

**PERSONAL SERVICES AGREEMENT  
FOR SURFACE WATER AND SANITARY SEWER MASTER PLAN UPDATES**

**City:** City of West Linn, a municipal corporation of the State of Oregon.  
**Contractor:** Brown and Caldwell  
6500 SW Macadam Ave., Suite 200  
Portland, OR 97239  
**Term:** May 9, 2017 - November 9, 2018  
**Compensation:** Not to exceed \$483,735.00

**RECITALS**

1. City has need for the services of a person or an entity with training, ability, knowledge, and experience as possessed by Contractor, and
2. City has determined that Contractor is qualified and capable of performing the professional services the City require, under the terms and conditions in this Personal Services Agreement (“Agreement”),

THEREFORE the Parties agree as follows:

**1. SERVICES TO BE PROVIDED**

Contractor shall provide services as specified in the Scope of Work, a copy of which is attached and incorporated in Exhibit A. Contractor shall initiate services immediately upon receipt of City’s notice to proceed, together with an executed copy of this Agreement.

**2. EFFECTIVE DATE AND DURATION**

This Agreement shall become effective upon the date of execution, and shall expire, unless otherwise terminated or extended, by **November 9, 2018**. All work under this Agreement shall be completed prior to the expiration of this Agreement.

**3. COMPENSATION**

City agrees to pay Contractor not to exceed **four hundred eighty-three thousand seven hundred thirty-five dollars (\$483,735.00)** for performance of those services described in the Scope of Work at the rates in Exhibit B, Compensation, which is incorporated by this reference. Payment shall be based upon the following applicable terms:

- A. Payment by City to Contractor for performance of services under this Agreement includes all expenses incurred by Contractor, with the exception of expenses, if any identified in this Agreement as separately reimbursable.
- B. Payment will be made in installments based on Contractor’s invoice, subject to the approval of the City Manager, or designee, and not more frequently than monthly. Payment shall be made only for work actually completed as of the date of invoice.
- C. Payment by City shall release City from any further obligation for payment to Contractor, for services performed or expenses incurred as of the date of the invoice. Payment shall

not be considered acceptance or approval of any work or waiver of any defects in the work.

- D. Where applicable, Contractor must make payment promptly as due to persons supplying Contractor labor or materials for the execution of the work provided by this order. Contractor must pay all contributions or amounts due from Contractor to the Industrial Accident Fund incurred in the performance of this order. Contractor shall not permit any lien or claim to be filed or prosecuted against City or any subdivision of City on account of any labor or material to be furnished. Contractor further agrees to pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.
- E. If Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to Contractor or a subcontractor by any person as such claim becomes due, City's Finance Director may pay such claim and charge the amount of the payment against funds due or to become due the Contractor. The payment of the claim in this manner shall not relieve Contractor or their surety from obligation with respect to any unpaid claims.
- F. If labor is performed under this order, then no person shall be employed for more than eight (8) hours in any one day, or forty (40) hours in any one week, except in cases of necessity, or emergency or where the public policy absolutely requires it, and in such cases, except cases of contracts for personal services as defined in ORS 279A.055, the labor shall be paid at least time and a half for all overtime in excess of eight (8) hours a day and for all work performed on Saturday and on any legal holidays as specified in ORS 279B.020. In cases of contracts for personal services as defined in ORS 279A.055, any labor shall be paid at least time and a half for all hours worked in excess of forty (40) hours in any one week, except for those individuals excluded under ORS 653.010 to 653.260 or under 29 USC SS 201-209.
- G. Contractor shall promptly, as due, make payment to any person, co-partnership, association or corporation, furnishing medical, surgical and hospital care or other needed care and attention incident to sickness or injury to the employees of Contractor or all sums which Contractor agrees to pay for such services and all moneys and sums which Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.
- H. The City certifies that sufficient funds are available and authorized for expenditure to finance costs of this contract.

**4. OWNERSHIP OF WORK PRODUCT**

Upon payment in full to Contractor, City shall be the owner of and shall be entitled to possession of any and all work products of Contractor which result from this Agreement, including any computations, plans, correspondence or pertinent data and information gathered by or computed by Contractor prior to termination of this Agreement by Contractor or upon completion of the work pursuant to this Agreement.

**5. ASSIGNMENT/DELEGATION**

Neither party shall assign, sublet or transfer any interest in or duty under this Agreement without the written consent of the other and no assignment shall be of any force or effect whatsoever unless and until the other party has so consented. If City agrees to assignment of tasks to a subcontract,

Contractor shall be fully responsible for the acts or omissions of any subcontractors and of all persons employed by them, and neither the approval by City of any subcontractor nor anything contained in this Agreement shall be deemed to create any contractual relation between the subcontractor and City.

**6. STATUS OF CONTRACTOR AS INDEPENDENT CONTRACTOR**

Contractor certifies that:

- A. Contractor acknowledges that for all purposes related to this Agreement, Contractor is and shall be deemed to be an independent contractor as defined by ORS 670.700 and not an employee of City, shall not be entitled to benefits of any kind to which an employee of City is entitled and shall be solely responsible for all payments and taxes required by law. Furthermore, in the event that Contractor is found by a court of law or any administrative agency to be an employee of City for any purpose, City shall be entitled to offset compensation due, or to demand repayment of any amounts paid to Contractor under the terms of this Agreement, to the full extent of any benefits or other remuneration Contractor receives (from City or third party) as a result of said finding and to the full extent of any payments that City is required to make (to Contractor or to a third party) as a result of said finding.
- B. The undersigned Contractor hereby represents that no employee of the City, or any partnership or corporation in which a City employee has an interest, has or will receive any remuneration of any description from Contractor, either directly or indirectly, in connection with the letting or performance of this Agreement, except as specifically declared in writing.

If this payment is to be charged against Federal funds, Contractor certifies that he/she is not currently employed by the Federal Government and the amount charged does not exceed his or her normal charge for the type of service provided.

Contractor and its employees, if any, are not active members of the Oregon Public Employees Retirement System and are not employed for a total of 600 hours or more in the calendar year by any public employer participating in the Retirement System.

- C. Contractor certifies that it currently has a City business license or will obtain one prior to delivering services under this Agreement.
- D. Contractor is not an officer, employee, or agent of the City as those terms are used in ORS 30.265.

**7. INDEMNIFICATION**

City has relied upon the professional ability and training of Contractor as a material inducement to enter into this Agreement. Contractor represents that all its work will be performed in accordance with generally accepted professional practices and standards as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of a contractor's work by City shall not operate as a waiver or release.

Contractor agrees to indemnify and defend the City, its officers, agents, employees and authorized volunteers and hold them harmless from any and all liability, causes of action, claims, losses, damages, judgments or other legal costs or expenses including attorney's fees and witness costs and (at both trial and appeal level, whether or not a trial or appeal ever takes place) that may be asserted by any person or entity which in any way arise from, during or in connection with the negligent or reckless acts, omissions, activities, or services associated with performance of the work described in this contract, and any intentional misconduct of Contractor, except to the extent that the liability arises out of the sole negligence of the City and its employees. Such indemnification shall also cover claims brought against the City under state or federal workers' compensation laws. If any aspect of this indemnity shall be found to be illegal or invalid for any reason whatsoever, such illegality or invalidity shall not affect the validity of the remainder of this indemnification.

**8. INSURANCE**

Contractor and its subcontractors shall maintain insurance acceptable to City in full force and effect throughout the term of this contract. Such insurance shall cover all activities of the contractor arising directly or indirectly out of Contractor's work performed hereunder, including the operations of its subcontractors of any tier. Such insurance shall be primary and non-contributory with respect to coverages A and B below.

The policy or policies of insurance maintained by the Contractor and its subcontractor shall provide at least the following limits and coverages:

A. Commercial General Liability Insurance

Contractor shall obtain, at contractor's expense, and keep in effect during the term of this contract, Commercial General Liability Insurance covering Bodily Injury and Property Damage on an "occurrence" form. This coverage shall include Contractual Liability insurance for the indemnity provided under this contract, subject to industry standard policy terms and limitations. The following insurance will be carried, and such limits may be met with a combination of primary and excess liability policies:

<b>Coverage</b>	<b>Limit</b>
General Aggregate	3,000,000
Products-Completed Operations Aggregate	3,000,000
Personal & Advertising Injury	3,000,000
Each Occurrence	2,000,000
Fire Damage (Any one fire)	500,000
Medical Expense (Any one person)	5,000

B. Commercial Automobile Insurance

Contractor shall also obtain, at contractor's expense, and keep in effect during the term of this contract, Commercial Automobile Liability coverage including coverage for all owned, hired, and non-owned vehicles. The Combined Single Limit per accident shall not be less than \$2,000,000.

C. Professional Liability Insurance

Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this contract, Professional Liability Insurance covering any damages caused by a negligent error or omission. Combined single limit per occurrence shall not be less than

\$2,000,000. Annual aggregate limit shall not be less than \$2,000,000.

D. Workers' Compensation Insurance

The Contractor, its subcontractors, if any, and all employers providing work, labor or materials under this Contract who are subject employers under the Oregon Workers' Compensation Law and shall comply with ORS 656.017, which requires them to provide workers' compensation coverage that satisfies Oregon law for all their subject workers. Out-of-state employers must provide workers' compensation coverage for their workers that complies with ORS 656.126. Employer's Liability Insurance with coverage limits of not less than \$500,000 each accident shall be included.

E. Additional Insured Provision

The Commercial General Liability Insurance and Commercial Automobile Insurance policies shall include the City, its officers, directors, employees and authorized volunteers as additional insureds with respect to this contract.

F. Notice of Cancellation

There shall be no cancellation, material change, exhaustion of aggregate limits or intent not to renew insurance coverage without 30 days written notice to the City. Any failure to comply with this provision will not affect the insurance coverage provided to the City. The certificates of insurance provided to the City shall state that the insurer shall endeavor to provide 30 days notice of cancellation to the City.

