

PROFESSIONAL CONSULTANT SERVICES AGREEMENT

PROACTIVE ENGINEERING CONSULTANTS, INC., dba Q3 CONSULTING

Engineering Services for The  
Northside Master Drainage Plan Report  
For Northside Specific Plan Area

THIS PROFESSIONAL CONSULTANT SERVICES AGREEMENT (“Agreement”) is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ (“Effective Date”), by and between the CITY OF RIVERSIDE, a California charter city and municipal corporation (“City”), and PROACTIVE ENGINEERING CONSULTANTS, INC., a California corporation, doing business as Q3 Consulting, (“Consultant”).

1. **Scope of Services.** City agrees to retain and does hereby retain Consultant and Consultant agrees to provide the services more particularly described in Exhibit “A,” “Scope of Services” (“Services”), attached hereto and incorporated herein by reference, in conjunction with [Engineering Services for The Northside Master Drainage Plan Report for Northside Specific Plan Area] (“Project”).

2. **Term.** This Agreement shall be effective on the date first written above and shall remain in effect until December 31, 2025, unless otherwise terminated pursuant to the provisions herein.

3. **Compensation/Payment.** Consultant shall perform the Services under this Agreement for the total sum not to exceed Two Hundred Twenty-Three Thousand Two Hundred Eighty Dollars (\$223,280.00), payable in accordance with the terms set forth in Exhibit “B.” Said payment shall be made in accordance with City’s usual accounting procedures upon receipt and approval of an itemized invoice setting forth the services performed. The invoices shall be delivered to City at the address set forth in Section 4 hereof.

4. **Notices.** Any notices required to be given, hereunder shall be in writing and shall be personally served or given by mail. Any notice given by mail shall be deemed given when deposited in the United States Mail, certified and postage prepaid, addressed to the party to be served as follows:

To City

Public Works Department  
City of Riverside  
Attn: Sweta Patel, PE  
3900 Main Street  
Riverside, CA 92522

To Consultant

Proactive Engineering Consultants, Inc.  
dba Q3 Consulting  
Attn: Tom Ryan, PE  
200 S. Main Street, Suite 300  
Corona, CA 92882

5. **Prevailing Wage.** If applicable, Consultant and all subcontractors are required to pay the general prevailing wage rates of per diem wages and overtime and holiday wages

determined by the Director of the Department of Industrial Relations under Section 1720 et seq. of the California Labor Code and implemented by Resolution No. 13346 of the City Council of the City of Riverside. The Director's determination is available on-line at [www.dir.ca.gov/dlsr/DPreWageDetermination.htm](http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm) and is referred to and made a part hereof; the wage rates therein ascertained, determined, and specified are referred to and made a part hereof as though fully set forth herein.

6. **Contract Administration.** A designee of the City will be appointed in writing by the City Manager or Department Director to administer this Agreement on behalf of City and shall be referred to herein as Contract Administrator.

7. **Standard of Performance.** While performing the Services, Consultant shall exercise the reasonable professional care and skill customarily exercised by reputable members of Consultant's profession practicing in the Metropolitan Southern California Area and shall use reasonable diligence and best judgment while exercising its professional skill and expertise.

8. **Personnel.** Consultant shall furnish all personnel necessary to perform the Services and shall be responsible for their performance and compensation. Consultant recognizes that the qualifications and experience of the personnel to be used are vital to professional and timely completion of the Services. The key personnel listed in Exhibit "C" attached hereto and incorporated herein by this reference and assigned to perform portions of the Services shall remain assigned through completion of the Services, unless otherwise mutually agreed by the parties in writing, or caused by hardship or resignation in which case substitutes shall be subject to City approval.

9. **Assignment and Subcontracting.** Neither party shall assign any right, interest, or obligation in or under this Agreement to any other entity without prior written consent of the other party. In any event, no assignment shall be made unless the assignee expressly assumes the obligations of assignor under this Agreement, in a writing satisfactory to the parties. Consultant acknowledges that any assignment may, at the City's sole discretion, require City Manager and/or City Council approval. Consultant shall not subcontract any portion of the work required by this Agreement without prior written approval by the responsible City Contract Administrator. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement, including without limitation, the insurance obligations set forth in Section 12. The Consultant acknowledges and agrees that the City is an intended beneficiary of any work performed by any subcontractor for purposes of establishing a duty of care between any subcontractor and the City.

10. **Independent Contractor.** In the performance of this Agreement, Consultant, and Consultant's employees, subcontractors and agents, shall act in an independent capacity as independent contractors, and not as officers or employees of the City of Riverside. Consultant acknowledges and agrees that the City has no obligation to pay or withhold state or federal taxes or to provide workers' compensation or unemployment insurance to Consultant, or to Consultant's employees, subcontractors and agents. Consultant, as an independent contractor, shall be responsible for any and all taxes that apply to Consultant as an employer.

## 11. **Indemnification.**

11.1 **Design Professional Defined.** For purposes of this Agreement, “Design Professional” includes the following:

- A. An individual licensed as an architect pursuant to Chapter 3 (commencing with Section 5500) of Division 3 of the Business and Professions Code, and a business entity offering architectural services in accordance with that chapter.
- B. An individual licensed as a landscape architect pursuant to Chapter 3.5 (commencing with Section 5615) of Division 3 of the Business and Professions Code, and a business entity offering landscape architectural services in accordance with that chapter.
- C. An individual registered as a professional engineer pursuant to Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code, and a business entity offering professional engineering services in accordance with that chapter.
- D. An individual licensed as a professional land surveyor pursuant to Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code, and a business entity offering professional land surveying services in accordance with that chapter.

11.2 **Defense Obligation For Design Professional Liability.** Consultant agrees, at its cost and expense, to promptly defend the City, and the City’s employees, officers, managers, agents and council members (collectively the “Parties to be Defended”) from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings to the extent the same arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. Consultant will reimburse City for reasonable defense costs for claims arising out of Consultant’s professional negligence based on the percentage of Consultant’s liability. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant’s Services under this Agreement.

11.3 **Indemnity For Design Professional Liability.** When the law establishes a professional standard of care for Consultant’s services, to the fullest extent permitted by law, Consultant shall indemnify, protect and hold harmless the City and the City’s employees, officers, managers, agents, and Council Members (“Indemnified Parties”) from and against any and all claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fines and penalties, liabilities or losses of any kind or nature whatsoever to the extent the same arise out of,

pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or anyone employed by or working under the Consultant or for services rendered to the Consultant in the performance of the Agreement, notwithstanding that the City may have benefited from its work or services and whether or not caused in part by the negligence of an Indemnified Party.

**11.4 Defense Obligation For Other Than Design Professional Liability.**

Consultant agrees, at its cost and expense, to promptly defend the City, and the City's employees, officers, managers, agents and council members (collectively the "Parties to be Defended") from and against any and all claims, allegations, lawsuits, arbitration proceedings, administrative proceedings, regulatory proceedings, or other legal proceedings which arise out of, or relate to, or are in any way connected with: 1) the Services, work, activities, operations, or duties of the Consultant, or of anyone employed by or working under the Consultant, or 2) any breach of the Agreement by the Consultant. This duty to defend shall apply whether or not such claims, allegations, lawsuits or proceedings have merit or are meritless, or which involve claims or allegations that any or all of the Parties to be Defended were actively, passively, or concurrently negligent, or which otherwise assert that the Parties to be Defended are responsible, in whole or in part, for any loss, damage or injury. Consultant agrees to provide this defense immediately upon written notice from the City, and with well qualified, adequately insured and experienced legal counsel acceptable to City. This obligation to defend as set forth herein is binding on the successors, assigns and heirs of Consultant and shall survive the termination of Consultant's Services under this Agreement.

**11.5 Indemnity For Other Than Design Professional Liability.** Except as to the sole negligence or willful misconduct of the City, Consultant agrees to indemnify, protect and hold harmless the Indemnified Parties from and against any claim for damage, charge, lawsuit, action, judicial, administrative, regulatory or arbitration proceeding, damage, cost, expense (including counsel and expert fees), judgment, civil fine and penalties, liabilities or losses of any kind or nature whatsoever whether actual, threatened or alleged, which arise out of, pertain to, or relate to, or are a consequence of, or are attributable to, or are in any manner connected with the performance of the Services, work, activities, operations or duties of the Consultant, or anyone employed by or working under the Consultant or for services rendered to Consultant in the performance of this Agreement, notwithstanding that the City may have benefited from its work or services. This indemnification provision shall apply to any acts, omissions, negligence, recklessness, or willful misconduct, whether active or passive, on the part of the Consultant or anyone employed or working under the Consultant.

