



# Staff Report

## City of Manhattan Beach

**TO:** Honorable Mayor Montgomery and Members of the City Council

**THROUGH:** David N. Carmany, City Manager

**FROM:** Jim Arndt, Director of Public Works  
Steve Finton, City Engineer  
Edward Kao, Senior Civil Engineer

**DATE:** February 15, 2011

**SUBJECT:** Consideration to Authorize the City Manager to Award a Contract to Willdan Engineering for Design Services for the Fiscal Year 2011-2012 Water Main Replacement Project – Phase 1 for an Amount Not-to-Exceed \$83,360

---

**RECOMMENDATION:**

Staff recommends that City Council

1. Authorize the City Manager to Award a Contract to Willdan Engineering for Design Services for the Fiscal Year 2011-2012 Water Main Replacement Project – Phase 1 for an Amount Not-to-Exceed \$83,360.
2. Authorize the City Manager to approve a contract amendment extending the term of the existing as-needed professional services agreement with Willdan Engineering to June 30, 2012.

**FISCAL IMPLICATION:**

Water Funds in the amount of \$200,000 have been appropriated for the design of this project (Account number 11835E) through the fiscal year 2010-2011 Capital Improvement Program. Construction funds in the amount of \$2,000,000 are scheduled to be appropriated through the fiscal year 2011-12 Capital Improvement Program. The total cost for Phase 1 consultant design services shall not exceed \$83,360, leaving \$116,640 available for Phase 2 consultant design services costs and construction.

Budget		
Water Funds (Current Appropriation)	<b>CIP 11835E</b>	\$200,000.00
Anticipated Expenditures		
Design Contract, Phase 1	(Willdan Engineering)	\$ 83,360.00
ESTIMATED FUND BALANCE Available for Phase 2 and Construction		\$116,640.00

**BACKGROUND:**

This project is part of the City’s annual water main replacement program. This program replaces old and/or undersized water mains. These main replacements will reduce the risk of main breaks and will enhance water flow.

As part of the fiscal year 2011-2012 Water Main Replacement Project – Phase 1, new 6” diameter ductile iron pipe shall replace existing water mains in the following streets:

No.	St. Name	From	To	Length (LF)
1	1 <sup>st</sup> St.	Highland Ave.	Valley Dr.	1,200
2	1 <sup>st</sup> St.	Ocean Dr.	Highland Ave.	540
3	3 <sup>rd</sup> St.	Ocean Dr.	Highland Ave.	540
4	4 <sup>th</sup> St.	Ocean Dr.	Highland Ave.	540
5	5 <sup>th</sup> St.	Ocean Dr.	Manhattan Ave.	200
6	Highland Ave.	1st St.	Homer St.	250
7	Highland Ave.	2nd St.	1st St.	250
8	Homer St.	Highland Ave.	Morningside Dr.	250
9	Manhattan Ave	8th St	15th St	2,000
10	Morningside Dr.	1st St.	Homer St.	250
11	Vista Dr.	Rosecrans Ave.	27th St.	2,320
Total				8,340

**DISCUSSION:**

On February 5, 2008, City Council awarded professional services agreements to AAE Incorporated, DGA Consultants, PSOMAS, RKA Consulting Group and WILLDAN Engineering to provide as-needed engineering design services for a three-year term. These agreements were established to expedite completion of Capital Improvement Program projects.

A Request for Engineering Design Services & Fees for design of the Fiscal Year 2011-2012 Water Main Replacement Project – Phase 1 was issued to the consultants listed below. These consultants provided their proposals and fee (also shown below).

1. WILLDAN Engineering (not to exceed fee of \$83,360)
2. DGA Consultants (not to exceed fee of \$96,240)
3. RKA Consulting Group (not to exceed fee of \$99,450)
4. PSOMAS (not to exceed fee of \$115,026)

City staff evaluated the proposals and ranked the firms based on qualifications and approach. Staff deems that the team, approach and fee proposed by Willdan Engineering to be the most effective proposal. Staff recommends that the design contract be awarded to Willdan Engineering.

Staff expects that the plans and specifications for the fiscal year 2011-2012 Water Main Replacement Project – Phase 1 would be completed and ready for bidding by May of 2011 with construction in summer of 2011.

The existing agreement with Willdan Engineering expires on February 25, 2011. It is expected that the services of Willdan Engineering will be needed for design and construction. It is recommended that the term of the existing agreement with Willdan Engineering be extended to June 30, 2012.

Attachments:

- 1) Map of Fiscal Year 2011-2012 Water Main Replacement Project Locations
- 2) Amendment No. 1 to Extend Agreement Term
- 3) Proposed Professional Services Agreement with Willdan Engineering for the fiscal year 2011-2012 Water Main Replacement Project – Phase 1

xc: Henry Mitzner, Controller  
Robert Wadden, City Attorney

# City of Manhattan Beach

# Water Main Replacements

## Phase 1 2011-2012



12/21/2010



0 500 1,000 2,000 Feet

**AMENDMENT No. 1**

to

**Agreement for Professional Design Services, as necessary  
dated February 25, 2008  
by the City of Manhattan Beach and WILLDAN Engineering**

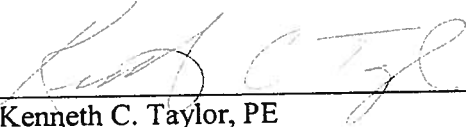
The terms of the agreement are amended as follows:

1. Term of Agreement – This Agreement shall terminate on **June 30, 2012**, as approved by the City Council on February 15, 2011.

All other provisions of the original agreement shall remain unchanged and enforceable.