G. Insurance Carrier Rating

Coverages provided by the Contractor must be underwritten by an insurance company deemed acceptable by the City. The City reserves the right to reject all or any insurance carrier(s) with an unacceptable financial rating.

H. Certificates of Insurance

As evidence of the insurance coverage required by the contract, the Contractor shall furnish a Certificate of Insurance to the City. No contract shall be effected until the required certificates have been received and approved by the City. The certificate will specify and document all provisions within this contract. A renewal certificate will be sent to the above address prior to coverage expiration.

Certificates of Insurance should read "Insurance certificate pertaining to contract for **SURFACE WATER AND SANITARY SEWER MASTER PLAN UPDATES**. The City of West Linn, its officers, directors and employees shall be added as additional insureds with respects to this contract. A notation stating that "Insured coverage is primary" shall appear in the description portion of certificate.

I. Independent Contractor Status

The service or services to be rendered under this contract are those of an independent contractor. Contractor is not an officer, employee or agent of the City as those terms are used in ORS 30.265.

J. Primary Coverage Clarification

The parties agree that Contractor’s Commercial General Liability and Automobile Liability coverage shall be primary to the extent permitted by law. The parties further agree that other insurance maintained by the City is excess and not contributory insurance with the insurance required in this section.

K. Cross-Liability Clause

A cross-liability clause or separation of insureds clause will be included in the general liability policy.

Contractor’s insurance policy shall contain provisions that such policies shall not be canceled or nonrenewed without thirty (30) days prior notice to City. A certificate in form satisfactory to City certifying to the issuance of such insurance shall be forwarded to:

Erich Lais City of West Linn 22500 Salamo Road West Linn, OR 97068	Ph: 503-722-5514 Fax: 503-656-4106 Email: elais@westlinnoregon.gov
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Such policies or certificates must be delivered prior to commencement of the work.

The procuring of such required insurance shall not be construed to limit contractor’s liability hereunder. Notwithstanding said insurance, Contractor shall be obligated for the total amount of any damage, injury, or loss caused by its negligence connected with this contract.

9. **METHOD & PLACE OF SUBMITTING NOTICE, BILLS AND PAYMENTS**

All notices, bills and payments shall be made in writing and may be given by personal delivery, mail or by fax. Payments may be made by personal delivery, mail, or electronic transfer. The following addresses shall be used to transmit notices, bills, payments, and other information:

<b>City of West Linn</b>	<b>CONTRACTOR</b>
Attn: Finance Department 22500 Salamo Road West Linn, OR 97068	Attn: Angela Wieland Address: 6500 SW Macadam Ave, Ste 200 Portland, OR 97239
Phone: 503- 657-0331	Phone: 503-977-6655
Fax: 503-650-9041	Fax: 503-244-9095
Email: FDirector@westlinnoregon.gov	Email: awieland@brwcald.com

and when so addressed, shall be deemed given upon deposit in the United States mail, postage prepaid, or when so faxed, shall be deemed given upon successful fax. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to who notices, bills and payments are to be given by giving written notice pursuant to this paragraph.

**10. MERGER**

This writing is intended both as a final expression of the Agreement between the parties with respect to the included terms and as a complete and exclusive statement of the terms of the Agreement. No modification of this Agreement shall be effective unless and until it is made in writing and signed by both parties.

**11. TERMINATION WITHOUT CAUSE**

At any time and without cause, City shall have the right, in its sole discretion, to terminate this Agreement by giving fifteen (15) days' notice to Contractor. If City terminates the contract pursuant to this paragraph, it shall pay Contractor for services rendered to the date of termination.

**12. TERMINATION WITH CAUSE**

A. City may terminate this Agreement effective upon delivery of written notice to Contractor, or at such later date as may be established by City, under any of the following conditions:

- 1) If City funding from federal, state, local, or other sources is not obtained and continued at levels sufficient to allow for the purchase of the indicated quantity of services. This Agreement may be modified to accommodate a reduction in funds
- 2) If federal or state regulations or guidelines are modified, changed, or interpreted in such a way that the services are no longer allowable or appropriate for purchase under this Agreement.
- 3) If any license or certificate required by law or regulation to be held by Contractor, its subcontractors, agents, and employees to provide the services required by this Agreement is for any reason denied, revoked, or not renewed.
- 4) If Contractor becomes insolvent, if voluntary or involuntary petition in bankruptcy is filed by or against Contractor, if a receiver or trustee is appointed for Contractor, or if there is an assignment for the benefit of creditors of Contractor.

Any such termination of this agreement under paragraph (a) shall be without prejudice to any obligations or liabilities of either party already accrued prior to such termination.

B. City, by written notice of default (including breach of contract) to Contractor, may terminate the whole or any part of this Agreement:

- 1) If Contractor fails to provide services called for by this Agreement within the time specified in this Agreement or any extension thereof, or
- 2) If Contractor fails to perform any of the other provisions of this Agreement, or so fails to pursue the work as to endanger performance of this agreement in accordance with its terms, and after receipt of written notice from City, fails to

correct such failures within ten (10) days or such other period as City may authorize.

The rights and remedies of City provided in the above clause related to defaults (including breach of contract) by Contractor shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

If City terminates this Agreement under paragraph (B), Contractor shall be entitled to receive as full payment for all services satisfactorily rendered and expenses incurred, an amount which bears the same ratio to the total fees specified in this Agreement as the services satisfactorily rendered by Contractor bear to the total services otherwise required to be performed for such total fee; provided, that there shall be deducted from such amount the amount of damages, if any, sustained by City due to breach of contract by Contractor. Damages for breach of contract shall be those allowed by Oregon law, reasonable and necessary attorney fees, and other costs of litigation at trial and upon appeal.

**13. ACCESS TO RECORDS**

City shall have access to such books, documents, papers and records of Contractor as are directly pertinent to this Agreement for the purpose of making audit, examination, excerpts and transcripts.

**14. FORCE MAJEURE**

Neither City nor Contractor shall be considered in default because of any delays in completion and responsibilities hereunder due to causes beyond the control and without fault or negligence on the part of the parties so disabled, including but not restricted to, an act of God or of a public enemy, civil unrest, volcano, earthquake, fire, flood, epidemic, quarantine restriction, area-wide strike, freight embargo, unusually severe weather or delay of subcontractor or supplies due to such cause; provided that the parties so disabled shall within ten (10) days from the beginning of such delay, notify the other party in writing of the cause of delay and its probable extent. Such notification shall not be the basis for a claim for additional compensation. Each party shall, however, make all reasonable efforts to remove or eliminate such a cause of delay or default and shall, upon cessation of the cause, diligently pursue performance of its obligation under the Agreement.

**15. NON-WAIVER**

The failure of City to insist upon or enforce strict performance by Contractor of any of the terms of this Agreement or to exercise any rights hereunder should not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights on any future occasion.

**16. NON-DISCRIMINATION**

Contractor agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules, and regulations. Contractor also shall comply with the Americans with Disabilities Act of 1990, ORS 659A.142, and all regulations and administrative rules established pursuant to those laws.

**17. ERRORS**

Contractor shall perform such additional work as may be necessary to correct errors in the work required under this Agreement without undue delays and without additional cost.



**18. EXTRA (CHANGES) WORK**

Only **Lance Calvert, PE, Public Works Director/City Engineer** may authorize extra (and/or change) work. Failure of Contractor to secure authorization for extra work shall constitute a waiver of all right to adjustment in the contract price or contract time due to such unauthorized extra work and Contractor thereafter shall be entitled to no compensation whatsoever for the performance of such work.

**19. ATTORNEY'S FEES**

In case suit or action is instituted to enforce the provisions of this contract, the parties agree that the losing party shall pay such sum as the court may adjudge reasonable attorney fees and court costs, including attorney's fees and court costs on appeal.

**20. GOVERNING LAW**

The provisions of this Agreement shall be construed in accordance with the provisions of the laws of the State of Oregon. Any action or suits involving any question arising under this Agreement must be brought in the appropriate court of the State of Oregon.

**21. COMPLIANCE WITH STATE AND FEDERAL LAWS/RULES**

Contractor shall comply with all applicable federal, state and local laws, rules and regulations, including, but not limited to, the requirements concerning working hours, overtime, medical care, workers compensation insurance, health care payments, payments to employees and subcontractors and income tax withholding contained in ORS Chapters 279A and 279B, the provisions of which are hereby made a part of this agreement

**22. CONFLICT BETWEEN TERMS**

It is further expressly agreed by and between the parties that should there be any conflict between the terms of this Agreement and the Contractor's proposed contract terms, scope of work, or any other document provided by the Contractor, this Agreement shall control and nothing in this Agreement shall be considered as an acceptance of any conflicting terms in the Contractor's proposal.

**23. AUDIT**

Contractor shall maintain records to assure conformance with the terms and conditions of this Agreement, and to assure adequate performance and accurate expenditures within the contract period. Contractor agrees to permit City, the State of Oregon, the federal government, or their duly authorized representatives to audit all records pertaining to this Agreement to assure the accurate expenditure of funds.

**24. SEVERABILITY**

In the event any provision or portion of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the validity of the remaining terms and provisions shall not be affected to the extent that it did not materially affect the intent of the parties when they entered into the agreement.

**25. AMENDMENT AND COMPLETE AGREEMENT**

This Agreement and attached exhibits constitutes the entire Agreement between the parties. No waiver, consent, modification, or change of terms of this Agreement shall bind either party unless in writing and signed by both parties. Such waiver, consent, modification, or change if made, shall be effective only in specific instances and for the specific purpose given. There are no understandings, agreements, or representations, oral or written, not specified in this Agreement regarding this Agreement. Contractor, by the signature of its authorized representative, acknowledges that he has read this Agreement, understands it and agrees to be bound by its terms and conditions.