**12. Insurance.**

**12.1 General Provisions.** Prior to the City's execution of this Agreement, Consultant shall provide satisfactory evidence of, and shall thereafter maintain during the term of this Agreement, such insurance policies and coverages in the types, limits, forms and ratings required herein. The rating and required insurance policies and coverages may be modified in writing by the City's Risk Manager or City Attorney, or a designee, unless such modification is prohibited by law.



12.1.1 **Limitations.** These minimum amounts of coverage shall not constitute any limitation or cap on Consultant's indemnification obligations under Section 11 hereof.

12.1.2 **Ratings.** Any insurance policy or coverage provided by Consultant or subcontractors as required by this Agreement shall be deemed inadequate and a material breach of this Agreement, unless such policy or coverage is issued by insurance companies authorized to transact insurance business in the State of California with a policy holder's rating of A or higher and a Financial Class of VII or higher.

12.1.3 **Cancellation.** The policies shall not be canceled unless thirty (30) days' prior written notification of intended cancellation has been given to City by certified or registered mail, postage prepaid.

12.1.4 **Adequacy.** The City, its officers, employees and agents make no representation that the types or limits of insurance specified to be carried by Consultant pursuant to this Agreement are adequate to protect Consultant. If Consultant believes that any required insurance coverage is inadequate, Consultant will obtain such additional insurance coverage as Consultant deems adequate, at Consultant's sole expense.

12.2 **Workers' Compensation Insurance.** By executing this Agreement, Consultant certifies that Consultant is aware of and will comply with Section 3700 of the Labor Code of the State of California requiring every employer to be insured against liability for workers' compensation, or to undertake self-insurance before commencing any of the work. Consultant shall carry the insurance or provide for self-insurance required by California law to protect said Consultant from claims under the Workers' Compensation Act. Prior to City's execution of this Agreement, Consultant shall file with City either 1) a certificate of insurance showing that such insurance is in effect, or that Consultant is self-insured for such coverage, or 2) a certified statement that Consultant has no employees, and acknowledging that if Consultant does employ any person, the necessary certificate of insurance will immediately be filed with City. Any certificate filed with City shall provide that City will be given ten (10) days' prior written notice before modification or cancellation thereof.

12.3 **Commercial General Liability and Automobile Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, commercial general liability insurance and automobile liability insurance as required to insure Consultant against damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from or which may concern operations by anyone directly or indirectly employed by, connected with, or acting for or on behalf of Consultant. The City, and its officers, employees and agents, shall be named as additional insureds under the Consultant's insurance policies.

12.3.1 Consultant's commercial general liability insurance policy shall cover both bodily injury (including death) and property damage (including, but not limited to, premises operations liability, products-completed operations liability, independent contractor's liability, personal injury liability, and contractual liability) in an amount not less than \$1,000,000 per occurrence and a general aggregate limit in the amount of not less than \$2,000,000.

12.3.2 Consultant's automobile liability policy shall cover both bodily injury and property damage in an amount not less than \$1,000,000 per occurrence and an aggregate limit of not less than \$1,000,000. All of Consultant's automobile and/or commercial general liability insurance policies shall cover all vehicles used in connection with Consultant's performance of this Agreement, which vehicles shall include, but are not limited to, Consultant owned vehicles, Consultant leased vehicles, Consultant's employee vehicles, non-Consultant owned vehicles and hired vehicles.

12.3.3 Prior to City's execution of this Agreement, copies of insurance policies or original certificates along with additional insured endorsements acceptable to the City evidencing the coverage required by this Agreement, for both commercial general and automobile liability insurance, shall be filed with City and shall include the City and its officers, employees and agents, as additional insureds. Said policies shall be in the usual form of commercial general and automobile liability insurance policies, but shall include the following provisions:

It is agreed that the City of Riverside, and its officers, employees and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured for the City of Riverside.

12.3.4 The insurance policy or policies shall also comply with the following provisions:

- a. The policy shall be endorsed to waive any right of subrogation against the City and its sub-consultants, employees, officers and agents for services performed under this Agreement.
- b. If the policy is written on a claims-made basis, the certificate should so specify and the policy must continue in force for one year after completion of the services. The retroactive date of coverage must also be listed.
- c. The policy shall specify that the insurance provided by Consultant will be considered primary and not contributory to any other insurance available to the City and Endorsement No. CG 20010413 shall be provided to the City.

12.4 **Errors and Omissions Insurance.** Prior to City's execution of this Agreement, Consultant shall obtain, and shall thereafter maintain during the term of this Agreement, errors and omissions professional liability insurance in the minimum amount of \$1,000,000 to protect the City from claims resulting from the Consultant's activities.

12.5 **Subcontractors' Insurance.** Consultant shall require all of its subcontractors to carry insurance, in an amount sufficient to cover the risk of injury, damage or loss that may be caused by the subcontractors' scope of work and activities provided in furtherance of this Agreement, including, but without limitation, the following coverages: Workers Compensation, Commercial General Liability, Errors and Omissions, and Automobile liability.

Upon City's request, Consultant shall provide City with satisfactory evidence that Subcontractors have obtained insurance policies and coverages required by this section.

13. **Business Tax.** Consultant understands that the Services performed under this Agreement constitutes doing business in the City of Riverside, and Consultant agrees that Consultant will register for and pay a business tax pursuant to Chapter 5.04 of the Riverside Municipal Code and keep such tax certificate current during the term of this Agreement.

14. **Time of Essence.** Time is of the essence for each and every provision of this Agreement.

15. **City's Right to Employ Other Consultants.** City reserves the right to employ other Consultants in connection with the Project. If the City is required to employ another consultant to complete Consultant's work, due to the failure of the Consultant to perform, or due to the breach of any of the provisions of this Agreement, the City reserves the right to seek reimbursement from Consultant.

16. **Accounting Records.** Consultant shall maintain complete and accurate records with respect to costs incurred under this Agreement. All such records shall be clearly identifiable. Consultant shall allow a representative of City during normal business hours to examine, audit, and make transcripts or copies of such records and any other documents created pursuant to this Agreement. Consultant shall allow inspection of all work, data, documents, proceedings, and activities related to the Agreement for a period of three (3) years from the date of final payment under this Agreement.

17. **Confidentiality.** All ideas, memoranda, specifications, plans, procedures, drawings, descriptions, computer program data, input record data, written information, and other materials either created by or provided to Consultant in connection with the performance of this Agreement shall be held confidential by Consultant, except as otherwise directed by City's Contract Administrator. Nothing furnished to Consultant which is otherwise known to the Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use City's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television or radio production, website, or other similar medium without the prior written consent of the City.

18. **Ownership of Documents.** All reports, maps, drawings and other contract deliverables prepared under this Agreement by Consultant shall be and remain the property of City. Consultant shall not release to others information furnished by City without prior express written approval of City.

19. **Copyrights.** Consultant agrees that any work prepared for City which is eligible for copyright protection in the United States or elsewhere shall be a work made for hire. If any such work is deemed for any reason not to be a work made for hire, Consultant assigns all right, title and interest in the copyright in such work, and all extensions and renewals thereof, to City, and agrees to provide all assistance reasonably requested by City in the establishment, preservation and enforcement of its copyright in such work, such assistance to be provided at City's expense

but without any additional compensation to Consultant. Consultant agrees to waive all moral rights relating to the work developed or produced, including without limitation any and all rights of identification of authorship and any and all rights of approval, restriction or limitation on use or subsequent modifications.

20. **Conflict of Interest.** Consultant, for itself and on behalf of the individuals listed in Exhibit "C," represents and warrants that by the execution of this Agreement, they have no interest, present or contemplated, in the Project affected by the above-described Services. Consultant further warrants that neither Consultant, nor the individuals listed in Exhibit "C" have any real property, business interests or income interests that will be affected by this project or, alternatively, that Consultant will file with the City an affidavit disclosing any such interest.

