City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656.4211 • Fax 503.656.4106 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT: Jennifer Arnold	PROJECT NO(S).: WAP-19-01	
NON-REFUNDABLE FEE(S): 2,850	REFUNDABLE DEPOSIT(S): —	TOTAL: 2,850

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal and Review (AP) *
- ☐ Conditional Use (CUP)
- ☐ Design Review (DR)
- ☐ Easement Vacation
- ☐ Extraterritorial Ext. of Utilities
- ☐ Final Plat or Plan (FP)
- ☐ Flood Management Area
- ☐ Hillside Protection & Erosion Control
- ☐ Historic Review
- ☐ Legislative Plan or Change
- ☐ Lot Line Adjustment (LLA) */**
- ☐ Minor Partition (MIP) (Preliminary Plat or Plan)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Pre-Application Conference (PA) */**
- ☐ Street Vacation
- ☐ Subdivision (SUB)
- ☐ Temporary Uses *
- ☐ Time Extension *
- ☐ Variance (VAR)
- ☑ Water Resource Area Protection/Single Lot (WAP)
- ☐ Water Resource Area Protection/Wetland (WAP)
- ☐ Willamette & Tualatin River Greenway (WRG)
- ☐ Zone Change

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

Site Location/Address: 4327 Kelly St.

Assessor's Map No.: 21E 36AA
Tax Lot(s): TL: 1803,
Total Land Area: 5,000 sq ft; 0.11 Ac

Brief Description of Proposal:
NEW SFR(s) in WRA, with Hardship Provision

Applicant Name: (please print) Paradise Homes
Address: 20659 NE Lakeside Drive
City State Zip: Fairview, Oregon 97024
Phone: 503.710.1227
Email: Paradise@frontier.com

Owner Name (required): (please print) Ching Hay
Address: 4356 Riverview Ave
City State Zip: West Linn, OR 97068
Phone: 503.784.7102
Email: mhay8650@msn.com

Consultant Name: (please print) Aquarius Environmental
Address: 2117 NE Oregon Street
City State Zip: Portland, OR 97232
Phone: 503.828.0265
Email: DanielS@aquariusenv.com

1. All application fees are non-refundable (excluding deposit). **Any overruns to deposit will result in additional billing.**
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. **Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format. If large sets of plans are required in application please submit only two sets.**

* No CD required / ** Only one hard-copy set needed

RECEIVED
JAN 03

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

Applicant's signature — 11.06.18 Date
Ching Hay — Owner's signature ***(required)*** — 11.06.18 Date

Paradise Group of Companies, Inc.

Paradise Group General Contractors
Paradise Homes

Dennis Caudell
Office 503.710.1227
Email- Paradise@frontier.com

Hay Properties- Project Narrative

New SFRs in WRA

12/28/2018

Address	4325 Kelly Street	4327 Kelly Street	4329 Kelly Street
State ID	2 1E 36AA 1802	2 1E 36AA 1803	2 1E 36AA 1804
Tax ID	01830095	01830102	01830111
Size	5,000 sq ft	5,000 sq ft	5,000 sq ft
Zone	R 4.5	R 4.5	R 4.5
Owner	Ching Hay 4356 Riverview Ave, West Linn, OR 97068 503.784.7102	**Applicant**	Paradise Homes Dennis Caudell Paradise@frontier.com 503.710.1227
Work Scope	New SFR	New SFR	New SFR
WRA Review	West Linn Development Code Chapter 32		
MDA Calculation (sq. ft.)	MDA: 5,000	MDA: 5,000	MDA: 5,000

Mitigation / Revegetation *West Linn Development Code Section 32.090, 32.100*

Table of Contents

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Site Location/Address: 4325 Kelly Street, 4327 Kelly Street, 4329 Kelly Street

Assessor's Map No.:

Tax Lot(s): TL 1802, 1803, 1804

Total Land Area: 15,000 sq ft; 0.34 Ac

Brief Description of Proposal:
NEW SFR(s) in WRA, with Hardship Provision

Applicant Name: (please print) Paradise Homes
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Applicant's signature — 11.06.18 Date — Ching Hay Owner's signature ***(required)*** — 11.06.18 Date

Development Review Application (Rev. 2011.07)

Proposal:

The proposed development consists of three previously developed lots; one with proposed driveway access from Kelly Street and the others with access via a future access easement granted by Lot 9 to the benefit of Lots 8 and 7. The lots have remained unimproved from the original development and are used as back yard space associated with the adjacent SFR at 4356 Riverview Ave.