INTENDING TO BE BOUND, City has caused this Agreement to be executed by its duly authorized undersigned officer and Contractor has executed this Agreement on the date written below.

**CONTRACTOR**



*Signature*

*Bryan K. Paulson, Vice President*

*Printed Name & Title*

*April 27, 2017*

*Date*

**CITY OF WEST LINN**

*Signature*

*Printed Name & Title*

*Date*

APPROVED AS TO FORM:

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CITY ATTORNEY

## Exhibit A

# Scope of Services

## City of West Linn Sanitary and Surface Water Master Plan

The City of West Linn (City) is developing a Surface Water Master Plan (SMP) and a Sanitary Sewer Master Plan (SSMP) to improve understanding of system characteristics and infrastructure in the city and support the prioritization of surface water and sanitary capital projects to address conveyance, capacity, and water quality for both existing and future development.

Key objectives for the SMP include the development/refinement of drainage basins, an evaluation of hydrology and stormwater flows, the identification of system deficiencies, and the development and prioritization of capital improvement projects. Key objectives for the SSMP include an evaluation of sanitary system performance that considers infill, redevelopment, and new development, the identification of reduction strategies for inflow and infiltration, an operations and maintenance assessment, and the development and prioritization of capital improvement projects.

Presentation of both the SMP and SSMP shall be clear, concise, and implementable.

This scope was developed to include a combined project management Phase (Phase 1) and discipline-specific phases and tasks for both the SMP and the SSMP. SMP development is described under Phases 2–8; SSMP development is described under Phases 9-14.

Work on the SMP and SSMP is estimated to occur over the next 16 months, including presentation of the Plans to the public and to City Council for adoption. Schedule adjustments may be needed during the project duration.

For purposes on this scope and contract, Brown and Caldwell (Engineer) is the prime contractor and overseeing contract management and the SMP. Carollo (Subcontractor) is developing the SSMP. The collective project team is referred to as the Engineer team.

### Phase 1 Project Management (Contract and Discipline-specific)

**Objective** To provide overall contract management and oversee the SMP-specific and SSMP-specific project phases, schedule and budget. To maintain ongoing communications with the City of West Linn (City). To provide quality assurance and quality control (QA/QC) throughout the project.

#### Task 1-1 Project Administration

**Activities** The Engineer will provide overall contract management. The Engineer team will coordinate to ensure storm and sanitary projects receive staff support necessary to meet the schedule and maintain project quality. Activities budgeted under Task 1-1 include:

- Overall schedule management. An initial, comprehensive (surface water and sanitary) project schedule will be developed using Excel. It will identify anticipated task duration, start/stop dates, and scheduled QA/QC reviews. Up to three schedule updates (in digital form) will be made available to the City.



- Overall budget management. Budget tracking will occur via WorkSmart, the Engineer's internal tool for tracking weekly project costs by project phase and task. Internal month end reporting will be conducted by the Engineer to estimate effort to complete and will be used to identify budget challenges in advance. While not anticipated, budget challenges would be communicated directly to the City during project coordination meetings and resolution/scope adjustments/amendments will be documented with emailed meeting summaries.
- Development of a Project Management Plan (PMP). The Engineer shall prepare a PMP to document project roles, responsibilities, and QA/QC protocols.
- Subcontractor coordination and oversight. The Engineer will work with the Subcontractor to review subcontractor's budget, coordinate deliverable schedules and identify data gaps and other project issues during the project duration.
- QA/QC activities. Draft deliverables will have a QA/QC review conducted in accordance with the project schedule. The Engineer will schedule and notify senior reviewers related to the SMP. The Subcontractor will schedule and notify senior reviewers related to the SSMP. Draft deliverables prepared by the Subcontractor will have a final QA/QC review by the Engineer in accordance with the project schedule.
- Monthly invoicing with project progress reports. The Engineer will prepare invoices to reflect budget spent and work completed at the phase level.
- Document Control and Delivery. Final deliverables including mapping, models, technical memoranda, and reports will be provided digitally to the City at the conclusion of the project.

## **Task 1-2 Project Coordination Meetings**

**Activities** Monthly check-in phone calls will be conducted as necessary during the project duration to discuss project progress and coordinate deliverables for the City. Key staff from the Engineer team will participate in the phone call. The Engineer will provide a brief email following each call to summarize key decisions, action items for the Engineer team and City staff, issue resolution, and any scope/budget adjustments.

## **Task 1-3 Project Kickoff Meeting**

**Activities** City staff and the Engineer team will initiate a project kick-off meeting to confirm project goals, objectives and priorities, and outline the anticipated schedule for the project.

Prior to this meeting, the Engineer team will prepare a meeting agenda, preliminary project schedule, surface water and sanitary system data request list, and preliminary table of contents for the SMP and SSMP. While the draft table of contents may be refined during the project, it will provide a starting point for discussion related to the format and content of deliverables.

The Engineer will prepare a draft internal stormwater questionnaire, to be completed by City staff in advance of Task 2-4, to document areas of known stormwater system deficiencies. A draft external stormwater questionnaire will also be prepared for distribution to the public to facilitate stakeholder input in advance of Task 2-4.

The data request list, preliminary table of contents, and draft stormwater questionnaire will be reviewed in detail during the project kick-off meeting.



Following the kick-off, the Engineer will finalize the stormwater questionnaires and submit it to the City for distribution to staff and the public. The Engineer will also provide a short project summary that can be used by the City to inform the public and solicit feedback via the external stormwater questionnaire.

### **Phase 1 Deliverables**

The following deliverables are included under Phase 1:

- Project schedule
- Monthly progress reports with invoices
- Project coordination meeting scheduling, including an email agenda of topics to be discussed
- Emailed summaries of project coordination meetings, including a list of key decisions and action items
- Project kick-off meeting agenda
- Data request list (separate surface water and sanitary)
- Draft and final staff stormwater questionnaire, to be completed by City staff and returned to the Engineer prior to the Surface Water Problem Area Workshop (Task 2-4)

### **Phase 1 Assumptions**

The following assumptions are made for Phase 1:

- The project duration is 16 months.
- The budget for specific QA/QC review of deliverables is reflected under the individual technical phases.
- QA/QC of sanitary master plan deliverables by the Engineer is budgeted under this Phase. A total of 5 technical memoranda and one compiled draft SSMP is assumed.
- Monthly coordination meetings will be conducted via telephone and attended by key staff, as required. A total of 16 meetings are assumed.
- Progress reports will summarize major activities completed during the invoicing period.
- The City's project manager will invite appropriate engineering, planning, and maintenance staff to participate in the project kick-off meeting and distribute meeting materials prior to the meeting.
- The City's project manager will distribute the final stormwater questionnaires to City staff and the public and facilitate collection and return of completed questionnaires to the Engineer within the timeline established during the project kick-off meeting.
- The City will be responsible for review and qualification of the public responses to the external stormwater questionnaire and identify those responses that should be considered in Task 2-4.
- A total of four Engineer team members will attend a 2-hour project kick-off meeting (Task 1-3).
- The project kick-off meeting will be coordinated between the SMP and SSMP project efforts.

- The City will provide a venue for the project kick-off meeting.
- Additional project meetings are included under the individual technical tasks.

## Phase 2 Basis of Planning (Stormwater)

**Objective** To compile, examine, and evaluate existing data, code language, records, and reports to aid in Capital Improvement Project (CIP) identification and SMP development. Use the data collection process to identify data needs and gaps.

### Task 2-1 GIS Data Compilation and Review

**Activities** The Engineer will review geographic information system (GIS) and other technical documentation provided by the City to compile and organize information in support of the surface water planning efforts.

The Engineer will conduct a cursory review of the City's existing storm drainage information in GIS to evaluate the extent of existing information and locations of the city with limited storm drainage infrastructure. GIS data will be reviewed for completeness in terms of open channel and pipe information including inverts, rim elevations, and pipe diameters. The Engineer will also conduct a desktop analysis to compare available light detecting and ranging (LIDAR) data with documented rim elevations to confirm that data are recorded on a consistent datum, and can be used for future system-wide modeling.

GIS data and identified data gaps or deficiencies that may impact project objectives and schedule will be documented in a matrix format for discussion with the City during a scheduled coordination phone call.

### Task 2-2 Preliminary Mapping

**Activities** Base maps in GIS will be prepared to document information collected as part of Task 2-1. Maps will reflect current city limits, land use and areas of future development, soils and topography, the current stormwater collection system and facilities, and existing stormwater system data gaps (inverts, rims, etc.).

### Task 2-3 Stormwater Code Review and Audit

**Activities** The Engineer will review the City's Municipal Code, Community Development Code, and Public Works Standards to verify design guidelines and assumptions for the stormwater system. The code review shall also identify inconsistencies and implementation gaps in design requirements and processes. The code review shall include erosion and sediment control, stormwater facility design and maintenance, and enforcement and will align with provisions of the City's NPDES MS4 permit.

Results of the initial code review will be documented in a matrix format.

Two Engineer staff will attend an in-person project meeting with City development review and public works staff to review and identify additional code provisions requiring review and discuss options.

A technical memorandum (TM#1) and updated code review matrix will be developed to document the code review and recommended code modifications.



## **Task 2-4 Surface Water Problem Area Workshop**

### **Activities**

The Engineer will prepare maps of the stormwater system by basin, identifying where significant data are available to support development of a hydrologic/ hydraulic model.

The Engineer will review the received and completed staff and public stormwater questionnaires, photographs, and other planning and design reports to document areas of the city with known stormwater capacity issues, aging infrastructure and areas requiring installation of stormwater infrastructure and/or treatment and detention facilities. Prior to the workshop, clarification phone calls with City staff may be conducted to confirm potential problem areas.

The Engineer will prepare an agenda, meeting materials, and facilitate a 3-hour workshop with City staff to discuss identified stormwater problem areas and to assess where targeted stormwater system modeling is needed for master planning purposes.