**IN WITNESS THEREOF**, the parties hereto have executed this Agreement on the day and year indicated below.

**CONSULTANT: WILLDAN Engineering**

By  2-8-11  
 Kenneth C. Taylor, PE Date  
 Director of Engineering

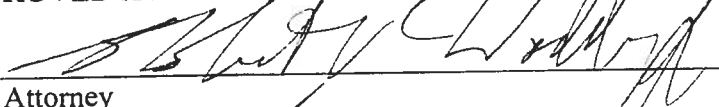
**CITY OF MANHATTAN BEACH:**

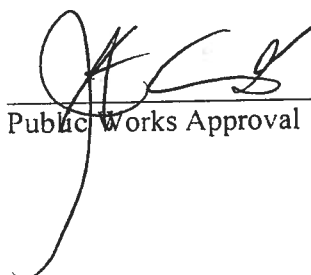
By \_\_\_\_\_ Date  
 City Manager

**ATTEST:**

\_\_\_\_\_  
 City Clerk (stamp) Date

**APPROVED AS TO FORM:**

 2/9/11  
 City Attorney Date

 2/9/11  
 Public Works Approval Date

**AGREEMENT**

THIS AGREEMENT is made this \_\_\_\_\_ day of \_\_\_\_\_, 2011 by the CITY OF MANHATTAN BEACH, a municipal corporation, ("CITY"), and (WILLDAN Engineering), a consultant, ("CONSULTANT").

**RECITALS**

The following recitals are a substantive part of this Agreement:

1. City is desirous of obtaining services as necessary to design the 2011-12 Water Main Replacement Project \_\_\_\_\_;
2. CONSULTANT is qualified by virtue of experience, training, education, and expertise to accomplish these services.

**AGREEMENT**

THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. **Term of Agreement**. This Agreement shall terminate upon completion of Scope of Services, unless earlier terminated as provided below.

1.1 **Termination**. CITY and CONSULTANT shall have the right to terminate this Agreement, without cause, by giving fifteen (15) days written notice. Upon receipt of a termination notice, CONSULTANT shall:

- (1) promptly discontinue all services affected (unless the notice directs otherwise); and
- (2) promptly deliver all data, reports, estimates, summaries, and such other information and materials as may have been accumulated by CONSULTANT in performing the Agreement to CITY, whether completed or in progress. CONSULTANT shall be entitled to reasonable compensation for the services it performs up to the date of termination.

1.2 **Extension** - CITY shall have the right to extend this agreement if CONSULTANT is working on an assignment and it is in the CITY's best interest to have CONSULTANT complete that assignment.

2. **Services to be Provided.** The services to be provided hereunder shall be **those set forth in Exhibit "A", Scope of Work**, which is attached hereto and incorporated herein by this reference. Written authorization by CITY will be required for all services provided.

3. **Compensation.** CONSULTANT shall be compensated as follows:

3.1 **Amount.** Compensation under this Agreement shall not exceed **Eighty three thousand and three hundred sixty dollars (\$83,360)** for all services provided on all assignments.

3.2 **Payment.** For work under this Agreement, payment shall be made per monthly invoice. For extra work not a part of this Agreement, written authorization by CITY will be required, **[payment shall be based on hourly rates in Exhibit "B"]**.

3.3 **Expenses.** CONSULTANT shall not be entitled to any additional compensation for expenses.

4. **Professional Standards.** CONSULTANT shall maintain or exceed the level of competency presently maintained by other similar practitioners in the State of California, for professional and technical soundness, accuracy and adequacy of all work, advice, and materials furnished under this Agreement.

5. **Time of Performance.** CONSULTANT shall complete all services required hereunder as and when directed by CITY. However, CITY in its sole discretion may extend the time for performance of any service.

6. **Employees and Subcontractors.** CONSULTANT may, at CONSULTANT'S sole cost and expense, employ such other person(s) as may, in the opinion of CONSULTANT, be needed to comply with the terms of this Agreement, if such person(s) possess(es) the necessary qualifications to perform such services. If such person(s) is/are employed to perform a portion of the scope of work, the engagement of such person(s) shall be subject to the prior approval of the CITY.

7. **Insurance Requirements.**

7.1 **Commencement of Work.** CONSULTANT shall not commence work under this Agreement until it has obtained CITY approved insurance. Before beginning work hereunder, during the entire period of this Agreement, for any extensions hereto, and for periods after the end of this Agreement as indicated below, CONSULTANT must have and maintain in place, all of the insurance coverages required

in this Section 7. CONSULTANT'S insurance shall comply with all items specified by this Agreement. Any subcontractors shall be subject to all of the requirements of this Section 7 and CONSULTANT shall be responsible to obtain evidence of insurance from each subcontractor and provide it to CITY before the subcontractor commences work.

All insurance policies used to satisfy the requirements imposed hereunder shall be issued by insurers authorized to do business in the State of California. Insurers shall have a current A.M. Best's rating of not less than A-:VII unless otherwise approved by CITY.

7.2 Coverages, Limits and Policy Requirements.  
CONSULTANT shall maintain the types of coverages and limits indicated below:

(1) COMMERCIAL GENERAL LIABILITY INSURANCE - a policy for occurrence coverage, including all coverages provided by and to the extent afforded by Insurance Services Office Form CG 0001 ed. 11/88 or 11/85, with no special limitations affecting CITY. The limit for all coverages under this policy shall be no less than one million dollars (\$1,000,000.00) per occurrence. CITY, its employees, officials and agents, shall be added as additional insureds by endorsement to the policy. The insurer shall agree to provide the City with thirty (30) days prior written notice of any cancellation, non-renewal or material change in coverage. The policy shall contain no provision that would make this policy excess over, contributory with, or invalidated by the existence of any insurance, self-insurance or other risk financing program maintained by CITY. In the event the policy contains such an "other insurance" clause, the policy shall be modified by endorsement to show that it is primary for any claim arising out of the work performed under this Agreement. The City of Manhattan Beach Insurance Endorsement Form No. 1 (General Liability) must be executed by the applicable insurance underwriters.