For each of the three existing lots, development will include approximately 5,000 square feet or the maximum disturbance area permitted within the WRA. All proposed development will occur within the existing building envelope indicated in the underlying zone.

Site Description:

The site is comprised of three 5,000 square foot lots, for a total of 0.34 acres. It is bounded by single family residences to the North, East, an apartment complex to the South and unimproved Kelly Street to the West. An ephemeral portion of Sunset Creek lies just across the property line to the South.

The site contains 8,373 square feet of Water Resource Area (WRA) overlay classification. 6,627 square feet of the site is not classified as WRA. The site does not contain any floodplain.

There are no wetlands on the property or in the creek vicinity. Slopes greater than 10 percent only exist on Lot 8 (TL 1803). This includes areas of slopes no greater than 13 percent. The creek bed consists of a small ravine that is generally approximately 18" wide by 6" deep. Water, when present in the summer, flows about 1" deep.

General Application Submittal Requirements

- ✓ Completed application form;
- ✓ Pre-Application Conference;
- ~~✓ Geologic Report;~~
- ✓ Site Plan;
  - ✓ Storm Detention and Treatment Plan
  - ✓ MDA Calculations
- ✓ Construction Management Plan;
- ✓ Mitigation / Revegetation Plan;
- ✓ Narrative description
  - ✓ Professional- Water Resource Delineation
- ✓ Deposit or Fee

32.060 Approval Criteria for the Standard Process

A. WRA protection/minimizing impacts.

1. Development shall be conducted in a manner that will avoid or, if avoidance is not possible, minimize adverse impact on WRAs.

Under the hardship provisions per CDC 32.110, the minimum required distance from the creek to the house and associated improvements is 15 feet. New homes will be placed as close to the northern property line (opposite of the creek) as practical. To that end, front and side setbacks will be reduced up to 50 percent per Chapter 32.110(F).

2. Mitigation and re-vegetation of disturbed WRAs shall be completed per CDC 32.090 and 32.100, respectively.

1. All trees, shrubs and ground cover to be planted are to be native plants selected from the Portland Plant List;
2. Trees are to be at least one-half inch in caliper, and planted between eight and 12 feet on center, at a rate of five trees per every 500 square feet of disturbance area, and a minimum of 2 species.
3. Shrubs are to be in at least a one-gallon container or the equivalent, and planted between four and five feet on center, or clustered in single species groups of no more than four plants, with each cluster planted between eight and 10 feet on center at a rate of 25 plants every 500 square feet of disturbance area, and a minimum of 2 species.
4. Any invasive non-native or noxious vegetation is to be removed within the mitigation area prior to planting.
5. A minimum survival rate of 80 percent of the materials planted is expected after three years. Plants that die will be replaced in kind, and monitored by the owner;
6. Plants are to be mulched and watered and weeded for three years.
7. Planting will occur between Dec 1st and April 30th as appropriate for the respective stock, and will be protected as appropriate from wildlife damage.

B. Storm water and storm water facilities.

1. Proposed developments shall be designed to maintain the existing WRAs and utilize them as the primary method of storm water conveyance through the project site unless:

a. The surface water management plan calls for alternate configurations (culverts, piping, etc.); or

b. Under CDC 32.070, the applicant demonstrates that the relocation of the water resource will not adversely impact the function of the WRA including, but not limited to, circumstances where the WRA is poorly defined or not clearly channelized.

Re-vegetation, enhancement and/or mitigation of the re-aligned water resource shall be required as applicable.

SFR development will incorporate rain gardens to infiltrate/dissipate runoff from disturbed areas into the WRA and creek as appropriate.

The following criteria do not apply.