During the workshop, attendees will review storm system information in each City-defined basin, to discuss, identify, and determine the following:

- Are there known system capacity or hydromodification problems in the basin?
- Is there aging or failing infrastructure in the basin?
- Are projects already proposed to address the identified problems?
- Is future development anticipated to cause future system capacity problems or exacerbate existing problems?
- What are the priorities for addressing the identified problems?
- Are there locations where little is known about system capacity and additional information is desired?
- If modeling is desired, are sufficient data available or is additional field survey work required?

During the workshop, the Engineer will work with City staff to establish performance criteria for the stormwater infrastructure system. Performance criteria will identify when system improvements are needed to meet a desired level of service or flood protection.

Outcomes from the workshop, specifically identified problem areas and those requiring modeling will be documented in a problem areas summary matrix, mapped, and referenced during field reconnaissance and surveying (Phase 3) and CIP development (Phase 6 and 7). The summary matrix will serve as the meeting minutes from the workshop.

### **Phase 2 Deliverables**

The following deliverables are included under Phase 2:

- Summary matrix documenting GIS data received from the City, identified data gaps, and proposed data gap resolution
- Initial code review matrix, for discussion with City staff during the code review meeting.
- Draft TM#1: Stormwater Code Review and Recommendations
- Stormwater problem area workshop meeting agenda and meeting materials including mapping



- Summary matrix documenting results of the surface water problem areas workshop, reflecting received stormwater questionnaires, preliminary modeling areas, and a list of areas to visit during the field verification activities and/or survey

## Phase 2 Assumptions

The following assumptions are made for Phase 2:

- The City will provide the Engineer with data in response to the data request lists within a mutually agreed upon timeline.
- The Engineer will supplement City-provided GIS information with Metro Regional Land Information System (RLIS) data to produce the preliminary maps.
- The City will provide the Engineer with one consolidated set of comments on the TM.
- Finalization of TM#1 will occur prior to inclusion in the SMP.
- Two Engineer staff will attend a 2-hour code review meeting with City staff.
- Two Engineer staff will attend the 3-hour Surface Water Problem Area Workshop.
- Resolution from Tasks 2-1, 2-3, and 2-4 will be used to develop the stormwater basis of planning and will be documented under Task 4-2 in TM#2: Stormwater Basis of Planning.

## Phase 3 Stormwater Field Investigations and Verification

**Objective** Conduct targeted field investigations with City engineering and maintenance staff to review identified stormwater problem areas and support collection of missing infrastructure data.

### Task 3-1 Field Verification

**Activities** The Engineer will conduct up to 3 days of additional field investigation to verify identified stormwater problem areas and potential CIP locations and clarify discrepancies in the GIS and modeled system data, including pipe sizes, measure-downs, materials, junction locations, and flow direction. Objectives of the site visits may include:

- Verification and refinement of subbasin delineations (if needed). See Task 5-1.
- Verification of areas with future development potential
- Initial observation and documentation of areas of the city with known capacity deficiencies, as identified in the completed stormwater questionnaires and identified on the stormwater problem area matrix
- Observation, qualification, and documentation of known high pollutant source areas of the city with the potential to install stormwater treatment. See Phase 4.
- Observation and documentation of existing stormwater treatment and detention facility installations and retrofit opportunities
- Observation and documentation of areas with current maintenance issues
- Observation and documentation of open-channel or natural-channel locations that may benefit from channel bank enhancement, improved riparian vegetation, or other in-stream channel improvements
- Other identified stormwater problem areas



Prior to the site visit, the Engineer and City staff will coordinate locations to visit during a scheduled project coordination meeting. An agenda of targeted locations will be developed including locations where private property may require access agreements.

Field data forms for internal use will be completed during the site visit to document observations and findings.

### **Task 3-2 Field Data Collection**

**Activities** Based on the results of Task 2-4 and 3-1, the Engineer will prepare a summary of the existing storm system data required to support development of targeted hydraulic modeling. The Engineer will summarize locations of the system that may warrant additional investigation and/or data collection efforts.

The Engineer will confirm data collection needs and surveying scope via a meeting with City staff. Data collection and survey will be performed by the City.

Collected data will be added to the City's existing GIS database.

### **Phase 3 Deliverables**

The following deliverables are included under Phase 3:

- Up to 24 hours of fieldwork for two Engineer staff to verify stormwater infrastructure data and basin boundaries
- Tabular summary of infrastructure required for survey, to conduct targeted hydraulic modeling
- Proposed model area mapping to include identification of infrastructure survey needs

### **Phase 3 Assumptions**

The following assumptions are made for Phase 3:

- Ground, manhole rim elevations, and open-channel system geometry will be based on existing information in the City's system inventory, or interpolated from available LIDAR to the extent possible.
- LIDAR may be used to develop cross-sections and map any ditches or open channel portions of the conveyance system. Use of LIDAR for open channel conveyance will be dependent on the size of the channel and whether additional structures (weirs, culverts, etc.) need to be mapped.
- Modeled pipe segments will be limited to the public conveyance system, 12 inches in diameter and larger.
- Fieldwork will be limited to the hours described above.
- City staff with knowledge of the stormwater system and natural stream channels will be available to accompany Engineer staff during field verification efforts. City staff will provide transportation during field investigation and verification efforts.
- The City will secure any needed right-of-entry and/or permissions for Engineer staff to conduct needed field investigations.
- Field verification by Engineer staff in Task 3-2 is limited to visual observations and hand measurements. No topographic survey or GPS measurements are included in the Engineer's scope of services.
- Data collection and survey will be conducted by City staff.

## Phase 4 NPDES Assessment

**Objective** Evaluate stormwater retrofit opportunity areas to identify CIPs to address water quality and enhance flow control in existing development areas that are not currently served by adequate stormwater quality management facilities in accordance with NPDES MS4 permit requirements. Document the basis for stormwater planning efforts.

### Task 4-1 Water Quality CIP Opportunities

**Activities** The Engineer will use preliminary mapping developed under Task 2-2 to review land use and existing stormwater treatment and detention facility coverage to identify areas that could benefit from the installation of stormwater quality management facilities. Mapped features will include:

- Structural stormwater facility locations and contributing drainage areas
- Storm drainage system
- Natural areas
- Publicly owned lands and/or vacant lands
- Identified stormwater problem areas (per Task 2-4)
- Land use

The City previously developed a stormwater quality retrofit strategy and a hydromodification assessment, as required by the NPDES MS4 permit. These strategy documents identified potential stormwater retrofit projects and project priorities to be included in this Stormwater Master Plan and will be revisited as part of this NPDES Assessment task.

The Engineer will document findings in a matrix format for inclusion in TM#2: Stormwater Basis of Planning, for discussion with the City during the Capital Improvement Project (CIP) Planning Workshop (Task 6-2). Some of the water quality opportunities may be vetted during field verification efforts (Task 3-1).

### Task 4-2 Documentation

**Activities** The Engineer will prepare TM#2: Stormwater Basis of Planning, in order to compile information developed from Phases 2, 3, and 4. TM#2 will include the following:

- Applicable stormwater design criteria and standards.
- Stormwater design and CIP development assumptions, including performance criteria for the stormwater infrastructure system (identified during Task 2-4).
- A summary of regulatory guidelines, drivers, and considerations related to the development of the SMP.
- A summary of the process for identifying stormwater problem areas and capital improvement project (CIP) opportunities with city staff and external stakeholders.

Matrices reflecting identified stormwater problem areas (developed under Task 2-4) and water quality opportunities (developed under Task 4-1) will be incorporated into the tech memo, as they form the basis for CIP development efforts.

## Phase 4 Deliverables

The following deliverables are included under Phase 4:

- Documentation of potential water quality opportunity areas and conceptual water quality CIP descriptions in a matrix format
- Draft TM#2: Stormwater Basis of Planning

## Phase 4 Assumptions

The following assumptions are made for Phase 4:

- Water quality CIP opportunities may be integrated with other CIPs and refined under Phase 6.
- The draft TM#2 will be provided to the City for review and comment. City comments not affecting technical or project related assumptions will be addressed at the time that the TMs are incorporated into the SMP.
- The City will provide the Engineer with one consolidated set of comments on the TM.

## Phase 5 Hydrologic and Hydraulic Modeling (Surface Water)

**Objective** Develop a hydrologic model of the city's drainage basins for existing and future flows. Develop targeted hydraulic models of specific stormwater infrastructure systems to evaluate problem areas and future infrastructure needs.

### Task 5-1 Subbasin Refinement

**Activities** The Engineer will use the current GIS inventory (Task 2-1) and preliminary mapping (Task 2-2) to refine stormwater subbasins used in the 2006 Stormwater Master Plan. Subbasin size will remain consistent with the 2006 Stormwater Master Plan, but may vary per the extent of the public stormwater system mapped, and anticipated hydraulic modeling needs. Subbasins may extend outside of the city limits to account for contributing areas, but detailed delineation in areas outside of the City is not anticipated.

Field investigations (Task 3-1) will be used to review and refine the subbasin delineations.

### Task 5-2 Hydrologic Model Development

**Activities** The Engineer will verify assumptions related to the hydrologic analysis, including land use and impervious characteristics, time of concentration methodology, and vacant and developable lands with the City during a project coordination phone call. Hydrologic input parameters will be consistent with previous master planning efforts.

The Engineer will conduct hydrologic modeling of the city using XPSWMM modeling software or other approved SWMM modeling platform. BC will simulate flows associated with the water quality, 2-year, 10-year, and 25-year, 24-hour rainfall (based on a Type 1A distribution). Hydrologic model results will be tabulated for inclusion in the SMP.

Hydrologic modeling methods and results will be documented in TM#3: Modeling Methods, Assumptions, and Results.