(2) COMMERCIAL AUTO LIABILITY INSURANCE - a policy including all coverages provided by and to the extent afforded by Insurance Services Office form CA 0001, ed. 12/93, including Symbol 1 (any auto) with no special limitations affecting the CITY. The limit



for bodily injury and property damage liability shall be no less than one million dollars (\$1,000,000) per accident. CITY, its employees, officials and agents, shall be added as additional insureds by endorsement to the policy. The insurer shall agree to provide the City with thirty (30) days prior written notice of any cancellation, non-renewal or material change in coverage. The policy shall contain no provision that would make this policy excess over, contributory with, or invalidated by the existence of any insurance, self-insurance or other risk financing program maintained by CITY. In the event the policy contains such an "other insurance" clause, the policy shall be modified by endorsement to show that it is primary for any claim arising out of the work performed under this Agreement. The City of Manhattan Beach Insurance Endorsement Form No. 2 (Auto) must be executed by the applicable insurance underwriters.

(3) WORKERS' COMPENSATION INSURANCE - a policy which meets all statutory benefit requirements of the Labor Code, or other applicable law, of the State of California. Employers Liability Insurance with a minimum limit of no less than one million dollars (\$1,000,000) per claim. The policy shall contain, or be endorsed to include, a waiver of subrogation in favor of CITY.

(4) PROFESSIONAL ERRORS & OMISSIONS - a policy with minimum limits of one million dollars (\$1,000,000) per claim and aggregate. This policy shall be issued by an insurance company which is qualified to do business in the State of California and contain a clause that the policy may not be canceled until thirty (30) days written notice of cancellation is mailed to CITY.

7.3 Additional Requirements. The procuring of such required policies of insurance shall not be construed to limit CONSULTANT'S liability hereunder, nor to fulfill the indemnification provisions and requirements of this Agreement. There shall be no recourse against CITY for payment of premiums or other amounts with respect thereto. CITY shall notify CONSULTANT in writing of changes in the insurance requirements. If CONSULTANT does not deposit copies of acceptable insurance policies with CITY incorporating such changes within sixty (60) days of receipt of such notice, CONSULTANT shall be deemed in default hereunder.

Any deductibles or self-insured retentions must be declared to and approved by CITY. Any deductible exceeding an amount acceptable to CITY shall be subject to the following changes:

- (1) either the insurer shall eliminate, or reduce, such deductibles or self-insured retentions with respect to CITY and its officials, employees and agents (with additional premium, if any, to be paid by CONSULTANT) ; or
- (2) CONSULTANT shall provide satisfactory financial guarantee for payment of losses and related investigations, claim administration, and defense expenses.

7.4 Verification of Compliance. CONSULTANT shall furnish CITY with original endorsements effecting coverage required by this Agreement. The endorsements are to be signed by a person authorized by the insurer to bind coverage on its behalf. All endorsements are to be received and approved by CITY before work commences. Not less than fifteen (15) days prior to the expiration date of any policy of insurance required by this Agreement, CONSULTANT shall deliver to CITY a binder or certificate of insurance with respect to each renewal policy, bearing a notation evidencing payment of the premium therefor, or accompanied by other proof of payment satisfactory to CITY.

8. Non-Liability of Officials and Employees of the CITY. No official or employee of CITY shall be personally liable for any default or liability under this Agreement.

9. Non-Discrimination. CONSULTANT covenants there shall be no discrimination based upon race, color, creed, religion, sex, marital status, age, handicap, national origin, or

ancestry, in any activity pursuant to this Agreement.

10. **Independent Contractor.** It is agreed that CONSULTANT shall act and be an independent contractor and not an agent or employee of CITY, and shall obtain no rights to any benefits which accrue to CITY'S employees.

11. **Compliance with Law.** CONSULTANT shall comply with all applicable laws, ordinances, codes, and regulations of the federal, state, and local government.

12. **Ownership of Work Product.** All documents or other information created, developed or received by CONSULTANT shall, for purposes of copyright law, be deemed works made for hire for CITY by CONSULTANT as CITY'S employee(s) for hire and shall be the sole property of CITY. CONSULTANT shall provide CITY with copies of these items upon demand and in any event, upon termination or expiration of the term of this Agreement.

13. **Conflict of Interest and Reporting.** CONSULTANT shall at all times avoid conflict of interest, or appearance of conflict of interest, in performance of this Agreement.

14. **Notices.** All notices shall be personally delivered or mailed to the below listed addresses. These addresses shall be used for delivery of service of process.

a. Address of CONSULTANT is as follows:

2401 East Katella Avenue, Suite 450,

Anaheim, CA 92806-6073

b. Address of CITY is as follows:

City of Manhattan Beach  
1400 Highland Ave  
Manhattan Beach, CA 90266

(with a copy to):

City Attorney  
City of Manhattan Beach  
1400 Highland Avenue  
Manhattan Beach, CA 90266

15. **Consultant's Proposal.** This Agreement shall include CONSULTANT'S proposal or bid which is incorporated herein. In the event of any inconsistency between the terms of the proposal and this Agreement, this Agreement shall govern.