21. **Solicitation.** Consultant warrants that Consultant has not employed or retained any person or agency to solicit or secure this Agreement, nor has it entered into any agreement or understanding for a commission, percentage, brokerage, or contingent fee to be paid to secure this Agreement. For breach of this warranty, City shall have the right to terminate this Agreement without liability and pay Consultant only for the value of work Consultant has actually performed, or, in its sole discretion, to deduct from the Agreement price or otherwise recover from Consultant the full amount of such commission, percentage, brokerage or commission fee. The remedies specified in this section shall be in addition to and not in lieu of those remedies otherwise specified in this Agreement.

22. **General Compliance With Laws.** Consultant shall keep fully informed of federal, state and local laws and ordinances and regulations which in any manner affect those employed by Consultant, or in any way affect the performance of services by Consultant pursuant to this Agreement. Consultant shall at all times observe and comply with all such laws, ordinances and regulations, and shall be solely responsible for any failure to comply with all applicable laws, ordinances and regulations. Consultant represents and warrants that Consultant has obtained all necessary licenses to perform the Scope of Services and that such licenses are in good standing. Consultant further represents and warrants that the services provided herein shall conform to all ordinances, policies and practices of the City of Riverside.

23. **Waiver.** No action or failure to act by the City shall constitute a waiver of any right or duty afforded City under this Agreement, nor shall any such action or failure to act constitute approval of or acquiescence in any breach thereunder, except as may be specifically, provided in this Agreement or as may be otherwise agreed in writing.

24. **Amendments.** This Agreement may be modified or amended only by a written agreement and/or change order executed by the Consultant and City.

25. **Termination.** City, by notifying Consultant in writing, shall have the right to terminate any or all of Consultant's services and work covered by this Agreement at any time. In the event of such termination, Consultant may submit Consultant's final written statement of the amount of Consultant's services as of the date of such termination based upon the ratio that the work completed bears to the total work required to make the report complete, subject to the City's rights under Sections 15 and 26 hereof. In ascertaining the work actually rendered through the

termination date, City shall consider completed work, work in progress and complete and incomplete reports and other documents only after delivered to City.

25.1 Other than as stated below, City shall give Consultant thirty (30) days' prior written notice prior to termination.

25.2 City may terminate this Agreement upon fifteen (15) days' written notice to Consultant, in the event:

25.2.1 Consultant substantially fails to perform or materially breaches the Agreement; or

25.2.2 City decides to abandon or postpone the Project.

26. **Offsets.** Consultant acknowledges and agrees that with respect to any business tax or penalties thereon, utility charges, invoiced fee or other debt which Consultant owes or may owe to the City, City reserves the right to withhold and offset said amounts from payments or refunds or reimbursements owed by City to Consultant. Notice of such withholding and offset, shall promptly be given to Consultant by City in writing. In the event of a dispute as to the amount owed or whether such amount is owed to the City, City will hold such disputed amount until either the appropriate appeal process has been completed or until the dispute has been resolved.

27. **Successors and Assigns.** This Agreement shall be binding upon City and its successors and assigns, and upon Consultant and its permitted successors and assigns, and shall not be assigned by Consultant, either in whole or in part, except as otherwise provided in paragraph 9 of this Agreement.

28. **Venue.** Any action at law or in equity brought by either of the parties hereto for the purpose of enforcing a right or rights provided for by this Agreement shall be tried in the Superior Court, County of Riverside, State of California, and the parties hereby waive all provisions of law providing for a change of venue in such proceedings to any other county. In the event either party hereto shall bring suit to enforce any term of this Agreement or to recover any damages for and on account of the breach of any term or condition of this Agreement, it is mutually agreed that each party will bear their own attorney's fees and costs.

29. **Nondiscrimination.** During Consultant's performance of this Agreement, Consultant shall not discriminate on the grounds of race, religious creed, color, national origin, ancestry, age, physical disability, mental disability, medical condition, including the medical condition of Acquired Immune Deficiency Syndrome (AIDS) or any condition related thereto, marital status, sex, genetic information, gender, gender identity, gender expression, or sexual orientation, military and veteran status, in the selection and retention of employees and subcontractors and the procurement of materials and equipment, except as provided in Section 12940 of the California Government Code. Further, Consultant agrees to conform to the requirements of the Americans with Disabilities Act in the performance of this Agreement.

30. **Severability.** Each provision, term, condition, covenant and/or restriction, in whole and in part, of this Agreement shall be considered severable. In the event any provision, term, condition, covenant and/or restriction, in whole and/or in part, of this Agreement is declared



invalid, unconstitutional, or void for any reason, such provision or part thereof shall be severed from this Agreement and shall not affect any other provision, term, condition, covenant and/or restriction of this Agreement, and the remainder of the Agreement shall continue in full force and effect.

31. **Authority.** The individuals executing this Agreement and the instruments referenced herein on behalf of Consultant each represent and warrant that they have the legal power, right and actual authority to bind Consultant to the terms and conditions hereof and thereof.

32. **Entire Agreement.** This Agreement constitutes the final, complete, and exclusive statement of the terms of the agreement between the parties pertaining to the subject matter of this Agreement and supersedes all prior and contemporaneous understandings or agreements of the parties. Neither party has been induced to enter into this Agreement by and neither party is relying on, any representation or warranty outside those expressly set forth in this Agreement.

33. **Digital and Counterpart Signatures.** Each party to this Agreement intends and agrees to the use of digital signatures that meet the requirements of the California Uniform Electronic Transactions Act (Civil Code §§ 1633.1, et seq.), California Government Code § 16.5, and California Code of Regulations Title 2 Division 7 Chapter 10, to execute this Agreement. The parties further agree that the digital signatures of the parties included in this Agreement are intended to authenticate this writing and to have the same force and effect as manual signatures for purposes of validity, enforceability, and admissibility. For purposes of this section, a “digital signature” is defined in subdivision (d) of Section 16.5 of the Government Code and is a type of “electronic signature” as defined in subdivision (h) of Section 1633.2 of the Civil Code. This Agreement may be executed in any number of counterparts, each of which will be an original, but all of which together will constitute one instrument. Each certified or authenticated electronic copy of an encrypted digital signature shall be deemed a duplicate original, constituting one and the same instrument and shall be binding on the parties hereto.

34. **Interpretation.** City and Consultant acknowledge and agree that this Agreement is the product of mutual arms-length negotiations and accordingly, the rule of construction, which provides that the ambiguities in a document shall be construed against the drafter of that document, shall have no application to the interpretation and enforcement of this Agreement.

34.1 Titles and captions are for convenience of reference only and do not define, describe or limit the scope or the intent of the Agreement or any of its terms. Reference to section numbers, are to sections in the Agreement unless expressly stated otherwise.

34.2 This Agreement shall be governed by and construed in accordance with the laws of the State of California in effect at the time of the execution of this Agreement.

34.3 In the event of a conflict between the body of this Agreement and Exhibit “A” - Scope of Services hereto, the terms contained in Exhibit “A” shall be controlling.

35. **Exhibits.** The following exhibits attached hereto are incorporated herein to this Agreement by this reference:

Exhibit "A" - Scope of Services

Exhibit "B" - Compensation

Exhibit "C" - Key Personnel

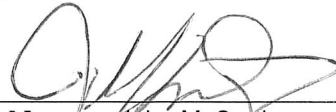
**[SIGNATURES ON THE FOLLOWING PAGE]**

IN WITNESS WHEREOF, City and Consultant have caused this Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a California charter city and municipal corporation

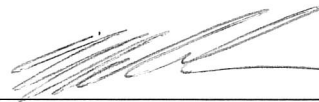
PROACTIVE ENGINEERING CONSULTANTS, INC., a California corporation, doing business as Q3 CONSULTING

By: \_\_\_\_\_  
City Manager

By:   
Print Name: John McCarthy  
Title: Vice President

Attest: \_\_\_\_\_  
City Clerk

and

By:   
Print Name: Mark Anderson  
Title: Chief Financial Officer

Certified as to Availability of Funds:

By: \_\_\_\_\_  
Chief Financial Officer

Approved as to Form:


By:   
Deputy City Attorney

IN WITNESS WHEREOF, City and Consultant have caused this Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a California  
charter city and municipal corporation

PROACTIVE ENGINEERING  
CONSULTANTS, INC., a California corporation,  
doing business as Q3 CONSULTING

By: \_\_\_\_\_  
City Manager

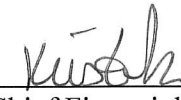
By:  \_\_\_\_\_  
Print Name: John McCarthy  
Title: Vice President

Attest: \_\_\_\_\_  
City Clerk

**and**

By:  \_\_\_\_\_  
Print Name: Mark Anderson  
Title: Chief Financial Officer

Certified as to Availability of Funds:

By:  \_\_\_\_\_  
for Chief Financial Officer

Approved as to Form:

By: \_\_\_\_\_  
Deputy City Attorney

**EXHIBIT "A"**

**SCOPE OF SERVICES**



## 6. Scope of Work

### Scope of Services

Our detailed scope of services for the Stormwater Master Plan project is based on the requirements in the RFP, our understanding of the requirements to complete a successful MDP.