### **Task 5-3 Hydraulic Model Validation and Development**

#### **Activities**

For select subbasins, the stormwater system data collected under Task 3-2 will be imported into the XPSWMM or other approved SWMM hydraulic modeling platform.

Existing-conditions flows calculated under Task 5-2 will initially be simulated in select drainage basins for model validation. Validation efforts will be limited to comparing existing-conditions model results for a select storm event to available information from the City such as flooding reports and photographs. If validation adjustments are necessary, the hydrologic model results developed under Task 5-2 will be adjusted and updated for reporting.

Based on modeling needs identified in Task 2-4, the Engineer will develop hydraulic models using XPSWMM modeling software or other approved SWMM platform for select areas of the city where additional information is needed to evaluate infrastructure problems and potential solutions.

Based on performance criteria established under Task 2-4, the Engineer will use the hydraulic models to analyze the functionality of the existing stormwater system to convey both current and future predicted flows. Capacity problem areas will be identified as potential project locations for analysis in Phase 6.

Hydraulic modeling results will be tabulated for model documentation.

The Engineer will conduct QA/QC review of hydraulic models and document model adjustments made in response to the review.

### **Task 5-4 Model Documentation**

#### **Activities**

The Engineer will prepare written documentation of the modeling methodology and results for inclusion in TM#3: Modeling Methods, Assumptions and Results.

Modeling results (basin boundaries, peak flows, and surcharge areas) will be documented in GIS shapefiles and spreadsheets, so that the City has access to modeling data and results.

At the end of the project, model files will be provided to the City in XPSWMM or other SWMM format.

### **Phase 5 Deliverables**

The following deliverables will be provided under Task 5:

- Draft TM#3: Modeling Methods, Assumptions and Results
- Electronic modeling files in XPSWMM or other SWMM format at project completion
- GIS shapefiles documenting subbasin delineation
- Tabular documentation of existing and future flow rates at key locations
- Inclusion of capacity problem areas in the potential project matrix under Task 6-1

### **Phase 5 Assumptions**

The following assumptions are made for Phase 5:

- No additional field investigation or survey work is included in this task.
- No more than 260 subbasins will be evaluated as part of the hydrologic modeling effort, consistent with the number of subbasins evaluated in 2006.



- Current land use and existing vacant lands will be used to calculate current (i.e., existing) condition stormwater flows for each design storm; future land use reflecting full-build out conditions based on current zoning will be used to calculate the future-conditions stormwater flows.
- City staff will provide anecdotal reports of flooding problems for use in model validation. Validation efforts under Task 5-3 will be limited to comparing existing-conditions model results for a select storm event to available information from City flooding reports and photographs.
- Pipes and culverts less than 12 inches in diameter will not be included in the modeling effort.
- The hydraulic modeling effort may include piped and open channel conveyances where stormwater is the primary source of discharge. Outfalls to creeks will be the end points of the hydraulic model. This scope of services does not include modeling of natural systems with baseflow or stormwater flow generated outside the city limits.
- Where survey data are not available from Tasks 2 and 3, the Engineer will incorporate assumed data from LIDAR, field measurements, or other sources and document the modeling assumptions.
- Due to the unknown scope and scale of modeling work, the total hydraulic modeling scope reflected under Tasks 5-3 reflects 140 hours of staff engineer time and 48 hours of senior modeling support and review. These hours assume only targeted modeling of select areas of the City will be required. Of the total hydraulic modeling budget, 16 hours of staff engineer time and 4 hours of senior modeling support time are reflected for validation efforts.
- If the hydraulic modeling needs determined under Task 2-4 extend to include a majority of the City's drainage basins, then an amendment will be required to update and expand the scope and budget for modeling efforts accordingly.
- The Engineer will meet with City staff to review the modeling results as part of the CIP Planning Workshop in Task 6-2.
- TM#3 will be provided to the City for review and comment. City comments not affecting technical or project related assumptions will be addressed at the time that the TMs are incorporated into the master plan.
- The City will provide the Engineer with one consolidated set of comments on TM#3.

## Phase 6 Preliminary Stormwater CIP Development

**Objective** Evaluate CIP design concepts and project areas to define highest priority projects for conceptual development as part of the SMP.

### Task 6-1 Potential Projects Matrix

**Activities** Based on the results of the previous project phases, the Engineer will create a comprehensive project matrix of potential stormwater projects. Potential projects may include pipe replacement, facility maintenance, detention/retention facility installation or modification, flow routing modifications, and water quality facility installations (e.g., rain gardens, planters).



When possible, overlapping problem areas will be combined into single projects that serve multiple objectives, such as integrating enhanced water quality treatment or flow controls with necessary capacity improvements. The Engineer will also coordinate with the Subcontractor to identify project areas that may require sanitary CIPs, to consider sanitary CIPs when prioritizing and scheduling stormwater projects.

## **Task 6-2 CIP Planning Workshop**

### **Activities**

The Engineer will facilitate a 3-hour CIP Planning Workshop with City staff to review the comprehensive potential project matrix per Task 6-1. The CIP Planning Workshop will be used to discuss the City's realistic goals and expectations for the CIP and present results from analyses conducted under Phases 4 and 5. Preliminary project alternatives and design concepts will be discussed and reviewed.

The CIP Planning Workshop will also be used to discuss system replacement needs and areas of the system requiring more frequent maintenance. The Engineer will review current, City-implemented standard operating procedures to outline typical maintenance activities by asset. Options to address areas of more frequent maintenance needs will be reviewed and definition of a CIP to reflect asset management needs and system replacement will be discussed.

Potential project prioritization criteria will be presented to initially prioritize project needs and define whether a need requires immediate resolution (priority), whether it is a lesser priority, or whether it should be constructed in conjunction with future development. This initial project prioritization will be reflected in a CIP concept matrix. The highest priority project locations/ concepts will be selected for detailed cost estimation.

The Engineer will prepare an agenda and workshop meeting materials for City review prior to the workshop.

Following the workshop, the Engineer will prepare a draft CIP concept matrix. The matrix will summarize key results and decisions and reflect up to 20 priority project locations with the proposed CIP design concepts for flood control, system maintenance, water quality, and asset management projects. Potential CIP integration (i.e., combination of CIP design concepts into one project) will also be documented in the draft CIP design concept matrix.

## **Phase 6 Deliverables**

The following deliverables are included under Phase 6:

- Comprehensive potential project matrix, reflecting project locations identified and project concepts developed under Phases 4 and 5
- Agenda and materials (i.e., mapping of potential project/ project areas reflecting any pre-determined "high priority" areas and potential prioritization criteria) for the CIP Planning Workshop
- Attendance and facilitation by two Engineering staff at a 3-hour workshop with the City
- CIP Planning Workshop meeting summary including a draft CIP concept matrix, reflecting up to 20 project concepts

## Phase 6 Assumptions

The following assumptions are made for Phase 6:

- City staff will coordinate logistics for the CIP Planning workshop, including securing a meeting location, establishing a meeting date and time, and inviting appropriate City staff.
- Up to 20 CIP concepts will be documented in the draft CIP concept matrix at the conclusion of Task 6-2. The top ten, higher-priority CIPs will be identified by City staff during a project coordination meeting for refinement under Phase 7.

## Phase 7 Stormwater CIP Development and Prioritization

**Objective** Establish a 20-year stormwater CIP and prepare planning-level cost estimates for incorporation into the Stormwater Master Plan.

### Task 7-1 Flood Control CIP Design

**Activities** Using future conditions flows estimated under Task 5-3, the Engineer will analyze and develop strategies to address observed system capacity deficiencies. Analysis may include the use of XP-SWMM or another approved SWMM hydraulic modeling platform. Strategies may include retrofit of existing water quality or detention ponds, installation of storage facilities, and pipe upsizing and/ or reconfiguration.

The Engineer will conduct up to 1 day of field reconnaissance to evaluate potential project solutions and alternatives.

Due to the unknown scope and scale of this work, 40 hours of staff engineer time and 16 hours of senior engineer time for modeling support and QA/QC has been budgeted.

### Task 7-2 CIP Cost Estimation and Documentation

**Activities** Based on results from the CIP planning workshop (Task 6-2) and flood control CIP development (Task 7-1), the Engineer will refine project concepts and develop detailed cost estimates for up to ten higher priority CIPs identified in Phase 6. Preliminary sizing may be conducted under this task.

Using recent bid tab information, RS Means, and City-specific cost information, the Engineer will prepare unit cost tables for applicable CIP design components and features for City review and feedback.

Planning-level cost estimates will include construction, engineering, administration, and contingencies as well as annual expenses for activities associated with maintenance or asset management. In conjunction with the planning level cost estimates, the Engineer will prepare an estimate of the percent of the total project cost that could be attributed to future development impacts to aid in SDC evaluations.

The CIP design concepts (to approximately a 10 percent level of design) and the planning-level cost estimates will be incorporated into a final stormwater CIP matrix for up to 10 higher priority CIPs, based on the draft matrix developed in Task 6-2. A comprehensive map will be developed to show CIP locations.



### **Task 7-3 Stormwater CIP Prioritization and Scheduling**

#### **Activities**

The Engineer will refine the potential project prioritization criteria introduced during the CIP Planning Workshop based on input received from the City. Stormwater scoring criteria shall be developed to reflect water quality benefits, project integration, and public safety and be flexible enough to integrate with other planned improvements in the city.

Using the final stormwater CIP matrix prepared under Task 7-2 to guide scoring, the Engineer will provide scoring forms to representatives from engineering and maintenance to score the ten higher-priority stormwater CIPs. The Engineer will collect scoring forms and compile data to score and rank stormwater CIPs directly based on stormwater criteria. The Engineer will also coordinate with the sanitary CIP prioritization efforts to ensure that consistent project scheduling is considered.

