PROFESSIONAL SERVICES AGREEMENT
CIVIL ENGINEERING, GEOTECHNICAL, ARCHITECTURE, AND OTHER RELATED PROFESSIONAL SERVICES

THIS AGREEMENT is between the City of Newport, an Oregon municipal corporation (City), and **HDR Engineering, Inc.**, a Nebraska corporation, which is registered to practice Civil Engineering in the State of Nebraska (Consultant).

RECITALS

A. Pursuant to OAR 137-048-0220, the City of Newport (City) solicited proposals for professional Consulting services to assist the City in CIVIL ENGINEERING, GEOTECHNICAL, ARCHITECTURE, AND OTHER RELATED PROFESSIONAL SERVICES.

B. After reviewing all proposals, the City has selected HDR Engineering, Inc. (Consultant) as the most qualified Consultant to provide the proposed services.

C. Consultant is willing and qualified to perform such services.

TERMS OF AGREEMENT

1. Consultant's Scope of Services

Consultant shall perform professional Consulting services related to Civil Engineering. The City is free to utilize other consultants as it deems appropriate.

2. Effective Date and Duration

This agreement is effective on execution by both parties and shall expire, unless otherwise terminated or extended, after three years. The parties may extend the term by mutual agreement.

3. Consultant's Tasks, Fee, and Schedules

A. Fee

Fees for services under this Agreement shall be based on time and materials and pursuant to the rates shown in Exhibit A. Consultant may increase the rates shown in Exhibit A on an annual basis, subject to the written approval of the City. Consultant will alert the City when Consultant is increasing its fees. Consultant will bill for progress payments on a monthly basis. In order to determine the maximum monetary limit for each task, Consultant will submit a schedule and a labor hour estimate based on the rates shown in Exhibit A. Consultant will invoice monthly progress payments based on actual time worked on the project. The maximum monetary limit will not be exceeded without prior written approval by the City. Projects partially completed may be paid for in proportion to the degree of completion.

Consultant will be reimbursed for direct charges such as the cost of printing, postage, delivery services, and sub consultant fees. Unless specifically noted in the Task Order, direct charges will be billed at cost without any markup. Office expenses such as computer cost, telephone calls, and

overhead expenses are incidental and are included in the hourly rates shown in Exhibit A.

B. Payment Schedule for Basic Fee

Payments shall be made within 30 days of receipt of monthly billings based on the work completed. Payment by the City shall release the City from any further obligation for payment to the Consultant for service or services performed or expenses incurred as of the date of the statement of services. Payment shall be made only for work actually completed as of the date of invoice. Payment shall not be considered acceptance or approval of any work or waiver of any defects therein.

C. Task Orders

The Consultant shall provide the City a scope of work that shall be approved by the City as part of a task order before any work is completed. The scope of work shall include a description of the work and significant work items, projected hours and costs, significant milestones and deliverables, and a schedule including a Gantt chart and critical path diagram. Depending upon the cost of the work, approval may be required by the City Council before work is authorized

D. Certified Cost Records

Consultant shall furnish certified cost records for all billings to substantiate all charges. Consultant's accounts shall be subject to audit by the City. Consultant shall submit billings in a form satisfactory to the City. At a minimum, each billing shall identify the Task Order under such work is performed, work completed during the billing period, percentage of work completed to date, and percentage of budget used to date for each task.

E. Identification

Consultant shall furnish to the City its employer identification number.

F. Payment – General

1) Consultant shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

2) Consultant shall pay employees at least time and a half pay for all overtime worked in excess of 40 hours in any one week except for individuals under the contract who are excluded under ORS 653.010 to 653.261 or under 29 USC sections 201 to 209 from receiving overtime. Any subcontractors utilized by Consultant under this Agreement will be paid according to the then prevailing wage.

3) Consultant 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 Consultant or all sums which Consultant agrees to pay for such services and all moneys and sums which Consultant 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.

4) Consultant shall make payments promptly, as due, to all persons supplying services or materials for work covered under this contract. Consultant shall not permit any lien or claim to be filed or prosecuted against the City on any account of any service or materials furnished.

5) If Consultant fails, neglects or refuses to make prompt payment of any claim for labor, materials, or services furnished to Consultant, sub-consultant or subcontractor by any person as such claim becomes due, City may pay such claim and charge the amount of the payment against funds due or to become due to the Consultant. The payment of the claim in this manner shall not relieve Consultant or its surety from obligation with respect to any unpaid claims.

G. Schedule

Consultant shall provide services under this Agreement in accordance with the Project Schedule.

4. Ownership of Plans and Documents: Records; Confidentiality

A. Definitions. As used in this Agreement, the following terms have the meanings set forth below:

1) Consultant Intellectual Property means any intellectual property owned by Consultant and developed independently from this Agreement that is applicable to the Services or included in the Work Product.

2) Third Party Intellectual Property means any intellectual property owned by parties other than City or Consultant that is applicable to the Services or included in the Work Product.

3) Work Product means the Services Consultant delivers or is required to deliver to City under this Agreement. Work Product includes every invention, discovery, work of authorship, trade secret or other tangible or intangible item and all intellectual property rights therein, and all copies of plans, specifications, reports and other materials, whether completed, partially completed or in draft form.

B. Work Product

1) Except as provided elsewhere in this Agreement, all Work Product created by Consultant pursuant to this Agreement, including derivative works and compilations, and whether or not such Work Product is considered a "work made for hire" or an employment to invent, shall be the exclusive property of City. City and Consultant agree that such original works of authorship are "work made for hire" of which City is the author within the meaning of the United States Copyright Act. To the extent that City is not the owner of the intellectual property rights in such Work Product, Consultant hereby irrevocably assigns to City any and

all of its rights, title, and interest in all original Work Product created pursuant to this Agreement, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrine. Upon City's reasonable request, Consultant shall execute such further documents and instruments necessary to fully vest such rights in City. Consultant forever waives any and all rights relating to original Work Product created pursuant to this Agreement, including without limitation, any and all rights arising under 17 USC §106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications.

2) In the event Consultant Intellectual Property is necessary for the use of any Work Product, Consultant hereby grants to City an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use Consultant Intellectual Property, including the right of City to authorize contractors, Consultants and others to use Consultant Intellectual Property, for the purposes described in this Agreement.

3) In the event Third Party Intellectual Property is necessary for the use of any Work Product, Consultant shall secure on City's behalf and in the name of City, an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the Third Party Intellectual Property, including the right of City to authorize contractors, Consultants and others to use the Third Party Intellectual Property, for the purposes described in this Contract.

4) In the event Work Product created by Consultant under this Agreement is a derivative work based on Consultant Intellectual Property or is a compilation that includes Consultant Intellectual Property, Consultant hereby grants to City an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the pre-existing elements of Consultant Intellectual Property employed in the Work Product, including the right of City to authorize contractors, Consultants and others to use the pre-existing elements of Consultant Intellectual Property employed in a Work Product, for the purposes described in this Agreement.

5) In the event Work Product created by Consultant under this Agreement is a derivative work based on Third Party Intellectual Property, or a compilation that includes Third Party Intellectual Property, Consultant shall secure on City's behalf and in the name of City an irrevocable, non-exclusive, non-transferable, perpetual, royalty-free license to use the pre-existing elements of the Third Party Intellectual Property, including the right to authorize contractors, Consultants and others to use the pre-existing elements of the Third Party Intellectual Property, for the purposes described in this Agreement.

6) To the extent permitted by the Oregon Constitution and by the Oregon Tort Claims Act, Consultant shall be indemnified and held harmless by City from liability arising out of re-use or alteration of the Work Product by City which was not specifically contemplated and agreed to by the Parties in this Agreement.

7) Consultant may refer to the Work Product in its brochures or other literature that

Consultant utilizes for advertising purposes and, unless otherwise specified, Consultant may use standard line drawings, specifications and calculations on other, unrelated projects.

C. Confidential Information

1) Consultant acknowledges that it or its employees, Sub-Consultants, subcontractors or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is the confidential information of City or City's residents. Any and all information provided by City and marked confidential, or identified as confidential in a separate writing, that becomes available to Consultant or its employees, Sub-Consultants, subcontractors or agents in the performance of this Agreement shall be deemed to be confidential information of City ("Confidential Information"). Any reports or other documents or items, including software, that result from Consultant's use of the Confidential Information and any Work Product that City designates as confidential are deemed Confidential Information. Confidential Information shall be deemed not to include information that: (a) is or becomes (other than by disclosure by Consultant) publicly known; (b) is furnished by City to others without restrictions similar to those imposed by this Agreement; (c) is rightfully in Consultant's possession without the obligation of nondisclosure prior to the time of its disclosure under this Agreement; (d) is obtained from a source other than City without the obligation of confidentiality; (e) is disclosed with the written consent of City; or (f) is independently developed by employees or agents of Consultant who can be shown to have had no access to the Confidential Information; or (g) is required to be disclosed by law, subpoena, or other court order.

2) Consultant agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Consultant uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to City under this Agreement, and to advise each of its employees, Sub-Consultants, subcontractors and agents of their obligations to keep Confidential Information confidential. Consultant shall use its best efforts to assist City in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the generality of the foregoing, Consultant shall advise City immediately in the event Consultant learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Consultant will at its expense cooperate with City in seeking injunctive or other equitable relief in the name of City or Consultant against any such person. Consultant agrees that, except as directed by City, Consultant will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, except in accordance with this Agreement, and that upon termination of this Agreement or at City's request, Consultant will turn over to City all documents, papers, and other matter in

Consultant's possession that embody Confidential Information.

3) Consultant acknowledges that breach of this Section 4, including disclosure of any Confidential Information, will give rise to irreparable injury to City that is inadequately compensable in damages. Accordingly, City may seek and obtain injunctive relief against the breach or threatened breach of this Section 4, in addition to any other legal remedies that may be available. Consultant acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interests of City and are reasonable in scope and content.

5. Assignment/Delegation

Neither party shall assign or transfer any interest in or duty under this Agreement without the written consent of the other. If City agrees to assignment of tasks to a subcontractor, Consultant shall be fully responsible for the acts or omissions of any subcontractors. Any approval of a subcontractor does not create a contractual relationship between the subcontractor and City.

6. Consultant is Independent Contractor

A. The City's project director, or designee, shall be responsible for determining whether Consultant's work product is satisfactory and consistent with this Agreement, but Consultant is not subject to the direction and control of the City. Consultant shall be an independent contractor for all purposes and shall not be entitled to compensation other than the compensation provided for under Section 3 of this Agreement. The City's acceptance of the work product as satisfactory does not relieve the Consultant from responsibility for any errors in the work product.

B. Consultant is an independent contractor and not an employee of City. Consultant acknowledges Consultant's status as an independent contractor and acknowledges that Consultant is not an employee of the City for purposes of workers compensation law, public employee benefits law, or any other law. All persons retained by Consultant to provide services under this Agreement are employees of Consultant and not of City. Consultant acknowledges that it is not entitled to benefits of any kind to which a City employee is entitled and that it shall be solely responsible for workers compensation coverage for its employees and all other payments and taxes required by law. Furthermore, in the event that Consultant is found by a court of law or an administrative agency to be an employee of the City for any purpose, City shall be entitled to offset compensation due, or to demand repayment of any amounts paid to Consultant under the terms of the Agreement, to the full extent of any benefits or other remuneration Consultant receives (from City or third party) as a result of the finding and to the full extent of any payments that City is required to make as a result of the finding.

C. The Consultant 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 the Consultant, either directly or indirectly, in connection with the letting or performance of this Agreement, except as specifically declared in writing.

D. Consultant certifies that it currently has a City business license or will obtain one prior to delivering services under this Agreement.

E. Consultant is not an officer, employee, or agent of the City as those terms are used in ORS 30.265.

7. Indemnity

A. The City has relied upon the professional ability and training of the Consultant as a material inducement to enter into this Agreement. Consultant represents to the City that the work under this Agreement will be performed in accordance with the professional standards of skill and care ordinarily exercised by members of the Civil Engineering profession under similar conditions and circumstances as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of a Consultant's work by the City shall not operate as a waiver or release. Acceptance of documents by City does not relieve Consultant of any responsibility for design deficiencies, errors or omissions.

B. Consultant shall defend, hold harmless and indemnify the City, its officers, agents, and employees from all claims, suits, or actions to the extent caused by the alleged negligent or otherwise wrongful acts or omissions of Consultant or its subcontractors, sub-Consultants, agents or employees under this Agreement. This indemnification does not extend to indemnification for negligent or otherwise wrongful acts or omissions of the City. If any aspect of this indemnity shall be found to be illegal or invalid for any reason whatsoever, the illegality or invalidity shall not affect the validity of the remainder of this indemnification.

C. Consultant shall save and hold harmless the City, its officers, agents, and employees from all claims, suits, or actions and all expenses incidental to the investigation and defense thereof, to the extent caused by the professional negligent acts, errors or omissions of Consultant or its subcontractors, sub-Consultants, agents or employees in performance of professional services under this Agreement. Any design work by Consultant that results in a design of a facility that does not comply with applicable laws including accessibility for persons with disabilities shall be considered a professionally negligent act, error or omission.

D. As used in subsections B and C of this section, a claim for professional responsibility is a claim made against the City in which the City's alleged liability results directly or indirectly, in whole or in part, from the quality of the professional services provided by Consultant, regardless of the type of claim made against the City. A claim for other than professional responsibility is a claim made against the City in which the City's alleged liability results from an act or omission by Consultant unrelated to the quality of professional services provided by Consultant.

8. Insurance

Consultant and its subcontractors shall maintain insurance acceptable to City in full force and effect throughout the term of this Agreement as detailed in this section. The insurance shall cover all risks arising

directly or indirectly out of Consultant's activities or work hereunder, including the operations of its subcontractors of any tier.

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

A. Commercial General Liability Insurance

Comprehensive General Liability Insurance covering Bodily Injury and Property Damage on an "occurrence" form with policy limits of at least per occurrence. This coverage shall include Contractual Liability insurance for the indemnity provided under this Agreement in an amount of $2,000,000.

B. Professional Liability

Professional Liability Insurance covering any damages caused by an error, omission or any negligent acts. Combined single limit per claim shall not be less than $1,300,000, or the equivalent. Annual aggregate limit shall not be less than $2,000,000 and filed on a "claims-made" form.

C. Commercial Automobile Insurance

Commercial Automobile Liability coverage on an "occurrence" form including coverage for all owned, hired, and non-owned vehicles. The Combined Single Limit per occurrence shall not be less than $1,300,000.

D. Workers' Compensation Insurance

The Consultant, its subcontractors, if any, and all employers providing work, labor or materials under this Agreement 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 Oregon workers' compensation coverage for their workers who work at a single location within Oregon for more than 30 days in a calendar year. Consultants who perform work without the assistance or labor of any employee need not obtain such coverage.

E. Additional Insured Provision

The Commercial General Liability Insurance Policy shall include the City its officers, directors, and employees as additional insureds with respect to this Agreement. Coverage will be endorsed to provide a per project aggregate.

F. Extended Reporting Coverage

If any of the liability insurance is arranged on a "claims made" basis, Extended Reporting coverage will be required at the completion of this Agreement to a duration of 24 months or the maximum time period the Consultant's insurer will provide if less than 24 months. Consultant will be responsible for furnishing certification of Extended Reporting coverage as described or

continuous "claims made" liability coverage for 24 months following Agreement completion. Continuous "claims made" coverage will be acceptable in lieu of Extended Reporting coverage, provided its retroactive date is on or before the effective date of this Agreement. Coverage will be endorsed to provide a per project aggregate.

G. 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 30 days' notice of cancellation provision shall be physically endorsed on to the policy.

H. Insurance Carrier Rating

Coverage provided by the Consultant 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.

I. Certificates of Insurance

As evidence of the insurance coverage required by the Agreement, the Consultant shall furnish a Certificate of Insurance to the City. No Agreement 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 Agreement. A renewal certificate will be sent to the address below ten days prior to coverage expiration.

J. Primary Coverage Clarification

The parties agree that Consultant's 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. Copy of Policy or Certificate of Insurance

A cross-liability clause or separation of insureds clause will be included in the general liability policy required by this Agreement. Consultant shall furnish City with at least 30-days written notice of cancellation of, or any modification to, the required insurance coverages. A copy of each insurance policy, certified as a true copy by an authorized representative of the issuing insurance company, or at the discretion of City, in lieu thereof, a certificate in form satisfactory to City certifying to the issuance of such insurance shall be forwarded to:

Timothy Gross, PE
Director of Public Works/City Engineer
City of Newport
169 SW Coast Highway
Newport, Oregon 97365

Thirty days cancellation notice shall be provided City by certified mail to the name at the address

listed above in event of cancellation or non-renewal of the insurance. The procuring of the required insurance shall not be construed to limit Consultant's liability under this agreement. The insurance does not relieve Consultant's obligation for the total amount of any damage, injury, or loss caused by negligence or neglect connected with this Agreement.

9. Termination Without Cause

At any time and without cause, City shall have the right in its sole discretion, to terminate this Agreement by giving notice to Consultant. If City terminates the Agreement pursuant to this section, Consultant shall be entitled to payment for services provided prior to the termination date.

10. Termination with Cause

A. City may terminate this Agreement effective upon delivery of written notice to Consultant, 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 Consultant, its subcontractors, agents, and employees to provide the services required by this Agreement is for any reason denied, revoked, or not renewed.

Any 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 Agreement) to Consultant, may terminate this Agreement:

1) If Consultant fails to provide services called for by this Agreement within the time specified, or

2) If Consultant fails to perform any of the other provisions of this Agreement, or 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 days or such other period as City may authorize.

C. If City terminates this Agreement, it shall pay Consultant for all undisputed invoices tendered for services provided prior to the date of termination.

D. Damages for breach of Agreement shall be those allowed by Oregon law, reasonable and necessary attorney fees, and other costs of litigation at trial and upon appeal.

11. Non-Waiver

The failure of City to insist upon or enforce strict performance by Consultant 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.

12. Notice

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:

IF TO CITY OF NEWPORT

Timothy Gross
Director of Public Works/City Engineer
City of Newport
169 SW Coast Highway
Newport, OR 97365
541-574-3366
t.gross@newportoregon.gov

IF TO CONSULTANT:

David Moyano
HDR Engineering, Inc.
1001 SW 5th Avenue, Suite 1800
Portland, OR 97204
503-423-3700
david.moyano@hdrinc.com

The date of deposit in the mail shall be the notice date for first class mail. All other notices, bills and payments shall be effective at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving written notice pursuant to this paragraph.

13. 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.

14. Force Majeure

Neither City nor Consultant 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 disenabled, 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 subcontractors or supplies due to such cause; provided that the parties so disenabled shall within ten 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-Discrimination

Consultant agrees to comply with all applicable requirements of federal and state statutes, rules, and regulations. By way of example only, Consultant also shall comply with the Americans with Disabilities Act of 1990, ORS 659.425, and all regulations and administrative rules established pursuant to those laws.

16. Errors

Consultant 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.

17. Extra Work

Extra work or work on Contingency Tasks is not authorized unless the City authorizes the additional or contingency work in writing. Failure of Consultant to secure written authorization for extra work shall constitute a waiver of all right to adjustment in the Agreement price or Agreement time due to unauthorized extra work and Consultant shall be entitled to no compensation for the performance of any extra work not authorized in writing.

18. Governing Law

The Agreement is subject to Oregon law. Any action or suits involving any question arising under this Agreement must be brought in the appropriate court in Lincoln County, Oregon.

19. Compliance with Applicable Law

Consultant shall comply with all federal, state, and local laws and ordinances applicable to the work under this Agreement, including but not limited to those set forth in ORS 279A, B & C. While all required contractual provisions are included in Exhibit B, Consultant shall be familiar with and responsible for compliance with all other applicable provisions of the Oregon Public Contracting Code.

20. Conflict Between Terms

This instrument shall control in the event of any conflict between terms between this document and the RFP and/or proposal.

21. Access to Records

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

22. Audit

Consultant shall maintain records to assure conformance with the terms and conditions of this Agreement, and to assure adequate performance and accurate expenditures within the Agreement period. Consultant agrees to permit City or its duly authorized representatives to audit all records pertaining to this Agreement to assure the accurate expenditure of funds.

23. 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.

24. Industrial Accident Fund Payment

Consultant shall pay all contributions or amount due the Industrial Accident Fund that Consultant or subcontractors incur during the performance of this Agreement.

25. Arbitration

All claims, disputes, and other matters in question between the City and Consultant arising out of, or relating to this Contract, including rescission, reformation, enforcement, or the breach thereof except for claims which may have been waived by the making or acceptance of final payment, may be decided by binding arbitration in City's sole discretion, in accordance with the Oregon Uniform Arbitration Act, ORS 36.600, et seq. and any additional rules mutually agreed to by both parties. If the parties cannot agree on rules within ten (10) days after the notice of demand, the presiding judge of the Lincoln County Circuit Court will establish rules to govern the arbitration.

A claim by Consultant arising out of, or relating to this Contract must be made in writing and delivered to the City Administrator not less than 30 days after the date of actual notice of the occurrence giving rise to the claim. Failure to file a claim with the City Administrator within 30 days of actual notice of the date of the occurrence that gave rise to the claim shall constitute a waiver of the claim. A claim filed with the City Administrator will be considered by the City Board at the Board's next regularly scheduled meeting. At that meeting the Board will render a written decision approving or denying the claim. If the claim is denied by the Board, the Consultant may file a written request for arbitration with the City Administrator. No demand for arbitration shall be effective until the City Board has rendered a written decision denying the underlying claim. No demand for arbitration shall be made later than thirty (30) days after the date on which the City has rendered a written decision on the underlying claim. The failure to demand arbitration within said 30 days shall result in the City Board's decision being binding upon the City and Consultant.

Notice of demand for arbitration shall be filed in writing with the other party to the agreement, subject to applicable statutes of limitation, except as set forth above. The City, if not the party demanding arbitration, has the option of allowing the matter to proceed with binding arbitration or by written notice within five (5) days after receipt of a demand for arbitration, to reject arbitration and require the Consultant to proceed through the courts for relief. If arbitration is followed, the parties agree that the award rendered by the arbitrators will be final, judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to modifications or appeal except to the extent permitted by Oregon law.

26. Attorney Fees

If suit, action or arbitration is brought either directly or indirectly to rescind, reform, interpret or enforce the terms of this contract, the prevailing party shall recover and the losing party hereby agrees to pay

reasonable attorney's fees incurred in such proceeding, in both the trial and appellate courts, as well as the costs and disbursements. Such costs and fees shall bear interest at the maximum legal rate from the date incurred until the date paid by losing party.

27. Complete Agreement

This Agreement and any exhibit(s) hereto and any and all Task Orders executed by the parties constitute 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. Any 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 herein regarding this Agreement. In the event of a conflict between the documents comprising this Agreement, interpretation shall occur in the following manner: 1) each individual Task Order; 2) this Agreement and any exhibits hereto; and 3) the RFP and Response. The following exhibits are attached to and incorporated into this Agreement:

A. Exhibit A – Fees;
B. Exhibit B – Oregon Public Contracting Code/required contractual provisions
C. Exhibit C – Consultant of Record RFP and Consultant's Proposal.

28. Miscellaneous

A. Consultant agrees that news releases and other publicity relating to the subject of this Agreement will be made only with the prior written consent of City.
B. Consultant shall comply with all virus-protection, access control, back-up, password, and other security and other information technology policies of City when using, having access to, or creating systems for any of City's computers, data, systems, personnel, or other information resources.
C. Consultant will include in all contracts with subcontractors appropriate provisions as required by ORS 279C.580.
D. Consultant will comply with environmental and natural resources regulations as set forth in ORS 279B.525 and regulations relating to the salvaging, recycling, composting or mulching yard waste material, and salvage and recycling of construction and demolition debris as set forth in ORS 279B.225 and 270C.510.

By their signatures hereunder, the parties acknowledge they have read and understand this Agreement and agree to be bound by its terms. This Agreement is effective on the date last signed below by a party below:

CITY OF NEWPORT:

Spencer Nebel, City Manager

Date: 5-5-17

HDR Engineering, Inc.:

By:

Its: Vice President

Date: 4-6-17

EXHIBIT A
CONSULTANT'S FEE SCHEDULE

City of Newport OR
Rate and Expense Schedule
Effective Jan 1, 2017 through Dec 31, 2017

Labor Classification	2017 Rate
Principal in Charge	204
QC/Technical Advisor	280
Project Manager II	210
Project Manager	170
Engineer IV	210
Engineer III	165
Engineer II	135
Engineer I	105
Scientist/Planner IV	180
Scientist/Planner III	150
Scientist/Planner II	125
Scientist/Planner I	100
Technician IV	165
Technician III	140
Technician II	105
Technician I	85

Expenses	
Travel, Mileage, Per Diem	GSA Rate
Other Direct Costs	At Cost
Subconsultants	5% Markup

EXHIBIT B
Oregon Public Contracting Requirements

ORS CHAPTER 279B PUBLIC CONTRACTING REQUIREMENTS FOR THE PURCHASE OF GOODS AND SERVICES

(1) Contractor shall pay promptly, as due, all persons supplying labor or materials for the prosecution of the work provided for in the contract, and shall be responsible for such payment of all persons supplying such labor or material to any Subcontractor. ORS 279B.220(1).

(2) Contractor shall promptly pay all contributions or amounts due the Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the contract. ORS 279B.220(2).

(3) Contractor shall not permit any lien or claim to be filed or prosecuted against the Contracting Agency on account of any labor or material furnished and agrees to assume responsibility for satisfaction of any such lien so filed or prosecuted. ORS 279B.220(3).

(4) Contractor and any Subcontractor shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.617. ORS 279B.220(4).

(5) Contractor agrees that if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or materials furnished to the Contractor or a Subcontractor by any person in connection with the contract as such claim becomes due, the City may pay such claim to the persons furnishing the labor or material and charge the amount of payment against funds due or to become due Contractor by reason of the contract. The payment of a claim in the manner authorized hereby shall not relieve the Contractor or his surety from his or its obligation with respect to any unpaid claim. If the City is unable to determine the validity of any claim for labor or material furnished, the City may withhold from any current payment due Contractor an amount equal to said claim until its validity is determined and the claim, if valid, is paid.

(6) Contractor shall promptly, as due, make payment to any person, copartnership, association, or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to employees of such Contractor, of all sums which the Contractor agrees to pay for such services and all monies and sums which the 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. ORS 279B.230(1).

(7) All subject employers working under the contractor are either employers that will comply with ORS 656.017, or employers that are exempt under ORS 656.126. ORS 279B.230(2).

(8) Contractor shall pay employees for overtime work performed under the contract in accordance with ORS 653.010 to 653.261 and the Fair Labor Standards Act of 1938 (29 USC 201, et seq). ORS 279B.235(3).

(9) The Contractor must give notice to employees who work on this contract in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and the days per week that the employees may be required to work. ORS 279B.235(2).

(10) All sums due the State Unemployment Compensation Fund from the Contractor or any Subcontractor in connection with the performance of the contract shall be promptly so paid. ORS 701.430.

(11) The contract may be canceled at the election of City for any willful failure on the part of Contractor to faithfully perform the contract according to its terms.

(12) Contractor certifies compliance with all applicable Oregon tax laws, in accordance with ORS 305.385.

(13) Contractor certifies that it has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontractors. ORS 279A.110.

(14) As used in this section, "nonresident contractor" means a contractor that has not paid unemployment taxes or income taxes in the state of Oregon during the 12 calendar months immediately preceding submission of the bid for the contract, does not have a business address in this state, and stated in the bid for the contract that it was not a "resident bidder" under ORS 279A.120. When a public contract is awarded to a nonresident contractor and the contract price exceeds $10,000, the contractor shall promptly report to the Department of Revenue on forms to be provided by the department the total contract price, terms of payment, length of contract and such other information as the department may require before the bidder may receive final payment on the public contract. ORS 279A.120.

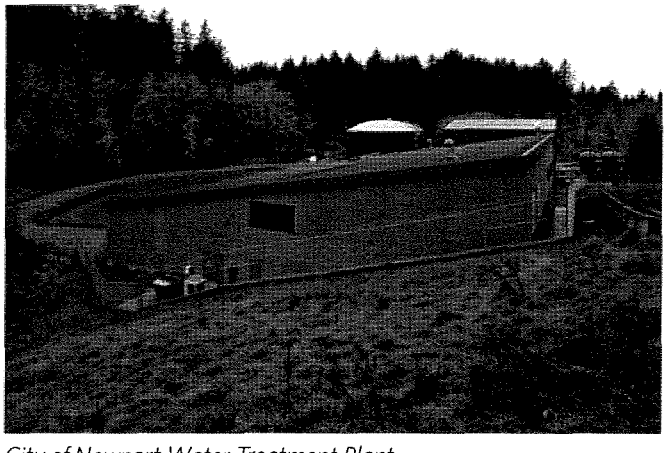
EXHIBIT C
Consultant's Proposal

NEWPORT
OREGON

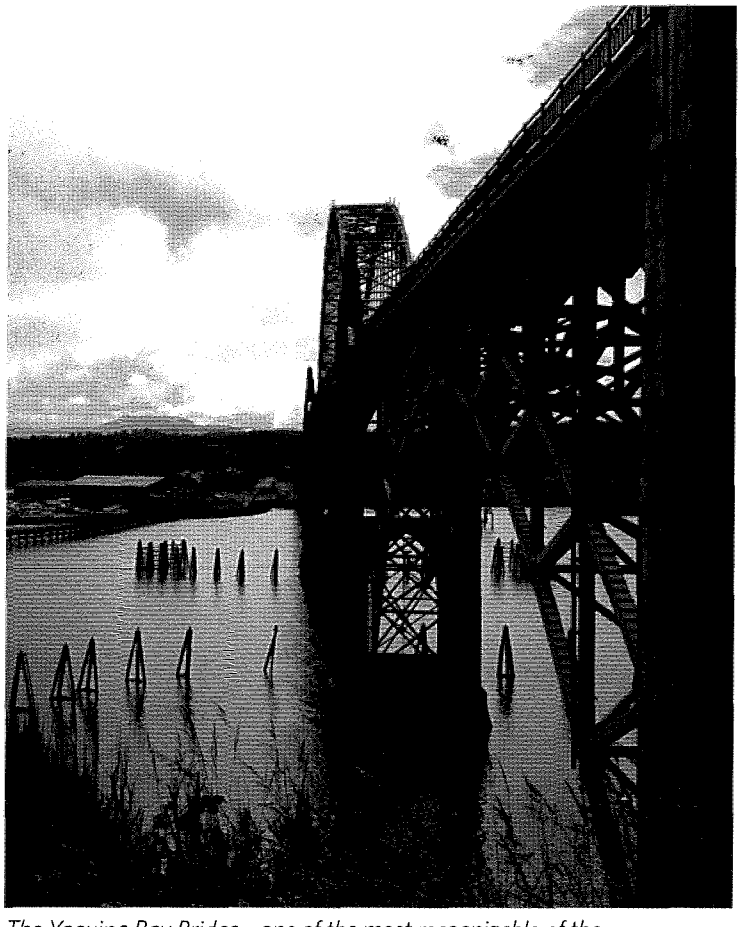
Statement of Proposals

Civil Engineering, Geotechnical, Architecture, and Other Related Professional Services

City of Newport



City of Newport Water Treatment Plant.



The Yaquina Bay Bridge - one of the most recognizable of the U.S. Route 101 bridges.