#### Task 0 – Client and Agency Project Meetings & Coordination

##### *Task 0.1 Kick-Off Meeting*

Q3 will conduct a Kick-Off meeting with the City and County to discuss project objectives, project schedule, potential design issues, research data requests, and City strategies. Q3 will identify the lines of communication for the project and protocols for data requests outside of the City.

##### *Task 0.2 Project Management, Meeting, and Coordination*

Q3 will perform coordination, communication, and technical consultation with the City and County 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 has been budgeted for eight (8) project meetings. This task also includes coordination between, and with, City and County staff during the project. If needed Q3 will provide services for additional meetings per a separate addendum.

#### Task 1 – Existing Conditions Assessment

##### *Task 1.1 Baseline Data Acquisition & Review*

Q3 will obtain existing available data and technical studies from the City and County related to the area drainage system, hydrology and hydraulic investigations. Data will include as-built plans, GIS database, reports, and recent calculations. Data will be reviewed to understand how much missing as-built data exists. For those systems, City or County owned, 24-inch and larger (effective diameter), Q3 will perform a general field review to identify estimated facility size, material, and direction of flow to the best of our knowledge. If the City requests more detailed field investigations, such as closed-circuit television (CCTV) or field survey, this can be performed per request of City per separate addendum. It is not anticipated that this level of detail will be needed.

##### *Task 1.2 Existing Facility GIS Update*

This task, and associated budget, has been pulled from this scope of work per the direction of the City.

##### *Task 1.3 Existing Facility Capacity Calculations*

Q3 will perform a hydraulic analysis of each storm drain system backbone system. A backbone system is defined by the facilities identified in the RFP. For backbone facilities, the systems will be evaluated using a downstream tail water control that is either known (from reports), calculated as part of another system evaluation, or soffit control. Calculations will be performed using WSPG (or WSPGW) for closed conduits, and in some cases could include HEC-RAS for the open channel sections. System culverts will be evaluated for inlet and outlet controls. Capacity will be defined for entire system based on individual segment failures. In other words, the first portion of a system to fail, will define the capacity for the system.

For non-backbone facilities, 24-inch and larger, capacities will be identified using normal depth and identified as the “full flow capacity” or when the pipe reaches maximum conveyance (non-pressurized).

##### *Task 1.4 Existing Facilities Map*

A map of the existing facilities and their associated flowrates will be prepared for each storm drain system. Each facility will show design flowrates (per previous hydrology calculations) and the capacity of the system. A GIS database will be prepared with the facility items identified in the “map”.

### *Task 1.5 Existing Facility Capacity Report*

A technical memorandum will be prepared to support the calculations and results identified in Task 1. This report will be used to help establish an initial priority ranking of all drainage systems with the project site area.

## **Task 2 – Hydrologic Review and Analyses**

### *Task 2.1 Review of HEC-HMS Model*

Q3 will acquire and review the digital files of the existing hydrology analyses for the project site. Review will consist of ensuring concentration points along the backbone facilities are consistent with the lateral locations. Hydrologic parameters will also be reviewed for consistency with County methodology. It is assumed that the drainage areas have been reviewed and accepted by the City/County. Any discrepancies will be brought to the attention of the City for further consideration.

### *Task 2.2 Proposed Condition Hydrologic Analyses*

Regional hydrology will be updated for the proposed drainage improvements when attenuation or detention is involved.. Up to four (4) regional alternatives will be evaluated per backbone facility. These 4 scenarios will support the alternatives identified in the hydraulics analysis.

### *Task 2.3 Rational Method Hydrology*

Hydrology will be performed for areas of new storm drain systems to quantify flows at locations within regional watershed. This task will be budgeted for 40 hours of hydrology to develop design peak flowrates for use to evaluate and size systems in WSPG. Rational method will be used to calculate several “representative” watersheds using AES Software containing various land uses that will be used to develop a runoff yield (cfs/acre). These values will be used in the smaller watersheds within the City boundary. Up to 5 “representative” calculations will be prepared.

### *Task 2.4 Technical Hydrology Memorandum (Incl. Maps)*

Q3 will prepare a technical memorandum TM supporting the hydrologic methodology, assumptions and discussion of the results. The memorandum will be prepared in conjunction with the completion of the hydraulics, as the alternatives will need to be evaluated simultaneously as the supporting hydrology. This TM will cover hydrology only. Discussion of the hydraulic capacity of the alternatives will be prepared per separate task. Hydrology maps will be prepared per this task for both existing and proposed conditions.

## **Task 3 – Proposed Facility Development**

### *Task 3.1 Regional Channel Hydraulics*

Q3 will evaluate the Highgrove Channel from approximately 1,200 linear feet upstream of Orange Street to the Santa Ana River. It is assumed that this model has already been developed (and can be acquired) in HEC-RAS by the County. Q3 will use this model to evaluate alternatives to eliminate the breakout of flows at Orange Street. Up to three alternatives will be evaluated to mitigate the current flow breakout at Orange Street including upstream detention, size/geometry modifications, and culvert improvements. A concept exhibit will be developed of the recommended alternative.

Springbrook Channel will be evaluated using WSPG or HEC-RAS from the I-215 to Lake Evans. It is assumed that this facility currently has an existing model in which Q3 can work from. Up to three alternatives will be evaluated including detention and size/geometry modifications. A concept exhibit will be developed of the recommended alternative.

University Channel will be analyzed using WSPG (or WSPGW) from Orange Street to the confluence with Springbrook channel. Up to four alternatives will be evaluated including size/geometry modifications and upstream detention. A concept exhibit will be developed of the recommended alternative.

### *Task 3.2 Backbone System Hydraulics*

For City storm drain main line facilities (backbone), Q3 will develop WSPG (WSPGW) or HEC-RAS models per the list identified in the RFP. Main laterals will also be modeled in WSPG (WSPGW).

Street hydraulics will be prepared using normal depth calculations to identify location of inlets and laterals based on rational method hydrology.

### *Task 3.3 Schematic Plan & Profiles*

Q3 will convert the existing concept plan and profile exhibits from MicroStation to Civil3D and update any proposed facility size necessary as a result of the updated hydraulic calculations. Q3 will add an alignment to the plan view that matches the stationing of the profiles. It is assumed that changes to the planned facilities will be minor. Plans will be prepared for listed backbone facilities and main storm drain laterals 36-inches and larger. Horizontal scale will be 1"=200', with vertical scale 1"=10'. This task assumes minor updates to existing plan and profile sheets with a few additional sheets along the backbone structures. A schematic exhibit (plan view only) will also be created for the recommended basin location at the sports park. The exhibits will be developed to show topographic data, aerial photographs, and property lines acquired by City. An alignment will be established for the plan view and utilized in the profiles to correlate with the WSPG hydraulics. The potential basin exhibit will consist of 200-scale plan view only. Generalized details, such as inlets, outlets, spillway, energy dissipation will be identified on the exhibit.

### *Task 3.4 Project Phasing*

For each of the recommended alternatives, Q3 will identify a priority of construction. Phasing of the projects will include discussion of which projects should be implemented in what order to garner the most value. The results will be shown on an exhibit, color coding the project of highest priority for phasing based on discussions with City, District, and results of the modeling.