16. **Licenses, Permits, and Fees.** CONSULTANT shall obtain a Manhattan Beach Business License, all permits, and licenses as may be required by this Agreement.

17. **Familiarity with Work.** By executing this Agreement, CONSULTANT warrants that:

- (1) it has investigated the work to be performed;
- (2) it has investigated the site of the work and is aware of all conditions there; and
- (3) it understands the difficulties and restrictions of the work under this Agreement. Should CONSULTANT discover any conditions materially differing from those inherent in the work or as represented by CITY, it shall immediately inform CITY and shall not proceed, except at CONSULTANT's risk, until written instructions are received from CITY.

18. **Time of Essence.** Time is of the essence in the performance of this Agreement.

19. **Limitations Upon Subcontracting and Assignment.** Neither this Agreement, or any portion, shall be assigned by CONSULTANT without prior written consent of CITY.

20. **Authority to Execute.** The persons executing this Agreement on behalf of the parties warrant that they are duly authorized to execute this Agreement.

21. **Indemnification.** CONSULTANT agrees to indemnify, defend, and hold harmless CITY and its elective or appointive boards, officers, agents, attorneys and employees from any and all claims, liabilities, expenses, or damages of any nature, including attorneys' fees arising out of CONSULTANT'S negligence, willful misconduct or fraud in the performance of the Agreement by CONSULTANT, CONSULTANT'S agents, officers, employees, subcontractors, or independent contractor(s) hired by CONSULTANT. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by CONSULTANT.

22. **Modification.** This Agreement constitutes the entire agreement between the parties and supersedes any other agreements, oral or written. No promises, other than those included in this Agreement, shall be valid. This Agreement may be modified only by a written agreement executed by CITY and CONSULTANT.

23. **California Law.** This Agreement shall be construed in accordance with the laws of the State of California. Any

action commenced about this Agreement shall be filed in the appropriate branch of the Los Angeles County Municipal or Superior Court.

24. **Interpretation.** This Agreement shall be interpreted as though prepared by both parties.

25. **Preservation of Agreement.** Should any provision of this Agreement be found invalid or unenforceable, the decision shall affect only the provision interpreted, and all remaining provisions shall remain enforceable.


26. **Entire Agreement.** This Agreement supersedes any and all other agreements, either oral or in writing, between the parties with respect to the subject matter herein. Each party to this Agreement acknowledges that representations by any party not embodied herein, and any other agreements, statements, or promises concerning the subject matter of this Agreement, not contained in this Agreement, shall not be valid and binding. Any modification of this Agreement will be effective only if it is in writing signed by the parties. Any issue with respect to the interpretation or construction of this Agreement are to be resolved without resorting to the presumption that ambiguities should be construed against the drafter.

27. **Attorneys' Fees.** In the event that legal action is necessary to enforce the provisions of the Agreement, or to declare the rights of the parties hereunder, the parties agree that the prevailing party in the legal action shall be entitled to recover attorneys' fees and court costs from the opposing party.

**IN WITNESS THEREOF,** the parties hereto have executed this Agreement on the day and year first shown above.

CONSULTANT

By

  
\_\_\_\_\_  
Kenneth C. Taylor, PE  
Director of Engineering

CITY OF MANHATTAN BEACH

By


\_\_\_\_\_  
City Manager

ATTEST:

\_\_\_\_\_  
City Clerk

APPROVED AS TO FORM:

  
\_\_\_\_\_  
City Attorney

  
\_\_\_\_\_  
Public Works Approval

January 14, 2011

Edward Kao, PE  
Senior Civil Engineer  
Public Works Department  
Engineering Division  
City of Manhattan Beach  
1400 Highland Avenue  
Manhattan Beach, CA 90266

Rec'd 1/14/11

**Subject: Professional Engineering Design Services & Fee Proposal  
for 2011-12 Water Main Replacement Project**

Dear Mr. Kao:

Willdan appreciates the opportunity to provide this proposal for Professional Engineering Services for the 2011-12 Water Main Replacement Project.

The proposed project team has extensive experience in the area of water main and transmission main replacement. We are committed to completing your project on schedule to allow construction bidding prior to May 19, 2011 with an anticipated construction contract award on July 5, 2011. The key to achieving this schedule is:

- Thorough and accurate utility research to avoid costly redesign
- Early start on Preliminary Design – City concurrence on preliminary alignment
- Early bid package delivery

Our design will incorporate measures to minimize service disruptions for pipeline replacement during construction, and to maintain existing service and fire flow while also minimizing traffic and construction impacts to the abutting customers. We understand that the project is within a high density residential area. Willdan will be sensitive to how the project impacts residents and will strive to minimize these impacts throughout the project.

The project team will consist of the following individuals.

Mr. Ray Wellington, PE, Deputy Director of Engineering, will oversee the entire effort to fully support this project and be responsible for the day to day management of the project and team.

Mr Eric Schlageter, PE and Mr. Mike Bustos, PE lead the design process and are responsible for the development of plans, specifications and estimates for the project. Both have been in responsible charge of many types of water facility designs, including distribution and transmission pipelines, pump stations and reservoirs and bring 20 years of combined experience

COPY

Resumes of all key team personnel are attached. These professionals will be supported by a capable staff of engineers, technicians, CADD operators, surveyors and geotechnical engineers.