- *2. Public and private storm water detention, storm water treatment facilities and storm water outfall or energy dissipaters (e.g., rip rap) may encroach into the WRA if:*

    a. Accepted engineering practice requires it;

    b. Encroachment on significant trees shall be avoided when possible, and any tree loss shall be consistent with the City's Tree Technical Manual and mitigated per CDC 32.090;

    c. There shall be no direct outfall into the water resource, and any resulting outfall shall not have an erosive effect on the WRA or diminish the stability of slopes; and

    d. There are no reasonable alternatives available.

The proposed access easement will incorporate rain garden(s) to infiltrate/dissipate runoff from disturbed areas into the WRA and creek as appropriate. Associated runoff will not encroach upon significant trees. There will not be any direct outfall into Sunset Creek.

3. Roadside storm water conveyance swales and ditches may be extended within rights-of-way located in a WRA. When possible, they shall be located along the side of the road furthest from the water resource. If the conveyance facility must be located along the side of the road closest to the water resource, it shall be located as close to the road/sidewalk as possible and include habitat friendly design features (treatment train, rain gardens, etc.).

Proposed SFR development within the WRA is not adjacent to or within right-of-way(s).

This section does not apply.

4. Storm water detention and/or treatment facilities in the WRA shall be designed without permanent perimeter fencing and shall be landscaped with native vegetation.

Rain Garden design will incorporate native plantings appropriate for stormwater infrastructure applications.

5. Access to public storm water detention and/or treatment facilities shall be provided for maintenance purposes. Maintenance driveways shall be constructed to minimum width and use water permeable paving materials. Significant trees, including roots, shall not be disturbed to the degree possible. The encroachment and any tree loss shall be mitigated per CDC 32.090. There shall also be no adverse impacts upon the hydrologic conditions of the site.

Proposed SFR development within the WRA is not adjacent to or within right-of-way(s) or public areas.

This section does not apply.

6. Storm detention and treatment and geologic hazards: Per the submittals required by CDC 32.050(F)(3) and 92.010(E), all proposed storm detention and treatment facilities must comply with the standards for the improvement of public and private drainage systems located in the West Linn Public Works Design Standards, there will be no adverse off-site impacts caused by the development (including impacts from increased intensity of runoff downstream or constrictions causing ponding upstream), and the applicant must provide sufficient factual data to support the conclusions of the submitted plan.

Please see the engineered stormwater design attached as Exhibit 2

C. Repealed by Ord. 1647.

D. WRA width.

The WRA width for a Water Resource is 65' from the ordinary high water as indicated in Table 32-2. Under the hardship provisions per CDC 32.110, the minimum required distance from the creek to the house and associated improvements is 15 feet.

Please see the Wetland Determination attached as Exhibit 1.

E. Potential Hazards and Risk Mitigation

Per the submittals required by CDC 32.050(F)(4), the applicant must demonstrate that the proposed methods of rendering known or potential hazard sites safe for development, including proposed geotechnical remediation, are feasible and adequate to prevent landslides or other damage to property and safety. The review authority may impose conditions, including limits on type or intensity of land use, which it determines are necessary to mitigate known risks of landslides or property damage.

The site's WRA is a narrow ephemeral portion of Sunset Creek bound by a shallow "ravine" less than 12 inches in depth and 20 inches in width.

The applicant requests the Planning Director waive any applicable requirement for submittal of a topographical survey and for submittal of a geologic report, in order to help the applicant reduce costs associated with this development.

- Platted in 1889, this previously developed land has remained unimproved for use as back yard lawn.
- The areas are well established and stable, without any visible hazard, evidence of slope failure or potential for failure. The site does not present any development constraints due to slope, drainage or geologic hazards.
- DOGAMI Statewide Geohazards Database identifies this area as a moderate (Landslide Possible) landslide risk, like more than half of all the developed land within the City of West Linn. DOGAMI characterizes Landslide Risk as Low, Moderate, High and Very High.
- Contours on the City's GIS generally depict a 10% slope across the three lots. This meets the CDCs Chapter 2 definition for a Type III land <u>at its very lowest criteria</u>.
- The site topography is flat and landscaped with terracing at either end of the lots. This creates an effective topography of less than 10% slopes within the buildable envelope of the lots. This factor alone would meet the definition of a Type IV land.