HDR

July
2016

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City of Newport
169 SW Coast Highway
Newport, OR 97365
Attn: Timothy Gross, PE - Director of Public Works/City Engineer

July 1, 2016

Re: Request for Proposals - Civil Engineering, Geotechnical, Architecture, and Other Related Professional Services

Dear Mr. Gross,

HDR has been serving the City for the past 7 years starting with delivery of the new wastewater treatment plant. We are dedicated to the City's success and bring the following benefits to this project:

HDR brings:

- **Staff with direct experience working with the City of Newport.** HDR has worked with the City on numerous projects including the new Water Treatment Plant, GAC expansion and standby generator addition, optimization report for the solids handling facilities at the wastewater plant, working closely with the Grants consultant of record to provide technical expertise, and being the Dam Consultant of Record.
- **Ability to provide most requested Civil and Other services under one roof.** Our philosophy is to be an expertise-driven, professional-services firm that delivers tailored solutions through a strong local presence. HDR has the advantage of being able to provide full-service civil engineering solutions and other related professional services for the execution of your Capital Improvement Plan projects with a strong group of engineering, construction management, planning, and natural resources personnel all located in HDR's Portland office. HDR also has the flexibility to come to Newport on demand when there is a need for an engineer to be on site.
- **Extensive regional staff resources.** Supporting our local team, HDR has deep resources in the Northwest - over 1,100 staff that the City can access quickly and efficiently to serve your community's needs. These experienced staff are backed by the firm's national resources of over 9,500 personnel. Our ability to access company-wide resources and expertise is a great strength that you can use to meet your project needs.

With our proven dedication to the City, ability to meet schedule and budget demands, technical expertise, and client-service philosophy, HDR will be your partner for success. The consultant accepts all the terms and conditions contained in the Request for Proposals. Though, HDR has reviewed the City's Professional Services Agreement contract and respectfully requests the opportunity to discuss potential changes to the contract. Our intent in requesting changes if for the contract to be consistent with our insurance coverage to protect the interests of both the City and HDR. Our proposal is not conditioned on acceptance of any proposed changes. This proposal shall be considered valid for 120 days after the submission deadline. All materials and documents acquired or produced by the consultant in conjunction with a resulting contract shall be delivered to and become the property of the City of Newport without restriction or limitation of their future use. HDR will abide by the conditions of the City's Professional Services agreement and can provide insurance coverage as required.

Please feel free to contact Verena at 503.423.3756 if you have questions regarding our submittal or would like more information about HDR and our commitment to serving Newport. Oregon tax ID: 47-0680568.

Sincerely,

HDR Engineering, Inc.

hdrinc.com

David C. Moyano, PE, SE
Vice President and Oregon Area Manager
David.Moyano@hdrinc.com

Verena Winter, PE
Project Manager
Verena.Winter@hdrinc.com

1001 SW 5th Avenue, Suite 1800, Portland, OR 97204
T 503.423.3700 **F** 503.423.3737

Understanding and Approach

A. Overall Approach to One Example Project from the Declared Category

Per the RFP, HDR has provided an Understanding of the Civil Engineering challenges facing the City. This understanding provides the foundation of how our team will work with the City to hone our approach, continue to foster seamless communication with the City, and successfully act as an extension of City staff.

Project Understanding

Based on the City's discipline categories identified in the RFP, HDR provides comprehensive civil engineering services which include water treatment and distribution, wastewater treatment and collection, transportation engineering, street and storm sewer engineering, and other related services such as public involvement, environmental permitting, and operational optimization of the treatment plant processes.

These inclusive services allow the City to quickly identify workload and/or critical infrastructure project needs and draw upon a depth of our team's resources that are available at the City's request. Our team has worked together on numerous projects and are well versed in their fields. HDR's Contract Manager, Verena Winter, has successfully worked with the City on other projects over the last seven years and understands the City's needs. These needs and an overview of our approach are provided in the table below.

NEWPORT CHALLENGES	HDR'S APPROACH
Multiple projects require attention and City staff do not always have the capacity to handle the workload	The HDR team offers team members for the duration of the project. This commitment establishes the City's trust and offers the City reliability of a single-point-of-contact to act as an extension of City staff. HDR's Contract Manager, Verena Winter, will be the liaison between the City and the HDR team to provide a smooth project implementation, execution, and fulfill the City's needs.
Aging infrastructure with frequent breakdowns and lack of local support for repairs minimizes the City options for potential solutions	Verena will be readily available, on-site, and flexible to be present when needed. Our commitment to the City will provide Verena (and others as needed) to remain in Newport several days a week or longer as a particular project requires. She will coordinate with her team from Newport and Portland.
Finding solutions to a problem requires time and a commitment to implement which can create more work for City staff	HDR provides all engineering disciplines under one roof and the few disciplines that are not offered (i.e. geotechnical, surveying, landscape architect) can be added to the team as a subconsultant. Our goal is to continue to make the City's life easier. We will work with the City under one contract instead of several contracts and simply deliver what the City requests.
Working independently or together with another consultant team or contractor to move a project forward can potentially threaten the budget and schedule.	Based on previous City projects, the City knows we work well with contractors in a team environment to solve problems and not create problems. The water treatment plant construction is a great example where problem solving with the contractor was a fun and enjoyable experience. We are already working closely with the Grants Consultant of Record to meet funding requirements.

Project Approach

Verena has toured the City with Tim Gross looking at deficiencies within the City's infrastructure. A significant concern is stormwater treatment and water quality at Sam Moore Park. At the June 16th, 2016 pre-proposal meeting, Tim mentioned this project again as one of the City's priority projects. The capital improvement plan has over $200,000 for the Sam Moore Creek Water Quality and Trail Improvement project set aside for the next fiscal year. This project is important to the City and HDR selected it as an example project for this proposal to illustrate our understanding, approach, and methodology. This project example demonstrates how HDR will utilize the different disciplines within the Civil Engineering category incorporating stormwater treatment, pumps and pipelines, water quality, wetland and bio-retention, permitting, parks and transportation, and flood control.

In the past, Sam Moore Creek has had numerous bacteria-based water quality discharge violations into the Pacific Ocean. Sam Moore Creek and Nye Creek connect before running into the outfall pipe which discharges into the ocean. The contamination source is not completely known and requires further investigation. The specific challenges of this project and a summary of our team's approach are summarized in the table below.

PROJECT ISSUES	HDR'S APPROACH
Project management requires multi-discipline coordination with the HDR team, agencies, the City, and contractors as well as budget and schedule management	HDR's project manager Verena Winter will make sure that communication is maintained through all disciplines and throughout the duration of the project. As proven on past City projects, she can handle an entire team and lead it towards a successful project. A detailed description of the associated tasks are provided in Task 1 provided in the following pages of this section.
Unknown source for infrequent bacterial water quality violations at the outfall into the ocean, accurate contamination investigation and correction	Assessment of what has been done historically to find the sources. Development and implementation of a sampling plan. Analysis of the sampled data and report of the findings with recommendations for improvements. A detailed description of the associated tasks is listed in Task 2 of the following pages of this section.
Sam Moore Park will undergo significant upgrades and changes to make it an enjoyable park for citizens. The park will include stormwater treatment facilities and flood control from Sam Moore Creek as part of the park system. The stormwater treatment is necessary to avoid contamination in the outfall into the ocean.	Determine the most appropriate site specific storm water treatment management facility which will be incorporated into the park. The park will undergo a complete remodel including a playground, trails system, pond or swale (which will be part of the flood control and stormwater treatment). Sam Moore Creek will be reconnected to the outfall pipe leading to the ocean. A detailed description of the associated tasks are provided in Task 3 provided in the following pages of this section.
Upgrades to Nye Beach pump station to increase capacity issues and avoid overflow occurrences into Nye Creek. Outfall pipe design is currently inadequate and will not meet current demand or regulatory requirements	Nye Creek pump station is undersized and has no standby pump. An upgrade of the pump station to handle the loads and provide redundancy is necessary to avoid further spills. The outfall pipe is undersized and needs to be replaced to avoid a point source discharge into the ocean. A detailed description of the associated tasks are provided in Task 4 provided in the following pages of this section.
Delays in required permitting could result in schedule delays and increase expense for the City. A public that is dissatisfied could delay schedule even more and derail the process.	Every design and change requires permitting, may it be a building permit or a permit from a federal agency. Each piece of this project requires a different permit and permit process. The public and community will have to be involved especially when it comes to the park design. Sometime public involvement does not go as smooth as hoped for. HDR will provide the permitting services as well as the public involvement throughout the course of the project. A detailed description of the associated tasks are provided in Task 6 provided in the following pages of this section.

Task 1 - Project Management

This project requires one person to coordinate between the City, the agencies, and the project engineering team. HDR's contract manager, Verena Winter, will not only drive the scope and budget compliance, she will also act as the liaison between the parties. HDR will allocate the expertise and resources to the different disciplines. If specific expertise is needed for clarification, Verena will engage the right people and get them on the phone or even out to the site. The HDR team is committed to the City's project and will provide on-site support as needed. Our team members will also remain available to the City for the duration of the project. Verena will provide the following to drive project success:

- Interface and facilitate communications between all parties which will be critical for project success.
- Align resources within HDR early to coordinate availability and involvement in the project.
- Engage an outstanding Quality Control team to review HDR's work before it is delivered to the City for review.
- Draw upon local and national expertise and resources (as needed) to make them available for this project.
- Prepare and update a schedule regularly to reflect changes in the project(s).
- Monitor and manage the budget and team while communicating scope changes and unanticipated items to the City as soon as they occur.
- Provide deliverables on time and with the necessary quality of work.

The City will participate in reviews and meetings related to the decision making processes. Also, the City may need to provide support finding documentation and other material that could help the project.

Task 2 - Water quality contamination investigation and correction

The City experiences occasional bacterial spills from the outfall pipe into the ocean. This bacterial contamination is an issue and violates standards. The source of the occasional bacterial water quality issues may not be entirely known. The events happen randomly and unexpectedly and don't show a pattern of occurrence, i.e. only during high flow events or during a certain time of the year. Although the City has been able to improve the situation significantly in the past couple years by finding cross connections of storm and sewer pipes in the distribution system, the occasional spill still occurs. To fix this problem, the sources need to be identified.

- In agreement with the City, HDR will bring the consultant working with the City on identifying cross connections and that knows the collection system, and include them as a subconsultant. This firm will bring knowledge that HDR would still need to acquire. This will avoid rework that the City has already paid for in the past, save time, and provide a pool of expertise from different sources.
- The newly formed team will review the data collected and work done to date to brainstorm and further identify potential bacterial sources. If a land use survey has not been completed, it would help with the identification (i.e. a near by park or campsite where people could illegally dump their RV waste into the system, or a dog park where dogs are off leash and could contribute to the bacterial issues in the creek). City maintenance staff will be included to obtain their input and ideas on potential sources based on what they experience during their system maintenance runs.
- The HDR team will develop and execute a sampling plan that will include automatic samplers distributed at locations where potential contamination sources could occur. This includes the storm and sewer distribution system as well as the creeks and parks. The sampling plan duration depends on the number of spills. It would be ideal to capture at minimum two spills to get a good set of data.
- The data sampling will require periodic analysis of the collected data and site visits to download the data (if not done automatically) and confirm the samplers are still in place and working.

- Cross connections would be identified in a similar way reviewing what has been done to date and then use smoke tests or cameras to follow the path of the storm pipe and discover potential cross connections with the sewer pipes.
- After the sampling, cross connection identification, and bacterial sources are identified, a report will summarize the findings and provide recommendations on improvements. This task could last up to one year depending on the number of spills and the quality of the collected data.

The City will be involved throughout the process and may need to provide access to manholes or other locations where samplers will be located, and potentially provide traffic control. HDR will brief the City on a regular basis about the findings and progress of the sampling and involve them in the decision making process.

Task 3 - Stormwater management and park design, and flood control

The City has a separate storm and sewer systems in the northern part of town. Sam Moore Creek receives stormwater from the storm sewer system. While this stormwater is relatively clean compared to a combined sewer distribution system, it does include street runoff which could have oil and other contaminants that are not to be discharged into the ocean. The City would like to upgrade Sam Moore Park and make it a more enjoyable and a safer place for people to spend time. This park is ideal to house a stormwater management facility providing water quality treatment and flood control that will also serve as a water feature in the park.

Also, during high rain events, flood control needs to be incorporated and Sam Moore Park will serve as an overflow area without causing damage to the overall park and surrounding area.

HDR will identify and design the appropriate stormwater management system for the City:

- Evaluate a range of options related to performance, aesthetic features, and long-term O&M. Examples for stormwater treatment methods are ponds (wet or dry) swales, and other low impact development design elements, such as pervious pavement and green streets.
- Calculate the size of the stormwater management facilities and design them into the new park layout. The design feature will be integrated into the park and allow for park uses.
- Provide surface water storage, leverage the parkspace to attenuate flows, manage stormwater to protect infrastructure (e.g., roads).
- Include a new trail system, playground, and a trail connection to the nearby skater park. Lighting will be installed for safety.
- Collaborate with input from the City and/or community groups that have a vested interest in improving the park. Draft designs will be provided for City and public review/input. The final design will be a collaboration of all interested parties and a functioning stormwater treatment system.

The design of the park improvements and stormwater management is anticipated to last for about one year as public input and City council meetings may take time to set up and to give them the opportunity to voice their opinion.

Task 4 - Nye Beach Pump Station and Outfall Pipe Design

The Nye Beach wastewater pump station does not have enough capacity to handle the wastewater flows it is receiving. There is also no standby pump provided. An upgrade of the pump station to incorporate bigger pumps and to add one pump that provides redundancy is necessary. The county jail is also connected to this particular pump station and it appeared in the past that the inmates are flushing sheets down the drain which plugs up the pumps. A grinder system before the pumps would maintain proper functioning of the pumps. These improvements will prevent further contamination spills into Nye Creek and therefore into the ocean.

The outfall pipe is undersized and acts as a point source into the ocean. It needs to be replaced to avoid backup and flooding into Sam Moore Park and to distribute flows at the discharge point. Trenching seems to be one option to provide adequate room to place the larger pipe into the beach area reaching out to the ocean. HDR will investigate other options to place the pipe as trenching is not the most environmentally accepted method. HDR will put the expertise in place and approach this task as follows:

Grinder selection and installation:

- Communicate with City maintenance personnel of past plugging events of the pumps to determine what the grinder must be able to handle. Determine preference of grinder manufacturer to determine the right equipment for this application.
- Contact grinder manufacturers and communicate the City's needs. Obtain sizes and pricing from manufacturers and incorporate the grinder into the pump station upgrades.

Pump station upgrades:

- Receive flow data from the City to determine the capacity of the pumps. Create hydraulic model and calculate the appropriate pump design criteria.
- Check condition of existing pumps and the possibility of adding parts to increase the capacity (i.e. adding another bowl, pending on the type of pump). This may be an opportunity to upgrade the existing pumps that could potentially save the City money.
- Communicate with City maintenance staff about preferences of pump brands.
- Contact pump manufacturers and communicate the needs for the appropriate pump selection.
- Incorporate new pumps or upgrades to existing pumps into the existing building (assuming there is enough space). Design new pump and piping layout and connections to existing sewer piping. Incorporate necessary valves, flow meters, switches, etc.
- Provide design draft to City for review and input. Incorporate City comments and finish design.

Outfall pipe:

- Gather flow data from the City for Nye Creek and Sam Moore Creek in high flow events and low flow events (assuming the data is available).
- Run hydraulic calculations to size the outfall pipe.
- Design the pipe alignment with all the necessary components (manholes, valves, meters etc.) from where the two creeks feed the pipe until it hits the ocean at the outfall point
- Design a non-point-source outfall system by contacting manufacturers for outfall diversion systems. The goal is to distribute the discharge into the ocean with a system that spreads the discharge into the water rather than one pipe end releasing the discharge at one location.
- Talk to a specialty contractor to see how an outfall pipe can be installed the most environmental friendly and cost efficient way, and to receive input about constructability.
- Parallel to this task the environmental permitting will be completed. See task 6 for detail.
- Communicate with City staff about process, alignment, City needs and regulations.
- Finish design of outfall pipe.

The deliverable to the City will be a final design of the Nye Beach pump station improvements with the grinder and the outfall pipe. Total estimated design time is about six months assuming that the necessary flow data is readily available.

The City will be part of this process all along to provide the necessary data, to give input on preferences of manufacturers and operations, to provide intermittent reviews of the design, and to finally approve the design before it will go out for bid.

Task 5 - Permitting and Public Involvement

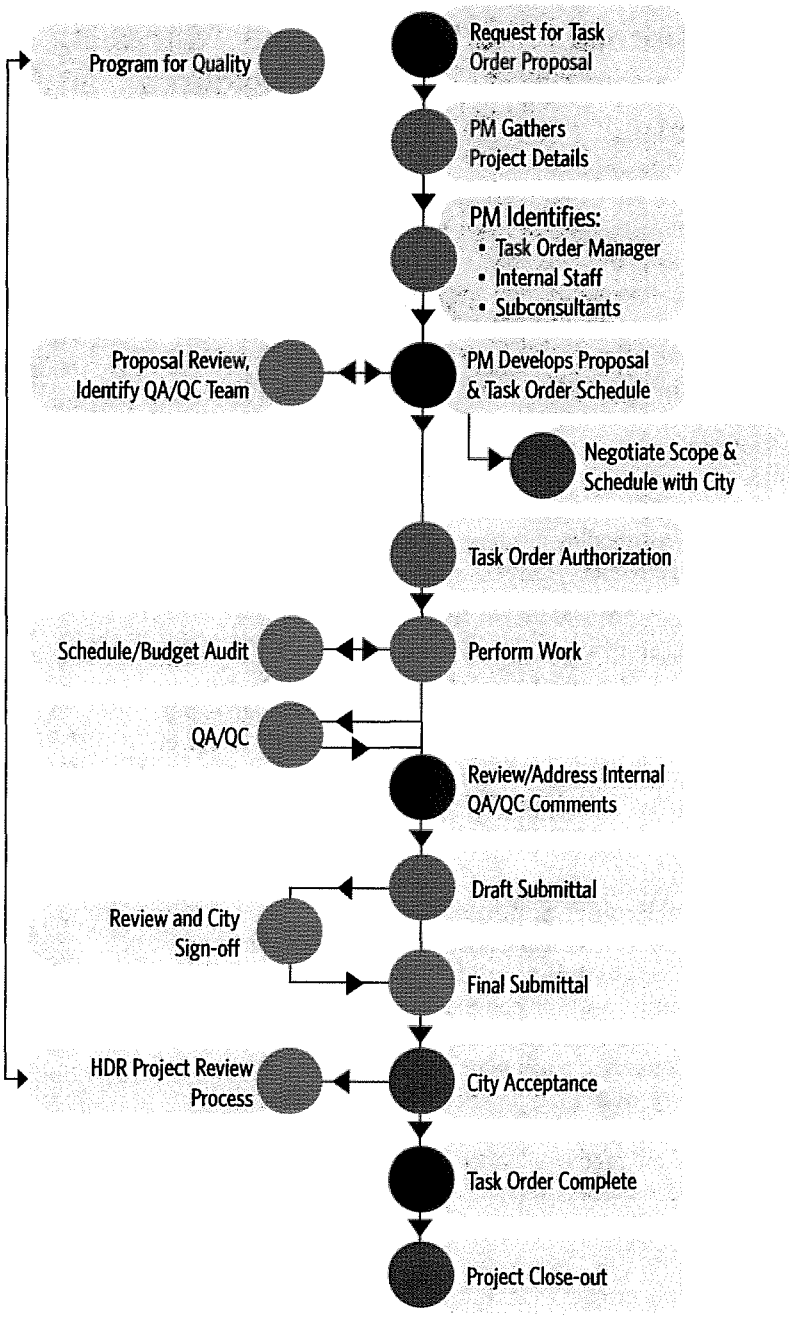
A number of local, state, and federal permits will be needed. It starts with a building permit for the pump station changes, and the discharge permit into the ocean, the stormwater treatment system has to be approved by a federal and/or state agency, and the park modifications will have to be approved as well. Which permit exactly has to be acquired depends on the layout and design of each component of this project. HDR will provide services for all necessary permits as follows:

Permitting:

- Work closely with the design team and advise on potential permitting impacts. Advise which agencies will have to be involved in each permit and the duration and steps of obtaining the permit.
- The first deliverable will be one or multiple brief memorandums describing the permit process, which agencies will be involved, and the fees and durations for each permit.
- Once the design is finalized, HDR will lead the communication with the prospective agencies and prepare the permit applications to stay in compliance with the agencies' rules and regulations.
- The City will submit the agency applications and write the check for each permit.

Public Involvement

- If public outreach is required to inform the community, empower groups about the projects, or collaborate with stakeholders, neighbors, and community members to build public support for the project, HDR can provide in-house public involvement experts. The team helps affected parties understand the "why" behind the "what" as it implements creative outreach and engagement techniques in person, polling, or via Internet to reach non-residents or stakeholders who are difficult to reach.
- Public involvement resources will be available as needed and remain part of the project until everybody is on the same page.
- The City will have to provide a room at City Hall if public meetings are necessary. HDR's team will be present at those meetings to inform the public on progress and outcome of the project.



B. General Work Plan

Developing a proper management plan is critical to the success of your projects. We are committed to meeting and exceeding your expectations, which will be directly connected to the schedule and budget of your projects. We have gained valuable knowledge through our previous project experience with the City and meetings with City engineering and management staff in an effort to improve our level of service. As part of this effort, we have developed a plan with a project management and team structure based on input from the City that we believe will further improve our level of service and responsiveness. We will also employ several tried and tested tools that we have found to be successful in managing scope, schedule and budget on past projects.

We have taken great care in defining and developing a proper plan to managing your civil engineering contract. Our general work plan approach identified in the figure above includes providing:

- A ***primary point of contact*** and secondary contact that will be accountable and focused on technical competence, cost and schedule control
- ***Senior professionals*** independently responsible for Quality Control (immediately available to provide input and technical review)
- A ***flexible organizational*** concept that will be refined and optimized based on actual contract requirements.

C. Approach and Methodology Managing Workload, Coordination, Sequencing and Control of Resources, and How Projects are Kept on Schedule

Ability to Handle Projected Workloads

The HDR team is assembled specifically to respond to the needs of the City's civil engineering projects through the allocation of qualified and adequate resources at the right time over the duration of the project. One of the identified realities of any project is that resource needs will vary significantly over the life of the project and Work Plan is a proven tool for developing a resource loaded project schedule and managing workload. The resource requirements for every HDR project are loaded into Work Plan where specific individuals are assigned with corresponding job-hours in conjunction with the project schedule.

Managing our Role on the Project

HDR will employ resources from our Portland office and draw upon regional resources if necessary. We have assembled a team that leverages deep civil design experience with local resources who understand the issues of the City and the local community. Of particular importance is the fact that HDR has collaborated successfully with the City on large and complicated projects in the past.

Control Project Schedules

Controls and scheduling are powerful tools to be used aggressively to drive the City's civil engineering projects to successful on-time completion. Early identification of forecasted schedule variations allow for the City and the HDR team to make informed decisions and, where necessary, perform mitigation actions early in the project. Establishing schedule controls through the use of WBS and resource loaded schedules defines the path for project success and supports the monthly review of project budgets, commitments, actual costs and schedule status.

Successful project execution depends on constant communication of schedule issues and control of the design process, which allows the City and HDR team members to:

- Develop a detailed understanding of the tasks and work packages necessary
- Anticipate project and resourcing needs
- Monitor/adjust individual task and work package schedule durations in response to actual expenditures and durations of completed tasks
- Examine issues and related impacts before they occur

The schedule for this Project will be developed and maintained using Microsoft Project, which is fully compatible with the City's system. The schedule is based on the task and work packages in conjunction with Work Plan - HDR's internal tool for managing resources, schedule and budget and the resources required by the design budget. Verena will work collaboratively with the team to:

- Structure task sequence to minimize the critical path and unnecessary dependencies
- Leverage the best use of the team's resources
- Provide time and dependencies for external activities including City and stakeholder review of scheduled deliverables
- Provide time for statutory requirements for permit reviews and related third party activities.

As part of her management responsibilities, Verena will manage the process to obtain monthly cost and schedule information from major task and discipline leaders, update actual costs measured against planned expenditure rates, and monitor work progress against the baseline plan. Monitoring these components throughout the project will assure identification of potential problem areas and allow adjustments in resources and tasks to drive on-time and within budget completion. The schedule will be monitored continuously and a monthly formal schedule update will be submitted as part of the invoice documentation.

D. City Interaction

The City's interaction with the HDR team is critical to project success. Effective communication and City interaction must be tailored based on two critical elements:

- **Project size and type**
- **City stakeholder preferences**

The City's civil engineering projects can range in size, complexity, and style. The amount of City interaction and involvement may depend on multiple factors. As effectively implemented with several City projects, we will completely integrate the City throughout all projects or simply inform the City of project status and milestones achieved. The City's interaction will be tailored based on your preference.

Based on availability, workload, preference, and style, City stakeholders often prefer different forms of communication. Analytical personalities may require details and functional application to make informed decisions while others may require a project executive summary highlighting the key obstacles and strategies to meet budget and schedule. Regardless of the communication style, Verena has worked with the City and understands the communication required and level of interaction the City might require.

The two critical elements are described in further detail below.

Project Size and Type

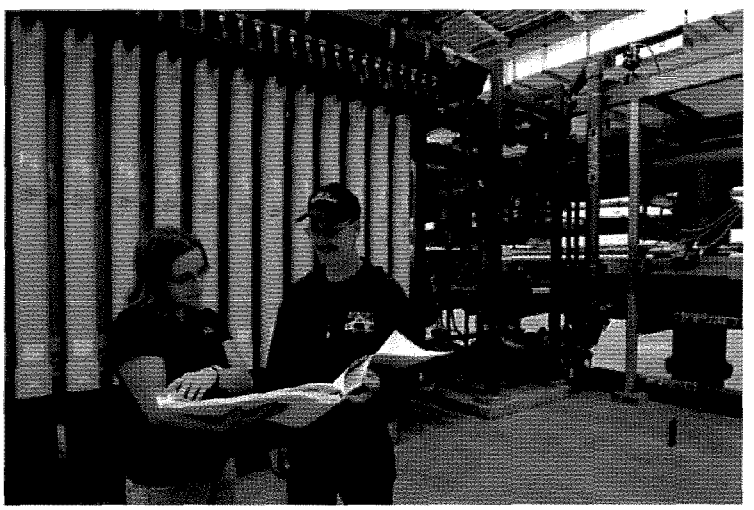
Different projects require different interaction. For example the design of a water storage tank does not require as much interaction from the City as the design of a park. The City would be involved in the water storage tank design as much as they would like. After the initial preference communications with maintenance staff and operators for certain elements (i.e. access ladders or access hatches etc.), HDR would take the project to a design level such as 60% and present it to the City for review and comments. HDR would incorporate the comments and move on with 100% design. Pending tank design complexity and the comments received after 60%, there might be another review after 90%. If there are any questions, communication with the City via email or phone will occur to obtain answers and move forward with design.

For a design of a park, the City would be heavily involved with every step. A park design has many stakeholders, not just from the City but also from the community. From the beginning, HDR would facilitate all voices being heard and provide ample opportunities for review and comments. There would be a meeting at the beginning of the project to capture all park needs from the different stakeholders to be implemented into the design. After an initial draft of the park layout, there will be another review meeting at about 20% design. In general, the design will be shared with the stakeholders as often as necessary to involve the City and stakeholders throughout the process.

City Stakeholder Preferences

Some people prefer a phone call or a short email while others would like to see the details. Verena is familiar with the different communication styles of the City staff and will adapt to each personality. Tim is very busy and wants a quick update, brief list of the details, and proposed solution to make a decision and/or to approve a certain item. Verena is respectful of Tim's time and will adapt to his preferences as appropriate.

Others may want a lengthy email and an additional phone call with details and explanations in order to make a decision. Verena will adapt to that style as well. Mostly, this will involve decisions for the operators. By nature, operators want more information before making a decision as they are the ones that will have to live with whatever is designed or installed. Operators need to know what other options are out there to see what will fit their needs best. For that reason, communication and involvement with the operators will be more in detail and specific.



E. Managing Scope, Schedule, and Budget

Quality Control

Focus on quality is a mindset shared by every member of our team for every project on which we perform (see Figure 1). It starts by clearly understanding expectations and making a commitment to meeting them with every deliverable. HDR's quality program for quality consists of selecting the best quality control reviewers for each project and making sure that our quality procedures are followed to provide the District with quality assurance.

HDR's Quality Program focuses on the proactive use of quality assurance (QA) procedures, coupled with comprehensive quality control (QC) reviews of project deliverables to verify that the scope, schedule, budget, and deliverables are consistent with project goals. The QC part of the program establishes a specific plan for technical reviews of each deliverable by qualified senior reviewers who were not involved in the preparation of the deliverable. These reviews include formal documentation and resolution of reviewer comments prior to submitting the deliverable to the City. The QC Plan includes the reviewers, the scheduled dates, the types of reviews required, and the reviewer budget.

Our team of QC reviewers will help provide technical excellence to the City. We will evaluate each project assignment to determine the level of detail required during the QC reviews based on factors such as size and complexity, team experience, potential second and third party liabilities, and risk. In general, we conduct QC throughout the project on any document that directly or indirectly constitutes a deliverable.

Project Management

Effective project management is a key element of project success. Our Contract Manager, Verena Winter, has led numerous multi-disciplinary projects, coordinated teams small and large, and provided leadership through clear communication and coordination to guide and manage the work of the team. HDR has effective, proven strategies for managing our team to deliver projects on time and within budget. These strategies are detailed on the following pages.

Project Management Plan (PMP)

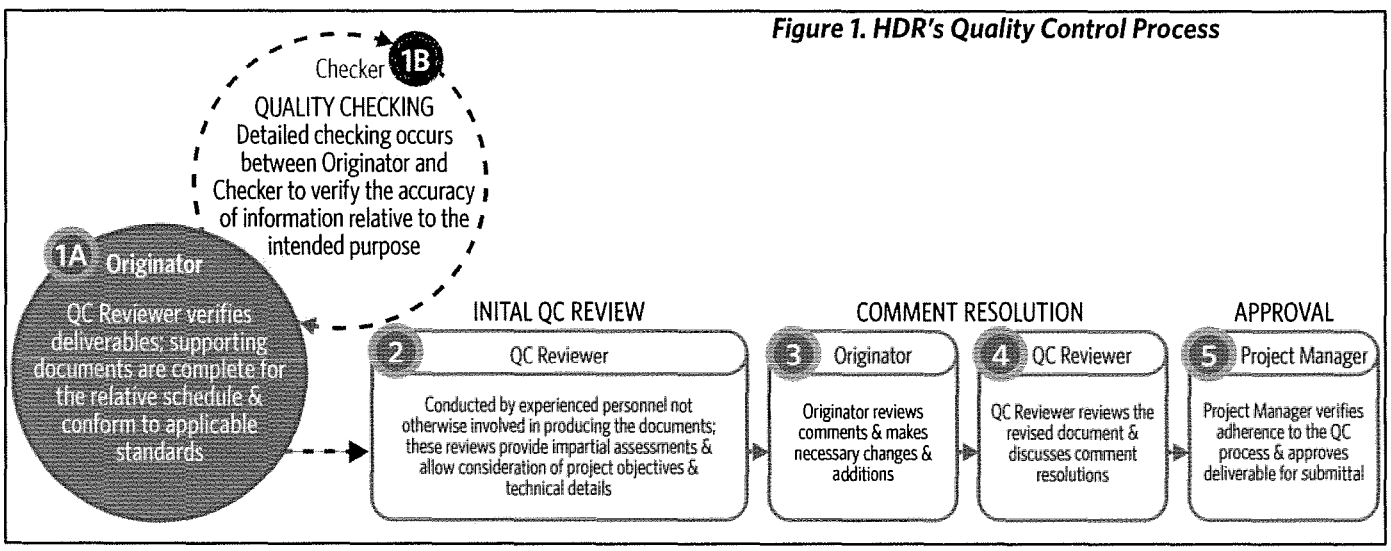
On all projects, whether they are studies, or preliminary or final designs, we will first develop a PMP that includes the scope, schedule, budget, project team, communication plan, QA/QC plan, and list of deliverables. HDR will share the PMP with all City staff for use as a reference during project execution.

Project Task Assignment Schedule

We understand the importance of project tracking and staying on schedule. Our standard, for every project, is to develop a master schedule that will include milestone dates and a detailed baseline Gantt schedule with task dependencies for each work assignment. The team will use the following techniques to determine progress:

- Organize each project into manageable and clearly-defined work tasks and deliverables.
- Maintain communication between the City Project Manager and HDR's Project Manager.
- Lead regularly-scheduled team meetings on each work assignment.
- Prepare monthly updates of work assignment progress versus budget and schedule using earned value reports.