### **Project Approach**

#### **Preliminary Engineering**

Our approach is modeled after the recent success we have had with similar projects. In this section, we present the highlights of our proposed technical approach in response to the City's RFP, a preliminary site investigation, and investigations conducted by each of our proposed project team members relative to their specific disciplines. In the following paragraphs, the specific activities associated with each task are developed. Primary emphasis for the project will be placed on:

- Developing the logistics for phasing the construction to minimize inconvenience to the area residents.
- Examining alternative construction methods to minimize costs and schedule impacts.
- Performing the work on schedule and on budget. Our team has the depth of experience and local knowledge to undertake this assignment. We will allocate the necessary resources to complete the design project within the desired timeframe in order for the City to bid the project and begin construction in July of 2011.

#### **Meetings and Coordination**

Upon receipt of a written contract and notice to proceed, Willdan's project manager will meet with the City staff to discuss specific items relative to the project start-up. In the event that the City desires additional confirmation of the scope of our proposal or wishes to expand or contract the scope of services, we are committed to negotiating with the City to better suit their needs. Willdan's project team will maintain frequent communication with the City representative via our designated Project Manager as often as necessary during the preliminary and final phases of this project in order to maintain the schedule and address any issues that may arise.

#### **Existing Improvements and Underground Utilities**

To protect the City against potential disputes over original conditions of existing improvements, Willdan will conduct an initial project site review to document the condition of the project area, such as the condition of existing improvements, the materials existing on streets or within public right-of-way, and the location of existing fire hydrants, water meters and valve boxes, and other water related appurtenances that are visible and may be questioned at a later date. This exercise will also make the design team familiar with areas where waterlines are to be constructed, and allow us to identify early on any construction-related difficulties or potential problems. Potential problems or conflicts identified either on private property or public right-of-way will be brought to the City's attention with proposed solutions for City approval.

Willdan will conduct a complete investigation of all the existing underground utilities in the project area. Our team will establish a complete inventory of underground facilities, documenting which utility companies have jurisdiction within the limits of the project.





Each utility company will be provided with a set of preliminary and final plans. If warranted, Willdan will identify utility pothole locations in critical areas with a high-risk of utility interference which may cause potential schedule delays. At the City's request we have included a \$7,500 pot-holing budget to be utilized at the City's discretion based upon our recommendations.

One of the most important cost control measures that can be implemented during the preliminary design phase is the proper research and location of existing underground facilities. Construction cost change orders associated with utility conflicts in the field during construction are the most common "budget breakers" for a project like this. In order for the proposed water mains to be constructed with few or no change orders of this type, the location of all underground facilities must be determined. Our experience designing and overseeing the construction of underground pipelines of all sizes, in many different communities, has reinforced our devotion to accomplishing this early in the design phase. If the substructure research is not adequate during the preliminary design phase, the project may be unsuccessful in the construction phase. Our scope of work contains a very extensive and proven method of coordinating this task.

#### Pipeline Replacement Methods

***The need for minimizing disturbance to the existing water and fire flow services during the pipeline replacement is a significant design issue*** that needs to be addressed early in the project preliminary design phase. Several options will be investigated including the installation of a concurrent parallel pipeline and/or high-lining.

#### Service Connections on Existing Distribution Mains

The service connections on the existing distribution mains, including fire hydrant leads, are critical to the design of this project. The approach that we propose is based on our previous experience with similar projects. ***The connections should be designed in a manner that keeps the time that the existing system will be out-of-service to a minimum.*** It may be necessary to pothole the distribution system at strategic locations to determine the horizontal and vertical locations of the distribution piping. The contract documents should specify restrained joint fittings, for the connections, that can accept field cut pipe. The specifications should also require that the contractor also have all required fittings on the job for the connections before proceeding with the excavation for the connections and shutting down the distribution pipeline.

#### Pipeline Alignment

During the preliminary design phase, we will conduct an extensive utility research phase whereby the location of existing utilities and other underground facilities, including the existing water mains, will be researched and field investigated. It is important to determine these constraints early in the preliminary design phase so a proper horizontal alignment can be planned. If necessary, due to the location of the existing mains, utilities (including sewer), and outside agency permit constraints, the proposed water mains, may have to be designed in their existing location. Should this be the case, the project specifications will include provisions to construct temporary piping to be installed along the gutter of the street with temporary asphalt mounds over the pipe for driveways. The temporary piping could be connected to fire hydrants or temporary connections could be made to distribution mains to maintain service. Existing service laterals could be connected to the temporary pipe with flexible hoses.

W

The above-described alternative may eliminate the need to jog the pipeline alignment from one side of the street to the other. This may eliminate complicated traffic control requirements or encroachment into adjacent right-of-ways or properties.

#### Design Survey and Property Rights

Willdan will utilize the City's record drawings to record existing features throughout the project area. Physical features such as utility locations, valve boxes, streets, manholes, hydrants, storm drains, and other appurtenant structures will be located via topographic survey and visually verified. The field data will be used to generate the base site maps required for design and to locate all easement boundaries.

#### Preliminary Plan Preparation

After completion of the initial ground survey and field reconnaissance, the project base sheets will be prepared. The underground facilities will be plotted on the base sheets and the preliminary alignment for the water pipelines will be established. During this phase of the work, the location of the existing valves, fire hydrants, water meters, and sewer manholes will be field verified.

Willdan will prepare a preliminary design package for submittal to the City that will include the project base sheets showing the preliminary horizontal alignment for each of the proposed new water pipelines. Willdan's project design team will review the preliminary design with the City. All centerline and survey control data based on record information will be shown on the plans, including property lines and rights-of-way. After approval of the preliminary pipeline alignments by the City, Willdan will review with the City the more detailed design requirements relating to pipe material, coatings, linings, types of joints, valves, fire hydrants, meters, meter boxes, and any other requirements. The proposed pipeline sizes will also be verified and recommendation for upsizing, if warranted, will be made.

