

# **EXHIBIT A**

## **SCOPE OF WORK**

### **ENGINEERING SERVICES FOR**

### **HIGH STREET WATERLINE REPLACEMENT**

### **CITY OF OREGON CITY**

## **Background**

The City of Oregon City (City) will be constructing street improvements on High Street from South 2<sup>nd</sup> Street to 3<sup>rd</sup> Street as part of its annual pavement maintenance program. Prior to construction of the High Street improvements, the City would like to replace the aging waterline within the same limits of High Street and certain side streets, as further described below and shown on the attached map (Exhibit A).

## **Project Description**

This project includes the design and construction of a new 8-inch diameter ductile iron waterline on High Street from South 2<sup>nd</sup> Street to 1<sup>st</sup> Street and a new 10-inch diameter ductile iron waterline from 1<sup>st</sup> Street to 3<sup>rd</sup> Street, including services, new pressure reducing valves on the back side of all existing water meters, and connections to the existing water system. The project also includes replacing the existing water mains on South 2<sup>nd</sup> Street from High Street to Center Street (6-inch diameter), on 2<sup>nd</sup> Street from McLoughlin Promenade to Center Street (8-inch Diameter), and on 3<sup>rd</sup> Street from High Street to the McLoughlin Promenade (10-inch diameter).

It is assumed temporary trench patching will be completed with this project prior to full street improvements and curb ramp replacements to occur separately with the 2018 Pavement Improvements project.

## **City Responsibilities**

The City of Oregon City will be responsible for the following:

- Provide a project engineer/manager who is responsible for overall project management and will provide coordination between the consultant and the City.
- Establish the work scope and design parameters for the project, including related standards.

- Provide the Consultant copies of all available, relevant City utility "as-built" plans, topographical maps, reports and studies pertinent to the project.
- Provide Consultant with GIS technical support for access to the City's GIS database.
- Provide Consultant with the City's standard drafting frame, title block and a Drafting Standards Manual.
- Provide Consultant with digital copies of the City's standard construction specifications, details and "front end" bidding document sections.
- Provide timely review and comment on all reports, drawings and specifications submitted by Consultant to City for review and approval.
- Maintain records and process consultant invoices.
- Provide legal review of all contracts, bid forms, and real property.
- Provide notifications as necessary to the public and business community regarding the nature and timing of the work to be completed.
- Advertise and manage the bidding process for construction.
- Review and approve contractor payments and any construction contract change orders.
- Assist Consultant with final construction inspections and provide feedback for punchlist items.

## Proposed Scope of Services

The scope of design and construction phase engineering services for the contemplated work is presented below.

### Task 1 – Project Management

This effort covers the administration and coordination of the consultant's staff, subconsultants, and the interface with the City project manager and other City staff. The effort will include the following subtasks:

- Schedule, prepare for, and conduct a project kick-off meeting to review the purpose and scope of the project. This meeting will be an internal project team meeting with City staff. Budget assumes three (3) Murraysmith staff will attend the kick-off meeting. Following the meeting, a walkthrough of the project site will be completed to help identify a preliminary alignment.

- In addition to the project kick-off meeting, budget assumes two (2) additional meetings to occur, one after the 50% submittal and one after the 90% design submittal, respectively. Consultant will schedule and lead project meetings and prepare meeting agendas and minutes. For estimating purposes, it is assumed two (2) Murraysmith team members will be present at each team meeting.
- Coordinate submittal and review of plans, bid items and quantities, and estimate by the City at the 50% and 90% level of completion.
- Process and submit monthly billings with a summary of project status by task and subtask, including a summary of invoicing from subconsultants retained for this project.
- Overall project coordination including preparation and maintenance of the overall project schedule, internal project meetings, and managing staff, subconsultants and other resources as needed to meet scheduled milestones.