Figure 1. HDR's Quality Control Process

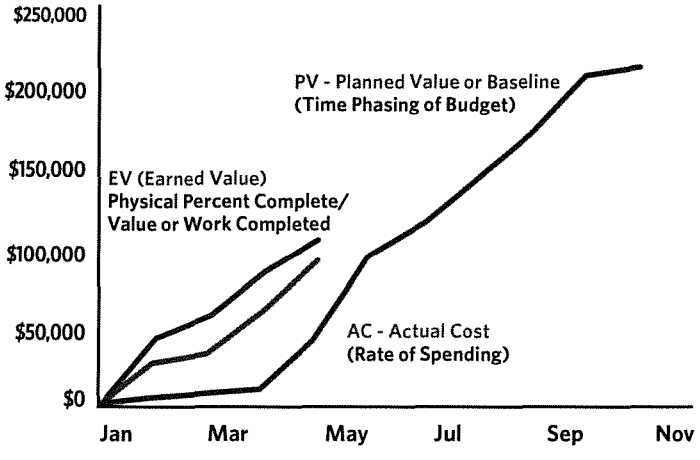


Accomplishing Project Assignments Within Budget

HDR uses a computerized project management tool called "PM Dashboard" to provide weekly information for tracking project budgets. Verena also use other tools such as Earned Value Analysis (Figure 2.), Issues/Decision Logs, and Action Item Logs to keep track of budgets, project decisions, and deliverables. The tools used by Verena include the following:

- Weekly job cost sheets indicating all costs to the project.
- Real-time cost data on the project through a web-based accounting system.
- Work Plan staff forecasting and accounting to provide project cost and cost-to-complete information.
- Earned Value Analysis

Figure 2. Earned Value Components



Verena will utilize computer-based project management tools that integrate the project tasks with schedule, resources, and budget details. This project performance information will be included in the monthly invoices and status reports. HDR has developed its own earned value tool that pulls real time accounting data within our accounting system to develop our earned value tables and graphs.

Monthly Status Reporting

A concise monthly project status report will be included with each invoice, including a summary listing of meetings and communications, work accomplished during the month, work expected during the next month, needs for additional information, documentation of any scope/budget issues, and a budget status summary by task. These reports will be formatted to support the City's progressing needs so you can easily use the same information.

Proven Experience

HDR is also currently working with numerous agencies on similar civil engineering activities, including City of Bend, Clean Water Services, Tualatin Valley Water District, the City of Beaverton, and the Eugene Water and Electric Board. Our success on these projects comes from our:

- **Dedicated local staff** with strong technical expertise and project management capabilities;
- **Clear organization structure** with a single point of contact for all service areas;
- **Commitment of key national staff** to provide specialty expertise and quality assurance/control reviews when necessary or desired by the client.

Firm Resources

HDR offers a broad range of services from planning through design, construction, and operations in infrastructure areas as diverse as water, transportation, architecture, energy, and environmental sciences. Our team is ready to deliver a wide range of civil engineering services for the City. We have extensive experience in assessment, planning, design and construction of water and wastewater facilities including groundwater production wells, treatment systems, pipelines, storage reservoirs, booster pumping stations, pressure reducing stations, instrumentation/control, telemetry, and SCADA systems. Beyond services offered by many consulting firms, we provide a wide range of complementary services that allow us to serve you as a "one stop shop" for your projects. These services include:

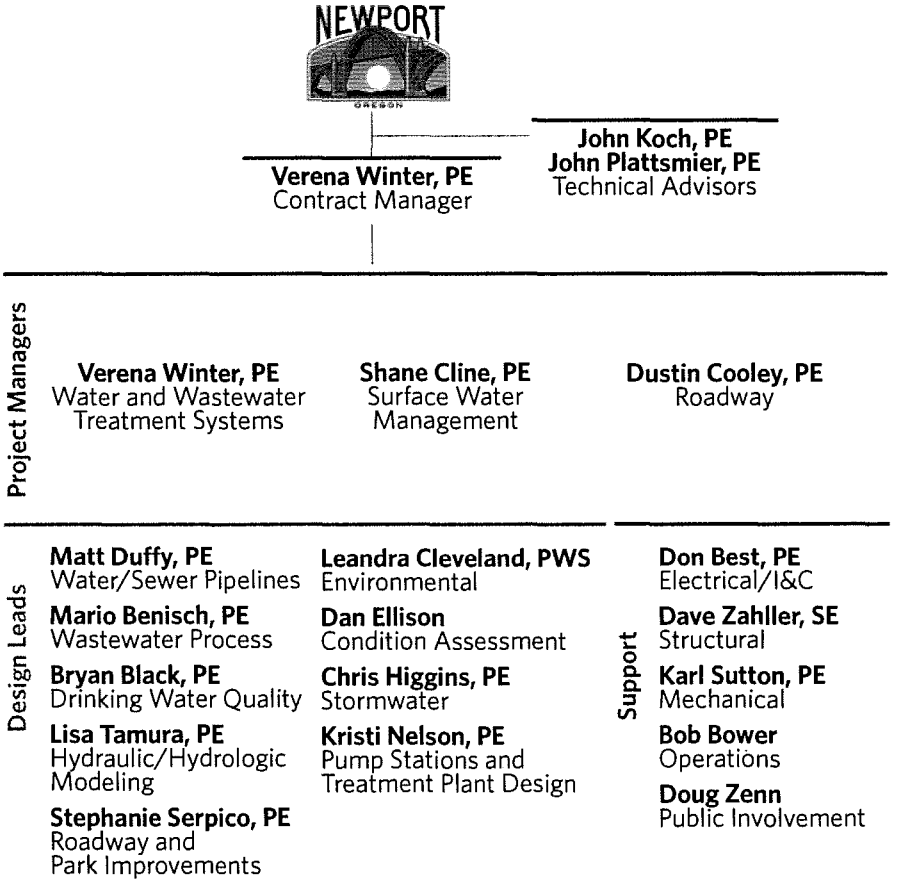
- **Asset management**, including development of pipeline replacement programs, condition assessment, accurate cost estimating, and financing strategies;
- **Sustainability evaluations**, including development of sustainable return on investment (SROI) to determine the social, economic and environmental benefits of your decisions;
- **Regulatory support**, including permitting plans, construction permits, water rights, NEPA/SEPA documentation, wetland delineations, biological assessments, and coordination with the Departments of Ecology and Health;
- **Real estate appraisal and right-of-way consultation** including appraisal, acquisition and relocation.

HDR is committed to meeting your needs. Our business model is based upon strong local staffing supported by company-wide resources and expertise. The full resources of our company stand behind every project team. In this manner, HDR strives to provide the benefits of a local firm with the advantages of a major national company.

Key Personnel Qualifications

A. Organizational Chart

Our firm's philosophy is captured in our brand promise to do the right thing to make great things possible. Our contract manager, **Verena Winter,** has worked with the City over the past seven years and has consistently delivered high quality projects. She brings the support of local discipline leads and support that cover the full breadth of services under the Civil Engineering category.



HDR will be a valuable addition to the City's resources, offering the following benefits:

- **Comprehensive services meeting all your technical and management needs.** HDR has all of the technical service areas covered "in-house" thus allowing more interactivity and idea-sharing amongst team members, resulting in better multi-disciplinary designs that are delivered on-time and affordably. Additionally, Verena and our design leads are some of HDR's strongest local task order leads, hence their technical expertise, communication style, and past performance on similar projects will further enhance our ability to deliver quality, timeliness, and affordability. HDR provides all engineering disciplines under one roof and the few disciplines that are not offered (i.e. geotechnical, surveying, landscape architect, etc.) can be added to the team as a subconsultant if needed.
- **Dedicated staff at multiple levels for staff availability when needed.** Our "on-call" approach and organizational structure provides dedicated staff with defined roles for the City's civil engineering needs. Our overall staffing throughout the Northwest means we can locally deliver additional resources or technical redundancy to any work orders you might have. This means availability of the right staff when you need them and in close proximity so as to leverage the inherent benefits of face-to-face project delivery.
- **Familiarity with Newport related to civil engineering.** HDR's familiarity with your staff, your facilities, and your administrative procedures will allow streamlined work execution.

Resumes for our team that include qualifications, relevant experience, registrations, and certifications are provided in Support Information.

B. Team Typical Duties and Experience

Our contract and water/wastewater treatment project manager, Verena Winter, will be supported by a diverse group of professionals including our street and storm sewer improvement project manager, Dustin Cooley, technical advisors, design leads, and support staff members who will collaborate with our leads in their areas of expertise to meet the City's civil engineering needs and standards. The table below provides our team members, civil engineering areas of expertise, and typical duties.

STAFF NAME	REGISTRATIONS AND CERTIFICATIONS	TYPICAL DUTIES
Verena Winter, PE Contract Manager	Professional Environmental Engineer - Oregon Certificate, Hydrology	With over 14 years of experience, Verena has successfully managed many water and wastewater treatment plant design projects as well as dam projects. Her experience includes treatment plant upgrades and expansions for several clients including the Cities of Newberg, Silverton, Coeur d'Alene, Portland. Verena served as Project Manager during construction fo the Newport WTP and is Contract Manager for the Dam Services On-Call. As Contract Manager for Newport, Verena will orchestrate the engagement of her team of experts, bringing in the right people for the right task.
John Koch, PE Technical Advisor	Professional Civil Engineer - Idaho, Indiana, Oregon, Washington	John's specialty is in hands-on trouble-shooting in functioning treatment plants and pump stations. With 46 years of experience, John has worked on several local projects including the Newport WTP renovation and others in Newberg, Bend, Silverton, and Beaverton. John designs improvements that work with current treatment systems and leverage existing infrastructure.
John Plattsmier, PE Technical Advisor	Professional Civil Engineering - Arizona, Colorado, Florida, Nevada, Oregon, Texas, Wyoming	John Plattsmier is HDR's national pipes and pump director and has worked on numerous Oregon projects including the Willamette Water Supply Program Preliminary Design (TVWD, Hillsboro), 124th Avenue Pipeline (TVWD), and Surface Water Improvements Program (Bend). As Technical Advisor, John will provide consistency in implementing HDR's independent quality review process of deliverables and supporting engineering analysis.
Shane Cline, PE Surface Water Management	Professional Civil Engineering - Oregon and Washington ISI Envision Sustainability	Shane specializes in stormwater master planning and system design, flood, and scour studies that include detailed CIP development and cost estimating to meet clients' facilities needs and specific budgetary situations. He also performs hydrologic and hydraulic analysis. Shane's background in fieldwork includes routine construction inspection and preliminary field reconnaissance. During construction, he serves as a technical liaison, providing construction assistance and in-field solutions to the contractor and client representatives.
Dustin Cooley, PE Street and Storm Sewer Improvements	Professional Civil Engineering - Oregon and Washington	Dustin has more than 15 years of experience completing roadway and storm sewer projects throughout Oregon. His experience includes designing projects that range from small surface street widening and overlays for local agencies to complex highway redesigns for state agencies. Dustin will work with the City to determine the most cost-effective street and/or storm sewer solution.
Matt Duffy, PE Water/Sewer Pipelines	Professional Civil Engineer - Oregon and Nevada	Water and wastewater engineer with 11 years of experience including planning and construction management of pipeline and pump station improvements for flow diversions, capacity expansions, and to facilitate new development.
Mario Benisch, PE Wastewater Process	Professional Environmental Engineer - Oregon	Mario has evaluated and designed wastewater treatment systems for more than 50 treatment plants. As Wastewater Process Design Lead, Mario will focus on cost-effective wastewater processes, treatment process design, and facility and master planning for the City.
Bryan Black, PE Drinking Water Quality	Professional Environmental Engineer - Oregon and Washington	Bryan specializes in water system planning, design, and construction. His deep water treatment expertise and familiarity with drinking water regulations, trends, and design options for compliance will provide the City with comprehensive decision-making confidence. Bryan's experience also encompasses advanced water treatment, conventional and membrane filtration, UV and chlorine disinfection, pretreatment, and corrosion control.
Chris Higgins, PE Stormwater	Professional Civil Engineer - Oregon and Washington	Chris is a stormwater design specialist with 22 years of experience designing 200+ retrofits and LID installations. She has been the stormwater lead on Oregon improvement projects, designing stormwater conveyance systems, water quality and quantity control facilities, and infiltration facilities to meet local jurisdictional requirements.

STAFF NAME	REGISTRATIONS AND CERTIFICATIONS	TYPICAL DUTIES
Kristi Nelson, PE Pump Stations and Treatment Plant Design	Professional Environmental Engineer - Oregon	Kristi brings 11 years' experience of water and wastewater planning and design. She supports master planning, process design, cost estimating and alternatives evaluation; onsite project startup assistance and implementation.
Lisa Tamura, PE Hydraulic/Hydrologic Modeling	Professional Environmental Engineer - Idaho, Oregon, and Washington	Lisa is an expert in using computer hydraulic models in stormwater, water, and wastewater planning and design. Hydraulic modeling programs: InfoWater, H2OMap Water, InfoSWMM, XP-SWMM, EPA SWMM, EPA NET, WaterCAD/ WaterGEMS, SewerCAD and InfoWorksCS.
Dan Ellison Condition Assessment	Professional Civil Engineer - California	Dan has gained national and international recognition as an expert on pipe assessment, rehabilitation, and trenchless construction, having authored several books on the subject. Dan's diversity of projects, along with superior team and program management skills makes Dan a tremendously flexible and creative team resource and valuable asset for the City of Newport's Civil Engineering Services contract.
Dave Zahller, SE Structural	Professional Civil Engineer - Colorado, Idaho, Montana, and Washington	Dave's 34 years of experience includes structural design, plan development and construction administration for water and wastewater plants, water storage facilities, bridges, dams, and associated buildings.
Don Best, PE Electrical/I&C	Professional Electrical Engineer - Idaho, Montana, Oregon, and Washington	With 25 years of experience, Don is regionally recognized as an I&C and Electrical expert. He has designed numerous projects in Oregon including the Newport WTP and projects for Newberg, Silverton, Beaverton, and Tualatin Valley Water District.
Karl Sutton, PE Mechanical	Professional Mechanical Engineer - Idaho, Oregon, and Washington LEED Accredited Professional	Through his 15 years of designing HVAC systems for wastewater facilities, Karl has learned energy-saving techniques particular to WWTPs and also odor-control methods. He has led the HVAC efforts for the Newberg WWTP renovation. Karl will deliver system designs that are effective and meet code.
Bob Bower Operations	Construction Documents Technologist WWTP Operator - Colorado and Washington	Bob Bower is one of HDR's top operations specialists, with more than 37 years of experience in the startup/testing, operation, maintenance, and management of municipal water and wastewater treatment, pumping, and distribution facilities. His experience includes preparing O&M manuals, providing operations assistance, evaluating and optimizing treatment processes, and troubleshooting equipment.
Leandra Cleveland Environmental	Certified Westlands Scientist	Leandra has experience managing dozens of successful wetland delineation, and permitting projects throughout Oregon and southwest Washington. Her project experience includes helping clients develop permitting strategies, and studying the environmental plausibility of the siting and construction of infrastructure projects. She understands the complexities of aquatic and terrestrial ecosystems as well as state and federal permitting and regulatory requirements. Leandra's expertise brings an effective framework to support the natural resource goals of project design.
Doug Zenn Public Involvement	N/A	Doug specializes in complex, multi-party process design. He has 15 years of experience in public involvement and facilitation, and 25 years of experience in communications. Doug has been involved with more than 200 community engagement efforts. He has developed and managed public involvement, awareness and education efforts that cover a range of issues, including transit planning, transportation, urban renewal, water resources, rate studies, and community-based planning.
Stephanie Serpico, PE Park Design	Professional Civil Engineer - Oregon	Stephanie brings 22 years of experience in transportation design including roadway and trail design. She has managed trail and park projects. She managed the development of the Deschutes River Trail (Phase 3) for ODOT. The team developed a multi-use path across First Street Rapids on the Deschutes River. She managed the development of the Lava Butte multi-use trail (from Lava Lands Visitor Center to Sunriver), which lies entirely in the Deschutes National Forest, where she worked closely with the staff from the USFS.

C. Project Manager Experience

Verena is a skilled project manager, having led the design team and construction team for the City of Newport's new water treatment facility and intake design. Other project management experiences include the the City's dam consultant of record for the seismic deficiencies of the existing Big Creek Dams and the City of Silverton digester upgrade. She has also managed the City of Newberg's wastewater treatment plant expansion. Verena's ability to focus a group of experts to gain quick results and her dedication to the City's success will be available to you on this contract.

Verena's projects have included treatment plants, pipelines, pump stations, and intakes; all possible components of design solutions. Verena's insight will aid in keeping the team on-track to determine the design parameters and develop practical solutions. Highlights of her project management experience and the similar projects are described below.

Dam Consultant of Record

Newport, Oregon

Role: Contract Manager. In 2009 HDR designed a new drinking water treatment facility for the City. Originally, the design involved modifying the intake structure to accommodate larger pumps and equipment. When a later geotechnical investigation indicated that the soil stability underneath the existing intake structure was very soft, the seismic stability of the dam was identified as a significant concern.

HDR performed an initial seepage, static stability, and post-earthquake stability analysis of Upper and Lower Big Creek Dams to understand the potential for large deformations and/or failure in case of a range of seismic events. Based on the results of the initial site investigation and analysis program, it was determined that additional site characterizations and engineering evaluations were required to improve the understanding of the subsurface stratigraphy, develop a geologic model of the site, and to better estimate the corresponding engineering properties and behavior of the foundation and embankment soils. Our subsequent investigations indicated that both dams could be susceptible to severe damage in even a moderate seismic event, which would compromise the City's only drinking water source.

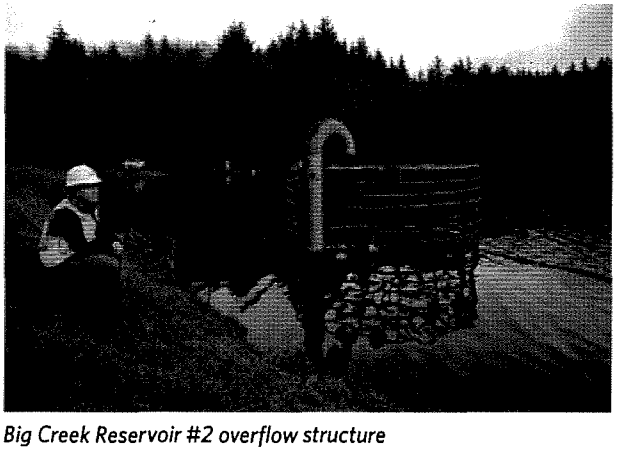
Water Treatment Plant Improvements

Newport, Oregon

Role: Project Manager. HDR provided predesign, final design, bid support, and construction observation services for the City's new water treatment facility. A new membrane water treatment facility capable of treating 6 MGD (expandable to 10 MGD) replaced the existing 4 MGD plant. The total project budget fell just under $20 million.

During construction, it was discovered that the reservoir dam is on unstable soils. A dam assessment was conducted by HDR to determine the extent of the problem in case of a seismic event. Because of the unstable soils, the existing pump station could not be renovated. Instead, a new 6-10 MGD intake pump station was designed on an expedited schedule (delivered within one month) and constructed within two months.

As Project Manager, Verena led the project design for both the treatment plant and the intake pump station, facilitated the CM/GC procurement, provided construction-phase engineering services, and start-up assistance.



Big Creek Reservoir #2 overflow structure

Wastewater Treatment Chemistry Optimization Study

Cottage Grove, Oregon

Role: Project Manager. HDR's corrosion and water quality experts conducted an on-site water quality workshop to evaluate the distribution system and assess the manganese carry-over issue. A preliminary distribution system water quality monitoring plan (DSWQMP) and an independent manganese mitigation testing plan (MMTP) were developed based on the discussion with the City's WTP staff. HDR also assisted with identifying and evaluating options for overall WTP performance improvement and optimization.

Wastewater Treatment Facility Upgrade

Silverton, Oregon

Role: Project Manager. The City of Silverton operates an advanced wastewater treatment facility rated at a maximum monthly flow of 6.6 MGD. HDR designed major improvements in the late 1990s that included a new activated sludge system. The plant provides reclaimed water to the nearby Oregon Garden, where the water flows through a series of constructed wetlands and provides irrigation water used throughout the site.

Verena provided construction phase engineering services for the digester upgrade, which included both the renovation of the two digesters and a new building for the controls and pumps. She partnered with the contractor and client to find solutions to renovation-related topics, and maintain the project schedule and budget.

Scoggins Dam Improvements

Clean Water Services, Oregon

Role: Project Manager. Scoggins Dam is an embankment dam located near the city of Forest Grove, Oregon, about 25 miles west of Portland. The dam provides irrigation water and water for municipal and industrial uses. Scoggins Dam was completed in 1975, has a height of 151 feet, and holds the reservoir called Henry Hagg Lake. The dam is owned by the Bureau of Reclamation (BOR) and operated by several different agencies. The foundation soil of Scoggins Dam is liquefiable and proposes a danger to fail in case of a seismic event. Clean Water Services (CWS) hired HDR to help model and design a dam raise for future storage and to work with BOR on implementing the raise into their structural seismic improvements of the dam. Different alternatives are being modeled to simulate a seismic event with the subsequent failure behavior of the dam. The design criteria to provide a structurally sound facility are being determined before the design of a preferred alternative will start. Verena is the project manager for this project. She coordinates with CWS and BOR, as well as with the HDR specialty dam engineering team. This is a very special project as scope changes occur daily due to what the model results reveal. Verena makes sure that everything is being kept on track, everything is in line with the budget, and communication between all parties takes place.

Newberg Construction Management

City of Newberg, Oregon

Role: Deputy Project Manager. HDR was assisting the City of Newberg in a $44 million project upgrade to the Newberg Wastewater Treatment Plant (WWTP). The goal was to support and meet the NPDES permit standards for the projected population of 45,000 through 2030. The project addressed all of the treatment processes within the WWTP, from the influent pump station to the effluent outfall in the Willamette River.

HDR assisted the City to develop a construction phasing plan that addressed the need for the WWTP to stay in operation during the entire construction process. Project components included: a new raw sewage pump station that relieved flows from the existing overburdened influent pump station; headworks; two additional oxidation ditches and repairs to the existing ditches; one additional secondary clarifier; effluent chlorination and de-chlorination treatment; correction of piping problems in the outfall; solids processing systems improvements including dewatering upgrades and composting optimization; operations administrative facility.

To facilitate orderly implementation and phasing of the upgrades, the project was delivered through the Construction Manager/General Contractor (CM/GC) methodology. HDR assisted the client with developing the CM/GC solicitation packet, advertising, interviewing, and in the final selection process. The contractor was on-board and joined in the design discussions, provided insight on construction estimates, equipment availability, and cost-saving opportunities.

D. Delivering Projects On Time and Within Budget

The HDR team has a long history of on-time and within budget completion of similar projects. A great example is our team's completion of the City's Water Treatment Plant project. We monitor our project schedule and budget closely using earned value techniques and make adjustments when needed. We maintain a resource loaded staff and project database called "workplan", so we can see our staff utilization.

If staff are projected to be overbooked during a given period, we make staff adjustments to make sure our project obligations are met. Verena Winter and Dustin Cooley are experienced, engaged and astute project managers. They review workload and progress with staff on a weekly basis. We keep work products on the network and our PMs review the development of work products with budget to make sure progress is on track. They then makes adjustments as necessary to keep project progress on schedule and within the budget.

PROJECT	ON TIME	ON BUDGET
New Water Filtration Facility | Newport, OR	Y	Y
The original HDR budget was $2,566,645 including planning, equipment procurement, alternative delivery, design, permitting, bidding, construction, and startup. During the geotechnical investigation it was determined that ground improvements were needed and that the dam stability and adjacent bridge needed to be investigated with remedial designs provided, resulting in a budget increase of $395,235. The final engineering cost was $2,961,880. The project was complete within budget and on-schedule and was awarded the AWWA Large Water Project of the Year (2012). At the end of this successful project, our client indicated, **"There's not another engineering firm in the world that I would have chosen." - Tim Gross, City of Newport OR Public Works Director**		
Pony Creek WTP Expansion and Upgrade | Coos Bay North Bend Water Board	Y	Y
This project was completed on-time and within the budget, with the exceptions of additional work requested by the Owner. The total engineering budget was $2,993,852 including planning, pilot testing, permitting, design, construction, startup, and closeout. HDR completed items within the original scope of work within the original budget. The Owner did request the following additional services totaling $23,334: three weeks of additional pilot testing, design of ammonia storage tank; and surge tank relocation. HDR completed the additional work but maintained the original schedule by drawing additional resources in to address the added design components. The ending engineering cost was $3,017,186.		
Intake, Raw Water Transmission Pipeline, New Water Filtration Facility | Bend, OR	Y	Y
The City of Bend Water project was delayed for one year. The project location is on US Forest land and the environmental assessment prepared by US Forest was challenged. The original contracted scope of work for consulting was budgeted at $12,248,004, including: planning, design, bidding, construction, startup, permit coordination, and financial services. The total project budget was $73M. During the course of the work, the Owner requested that HDR provide environmental support services with a budget increase of $530,000. The final engineering cost to the City was $12,778,004. The total project cost is still within budget despite the one year delay and interruption to construction sequencing.		
Water Distribution Study | Eugene Water and Electric Board, OR	Y	Y
This project was completed on time and on budget. The project was a study to estimate a reasonable level of funding to maintain the distribution systems of two wholesale customer water districts over the long-term. This project received a very positive client report card from EWEB, with the project manager indicating he was satisfied or extremely satisfied in all categories.		
Smith Creek Assessment | Eugene Water and Electric Board, OR	Y	Y
HDR conducted a condition assessment of EWEB's Smith Creek Hydroelectric Project located near Porthill, Idaho, to evaluate the project's continued dependable operation through the expiration of the project's FERC license in 2037. The assessment included an on-site inspection and office analysis, summarized in a report which presented observations and recommendations resulting from HDR Engineering's assessment of the condition of the Project and supporting facilities. Simultaneously, HDR and subcontractor Energy GPS produced a financial evaluation which analyzed the future market value of the energy produced by the project and the probable market value of the project if the asset were sold. EWEB subsequently used the information to solicit and evaluate bids for the sale of the project.		
Wastewater Modeling | Eugene Water and Electric Board, OR	Y	Y
Project was completed on time and on budget. Under this project, HDR provided oversight of the District's sewer model selection, quality assurance, and quality control processes. This project received a very positive client report card from CWS, with the project manager indicating he was satisfied or extremely satisfied in all categories including communication, quality, and value.		

Experience, Quals, References, & Past Performance

A. Experience with Public Infrastructure Project Involvement and Regulatory Agency Interactions

The HDR team has recent and relevant land use planning and permitting experience with regulatory agencies. Similarly, we have a wealth of experience helping our clients obtain permits and approvals from federal agencies such as the US Army Corps of Engineers (USACE) and the National Marine Fisheries Service (NMFS), and state agencies like Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Land Conservation and Development (DLCD), and Oregon Department of Environmental Quality (DEQ). We frequently work with these entities --know who to talk to, and understand their rules and regulations. We can leverage our extensive land use planning and permitting experience to open channels of communication that reduce schedule and budget risk and efficiently facilitate permits and approvals. Our experience and relationships allow us to effectively advocate for our clients, promoting practical outcomes and constructible projects.

		INFRASTRUCTURE PROJECTS								
	PERMITTING SERVICES	Schmeer Road (ODOT)	Work at Port of Portland	WVFA (Port of Vancouver)	Sandy River Bridge (ODOT)	Columbia River Crossing (ODOT)	I-5 Willamette Bridge (ODOT)	Boardman Creek (Clackamas)	Fairview Creek (Gresham)	Baseline WND (First Wind)
LOCAL LAND USE	**Local Permits.** Land use and development permits can require extensive coordination with the approving jurisdiction and often have very specific requirements of information presented as part of the permitting process. Early coordination, modifying project elements, and consideration of permit requirements and timelines can help manage cost and schedule risk.	●	●	●	●	●	●	●	●	●
LOCAL LAND USE	**DLCD.** Oregon Statewide Planning Goals and implementing rules establish specific procedures when goal exceptions and plan amendments are proposed. Proactive consideration of requirements and timelines can help manage cost and schedule risk related to DLCD approvals.						●			●
ENVIRONMENTAL PERMITTING	**404.** Levees touch water - whether in the Columbia River, the Columbia Slough or associated floodplains - resulting in the need for permits from USACE when removal or fill is proposed within jurisdictional features.		●	●	●		●	●	●	
ENVIRONMENTAL PERMITTING	**401.** Projects that require a 404 permit necessitate a 401 certification, and applications need to also consider DEQ's requirements for impacts to jurisdictional features.		●	●	●		●	●		●
ENVIRONMENTAL PERMITTING	**ODFW/WDFW.** The City may need authorization from ODFW or NOAA Fisheries, including potential in-water work extensions, to keep projects on schedule or to respond to emergency flood protection needs. HDR's fisheries scientists routinely obtain needed clearances and negotiate extended in-water work windows for clients throughout the Northwest.		●	●	●		●	●		
ENVIRONMENTAL PERMITTING	**Mitigation Plans.** Impacts to jurisdictional features can be unavoidable and mitigation plans that may reflect City constraints might be necessary to keep a project on track. HDR routinely develops mitigation plans and strategies that minimize costs associated with land acquisition, reducing delays, and allowing projects to meet construction timelines.		●	●	●		●	●	●	
ENVIRONMENTAL PERMITTING	**1200C.** Erosion and sediment control permits are often the most likely avenue for a project to receive a permit violation. Considerations during planning and design, and inspection and compliance during construction would allow the City's projects to be constructed without a violation.	●	●	●	●		●	●		●

	LAND USE PLANNING SERVICES	INFRASTRUCTURE PROJECTS								
		Schmeer Road (ODOT)	Work at Port of Portland	WVFA (Port of Vancouver)	Sandy River Bridge (ODOT)	Columbia River Crossing (ODOT)	I-5 Willamette Bridge (ODOT)	Boardman Creek (Clackamas)	Fairview Creek (Gresham)	Baseline WND (First Wind)
ENGINEERING DESIGN AND DEVELOPMENT REVIEW	**Development Review.** Development applications need to be reviewed for consistency with potential City and USACE's requirements.	●				●				
	GIS. GIS allows asset management including tracking of approved encroachments and strong visual tools for reporting and informed decision making.	●	●	●	●		●	●	●	●
	408. Partner agency or private development projects require 408 authorizations. HDR has recent experience on the Schmeer Road project developing 408 authorization packages that clearly define existing and proposed encroachments, facilitating efficient 408 negotiations with USACE, and allowing HDR to guide partner agencies towards thorough authorization packages.	●				●				

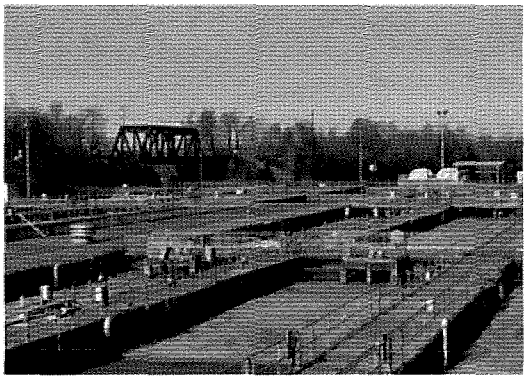
B. Similar Projects

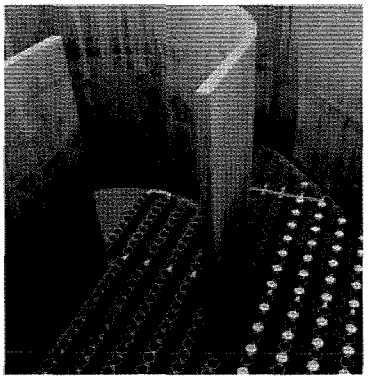
Wastewater Planning and Treatment

KEY SERVICES:

- Biosolids Stabilization & Dewatering
- Condition Assessment & Asset Management
- Conventional Rehabilitation of Sewer Systems
- Conveyance Treatment & Odor Control
- CSO Mitigation Planning & Design
- Disinfection Facilities Design
- Effluent Reuse
- Electrical I&C Design
- Infiltration/Inflow (I/I) Evaluation
- Pumping Station Design, Rehabilitation & Management
- Primary, Secondary & Advanced Wastewater Treatment Facilities Design
- Sanitary Sewer Collection System Design
- Trenchless Sewer System Installation & Rehabilitation

HDR has experienced staff and innovative solutions to address all of your wastewater needs. HDR's qualifications in wastewater engineering are based on decades of experience in municipal wastewater collection, treatment, disposal, reuse, and solids handling. We have planned, permitted, and designed pipelines, tunnels, and pump stations across the Pacific Northwest and the US. HDR has local experience in preparing collection systems, combined sewer overflow plans, and infiltration and inflow improvements.