F. Roads, driveways and utilities.

1. New roads, driveways, or utilities shall avoid WRAs unless the applicant demonstrates that no other practical alternative exists. In that case, road design and construction techniques shall minimize impacts and disturbance to the WRA by the following methods:

a. New roads and utilities crossing riparian habitat areas or streams shall be aligned as close to perpendicular to the channel as possible.

b. Roads and driveways traversing WRAs shall be of the minimum width possible to comply with applicable road standards and protect public safety. The footprint of grading and site clearing to accommodate the road shall be minimized.

c. Road and utility crossings shall avoid, where possible:

1) Salmonid spawning or rearing areas;

2) Stands of mature conifer trees in riparian areas;

3) Highly erodible soils;

4) Landslide prone areas;

5) Damage to, and fragmentation of, habitat; and

6) Wetlands identified on the WRA Map.

2. Crossing of fish bearing streams and riparian corridors shall use bridges or arch-bottomless culverts or the equivalent that provides comparable fish protection, to allow passage of wildlife and fish and to retain the natural stream bed.

3. New utilities spanning fish bearing stream sections, riparian corridors, and wetlands shall be located on existing roads/bridges, elevated walkways, conduit, or other existing structures or installed underground via tunneling or boring at a depth that avoids tree roots and does not alter the hydrology sustaining the water resource, unless the applicant demonstrates that it is not physically possible or it is cost prohibitive. Bore pits associated with the crossings shall be restored upon project completion. Dry, intermittent streams may be crossed with open cuts during a time period approved by the City and any agency with jurisdiction.

4. No fill or excavation is allowed within the ordinary high water mark of a water resource, unless all necessary permits are obtained from the City, U.S. Army Corps of Engineers and Oregon Department of State Lands (DSL).

5. Crossings of fish bearing streams shall be aligned, whenever possible, to serve multiple properties and be designed to accommodate conduit for utility lines. The applicant shall, to the extent legally permissible, work with the City to provide for a street layout and crossing location that will minimize the need for additional stream crossings in the future to serve surrounding properties.

This proposal does not include any roads, driveways, crossings or associated work within or over the WRA.

This section does not apply.

G. Passive Recreation.

This application does not propose any passive recreation as described in this section.

This section does not apply.

H. Daylighting Piped Streams.

This property does not contain any daylighted stream elements, and this proposal does not create any new daylighting.

This section does not apply

I. Habitat Friendly Development Practices

The following habitat friendly development practices shall be incorporated into the design of any improvements or projects in the WRA to the degree possible:

1. Restore disturbed soils to original or higher level of porosity to regain infiltration and storm water storage capacity.

2. Apply a treatment train or series of storm water treatment measures to provide multiple opportunities for storm water treatment and reduce the possibility of system failure.

3. Incorporate storm water management in road rights-of-way.

4. Landscape with rain gardens to provide on-lot detention, filtering of rainwater, and groundwater recharge.

5. Use multi-functional open drainage systems in lieu of conventional curb-and-gutter systems.

6. Use green roofs for runoff reduction, energy savings, improved air quality, and enhanced aesthetics.

7. Retain rooftop runoff in a rain barrel for later on-lot use in lawn and garden watering.

8. Disconnect downspouts from roofs and direct the flow to vegetated infiltration/filtration areas such as rain gardens.

9. Use pervious paving materials for driveways, parking lots, sidewalks, patios, and walkways.

10. Reduce sidewalk width to a minimum four feet. Grade the sidewalk so it drains to the front yard of a residential lot or retention area instead of towards the street.

11. Use shared driveways. 3 SFR lots will be using the same shared access driveway with shorter individual driveways to each house.