The Engineer will present results to the City during a project coordination meeting to ensure project rankings are consistent with City priorities. Based on anticipated revenue, CIPs will be scheduled as either highest priority (5-year CIP) or medium priority (20-year CIP) in conjunction with anticipated funding levels. CIP concepts not refined under Task 7-2 will continue to be documented in the final stormwater CIP matrix and classified as either medium or low priority. Project prioritization and schedule will be incorporated in the final stormwater CIP matrix.

#### **Phase 7 Deliverables**

The following deliverables are included under Phase 7:

- Draft and final unit cost table
- Final stormwater CIP matrix reflecting refined design concepts, cost estimates, prioritization, and schedule for ten higher priority projects.
- Project scoring forms for use by the City
- Map reflecting CIP locations, for inclusion in the SMP

#### **Phase 7 Assumptions**

The following assumptions are made for Phase 7:

- Refined design concepts and cost estimates will be developed for up to ten CIPs.
- One additional day (8 hours) for two Engineer staff is budgeted to conduct additional onsite investigations of CIP locations and design concepts in the field; City staff from engineering and maintenance will be available to guide the visit.
- The City will secure any needed right-of-entry and/or permissions for the Engineer to conduct needed field investigations.
- As available, City staff will provide recent, local bid tab information to the Engineer to help establish unit costs for CIP planning and development.
- The Portland PAC tool or alternative SBUH spreadsheet BMP sizing tool will be used to develop conceptual designs for CIPs other than pipe upgrades for capacity. Where appropriate, preliminary calculations will be performed to size energy dissipation structures or slope stability materials.
- Stormwater program rate study and revenue alternatives will be evaluated separately and are not included in this scope of services.





## Phase 8 Stormwater Master Plan (SMP) Preparation

**Objective** Compile stormwater system information, analyses, and CIP program into a comprehensive SMP document. Solicit public input on the Stormwater Master Plan. Present the Stormwater Master Plan to the public and City officials for review, comment, and final adoption.

### Task 8-1 Draft SMP Development

**Activities** The Engineer will prepare a draft concise Stormwater Master Plan document, compiling the highlights of information and documentation prepared under Phases 2 through 7. General system maps and narrative reflecting the City's stormwater conveyance system, water quality and hydromodification issues, identified system capacity deficiencies, and CIP locations will be compiled and concisely summarized in the draft Stormwater Master Plan.

Detailed technical information, such as tabular modeling data, TMs, and cost estimates, will be included as technical appendices, as appropriate.

The Engineer will conduct an internal QA/QC of the draft Stormwater Master Plan.

A draft digital copy will be provided to the City for review and comment.

### Task 8-2 Draft Final and Final SMP Development

**Activities** City comments provided under Task 9-1 will be incorporated to create a draft-final SMP for City Council review and comment. An Executive Summary will highlight the major findings and recommendations from the Draft Stormwater Master Plan. A draft-final SMP in digital format will be provided to the City for review and comment by City Council.

City comments on the draft-final SMP will be incorporated to create a final SMP. Three copies of the final SMP, including appendices, will be provided. A print and Web-ready, searchable electronic version of the final SMP, in addition to ten hard copies (excluding appendices), will be provided to the City.

### Task 8-3 Meetings and Stakeholder Outreach (SMP)

**Activities** The Engineer will prepare materials to present the SMP goals, objectives, and recommendations to the public and community groups. Meeting materials will include up to three large size maps and a PowerPoint presentation using graphics developed for the SMP documents in Task 9-1.

One Engineer staff will attend two meetings with the utility advisory board to solicit comments and feedback related to development of CIPs.

Two Engineer staff will attend and present at up to two meetings with City officials. The meetings are expected to include one work session with the City Council and one City Council meeting to adopt the SMP.

## Phase 8 Deliverables

The following deliverables are included under Phase 8:

- Draft SMP (in .doc format) for City review and comment
- Draft-Final SMP (in .pdf format) for Council and utility advisory board review and comment

- Final SMP (in .pdf format) and five full hard copies and fifteen copies excluding appendices
- Electronic copies of project GIS data
- Attendance and materials (maps) for one Engineer staff at two, 2-hour utility advisory board meetings
- Materials and presentation (in PowerPoint®) by two Engineer staff at two City Council work sessions/ meetings

## Phase 8 Assumptions

The following assumptions are made for Phase 8:

- One consolidated set of City and stakeholder review comments on the draft SMP will be provided to the Engineer.
- One consolidated set of City comments on the draft-final SMP will be provided to the Engineer.
- No formal PowerPoint® presentation will be required for the utility advisory board meetings.
- The City will be responsible for additional stakeholder coordination efforts, aside from the scoped utility advisory board and City Council meetings. This includes meetings and coordination with the Committee for Citizen Involvement and other neighborhood committees.
- Presentation during the City Council meetings will be in PowerPoint® format and provided to the City in advance of the work session or meeting.

## Phase 9 Basis of Planning (Sanitary)

**Objective** To establish planning criteria and all planning assumptions for use in evaluation of the wastewater collection system.

### Task 9-1 Data Review and Gap Analysis

**Activities** Activities budgeted under Task 9-1 include:

- **Data Gap Analysis.** Review previously completed documents relating to the wastewater collection system, review existing system maps and mapping data, and identify data gaps required for completing the Plan in accordance with the data request.
- **Policies & Criteria.** Obtain any existing municipal code, public works standards, and community development code from the City. Review policies and criteria and make recommendations for additional or revised criteria and service area goals that best fit the needs of the City.
- **Service Area Maps.** Develop service area and land use maps using GIS data from the City, from Clackamas County, and from Metro as needed. Future maps will delineate the 5-year, and build-out scenarios.
- **Demographic Analysis.** Review current population, land use, and zoning to establish the historical demographics and to develop future demographics for the service area. Establish land use data per basin for the existing system service area ("Existing") and the 5-year and build-out planning periods.

## Task 9-2 Flow Projections

### Activities

Flow projections are based on demographic assumptions and the data obtained from flow monitoring. The following activities are budgeted under Task 9-2:

- Flow Data Review. Review the City's existing flow data, consisting of the in-house data and the data collected by ADS in the winter of 2015-16. Compare base sanitary flows estimated from existing land use to dry weather flow calculated through the flow monitoring for each basin. Existing land use and currently served areas will be used to estimate flow factors in gallons per acre per land use category. The flow factors will be customized to match the observed existing Average Dry Weather Flow (ADWF) and will be used to develop flow projections. Evaluate historical pump station flow and develop base sanitary flows for each pump station basin to be included in Phase 11.
- Base Flow Projections: Develop base sanitary flows for two planning periods: 5-year and build-out.
- Infiltration & Inflow Projections. Estimate I/I flow rates for each sewer basin based on area-specific I/I factors. Developed I/I flow rates will be compared to I/I flow rate estimates per monitored basin.
- Flow Projections. Future flows, including base flows and I/I will be projected based on unit flow factors for each land use type and I/I assumptions. Future flows will be developed for each sewer and pump station basin for the selected planning periods. This data will be used for establishing future capacity requirements of the conveyance system under Phase 12.

## Task 9-3 Meetings and Documentation

### Activities

The Subcontractor will participate in a meeting with City staff to finalize the basis of planning and to discuss the existing system per Phase 10.

The Subcontractor will prepare draft TM#1 of the SSMP: Basis of Planning.

## Phase 9 Deliverables

The following deliverables are included under Phase 9:

- Draft TM#1 - Basis of Planning and comment response log
- Meeting agenda and notes from the basis of planning meeting

## Phase 9 Assumptions

The following assumptions are made for Phase 9:

- The planning area assumed for this Plan includes the current City limits and the area included in the Urban Growth Boundary (UGB)
- The City can provide all elements of the data request list
- Wastewater pollutant loading is not anticipated to be evaluated as part of the SSMP
- No flow monitoring is included as part of the SSMP
- Unique flow factors will be developed for up to ten basins, corresponding to the monitored basins

## Phase 10 Existing System Assessment (Sanitary)

**Objective** To document and create an inventory of all facilities in the existing wastewater collection system.

**Activities** The Subcontractor will review the components of major sewer collectors and pump stations using data from the City's GIS, available pipe database, discussions with staff, and previous studies including the City's 1999 Sanitary Sewer Master Plan. Activities budgeted under Phase 10 include:

- Develop text and tables summarizing the City's collection and conveyance system. Summarize the boundaries of sewer service basins and pump station basins (if different). Provide descriptions for each of the City's sewage pump stations, and force mains. Provide total length of pipe based on diameter and material
- Develop figures for the Plan of the existing system infrastructure using the City's GIS data
- Prepare draft TM#2 of the SSMP: Existing System.

### Phase 10 Deliverables

The following deliverables are included under Phase 10:

- Draft TM#2 – Existing System and comment response log.

### Phase 10 Assumptions

The following assumptions are made for Phase 10:

- No work will be performed on condition assessment of existing sanitary facilities (pump stations or pipelines). No assessment will be performed of the City's existing operations and maintenance activities.
- No field work is included as part of this Phase.
- The meeting for Phase 10 will occur as part of the meeting for Phase 9.

## Phase 11 Hydraulic Model Development (Sanitary)

**Objective** To develop and calibrate a sewer model for the City for use in the capacity evaluation.

### Task 11-1 Hydraulic Model Development

**Activities** The Subcontractor will create a hydraulic computer model of the City's piping and pumping facilities. The model will consist of the City's trunk pipelines and pump stations. Model pipe data will be updated from the City's GIS data. The data will be imported into the model and the pipe connectivity for all nodes will be confirmed. The model will include pipes 10-inches in diameter and greater, plus smaller main collector pipelines as needed to reach each basin. Pump stations, wet well dimensions, pump curves and pump controls will be added to the model. The flows will be added to the model geographically by mini-basin for the selected planning periods.