Wastewater Treatment Plant Repair, Renovation, and Expansion

City of Newberg, OR

HDR assisted the City of Newberg (City) in a $44 million project upgrade to the Newberg WWTP. The goal was to support and meet the NPDES permit standards for the projected population of 45,000 through 2030. The project addressed all of the treatment processes within the WWTP, from the influent pump station to the effluent outfall in the Willamette River. Additionally, the HDR team conducted a mixing zone study of the City's effluent outfall in support of the NPDES permit with DEQ and the design of a new outfall manifold. HDR developed a construction phasing plan that addresses the need for the WWTP to stay in operation during the entire construction process.

Project components included: a new off site raw sewage pump station that relieved flows from the existing overburdened influent pump station; headworks (grit and screening capacity as well as flow metering and distribution); two additional oxidation ditches and repairs to the existing ditches; one additional secondary clarifier; effluent chlorination and dechlorination treatment; correction of piping problems in the outfall; solids processing systems improvements including dewatering upgrades and composting optimization; operations administrative facility; other remaining work to meet 2030 loads which could also be further phased; and a new outfall manifold.

The new wastewater diversion pump station/interceptor facility was designed to divert one of the main plant interceptors before it descends 40 feet to the existing influent pump stations. By taking this approach, the City eliminated the 40-feet of static head and the station is easier to maintain by avoiding a deep ravine that was difficult to access in wet weather.

Completion Date: 2015

107th to Arctic Sewer Replacement

City of Beaverton, OR

This 8-inch, concrete sanitary sewer line that serves businesses and a local railroad was in need of repair or replacement due to serious corrosion, near failure, and failure. HDR reviewed the City's video survey of the pipe and then made field inspections and took samples for testing to determine the potential causes for sewer failure. We evaluated the extent of failure, and assessed a variety of methods for repair or replacement including lining, pipe bursting, and open-cut excavation for full replacement. Portions of the system were asbestos-cement piping, so avoiding hazardous-material impacts was a key consideration. Given the location of the existing piping in a light industrial area, strategic soil sampling was completed to determine any concerns related to contaminated soils or groundwater. HDR then designed the replacement of the sewer-system segments that had failed.
Completion Date: 2015

Columbia Boulevard Stormwater Pump Station

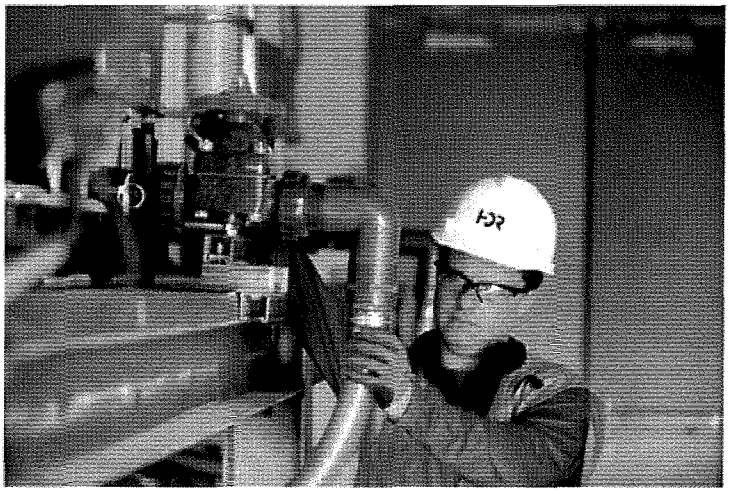
City of Portland - Bureau of Environmental Services, OR

The CBWTP Stormwater Pump Station Project (BES Project E10726) is being implemented to comply with the Tier II Response to the Stormwater Pollution Control Plan for the CBWTP. The scope of work includes a brief alternative analysis of potential options to comply with the Tier II Response and final design of the recommended solution. Despite the numerous stormwater best practices implemented at CBWTP, the stormwater discharged via the existing stormwater outfall has exceeded the permit limits for phosphorus in the last two years. Per Oregon Department of Environmental Quality (DEQ), a Tier II Response is required and it must include treatment of the stormwater to remove the phosphorus prior to discharge. HDR is supporting BES with the design and construction of a stormwater pump station to capture the majority of the stormwater and send it to the secondary treatment system that already has phosphorus removal processes in place. Construction is planned for completion prior to June 30, 2016 in compliance with the Tier II Response.
Completion Date: Ongoing (2016)

Secondary Improvements Project

City of Bend, OR

HDR staff provided owners engineering services for a $32 million dollar upgrade to the wastewater facility in Bend, Oregon which includes, primary and secondary treatment, doubling the size of the existing 6 million gallon per day facility. The work included managing a team of utility operations, maintenance and information technology staff to implement a new SCADA system including fiber optics, server room, and asset management system
Completion Date: Ongoing (2016)



Sewer Master Plan

City of Beaverton, OR

Since the City 2004 sewer mater plan, the City has experienced in-fill growth and annexed several areas, most recently the South Cooper Mountain area, which is anticipated to build out in the next 20 years. The City also wants to confirm its ability to attract and secure economic development. During this period, the City has collected a significant amount of condition data, and implemented Cityworks and Granite XP to help better maintain sewer assets. With this Sewer Master Plan update, HDR is helping the City utilize these tools and knowledge to **optimize the City's operational strategy and capital improvement program and develop a plan to fund and focus investments where they will make the greatest impact for the community.**
Completion Date: Ongoing (2017)

Hydraulic/Hydrologic Modeling Support

City of Astoria, OR

The City has entered into an Amended Stipulation and Final Order (ASFO) with the Oregon Department of Environmental Quality (DEQ) that sets out certain requirements and a phased implementation schedule for control of CSOs from their 38 outfalls to the Columbia River and Youngs Bay. HDR is assisting the City by doing the following: updating and maintaining the City's XP-SWMM hydraulic/hydrologic computer model; advising the City on monitor locations to collect data for model calibration/validation and assessing system performance; using the hydraulic model to confirm preliminary design criteria for proposed and future projects; providing expertise in developing preliminary plans for additional CSO infrastructure projects, including planning-level cost estimates; assisting with CSO compliance reporting for submission to DEQ; and presenting updates to City Council on the progress and status of the CSO Program.
Completion Date: Ongoing

Abbey Creek Stormwater and Sewerline

Clean Water Services, OR

The Abbey Creek Project includes the design of a sanitary sewer trunkline and innovative stormwater approaches for the North Bethany Plan Area which was recently added to Portland's urban growth boundary. The sanitary sewer trunkline will be in service in time to accommodate the opening of a new elementary school in 2017. The trunkline includes a crossing of the Western Tributary to Abbey Creek using a pedestrian bridge that will be approximately 30 feet high and 260 feet long. HDR's team coordinated with stakeholders such as the Tualatin Hills Parks and Recreation District, Clean Water Services, Beaverton School District, and the development community to develop a solution that minimizes compromises and maximizes benefits. The stormwater solutions include meeting the District's flow attenuation requirements using existing resources. An existing agricultural pond will be part of the flow attenuation system, an approach that leverages site characteristics and meets goals with minimal disturbance to the stream corridor. The project team is considering the implementation of real time controls to allow for maximum flexibility in the operation of the stormwater management system. The Project is being delivered successfully while meeting aggressive design schedules and satisfying the needs of multiple stakeholders.
Completion Date: Ongoing (2017)

Outfall 33 Storm Sewer Realignment

City of Portland - Bureau of Environmental Services, Portland, OR

This urban storwater project is planned to begin design in May, 2016. A storm sewer main replacement design is required for an existing failing storm main system. The storm main serves the Outfall 33 (OF33) stormwater-only basin, runs west from SE Water Avenue to the Willamette River along SE Clay Street right-of-way, and is rated with the most severe structural score (Grade 5). This project consists of abandoning the existing alignment and conveying flow to the north into the Outfall 34 (OF34) stormwater-only system. The project is planned to include trenchless methods and extensive traffic control in a highly urbanized area.
Completion Date: Ongoing (2016)

North Overlook Park Manhole Rehabilitation

City of Portland - Bureau of Environmental Services, OR

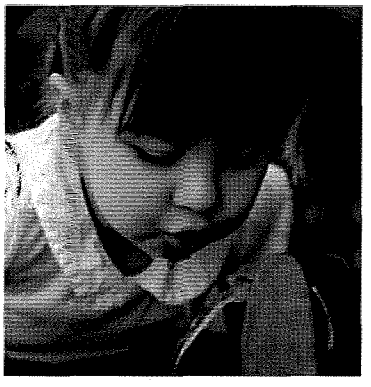
The N. Overlook Park Manhole Rehabilitation Project (BES Project E10624) is being implemented to repair an existing manhole that has extensive structural cracking. Drop structure AAT700 (manhole), located between N Greeley Ave and Overlook Park in the Beech-Essex Combined Sewer Basin, serves as the confluence for a steep slope 15-in concrete pipe and a 105-year-old 36-in trunk combined sewer line. The manhole sits offset from the 36-inch brick sewer. Flow exits the manhole in the 36-in trunk line and continues west approximately 25 feet to diversion structure AAT714. The manhole is used for access to the 36-inch brick-stone sewer that flows downstream to diversion structure AAT714. The manhole has an outside drop sewer connection that intercepts the 15-inch sewer at elevation 66-feet and it has a curved pipe section that discharges the intercepted flow into the manhole at elevation 52.2-feet (about 14-feet drop). The top elevation of the manhole is about 1 foot above the crown of the 15-inch pipe. Observations and past inspections of the manhole indicate cracking in the manhole walls. The manhole sits at the toe of a slope historically known to be the edge of a landfill closed in 1932. HDR led an alternatives analysis to identify the preferred repair plan for this manhole and is currently developing final engineering plans and technical specifications. Bid and construction phase services to implement the identified improvements are planned for 2016.
Completion Date: Ongoing (2016)

Water Planning and Treatment

KEY SERVICES:

- Corrosion Control Testing/ Remediation
- Distribution Systems & Extensions
- Geographic Information Systems (GIS)
- High Service Pumping Stations
- Tanks & Reservoirs
- Wells & Surface Water Intakes
- Water Treatability Studies
- Hydraulic/Hydrology Models
- Water System Security
- Water Quality Laboratory & Forensic Services
- Water Reclamation
- Water System Network Modeling
- Water Treatment & Disinfection
- Wellhead & Source Protection Analysis

HDR provides its clients a team of nationally recognized water experts with experience in all aspects of water management including membrane treatment, advanced treatment research, regulatory compliance, security/threat protection, management consulting, master planning/computer modeling, storage, pumping stations, operations and maintenance and corrosion control. As a leader in water infrastructure, HDR has planned and designed water treatment and conveyance facilities throughout the United States.



Water Treatment Plant Improvements

City of Newport, OR

HDR provided design and construction engineering services for a new water membrane filtration facility. The project was constructed using a Construction Manager/General Contractor (CM/GC) delivery process. HDR also assisted the City with the selection of the CM/GC. The plant's initial capacity was upgraded from four to six million gallons per day (MGD), expandable to 10 MGD. The new treatment system design includes an intake pump station, a pressurized flocculation system, membrane filters, granular activated carbon (GAC) to improve water taste and odor, and a clearwell for disinfection. A membrane backwash system minimizes waste, increasing water recovery to over 99.5 percent. The project encountered several challenges during design and construction (water quality, site constraints, unfavorable soil conditions, dam seismic stability issues, and funding shortages). The total project budget was just under $20 million. HDR worked closely with the CM/GC contractor and the city to resolve all issues and produce a state-of-the-art membrane filtration facility.
Completion Date: 2012

GAC Expansion

City of Newport, OR

The City of Newport operates a new membrane filtration drinking water treatment plant since the summer of 2012. HDR designed this new facility and provided engineering construction services. The plant was designed to include granular activate carbon (GAC) vessels for taste and odor control. At the time of construction only two GAC vessels were installed with provisions to install a future third vessel when funding is available. HDR provided construction documents for the addition of the the third GAC vessel.
Completion Date: 2015

Standby Generator

City of Newport, OR

The City of Newport's water treatment plant currently does not have a standby generator to overcome power outages and still produce water. At the beginning of the construction in 2010 the standby generator was taken out of the water treatment plant project due to shortages in finances and with the option to add it to the site when finances are available. Provisions to add the generator have been made in the design such as leaving a circuit breaker and a switch board to connect the generator in the electrical room. Also additional empty conduits for pulling the generator cables at a later point in time are in place. Five years after the treatment plant was finished, the City has the financial means to install the standby generator. The City hired HDR for this project. New generator design and regulations don't allow the generator to be put in the spot where it was proposed in the original design because of space and safety distance limitations. The old treatment plant has to be demolished and a new location for the generator has to be found on that site, the conduits need to be placed to the new location, and construction oversight of the demolition of the old treatment plant has to occur to make sure no active pipes are being destroyed or damaged. Verena is the project manager, design engineer, and construction engineer for this project, working closely with the electrical engineer to determine the generator type, capacity, and with input from the City determine additional features for the generator that may be useful for their operation. The City will also be involved in the selection of the location of the new generator as the newly opened space will provide room for a garage. A conceptional site layout will be developed. The City asked specifically for Verena to be overseeing the demolition efforts of the old treatment plant as she knows exactly which pipes are active and which ones are abandoned.
Completion Date: Ongoing (2016)

Water Supply Project

City of Bend, OR

HDR provided predesign, final design, and engineering services during construction of Phase 2 surface water improvements, which include intake modifications, water transmission conduit, powerhouse facilities, and water treatment facilities.

Intake modifications included: (1) two new fish screens using retractable, rotating drums, with actuated isolation gates and heated water spray wash system; (2) new fish passage, with pool, chute, and ladder; (3) new intake building; (4) standby power in outdoor weatherproof enclosure; and (5) programmable logic controller (PLC) based system monitoring and control linked to water treatment plant SCADA system.

The water transmission conduit included 50,400 linear feet (LF) of 36-inch-diameter pressurized pipeline, two Tumalo Creek conduit bridge crossings, conduit appurtenances (including mainline isolation valves, air release and vacuum valve assemblies, blowoff assemblies, and access manways), and cathodic protection measures and corrosion provisions.

Powerhouse facilities included one turbine generator with a flow range of 5-21 cfs and ultimate capacity of 1.4 MW, an energy dissipation valve to operate in combination with turbine with flow transition automated, isolation valves for the turbine and energy dissipation valve, piping from the water transmission conduit to turbine generator and bypass valve with flow meters on both conduits, bifurcation from the 36-inch supply line to the two 18-inch conduits for the turbine and energy dissipation valve, PLC-based controls linked to water treatment plant SCADA system, outdoor substation with circuit breaker and step-up transformer, jib crane for turbine generator equipment maintenance, equipment vaults housing the flow meters and exterior valves, and stilling basin for bypass flows and afterbay for turbine flows (with sluice gate between basins), and 2,700-square-foot powerhouse building housing the turbine generator, electrical switch gear, flow meters and battery power supply.

Water treatment facilities included: (1) pretreatment basins, including two trains of rapid mix, flocculation, sedimentation, and equalization basins; (2) vertical rapid mix equipment; (3) membrane feed pumps at equalization basin and automatic strainers with variable frequency drives (VFDs) for pump motors; (4) membrane filtration system; (5) membrane chemical cleaning system, including caustic and acid clean-in-place (CIP) tanks and neutralization tank; (6) waste handling system with overflow structure and waste pumping station; (7) chemical storage and handling systems; (8) 20,000-square-foot membrane building housing membrane equipment, administration area, chemical storage, and electrical room; (9) plant PLC-based SCADA system with membrane system controls system linked to plant SCADA system; (10) standby power generator; and (11) waste conveyance system with pumping station to discharge water treatment liquid waste stream to the city's sanitary sewer.
Completion Date: Ongoing (2016)

Thompson Road Suction Pipeline

Tualatin Valley Water District, OR

This 24-inch, 7,800-ft-long suction pipeline is a critical transmission main in the District's system. HDR assisted the District with route analysis, preliminary design, and construction engineering services. The line connects the new Thompson Road Pump Station to an existing 42" concrete cylinder pipe that generally follows the BPA power line easement running north between approximately NW 143rd Avenue and NW 147th Place/Avenue. Criticality, corrosion protection, and establishing system redundancy were key considerations for the project. This project was completed on-time and within budget (Design completed $27,000 under budget).

Completion Date: 2014

Emergency Pump Station

Tualatin Valley Water District, OR

HDR prepared a preliminary design for a 20-MGD emergency pump station that will provide flow-reversal in the Washington County Supply Line in the event of loss of supply from the City of Portland. Efforts included designing taps into the existing 54" concrete cylinder pipe, designing connections, designing a trailer-mounted pump station, and identifying an intended resolution plan for property constraints.

Based on input from Workshop 1 and field survey data including pothole information, the team finalized the design criteria. The preliminary design includes identification of hot tap locations, pump-station sizing, pump-station configuration, and final property-encumbering detail information to allow for any necessary property-owner negotiations for the final facility.

Completion Date: 2016

Water Quality Consulting

City of Beaverton, OR

Regulatory compliance and water quality evaluation in the distribution system. The City installed fluoride feed facilities and desires to better understand the distribution of concentrations. Assisted the City in determining whether to comply with the Initial Distribution System Evaluation through monitoring or modeling techniques. Conducted a full-scale distribution system tracer study using fluoride to calibrate and verify the water quality simulations of the distribution model.

Completion Date: Ongoing

Water Distribution Study

Eugene Water and Electric Board, OR

HDR assisted the Eugene Water & Electric Board (EWEB) complete a water distribution study for two water districts which receive their retail water service. The objective of the study was to estimate a reasonable annual reasonable budget or level of "investment" (funding) for the districts to effectively maintain their distribution system over the long-term and to meet service goals. HDR's data-driven approach for pipeline service life planning relied on EWEB's existing GIS data for their pipeline, which included material, size, age and leak and repair history. Two methodologies were used to assess Service Life Planning using this data: (i) Asset Class Performance Analysis; and (ii) Weibull Failure Rate Analysis. An informal regional utility survey was also conducted to compare the findings from the analysis. For the asset class performance analysis, HDR conducted several workshops with EWEB staff to determine the appropriate performance threshold to define failure for several pipe asset classes (material and size). The weibull failure rate analysis was conducted for the full system because of data limitations. The results of the analysis indicated relatively long life expectancies for the EWEB/district system. However, these life expectancies are consistent with those at some other utilities who have performed similar analysis, including those from the survey. Based on the analysis of system performance and service life, a 100-year main replacement program was forecasted in terms of mileage and cost for each of the districts. HDR worked with EWEB staff to train them in the use of the data-driven model used in the service life analysis. EWEB staff have since updated their GIS to integrate with the data analysis model so that the service life estimates can be updated as new data is collected. Finally, HDR assessed EWEB's current condition assessment program, and provided recommendations for cost-effective practices based on the most recent techniques used in the industry. Recommendations included: Monitoring failure rates and maintaining detailed records; scheduling pipes for renewal when failure rates reach a predetermined trigger point; and building a reserve for future infrastructure renewal, including field condition assessment.

Completion Date: 2015

Roadway and Transportation

HDR's deep resources provide the ability to deliver any size of projects on short notice and on schedule. A sampling of our work within the past 5 years is presented in the table below. Details on select projects follow.

	Street Design	Concept Design	Traffic	Stormwater/Sewer	Utilities	ADA	Bike/Ped
N. Rivergate Overcrossing | Port of Portland / City of Portland	●	●		●	●		
Golden Rd. / Cedar St. Improvement | City of Hillsboro	●	●	●	●	●	●	●
Boyer Drive Extension | Clackamas County	●	●	●	●	●	●	●
Schmeer Rd. / Victory Blvd. Improvements | ODOT	●	●	●	●	●	●	●
Transportation GO Bond | City of Bend	●	●	●	●	●	●	●
Boardman Creek | Clackamas County	●	●	●	●	●	●	●
Galveston Ave. Vision | City of Bend	●	●	●	●	●	●	●
NE 18th St. Improvements | City of Vancouver	●	●	●	●	●	●	●
99th Street Improvements | City of Vancouver	●	●	●	●	●	●	●
Alpine Ave. Improvements | City of McMinnville	●	●	●	●	●	●	●
Havlik Road Ext. | ODOT / City of Scappoose	●	●	●	●	●	●	●
Elwert-Krueger Rds. Intersection | Washington County	●		●	●	●	●	●
Outer Powell Blvd. Safety Improvements | ODOT	●	●	●	●	●	●	●
ROW / Pavement Coordination | City of Portland		●					
Gateway Overcrossing | Port of Vancouver	●	●	●		●	●	●
SE Interceptor | City of Portland BES	●		●	●	●		

North Rivergate UPRR Overcrossing

Port of Portland / City of Portland

Under the Port of Portland on call and in close coordination with PBOT, HDR developed two bridge alignment alternatives (bridge types include steel girders, precast concrete, and cast-in-place concrete) as well as developed concepts for pedestrian and bike at-grade crossings and typical roadway sections. We developed the TS&L report to meet the requirements of the Oregon Bridge Design and Drafting Manual (BDDM). We also identified stormwater improvements for alternatives, including right of way impacts. We conducted a desktop analysis to identify environmental resources and constraints, and identified the need for state and federal permits. The Port will use the TS&L report to obligate Metropolitan Transportation Improvement Program funding and secure the remainder of a combined funding package. We collaborated with PBOT on improvements to the North Lombard Street / North Rivergate Blvd. intersection, including paving and stormwater treatment. Improvements included reconstruction of the intersection to accommodate turning movements.
Completion Date: Ongoing (2016)

Bike/Ped Improvements, Golden Rd. / Cedar St.

City of Hillsboro, OR

HDR's in-house team of roadway designers, right of way staff, and stormwater experts are providing a seamless and integrated approach that balances stormwater, right of way, and roadway needs.

Cedar Street and Golden Road currently provide one lane of traffic in each direction, with minimal shoulders. Ditches and culverts provide drainage. HDR is working with the City to improve these collector streets to meet the City's standard cross-section for a 2-lane collector with 36 feet between curbs. Improvements include curb and gutter, bike lanes, landscape strips, street trees, street lighting, and sidewalks. Both streets include storm sewer and stormwater quality improvements, as well as modifications to waterlines.
Completion Date: 2017

Boyer Drive Extension

Clackamas County, OR

HDR is providing the County with preliminary and final engineering design plans, public involvement, right of way, and bid preparation services for an extension of Boyer Drive from OR213 to Fuller Road, and modifications to the intersection at Fuller and King roads. The Fuller/King intersection will be modified with a raised concrete median on King Road, converting the intersection to a right-in/right-out configuration. King Road will be changed from four lanes without bike lanes, to three lanes with bike lanes, and will require traffic signal modifications.
Completion Date: Ongoing (2016)

Schmeer Road / Victory Blvd Bike/Ped Improvements

ODOT, OR

We designed intersection relocations at two locations and roadway widenings on both OR99W and Schmeer Rd. to accommodate turning movements and high truck volumes. We also improved bike / ped connectivity; improved vehicle safety and operations on OR99W and at the two new connecting intersections; and improved bridge deck and rail conditions on two bridges.
Completion Date: 2015

Transportation GO Bond

City of Bend, OR

We provided preliminary and final design, including roadway and stormwater; geotech investigation and pavement design; TP&DT plans; signing and striping; illumination; and landscaping.

For this project, we supported the City in upgrading four intersections from four-way-stop-controlled/ signalized to roundabouts (Simpson Avenue/Mt Washington Drive, Empire Ave./18th St., Powers Rd./ Brookswood Blvd., and Reed Mkt Rd./15th St.). In addition to the intersection improvements, Reed Market Rd. was reconstructed to major arterial standards from 27th St to 3rd St. Due to population growth, these major intersections had become outdated, deteriorated, congested and unsafe. HDR's staff obtained 69 right of way acquisitions (including commercial and residential properties).

The project met the City's goals to reduce congestion, repair deteriorating roads and increase safety, mobility, and multi-modal connectivity. HDR fast-tracked delivery to uphold the City's commitments to the public.
Completion Date: 2015

I-5 Broadway/Weidler Interchange Improvements

ODOT, OR

To improve safety and operations in this critical area, HDR is providing preliminary engineering to refine design concepts developed for a Facility Plan. This is a complex multi-modal area that includes major bike routes, street-car, and the freeway (a major freight route). Our traffic team has been evaluating how each alternative performs with regard to improving the safety and operations for all modes. Due to the complexity of the area, safety evaluation tools were not providing accurate results, therefore, our traffic engineers created a new tool to study safety performance by predicting the locations for rapid deceleration. This project requires multi-agency coordination, including City of Portland.

HDR is leading the public involvement, developing an outreach strategy, managing project communications and facilitating stakeholder engagement. HDR also is providing economic analysis and we are developing estimates of public savings accrued from safety improvements reducing collisions; congestion reduction resulting in less recurring delay; and incident reductions resulting in less non-recurring delay.
Completion Date: Ongoing (2016)

Outer Powell Blvd Safety Improvements

ODOT

HDR provided traffic analysis for this 4.3-mile corridor on SE Powell Blvd in east Portland. The street does not have sidewalks or continuous bicycle lanes making it unsafe for bikes/pedestrians. We used Metro's travel demand and developed Synchro models to inform the team about vehicle queue lengths, circulation, and cross sections.

HDR also performed access management and preliminary design, and prepared an environmental assessment. Our public involvement team emphasized multicultural, environmental justice, and business outreach, and implemented a highly successful and innovative PI program for this diverse community.

Our team is currently developing concept designs to incorporate pedestrian and bicycle improvements. The team is testing signal phasing that will include protected pedestrian and bicycle movements.
Completion Date: 2018

Alternatives Improvements, NE 82nd / NE Airport Way

ODOT

HDR reviewed and analyzed traffic data to test concept designs. To cost-effectively deliver this project, HDR primarily used existing data sources as the basis for modeling. We used cost-effective tools (Synchro and SimTraffic) at the screening phase, and later applied more effective tools (VISSIM) to capture the interactions between modes and intersections, and produce robust and easy-to-understand visual simulations to inform stakeholders. The VISSIM model includes light rail, pedestrians, bicycle, and motor vehicles. The team also performed traffic analysis using Synchro for both airport and regional traffic peaks in the year 2035. This documentation highlights the specific movements that are failing and the reasons why they are failing.
Completion Date: 2017

C. Public Agency Client List

Names and phone numbers for projects completed for our last 10 clients. The contacts relate directly to the project descriptions provided in this section.

City of Newport
Water Treatment Plant Improvements
Steve Stewart, Water Treatment Plant Superintendent
541.574.5871

City of Beaverton
Water and Waterworks On-Call Contract
David Winship, Principal Engineer
503.526.2434

Eugene Water and Electric Board
On-Call Services
Brad Taylor, Operations Manager
541.255.5607

Tualatin Valley Water District
Thompson Road Pipeline and Emergency Pump Station
Mike Britch, Chief Engineer
503.848.3045

City of Bend
GO Bond Project
Nick Arnis, Growth Management Director
503.388.5542

Port of Portland
N. Rivergate UPRR Overcrossing
Eric Forsyth, Project Manager
503.415.6321

City of Hillsboro
Golden Rd./Cedar Street
Scott Dreher, Sr. Program Manager
503.681.6118

Clackamas County
Boyer Road Extension
David Queener, Development Project Manager
503.742.4322

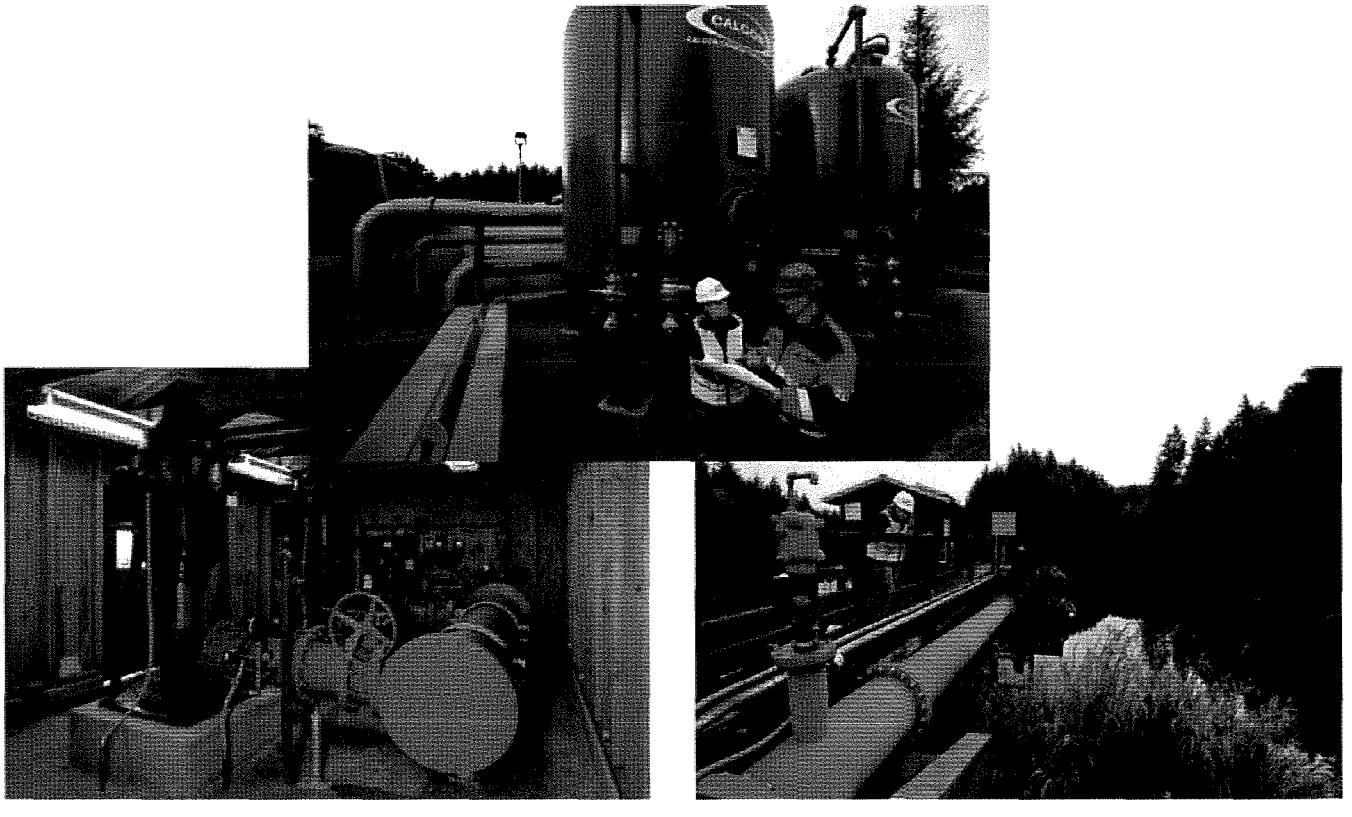
ODOT
Schmeer Road / Victory Blvd Bike/Ped Improvements
Matt Freitag, Consultant Project Manager
503.731.4851

Clean Water Services
Durham Tertiary Upgrades
Rick Shanley, Division Manager
503-547-8178

D. Understanding Design and Construction Oversight

Oversight during construction is a very important aspect and implements the constructed structure as designed and/or meets the design intent. Construction engineering services is the connection piece between the contractor and the design engineer in which the design engineer represents the City's interest and needs. The construction of the Newport water treatment plant is a good example how HDR demonstrated the ability to provide excellent engineering services and oversight during construction. Many unexpected items arose during construction from the soil foundation stabilization of the treatment plant to the discovery of liquefiable soil at the existing intake and the subsequent redesign of a completely new intake structure all while construction was in full swing. During start up, there were many issues with the programming and the correspondence between the membrane manufacturer who was in charge of the programming and the construction team. Verena and the construction team were able to overcome the difficulties in communication and prove that the job was well done on the contractor's side resulting in the City receiving money back from the membrane manufacturer for not fulfilling their contractual obligations.