### *Task 3.5 Water Quality*

Q3 will provide a cursory evaluation of the project site for potential implementation of regional water quality treatment. Q3 will coordinate with the District to access area needs and potential strategic partners to meet water quality objectives. A list of potential locations for regional water quality treatment facilities will be developed that includes feasible treatment of targeted water quality constituents for each major watershed, including trash. Included in this analysis, will be a ranking of viable facility alternatives.

### *Task 3.6 Technical Hydraulics Memorandum*

Q3 will prepare a summary technical memorandum of the hydraulic results and model calculations to support the alternative solutions. This memo will include assumptions and technical backup for the calculations prepared.

## **Task 4 – Preliminary Construction Cost Estimate**

A preliminary quantity estimate will be prepared based on the recommended alternatives. Quantities will include facility conduit, grading estimates, and property acquisition. Contingencies will be estimated for utility relocation, traffic control, engineering and permitting. Unit pricing will be based on the District's cost sheets.

## **Task 5 – Fees and Funding**

Q3 will identify onsite and offsite developable areas tributary to each of the identified facility improvements to help the City determine a fair-share Development Impact Fee for future projects within the Northside Master Drainage Plan area. Q3 will also work with the City and District to assess potential funding strategies. This task has been budgeted for 40 hours.

## **Task 6 – Master Drainage Plan Report**

Q3 will update the existing Draft MDP report summarizing all assumptions, methodologies, and findings. Supporting technical data will be provided, such as hydrology, hydraulics, and costs. The report will include item described in the RFP. It is assumed that a majority of the text currently in the Draft will be used for the Final document.

## **Task 7 – Public Hearings & Meetings (Optional)**

The Q3 team can be made available to attend up to three (3) formal public hearings/meetings with the City and/or other entities for the purpose of presenting and discussing the study. This task will include the

preparation of a PowerPoint presentation for three meetings and attendance. Meeting minutes will be included for each meeting. This task has been budgeted for 42 hours.

## Clarifications

- No FEMA floodplain revisions are required or included in this proposal.
- As-built data for existing storm drain systems to be provided by City and/or County
- Available GIS files to be provided to Q3
- Utility location identification or admission within exhibits is not part of this study.
- Existing Condition hydrology for regional and backbone infrastructure completed by RE.
- Digital HEC-HMS models and Maps will be provided for the existing conditions.
- CAD files of previous plan and profiles will be made available to Q3.

**EXHIBIT "A"**  
**SCOPE OF SERVICES**

Additionally, it is agreed that RIVERSIDE COUNTY FLOOD CONTROL, and its officers, employees, and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured.

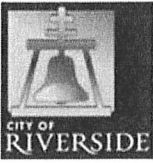
Additionally, it is agreed that the WATER CONSERVATION DISTRICT, and its officers, employees, and agents, are added as additional insureds under this policy, solely for work done by and on behalf of the named insured.



**EXHIBIT "B"**  
**COMPENSATION**



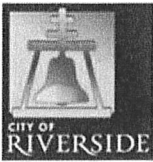
**EXHIBIT "C"**  
**KEY PERSONNEL**



**REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES  
Northside Master Drainage Plan (MDP) Report**

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## **Project Team Resumes**



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

### John A. McCarthy, PE, CFM Project Director

Mr. McCarthy is experienced in the development, final design, and construction of flood control and drainage projects for public works and private sector projects. He has completed storm water master plans for numerous cities and large-scale development projects throughout California. Mr. McCarthy has extensive experience in planning and design projects within the Riverside County areas. His long history of work with the District has resulted in strong relationships with the management and staff. Mr. McCarthy will act as project manager and main point of contact for the City on this project.

#### Project Experience

**Bedford Canyon Channel Stage 1, Corona, CA.** *Riverside County Flood Control & Water Conservation District.* Project Manager providing technical studies and design for improvement of the Bedford Canyon Channel Stage 1 from the I-15 freeway downstream to Temescal Canyon Road. Preparing hydraulic model for the baseline and project condition alternatives including sediment transport and scour analyses. Evaluating a series of channel alternatives to identify a set of recommended improvements.

**Mockingbird Canyon Dam and Fairmont Park Dam Inundation Studies, Riverside, CA.** *City of Riverside.* Project Manager responsible for the preparation of separate technical studies for a dam inundation maps for the Mockingbird and Fairmont Park Dams. The dams are owned by the City of Riverside and under the jurisdiction of the State Divisions of Safety of Dams. The facilities are classified as “High” hazard dam. The team prepared a failure analysis and mapping in accordance with the new state requirements. The dam breach scenarios were developed using HEC-HMS. The breach analysis was input, and the downstream inundation areas and flood wave timing were developed using FLO-2D. The dam inundation mapping has been completed and approved by DSOD.

**Chino Preserve Storm Drain Master Plan Update, Chino, CA.** *City of Chino.* Project Manager for the preparation of hydrology and hydraulic studies to update the City’s storm drain master plan. Prepared new hydrology based on the city’ current land use plan, identified deficient storm drain systems and developed alternatives and recommendations for the updated master plan.

**Santa Ana River Sediment Transport, Riverside County, CA.** *Riverside County Flood Control & Water Conservation District.* Project Manager. Responsible for project management. The project included a detailed sediment transport analysis for the Santa Ana River along the Riverside 1 and 2 Levee systems. Inspections of the Riverside Levees revealed damaged groins, localized degradation, and exposed toe. The team compiled historic information and data; prepared a hydraulic model to define hydraulic performance and evaluate sediment transport and developed multiple baseline historical HEC-6T models to represent past observed conditions (historic topographic mapping) in support of model calibration. These models were then used to develop a correlation between two sets of model conditions that were applied to the development of a present-day model and the prediction the long-term stream adjustments.

**Years of Experience:** 30

#### Registration

Professional Engineer – Civil,  
CA #47583 – 1991

Certified Floodplain Manager –  
#05-01596 – 2005

Professional Engineer – Civil,  
AZ #51805 – 2010

#### Education

B.S., Civil Engineering, California  
State Polytechnic University, San  
Luis Obispo – 1989

Certificate, Light Construction  
and Development Management  
– 1997

#### Professional Affiliations

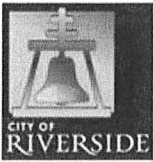
Member:

Association of State Floodplain  
Managers (ASFPM)

American Society of Civil  
Engineers (ASCE)

Floodplain Management  
Association (FMA)





## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

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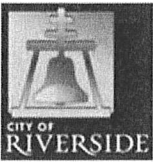
**Travertine Flood Hazard Mitigation Plan, La Quinta, CA.** *Hoffmann Group.* Drainage Manager for the preparation of technical hydrology, hydraulic, and geomorphic studies for the development of a flood protection plan for the proposed 855 acre mixed use development. The site is located on a series of coalescing active and inactive alluvial fans along the Santa Rosa mountain front. Prepared hydrology regional for the 5 major watershed areas, evaluated potential flow path uncertainty on the fans, and completed 2-dimensional hydraulic models. Based on the baseline condition results and site planning, developed a series of flood protection measures for the site development.

**La Quinta Focused Drainage Studies, La Quinta, CA.** *City of La Quinta.* Principal In-charge. Q3 Team members prepared hydrology and hydraulic analysis for an area of the City hardest hit by the recent extreme storm events in 2013 and 2014. The study evaluated the flood risk associated with extreme storm events and identified potential drainage improvements to reduce future flood damage and increase public safety if or when extreme storm events occur. The Team prepared a coupled 1D and 2D hydrology and hydraulic model for the study area. Offsite hydrology was prepared using RC Hydrology Manual procedures. Onsite hydrology was evaluated using a direct rainfall method applied over the study area. The advance model was used to more accurately drainage flow paths and overflow patterns and storm water runoff volumes in the identification of appropriate storm drain infrastructure. The results of the analysis were used to develop alternatives and cost estimates for recommended improvements to reduce the flood hazard during extreme events. The project evolved into preparing drainage improvement plans along Eisenhower Drive near Fernando Drive. Mr. McCarthy was the acting Project Manager for the preparation of the design plans.