### *Task 1 Deliverables*

- Invoices and Progress Reports (monthly)
- Project Design Schedule
- Meeting agendas and minutes

## **Task 2 - Surveying**

### *Task 2.1 Topographic Survey*

Consultant will complete topographic surveying services necessary for waterline designs. The topographic survey limits for this scope of services will include the project limits shown on Exhibit A, with the exception of South 2<sup>nd</sup> Street, which will be surveyed as part of the 2018 Pavement Improvements project.

Perform detailed topographic survey from right-of-way to right-of-way for the limits described above . Detailed topographic survey work will include field survey of existing above ground features (i.e. edge of pavement, curb ramps, grade breaks, concrete sidewalk joints, buildings, improvements, trees (label size and species of all trees greater than 5-inch dbh), shrubs, utilities, signs, survey monuments, etc.) as well as elevations with one-foot contour intervals. The below ground utilities will be located from one-call locate paint marks and surveyed, including at grade

### *Task 2 Deliverables*

- CAD files and base map for use in design

## Task 3 – Utility Coordination

The Consultant will perform utility coordination work related to the following franchise and private utilities: power, communications, gas, cable television and other private utilities that may be present within the project limits. Consultant will confirm utility owners within the project limits, assist utility owners with identifying and resolving potential utility conflicts and coordinate utility potholing to rule out or confirm potential utility conflicts. The City of Oregon City utilities include water, sanitary sewer and storm sewer facilities throughout the project area.

Utility coordination efforts will include:

- Develop a utility contact information list and email project information letters to utility companies involved to explain nature of the work.
- Provide project preliminary plans to each utility at 50% and 90% design levels.
- Maintain a record of correspondence with utility companies.
- Identify conflicts and issue conflict notices to impacted utilities.
- Meet with utilities on-site to review location of existing utilities and coordinate potholing activities. Budget includes three on-site meetings.
- Coordinate with private utilities to resolve utility conflicts and finalize utility relocation requirements as appropriate. Affected utilities will be responsible for developing their relocation designs. Consultant will review each utility's relocation plans and proposed schedule, provide written comments and issue approval.

It is assumed the majority of potential utility conflicts can be avoided through careful design of new facilities. Affected utilities will be responsible for potholing their facilities as requested to assist Consultant in developing designs that avoid their facilities to the extent practical. Utilities will be responsible for developing their relocation designs in order to accommodate the project.

### *Task 3 Deliverables*

- Utility contact list
- Project information letters and conflict notices to each affected utility
- Reviewed utility relocation plans with comments and recommendations

## Task 4 – Geotechnical Investigations

Pavement investigations for S. High Street were complete in June 2017 by GeoDesign as part of the 2017 Pavement Improvements project design prepare by Wallis Engineering. Those prior investigations will be reviewed and updated as part of Murraysmith's 2018 Pavement Improvements contract with the City. For the waterline replacement on High Street, additional

explorations will be conducted to define rock profiles and characterize utility trench excavations as follows:

- Identify and mark boring locations and call in utility locates.
- Provide traffic control plans and traffic control when required. It is assumed permitting requirements and fees will be handled by City personnel.
- Maintain a detailed log of the explorations. Classify the subgrade soil during field explorations. Obtain samples of the pavement, base, and subgrade materials encountered
- Provide a summary of subsurface conditions as a memorandum.
- For budgeting purposes, it is assumed that there will be four explorations to 10-foot depth with up to five feet of rock coring in each, and twelve explorations to 10-foot depth or to refusal, whichever occurs first.

#### *Task 4 Deliverables*

- Summary memorandum of borings
- Estimated rock profiles and excavation quantities incorporated into project plans, bid item quantities, and estimate

### **Task 5 – 50% Design**

During this phase, Consultant will develop engineering plans that depict recommended waterline improvements. The plans will establish appropriate project limits, identify connection locations to the existing water system, service locations, and draft profiles. Specific requirements under this task include:

- Complete a review of the City's existing mapping, as-builts, and GIS information.
- Conduct initial site visit with City staff to complete site reconnaissance for use in developing designs.
- Prepare a 50% level cost estimate and bid schedule.
- Prepare 50% construction plans (1" = 40' scale on half size sheets) and details as needed to clearly describe the work to be constructed. Construction plans will, at a minimum, include civil notes, details and sections, and waterline improvement plans and profiles.
- Preparation of 50% special specifications table of contents to cover conditions specific to the work.