#### Final Plans and Specifications

The final alignment for the new water mains will be designed to avoid conflict with existing underground facilities. If it is determined that existing utilities will need to be relocated, Willdan will advise the City of this activity need. However, relocation design of utilities is assumed the responsibility of the City's construction contractor or the serving utility.

Willdan will identify any special conditions which may influence the feasibility of the final design. This will include: the determination of anticipated pressures within the pipeline system in order to determine the appropriate pipe class, valves, flanges and fittings; the determination and resolution of any obstructions or interferences; determination of whether special details will be required for the crossing of existing obstructions; and determination of any minimum utility separation requirements between sewer and water and between gas and water facilities.

Willdan will identify clearly on the plans the existing water mains to be abandoned and the locations where they should be cut and plugged. ***Special consideration will be given to phasing the construction in such a manner that service is not interrupted to water customers for an unreasonable amount of time.*** Willdan has recently been responsible for several local water main construction projects of similar nature where the average customer shut down was approximately 30 minutes. These designs were



completed by Willdan, and our staff inspectors ensured short customer shut down periods.

Willdan will identify the need for and the location of any special water main appurtenances. This will be accomplished by reviewing the high and low points, dead ends, connection points, valving requirements, fire hydrant spacing, and service connections. Willdan will also identify the need for special design requirements relating to hot tapping of existing mains and pipeline thrust restraint.

We will also specify the requirements for proper disposal of water from testing and flushing the new water mains. The project specifications will require the construction contractor to take special care to prevent large amounts of water from damaging private property or causing erosion in existing drainage facilities.

Our scope of services are as follows:

**Scope of Work**

**A. Preliminary Engineering**

**A1. Project Meetings and Status Reports**

Schedule and conduct a kick-off meeting with City staff to introduce project team members, formalize the project communications protocol, discuss schedules, review and confirm Scope of Work and obtain any relevant data, reports, plans or documents the City may have in its possession relative to this project. An agenda will be prepared ahead of the meeting and presented to the City for approval. Attendance and minutes of the meeting will be taken and distributed to all attendees. Biweekly project status reports will be developed and provided as directed in the RFP.

**A2. Field Reconnaissance**

A site visit will be completed for the proposed pipeline alignment for each project location. Physical features such as existing piping, storm drains, valve boxes, meters, hydrants, fences, streets, and all appurtenances will be located. Any encroachment or right of way issues along the preliminary pipeline alignment will be identified for resolution with the City.

**A3. Utility Research and Coordination**

At the time the Notice-to-Proceed is issued, Underground Service Alert (USA) will be notified concerning this project for a list of utility companies with facilities in the proposed alignment. All utility companies will be notified and asked to provide as-built drawings of their facilities. The requirements for crossing or paralleling the utilities will be obtained if required. All requirements for the use of the right-of-way will be obtained. The as-built information will be incorporated into the base drawing along with the topographic survey.

W

The subtasks involved with completion of this task may include:

- Establish list of utility companies and other agencies that have facilities within the project area.
- Send preliminary notices to all agencies and utility companies and establish contact person.
- Send preliminary plans to all agencies and utility companies and request response regarding preliminary design.
- Send final plans to all agencies and utility companies and request response for design review.

#### **A4. Topographic Survey**

A topographic survey will be conducted and topographic map generated to support design. The topographic map will include all above ground culture, from right-of-way to right-of-way, including locations of all accessible manholes and catch basins, fire hydrants, water meters, and valve boxes. The centerline and right-of-way information will be based on record information. In order to reduce costs to the City, we propose to only measure invert elevations for those utilities that are determined to potentially conflict with the approved alignment at the time of approval.

#### **A5. Geotechnical Investigation**

The purpose of the geotechnical investigation is to evaluate geotechnical subsurface conditions along the pipeline segments to be replaced. Based on the investigation, we will provide our conclusions and recommendation for trench stability, temporary shoring, bedding/backfill specifications, corrosion protection, and lateral capacity estimates for thrust blocks that may be constructed at bends and joints.

##### Task 1 – Research and Review

We will review available subsurface data, including publicly available geologic and geotechnical maps and documents to determine general shallow subsurface conditions along the 11 water main alignments to be replaced for the project.

##### Task 2 – Field Investigation

The proposed field investigation will include site reconnaissance and subsurface exploration. We propose to drill approximately thirty (30) shallow soil borings along the 11 water main alignments to be replaced. Boring locations will be selected to take advantage of alignment intersections in order to reduce the total number of borings, while still meeting the City's requirement of a boring being drilled approximately every 300 feet of alignment. Borings will be drilled to a depth 2 to 3 feet below the existing pipeline invert depths, assumed as being between 4 and 8 feet bgs for the purpose of this proposal. The borings will be drilled using a truck mounted drill rig equipped with hollow-stem and solid-flight augers, and advanced to the target depths or refusal, whichever comes first.

Relatively undisturbed ring samples and Standard Penetration Test (SPT) samples will be collected at frequent intervals. Bulk samples of the material will also be collected. An experienced member of our engineering/technical staff will log earth materials in the field



in accordance with the Unified Soil Classification System – Visual/Manual Procedure. The borings will be backfilled with the excavated spoils and tamped.

We have assumed that the City of Manhattan Beach will arrange for all required access permission and permits from any other local, state and federal agency which may have jurisdiction over the project area. Willdan will mark the proposed boring locations and obtain underground utility clearance through Underground Service Alert (“Dig Alert”).