**Whitewater Preserve Levee Improvements, Riverside County, CA.** *The Wildlands Conservancy.* Project Manager overseeing the planning, final design, and environmental permitting for levee improvements along the Whitewater River in the Whitewater Preserve. The levee is being designed to repair a failed system which protects the visitor servicing areas and sensitive habitat in the Preserve. Q3 is leading the efforts to design a levee system to accommodate extreme storm events and in compliance with Federal regulations. Work includes regional hydrology, river hydraulics, sediment transport analysis and scour calculations. The results of the technical studies were used in conjunction with the environmental work to develop alternatives and determine a set of recommended improvements. Q3 is developing final construction documents for the recommended improvements.

**Drainage Master Plan, Redlands, CA.** *City of Redlands.* Principal-In-Charge. Responsible for overseeing project. The team developed a drainage master plan for the city to update its drainage infrastructure and to identify regional drainage solutions to the city's flooding issues. Services included hydrology, advanced 1 and 2-dimensional hydraulic modeling, stormwater planning, best management practice (BMP) identification and evaluation, cost estimates, master plan report, and stakeholder coordination.

**Storm Water Master Plan, Rancho Palos Verdes, CA.** *City of Rancho Palos Verdes.* Project Manager. Provided drainage planning management for the overall Stormwater Master Plan for the City. The flood control portion of the report includes the use of the XP-SWMM model for both hydrology and hydraulics. The Storm Water Master Plan includes the development of a GIS database for the storm drain inventory including a Facility Mapping Tool which is being utilized to gather field data and keep the City informed of the field work schedule and finding. The hydrology and hydraulics modeling was completed utilizing GIS, XPSWMM, and XPWSPGW. This master plan includes the integration of stormwater quality retrofit opportunities. The Master Plan will ultimately provide the City with a comprehensive "living" storm water master plan. The master plan also includes a project prioritization scheme and a Capital Improvement Plan.



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

### Tom J. Ryan, PE Project Manager

Mr. Ryan has more than 22 years of engineering experience and 11 years of project management experience. Project experience includes preparation of storm water master plans, flood control and storm drain plans, advanced hydrologic/hydraulic analyses, FEMA flood studies, channel restoration, and water quality planning and design. In recent years, Tom's work in advanced urban area dynamic hydraulic modeling and public awareness has included first-of-its-kind flood routing simulations that resulted in award winning projects and numerous national and local presentations and publications.

#### Project Experience

**Mockingbird Canyon Dam and Fairmont Park Dam Inundation Studies, Riverside, CA.** *City of Riverside.* Project Engineer responsible for aiding and assisting in the preparation of separate technical studies for a dam inundation maps for the Mockingbird and Fairmont Park Dams. The dams are owned by the City of Riverside and under the jurisdiction of the State Divisions of Safety of Dams. The facilities are classified as "High" hazard dam. The team prepared a failure analysis and mapping in accordance with the new state requirements. The dam breach scenarios were developed using HEC-HMS. The breach analysis was input, and the downstream inundation areas and flood wave timing were developed using FLO-2D. The dam inundation mapping has been completed and approved by DSOD.

**Chino Preserve Storm Drain Master Plan Update, Chino, CA.** *City of Chino.* Project Engineer for the preparation of hydrology and hydraulic studies to update the City's storm drain master plan. Prepared new hydrology based on the city's current land use plan, identified deficient storm drain systems and developed alternatives and recommendations for the updated master plan. Mr. Ryan provided oversight and QAQC for the project, in addition to alternative analyses for proposed condition regional facilities.

**City of Coachella Stormwater Master Plan of Drainage, City of Coachella.** Project Manager responsible for the identification of flood control mitigation measures for the City. Hydrologic and hydraulic calculations were based on Riverside County Method. Q3 worked with the City and the Coachella Valley Water District (CVWD) to identify potential attenuation basins and alternative conveyance facilities to mitigate the current flooding conditions. High tailwater existed in the regional receiving water. This, in conjunction with very flat terrain required the use of a more powerful stormwater modeling system. Q3 use PCSWMM to evaluate the hydraulics of the comprehensive storm drain system. This model allows the user to model unsteady flow scenarios to utilize the difference in peak flows from the local storm drains to the regional downstream receiving waters. Work included evaluation of both flood control and water quality mitigation.

**La Quinta Focused Drainage Study, La Quinta CA.** *City of La Quinta.* Project Manager responsible for the preparation of the hydrologic and hydraulic models that encompassed the majority of the City. Mr. Ryan used a SWMM based 1D/2D model to create a comprehensive model capable of analyzing the entire City's storm drainage system in response to a 500-year storm event. The study was triggered after two years of consecutive extreme storm events. The largest storm even, September 9<sup>th</sup>, 2014 dropped approximately 3-inches of rain in one hour causing multiple locations to flood. The drainage system was

**Years of Experience:** 22

**Registration**

Civil Engineer, CA #61701 – 2000

**Education**

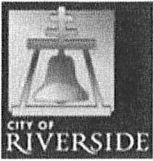
M.S., Royal Institute of Technology, Stockholm, Sweden, Environmental Engineering – 1997

B.S., California State University, Long Beach, Civil Engineering – 1995

**Professional Affiliations**

Member, American Society of Civil Engineers (ASCE)

Phi Beta Delta Honor Society for International Scholars, Member



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overrun by the thunderstorm's flash flood-like runoff that was a product of heavy rain, short duration, and adjacent hillside runoff. The models were prepared using data from the 2014 storm event and flood depths in the model correlated to actual storm photos. The model was then used to identify drainage improvements in five locations within the City. Mr. Ryan and Mr. McCarthy were responsible for developing the design alternatives for four of the locations. The use of these models showed more realistic design alternatives than using standard H&H models.

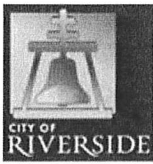
**Master Plan of Drainage, Redlands, CA.** *City of Redlands.* Project Manager. The team identified existing drainage deficiencies and sizing for proposed replacement facilities to alleviate flooding for the designated storm events. Historical floods for the City of Redlands included more than three feet of runoff inundating the downtown portion of the city. As part of this project, a hydraulic model was prepared which includes a fully hydrodynamic 2-dimensional analysis of the surface runoff, coupled with the subsurface facilities, which was used to identify the most feasible flood mitigation alternatives. A 3D animation was created to demonstrate the results of the downtown flooding (first of its kind for urban modeling) for review by stakeholders.

**Whitewater Channel Evaluation of Debris Capture & Flow Conveyance, Indian Wells, California.** *City of Indian Wells.* Project Engineer for the evaluation of two existing grade control structures and 1.5 miles of Whitewater River channel. The study evaluated the functionality of the two grade control structures and the existing channel low flow system. Recommendations were made for improving the grade control structures and grading a more efficient low flow channel system. Mr. Ryan oversaw the preparation of hydraulic models in HEC-RAS to evaluate channel characteristics of the grade control structures, as well as, alternatives for low-flow channel designs. These results were used to evaluate the grade control structure performances and to ensure the hydraulic jumps were within the reach of the existing facilities. A report was prepared outlining the methods, recommendations, and rough order magnitude costs of the proposed improvements.

**Indian Wells Crossing Project, Indian Wells, CA.** *The Kiner Group.* Project Manager responsible for evaluating the impacts of proposed improvements along 3,000 linear feet the WWRSC. Work includes hydraulic modeling, comparing the new CVWD Draft K-3 scour guidelines to a detailed sediment transport model, prepared by Q3. Results of this analysis will be used to design bank protection, improve existing grade control structures, and identify potential impacts to the Miles Avenue bridge. Currently, Q3 is working with CVWD to develop and modify current standards for design.

**City of Buena Park Master Plan of Drainage, Buena Park, CA.** *City of Buena Park.* As Project Manager, managed team that performed a full field evaluation of the drainage infrastructure of the City of Buena Park. Using a state-of-the-art GIS/GPS system to field identify and map each facility, a GIS database of the city's drainage infrastructure was developed. Calculations of the existing facility capacities and proposed infrastructure were prepared for all main storm drains. Hydrology was performed using AES Software for the 10-, 25-, and 100-year design storms. Hydraulics were performed using WSPG, Flowmaster, and SWMM. Prepared a citywide facility prioritization map and system.