12. Reduce width of residential streets and driveways, especially at WRA crossings.

13. Reduce street length, primarily in residential areas, by encouraging clustering.

14. Reduce cul-de-sac radii and use pervious and/or vegetated islands in center to minimize impervious surfaces.

15. Use previously developed areas (PDAs) when given an option of developing PDA versus non-PDA land.

16. Minimize the building, hardscape and disturbance footprint.

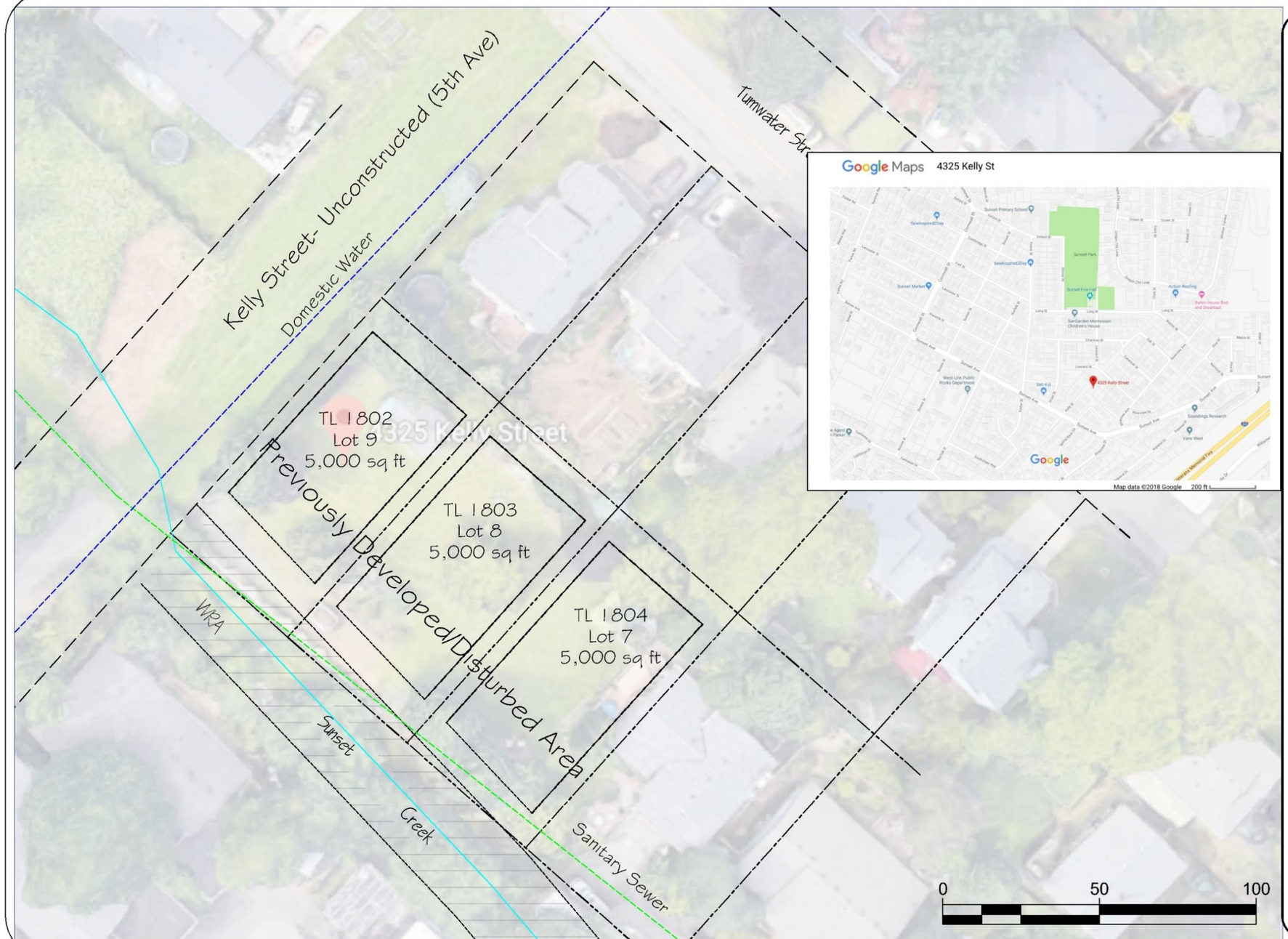
17. Consider multi-story construction over a bigger footprint. (Ord. 1623 § 1, 2014; Ord. 1635 § 19, 2014; Ord. 1647 § 5, 2016; Ord. 1662 § 7, 2017).