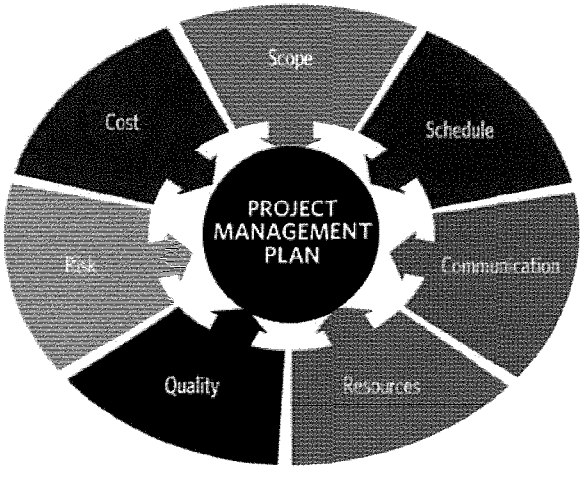
In summary, no design or contractor is perfect. Verena was able to build a trust level with the contractor resulting in potential conflicts during construction being discovered and brought up before implementation. Together with the contractor, Verena found solutions to problems that arose during construction while managing the budget closely. And every problem was brought to the City's attention at the weekly construction meetings to inform and obtain approval. Construction oversight not only includes submittal and RFI reviews but also communication, trust, and people skills to make it a successful project.



E. Delivering Projects On Time and Within Budget

Successful project management requires comprehensive planning and disciplined execution. To guide the project, HDR will create a comprehensive Project Management Plan.

Throughout the project, we will use many tools to efficiently execute the work, monitor our conformance with the baseline plan, and implement corrective actions, as needed. Our approach and key project management tools are summarized below.



HDR's project management approach will deliver on-time, on-budget project completion with no surprises.

Communication/Project Meetings

HDR's approach is focused on a highly-interactive process. At the heart of this process is a series of workshops involving representatives of key disciplines, including our consulting team and your engineering, management, and maintenance and operations (M&O) staff. Having the many viewpoints in one room provides participants a better understanding of issues, anticipates and resolves constraints, and leads to creative solutions.

Benefit to the City: *Interactive workshops/meetings provide participants a better understanding of issues, anticipate and resolve constraints, and lead to creative solutions and consensus among participants.*

Cost Control

Cost management will be achieved by monitoring costs, earned value and cost to complete on a task-by-task basis. ***HDR's contract manager, Verena Winter, has a stellar record of completing projects at or below budget, as demonstrated on projects performed for the City of Newport (Dam Consultant and Wastewater Treatment Improvements), City of Cottage Grove (Wastewater Treatment Optimization), and the City of Silverton (Wastewater Treatment Upgrade).***

Schedule Control

At the onset of the project, we will meet with the City staff to review and refine the sequencing logic and deliver consistency with the detailed work breakdown structure. Monthly updates will be prepared, analyzed, and discussed with the City, and correction plans will be developed to address negative variances with the baseline schedule. HDR will also provide and maintain a three-month look-ahead calendar of key milestones, submittals, and meetings to help everyone plan their schedules.

Benefit to the City: *Advanced scheduling will save time for key decision makers and agency participants, and help keep the project on schedule.*

Effective Project Quality Management

Our philosophy is that it is **our** job to provide quality management for all deliverables we submit. It is not the City's responsibility to review our products for anything except conformance to your goals and objectives. HDR will follow a rigorous, job-specific QA/QC plan to drive the quality of the deliverables to the City.

HDR is committed to producing high quality work, and has developed a suite of policies and procedures for QA/QC. Management reviews at project inception and at intervals throughout the project confirm that scope, budget, and schedule are on track. Independent technical reviews of each project deliverable are performed by subject experts not directly involved with the work prior to submittal. These QA/QC reviews are all documented, with review forms kept with the project files, and the QA/QC program compliance of HDR offices is audited yearly by the company.

Benefit to the City: *Quality products to the City.*

Support Information

1. **Insurance certificate**
2. **HDR team resumes**

CERTIFICATE OF LIABILITY INSURANCE

6/1/2017

DATE (MM/DD/YYYY) 5/25/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Lockton Companies
444 W. 47th Street, Suite 900
Kansas City MO 64112-1906
(816) 960-9000

CONTACT NAME:
PHONE (A/C, No, Ext): FAX (A/C, No):
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Hartford Fire Insurance Company	19682
INSURER B : Travelers Property Casualty Co of America	25674
INSURER C : American Zurich Insurance Company	40142
INSURER D : Lexington Insurance Company	19437
INSURER E :	
INSURER F :	

INSURED
1013472 HDR ENGINEERING, INC.
8404 INDIAN HILLS DRIVE
OMAHA, NE 68114-4049

COVERAGES HDRIN01 CERTIFICATE NUMBER: 312366 REVISION NUMBER: XXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR X CONTRACTUAL LIAB INC GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [X] LOC OTHER:	N	N	37CSEQU0950	6/1/2016	6/1/2017	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 1,000,000 $ 1,000,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
A A A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS X HIRED AUTOS SCHEDULED AUTOS X NON-OWNED AUTOS	N	N	37CSEQU0951 (AOS) 37CSEQU0952 (HI) 37CSEQU1160 (MA)	6/1/2016 6/1/2016 6/1/2016	6/1/2017 6/1/2017 6/1/2017	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 2,000,000 $ XXXXXXX $ XXXXXXX $ XXXXXXX $ XXXXXXX
B B	X UMBRELLA LIAB [X] OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $	N	N	ZUP-10R64084-16-NF (EXCLUDES PROF LIAB)	6/1/2016 6/1/2016	6/1/2017 6/1/2017	EACH OCCURRENCE AGGREGATE $	$ 1,000,000 $ 1,000,000 $ XXXXXXX
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [N] If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	N	0381127	7/1/2016	7/1/2017	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
D	ARCHS & ENGS PROFESSIONAL LIABILITY	N	N	061853691	6/1/2016	6/1/2017	PER CLAIM: $1,000,000 AGGREGATE: $1,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

312366
FOR INFORMATION PURPOSES ONLY

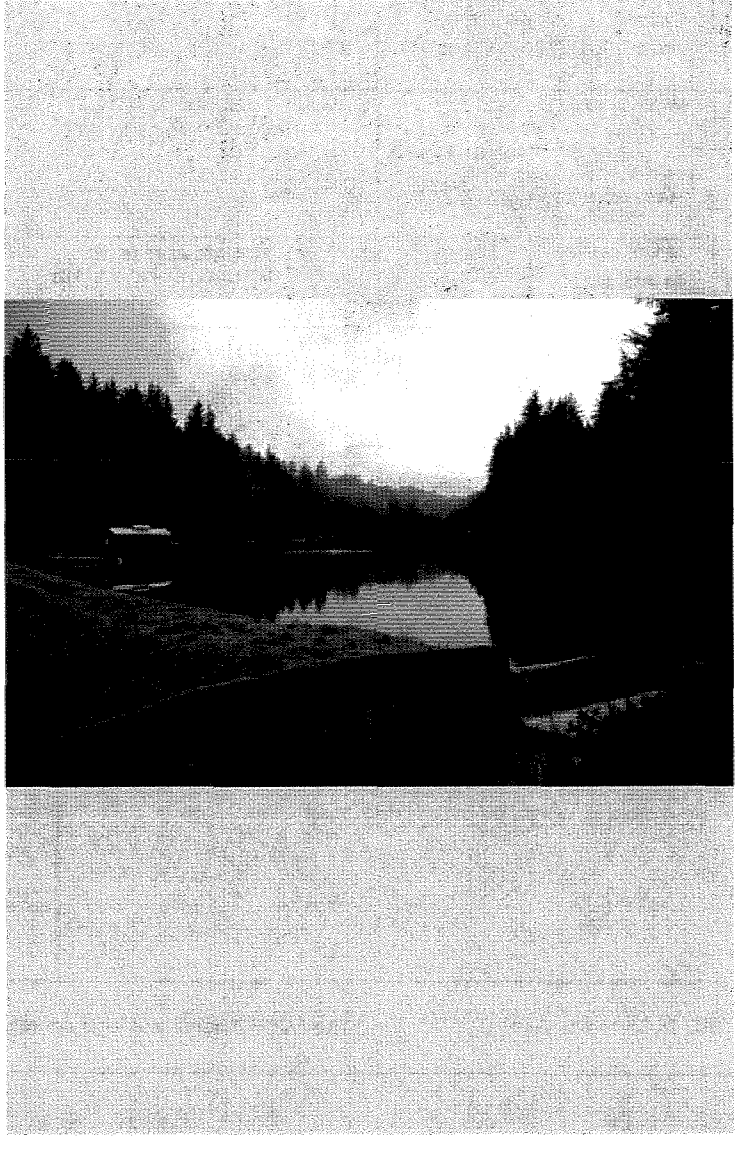
CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Joseph M Agnello

Project Manager and Technical Advisor Resumes



Verena Winter

Contract Manager

Verena is a skilled project manager, having led the design and construction team for the City of Newport's new water treatment facility and intake design. Other project management experiences include the dam engineer of record for the City of Newport and the seismic Evaluation for the Big Creek Dams, the Scoggins Dam Raise Project, and the City of Silverton digester upgrade. She also provided leadership as the deputy project manager for the City of Newberg wastewater treatment plant expansion. Verena has been involved in many water and wastewater design projects including wastewater treatment plant and conveyance system upgrades and expansions; odor control for treatment plants and collection systems and water treatment facility design. She also has experience in CM/GC procurement and leading construction-phase engineering efforts.

EDUCATION

Master of Science, Environmental Engineering, Portland State University, 2007

Certificate, Hydrology, Portland State University, 2007

Bachelor of Science, Engineering Management, Bauhaus University, Germany, 2005

REGISTRATIONS

Professional Engineer - Environmental, Oregon, United States, No. 79262PE

PROFESSIONAL MEMBERSHIPS

International Water Association, Member, 2009-Present

American Water Works Association, Member, 2010-Present

RELEVANT EXPERIENCE

City of Newberg, Wynooski WWTP Dewatering, Headworks, and Influent Pump Station Improvements Construction Services (Task Order 8), *City of Newberg, OR*
HDR designed upgrades at three facilities at the wastewater treatment plant in Newberg: the headworks, the influent pump station, and the dewatering facilities. Verena was the construction engineer for the entire duration of the construction and coordinated with the CM/GC contractor and the Owner. She also assisted with the start-up process.

Newport Water Treatment Plant Improvements, *City of Newport, OR*
HDR provided predesign, final design, bid support, and construction observation services for the City's new water treatment facility. A new membrane water treatment facility capable of treating 6 MGD (expandable to 10 MGD) replaced the existing 4 MGD plant. Verena was involved in the project pre-design, design, facilitated the CM/GC procurement, provided construction-phase engineering services for this CM/GC construction contract, and start-up assistance. She also managed the assessment and feasibility study of the reservoir dam and the influent pump station design and construction efforts.

Wastewater Treatment Facility Upgrade 2011 Construction, *City of Silverton, OR*
As part of the solids-handling system expansion, two digesters were upgraded with new covers and mixing systems, all new mechanical equipment was installed for the digesters, and the solids side-stream recycle pump station was refurbished. . Verena provided construction phase engineering services for the digester upgradeShe partnered with the contractor and client to find solutions to problems arising during construction, and maintain the project schedule and budget.

Pony Creek WTP Expansion, *Coos Bay / North Bend Water Board, OR*
Pony Creek WTP upgrades were intended to keep the facility ahead of the curve in producing quality water and meeting peak demands. Efforts included increasing the plant's capacity from 8 to 12 mgd, incorporating conventional flocculation and sedimentation, providing integrated manganese control, and improving the disinfection system. Verena constructed the pilot and was part of the pilot study analysis process.

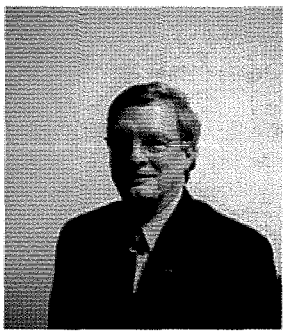
Primary Sludge Thickening, *Metropolitan Wastewater Management Commission, Eugene, OR*
HDR designed a new gravity thickener system for the Eugene/Springfield Water Pollution Control Facility. By thickening the primary sludge prior to digestion, the clarifiers will be able to handle higher wet-weather peak flows without washing out solids. The thickener was equipped to be capable of receiving waste activated-sludge for co-thickening. Finally, the system was prepared for the potential future addition of a UFAT fermentation process to further enhance plant operations. Verena was involved in the construction engineering portion of the project and during start-up.

Phase 1, Water Quality Treatment and Regulatory Compliance Project, *City of Baker City, OR*
HDR assisted with the Phase 1 of a water quality, treatment, and regulatory compliance project in order to meet US EPA elevated water surface treatment standards. The city serves about 4,400 connections using a gravity surface-water source treated by disinfection with gas chlorine. HDR prepared a report for submission to Oregon Department of Health Services. Verena was part of the water quality team that analyzed and evaluated collected data and provided recommendations to the City.

Hyalite/Sourdough WTP, *City of Bozeman, MT*
HDR designed and provided construction administration for a new 22 mgd membrane water treatment plant to replace the existing direct filtration water treatment facility. The project included a new admin./lab. building, influent flow control, raw water preliminary treatment, fully automated membrane water treatment units, chemical storage and feed residuals handling, and standby power. Verena facilitated the 9 month pilot study by designing, constructing the pilot system. This involved managing several vendors, compiling and analyzing pilot data and preparing reports submitted to Montana DEQ. Verena also helped with the membrane and pumping system design.

Water Filtration Facility, *City of St. Helens, OR*
HDR supported the City in the design of its new membrane filtration water treatment facility. The plant has an initial capacity of 6 mgd, expandable to 10 mgd. Filtration is needed due to the classification of groundwater as under the direct influence of surface water. Verena was part of the design team for several aspects for this project.

Water Treatment Plant Upgrade, *City of Bend, OR*
HDR provided predesign, final design, and engineering services during construction of Phase 2 surface water improvements, which include intake modifications, water transmission conduit, powerhouse facilities, and water treatment facilities. Intake modifications included: (1) two new fish screens using retractable, rotating drums, with actuated isolation gates and heated water spray wash system; (2) new fish passage, with pool, chute, and ladder; (3) new intake building; (4) standby power in outdoor weatherproof enclosure; and (5) programmable logic controller (PLC) based system monitoring and control linked to water treatment plant SCADA system. The water transmission conduit included 50,400 linear feet (LF) of 36-inch-diameter pressurized pipeline, two Tumalo Creek conduit bridge crossings, conduit appurtenances (including mainline isolation valves, air release and vacuum valve assemblies, blowoff assemblies, and access manways), and cathodic protection measures and corrosion provisions. Powerhouse facilities included one turbine generator with a flow range of 5-21 cfs and ultimate capacity of 1.4 MW, an energy dissipation valve to operate in combination with turbine with flow transition automated, isolation valves for the turbine and energy dissipation valve, piping from the water transmission conduit to turbine generator and bypass valve with flow meters on both conduits, bifurcation from the 36-inch supply line to the two 18-inch conduits for the turbine and energy dissipation valve, PLC-based controls linked to water treatment plant SCADA system, outdoor substation with circuit breaker and step-up transformer, jib crane for turbine generator equipment maintenance, equipment vaults housing the flow meters and exterior valves, and stilling basin for bypass flows and afterbay for turbine flows (with sluice gate between basins), and 2,700-square-foot powerhouse building housing the turbine generator, electrical switch gear, flow meters and battery power supply. Water treatment facilities included: (1) pretreatment basins, including two trains of rapid mix, flocculation, sedimentation, and equalization basins; (2) vertical rapid mix equipment; (3) membrane feed pumps at equalization basin and automatic strainers with variable frequency drives (VFDs) for pump motors; (4) membrane filtration system; (5) membrane chemical cleaning system, including caustic and acid clean-in-place (CIP) tanks and neutralization tank; (6) waste handling system with overflow structure and waste pumping station; (7) chemical storage and handling systems; (8) 20,000-square-foot membrane building housing membrane equipment, administration area, chemical storage, and electrical room; (9) plant PLC-based SCADA system with membrane system controls system linked to plant SCADA system; (10) standby power generator; and (11) waste conveyance system with pumping station to discharge water treatment liquid waste stream to the city's sanitary sewer. Verena was onsite during startup/commissioning and led the coordination with the contractor and system integrator during the testing phase.



John Koch

Technical Advisor - Design

Having evaluated, planned, designed, reviewed, constructed, and started up 300+ water and wastewater filtration systems during his 40+ years in the industry, John provides an abundance of design and innovative experience to the JWC. John has worked on over 100 pump station projects including the Newberg and Mount Vernon plants, which are of similar size and complexity to the JWC intake. He has also been instrumental in the successful commissioning of many of HDR's advanced treatment facilities including plants in Oregon, Alaska, Washington, California, and Colorado.

EDUCATION
Bachelor of Science, Civil Engineering, Indiana Institute of Technology, 1968

REGISTRATIONS
Board Certified Environmental Engineer, United States National Registration

Professional Engineer, Idaho, United States, No. 8369

Professional Engineer, Indiana, United States, No. PE60017723

Professional Engineer - Civil, Washington, United States, No. 23981

PROFESSIONAL MEMBERSHIPS
American Water Works Association, Slide Gate Committee

American Water Works Association, Stainless Steel Pipe Committee

INDUSTRY TENURE
47 years

HDR TENURE
28 years

RELEVANT EXPERIENCE

Wastewater Treatment Plant Expansion, *City of Newberg, OR.* Senior Technical Lead. Senior technical lead for $44 million in improvements to the Newberg Wastewater Treatment Plant. Improvements included a new offsite raw sewage pumping station that will relieve flows from the existing overburdened influent pump station, headworks, two additional oxidation ditches, one additional secondary clarifier, and dewatering upgrades.

Alderwood Water and Sewer District, Aeration System Improvements, *Lynnwood, WA.* Project Manager. John was the project manager for upgrades and improvements for aeration system for 3 MGD activated sludge wastewater treatment plant.

Emerald Ridge Wastewater Pump Station Replacement, *City of Bellevue, WA .* QC Reviewer and Technical Resource. John was QC Reviewer and technical resource for construction documents for removal and replacement of the existing pump station. Improvements included a caisson and cast-in-place concrete wet well,125 GPM submersible duplex pumps, influent sewer modifications, discharge piping, valve vaults, ventilation, and site improvements.

River Road Wet Weather Facility, *City of Salem, OR.* Lead QC Reviewer. John was Lead QC Reviewer for preliminary and final design and construction period services for the River Road Wet Weather Facility. The improvements included the design and construction of an Actiflo high-rate flocculation/sedimentation and UV disinfection system.

Caldwell Pump Station Improvements, *City of Caldwell, ID.* Project Manager. John led the hydraulic analysis and design of improvements to the influent pumping station. A hydraulic model study demonstrated that the existing pump station capacity could be increased from 10 mgd to 15 mgd with minor modifications and new solids handling pumps.

Durham Headworks Operations Improvements, *Clean Water Services, OR.* Design/Construction Engineer. Provided design and construction services for $15 million of expansion and modifications. Oversaw rehabilitation of two secondary clarifiers, installation of two 700-hp variable frequency drive 33-mgd pumps, raw sewage pumps, and new 140-mgd headworks building.

Primary Sludge Thickening, *Metropolitan Wastewater Management Comm, OR.* John was a technical resource for gravity thickener system for the Eugene/Springfield Water Pollution Control Facility. By thickening the primary sludge prior to digestion; the clarifiers are now able to handle higher wet-weather peak flows without washing out solids.

Decatur Booster Pumping Station, *City of Las Vegas, NV.* Quality Control. John was QC engineer on pump selection and installation for 85 MGD water booster pumping station.

Bend Water Treatment Plant. *Bend, OR* John was the QA/QC lead for this 13 MGD pressure membrane facility. Project components include river intake improvements; a 10-mile, 30-inch diameter high pressure steel transmission pipeline; a 1.6 megawatt hydroelectric power house and a new membrane filtration water treatment plant.

Bryte Bend Water Treatment Plant Expansion to 58 mgd, *City of West Sacramento, California*
QA/QC lead for predesign, environmental documentation, permitting assistance, design, bidding, and construction administration services to expand the Bryte Bend Water Treatment Plant from 24 mgd to 58 mgd. Improvements include new fish screens, installation of five 12 mgd vertical turbine pumps, ACTIFLO raw water clarification system, conventional gravity filtration system including conversion of existing traveling bridge filters, two 4 MG prestressed concrete clearwell tanks, low lift pumping station, chemical storage and feed system, disinfection system modifications, conversion of the sedimentation basins to washwater recovery basins, new washwater recovery pumping station, operations building/lab modifications, and electrical and plant control system improvements.

Otay Water Treatment Plant Review, *City of San Diego, CA*
The City chose HDR to assist in optimizing the operation and management of the 40-mgd Otay Water Filtration Plant through a competitive process. John performed maintenance, equipment and operations performance review for 40 mgd Otay water treatment plant.

Clean Water Services, Durham Advanced Wastewater Treatment Plant, Phase II-A Improvements, *City of Tigard, OR*
As part of a five-year contract, HDR designed improvements to the Durham Advanced Wastewater Treatment Facility. John served as the project manager of construction for $25 million in improvements including nine 950-square-foot multi-media effluent filters, 200,000-square-foot two-stage chemical clarifier, and 1 million gallon chlorine contact tank

Basin Creek Water Treatment Plant Design, Butte Basin Creek WTP, *Butte-Silver Bow, MT*
The City and County of Butte-Silver Bow (BSB) serves the public water supply system from three sources: the Big Hole River, Moulton Reservoir, and Basin Creek Reservoir. Initial efforts focused on site selection, pilot testing, hydraulic analysis, distribution system modeling, and process selection. Based on these initial efforts, a pressurized membrane filtration process was selected and ultimately the membrane equipment was procured by BSB. John is leading the QA/QC team on the design of this ceramic membrane plant for the Big Hole area of Butte-Silver Bow.

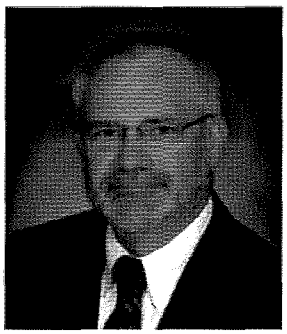
Bozeman Water Treatment Plant, *City of Bozeman, MT*
John was the QA/QC lead for this 22 MGD pressure membrane facility. The facility includes a rapid mix, flocculation and plate settlers prior to the membrane filtration system. He also was the lead startup and commissioning engineer.

Broken Arrow Water Treatment Plant, *City of Broken Arrow, OK*
John was the QA/QC lead for this 20 MGD pressure membrane facility. The plant consists of a raw water pump station, earthen pre-sedimentation basins, pre-treatment facilities with rapid mix, flocculation and plate settlers and pressure membrane treatment system.

Water Treatment Plant Improvements, *City of Anacortes, WA*
The City of Anacortes hired HDR to assist in implementing upgrades to their water treatment plant. HDR provided a new pre-treatment process using ballasted flocculation/sedimentation to provide improved turbidity reductions of the raw water prior to filtration. John's responsibilities as lead mechanical engineer included developing and designing improvements for the 40 mgd enhanced sedimentation, rapid sand filtration facilities.

Phase 5C.1 Initial Tertiary Membrane Filtration (TMF)/Nitrification Improvements, *City of Coeur D'Alene, ID*
HDR is completing the design of expanded aeration facilities and 1.0 mgd of TMF that can be added incrementally up to 6.0 mgd as flows increase and more stringent ammonia, phosphorus, and CBOD permit limits go into effect. John led the QA/QC team and was the lead startup/commissioning engineer for the membrane units that are exceeding expectations with achieving effluent limits of less than 0.03 mg/l phosphorous and 0.1 mg/l ammonia.

Water Filter Upgrade, *City of Pasco, WA*
HDR's evaluation determined that the 1946 vintage piped underdrain system should be replaced to increase the hydraulic capacity of the multi-media filters. John was the project manager for filter underdrain system, media selection, and media cleaning alternatives. The team prepared construction plans and specifications to remove all the internal components of the existing 16 filter cells.



John Plattsmier

Technical Advisor

John has worked on 100+ pump station evaluations and designs over the past 32 years. This experience includes design of over 44,000 HP in installed pump station capacity. Serving as technical advisor for the City's Treatment Plant Improvements project, you are familiar with John's deep knowledge of pump station and pipeline planning, design, and construction. John understands the complexities of system hydraulics, capacity, and limitations. This project knowledge, combined with his pump station and pipeline planning experience, will result in decision-making confidence for the City's civil engineering needs on any project.

EDUCATION
Bachelor of Science, Civil Engineering, Louisiana State U Baton Rouge, 1983

REGISTRATIONS
Professional Engineer, Oregon, United States, No. 86825

PROFESSIONAL MEMBERSHIPS
American Society of Civil Engineers (ASCE), MOP for Pipeline Inspection and Acceptance Testing, Blue Ribbon Panel Reviewer

American Society of Civil Engineers (ASCE), Pipeline Condition Assessment, Member

American Society of Civil Engineers (ASCE), Pipeline Route Selection Committee (MOP 46), Member

American Water Works Association, Ductile and Iron Pipe Committee (A-21), Chair

RELEVANT EXPERIENCE

Newport Water Treatment Plant Improvements, *City of Newport, OR.* Technical Advisor. HDR provided predesign and final design, bid support, and inspection services for the expansion of its water treatment facility. The City currently owns and operates a 4 MGD potable water system that was being upgraded to a new membrane water treatment facility capable of treating 6 mgd (expandable to 10 mgd).The total project budget falls just under $20 million

Water Treatment Plant Expansion Preliminary Design, *Joint Water Commission, OR.* Intake and RWPS Lead. As part of a larger team, HDR is leading the intake pump station and raw water pipeline analysis, and system capacity assessment. The goal is to maximize the system's capacity to meet projected demands with minimal short-term investment.

Surface Water Improvements, *City of Bend, OR.* Technical Advisor. HDR is leading this project to improve water supply reliability and to comply with regulatory requirements. Project components include river intake improvements; a 10-mile, 30-inch-diameter high pressure steel transmission pipeline; a 1.6 megawatt hydroelectric power house and a new membrane filtration water treatment plant.

Willamette Water Supply Preliminary Design, *Tualatin Valley Water District, OR.* Design Lead. The new billion-dollar Willamette Water Supply will convey 85+ mgd of water from the Willamette River to Hillsboro, and will include an expanded intake, new 85 mgd WTP and pump station, 20 MG reservoir, and 20+ miles of 72-inch-diameter pipelines. HDR will deliver the preliminary design of the transmission system including pipeline routing and 30% design, reservoir siting and 30% design, overall permitting strategy, program implementation plan, and assessment of future program management.

Washington County Emergency Pump Station, *Tualatin Valley Water District, OR.* Project Manager. HDR prepared a preliminary design for a 20-mgd emergency pump station that will provide flow-reversal in the Washington County Supply Line in the event of loss of supply from the City of Portland. Efforts included designing taps into the existing 54" concrete cylinder pipe, designing connections, designing a trailer-mounted pump station, and identifying an intended resolution plan for property constraints.

107th to Arctic Sewer Replacement, *City of Beaverton, OR.* Technical Advisor. HDR evaluated the extent of failure of this 8-inch, concrete sewer, and took testing samples to determine potential causes. We assessed repair or replacement methods including lining, pipe bursting, and open-cut excavation. HDR then designed the replacement of the sewer-system segments that had failed.

Sanitary Sewer Intertie #2, *Clackamas County, WES, OR.* Technical Advisor. HDR conducted a routing study and subsequent design of a pump station and force main that transfer sewage flows from CCSD #1 to new facilities currently under construction at the Tri-City Water Pollution Control Plant in Oregon City.

City of Dallas, TX, Able Pump Station, *City of Dallas, TX.* Technical Advisor. HDR designed a new storm water pump station for the City which will replace two existing pump stations.

The new Able Stormwater Pump Station will have a capacity of 410,000 gpm (580 mgd) and utilize 3000 HP concrete volute pumps as the pumping units. The station will have dual primary electric service and dual transformers to provide reliable service and the station will be integrated into the new communications system used by the City's Flood Control staff.

City of Fargo, HM LLC - 2nd Street and 4th Street Pump Station Outfalls, *Fargo, ND.* Technical Advisor. Construction oversight for two new pump stations in downtown Fargo. The 2nd Street pump station is being upgraded to 75,000 gpm. Then 4th Street Levee pump station is being replaced and was designed for 98,000 gpm.

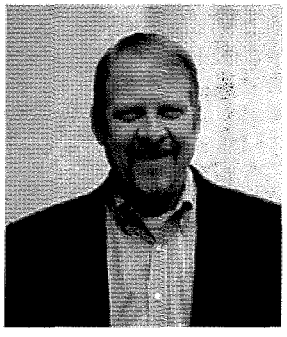
Brazos River Intake and Pump Station, *Confidential Client.* Technical Advisor. HDR is providing consulting services to a confidential client for its intake on the Brazos River that will deliver 200,000 GPM (288 MGD) to its existing and new Harris Reservoirs. The services include geomorphic analysis of the river bed, sediment transport modeling using both Computerized FD and scaled physical modeling to provide assurance to the client that the new intake will be able to deliver the required flow through the widely varying depth of flow in the river. In addition HDR is preparing the preliminary design of the pump station and delivery piping to the reservoirs. Upon completion of the preliminary design HDR is to move into final design with an in-service date of 2015.

USACE - Jacksonville District, C-44 Reservoir and Appurtenant Features, *Indiantown, FL.* Technical Advisor. HDR designed a 1,100 cfs (710 mgd) stormwater reservoir pumping station, stormwater reservoir with 36,500 acre-feet of storage and an associated stormwater treatment area of approximately 4,000 acres. The project goal is to capture stormwater runoff from the C-44 canal to better control damaging freshwater discharges and improve water quality for the St. Lucie Estuary.

Southern Nevada Water Authority, SNWA Treatment and Transmission Project, *Las Vegas, NV.* Project Manager. This project involved the planning, design and construction of approximately $2 billion worth of improvements to deliver water to the Las Vegas Valley. Included in the project was nearly 100 miles of pipeline ranging in size from 144 to 42 inches, as well as nine pumping stations, and reservoirs and five flow control stations. Services included hydraulic and surge analysis, master specification development, master detail development, planning and route selection of the pipelines and site selection of the pump stations and reservoirs and design services. Oversaw the review of submittals and shop drawings for the 150-mgd River Mountains Water Treatment Facility, five of the water pump stations and a significant portion of the transmission mains. Managed the planning of two of the three segments of the conveyance system and the design activities of four of the water pumping.

Martha Street Sewer Separation, *City of Omaha, NE.* Technical Advisor. As part of the City's CSO Program, HDR conducted a storm sewer separation study, preliminary and final design, and prepared a Basis of Design report of the proposed sewer separation in the Martha Street Basin. Approximately ten blocks of new sanitary sewer were constructed within an existing residential neighborhood.

Metro Wastewater Reclamation District PAR 1088 South Platte Interceptor and Pump Back, *Metro Wastewater Reclamation District, CO.* Technical Advisor. HDR is responsible for preliminary and final design of a new 7.5 mile interceptor sewer and 11.0 mile force main to serve the new Northern Treatment Plant. The project includes 7.5 miles of SPI interceptor with diameters from 30-84 inches.