**Master Plan of Drainage Update, Yucaipa, CA.** *City of Yucaipa.* As Project Manager, provided engineering services to update Yucaipa's Master Plan of Drainage. The update included development of unit hydrographs for calculation of peak flow rates along Wilson and Wildwood Creeks within the city limits. The unit hydrographs were prepared in accordance with San Bernardino County hydrology methods. Included incorporation of existing and future stormwater detention basins proposed for the watersheds. Identified the configuration of the existing basins based on available as-built plans and data. Preliminary stage-storage and stage-discharge relationships were prepared for the proposed basins based on preliminary sizes and estimated storage volumes provided by the city.



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

### Howard J. Barndt, PE *Hydrology & Hydraulics*

Mr. Barndt is experienced in regional and local hydrology studies, urban drainage design, regional and local flood control design, flood- and dam-inundation studies, 1- and 2-dimensional hydraulics, sediment transport and scour analysis, floodplain management studies, reservoir operations, and dam/levee breach and inundation studies. Mr. Barndt's extensive work in the Riverside County region has given him an intimate knowledge of hydrologic conditions and District regulations and guidelines.

#### Project Experience

**Bedford Canyon Channel Stage 1, Corona, CA.** *Riverside County Flood Control & Water Conservation District.* Project

Technical Engineer providing technical studies and design for improvement of the Bedford Canyon Channel Stage 1 from the I-15 freeway downstream to Temescal Canyon Road. Preparing hydraulic model for the baseline and project condition alternatives including sediment transport and scour analyses. Evaluating a series of channel alternatives to identify a set of recommended improvements.

**Mockingbird Canyon Dam and Fairmont Park Dam Inundation Studies, Riverside, CA.** *City of Riverside.* Technical Manager responsible for the preparation of separate technical studies for a dam inundation maps for the Mockingbird and Fairmont Park Dams. The dams are owned by the City of Riverside and under the jurisdiction of the State Divisions of Safety of Dams. The facilities are classified as "High" hazard dam. The team prepared a failure analysis and mapping in accordance with the new state requirements. The dam breach scenarios were developed using HEC-HMS. The breach analysis was input, and the downstream inundation areas and flood wave timing were developed using FLO-2D. The dam inundation mapping has been completed and approved by DSOD.

**Chino Preserve Storm Drain Master Plan Update, Chino, CA.** *City of Chino.* Technical Manager for the preparation of hydrology and hydraulic studies to update the City's storm drain master plan. Prepared new hydrology based on the city's current land use plan, identified deficient storm drain systems and developed alternatives and recommendations for the updated master plan.

**Santa Ana River Riverside Levees Sediment Transport Study, Riverside County, CA.** *Riverside County Flood Control & Water Conservation District.* Engineer responsible for the preparation of a comprehensive sediment transport study of the Santa Ana River Riverside Levees Reach to serve as the basis of design for potential repairs and reconstruction of the Riverside Levees and related appurtenances. Inspections of the Riverside Levees revealed damaged groins, localized degradation, and exposed toe. To address these issues, the client requested a sedimentation study to evaluate the long-term trends of aggradation and gradation as well as design recommendations for repair or reconstruction of the levees. Historic information and data was compiled; a hydraulic model was prepared to define hydraulic performance and evaluate sediment transport and developed multiple baseline historical HEC-6T models to represent past observed conditions (historic topographic mapping) in support of model calibration. These models were then used to develop a correlation between two sets of model conditions that were applied to the development of a present-day model and the prediction the long-term stream adjustments.

**Murrieta Creek Hydrologic Analysis and Preliminary Design, Riverside County, CA.** *Riverside County Flood Control & Water Conservation District.* Task Manager responsible for the preparation of a watershed hydrology study for the 220-square-mile watershed tributary to the City of Temecula. The work included a peer review of previous studies, the preparation of a comprehensive hydrology study calibrated

**Years of Experience:** 19

**Registration**

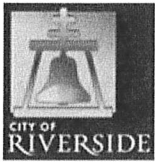
Civil Engineer, CA #65914 – 2004

**Education**

B.S., Civil Engineering, California State University, Long Beach – 1999

M.S., Civil Engineering (Water Resources), California State University, Long Beach – 2004





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to available stream and rain gage information for specific events, determine a viable mechanism to translate calibrated results to standard design hydrology by first evaluating the Warm Springs Creek tributary as a test case, and subsequently applying the adopted process to the overall watershed. The final results will tentatively be used to update the design of regional flood protection improvements.

**Bedford Canyon Channel Stage 1, Corona, CA.** *Riverside County Flood Control & Water Conservation District.* Lead Engineer for the preparation of technical studies and design for improvement of the Bedford Canyon Channel Stage 1 from the I-15 freeway downstream to Temescal Canyon Road. Preparing hydraulic models for the baseline and project condition alternatives including sediment transport and scour analyses. Evaluating a series of channel alternatives to identify a set of recommended improvements.

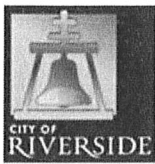
**San Timoteo Creek – Unnamed Tributary Realignment and Stabilization Project, Beaumont, CA.** *Pardee Homes.* Project Manager responsible for developing the basis of design and preparing the construction plans for the realignment, stabilization, and enhancement of a one-mile long unnamed tributary to the San Timoteo Creek. The improvements were designed to protect the adjacent natural and engineered slopes associated with an existing golf course and proposed community development. The basis of design included regional hydrology and flood routing for the tributary watershed, detailed hydraulic and sediment transport analysis for the realigned unnamed tributary, and the configuration/sizing of grade control measures, a baffled apron chute-type energy dissipater, a flood mitigation basin, and water quality measures.

**Mockingbird Canyon Dam – Inundation Study, Riverside, CA.** *City of Riverside.* Lead Engineer responsible for the preparation of technical studies for a dam inundation map for the Mockingbird Dam. The dam is owned by the City of Riverside and under the jurisdiction of the State Divisions of Safety of Dams. The facility is classified as “High” hazard dam. The team prepared a failure analysis and mapping in accordance with the new state requirements. The dam breach scenarios were developed using HEC-HMS. The breach analysis was input, and the downstream inundation areas and flood wave timing were developed using FLO-2D. The dam inundation mapping has been completed and approved by DSOD.

**Travertine Flood Hazard Mitigation Plan, La Quinta, CA.** *Travertine Corporation.* Project Engineer responsible for preparing technical studies to support the drainage and flood protection master plan for a proposed 905-acre development located at the foothills of an active alluvial fan. Mr. Barndt prepared pre- and post-condition hydrology for the project site and completed a geomorphic assessment of the alluvial fan activity. Work also included using a 2D model to analyze the alluvia fan flow characteristics in conjunction with applying storage and diversion strategies to mitigate potential flood damage. Using Mr. Barndt’s analysis results, the client established the footprint of the proposed development and recommended flood protection improvements. CVWD and the City approved the results of the Master Plan.

**March Air Force Base Reuse Drainage Master Plan, Riverside County, CA.** *March Joint Powers Authority.* Project Engineer responsible for the preparation of the drainage master plan for the March AFB Reuse Plan in coordination with the Riverside County Flood Control and Water Conservation District. The plan addresses drainage deficiencies, development of backbone drainage system alternatives, conceptual drainage facility plans, cost estimates, and funding mechanisms for the 10-square-mile decommissioned air base. The study was prepared to provide guidance for drainage issues as individual projects evolve during the development period of the Reuse Plan.

**Whitewater Preserve Levee Improvements, Riverside County, CA.** *The Wildlands Conservancy.* Lead Technical Engineer for the analysis and design of levee improvements along the Whitewater River in the Whitewater Preserve. The levee is being designed to repair a failed system which protects the visitor servicing areas and sensitive habitat in the Preserve. Mr. Barndt prepared the regional hydrology and sediment transport analysis and scour calculations that were used as the basis of design for the proposed improvements.



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

### Zach Snyder, PE *Hydrology & Hydraulics*

Mr. Snyder's experience is focused in the development of complex project for stormwater management. He has completed high profile flood studies in the southern California area utilizing advanced software to create complex and comprehensive linked 1D/2D models of urban drainage systems. An out of the box thinker, he uses all the tools at his disposal to come up with creative and cost effective solutions for flood hazard mitigation projects. He is also an expert in AutoCAD Civil 3D plan production and preparation, taking storm drain, flood control, and levee projects from concept to completed plan sets ready for submittal.