### *Task 5 Deliverables*

- Electronic versions of the 50% plans, specifications table of contents and cost estimate (PDF and Excel)

## **Task 6 – 90% Design**

The 90% design submittal will be advanced from the 50% submittal (incorporating review comments as appropriate). Additional tasks beyond those listed above include:

- Prepare an updated cost estimate (90% level) and bid schedule.
- Prepare 90% construction plans (1" = 40' scale on half size sheets) and details as needed to clearly describe the work to be constructed.
- Prepare 90% contract documents. This includes preparing front end contract documents using the City's most recent standard forms and technical specifications in ODOT/APWA format. Special specifications will cover conditions specific to the work.
- It is assumed that no permits are required for this project.

### *Task 6 Deliverables*

- Electronic versions of the complete 90% contract documents including front end documents, technical specifications, plans, and cost estimate (PDF, Word and Excel)

## **Task 7 – Final Design**

The final design submittal will be advanced from the 90% submittal (incorporating review comments as appropriate).

### *Task 7 Deliverables*

- Electronic versions of the complete contract bidding documents including final front end documents, technical specifications, plans, and cost estimate (PDF, Word, Excel and CAD)
- Provide one (1) reproducible set of bidding documents

## **Task 8 – Bidding Services**

It is assumed the City will print, advertise and be the primary point of contact for bidder inquiries. Consultant services will include:

- Responding to bidder inquiries during the bid periods as requested by the City.

- Preparation of necessary bid addenda to address contractor questions and/or to identify contractors, suppliers, etc., that are qualified to submit bids or furnish equipment. It is assumed up to one (1) addendum may be needed.
- Assisting City staff with the bid openings. Consultant will review specialty contractor prequalification applications as part of the bid review process. Consultant will also consult with and advise the City as to the acceptability of subcontractors, suppliers and others proposed by the prime contractor if required by the bidding documents. Consultant will provide a letter of recommendation for award.

### *Task 8 Deliverables*

- Addenda as needed (one assumed)
- Letter of recommendation for award

## Task 9 – Construction Phase Services

The Consultant will provide construction contract administration and inspection with support from the City for public notifications and other coordination related items as needed. Construction phase services will include:

- Attending a preconstruction meeting.
- Reviewing requests for information, clarifications and change orders.
- Review of contractor submittals, shop drawings and field testing for conformance to the design requirements of the project and in accordance with the requirements of the contract documents. Consult with and advise City as to the acceptability of substitute and “or-equal” items proposed for use by the contractor.
- Construction inspection monitoring the progress and quality of the work, including preparation of construction inspection reports.
  - Inspection time is assumed to include five visits per week, six hours per visit over a 2-month construction period (mid-May to Mid-July). When possible, site visits will be combined with the 2018 Pavement Improvements site visits.
- Assistance in determining if non-conforming contract work should be rejected.
- Attendance at progress meetings (assume every other week for a total of two months) with contractor and City to address construction related issues.
- Reviewing and making recommendations for contractor monthly progress payments (assumed up to three progress payments).

- Attendance during the final inspection and preparation of a report on completion of the project, including a recommendation of final acceptance of work by the City.
- Provide Record Drawings representative of the “as constructed” project. Record Drawings will be provided to the City in CADD and electronic PDF format.

## Preliminary Sheet List

The following is the anticipated list of plan sheets:

Running Total	Sheets	Sheet Number	Description
1	1	G-1	Cover Sheet, Index of Drawing and Location Map
2	1	G-2	Legend and Abbreviations
3	1	G-3	General Notes
4	1	G-4	Sheet Layout Map
12	4	C-1 to C-8	Plan, Profile and Notes – High Street
	1		Plan, Profile and Notes – South 2 <sup>nd</sup> Street
	2		Plan, Profile and Notes – 2 <sup>nd</sup> Street
	1		Plan, Profile and Notes – 3 <sup>rd</sup> Street
20	8	D-1 to D-8	Connections and Miscellaneous Details
Standard Drawings (include as needed)			

## Schedule

The design schedule for the High Street Waterline bid package will accommodate an anticipated bid opening in March, anticipated NTP to the construction contractor by May and construction completion in mid-July.