Some Habitat Friendly Development Practices to be utilized in this development are as follows:

- Revegetation will use native shrubs, trees and grasses;
- Driveways and access roadways will use rain garden(s) for runoff pretreatment;
- Rain Barrels will capture roof runoff for later use in landscaped areas;
- Pervious materials will be used in parking areas and access roadways;
- Sidewalks will shed runoff to landscaped areas;
- Shared access roadways;
- All proposed development is in Previously Developed Areas;
- Smaller footprint development;
- Efficient Home Design and Construction.

Figure 1

Site Plan



General Notes

SCALE: VERT: NOTED HORIZ: NOTED
DATE: SEPTEMBER 2018
FILE:

SECTION	TWP.	RANGE
36	2S	1E

LEGAL

PROJECT NAME: HAY PROPERTY
LOCATION: 4325 Kelly St West Linn

SITE PLAN

No.	Revision/Issue	Date

Firm Name and Address
Paradise Homes
503-710-1227 Paradise@frontier.com

Project Name and Address
Hay Property
4325 Kelly Street
West Side Addition
Block 5, Lot 8

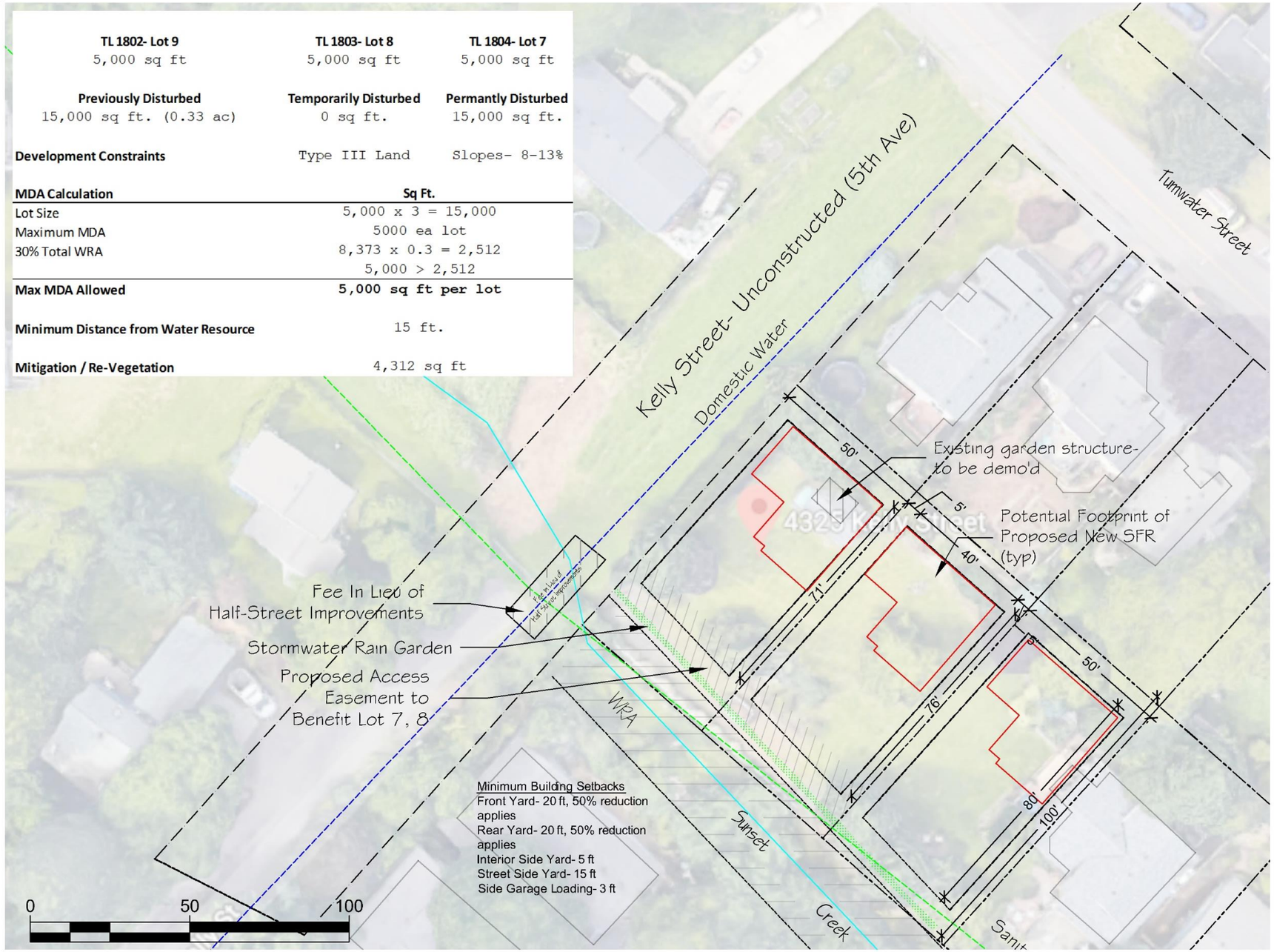
Project	Sheet
4325	1
Date: 9-4-18	
Scale: As Noted	