#### Project Experience

**Bedford Canyon Channel Stage 1, Corona, CA.** *Riverside County Flood Control & Water Conservation District.* Engineer assisting in the technical studies and design for improvement of the Bedford Canyon Channel Stage 1 from the I-15 freeway downstream to Temescal Canyon Road. Preparing hydraulic model for the baseline and project condition alternatives including sediment transport and scour analyses. Evaluating a series of channel alternatives to identify a set of recommended improvements.

**Mockingbird Canyon Dam and Fairmont Park Dam Inundation Studies, Riverside, CA.** *City of Riverside.* Engineer responsible for assisting in the preparation of separate technical studies for a dam inundation maps for the Mockingbird and Fairmont Park Dams. The dams are owned by the City of Riverside and under the jurisdiction of the State Divisions of Safety of Dams. The facilities are classified as "High" hazard dam. The team prepared a failure analysis and mapping in accordance with the new state requirements. The dam breach scenarios were developed using HEC-HMS. The breach analysis was input, and the downstream inundation areas and flood wave timing were developed using FLO-2D. The dam inundation mapping has been completed and approved by DSOD.

**Chino Preserve Storm Drain Master Plan Update, Chino, CA.** *City of Chino.* Engineer responsible for assisting in the preparation of hydrology and hydraulic studies to update the City's storm drain master plan. Prepared new hydrology based on the city's current land use plan, identified deficient storm drain systems and developed alternatives and recommendations for the updated master plan.

**Glass House Pharms Phase 1 – Regional Flood Protection, Cathedral City, Riverside County, CA.** *Glass House Pharms, LLC.* Lead Engineer for the development of a regional flood hazard mitigation plan for the proposed development along the I-10 corridor. Work included regional flood routing and hydraulic analysis for the design of regional storm water detention basins and flood control channels to support the project.

**Whitewater Preserve Levee Improvements, Riverside County, CA.** *The Wildlands Conservancy.* Project Engineer for the preparation of hydraulic analysis and final design for levee improvements along the Whitewater River. The levee is being designed to repair a failed system which protects the visitor servicing areas and sensitive habitat. The levee is being designed to accommodate extreme storm event and in compliance with Federal regulations.

**Travertine Development Regional Flood Studies, La Quinta, Riverside County, CA.** *Hoffmann.* Project Engineer preparing the baseline and project conditions regional hydrology flood routing studies and the subsequent determination of impacts and mitigation alternatives for the proposed improvements. The

**Years of Experience:** 5

**Registration**

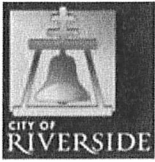
Civil Engineer, CA #C 89405 - 2018

**Education**

B.S., California State Polytechnic University, Pomona, Civil Engineering – 2014

**Professional Affiliations**

American Society of Civil Engineers (ASCE), Orange County, Member, 92799890



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

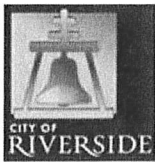
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specific planning area is tributary to Dike No. 4 and the Guadalupe Levees and the work included the evaluation of project related impacts and mitigation measures for those facilities.

**Morongo Creek Interim Channel Design, Cathedral City, Riverside County, CA.** *Messenger Investment Company.* Project Engineer for final design of Morongo Wash Channel underneath UPRR bridge, slope lining downstream of the UPRR crossing, and basins located west of Bob Hope Drive at I-10. Performed extensive Civil 3D grading to perform basin design and tested basins in SWMM to see if volume of basins is sufficient to carry design flow. Channel grading and slope lining design were also performed within Civil 3D. Implemented comments on the 90% channel submittal to submit them for final review and FEMA CLOMR review.

**Focused Drainage Study, La Quinta, California.** *City of La Quinta.* Engineer responsible for developing a linked 1D/2D flood routing model for a portion of the City of La Quinta hardest hit by extreme storm events in 2013 and 2014. This innovative model included in depth topography, storm drain information, hydrology, and rainfall. Conducted research in all of these areas and compiled them into the model in order to assess targeted areas and specific alternatives for storm drain improvements. The study evaluated the flood risk associated with extreme storm events and identified potential drainage improvements to reduce future flood damage and increase public safety if or when extreme storm events occur.





## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

### Candace Tong, PE *Concept Plans/Report/Fees*

Candace Tong earned a Bachelor of Science degree in Civil Engineering from the University of California, Irvine and has nearly seven years of professional experience encompassing storm water management projects including hydrologic and hydraulic modeling, storm drain and channel design, levee and dam inundation studies, one- and two-dimensional hydraulic modeling, and flood hazard mitigation planning in the arid regions of the Coachella Valley.

**Years of Experience:** 7

**Registration**

Civil Engineer, CA #90444

**Education**

B.S., University of California,  
Irvine, Civil Engineering – 2014

### Project Experience

**Bedford Canyon Channel Stage 1, Corona, CA.** *Riverside County Flood Control & Water Conservation District.* Engineer assisting in the technical studies and design for improvement of the Bedford Canyon Channel Stage 1 from the I-15 freeway downstream to Temescal Canyon Road. Preparing hydraulic model for the baseline and project condition alternatives including sediment transport and scour analyses. Evaluating a series of channel alternatives to identify a set of recommended improvements.

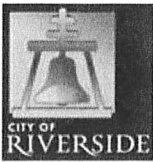
**Chino Preserve Storm Drain Master Plan Update, Chino, CA.** *City of Chino.* Project Engineer responsible for leading the preparation of hydrology and hydraulic studies to update the City's storm drain master plan. Prepared new hydrology based on the city's current land use plan, identified deficient storm drain systems and developed alternatives and recommendations for the updated master plan. Work included preparation of Master Plan Report and proposed alternatives for regional drainage infrastructure.

**City of Coachella Stormwater Master Plan of Drainage, City of Coachella.** Project Engineer responsible for the identification of flood control mitigation measures for the City. Hydrologic and hydraulic calculations were based on Riverside County Method. Q3 worked with the City and the Coachella Valley Water District (CVWD) to identify potential attenuation basins and alternative conveyance facilities to mitigate the current flooding conditions. High tailwater existed in the regional receiving water. This, in conjunction with very flat terrain required the use of a more powerful stormwater modeling system. Q3 use PCSWMM to evaluate the hydraulics of the comprehensive storm drain system. This model allows the user to model unsteady flow scenarios to utilize the difference in peak flows from the local storm drains to the regional downstream receiving waters. Work included evaluation of both flood control and water quality mitigation. Programs used included AES, WMS, WSPGW, and PCSWMM.

**Los Patrones Parkway, Rancho Mission Viejo, CA.** *Rancho Mission Viejo, LLC.* Engineer In Training for the preparation of grading and street improvement plans for a proposed 4.5 mile arterial highway. The highway begins at the intersection of Oso Parkway and SR-241 and terminates at Cow Camp Road. Prepared AutoCAD Civil 3D surfaces of proposed grading improvements.

**Stormwater Master Plan of Drainage, City of Costa Mesa, CA.** *City of Costa Mesa.* Project Engineer for the City-wide evaluation of drainage infrastructure. Developed four 1D/2D XPStorm models that covered the entire City to validate existing known flooded areas and to develop proposed solutions. This heavily urbanized area will require an alternative approach to solving the drainage problem as surface attenuation will not be possible for majority of the City. Alternatives will include allowable shallow surface flooding, diversion of flows so as to not impact downstream drainage systems, and subsurface storage.

**KPC Coachella Development Storm Water Master Plan, City of Coachella, CA.** *KPC.* Project Engineer for the preparation of regional and local hydrology and hydraulic studies for the development of flood hazard mitigation measures for this proposed 2,800-acre mixed use project located on active and relict



## REQUEST FOR PROPOSALS FOR PROFESSIONAL SERVICES Northside Master Drainage Plan (MDP) Report

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alluvial fans. Prepared 2-dimensional flood routing analyses on numerous watershed areas to identify recommended improvements for flood hazard mitigation. Identified project impacts and measures to mitigate the impacts.

**Whitewater River Channel and Grade Control Improvements, Indian Wells, CA.** *The Kiner Group.* Project Engineer for the preparation of channel improvement plans for a one-mile reach of the Whitewater River in Indian Wells. The work included the evaluation and design of new slope lining and modification of existing grade control structures. Completed improvement plans for the recommended facilities and processed technical studies and plans with the Coachella Valley Water District.