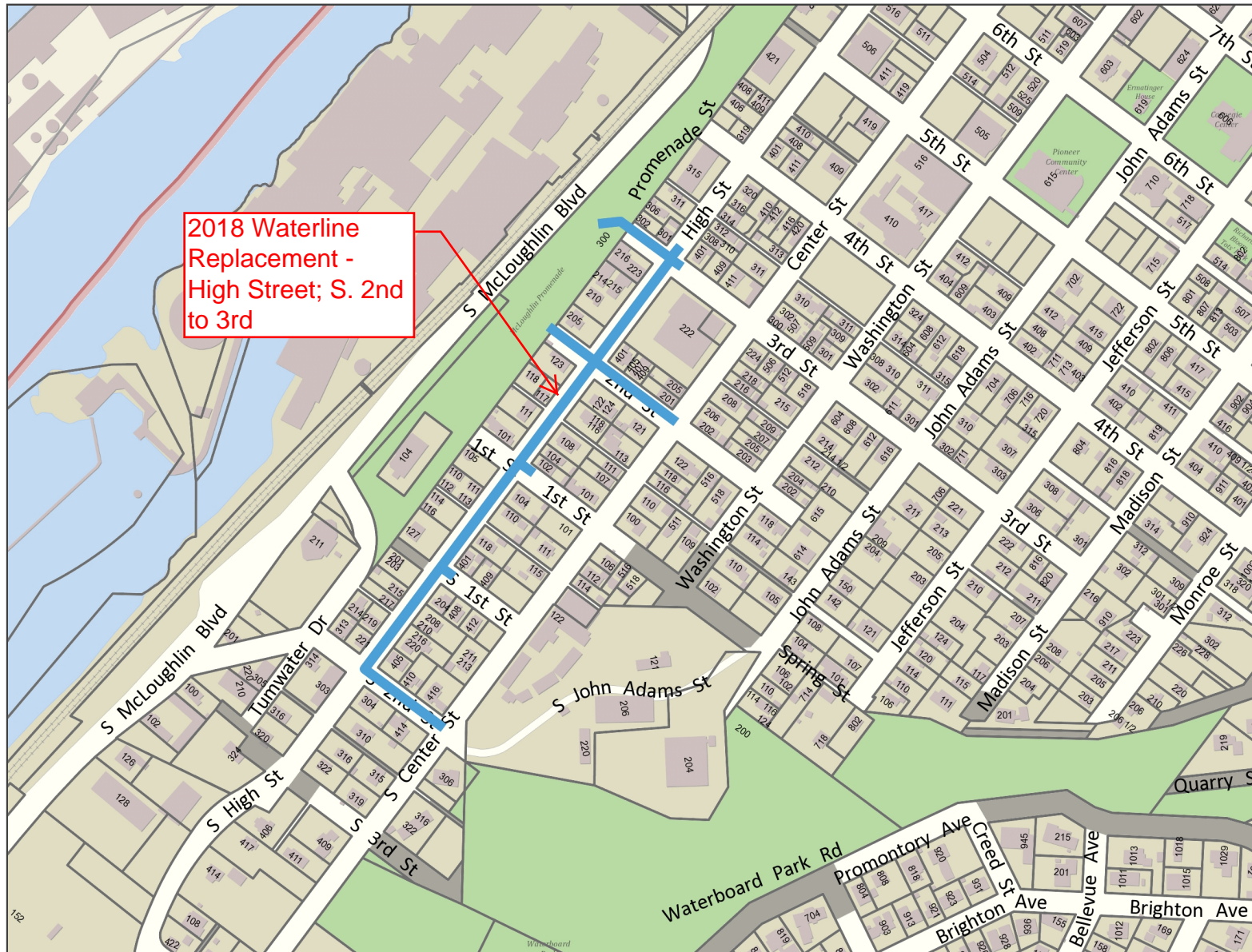


HIGH STREET WATERLINE REPLACEMENT  
CITY OF OREGON CITY  
PROPOSED FEE ESTIMATE

							ESTIMATED FEES					
	Professional Engineer IX	Professional Engineer VIII	Professional Engineer III	Engineering Designer I	Technician IV	Hours	Labor	Subconsultants		Subconsultant Total	Expenses	Total
	\$181 PIC	\$172 PM & QA/QC	\$130 P.E.	\$110 Designer	\$130 CAD			GeoDesign	PBS			
Task 1 - Project Management						0	\$ -			\$ -	\$ -	\$ -
Task 1.1 - Project Meetings (Design Phase - 3 Meetings)	4	12	12			28	\$ 4,348			\$ -	\$ 81	\$ 4,429
Task 1.2 - Project Management and Coordination (7 Months)	4	20				24	\$ 4,164			\$ -	\$ -	\$ 4,164
Task 1.3 - Monthly Invoices and Progress Reporting (7 Months)	4	8				12	\$ 2,100			\$ -	\$ -	\$ 2,100
Task 1 Subtotal	12	40	12	0	0	64	\$ 10,612	\$ -	\$ -	\$ -	\$ 81	\$ 10,693
Task 2 - Surveying						0	\$ -			\$ -	\$ -	\$ -
Task 2.1 - Topographic Survey			4		8	12	\$ 1,560	\$ 13,200		\$ 13,200	\$ 144	\$ 14,904
Task 2 Subtotal	0	0	4	0	8	12	\$ 1,560	\$ -	\$ 13,200	\$ 13,200	\$ 144	\$ 14,904
Task 3 - Utility Coordination						0	\$ -			\$ -	\$ -	\$ -
Task 3.1 - Utility Contact List and Notification Letters		1	2	4		7	\$ 872			\$ -	\$ -	\$ 872
Task 3.2 - Send Plans to Utilities			2	4		6	\$ 700			\$ -	\$ -	\$ 700
Task 3.3 - Identify Conflicts		2	6	12		20	\$ 2,444			\$ -	\$ -	\$ 2,444