Shane Cline

Surface Water Management

Shane specializes in stormwater system design and planning, flood, and scour studies that include detailed cost estimating to meet clients' facilities needs and specific budgetary situations. He also performs hydrologic and hydraulic analysis, stream restoration, facilities master planning, GIS mapping, and development of detail-oriented final design documents that include contract plans, cost estimates, and project specifications. He has performed this work on a variety of projects including roadway, culvert and bridge improvement projects, stream rehabilitation projects, fish passage, facility master plans, and stream enhancement projects.

EDUCATION

Master of Civil Engineering, Civil Engineering, Portland State University, 1999

Bachelor of Engineering, Civil Engineering, Montana State University, Bozeman, 1992

REGISTRATIONS

Professional Engineer - Civil, Oregon, No. 61469PE
Issued: 02/28/2001,
Expires: 12/31/2015

PROFESSIONAL MEMBERSHIPS

American Society of Civil Engineers (ASCE), Portland Section, Member, 2001-2005

RELEVANT EXPERIENCE

Newport Water Treatment Plant Improvements, *Newport, OR*
HDR provided predesign and final design, bid support, and inspection services for the expansion of its water treatment facility. The City currently owns and operates a 4 MGD potable water system that was being upgraded to a new membrane water treatment facility capable of treating 6 mgd (expandable to 10 mgd).The total project budget falls just under $20 million.

City of Newport, Oregon, Dam Consultant of Record, *Newport, OR*
HDR has performed an initial investigation on seepage, static stability, and post-earthquake stability analysis of Big Creek Dam #1 and #2 to understand the potential for large deformations and/or failure in case of a range of seismic events that may occur in the area of the reservoir sites. HDR's investigation also determined that additional site characterization and evaluations were required to help refine the understanding of the site geology, and the corresponding behavior of the foundation and embankment soils at the Dam #1 and #2 sites.

Tualatin Valley Water District, SW 124th Avenue Pipeline Design, *Tualatin, OR*
Shane was the Deputy PM for the WWSP's SW 124th Avenue Pipeline Design. HDR provided the design for approximately 2.2 miles of 66" steel water transmission pipeline that will eventually connect to the Willamette River Water Supply System. This pipeline would be constructed in coordination with the Washington County's proposed new roadway construction of SW Graham's Ferry Road, Tonquin Road and the new 124th Avenue. Shane acted as deputy project manager and provided coordination with Washington County's roadway design consultant, project designers, TVWD, attended constructability reviews, and coordinated detail oriented utility conflicts between projects.

City of Bend, Surface Water Improvements Phase 2, *Bend, OR*
HDR lead this $60 million project to improve water supply reliability and comply with regulatory treatment requirements. Project elements included river intake improvements; a 10-mile, 30-inch diameter high pressure steel transmission pipeline; a 1.6 megawatt hydroelectric power house and a new membrane filtration water treatment plant. Elements included preliminary design, final design, coordination with nearby Federal landowner (USFS), FERC compliance, permitting, and construction observation. Shane was the site civil task lead and was responsible for final design of the upstream water intake, site design including maintenance considerations, site access, existing utility coordination, design of retaining walls to avoid sensitive areas, and development of scour protection at the major creek crossing.

Port of Portland, Port-wide Stormwater Master Plan, *Portland, OR*
Senior Stormwater Manager. HDR is leading the maritime / industrial portions of an overall stormwater masterplan for the Port of Portland. In this role, HDR is evaluating the existing stormwater infrastructure at the four (4) maritime terminals as well as the four (4) industrial districts, totaling over 4,250 acres of heavy industrial property. HDR's role encompasses the full suite of stormwater engineering services from data acquisition (infrastructure survey and water quality sampling), to capacity assessments, to retrofit designs and water quality treatment, to assistance with regulatory negotiations with the City or Portland as well as Oregon DEQ and even to micro stormwater planning for the Port's dock runoff. HDR is also helping the Port develop a comprehensive set of design standards for all maritime projects (both tenant-designed as well as Port-designed) to follow. Shane acted as HDR's project manager for this project.

Clean Water Services, Fanno Creek Reconstruction/Rehabilitation, *Tigard, OR*
The District hired HDR to provide hydraulic analysis and design services for the enhancement of Fanno Creek between Hwy 99 and Hall Blvd. The project re-meandered a previously straightened reach and stabilized several highly eroding banks to improve channel function, floodplain connectivity and aquatic habitat. The project also created new wetlands, integrated backwater and tributaries to Fanno Creek, and replaced invasive vegetation with native plant communities.

City of Portland, Northwest Neighborhoods Combined Sewer Relief, *Portland, OR*
Project Manager / Task Lead. HDR assisted BES on the Northwest Neighborhoods project that alleviated basement flooding and provide reductions in CSO flows to the new West Side CSO Tunnel. This goal was achieved by developing a Recommended Plan through completion of four primary project components: Condition Assessment, Basin Characterization, Alternative Analysis, and Capital Improvement Plan integration. The resulting Recommended Plan was developed to a predesign level through the incorporation of plan and profile sheets that identified major project elements and potential conflicts. Mr. Cline served as Task Lead responsible for alternatives development and coordination with the City's hydraulic modeling team, documentation of the alternative development process, extensive GIS mapping.

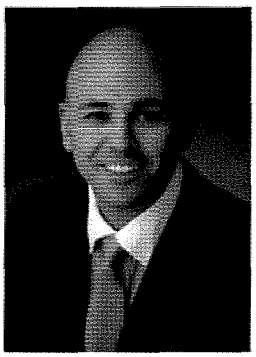
Fourth Plain Boulevard and Covington Road Realignment, *Clark County, WA*
Water Resources Designer
Designed three facilities to mitigate stormwater impacts related to the improvement of 8,500 feet of urban arterial roads. Stormwater facilities included infiltration basins, biofiltration swales, and conveyance elements. Coordinated efforts between road design engineers, soils engineers, and county staff. Design elements included high groundwater, highly developed surrounding properties, and extremely flat road profile.

Dayton Bridge Repair, *Clark County, WA*
Water Resources Task Lead. The Dayton bridge currently is rated as a three out of ten and is considered scour critical. Due to funding limitations and traffic loading Clark County indicated a preference for repair of the existing bridge over replacement. HDR assisted the County prepare a grant application, conducted site visits, developed a concept plan and develop program level cost estimates. Once the grant was issued HDR advanced the concept design to final design. To support the design HDR also prepared bridge hydraulics and scour analysis using HEC-RAS and developed scour protection measures. Additionally the hydraulics team coordinated with environmental staff to develop a design that was able to be permitted with out sacrificing public safety. Shane was responsible for preparing the concept level scour protection measure design and overseeing the hydraulic and scour analysis.

City of Grants Pass, Stormwater Master Plan and Modeling, *Grants Pass, OR*
The City hired HDR to develop a stormwater master plan to mitigate the impacts of increased stormwater runoff and pollutants due to development in rapidly growing Grants Pass. HDR assisted the City in identifying a well-defined stormwater master plan and provided the City with readily available design data and tools to assist in the building of stormwater infrastructure that benefits the entire community of Grants Pass.

Clean Water Services, Bethany Creek Enhancement Pilot Project, *OR*
Design and H&H Lead.
This pilot project focuses on reducing flow to limit channel degradation, floodplain disconnection, and erosion potential by maximizing stormwater detention within a natural wetland along the Bethany Creek corridor near NW Kaiser Road. The HDR Team is incorporating the use of natural features, landscape, and vegetation along with stormwater structures. The team will also quantify how changes in land use and stormwater runoff might affect the system. Steps implemented here will serve as a model for future efforts. Shane oversaw development of the unsteady hydraulic model (1d and 2d), interpreted analysis results as they related to project goals and objectives, and oversaw the development of the project plans and contract documents.

Padden Parkway, *Clark County, WA*
Water Resources Engineer. Prepared hydrologic and hydraulic analysis and design for the creation of 5,000 feet of new arterial roadway through sensitive weltands. Project elements included the preparation of alternative analysis and the design of biofiltration swales, vegetated buffer strips, and conveyance culverts. This project also addressed significant ecological concerns. Integrated efforts of roadway design engineers, wetland mitigation team, and county staff.



Dustin Cooley, PE

Roadway

EDUCATION
Bachelor of Science, Civil Engineering

REGISTRATIONS
Professional Engineer, Washington, United States, No. 41794

Professional Engineer, Oregon, United States, No. 63070PE

Dustin has 15 years of experience completing complex roadway / highway design projects in Oregon and southwest Washington. Dustin's responsibilities have included managing design teams; applying AASHTO, state, and local agency design standards to develop PS&E bid packages; performing detailed project documentation including QA/QC checks; QA/QC throughout all levels of design; developing complex construction staging plans dovetailing construction with adjacent projects, minimizing impact to public, maintaining access, and meeting agency work zone traffic control goals; developing detailed PS&E, for use by contractors to prepare bids; representing design team during construction, providing high level of technical support and guidance to the client and contractor; and providing support to agencies during bid process and providing construction engineering support once contracts are awarded.

RELEVANT EXPERIENCE

Boyer Drive Extension, *Clackamas County, OR*
Dustin is managing the team that is developing preliminary and final engineering design plans, public involvement, right of way, and bid preparation services. HDR staff are developing design criteria for roadway section, storm drainage facilities, bike and pedestrian facilities, sidewalks, traffic signal modifications, signing, striping, lighting, and retaining walls.

18th Street Improvements - 112th Ave. to 138th Ave., *City of Vancouver, WA*
HDR designed the upgrade of NE18th Street, providing east/west connectivity. The project was developed in two phases. Working closely with the client (at times embedded in city offices), Dustin managed the HDR team that developed plans, specifications, and estimates for the segment from NE Four Seasons Lane to 138th Avenue, which included sound and retaining walls and stormwater facilities.

Boardman Creek Fish Habitat Restoration, *Clackamas County, OR*
Dustin is the Deputy Project Manager and Roadway Lead for this project where HDR is providing preliminary engineering and creek restoration, hydraulics, and environmental services to reduce flood events, provide fish passage, enhance wildlife habitat, and restore Boardman Creek to its natural functions. The project is replacing two deficient pipe culverts with new bridges to convey flood events.

I-5/SR501 (Pioneer Street) Interchange, *City of Ridgefield, WA*
The 1960s-era I-5/SR 501 interchange was replaced with a modern tight diamond interchange to increase capacity, provide efficient access to I-5, and improve safety. Pioneer Street (SR501) was realigned with existing right of way, and new ped/bike facilities added. We also prepared preliminary and final design of dual-lane roundabouts and a NB I-5 auxiliary lane. HDR prepared preliminary and final design; Dustin provided Quality Control.

39th St Bridge DSDC, *WSDOT*
Dustin supported the development of final PS&E construction documents for a grade separation of 39th St. that improves vehicular and bike/ped mobility. Work included designing a one-way circulator frontage road; preparing striping and signing plans; coordinating with watermain, sanitary sewer and stormwater designs; and coordinating among stakeholders including City of Vancouver, BNSF, and WSDOT.

Airport Way Interchange Improvements, *ODOT*
As Lead Roadway Designer, Dustin worked with the team that prepared the preliminary design and provided technical support during PS&E development of construction documents. The design addressed congestion associated with the NB movements from Airport Way to I-205 while maintaining the long-term integrity of I-205 and access to Portland International Airport and surroundings. Project included roadway design, utilities coordination, pavement design review, signing/striping, complex staging, right of way acquisition, oversight of permitting, neighborhood outreach and TP&DT plans.

I-84 East Portland Freeway to NE 181st Avenue, *ODOT*
This 8.5-mile, pavement preservation project refurbished, repaired, and overlaid pavement and improved roadside safety. Dustin developed preliminary and final PS&E construction documents for signing/striping and traffic control plans for this 8.5-mile section of I-84. We designed a detour for a complete closure of EB and WB I-84 traffic for paving operation to mill and inlay 3.5 miles of the pavement surface within the I-84/I-205 interchange. For DAP and Final Design phases, we prepared traffic control staging plans and details; median barrier replacement details; detour plans and details; signing and striping plans and details; sign mount details; specifications; and a cost estimate. Dustin also managed the construction for the HDR designs.

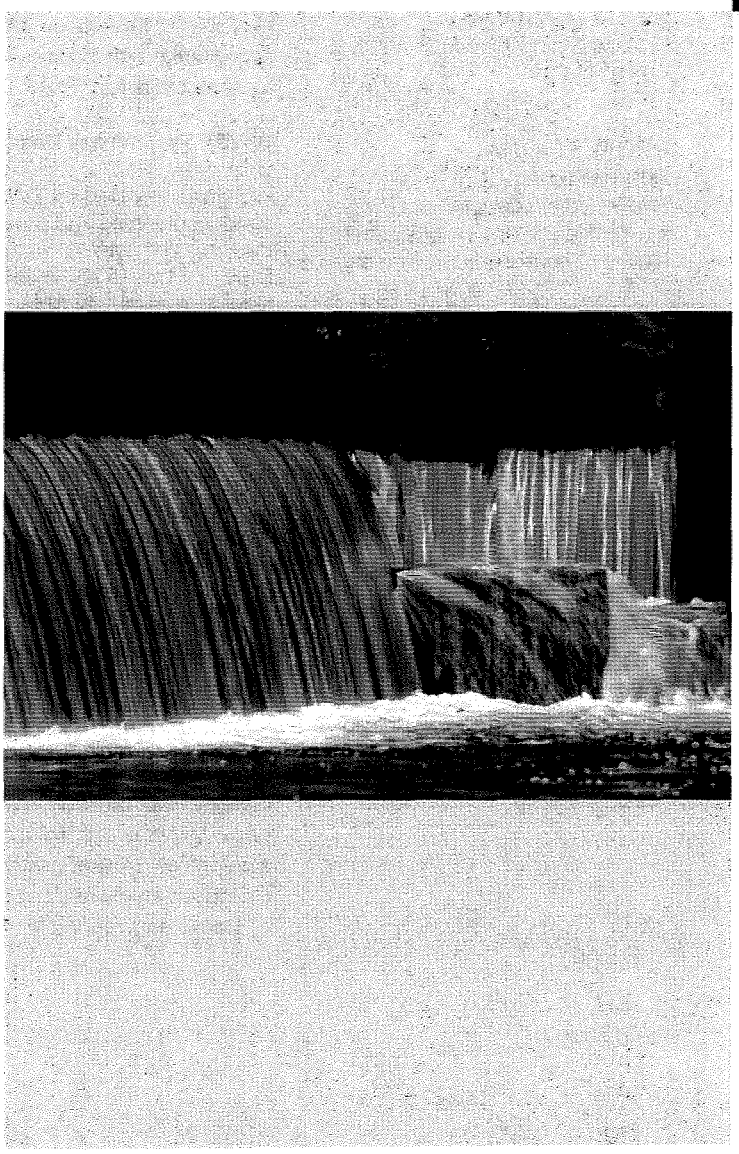
Havlik Road Improvements, *City of Scappoose, OR*
As the lead roadway designer, Dustin developed 60% design on this federally funded modernization project under separate contracts with the City of Scappoose and ODOT and later completed and delivered final PS&E documents under one contract to ODOT's Office of Pre-letting. Project included roadway design, coordination with railroad, waterline and utilities relocations, traffic signal design, wetlands determination, signing/striping and construction administration.

Golden Road and Cedar Street Bike / Pedestrian Improvements, *City of Hillsboro, OR*
As the lead roadway designer, Dustin is working with the city to improve these collector streets to meet the city's standard cross-section for a 2-lane collector with 36 feet between curbs. Improvements include curb and gutter, bike lanes, landscape strips, street trees, street lighting, and sidewalks .Both streets include storm sewer and storm water quality improvements, as well as modifications to city waterlines.

Havlik Drive Railroad Crossing and Extension, *ODOT*
Dustin designed a crossing of the Portland and Western railroad at Havlik Drive in Scappoose, OR. The project included right of way evaluation and acquisition, roadway and storm drainage design, traffic signal and street lighting design, water main design and easement acquisition, railroad crossing design, and connection to Hwy 30 at the Havlik Drive intersection.

OR 213 E. Portland Freeway to Conway, *ODOT*
Dustin provided quality control for this project, where HDR provided roadway engineering, permanent and temporary traffic management, and construction support to complete improvements to the roadways including pavement reconstruction, signal replacements, culvert upgrades, restriping, and drainage improvements. The project included roadway alignment safety upgrades to ODOT 4R Design Standards. HDR prepared the final plans, specifications, and estimates.

Design Lead Resumes



Matt Duffy

Water/Sewer Pipelines

Matt is a transmission system designer with 11 years of experience including planning, design, and construction management of pipelines and pump stations. His projects have included 66-, 72-, and 114-inch diameter pipes, many through urban corridors. One example is the condition assessment and design of recommended improvements for 108 miles of large-diameter laterals for the Southern Nevada Water Authority. As a construction inspector/manager, Matt has been in charge of field inspection, overseeing up to four field inspectors. His responsibilities have included processing change orders, contract change directives, RFIs, pay requests, and engineer estimates through expedition software.

EDUCATION

Master of Science, Civil Engineering (Master of Science in Civil Engineering), University of Nevada Las Vegas, 2012

Bachelor of Science, Civil Engineering, Oregon Institute of Technology, 2004

REGISTRATIONS

Professional Engineer, Oregon, United States, No. 74371

PROFESSIONAL MEMBERSHIPS

Construction Management Association of America, Southern Nevada, Member, 2006-Present

RELEVANT EXPERIENCE

SW 124th Avenue Pipeline Design, *Tualatin Valley Water District, OR*
As the first component of the WWSP transmission system, WWSP is constructing approximately 3 miles of 66-inch steel water transmission pipeline in coordination with Washington County's proposed roadway, the new SW 124th Avenue. HDR developed the PS&E for construction and also coordinated with Bonneville Power Administration and BNSF for permitting of pipeline crossings. **Role:** Design Lead

WWSP Preliminary Design, *Tualatin Valley Water District/City of Hillsboro, OR*
HDR was selected by TVWD, the City of Hillsboro, and their partners to conduct planning and preliminary design of the Willamette Supply transmission system, including over 30 miles of large-diameter transmission lines and two 15 MG reservoirs. Matt coordinated development of the draft pipeline preliminary design documents and also supported development of design standards. **Role:** Pipeline Preliminary Design Documents Coordinator

North Transmission Pipeline Emergency Repair, *Joint Water Commission, Hillsboro, OR*
HDR provided emergency response to the City of Hillsboro in the replacement of a large diameter valve after a catastrophic failure on a major regional transmission line. HDR performed an evaluation of the problem, developed and implemented a repair strategy, and facilitated quick materials procurement. **Role:** Project Engineer

City of Bend, Surface Water Improvements, *City of Bend, OR*
HDR provided predesign and design services of Phase 2 surface water improvements, which included intake modifications, water transmission conduit, powerhouse facilities, and water treatment facilities. The water transmission conduit included 50,400 LF of 36-inch-diameter pressurized pipeline; two Tumalo Creek conduit bridge crossings; conduit appurtenances (including mainline isolation valves, air release and vacuum valve assemblies, blowoff assemblies, and access manways); and cathodic protection measures and corrosion provisions. Matt assisted with the hydraulic engineering for this pipeline. **Role:** Project Engineer

Sewer Rehabilitation Group D, *City of Las Vegas, NV.* Inspector/Construction Manager. This project included the CIPP rehabilitation of the following existing sanitary sewers and rehabilitation of sanitary sewer manholes: 2 spot repairs of 15-inch diameter polyvinyl chloride (PVC) sanitary sewer pipe and 32 sanitary sewer manholes in the Los Prados Community from Ann Road to Lone Mountain Road; Approximately 13,309 feet of 24-, 27-, 30-, and 36-inch diameter unlined reinforced concrete pipe (RCP) sanitary sewers and 40 sanitary sewer manholes from Lone Mountain Road to Cheyenne Avenue.

NPS Water & Sewer, *National Park Service.* Resident Engineer. Matt was the Resident Engineer and Inspector for installation of 8-inch water and sewer pipe, 8-inch sewer pipe slip-lining, new manhole installation, manhole rehabilitation, fire hydrant installation, water meter vaults, backflow preventers, irrigation systems, and road base and asphalt restoration.

Sloan 2160 and Lamb 2345 Pumping Station Expansions, *Southern Nevada Water Authority, NV.* Construction Phase Services. Mr. Duffy reviewed shop drawings and provided construction phase services for expansion of two 111 MGD pump stations through addition of size 15,300 gpm split-case pumps at each station.

V&A CCWRD Lift Station Condition Assessment, *Las Vegas, NV.* Project Engineer for the assessment of 20 Lift stations with the Las Vegas Valley. Responsible for physical site visit, inspection, and providing a final report with pumping station condition assessment and equipment upgrade and replacement recommendations.

WPCF Expansion, *Las Vegas, NV.* Project Designer. Responsibilities included pumping station hydraulic systems design calculation, predesign and design of the Centrate Pumping Station expansion and plant 1-4 Primary Sludge Pumping Stations, preparing specifications , equipment list, and cost estimation; shop drawings review during construction phase; response to RFI, and Action Items.

Sahara- Arden Replacement and BOMO Force Main, *Las Vegas, NV.* Project Engineer. The CLV Sahara Arden Gravity Sewer Replacement and BOMO Force Main consisted of installation of approximately 4,250 LF of 66"/72"/78" and 6,400 LF of 104" diameter sanitary sewer and removal/abandonment of approximately 11,000 of 54"/66"/72" diameter sanitary sewer. Sewer bypass pumping and sequencing of the existing sewer line abandonment were required.

CCWRD Collection System Consulting Services, *Clark County Water Reclamation District, NV.* Project Designer. Matt provided an updated developer-installed infrastructure inspection program, supported CCWRD outreach to stakeholders and implemented the inspection program. The work includes a best practices study of multiple municipalities and compilation of a guidelines document to be used to inspect developer-installed wastewater collection system infrastructure.

Mario Benisch, PE

Wastewater Process

Mario is a senior process engineer who has been involved in the evaluation and/or design of more than 50 wastewater treatment plants across the United States. His primary focus is on biological and chemical process design of wastewater treatment systems, process modeling, facility and master planning, and emerging treatment technologies. Mario is known for his ability to find creative solutions to technical issues. He has helped solve capacity issues at wastewater treatment plants throughout the nation; identifying opportunities that help agencies meet their expanding loads with minimal capital investment. In particular, he specializes in secondary treatment and nutrient removal. One example is the St Joseph, MO 54 mgd BNR Upgrade. By utilizing decommissioned aerobic digesters and cross seeding from one parallel BNR plant to the other the overall program cost were reduced by $20 million. His experience with research, planning, and design equip him to generate and assess new ideas for process improvements.

EDUCATION
Master of Science, Environmental Engineering, University of Stuttgart, Germany

REGISTRATIONS
Professional Engineer - Environmental, Oregon

PROFESSIONAL MEMBERSHIPS
Water Environment Federation, Member, 1998-Present

International Water Association, Member, 2004-Present

HDR TENURE
17 years

INDUSTRY TENURE
18 years

RELEVANT EXPERIENCE

WWTP Facility Plan, *City of Silverton, OR*
Lead Process Engineer. Developed the facility plan for the liquid-treatment process, which included flows and loads analyses, process modeling, mass balance, existing capacity and performance review, alternative development and evaluation, and selection of final recommended alterative.

Wilsonville WWTP Facility Plan, *City of Wilsonville, OR*
Lead Process Engineer. Conducted capacity evaluation focusing on different discharge permit scenarios, process optimization and the replacement of aerobic digester with anaerobic digesters, as well as dewatering and subsequent recycle load-management issues.

Durham AWWTP Nitrification Capacity Study, *Clean Water Services, Hillsboro, OR*
Lead Process Engineer. Conducted a combination of full-scale stress testing and computer simulation to determine the additional nitrification capacity of the plug flow design of the new process train over the existing complete-mixed trains.

Kellogg WWTP Facility Evaluation, *Clackamas County Water Environment Services, OR*
Lead Process Engineer. Conducted hydraulic and process capacity analysis for a landlocked 10-MGD facility for different effluent permit scenarios. The analysis determined the existing treatment capacity and identified various alternatives to improve the hydraulic capacity by removing bottlenecks and upgrading the treatment processes to improved nitrification while maintaining the current treatment capacity.

Hite WWTP Facility Plan, *MWRD, CO*
Lead Process Engineer and Process Modeler. Provided facility planning support for 220 MGD advanced nutrient removal facility including tertiary, sidestream anammox, and phosphorus recovery. Responsibilities included alternative development and evaluation, process modeling, facility sizing and layout, and phasing development.

Wenatchee WWTP, *City of Wenatchee, WA*
Lead Process Engineer and Process Modeler. Provided facility planning support for 4 MGD BOD removal only facility that discharges to the Columbia River. Responsibilities included unit process capacity evalation, alternative development and evaluation, process modeling, and facility sizing.

Billings WWTP, *City of Billings, MT*
Lead Process Engineer and Process Modeler. Provided facility planning support for 34 MGD advanced nutrient removal facility including, sidestream anammox and phosphorus recovery. Responsibilities included alternative development and evaluation, process modeling, and facility sizing.

WWTP Capacity Evaluation, *City of Pasco, WA*
Lead Process Engineer. Conducted process capacity evaluation of a 4-MGD Trickling Filter Activated Sludge Facility. In addition to determining the existing capacity, alternatives to increase the nitrification capacity and permit denitrification by partial trickling filter bypass of primary effluent.

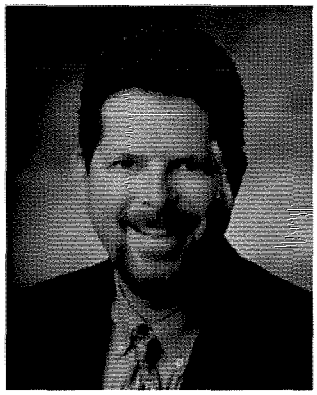
WWTP Facility Plan, *City of Billings, MT*
Project Engineer. Conducted process modeling, capacity evaluation, and condition assessment of the 15-MGD treatment facility.

WWTP Facility Plan, *City of Coeur d'Alene, ID*
Lead Process Engineer. Provided process design and process modeling for several facility plan updates, each reflecting changes to the discharge permit and population-growth projections. The particular change of this planning project was the limit of technology discharge phosphorus limit of less than 0.05 mg/L, which led to include major technology pilot-testing to reduce the risk to the City of Coeur d'Alene.

Wastewater Facilities Planning, Preliminary Design, *Spokane County, WA*
Project Engineer. Provided process design assistance for Spokane County facility plan and several amendments over the years. Mr. Benisch's primary role on this project was process modeling, establishing design flows and loads, and developing planning-level design alternatives.

Lemay WWTP, *City of St Louis, MO*
Process Engineer for the evalation of a combined treatment capacity of the Lemay treatment facility that consists of a 240 mgd BOD removal only seconcary treatment train and a 120 mgd wet weather chemically enhanced primary treatment (CEPT) facility

Low Phosphorus Demonstration Pilot Facility, *City of Coeur D'Alene, ID*
Process Engineer. HDR is conducting a two-year demonstration pilot for the City of Coeur d'Alene to help select the treatment technology or technologies for the wastewater treatment plant to meet lower effluent phosphorus limits under new NPDES permit limits. HDR is providing a platform for operator training, answering questions regarding reliability, assessing process impacts from diurnal and seasonal variability in flows and loads, and providing a head start on process optimization.



Bryan Black

Drinking Water Quality

Bryan Black specializes in water system planning and design, including water supply intakes, pump stations, pipelines, and water treatment plants. Bryan has overseen design of over a dozen water pump stations and pipeline projects in Oregon. He brings a keen understanding of hydraulic requirements, hydraulic institute standards, and modeling to develop system curve for pump station designs. Bryan engages multiple disciplines to meet customers' goals and design requirements EWEB will benefit from Bryan's experience managing and designing projects including intakes, pump stations, and pipelines for the Cities of Bend, St. Helens, Newport and the Canby Utility Board.

EDUCATION

Master of Science, Environmental Engineering, University of North Carolina, 1994

Bachelor of Science, Civil Engineering, University of Texas Austin, 1989

REGISTRATIONS

Professional Engineer, Oregon, United States, No. 65179PE

Professional Engineer, Washington, United States, No. 34367

PROFESSIONAL MEMBERSHIPS

American Water Works Association, Member

American Water Works Association, Pacific Northwest, Member

Chi Epsilon, National Civil Engineering Honor Society, Member

Pacific Northwest Clean Water Association (PNCWA), Member

Water Environment Federation, Member

RELEVANT EXPERIENCE

New Intake and Raw Water Pump Station, *City of Newport, OR*
Project Manager. The intake pipeline involved an innovative siphoning system to avoid construction within a high hazard earthen dam. The pump station included vertical turbine can pumps driven by variable frequency drives. The pumps are controlled to maintain consistent pressure into the new treatment plant, while the treatment plant controls the flow rate through valving. The raw water pump discharge line was constructed using trenchless techniques to pass under a creek to reach the pre-treatment chemical addition and mixing area. HDR assisted with preparation of CM/GC contracting and scoping documents, and completed this project using CM/GC construction delivery.

New Intake, Raw Water Transmission Pipeline, and Raw Water Pump Station, *City of Bend, OR*
Project Manager. The project included: a new trash rack with overhead catwalk for inspection and maintenance; pre-sedimentation basins with sluicing gates; a new intake structure; a propane fired generator with automatic transfer switching; a propane fuel tank with vaporizer; new electrical service and fiber optic communications. The raw water transmission main project included 10-miles of 30- to 36-inch pipe. The raw water pump station includes four VFD-driven vertical turbine can pumps to feed the new water filtration facility. The pumps maintain consistent pressure into the treatment plant, while the treatment plant controls flow to treat the rate of incoming water from the raw water transmission system. Full permitting was completed including dewatering and in-water work planning and approvals.

River Intake and Raw Water Pump Station Improvements, *Canby, OR*
Project Manager. The river intake on the Molalla River included a subsurface infiltration gallery along with a direct river intake. The raw water pump station included three vertical line shaft turbine pumps in a concrete caisson wet well structure. The pumps were powered by variable frequency drives and a diesel standby engine generator was installed to improve reliability. The project included a 500-foot horizontal directional drill pipeline installation to avoid an unstable hillside.

Raw Water Intake Evaluation, *JWC, OR*
Technical Advisor. As part of the overall evaluation of the WTP, HDR evaluated the intake and raw water pump station to determine current peak capacity and develop alternatives for expansion. The HDR team performed a series of pump station tests to validate the accuracy of raw water flow meters, determine if pumps were operating on their curve, and support identification of improvements to increase capacity. HDR also supported pilot testing efforts at the WTP to evaluate increase filter loading rates.

Water Supply Intakes and Pump Stations, *City of St Helens, OR*
Project Manager. HDR planned and designed Intake, Raw Water Pump Stations, and pipelines for the City of St Helens. The work included renovation of two Ranney collector wells located in the bank of the Columbia River. Two existing 5,000 gpm pumps stations were refurbished including one submersible pumps station and one vertical line shaft turbine pump station. At the new water treatment plant, HDR designed a new raw water pump station and a new finished water pump station, each with 7,000 gpm capacity. The pump stations used vertical turbine can pumps driven by variable frequency drives to closely control flow and pressure while conserving power. Automation included automatically bringing on or dropping off pumps with demand, running all pumps at the same speed, and binging on a standby pump in case of a duty pump fault. Safety provisions included hydraulic surge suppression.

Finished Water Pump Station, *Canby Utility Board, OR*
Project Manager. HDR designed upgrades and expansion of the utility's finished water pump station at the water treatment plant to achieve the desired 8,500 gpm expanded capacity. The project included condition assessment, hydraulic modeling, transient analysis, alternatives evaluation, and design of selected improvements.

Finished Water Pump Station, *Coos Bay / North Bend Water Board, OR*
As part pf upgrades at the Pony Creek WTP, HDR designed a new 8,500 gpm finished water pump station to meet the increased capacity of the treatment facility. Services included planning, design, and services during construction.

New 1,000 CFS Fish Screen, *North Unit Irrigation District, OR.*
Project Principal. HDR designed new fish screening facilities and a renovation to the District's 1000 CFS intake near Bend OR. A flat screen was selected. The project included regulatory coordination including ODFW and Bureau of Reclamation.