### Task 11-2 Hydraulic Model Calibration

**Activities** The calibration will focus on a quantitative approach based on the recommendations for hydraulic model verification contained in the "Code of Practice for the Hydraulic Modeling



of Sewer Systems,” version 3.001, published by the Wastewater Planning Group, a section of the Chartered Institution of Water and Environmental Management and the Subcontractor's expertise. Activities budgeted under Task 11-2 include:

- Calibrate the model based upon the flow monitoring data at 10 locations, and rainfall data provided by the City.
- Calibrate the model to dry weather flow conditions. Flow monitoring data will provide custom hourly diurnal curves that establish the daily flow patterns for each metering basin. Model parameters will be adjusted, as needed, to best match the flow monitoring and SCADA data.
- Calibrate the model for wet weather conditions. Rainfall information will aid in developing the required rainfall-derived infiltration/inflow (RDII) estimations that enter the collection system during a storm event. It is recommended that the use of a single calibration period incorporating several independent rainfall events should be considered whenever possible. Model results will be reviewed and adjusted, as needed, to best match the flow monitoring, rainfall and SCADA data. Flow and depth will be verified during calibration.

The flows from any unmetered basins will be developed as best as possible using a mass balance between the available existing meters, pump SCADA data, and the flow meter, and proportioned as best as possible based on development type, age, pipe material, and extent of collection system components.

### **Task 11-3 Develop Planning and System Performance Criteria**

#### **Activities**

The Subcontractor will review current and potential future design standards for the sewer system, including design depth to pipe diameter (d/D) standards and discuss the effects of conservative and less conservative standards for sanitary flows and wet weather flows with the City. The design storm and all design parameters to be used for the capacity evaluation will be established.

The Subcontractor will develop three evaluation criteria as a sensitivity analysis of the risk associated with each criterion using the calibrated CTP collection system model. The Subcontractor will present figures and charts that illustrate the relative difference in capacity deficiencies between the three criteria to allow for discussion and make a decision relative to the best criteria to be used for the analysis. The criteria to be developed will include allowable pipeline d/D values during peak flows, minimum velocities, minimum/maximum slope, and pumping requirements.

### **Task 11-4 Meetings and Documentation**

#### **Activities**

The Subcontractor will participate in a meeting with City staff to review the hydraulic model development.

The Subcontractor will prepare draft TM#3 of the SSMP: Hydraulic Model Development.

### **Phase 11 Deliverables**

The following deliverables are included under Phase 11:

- Draft TM#3 – Hydraulic Model Development and comment response log
- Meeting agenda and notes from the hydraulic modeling meeting



## Phase 11 Assumptions

The following assumptions are made for Phase 11:

- The City will obtain survey to resolve any elevation issues within the GIS
- The Subcontractor will select a commercially available SWMM-based software program for its use in this study.
- The City's GIS pipe data is assumed to have full connectivity, correct topology, and correct elevations. If the data is found to be lacking, the Subcontractor will notify the City and wait for updated data to be provided
- At the completion of the master planning process all hydraulic and hydrologic model files will be provided to the City
- The Subcontractor will not provide the software program or license. The Subcontractor will use its own version of the software for this project. The Subcontractor will not purchase software for the City or Engineer.
- Flow monitoring is not included in the scope of work.

## Phase 12 Capacity and I/I Evaluation

**Objective** To evaluate existing and future capacity, identify system deficiencies, and provide recommendations to resolve deficiencies. To review the existing I/I Program, identify potential causes for I/I, and recommend I/I reduction strategies based on flow monitoring and capacity analysis results.

### Task 12-1 Capacity Evaluation

**Activities** The Subcontractor will perform a hydraulic capacity analysis under the design storm for each basin using the calibrated model, and projected peak flow rates and system expansion developed in Phase 11. The analysis will be performed for 10-year and 20-year scenarios, and will assist in identifying any system deficiencies and improvements required to resolve deficiencies. Activities budgeted under Task 12-1 include:

- Develop future hydraulic modeling scenarios that evaluate the impact of wastewater flows under each of the planning periods. Maps will be developed showing current and future deficiencies. Develop infrastructure recommendations to resolve deficiencies
- Evaluate the capacities of the pump stations for their ability to convey peak flows under firm capacity for existing and build-out conditions. Develop pump station recommendations to resolve deficiencies. Improvements will be sized for meeting build-out conditions

### Task 12-2 Identify Potential Causes of I/I

**Activities** Activities budgeted under Task 12-2 include:

- Review basins identified with high I/I for potential causes of I/I including a history of repairs, and pipe age and material.
- Review sewer and storm GIS data to identify potential connections.
- Plot areas of high I/I on a system map to identify geographic features of I/I causes.
- Discuss I/I causes with City operations staff.



### **Task 12-3 I/I Reduction Implementation**

**Activities** Activities budgeted under Task 12-3 include:

- Identify I/I reduction strategies, such as policy development for private laterals, smoke testing, dye testing, and evaluating legal and technical approaches by other wastewater systems.
- Given results of the capacity analysis, establish I/I reduction goals for each basin to offset capital projects.
- Recommend an I/I reduction strategy,
- Prepare cost estimates, and
- Prioritize areas for implementing strategies.

### **Task 12-4 Meetings and Documentation**

**Activities** The Subcontractor will participate in a meeting with City staff to review the capacity evaluation and I/I reduction strategies.

The Subcontractor will prepare draft TM#4 of the SSMP: Capacity Evaluation and I/I Reduction Program.

### **Phase 12 Deliverables**

The following deliverables are included under Phase 12:

- Draft TM#4 – Capacity Evaluation and I/I Reduction Program and comment response log.
- Meeting agenda and notes from the capacity evaluation and I/I meeting
- Updated hydraulic model

### **Phase 12 Assumptions**

The following assumptions are made for Phase 12:

- The City will confirm performance criteria to use to evaluate the existing system.
- The City will provide input on areas with known I/I issues.

## **Phase 13 Sanitary CIP Development and Prioritization**

**Objective** To prepare sanitary CIPs to implement recommended sanitary projects outlined in Phases 9-12

### **Task 13-1 Capital Improvement Program**

**Activities** Activities budgeted under Task 13-1 include:

- **Project Prioritization.** Prioritize capacity-related projects identified in the previous tasks with City staff for inclusion in the CIP based on the severity of the deficiencies. The Subcontractor will propose project prioritization and confirm prioritization with the City.
- **Cost Estimating.** Develop budgetary numbers for pipeline replacement and pump station rehabilitation programs. Develop planning level cost estimates for all recommended projects using costs provided in other planning efforts. City to provide



recent costs for completed projects. Cost estimates for construction, site acquisition, engineering, permitting, and other contingencies will be prepared; all costs will be given in 2017 dollars

- CIP Schedule. Schedule identified projects for the two planning periods: near-term (5 year) and long-term (build-out) conditions. A summary table will present CIP projects, year for construction, and estimated costs, and will be organized according to a recommended phasing plan. Identify SDC eligibility for future funding analyses
- System Maps. Develop maps showing recommended future system pipes and facilities. Maps will include recommended projects color-coded by CIP phase and annotated with project identification numbers

### **Task 13-2 Meetings and Documentation**

**Activities** The Subcontractor will participate in a meeting with City staff to review the proposed CIPs and CIP prioritization.

The Subcontractor will prepare draft TM #5 of the SSMP: Capital Improvement Plan.

### **Phase 13 Deliverables**

The following deliverables are included under Phase 13:

- Draft TM#5 – Capital Improvement Plan and comment response log
- Meeting agenda and notes from the CIP Review meeting

### **Phase 13 Assumptions**

The following assumptions are made for Phase 13:

- An electronic CIP tool or CIP fact sheets are not included in this Scope of Work. The CIP will be listed in a single table summarizing the CIP projects and a single overview map.
- No financial analysis will be performed

## **Phase 14 Sanitary System Master Plan (SSMP) Preparation**

**Objective** To compile previous tasks mentioned in this scope of services, including incorporating all prepared chapters into a draft and final updated SSMP. To assist the City in coordinating plan review from DEQ. To assist the City and Engineer with a public comment period. Comments received from the public review meetings, adjacent sewer providers, Tri-City Service District, and the DEQ will be incorporated into the updated Plan for City Council's approval and adoption.

### **Task 14-1 Plan Development**

**Activities** Activities budgeted under Task 14-1 include:

- City Review Draft. A Master Plan report will be developed. The six technical memoranda will be updated based on City comments and included as appendices. Other appropriate appendices will be included with the Plan.
- Agency Review Draft. City comments on the City Review Draft will be incorporated into an Agency Review Draft. The City will submit Agency Review Draft to adjacent sewer providers, Tri-City Service District, and the DEQ



- Final Plan. The City will develop written responses received during the Plan Review process. The Subcontractor will incorporate comments into a comment response log and into the Final Plan. The Subcontractor's Professional Engineer will stamp the Final Plan

## **Task 14-2 Meetings and Stakeholder Outreach (SSMP)**

**Activities** Activities budgeted under Task 14-2 include:

- Agency Review Meeting. The Subconsultant will attend one (1) agency review meeting. The City will develop written responses received during Agency Review Draft Plan process. The Subconsultant will incorporate comments into a comment response log and into the Final Plan.
- Utility Advisory Board Meetings. Two (2) meetings with the City's Utility Advisory Board are expected. Provide support for developing presentation materials for Utility Advisory Board meetings. The City will lead the meetings with support by the Engineer team.
- City Council Meetings. Two (2) meetings with City Council are expected. Provide support for developing PowerPoint presentations for City Council meetings. The City will lead the meetings with support by the Engineer team.