#### Task 3 – Geotechnical Laboratory Testing

Geotechnical laboratory testing will be performed on representative samples of soil to evaluate the engineering characteristics of these materials. Testing may include any or all of the following:

- In situ moisture and density
- Atterberg limits
- Gradation
- Direct Shear tests
- Corrosion tests (pH, Minimum Resistivity, Sulfate Content and Chloride Content)
- Compaction tests

#### Task 4 – Geotechnical Engineering Analyses

Data obtained from subsurface exploration and laboratory testing will be evaluated to develop idealized profiles of the shallow subsurface and define soil parameters for engineering analyses. The following analyses are anticipated for the project:

- Development of recommendations for temporary slopes/shoring and pipe bedding/trench backfill; and
- Development of recommendations for thrust block design.

#### Task 5 – Geotechnical Report Preparation

Upon completion of the above tasks, Willdan Geotechnical will prepare a soils report, which will be signed and stamped by a California Registered Geotechnical Engineer (GE). The report will contain our findings, conclusions, and the recommendations listed in Task 4 above. The soils report is envisioned to include the following:

- A map showing the locations of borings, and the surficial distribution of earth materials;
- A description of the field and laboratory procedures used in the investigation;
- A discussion of the materials encountered in the borings, including thickness of the existing pavement section at each boring location, and measured engineering properties including soil strata, present and historical ground water levels;
- Logs of exploratory borings summarizing the soil conditions encountered and results of the geotechnical laboratory testing;
- A discussion of site-specific geologic hazards, including detailed description of the location and characteristics of known faults near the site and the potential for fault rupture through the site, liquefaction, seismic-induced landslide, and earthquake-induced ground subsidence and/or flooding;

W

- The site seismic-Resistance Design parameters per CBC (2010);
- Recommendations for thrust block lateral capacity design;
- Recommendations for open trenching;
- Recommendations regarding suitability of on-site material as fill, and recommendations for imported trench backfill material, if needed; and
- Recommendations for placement and compaction of engineered fill and backfill material. Four copies of the bound report will be provided to your office.

**B. Preliminary Plan Preparation**

**B1. Base Plan Preparation**

Utilizing record drawings and topographic survey, base plans will be prepared. The base plans will be used to determine the preliminary alignment of the proposed water main pipelines while maintaining proper clearances from existing utilities. The base plans will be field verified by completing a job walk of the proposed pipeline alignments. The job walk will verify the topographic information and record utility data and pick-up any features not shown on the base plans.

Project base sheets will be presented to the City for review and comment. The subtasks involved with the performance of this task may include but will not be limited to the following:

- Obtain proper title block, dimensions, and signature blocks for project plans.
- Plot centerline, right-of-way, record easements and property lines on project base sheets.
- Plot existing underground utilities on project base sheets, including existing water mains and meters, valves, fire hydrants, blow-offs, sewer pipelines, sewer manholes, storm drains, and other related structures and facilities.

**B2. Preliminary Water Pipeline Design**

- Verify proposed pipe material and sizes. It is our understanding that the City's material of choice will be ductile iron pipe.
- Plot preliminary horizontal alignment of each of the proposed waterlines.
- Conduct research regarding any plans for proposed or future underground facilities within the project area and plot on project plans.
- Compile a list of potential utility conflict locations with the proposed alignment and utilize \$7,500 pot-holing budget at the City's direction to determine actual depths of conflicting utilities.
- Plot vertical alignment and utility crossings in order to avoid conflicts in critical areas (i.e., crossovers).
- Submit preliminary 35% plans to City for review.

**C. Final Plans and Specifications**

**C1. Preparation of Final Plans**

Prepare plan sheets for the full length of the pipelines as specified in the City's RFP. The subtasks including in this task may include:



- Finalize horizontal alignment design; determine locations and requirements for connections to existing water pipeline facilities.
- Review spacing of fire hydrants and determine if new hydrant locations should be included in design.
- Details of all connections to existing pipelines. These details will incorporate procedures for short down time of the existing pipeline while the connection is being made so the existing pipeline mains can stay in service until the new pipelines are completed and accepted. Reference will be made to the City's standard drawings and details where applicable.
- Include all water pipeline appurtenances at this phase of the work, including isolation valves, air/vacuum release valves, blow-offs, pressure reducing stations, etc.
- Prepare all required design details, including connection details, utility crossing details, and pipeline casing details (if required). Reference will be made to the City's standard detailed drawings where possible.
- All project plans will be prepared in AutoCAD; data disks, as well as mylars, will be provided to the City pursuant to the RFP requirements.
- Submit 75% and 100% plans and specifications for City approval. Incorporate City's review comments and finalize plans.

**C2. Prepare Project Specifications and Bid Documents**

- Obtain standard format from City for bid package and specifications.
- Contract documents will be the standard boilerplate provided by the City. We will tailor the documents to meet the requirements of this project.
- Prepare special provisions and bid schedule(s) for project.
- All specifications will be delivered in hard copy and digital format (MS Word).

**D. Prepare Detailed Opinion of Probable Construction Cost**

The opinion of probable construction cost for this project will follow the City's requirements for preparation of cost estimates. If the City has any special software requirements for cost estimating, we are prepared to utilize them.

Our continued work with other public agencies allows us to collect construction bid data for many types of public works projects including water facility projects. We will utilize this data along with input from the City of Manhattan Beach to formulate our construction cost estimates. The subtasks involved in this task include:

- Utilize recently obtained price quotes for similar projects.
- Review detailed construction cost estimates with in-house Construction Management Division staff.