Intake, Raw Water Pump Station, and Pipeline Improvements, *City of Kennewick, WA.*
Task Leader. HDR designed refurbishment of the City's 15 MGD Ranney Collector well in the bank of the Columbia River. Tasks included well re-development, new pump station, ultraviolet light and sodium hypochlorite disinfection, new 72-inch contactor pipeline, and new building.

Lisa Tamura

Hydraulic/Hydrologic Modeling

Lisa has a variety of experience using computer hydraulic models in water, wastewater and stormwater planning and design. Her work has included assisting with hydraulic model selection, model development, calibration and system analysis and design. She has also trained staff on hydraulic model operation and maintenance. She has considerable experience with water and wastewater hydraulic modeling programs such as: InfoWater, H2OMap Water, InfoSWMM, XP-SWMM, EPA SWMM, EPA NET, WaterCAD/ WaterGEMS, SewerCAD and InfoWorksCS. In addition, Lisa uses GIS products and Microsoft Access to supplement presentation, data management, and analysis routines to expand the capabilities of the hydraulic modeling programs.

EDUCATION

Master of Science, Environmental Engineering, University of Southern CA, 1994

Bachelor of Science, Engineering (Civil Engineering), Claremont Consort Harvey Mudd, 1990

REGISTRATIONS

Professional Engineer - Environmental, Oregon, United States, No. 18934

PROFESSIONAL MEMBERSHIPS

Water Environment Federation, Pacific Northwest, Member, 1998-Present

RELEVANT EXPERIENCE

Aquifer Storage and Recovery Well #3, *City of Beaverton, OR*
Modeling Lead. HDR updated the water distribution model then used the model to evaluate the piping hydraulics for injection and discharge, and to evaluate potential ranges of water quality upon blending at the point of entry and at the first customer. Lisa used the City's existing hydraulic model (WaterCAD) to evaluate the impacts of ASR 3 on the distribution system.

Water Master Plan, *City of St. Helens, OR*
Hydraulic Modeling Lead. The project involved updating the City's demand forecast, developing a water system model to analyze system deficiencies, and developing a capital improvement program. Lisa assisted the City in selecting InfoWater as the hydraulic model used for this work. She also constructed, calibrated, and used the model for system analysis to help identify projects for the City's capital improvement program.

Water Master Plan, *City of Forest Grove, OR*
Modeling and Hydraulics Lead. The WMP update was completed under a short timeline (approx. 6 months) to meet the City's budgeting cycle. HDR developed an upgraded water distribution system model using WaterGEMS to leverage the City's robust GIS system and used the model to identify capital improvement projects.

Modeling Services, *Clean Water Services, OR*
Project Manager. Lisa assisted CWS staff in selecting a hydraulic model for its sanitary sewer system, developing protocols of information migration, and providing overall quality assurance support. As part of the platform selection process, HDR conducted staff interviews and document reviews; and analyzed six alternative models. Once a candidate model platform was identified, HDR performed a pilot model conversion to assist them in developing the conversion approach - intended to ensure consistency. Once the final selection was made, HDR provided QA/QC of the model conversion, in addition to a calibration and integration process to help facilitate transition and operations.

Comprehensive Wastewater Master Plan, *City of Spokane, WA*
Lead Modeler. Preparation of this plan included the construction and calibration of three basin models using Innovyze's InfoSWMM hydraulic modeling platform. Once

constructed, these models were used to perform the system analysis needed to evaluate capacity limitations in the County's current collection system as well as evaluating the impacts due to growth in the future. As a part of this effort flow monitoring data was collected and evaluated for use in the calibration of the models. Training and direction was provided to County staff on using the InfoSWMM model.

Combined Sewer Modeling and Master Planning Support, *City of Astoria, OR.*
Project Manager and Lead Modeler. Lisa is assisting the City by doing the following: updating and maintaining the City's XP-SWMM hydraulic/hydrologic computer model; advising the City on monitor locations to collect data for model calibration/validation and assessing system performance; using the hydraulic model to confirm preliminary design criteria for proposed and future projects; providing expertise in developing preliminary plans for additional CSO infrastructure projects, including planning-level cost estimates; assisting with CSO compliance reporting for submission to DEQ; and presenting updates to City Council on the progress and status of the CSO Program.

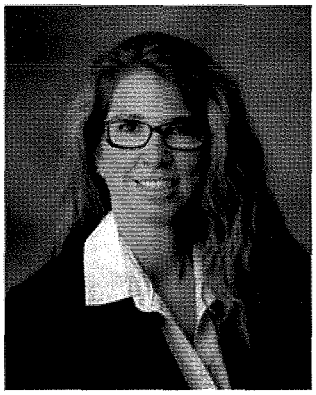
Water Model Update, *City of Vancouver, WA*
Project Manager. HDR worked with the City of Vancouver to update their InfoWater model and perform an energy optimization analysis of their pumping facilities. HDR updated the model to include new demand scenarios and to set up the model to perform energy-optimization analyses.

Willamette Water Supply Preliminary Design, *TVWD, OR*
Hydraulic Modeler. The new billion-dollar Willamette Water Supply will convey 85+ mgd of water from the Willamette River to Hillsboro, and will include an expanded intake, new 85 mgd WTP and pump station, 20 MG reservoir, and 20+ miles of 72-inch-diameter pipelines. HDR will deliver the preliminary design of the transmission system including pipeline routing and 30% design, reservoir siting and 30% design, overall permitting strategy, program implementation plan, and assessment of future program management.

USACE Portland District, The Dalles Dam East Fish Ladder Auxillary Water Supply Engineering Design Report, *The Dalles, OR*

Hydraulic Modeler. This report has been developed to aid the USACE in developing cost effective alternatives for providing a backup supply for the auxiliary water system (AWS) for The Dalles Dam EFL. Water is currently supplied to the AWS by two fish unit turbines. To provide a backup supply of water to the AWS in case of a fish unit turbine failure, four alternatives have been evaluated in this EDR up to the 60% review level. Two alternatives were then taken to the 90% review level and finally one alternative was selected for final design.

USACE Portland District, TO6 Green Peter Transformer Oil Spill Prevention System, *Portland, OR*
Hydraulic Modeler. A transformer containing thousands of gallons of cooling oil is in an oil-containment area to capture spilled oil, which also inadvertently collects storm water. HDR developed a system to treat the storm water to a level adequate for discharge to the river. Other project components included a directional-style pressure relief valve on the transformer in case of fire and a new drainage pump that directs sump discharge to the new water treatment system.



Stephanie Serpico, PE

Roadway and Park Improvements

Stephanie is well known to City staff for her recent successful management of the design and construction of the GO Bond program. She is an effective communicator—both within her HDR team and in partnership with City staff in frequent outreach to the public. She has extensive experience successfully leading public meetings and technical and advisory committees; presenting at city council work-sessions and meetings; working with elected officials; and facilitating workshops and special interest group meetings. A long-time Bend resident, her accomplishments include many projects that have enhanced the Bend community. She has an engrained owner's perspective and understands the importance of listening and communicating early, openly and honestly to anticipate and effectively resolve conflicts and build consensus.

EDUCATION
Bachelor of Science, Civil Engineering, Penn State University Park, 1993

REGISTRATIONS
Professional Engineer, Oregon, United States, No. 58977PE

RELEVANT EXPERIENCE

Transportation General Obligation (GO) Bond Program, *City of Bend, OR.*
Stephanie managed HDR's team in providing program management for the City's GO Bond Program. She also provided public information, stakeholder briefings, open houses and workshops. HDR's approach demonstrated the City's commitment to stimulate the local economy by using local firms to perform the work. The program was completed on time and under budget.

Galveston Corridor Concept Plan, *City of Bend, OR.*
Stephanie led a team that created a community-supported plan that will enhance roadway safety and encourage non-motorized vehicle travel, while meeting environmental quality goals of the community and minimizing maintenance costs of improvements. Managed six projects to connect multiple segments of the Deschutes River Trail for the Bend Park This included successfully coordinating with many stakeholders to gain concurrence on trail alignments and project concepts. The diverse stakeholder group included Central Oregon Trail Alliance, DogPac, Homeowner Associations, USDA Forest Service, and Oregon State Parks. Stephanie's communication and public relations skills will be invaluable in coordinating with the public and varied stakeholders to make construction of the SE Interceptor project as tolerable as possible, and Recreation District.

Planning and Design, Deschutes River Trail, *Bend Park & Recreation District*
Stephanie managed a team that provided trail planning, design and permitting services to connect segments of the iconic Deschutes River Trail. Her team provided services for stormwater controls, riparian restoration, public outreach, archaeological surveys, construction drawings and cost estimates, and right of way and/or easement needs.

Colorado Avenue Undercrossing, *Bend Park & Recreation District*
Stephanie is leading a team that is constructing a pedestrian undercrossing through the embankment of Colorado Avenue and constructing a paved asphalt path to connect to the existing trail. HDR's services include design of the approaching trails to the undercrossing, the undercrossing, and the reconstruction of Colorado Avenue.

Riley Ranch Nature Reserve Bridge, *Bend Park & Recreation District*
HDR is designing a bridge to replace a vehicular bridge that once provided access between private property and the former Gopher Gulch Ranch.

Lava Butte to S. Century Drive, *ODOT, US97.* Award-winning modernization project located entirely on the Deschutes National Forest and within the Newberry National Monument that increased the roadway section from two lanes to a four-lane divided highway with two reconstructed interchanges, and environmental enhancements including two wildlife crossing structures with 8 foot project enclosure fencing, electro-mats and jump outs. In addition managed the value engineering process, public involvement, traffic analysis, preliminary and final design, Stephanie was responsible the EA document, which also included an IAMP and BA/BO, the project was closely coordinated with FHWA, Forest Service, Deschutes County staff and commissioners, ODFW and Sunriver.

US30: Brewery Grade Intersection, *City of The Dalles/ODOT.* Program manager for the construction of a single-lane roundabout with sidewalks, landscaping strips and ADA facilities. Major issues included ROW, utility relocations, historic resource clearances, drainage and public outreach. Was successfully delivered to bid opening in 6 months and on budget.

5th Street: Glacier Ave – Jackpine Ave., *City of Redmond/ODOT.* Program manager of the reconstruction of 5th Street in Redmond including public utilities, storm water system, ADA facilities, sidewalks and landscaping. Major issues with the project include construction staging and impacts to business. Was successfully delivered to bid opening in 6 months.

Intermodal Pedestrian Connections and Spring St., *City of Klamath Falls/ODOT.* Program manager; project enhanced the mobility of pedestrian improvements from Main Street to the Amtrak and reconstructed Spring St by adding curb, gutter, sidewalks, storm drainage facilities, illumination, fencing and paving. Was successfully delivered to bid opening in 6 months.

Glacier / Highland Couplet, *ODOT, OR126.* This controversial urban modernization project included changing OR126 on Highland Avenue from a three lane section to a couplet with Glacier Avenue through downtown Redmond. It included the reconstruction of Highland and Glacier Avenues, access management, construction of sidewalks, storm-water system including decommissioning of dry wells and constructing a pump station, ornamental lighting, landscaping, and a pedestrian under-crossing. Constant collaboration and coordination was required with the City of Redmond as they were a major funding partner. Responsible for the public involvement, environmental assessment, right of way acquisitions and final design.

Warner Curves - Deep Creek/US395 Sailboat Ranch to Lakeview, *ODOT: OR140.* Project Manager for the realignment and reconstruction of the highway to eliminate substandard curves and installation of safety features on the Warner Highway, and paving US395. The new alignment crossed a creek with a new concrete culvert that was designed for fish passage. Coordination with the BLM, Oregon DSL, and ODFW and DEQ was required for stream restoration, fish passage, water quality, and wetland mitigation. Responsible for the public involvement, and coordinating environmental clearances and permitting, right of way acquisitions, final design and construction management.

N. Fork Little Butte Crk/Green Springs Hwy., *ODOT, OR140.* Project Manager for the project that included pavement preservation, left turn channelization, landslide mitigation and repair and water quality and storm water management, drainage. The project is located on the Rogue – Siskiyou and Fremont – Winema National Forests. Responsible for coordinating all environmental clearances, including but not limited to biological assessments and opinions, wetland mitigation and permitting with Division of State Lands and the Corps of Engineers as well as the additional easements and timber removal contracts required for the left turn channelizations and the timber removal contracts on both National Forests.

Leandra Cleveland, CWS

Environmental and Permitting

Leandra is a biologist and planner with considerable experience in environmental compliance permitting, wetland delineations and function assessments, habitat mitigation and enhancement plans, mitigation monitoring, and preparing NEPA/SEPA documents. She understands the complexities of aquatic and terrestrial ecosystems as well as state and federal permitting and regulatory requirements. Leandra's expertise brings an effective framework to support the natural resource goals of project design. Leandra has provided environmental task lead services on several Clean Water Services projects, guiding the client through permit applications such as preparing Clean Water Act, Removal/Fill, and Washington County Land Use permits. Leandra has also provided NEPA documentation and guidance on several ODOT projects.

EDUCATION
B.A., Environmental Science, Washington State University, 2000

REGISTRATIONS
Certified Wetlands Scientist

PROFESSIONAL MEMBERSHIPS
National Association of Environmental Professionals

Society of Wetland Scientists

RELEVANT EXPERIENCE

87th Avenue/ SW Canyon Road Creek Corridor and Pipe Rehabilitation, Clean Water Services, *OR*
Erosion of the streambank and channel along SW 87th Ave. had exposed a sewer line. HDR provided engineering services to repair the pipeline corridor in a manner that would prevent the stream from eroding the pipe trench in the future, and benefit the stream condition and surrounding vegetation. The team provided survey and geotechnical studies; prepared easement packages, alternatives evaluation, and design; and prepared federal thru local permit applications. Leandra was the permitting lead for the project. She conducted the wetland and habitat assessment for the project and obtained the necessary permitting approvals from the US Army Corps of Engineers, Oregon Department of State Lands, and Oregon Department of Fish and Wildlife.

NEPA Documentation, Airport Way Interchange Improvements, ODOT, *OR*
HDR conducted a planning study, NEPA documentation, preliminary engineering and Interchange Area Management Plan to address congestion on the northbound movements from Airport Way to I-205 while maintaining the long-term integrity of I-205 and access to Portland Airport. The project involves assessing traffic and mobility issues, developing alternative solutions, and evaluating and refining those alternatives in preparation for detailed alternative analysis through the NEPA process.

18th Street Improvements - 112th Ave to 138th Ave, City of Vancouver, *WA*
HDR designed the upgrade of NE18th Street, providing east/west connectivity that includes continuous multi-use bike and pedestrian trails linking Burnt Bridge Creek Trail, sound and visual buffers for impacted neighborhoods, and pedestrian and bike safety improvements. Other features of the project included a frontage road, right of way requirements, drainage, environmental permits, utility relocation, and public/agency involvement. Leandra coordinating environmental permitting for the City of Vancouver critical areas ordinance.

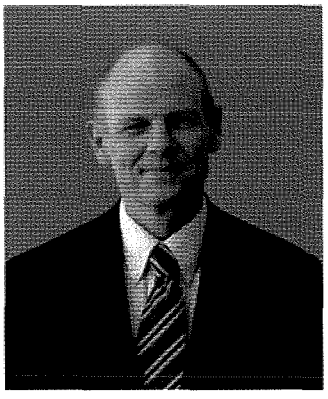
Havlik Road Improvements, City of Scappoose, *OR*
As part of the federal stimulus package, the Oregon Department of Transportation, City of Scappoose, and Portland and Western Railroad are cooperatively designing and permitting the Havlik Drive Extension. This project involves a 500 foot extension of Havlik Drive, installation of a right turn lane from Highway 30, and raising of the existing railroad to meet the grade of the proposed intersection. Leandra was the environmental project manager responsible for coordinating environmental clearances and permits including archeological and historic determinations and Section 106 concurrence, air quality, noise, hazardous materials, wetlands and Clean Water Act Section 404/401 and Oregon Removal-Fill, Endangered Species Act Section 7, NEPA, and local permits.

Boyer Drive Extension, Clackamas County, *WA*
HDR is providing the County with preliminary and final engineering design plans, public involvement, right of way and bid preparation services. HDR staff are developing design criteria for roadway section, storm drainage facilities, bike and pedestrian facilities, sidewalks, traffic signal modifications, signing, striping, lighting, and retaining walls. Leandra is the lead for environmental permitting. She provided a natural resources assessment and permitting evaluation for the project.

Beaverton Creek South Culvert Design and Permitting, Clean Water Services, *OR*
HDR coordinated with Clean Water Services to design three replacement culverts along a tributary to Beaverton Creek. Leandra coordinated with the project engineers to minimize stream impacts resulting from the replacement culverts. She also prepared the Clean Water Act, Removal/Fill, and Washington County Land Use permits for the project.

Havlik Drive Railroad Crossing and Extension, ODOT, *OR*
HDR designed a crossing of the Portland and Western railroad at Havlik Drive. The project included roadway and storm drainage design, traffic signal and street lighting design, water main design and easement acquisition, railroad crossing design, and connection to Hwy 30 at the Havlik Drive intersection. Leandra was the environmental project manager responsible for coordinating environmental clearances and permits including archeological and historic determinations and Section 106 concurrence, air quality, noise, hazardous materials, wetlands and Clean Water Act Section 404/401 and Oregon Removal-Fill, Endangered Species Act Section 7, NEPA, and local permits.

NE 82nd & NE Airport Way Intersection Improvements, Port of Portland, *OR*
The Port is re-examining the intersection of NE Airport Way and NE 82nd Avenue with the intent to develop a conceptual design for a grade-separated interchange. This project will define and illustrate the primary traffic issues, and use a value planning workshop to help develop, screen and refine conceptual grade-separated intersection concepts. Leandra provided a wetland determination for the project.



Dan Ellison, PE, SE

Condition Assessment

Dan is a national and international expert on pipe assessment, rehabilitation, and trenchless construction, having authored several books on the subject. He is the Chair of the Water Main Rehabilitation Committee of AWWA. Projects range from record-setting trenchless river crossings, to published research and to power plant retrofits. His project experience includes a wealth of condition assessments, water system infrastructure studies, earthquake risk mitigation studies and seismic strengthening programs.

Dan's experience includes assembling and managing a multi-discipline emergency response team after the Northridge, CA earthquake to produce cost estimates vital to securing relief and risk mitigation funding. This diversity of projects, along with superior team and program management skills makes Dan a tremendously flexible and creative team resource and valuable asset for the City of Newport's Civil Engineering Services contract.

EDUCATION

Master of Business Admin, Finance (MBA - Finance), University of Southern CA, 1994

Bachelor of Science, Civil Engineering, University of Utah, 1988

Bachelor of Arts, English Language & Literature (English), University of Utah, 1978

REGISTRATIONS

Structural Engineer, California, United States, No. S3020

Professional Engineer - Civil, California, United States, No. C38094

PROFESSIONAL MEMBERSHIPS

American Public Works Association (APWA)

American Society of Civil Engineers (ASCE)

American Water Works Association

American Water Works Association, California Nevada, Pipeline Rehabilitation Committee

American Water Works Association, National AWWA, Water Main Rehabilitation Committee

PhiBetaKappa

RELEVANT EXPERIENCE

Water Distribution System Assessment, *Eugene Water & Electric Board, Eugene, OR*
Helped develop defensible statistical analysis used to determine the life expectancies of different pipeline asset classes. Used historical repair records, information regarding pipe materials, and published reports from the Water Research Foundation and other sources for an unbiased assessment needed to support annexation of two smaller districts.

Selection of Water Main Materials, *Los Angeles Department of Water and Power.* Lead author for a Board of Commissioners-directed third-party study of HDPE, PVC, ductile iron, and steel for routine water main installations. Study included a review of relevant recent research by the Water Research Foundation and others. Study compared materials in terms of initial cost, historic failure rates, projected future failure rates, consequences of failure, and seismic performance.

Trunk Line Testing Program, *Los Angeles Department of Water and Power.* HDR devised a methodology and established program for testing and rehabilitation of large-diameter riveted and welded steel pipelines. All were originally installed without cement-mortar lining and with minimal external coatings. This program demonstrated that 90 percent of the trunk lines were not at risk of catastrophic failure and could remain in service, with periodic testing, cathodic protection, and other rehabilitation.

Recycled Water Master Plan Update, *Las Virgenes Municipal Water District/Triunfo Sanitation District JPA, Calabasas, CA* Project Manager. HDR developed a new regional hydraulic model including the LVMWD and Calleguas MWD RW systems, using GIS-based demands from customer billing records. This included updated projections of demands and supplies and analyzed new main extension scenarios to surrounding areas. Dan provided a list of recommended improvements and costs.

Natural Disaster Risk Mitigation Study, *LADWP.* Project Manager for a multi-discipline effort that examined every power facility in the Los Angeles system for disaster risk mitigation. Disaster scenarios included seismic shaking, liquefaction, landslide, fire, and tsunami. Risk mitigation projects were developed, prioritized and budgeted.

Structural Assessment of 15 tanks/reservoirs, *City of Thousand Oaks* Project manager for the structural and condition assessment of 15 potable water reservoirs. Project developed a Master Plan for tank maintenance, seismic retrofit recommendations, structural rehabilitation, and coating replacement. Work included lab and field testing of coatings to assess condition, adhesion, metal content and other parameters.

Sewer Master Plan, *City of Fillmore, CA*
Comprehensive analysis and report of city's wastewater collection system. Utilized a spreadsheet analysis coupled with GIS system information. The model was designed such that simple alternatives and modifications could be made by city staff, without knowledge or maintenance of proprietary software. Study looked at alternatives for serving developments that would increase the service area by approximately 30 percent over the next several years. Approximately $10 M in necessary improvements were identified. The condition of existing infrastructure was assessed, and a program of repair and rehabilitation was outlined, with a goal of reducing I/I, which has significant impact on treatment plant operations and costs.

Potable, Wastewater and Recycled Water Master Plans, *City of Santa Paula, CA*
Preparation of 3 master plans for the City of Santa Paula, which will set the stage for a large expansion of the City planned for the next 30 years, including the Fagan, Adams and East Area (Limoneria) developments. Included is a comprehensive water demand and supply assessment which shows that "new" water resources will be required, including recycled water, increased basin yields, water rights transfers, and use of State Water Project releases from Lakes Pyramid and Piru. Studies were completed in early 2005

Water System Corrosion Protection Study, *City of Ventura, CA*
2004 study that evaluated and prioritized all cast-iron and steel water mains within the City of Ventura. Evaluation was based on a risk assessment, which looked at the likelihood and consequence of pipeline failure. The likelihood of failure was based on testing of soil properties at over 30 locations, an examination of stray current potential, and leak history. An optimization of corrosion conditioning methods was also performed, using electrochemical noise evaluation methods, a state-of-the art process pioneered by Schiff Associates.

Conifer Tank Evaluation, *Ventura, CA*
The Oak Park Water Service (OPWS) struggled for many years to replace the Conifer Tank, which was substandard from many perspectives: wrong elevation, sited on unstable geology, and seismically deficient. Initial attempts to replace the tank ran into considerable opposition. Examined dozens of alternative projects, eventually narrowing the selection to 2 sites, with both above and below-grade options. Additionally, various alternative pipelines were considered, including acquiring a transmission pipeline from the water wholesaler. Each alternative required an evaluation of costs, environmental factors, and operational features. Mr. Ellison wrote the study, which allowed the writing of an EIR, ultimately leading to the selection of a new site for the reservoir. At the new site, the reservoir will provide benefits to the whole OPWS system.

Christine Higgins

Technical Advisor

Chris is a civil engineer specializing in stormwater analysis and design. She has been the stormwater task leader on many ODOT, Washington County, and TriMet improvement projects, designing stormwater conveyance systems, and water quality and quantity control facilities to meet location jurisdictional requirements that include the City of Beaverton, Clean Water Services, Clackamas County Water Environment Services, and the Department of Environmental Quality. Chris also has experience performing hydraulic analysis for existing storm and sanitary sewer systems.

EDUCATION

Bachelor of Civil Engineering, Union College Schenectady, New York, 1993

REGISTRATIONS

Professional Engineer, Oregon, United States, No. 58552

Professional Engineer, Washington, United States, No. 50325

RELEVANT EXPERIENCE

Gresham Smith and Partners, Stormwater Master Plan 2013, *Portland, OR*
HDR provided stormwater master planning services to the Port as part of a larger team. This project was driven by regulatory requirements, operational demands, and development-based needs. HDR performed work at the four marine terminals and four industrial parks, and provided support on airport facilities. HDR provided infrastructure and land-use characterization, coordination of public-relations outreach, and the development of Port-wide design standards and best management practices.
Role: Quality Control Lead

Bel Aire Creek Drainage Study, *City of Beaverton, OR*
The Bel Aire Creek Basin, specifically the area near Blankeney Pond, has experienced serious flooding. Chris developed a baseline model of the Bel Aire Creek basin stormwater conveyance system using XP-SWMM to determine where and why the flooding occurs. After determining the conveyance inadequacies in the stormwater system, Chris developed several options for improving the conveyance system using XP-SWMM and a cost/benefit analysis.

Bel Aire Storm and Sanitary Sewer, *City of Beaverton, OR*
Chris developed construction plans as a follow-up to the Bel Aire Creek Drainage Basin study for the City of Beaverton. The storm sewer improvements included 2,300-lf of 36-inch pipe, 1,500-lf of 30-inch pipe, and a regional water quality facility designed to treat approximately 54 acres of basin area to the City of Beaverton and Clean Water Services requirements.

Fisher Basin Stormwater and Wetlands Master Plan, *City of Camas, WA*
In an effort to protect and enhance existing wetlands in the Fisher Basin and encourage urban development in an environmentally responsible manner, the City of Camas developed a master plan that coordinates stormwater management, wetland protection, and aquatic habitat into an implementable program. Chris was the modeling task leader responsible for the analysis of Fisher Basin, including the analysis of the detention and water quality facilities. The consulting team modeled the hydrology and hydraulics of Fisher Basin using HEC-HMS, incorporating all the detention facilities in the developed sub-basins, allowing the model to be easily supported by the City as the basin continues to develop. (2000)

North Dwyer Creek Master Plan, *City of Camas, WA*
The North Dwyer Creek area is adjacent to Lacamas Lake and Lacamas Creek and is crossed by Dwyer Creek. The consulting team developed a master plan for a 650-plus-acre area within Camas that had been annexed to the city, inventoried existing conditions, including existing water, waste water, and stormwater systems; wetlands; threatened and endangered species; cultural resource sites; and existing land uses. The team also analyzed the existing utilities (water, waste water, and stormwater) for impacts from future development. Once a preferred alternative was selected, the team prepared a master plan meeting the requirements of a subarea plan under RCW 36.70A and drafted revisions to the zoning ordinance to implement the plan. Chris was responsible for the water and stormwater sections of the master plan. She performed an analysis of the existing water and stormwater

systems in the North Dwyer Creek Annexation area and the effect of future development on the systems. Chris performed the analysis of water system using EPD-NET.

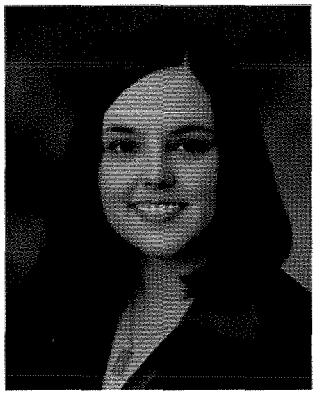
North Plains Stormwater Master Plan, *City of North Plains, OR*
This storm water master plan for the City of North Plains incorporated both structural and habitat enhancements for storm and surface water as the city further develops. The hydrologic and hydraulic modeling was performed with XP-SWMM to accurately model an urban environment. The Oregon Department of Fish and Wildlife was brought into the project early on to ascertain their critical habitat areas and other issues. A habitat enhancement plan was developed as part of the CIP to programmatically address ESA issues. Chris was responsible for the stormwater modeling.

170th Avenue Widening Project, *Washington County, Hillsboro, OR*
For this project providing drainage and water quality design services for improvements of 170th Avenue, Chris designed the storm system, water quality facilities, and the reconstructed stream channel to clean water services standards. The project consisted of 2.9 miles of improved roadway with numerous water quality and drainage facilities. The project crosses through three regional drainage basins. The area has suffered frequent and severe flooding problems and drainage solutions needed to include regional projects to correct and mitigate area flooding. A reconstructed stream channel with riparian wetlands was proposed as a high flow bypass. The channel was designed for proper sediment transport in addition to water quality and habitat considerations. Chris modeled the contributing drainage basin areas with a HEC-HMS hydrology model.

Barnes Road, Washington County, *Beaverton, OR*
Chris was the hydraulics and stormwater task lead for alignments and improvements for a two-mile section of Barnes Road between Highway 217 and Saltzman Road. The changes were made to accommodate an increase in traffic created by 250 acres of new development and addressed alignments for two miles of a five- to seven-lane road with three intersections. Chris performed the hydraulic and hydrologic analyses for two creek crossings to establish hydraulic data needed for the structural design, scour analysis, and a no rise certification. Chris also designed the stormwater system including the water quality and quantity control facilities to meet the City of Beaverton and Clean Water Services design standards.

Brookwood Avenue/Witch Hazel Road at Tualatin Valley Highway, *Washington County, OR*
Chris served as the hydraulic engineer for this project providing Washington County with an extension of Brookwood Avenue south to Witch Hazel Road, creating two four-legged intersections. Improvements include bike lanes, curbs, gutters, landscaping, sidewalks, streetlights, and a storm sewer system. Chris was responsible for the stormwater conveyance design and the water quality and detention design to meet Clean Water Services requirements.

NW Saltzman Rd, Phase 1 - NW Cornell Rd to NW Bauer Woods Drive, *Washington County, OR*
Chris was the PM/Task Lead for stormwater for this project to improve NW Saltzman Road between NW Cornell Road on the south and NW Bauer Woods Drive on the north, for a total project length of 5,600 feet (1.06 miles). The project included the addition of bike lanes, curbs, gutters, sidewalks, intersection and safety improvements, illumination and landscaping, an updated storm sewer system, and water quality facilities. The proposed drainage system was designed as a combination or flow-through curb inlet with curbside swales and manhole system. A vegetated water quality swale, meeting Clean Water Services standards, was designed to treat the stormwater runoff from the south half of the project. The water quality design for the north half of the project took on a green streets feel with five vegetated water quality swales, meeting Clean Water Services standards, located between the curb and the sidewalk with minimal piping of the stormwater.



Kristi Nelson, PE

Pump Stations and Treatment Plant Design

Kristi Nelson's experience in water and wastewater planning and engineering includes master planning, process design, cost estimating and alternatives evaluation, onsite project start-up assistance and implementation, and report and document preparation. Kristi has been involved in the design of numerous upgrades and expansions covering the entire range of water and wastewater treatment processes. Her projects include the pump station for Clackamas County Sewer District, and treatment plant system upgrades for City of Kennewick, City of Newberg and MWMC. She is highly efficient at evaluating operational adequacy and identifying proper operations and maintenance considerations. Her strong attention to project details and varied project experience makes her a valuable asset to any project team.

EDUCATION
Master of Science, Civil Engineering, University of Washington, 2004

Bachelor of Science, Civil Engineering, Oregon State University, 2002

REGISTRATIONS
Professional Engineer - Environmental, Oregon, United States, No. 70768
Issued: 12/31/2007, Expires: 12/31/2016

PROFESSIONAL MEMBERSHIPS
Water Environment Federation, Member, 2004-Present

Pacific Northwest Clean Water Association (PNCWA), Treasurer, 2007-2009

RELEVANT EXPERIENCE

JWC Water Treatment Plant Upgrade, Joint Water Commission, *City of Hillsboro, OR.* Project Engineer. The JWC wants to secure additional capacity at their WTP to make use of available raw water supplies and decrease costs associated with wholesale water purchases. As part of the overall interim expansion of the WTP, HDR is evaluating the Raw Water Intake Pump Station to determine its existing peak capacity and to develop and evaluate alternatives that will increase the capacity of the pump station.