Figure 2

Lot Plan

TL 1802- Lot 9	TL 1803- Lot 8	TL 1804- Lot 7
5,000 sq ft	5,000 sq ft	5,000 sq ft
Previously Disturbed	**Temporarily Disturbed**	**Permantly Disturbed**
15,000 sq ft. (0.33 ac)	0 sq ft.	15,000 sq ft.
Development Constraints	Type III Land	Slopes- 8-13%

MDA Calculation	Sq Ft.
Lot Size	5,000 x 3 = 15,000
Maximum MDA	5000 ea lot
30% Total WRA	8,373 x 0.3 = 2,512
	5,000 > 2,512
Max MDA Allowed	**5,000 sq ft per lot**
Minimum Distance from Water Resource	15 ft.
Mitigation / Re-Vegetation	4,312 sq ft



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LEGAL: SECTION 36, TWP. 2S, RANGE 1E

PROJECT NAME: HAY PROPERTY
LOCATION: 4325 Kelly St West Linn

LOT PLAN

No.	Revision/Issue	Date

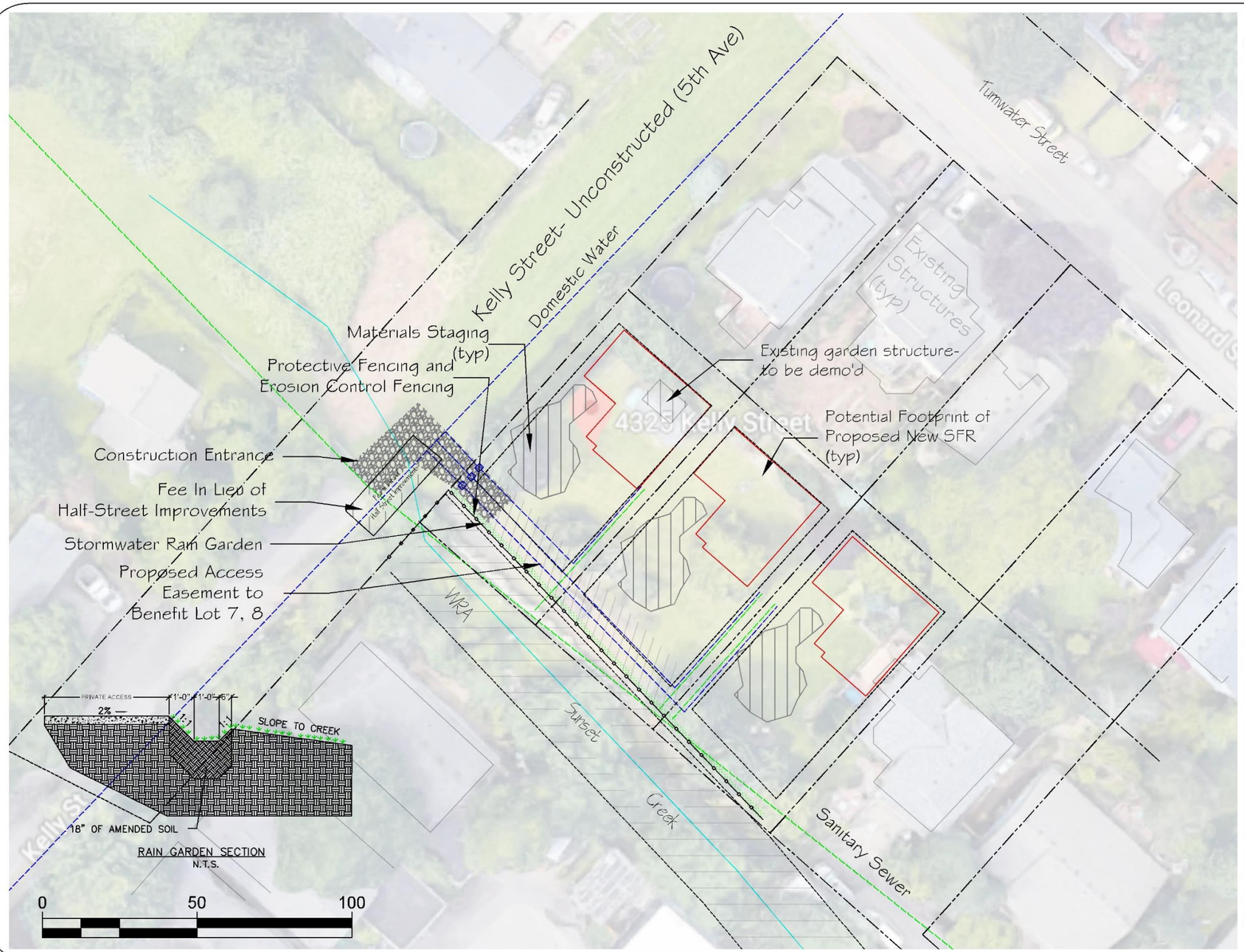
Firm Name and Address
Paradise Homes

Project Name and Address
Hay Property
4325 Kelly Street
West Side Addition
Block 5, Lot 8

Project	Sheet
4325	2
Date: 9-4-18	
Scale: As Noted	

Figure 3

Construction Management Plan



General Notes

HAY PROPERTY
4325 Kelly St West Linn

CONSTRUCTION MANAGEMENT PLAN

SCALE: VERT: NOTED HORIZ: NOTED
DATE: SEPTEMBER 2018
FILE:

SECTION	LEGAL TWP.	RANGE
36	2S	1E

PROJECT NAME:
LOCATION:

No.	Revision/Issue	Date

Firm Name and Address

Paradise Homes

Project Name and Address

Hay Property
4325 Kelly Street
West Side Addition
Block 5, Lot 8