### **Phase 14 Deliverables**

The following deliverables are included under Phase 14:

- Draft Master Plan - City Review Draft (electronic version only)
- Draft Master Plan - Agency Review Draft (electronic version only)
- Agency Review Comment Response Log
- Final Master Plan (3 hardcopies of the Final Plan with appendices, 10 hardcopies of the Final Plan not including appendices, electronic copy in Word, a searchable PDF File with bookmarks)
- Maps and/or PowerPoint presentations for Utility Advisory Board and City Council meetings.
- Final electronic documents, spreadsheets, presentations, modeling and GIS data

### **Phase 14 Assumptions**

The following assumptions are made for Phase 14:

- The Master Plan Report is expected to be concise and 20-25 pages in length. The Technical Memoranda will be included as an appendix to the Plan.
- City staff comments will be received together for inclusion in the Agency Review Draft
- No additional draft plans will be developed

Exhibit B  
Compensation

West Linn Stormwater-Sanitary MP  
April 18, 2017

West Linn, City of (OR) -- West Linn Stormwater-Sanitary MP																				
Phase	Description	Project Manager	Project Analyst	Surface Water QA/QC	Sanitary QA/QC	Project Oversight	Project Engineer	NPDES	Modeling QA/QC	Staff Engineer	Editor	Word Processor	Accountant	Total Labor Hours	Total Labor Cost	Travel	Carollo Fee	5% mark up	Total Expense Cost	Total Cost
		Wieland, Angela M	Gage, Eva D	Reininga, Krista	Whitehead, Donald M	Holland, Jonathan R	Reizlaff, Ryan G	Maxwell, Alissa M	Foged, Nathan H	Grzegorzewski, Matthew	Draheim, Daniel P	Pare, Wendy M	Vasquez, Jesus E							
		\$165	\$99	\$222	\$203	\$242	\$165	\$165	\$222	\$113	\$113	\$113	\$99							
<b>001</b>	<b>Project Management</b>	<b>124</b>	<b>26</b>	<b>6</b>	<b>42</b>	<b>4</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>18</b>	<b>248</b>	<b>40,054</b>	<b>53</b>	<b>19,758</b>	<b>988</b>	<b>20,799</b>	<b>60,853</b>
1-1	Administration	72	26	6	42	4	0	0	0	0	0	2	18	170	27,288					27,288
1-2	Coordination Meetings	32	0	0	0	0	16	0	0	0	0	0	0	48	7,920					7,920
1-3	Kickoff Meeting	20	0	0	0	0	8	0	0	0	0	2	0	30	4,846	53	0	0	53	4,899
1-4	Subconsultant PM Activities																19,758	988	20,746	20,746
<b>002</b>	<b>Basis of Planning (Stormwater)</b>	<b>58</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>48</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>284</b>	<b>40,640</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>40,690</b>
2-1	GIS Data Compilation and Review	8	0	0	0	0	12	0	0	40	0	0	0	60	7,820	0	0	0	0	7,820
2-2	Preliminary Mapping	4	0	0	0	0	8	0	0	32	0	0	0	44	5,596	0	0	0	0	5,596
2-3	SW Code Review + Audit	14	0	2	0	0	0	48	0	0	0	4	0	68	11,126	0	0	0	0	11,126
2-4	Surface Water Problem Area Workshop	32	0	2	0	0	30	0	0	48	0	0	0	112	16,098	50	0	0	50	16,148
<b>003</b>	<b>SW Field Investigation-Verification</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>152</b>	<b>22,376</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>22,526</b>
3-1	Field Verification	36	0	0	0	0	36	0	0	12	0	0	0	84	13,236	150	0	0	150	13,386
3-2	Field Data Collection	8	0	0	0	0	20	0	0	40	0	0	0	68	9,140	0	0	0	0	9,140
<b>004</b>	<b>NPDES Assessment</b>	<b>20</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>48</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>100</b>	<b>15,688</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15,688</b>
4-1	Water Quality CIP Opportunities	4	0	0	0	0	0	32	0	12	0	0	0	48	7,296	0	0	0	0	7,296
4-2	Documentation	16	0	4	0	0	8	16	0	0	2	6	0	52	8,392	0	0	0	0	8,392
<b>005</b>	<b>Hydrologic-Hydraulic Modeling (SW)</b>	<b>22</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>20</b>	<b>268</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>390</b>	<b>51,366</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>51,366</b>
5-1	Subbasin Refinement	4	0	0	0	0	8	0	0	32	0	0	0	44	5,596	0	0	0	0	5,596
5-2	Hydrologic Model Development	6	0	0	0	0	20	0	4	56	0	0	0	86	11,506	0	0	0	0	11,506
5-3	Hydraulic Model Validation + Devel	8	0	0	0	0	32	0	16	140	0	0	0	196	25,972	0	0	0	0	25,972
5-4	Model Documentation	4	0	4	0	0	8	0	0	40	2	6	0	64	8,292	0	0	0	0	8,292
<b>006</b>	<b>Preliminary SW CIP Development</b>	<b>48</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>106</b>	<b>16,574</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>16,624</b>
6-1	Potential Projects Matrix	16	0	0	0	0	8	0	0	0	0	4	0	28	4,412	0	0	0	0	4,412
6-2	CIP Planning Workshop	32	0	4	0	0	24	0	0	16	0	2	0	78	12,162	50	0	0	50	12,212
<b>007</b>	<b>SW CIP Devel-Prioritization</b>	<b>34</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>4</b>	<b>124</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>238</b>	<b>33,318</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>33,368</b>
7-1	Flood Control CIP Design	6	0	0	0	0	24	0	4	56	0	0	0	90	12,166	50	0	0	50	12,216
7-2	CIP Estimation-Documentaiton	12	0	8	0	0	32	0	0	68	2	2	0	124	17,172	0	0	0	0	17,172
7-3	SW CIP Prioritization-Scheduling	16	0	4	0	0	0	0	0	0	0	4	0	24	3,980	0	0	0	0	3,980
<b>008</b>	<b>SMP Preparation</b>	<b>76</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>24</b>	<b>32</b>	<b>0</b>	<b>320</b>	<b>47,056</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>47,356</b>
8-1	Draft SMP Development	24	0	12	0	0	60	0	0	40	8	16	0	160	23,756	0	0	0	0	23,756
8-2	Draft Final + Final Development	24	0	0	0	0	24	0	0	16	8	8	0	80	11,536	150	0	0	150	11,686
8-3	Meetings-Stakeholder Outreach	28	0	4	0	0	16	0	0	16	8	8	0	80	11,764	150	0	0	150	11,914

Exhibit B  
Compensation

Phase	Description	Wieland, Angela M	Gage, Eva D	Reininga, Krista	Whitehead, Donald M	Holland, Jonathan R	Reizlaff, Ryan G	Maxwell, Alissa M	Foged, Nathan H	Grzegorzewski, Matthew	Draheim, Daniel P	Pare, Wendy M	Vasquez, Jesus E	Total Labor Hours	Total Labor Cost	Travel	Carollo Fee	5% mark up	Total Expense Cost	Total Cost		
<b>009</b>	<b>Basis of Planning (Sanitary)</b>																		<b>30,478</b>	<b>1,524</b>	<b>32,002</b>	<b>32,002</b>
9-1	Data Review-Gap Analysis																		13,800	690	14,490	14,490
9-2	Flow Projections																		6,458	323	6,781	6,781
9-3	Meetings + Documentation																		10,220	511	10,731	10,731
<b>010</b>	<b>Existing System Assmt (Sanitary)</b>																		<b>10,322</b>	<b>516</b>	<b>10,838</b>	<b>10,838</b>
10-1	Existing System Review																		2,338	117	2,455	2,455
10-2	Meetings + Documentation																		7,984	399	8,383	8,383
<b>011</b>	<b>Hydraulic Model Devel (Sanitary)</b>																		<b>45,154</b>	<b>2,258</b>	<b>47,412</b>	<b>47,412</b>
11-1	Hydraulic Model Development																		15,166	758	15,924	15,924
11-2	Hydraulic Model Calibration																		17,182	859	18,041	18,041
11-3	Devel Planng & Sys Perform Criteria																		3,554	178	3,732	3,732
11-4	Meetings + Documentation																		9,252	463	9,715	9,715
<b>012</b>	<b>Capacity + I/I Evaluation</b>																		<b>37,690</b>	<b>1,885</b>	<b>39,575</b>	<b>39,575</b>
12-1	Capacity Evaluation																		16,164	808	16,972	16,972
12-2	Identify Potential Causes of I/I																		4,128	206	4,334	4,334
12-3	I/I Reduction Implementation																		5,448	272	5,720	5,720
12-4	Meetings + Documentation																		11,950	598	12,548	12,548
<b>013</b>	<b>Sanitary CIP Devel-Prioritization</b>																		<b>22,592</b>	<b>1,130</b>	<b>23,722</b>	<b>23,722</b>
13-1	CIP																		12,884	644	13,528	13,528
13-2	Meetings + Documentation																		9,708	485	10,193	10,193
<b>014</b>	<b>SSMP Preparation</b>																		<b>39,730</b>	<b>1,987</b>	<b>41,717</b>	<b>41,717</b>
14-1	Plan Development																		24,420	1,221	25,641	25,641
14-2	Meetings-Stakeholder Outreach																		15,310	766	16,076	16,076
<b>TOTALS</b>		<b>426</b>	<b>26</b>	<b>50</b>	<b>42</b>	<b>4</b>	<b>394</b>	<b>96</b>	<b>24</b>	<b>664</b>	<b>30</b>	<b>64</b>	<b>18</b>	<b>1,838</b>	<b>267,072</b>	<b>653</b>	<b>205,724</b>	<b>10,286</b>	<b>216,663</b>	<b>483,735</b>		

**Notes:**

Hours and dollars are rounded to nearest whole number.  
The rate schedule may be updated annually (January 1st of each following year) for escalation of rates.  
Miscellaneous project expenses (CAD Services, software licenses, color graphics, copying printing, personal computer, etc.) are included in the hourly rates and not billed separately.  
Employee travel time will be billed at hourly rates. Mileage charges will be billed at the Internal Revenue Service's standard mileage rates.