Water Distribution Master Plan, Portland Water Bureau, *City of Portland, OR.* Pump Station Inspection Coordinator/Project Engineer. As the lead consultant for the Condition Assessment Task, HDR: (1) Developed pump station inspection forms; worked with BWW staff to develop criteria for rating condition of components; (2) Inspected and/or evaluated 32 pump stations and summarized data in a technical memorandum; (3) Developed list of proposed projects and identified those that could be incorporated into the maintenance program; and (4) Provided conceptual-level cost estimates for the proposed projects.

NE 99th Street Sewer Alternative Analysis, *Clark Regional Wastewater District*
The Clark Regional Wastewater District (District) has identified the need for potential improvements to the existing infrastructure in NE 99th Street, to be completed with the NE 99th Street improvements proposed by Clark County. Kristi performed an alternative analysis to compare options for expanding the existing infrastructure. The two options evaluated were an expansion of the existing Country Meadows Pump Station, including a new force main, or decommissioning of the pump station and installation of a gravity sewer using microtunneling technology.

Stormwater Pump Station, BES, *City of Portland, OR*
Kristi is currently leading the design of a new storm water pump station at the Columbia Boulevard Wastewater Treatment Plant that will convey the site's stormwater to the secondary treatment process to comply with the Tier II Response to the Storm Water Pollution Control Plan for the CBWTP.

Pump Station Inspections, USACE Portland & Seattle Districts, *OR, WA.* Using USACE criteria, Kristi led the condition inspections on the mechanical components of 18 pump stations. The purpose of the Periodic Inspection Program was to verify

proper operation and maintenance, evaluate operational adequacy and structural stability, review design criteria to identify changes in current design standards, identify features to monitor over time and to improve the ability to communicate the overall condition of the levee system.

Feasibility Study and Environmental Assessment for Water for Irrigation, Stream, and Economy Project, *US Bureau of Reclaimation, OR.*
Project Engineer. HDR is currently developing a a Feasibility Study/environmental document evaluating converting canals and laterals to a piped system. Work includes defining pipline design criteria, data collection, and preliminary design of the pipe systems.

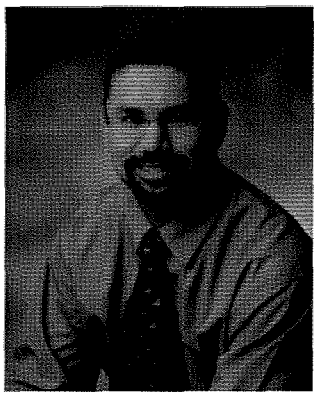
Metropolitan Wastewater Management Commission, Sodium Hypochlorite Conversion, *City of Eugene, OR.*
Project Engineer. HDR assisted MWMC in converting its wastewater disinfection system to a sodium hypochlorite and sodium bisulfite disinfection process. The project entails planning, design, regulatory discussions, equipment selection, construction cost estimating, and construction services for the conversion of the chlorination and de-chlorination systems, and the design of all associated instrumentation, equipment and controls. Kristi was responsible for the design of the chemical distribution and metering pump equipment.

Wastewater Treatment Plant Improvements #4, *City of Kennewick, WA.*
Project Engineer. HDR completed the evaluation and design of improvements for the City of Kennewick's 20 MGD Wastewater Treatment Plant in order to improve plant operations and process redundancy. The improvements consisted of a new headworks facility, a new RAS/WAS pump building, an additional secondary clarifier, and other various operational improvements to the plant. Kristi developed the design documents for the new RAS/WAS pump station and assisted in the design of the new headworks facility.

Wynooski WWTP Dewatering, Headworks, and Influent Pump Station Improvements Final Design (Task Order 7), *City of Newberg, OR*
Project Engineer. As part of an on-going program led by HDR at the City's Wynooski Wastewater Treatment Plant, efforts under this task order involved design completion for upgrades at the headworks, the influent pump station, and the dewatering facilities. Kristi assisted in the design of the dewatering system, the influent pump station and new septage receiving station.

SW 124th Pipeline Design, *Tualatin Valley Water District*
HDR is currently finalizing the design of a 3 mile long, 66-inch diameter steel water transmission pipeline that would eventually be connected to the Willamette Water Supply System to provide an additional source of supply for the Tualatin Valley Water District (TVWD). This pipeline will be constructed in coordination with Washington County's proposed roadway generally along the alignment of SW 124th Avenue. Kristi is responsible for developing the design specifications for the project and coordination with the County's roadway specifications.

Support Resumes



Don Best

Electrical and I&C Lead

Don Best is an electrical engineer with 24 years of design, programming, and commissioning experience with a wide variety of plant control systems and SCADA systems. His experience includes electrical design, I&C system design, programmable logic controller (PLC) programming; human machine interface (HMI) screen devepment, commissioning, and operator training. Plant control system technology design include controllers, HMI software, computer systems, data network systems and telemetry equipment. He has a comprehensive understanding of the National Electrical Code (NEC) and state code requirements.

EDUCATION
Bachelor of Science, Electrical Engineering, Oregon State University, 1990

REGISTRATIONS
Professional Engineer - Electrical, Oregon, United States, No. 57142PE Issued: 07/11/2000, Expires: 12/31/2015

INDUSTRY TENURE
24 years

HDR TENURE
19 years

RELEVANT EXPERIENCE

Water System Improvements, *City of Newport, OR*
Electrical and I&C Lead. HDR provided predesign and final design, bid support, and inspection services for the expansion of its water treatment facility. Don served as the Electrical and I&C Engineer for this project. The City water system was being upgraded to a new membrane water treatment facility capable of treating 6 mgd (expandable to 10 mgd). Don's role included implementing the new SCADA/control system for new treatment processes and to allow for periodic unattended operations. Electrical design included coordinating with the local utility for service, standby generator sizing, developing plans and specifications for power distribution, motor control equipment, lighting design, and plant control system.

Washington County Emergency Pump Station, *TVWD, OR*
Don was the Senior Electrical Engineer for a 20-mgd emergency pump station that will provide flow-reversal in the Washington County Supply Line in the event of loss of supply from the City of Portland. Efforts included designing taps into the existing 54" concrete cylinder pipe, designing connections, designing a trailer-mounted pump station, and identifying an intended resolution plan for property constraints. Electrical design included developing plans and specifications for power distribution, motor control equipment, lighting design, and plant control system.

Newberg I&C Improvements, *City of Newberg, OR*
Don has been under contract with the City of Newberg for I&C services for over 14 years. Don was the Project Manager for I&C design and PLC programming of new control systems at the water treatment plant, wastewater treatment plant, and remote telemetry sites. Don's efforts included programming services for the PLC's and telemetry systems; assisting the City in the development of new or modified Wonderware InTouch applications; implementing reliable process control strategies; reviewing shop drawings during construction; startup and commissioning, troubleshooting of instrumentation and motor control equipment; and applying electrical and instrumentation engineering knowledge to the design and construction of plant control system modifications related to plant expansions and upgrades.

City of Bend, Surface Water Improvements Phase 2, *Bend, OR*
Electrical and I&C Lead. HDR provided predesign, final design, and engineering services during construction of Phase 2 surface water improvements, which include intake modifications, water transmission conduit, powerhouse facilities, and water

treatment facilities. Electrical components included standby power with outdoor weatherproof enclosure, service-entrance switchboard, power distribution equipment, motor control equipment, data networking, access control, video surveillance, and PLC-based controls linked to water treatment plant SCADA system. The project included a 2,700-square-foot powerhouse building housing the turbine generator, electrical switch gear, flow meters and battery power supply. Water treatment facilities included a plant PLC-based SCADA system with membrane system controls system with chemical storage and feed equipment.

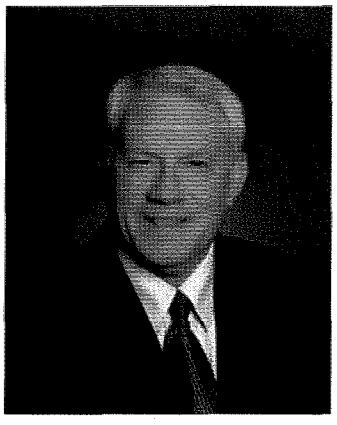
City of St. Helens, Water Filtration Facility, *St. Helens, OR*
Project engineer for electrical and I&C design for the construction of the new 10 mgd membrane facility. The project included improvements to the raw water supply, transmission system, and new treatment and storage facilities. Work also included the upgrade of the radio telemetry system for the control and monitoring of the collector well pumps and storage reservoirs. Electrical design included coordinating with the local utility for service, standby generator sizing, developing plans and specifications for power distribution, motor control equipment, lighting design, and plant control system.

Canby Utility Board, UV Disinfection System for Drinking Water, *Canby, OR*
Don led the electrical and I&C design of Canby Utility's water supply system and 8 mgd water treatment plant. Modifications included expansions of raw and finished pumping capacity, installation of mixing to improve pretreatment performance, expansion of filtration capacity, installation of backwash water supply improvements, installation of UV disinfection, and upgrades to the standby power system. Electrical design included coordinating with the local utility for service, standby generator sizing, developing plans and specifications for power distribution, motor control equipment, lighting design, and plant control system.

Water Works Park Master Plan, *City of Vancouver, WA*
HDR developed a master plan for Water Works Park and preliminary design of a new reservoir. Storage facilities consisted of one 4.0 MG and one 1.0 MG ground-level reservoirs, and a 250,000 gallon elevated reservoir. Don evaluated the electrical power and standby power requirements for the facilities.

Longview Water Treatment Plant, *City of Longview, WA*
Project engineer for electrical and I&C design for major expansion to facility. Responsibilities included design to replace existing control equipment with new PLC and SCADA system, including design of modifications to existing plant control panels. Created P&ID drawings, control strategies, control system specifications, and installation details.

Bozeman Hyalite/Sourdough WTP, *Bozeman, MT*
HDR designed and provided construction administration for a new 22-mgd membrane water treatment plant for the replacement of the existing Hyalite/Sourdough direct filtration water treatment facility. The project included a new Administration/Laboratory and vehicle maintenance facility, influent flow control, raw water preliminary treatment, fully automated membrane water treatment units, chemical storage and feed residuals handling, and standby power.



David Zahller

Structural

Dave's experience includes structural design, plan development and construction administration for water and wastewater plants, water storage facilities, bridges, dams, industrial, office, commercial and residential buildings. Part of Dave's 34 years of experience has included structural evaluations of existing bridges, residential and commercial buildings, industrial facilities and roof systems.

RELEVANT EXPERIENCE

Montana, Hamilton WWTP Phase 2 Improvements, *City of Hamilton, MT*
HDR prepared a Preliminary Engineering Report, in addition to grant applications to the Treasure State Endowment Program, DNRC, and Community Development Block Grant, to assist the City of Hamilton in securing funding for their Phase 2 WWTP Improvements. In addition, HDR has completed the design and is in the process of assisting the City with bidding the Phase 2 WWTP Improvements project that will upgrade the existing disinfection facilities to ultraviolet light disinfection to meet water quality requirements, replace aging aeration blower equipment, expand the existing laboratory space to enable the City to provide the laboratory testing required by their new wastewater discharge permit. *Condition assessment was included in this scope of work.*

Wastewater Treatment Plant, Primary Clarifier Upgrade, *City of Pasco, WA*
The City of Pasco selected HDR to design new primary clarifiers to better accommodate the current and future flow at the City's Waste Water Treatment Plant. HDR's approach includes using Computational fluid dynamics (CFD) modeling to minimize the size and construction cost of the new clarifiers. HDR is also using BIM to design the new facilities to expedite design and save the City engineering costs.

Pocatello Wastewater Treatment Plant Phase 1 Improvements, *City of Pocatello, ID*
Provided predesign, equipment pre-selection/procurement, final design, and bidding services for Phase 1 upgrades to the 7 mgd wastewater treatment plant. Improvements were needed to meet the new NPDES permit effluent limitations for total phosphorus (TP) that were derived from a Total Maximum Daily Loading (TMDL) for TP, and also included a new 28 mgd ultraviolet (UV) disinfection facility, dual media filtration, aeration basin upgrade to biological nutrient removal (BNR), and headworks screening with washer/compactor facilities. *Condition assessment was included in this scope of work.*

Phase 2 Port Townsend Water Treatment Plant Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Compliance, *City of Port Townsend, WA*
Planning, predesign, final design, and bidding support services for a new ultraviolet (UV) disinfection system at the water treatment to comply with LT2ESWTR requirements

EDUCATION
Bachelor of Civil Engineering, Civil/Structural (Bachelor of Science Civil Engineering), Montana State University, Bozeman, 1976

REGISTRATIONS

Professional Engineer - Civil and Structural, Montana, United States, No. PE 4823

Professional Engineer - Civil and Structural, Washington, United States, No. PE/SE 24744

INDUSTRY TENURE
39 years

HDR TENURE
2 years

PROFESSIONAL MEMBERSHIPS
American Institute of Steel Construction

American Society of Civil Engineers (ASCE)

Basin Creek Water Treatment Plant Design, *City-County of Butte-Silver Bow, MT*
HDR is providing water filtration and disinfection design services for the new Basin Creek WTP. Filtration is required for Basin Creek water and disinfection byproducts must be further controlled. The Big Hole water plant struggles to remove an unusually large organic color load during spring and weather conditions / pine beetle kill has the potential of making this problem even worse.

North Beach Combined Sewer Overflow (CSO) Reduction Final Design Services, *King County, WA*
Dave is providing structural design of new overflow vault and structural upgrades to existing wet well. HDR is preparing final design documents for a 0.33 million gallon storage facility located in a fully developed residential neighborhood adjacent to and at the King County North Beach Pump Station. The project consists of construction of a storage facility within the right-or-way, an automatic flushing system utilizing a tipping bucket, a drain pump station, odor control for both the CSO storage facility and the existing pump station wet well, and a new ancillary building to house the mechanical equipment.

LOTT Clean Water Alliance, Budd Inlet Treatment Plant - Primary Sedimentation Basins (Construction Support), *City of Olympia, WA*
As a continuation of work at LOTT Clean Water Alliance's (LOTT) Budd Inlet Treatment Plant - Primary Sedimentation Basins project, HDR provided a variety of ongoing design services and on-site construction inspection support. Construction was delivered by a Washington State alternate delivery process General Contractor/Construction Manager (GC/CM), generally referred as Construction Manager at Risk.

Henderson and Genesee CSO Reduction Projects, *Seattle Public Utilities, Seattle, WA*
SPU selected HDR to help them achieve one overflow per outfall per year on average for both the Henderson and Genesee Basins. Also, as part of this contract, HDR has been tasked by SPU to submit a CSO reduction plan for the Windermere Basin to the Department of Ecology by November, 2009.

Stevensville WWTP Phase 2 Improvements, *Town of Stevensville, MT*
HDR is designing upgrades to Stevensville's WWTP to meet the requirements of its NPDES discharge permit. The improvements are extensive and due to funding constraints, require a phased approach over the next 10 years. These improvements will: provide redundancy for critical treatment plant components to reduce the chance for discharging substandard treated effluent to the Bitterroot River; provide system upgrades to reduce the risk of plant upsets, health and safety concerns, and excessive maintenance requirements at the WWTP; and provide enhanced treatment systems to reduce nutrient loading and pathogens to the Bitterroot River. The Phase 2 Improvements include: upgrading the secondary treatment process to meet the nitrate limit and providing a new headworks facility with screenings and grit removal. *Condition assessment was included in this scope of work.*

Karl Sutton, PE/LEED AP

Mechanical Engineer

Karl is a mechanical engineer with experience in the water industry. He has experience in HVAC, hydronic system, odor control, instrumentation and controls, and construction contract administration. His responsibilities include: equipment selection; mechanical layout and design; creating process and instrumentation diagrams; sequence of operations and control schematics; and performing various construction contract administration tasks including RFI and submittal reviews. Karl prefers to collaborate with the operations staff; designing upgrades that mesh well with their current system and that are easy to operate and maintain.

EDUCATION
Bachelor of Science, Mechanical Engineering, University of Idaho, 1999

REGISTRATIONS
Professional Engineer - Mechanical, Washington, No. 42415

LEED Accredited Professional

Professional Engineer - Mechanical, Oregon, No. 67096PE

PROFESSIONAL MEMBERSHIPS
American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), Oregon Chapter, Member, 2006-2009

RELEVANT EXPERIENCE

East Operations Facility, *Vancouver, WA.*
Mechanical Engineer. HDR designed a new operations facility for the City of Vancouver. The phases of the project include complete program validation, design development, construction documents, bidding/permit and construction support services. The East Operations Center includes a Utility Customer Service Office, an Emergency Operations Center/Community Room, Customer Service Office, Equipment Services, and an Emergency Operations Center/Community Room.

Chlorine Disinfection Improvements, *Portland Water Bureau, Portland, OR.*
HDR planned, designed, and assisted with construction improvements to the Bureau's 220 mgd chlorine disinfection system for the Bull Run supply. HDR completed a needs assessment to identify potential improvements including installation of vacuum regulators, Equa-draw gas flow management, and new piping and valves that would replace older equipment and improve safety in the facility.

Hawks Prairie Water Treatment Facility, *City of Lacey,* WA.
Mechanical Engineer in Construction Administration. HDR designed a 1,800 gpm water treatment facility to remove iron, manganese, hydrogen sulfide, and ammonia from drinking water. The design included the onsite generation, storage, and metering of 0.8 wt% sodium hypochlorite. Additional hypochlorite generation and storage capacity was provided so the facility could be used for the generation and transfer of hypochlorite to nearby chlorination facilities.

Well No. 3 Rehabilitation Design and Construction Services, *City of Redmond, WA.* Mechanical Engineer. HDR provided process selection, final design, and construction assistance for this project which involved construction of a new well facility around an existing well casing, new well and booster pumps, packed tower air stripping system, sodium fluoride dry chemical feed system, and on-site hypochlorite disinfection system.

Well No. 5 Rehabilitation/Construction, *City of Redmond, WA.*
Mechanical Engineer. HDR provided process selection, final design, and construction assistance for this project. The project involved construction of a new well facility around an existing well casing, new 1,000 gpm well and booster pumps, packed tower air stripping system, sodium fluoride dry chemical feed system and on-site hypochlorite disinfection system.

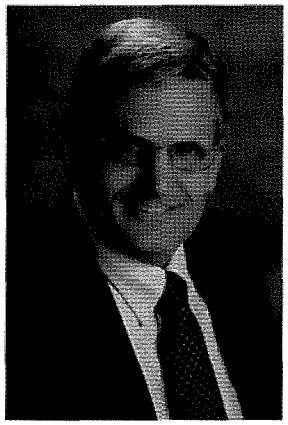
Sewer Pump Station Rehabilitations Predesign for Five Pump Stations, *City of Bellevue, WA.*
Mechanical Engineer. Review of aging sewer pump stations for the City of Bellevue. HDR identified discrepancies with clearances and codes. Alternatives and opinions of probable costs for each discrepancy were prepared. HDR has completed rehabilitation design on three of these pump stations, with the other two anticipated.

St. Helens Water Treatment Plant, *City of St. Helens, OR.*
Mechanical Engineering. HDR assisted the City of St. Helens with the expansion of its water supply and building a new membrane filtration treatment plant. The project included improvements to the raw water supply, transmission system, and new treatment and storage facilities. The new membrane treatment plan has an initial capacity of 6 mgd but is expandable to 10 mgd. Key project issues included assessment of system hydraulics, competitive membrane pilot testing and procurement, backwash water recovery by membrane filtration, use of a common redundant unit to the primary and secondary membrane skids, new site development including a conditional use permit, permitting, public involvement, and a fast-track schedule for completion. HDR was responsible for planning, design, construction, start-up and commissioning. Karl led the refinement of in-place systems.

Sodium Hypochlorite Conversion, *City of Eugene, OR.*
Mechanical Engineer. HDR assisted MWMC in converting its wastewater disinfection system to a sodium hypochlorite and sodium bisulfite disinfection process. The project entailed planning, design, regulatory discussions, equipment selection, construction cost estimating, and construction services for the conversion of the chlorination and de-chlorination systems, and the design of all associated instrumentation, equipment and controls.

Kennewick WWTP, *City of Kennewick, WA.*
HDR completed the evaluation and design, and is currently providing construction services of improvements for the City of Kennewick's 12 MGD Wastewater Treatment Plant in order to meet current NPDES permit requirements. The improvements consist of replacing and expanding the existing headworks, the design and construction of an additional secondary clarifier, the addition of fine bubble diffuser in the HRTs, and other various operational improvements to the plant. The construction cost for the project is $6.7 million dollars.

Willow Lake Water Pollution Control Facility, *City of Salem, OR.*
Mechanical engineer for the Willow Lake Water Pollution Control Facility, Process Support Facility (PSF). The PSF is a 30,000 SF water quality laboratory and administration building complex in Salem, OR. Also provided support for the HVAC and hydronic system design.



Robert Bower

Operations Specialist

Bob Bower is one of HDR's top operations specialists, with more than 37 years of experience in the startup/testing, operation, maintenance, and management of municipal water and wastewater treatment, pumping, and distribution facilities. His experience includes preparing O&M manuals, providing operations assistance, evaluating and optimizing treatment processes, troubleshooting equipment, starting up and commissioning pumping and treatment facilities, delivering operator training, devising automated control strategies, assisting with asset management programs, and designing plant process laboratories. He also has performed advanced wastewater treatment research.

EDUCATION
Bachelor of Science, Environmental Sciences/ Studies, University of WI Green Bay, 1978

REGISTRATIONS
Construction Documents Technologist, United States National Registration

Wastewater Treatment Plant Operator, Colorado, United States, No. Class A

Wastewater Treatment Plant Operator, Washington, United States, No. Group 4

PROFESSIONAL MEMBERSHIPS
Pacific Northwest Clean Water Association (PNCWA)

Water Environment Federation

RELEVANT EXPERIENCE

Alderwood Water & Wastewater District, Picnic Point Wastewater Treatment Plant, *Lynnwood, WA*
Condition Assessment/Operations Specialist. Bob performed a condition assessment of the 3 mgd plant, which included headworks, the aeration system, the disinfection system, and the solids handling systems. He provided recommendations for changes to influent flow measurement, screening and grit handling to reduce maintenance problems and improve operational reliability. Bob developed an operations plan for sequencing the construction to maintain treatment at all times during the facility's expansion to 12 mgd, and minimized the need for bypass pumping and temporary treatment facilities. New treatment process units included: screening and grit removal (with odor control), primary clarifiers, activated sludge process with the capacity for nitrification, secondary clarifiers, and disinfection.

Brunswick County, Sea Trail Wastewater Pump Station and Force Main - SW Region, Brunswick County, *NC*
Assisted in the development of a preliminary engineering report that evaluated the immediate needs of two existing wastewater treatment facilities, as well as the management of high priority wastewater needs for the southwest portion of the county. Improvements included solids and grit removal, flow equalization, facility expansion, and waste activated sludge processes. (2006)

Brunswick County, West Brunswick Water Reclamation Facility - Program Management, Brunswick County, *NC*
Prepared startup and commissioning plan, including component testing as well as instrumentation and control (I&C) system testing for new wastewater system consisting of five pump stations, 3 mgd wastewater treatment plant, reclaimed water distribution system, and 700 acre drip irrigation system. Prepared and presented operator training and participated in startup and. Treatment plant equipment included influent screens, flow equalization basin, two oxidation ditches, two clarifiers, two effluent disc filters, chlorine contact basin, hypochlorite storage and metering, effluent pumps, return activated sludge (RAS) and waste activated sludge (WAS) pumps, gravity belt thickening, and ATAD solids digestion. (2005 to 2006)

C&C of Honolulu Dept of Environ. Svc., Wastewater Program Management Environmental Staff Augmentation, *HI*
Wastewater Program Management Environmental Staff Augmentation - *City and County of Honolulu, Hawaii*
Provided technical and engineering services in support of the wastewater function of the of the city's department of environmental services. The objective is to provide staff augmentation to the city's department of environmental services to assist with the timely and cost-effective engineering, management, and enhancement of wastewater operations, and maintenance and capital improvement programs, as well as assist with ensuring the various tasks and program meet the requirements of the city's consent decrees, administrative orders, and National Pollution Discharge Elimination System (NPDES) permits. Responsible for providing pump station training program assistance. The training program was required to meet general consent decree requirements. Developed written descriptions and frequencies of the pump station training that pump station operators receive upon hire and as operators progressively become more experienced in their job, developed a training schedule,

developed training materials, and assisted with training of staff, including training on wet well operations and current pump station control technologies.

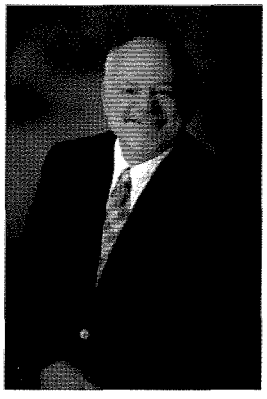
Charlotte Water, McAlpine Creek WWMF, Phase 2, Construction Administration, *NC*

Provided equipment and instrumentation and control (I&C) system testing for 140 mgd screening and grit facility, as well as prepared and presented operator training, and participated in startup and commissioning. Phase II improvements also included the two 130-foot primary clarifiers, a primary sludge pumping station, a wet scrubber odor control facility, rehabilitation of 10 effluent filters, two gravity thickeners, and 12 junction boxes. Aerations basins were converted to anoxic zones for phosphorus removal. (2002 to 2005)

City of Anacortes, Wastewater Treatment Plant, Electronic Operations & Maintenance (eO&M) Manual, *Anacortes, WA*
Operations Specialist. Bob assisted with the preparation of an electronic operations manual (eOM) that provided city wastewater treatment plant staff with convenient and quick access to the information electronically to facilitate efficient O&M of the plant. The eOM was developed as a web application and functions on the city's MS Windows-based server, accessible by City staff only.

City of Baker City, UV Treatment Facility Pre-design, Final Design, and Bidding Assistance, *Baker City, OR*
Operations specialist during predesign and design of a new ultraviolet (UV) treatment facility and integration of existing control and monitoring equipment into a new master control system.

City of Bend, Sourcewater Improvement Project Phase 3 - Construction, *OR*
Surface Water Treatment Plant, Intake Modifications, Powerhouse, and Transmission Conduit, *City of Bend, Oregon*
Operations specialist during construction of Phase 2 surface water improvements, which include intake modifications, water transmission conduit, powerhouse facilities, and water treatment facilities. Intake modifications included: (1) two new fish screens using retractable, rotating drums, with actuated isolation gates and heated water spray wash system; (2) new fish passage, with pool, chute, and ladder; (3) new intake building; (4) standby power in outdoor weatherproof enclosure; and (5) programmable logic controller (PLC) based system monitoring and control linked to water treatment plant SCADA system. The water transmission conduit included 50,400 linear feet (LF) of 36-inch-diameter pressurized pipeline, two Tumalo Creek conduit bridge crossings, conduit appurtenances (including mainline isolation valves, air release and vacuum valve assemblies, blowoff assemblies, and access manways), and cathodic protection measures and corrosion provisions. Powerhouse facilities included one turbine generator with a flow range of 5-21 cfs and ultimate capacity of 1.4 MW, an energy dissipation valve to operate in combination with turbine with flow transition automated, isolation valves for the turbine and energy dissipation valve, piping from the water transmission conduit to turbine generator and bypass valve with flow meters on both conduits, bifurcation from the 36-inch supply line to the two 18-inch conduits for the turbine and energy dissipation valve, PLC-based controls linked to water treatment plant SCADA system, outdoor substation with circuit breaker and step-up transformer, jib crane for turbine generator equipment maintenance, equipment vaults housing the flow meters and exterior valves, and stilling basin for bypass flows and afterbay for turbine flows (with sluice gate between basins), and 2,700-square-foot powerhouse building housing the turbine generator, electrical switch gear, flow meters and battery power supply. Water treatment facilities included: (1) pretreatment basins, including two trains of rapid mix, flocculation, sedimentation, and equalization basins; (2) vertical rapid mix equipment; (3) membrane feed pumps at equalization basin and automatic strainers with variable frequency drives (VFDs) for pump motors; (4) membrane filtration system; (5) membrane chemical cleaning system, including caustic and acid clean-in-place (CIP) tanks and neutralization tank; (6) waste handling system with overflow structure and waste pumping station; (7) chemical storage and handling systems; (8) 20,000-square-foot membrane building housing membrane equipment, administration area, chemical storage, and electrical room; (9) plant PLC-based SCADA system with membrane system controls system linked to plant SCADA system; (10) standby power generator; and (11) waste conveyance system with pumping station to discharge water treatment liquid waste stream to the city's sanitary sewer.



Douglas Zenn

Public Involvement

EDUCATION
Bachelor of Arts,
Journalism, Ohio University;
Athens, 1980

Doug specializes in complex, multi-party process design. He has 15 years of experience in public involvement and facilitation, and 25 years of experience in communications. Doug has been involved with more than 200 community engagement efforts. He has developed and managed public involvement, awareness and education efforts that cover a range of issues, including water resources, transit planning, transportation, urban renewal, and community-based planning. Doug has led a wide variety of public engagement exercises covering a spectrum of needs from informing the community to empowering groups in decision-making roles. His processes involve working creatively to provide stakeholders with access to understandable information for decision-making and meaningful involvement opportunities throughout a project.

RELEVANT EXPERIENCE

Southeast Interceptor Rehabilitation, *City of Portland, OR*
HDR is leading the rehabilitation of a 72-inch by 74-inch horseshoe monolithic concrete sewer. The team is assessing potential rehabilitation techniques, and will develop construction documents for the implementation of the selected method. Considerations include public and business impacts, access points, and life-cycle-costs. Public information and outreach efforts will be key to project success in this densely-urban portion of Southeast Portland.

Tryon Creek WWTP Improvements, *City of Portland, OR*
Doug teamed with Riverbend Engineering and CH2M on a system of improvements to Tryon Creek Wastewater Treatment Plant. He worked with neighborhood associations to identify potential impacts and project benefits.

Westside Streams Daylighting Study, *City of Portland, OR*
Doug teamed with Riverbend Engineering on an assessment of small Westside streams, to explore the possibility of daylighting as a means to take stormwater out of the combined system.

SE Clay Street Green Street, *City of Portland, OR*
Doug worked with BES on the agency's first full-street pilot project. The Clay Green Street project worked closely with business association and neighborhood association leaders in the area as well as with all of the neighboring businesses in identifying opportunities along Clay Street for green infrastructure improvements.

Outer Powell Blvd., Design Refinement and NEPA, ODOT, *City of Portland, OR*
HDR is providing traffic analysis, access management, preliminary design, and NEPA services to refine safety improvements on Outer Powell Boulevard. As part of the Environmental Assessment, HDR is identifying and documenting potential impacts to the environment resulting from new sidewalks, new/extended bicycle lanes, center medians and left-turn pockets. Other project elements include providing community involvement in a diverse, multilingual area.

Columbia Slough Restoration, *City of Portland BES*
While with BES, Doug worked on public information and outreach surrounding the Columbia Slough its contaminants and upcoming combined sewer reductions.

Communications Specialist, *City of Portland BES*
Worked within the Communications Division as a Communications Specialist handling projects involving community and media relations, publications, public speaking, advertising and graphics.

Fanno Creek PS Evaluation and Development, *City of Portland BES, OR*
Doug worked with BES to eliminate five pump stations and develop a single pump station downstream (Fanno Creek Pump Station.) He worked with neighbors in both Portland and Washington County.

Johnson Creek Realignment, *City of Portland BES, OR*
Doug worked with the Lents neighborhood and adjacent property owners for property acquisition and redevelopment of floodplain for Johnson Creek, just east of I-205. The area was a traditional flood zone during high-rain periods.

Kelly Butte Water Storage Upgrade, *Portland Water Bureau, OR*
Doug worked with the Portland Water Bureau in preparation for the development of the new reservoir development on Kelly Butte. Doug worked with neighborhood associations and immediate neighbors to discuss project benefits and objectives and potential impacts and timelines.

Lower Columbia River and Estuary Sub-basin Summaries, *Lower Columbia River Estuary Partnership (LCREP), OR*
Doug led the development of the Lower Columbia River Estuary Program's for subbasin-level assessments. The studies, which led to identification of projects for funding by the Northwest power Planning Council, involved numerous fish and wildlife interests from bot Oregon and Washington as well as county officials form those counties that border the lower Columbia River.

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