**E. Submittals**

1. Detailed Construction Drawings will be prepared in AutoCAD format. The sheet sizes will be 24" x 36" using a City provided title block and General Notes. The specifications will be completed in Microsoft Word utilizing the standards



provided by the City.  
 The estimated drawings for the 6-inch Water Mains are as follows:

Sheet #	Drawing Description	Scale
1	Title Sheet, Sheet Index, Maps & Legend Benchmark	
2	Plan Location 1	1" – 20'
3	Plan Location 2,3	1" – 20'
4	Plan Location 4,5,6	1" – 20'
5	Plan Location 7,8,10	1" – 20'
6	Plan Location 9	1" – 20'
7	Plan Location 9	1" – 20'
8	Plan Location 11	1" – 20'
9	Plan Location 11	1" – 20'
10	Construction Details and Sections	
11	Construction Details and Sections	

2. Submittals will be at the 35%, 75% and 100% for review and comment. Each submittal will include the following material:
  - a. 35% Submittal
    - (1) Set of Drawings to Utility Companies, (3) Sets of Plans and Cost Estimates to the City for review and comment
  - b. 75% Submittal
    - (3) Sets of Drawings, Specifications and Cost Estimates to the City for review and comment
  - c. 100% Submittal
    - (3) Sets of Drawings, Specifications and Cost Estimates to the City for review and approval

Final plans will be submitted on Signed Mylar Drawings including a CD of the AutoCAD Drawings, contract documents and specifications will be submitted electronically in MS Word for use by the City to prepare the bid package

3. All specifications will include contract documents for advertising and awarding of a contract.
4. Willdan will provide a one page Bi-Weekly Status Report to the City on Monday mornings before 10:00 am and will include the requested information as delineated within the RFP.
5. Willdan will provide bidding and construction support services including RFI response during pre-bid and construction, shop drawing review, log and processing of submittals, attend pre-construction conference, and prepare a complete set of original as-built drawings.



The City of Manhattan Beach  
 2011-12 Water Main Replacement  
 January 14, 2011  
 Page 11

### Schedule

Willdan understands that the schedule for this project is to have the project designed and ready for submission to the City Council for approval by May 19th for Advertisement for Bids.

We will work closely with our geotechnical, surveying and subconsultants to obtain critical, time-sensitive information prior to their formal product delivery for inclusion in the ongoing project design. We can mobilize our resources, expedite the project schedule, and meet or exceed the City's project goals and expectations.

Submittal Milestone	Weeks from NTP
35% Submittal	6
75% Submittal	10
100% Submittal	14

### Project Fee Schedule

The estimated fees for Professional Engineering Services are as follows:

#### PROJECT FEE January 14, 2011

#### City of Manhattan Beach 2011-12 Water Main Replacement Project

WILLDAN Task Description	Project Manager \$170	Associate Engineer \$130	Designer \$110	Clerical \$60	Total Hours	Fixed Price	Total Fee
Project Meetings (3) and Status Reports (6)	12	9			21		\$3,210
Field Reconnaissance		7	16		23		\$2,670
Utility Research and Coord/Follow-up		4	12	5	21		\$2,140
Topographic Survey	1					\$10,400	\$10,570
Geotechnical Investigation	1					\$24,000	\$24,170
Base Drawings	1	16	30		47		\$5,550
35% Plans, Specs. & Opinion of Cost	4	16	36	4	60		\$6,960
75% Plans, Specs & Opinion of Cost	2	24	50	4	80		\$9,200
100% Plans, Specs & Opinion of Cost	2	12	16	4	34		\$3,900
Prepare Final Bid Docs	3	16	10	8	37		\$4,170
Pot-Holing Budget						\$7,500	\$7,500
Construction Support Services	4	16	4	2			\$3,320
<b>SUBTOTALS:</b>	<b>30</b>	<b>120</b>	<b>174</b>	<b>27</b>	<b>377</b>	<b>\$41,900</b>	<b>\$83,360</b>

\* This proposal has included four (4) meetings. The proposed meetings are:

- Kick-off
- 75% and 100% Design Reviews
- Pre-Construction Meeting

The City of Manhattan Beach  
2011-12 Water Main Replacement  
January 14, 2011  
Page 12

Compensation will be on a time-and-material not to exceed basis. Our rates are those specified in the current Master Agreement.

We look forward to the continued success working with the City of Manhattan Beach on this project through our extended on-call services. If you should have any questions, please call me at (805) 653-6597.

Very truly yours,

**WILLDAN ENGINEERING**



Kenneth C. Taylor, PE  
Director of Engineering

W

As part of the 2011-12 Water Main Replacement Project, new 6" diameter ductile iron pipe shall replace existing water mains in the following streets:

No.	Street Name	From	To	Length (LF)
1	1 <sup>st</sup> Street	Highland Avenue	Valley Drive	1,200
2	1 <sup>st</sup> Street	Ocean Drive	Highland Avenue	540
3	3 <sup>rd</sup> Street	Ocean Drive	Highland Avenue	540
4	4 <sup>th</sup> Street	Ocean Drive	Highland Avenue	540
5	5 <sup>th</sup> Street	Ocean Drive	Manhattan Avenue	200
6	Highland Avenue	1 <sup>st</sup> Street	Homer Street	250
7	Highland Avenue	2 <sup>nd</sup> Street	1 <sup>st</sup> Street	250
8	Homer Street	Highland Avenue	Morningside Drive	250
9	Manhattan Avenue	8 <sup>th</sup> Street	15 <sup>th</sup> Street	2,000
10	Morningside Drive	1 <sup>st</sup> Street	Homer Street	250
11	Vista Drive	Resecrans Avenue	27 <sup>th</sup> Street	2,320
Sub-total for 6" diameter pipes				8,340

W