Task 3.4 - Coordinate Conflict Resolution		1	8	32		41	\$ 4,732			\$ -	\$ -	\$ 4,732
Task 3 Subtotal	0	4	18	52	0	74	\$ 8,748	\$ -	\$ -	\$ -	\$ -	\$ 8,748
Task 4 - Geotechnical Investigations						0	\$ -			\$ -	\$ -	\$ -
Task 4.1 - Field Investigations, Analysis and Reporting		2	4			6	\$ 864	\$ 23,650		\$ 23,650	\$ -	\$ 24,514
Task 4 Subtotal	0	2	4	0	0	6	\$ 864	\$ 23,650	\$ -	\$ 23,650	\$ -	\$ 24,514
Task 5 - 50% Design						0	\$ -			\$ -	\$ -	\$ -
Task 5.1 - Plans		4	32	32	32	100	\$ 12,528			\$ -	\$ 1,296	\$ 13,824
Task 5.2 - Specifications TOC			2			2	\$ 260			\$ -	\$ -	\$ 260
Task 5.3 - Cost Estimate		1	4	8		13	\$ 1,572			\$ -	\$ -	\$ 1,572
Task 5 Subtotal	0	5	38	40	32	115	\$ 14,360	\$ -	\$ -	\$ -	\$ 1,296	\$ 15,656
Task 6 - 90% Design						0	\$ -			\$ -	\$ -	\$ -
Task 6.1 - Plans		4	32	32	32	100	\$ 12,528			\$ -	\$ 1,296	\$ 13,824
Task 6.2 - Specifications & Contract Documents		4	32	16		52	\$ 6,608			\$ -	\$ -	\$ 6,608
Task 6.3 - Cost Estimate		1	4	8		13	\$ 1,572			\$ -	\$ -	\$ 1,572
Task 6 Subtotal	0	9	68	56	32	165	\$ 20,708	\$ -	\$ -	\$ -	\$ 1,296	\$ 22,004
Task 7 - Final Design						0	\$ -			\$ -	\$ -	\$ -
Task 7.1 - Plans		2	12	24	20	58	\$ 7,144			\$ -	\$ 1,080	\$ 8,224
Task 7.2 - Specifications & Contract Documents		2	12	8		22	\$ 2,784			\$ -	\$ 50	\$ 2,834
Task 7.3 - Cost Estimate		1	2	4		7	\$ 872			\$ -	\$ -	\$ 872
Task 7 Subtotal	0	5	26	36	20	87	\$ 10,800	\$ -	\$ -	\$ -	\$ 1,130	\$ 11,930

HIGH STREET WATERLINE REPLACEMENT  
CITY OF OREGON CITY  
PROPOSED FEE ESTIMATE

							ESTIMATED FEES					
	Professional Engineer IX  \$181	Professional Engineer VIII  \$172	Professional Engineer III  \$130	Engineering Designer I  \$110	Technician IV  \$130	Hours	Labor	Subconsultants		Subconsultant Total	Expenses	Total
								GeoDesign	PBS			
Task 8 - Bidding Services						0	\$ -			\$ -	\$ -	\$ -
Task 8.1 - Bidder Questions			4			4	\$ 520			\$ -	\$ -	\$ 520
Task 8.2 - Addendum (1 Assumed)		1	4	4	2	11	\$ 1,392			\$ -	\$ 36	\$ 1,428
Task 8.3 - Bid Opening and Letter of Recommendation		1	4			5	\$ 692			\$ -	\$ 27	\$ 719
Task 8 Subtotal	0	2	12	4	2	20	\$ 2,604	\$ -	\$ -	\$ -	\$ 63	\$ 2,667
Task 9 - Construction Phase Services						0	\$ -			\$ -	\$ -	\$ -
Task 9.1 - Pre-Construction Meeting	4	4	6	4		18	\$ 2,632			\$ -	\$ 27	\$ 2,659
Task 9.2 - RFIs and Change Orders		1	4	8		13	\$ 1,572			\$ -	\$ -	\$ 1,572
Task 9.3 - Submittals		1	4	24		29	\$ 3,332			\$ -	\$ -	\$ 3,332
Task 9.4 - Inspection			24	220		244	\$ 27,320			\$ -	\$ 1,188	\$ 28,508
Task 9.5 - Progress Meetings		4	16			20	\$ 2,768			\$ -	\$ 216	\$ 2,984
Task 9.6 - Monthly Progress Payments (2)		2	8	16		26	\$ 3,144			\$ -	\$ -	\$ 3,144
Task 9.7 - Final Inspection		1	8	8		17	\$ 2,092			\$ -	\$ 27	\$ 2,119
Task 9.8 - Record Drawings		1	2	16	8	27	\$ 3,232			\$ -	\$ 644	\$ 3,876
Task 9 Subtotal	4	14	72	296	8	394	\$ 46,092	\$ -	\$ -	\$ -	\$ 2,102	\$ 48,194
TOTAL - ALL TASKS	16	81	254	484	102	937	\$ 116,348	\$ 23,650	\$ 13,200	\$ 36,850	\$ 6,112	\$ 159,310



2018 Waterline Replacement - High Street; S. 2nd to 3rd

## Legend

- Taxlots
- Taxlots (Outside UGB)
- Unimproved ROW
- City Limits
- UGB
- Basemap

## Notes

## Overview Map



0 400 800 Feet

1: 4,800



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

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City of Oregon City  
PO Box 3040  
625 Center St  
Oregon City  
OR 97045  
(503) 657-0891  
[www.orecity.org](http://www.orecity.org)