Project	4325	Sheet
Date	9-4-18	3
Scale	As Noted	

Figure 4

Mitigation Plan

MITIGATION
Per West Linn CDC 32.099 and 32.100

	Lot 7 MDA- 1597 sq ft	Lot 8 MDA- 1595 sq ft	Lot 9 MDA- 1934 sq ft
Trees Qty.	15	15	20
Shrub Qty.	75	75	100
Min. Tree Size	½" caliper (live cuttings or bare root stock)		
Min. Shrub Size	12-inch height (container stock)		
Tree Spacing	Average intervals of 10 feet on center.		
Shrub Spacing	Single species clusters of no more than 4 plants, spaced on average 8 to 10 feet on center		
Tree Diversity and Species*	Minimum 2 species		
Shrub Diversity	Minimum 2 species		
Location of Mitigation	Areas disturbed by construction- • Trees and shrubs along property lines; • Wheat grass and shrubs in open areas.		
Survival	Minimum 80%		
Survival Enhancement	Non-native or noxious vegetation must be removed or controlled throughout the 3-year maintenance period. Plant sleeves or fencing must be used to protect against wildlife damage.		

Applicant
Paradise Homes
Paradise@frontier.com
503.710.1227

Owner
Ching Hay
4356 Riverview Ave
West Linn, 97068
503.784.7102

General Notes

SCALE: VERT: NOTED HORIZ: NOTED
DATE: SEPTEMBER 2018
FILE:

LEGAL		
SECTION	TWP:	RANGE
36	2S	1E

HAY PROPERTY
4325 Kelly St West Linn

MITIGATION PLAN

PROJECT NAME:
LOCATION:

No.	Revision/Issue	Date

Firm Name and Address
Paradise Homes

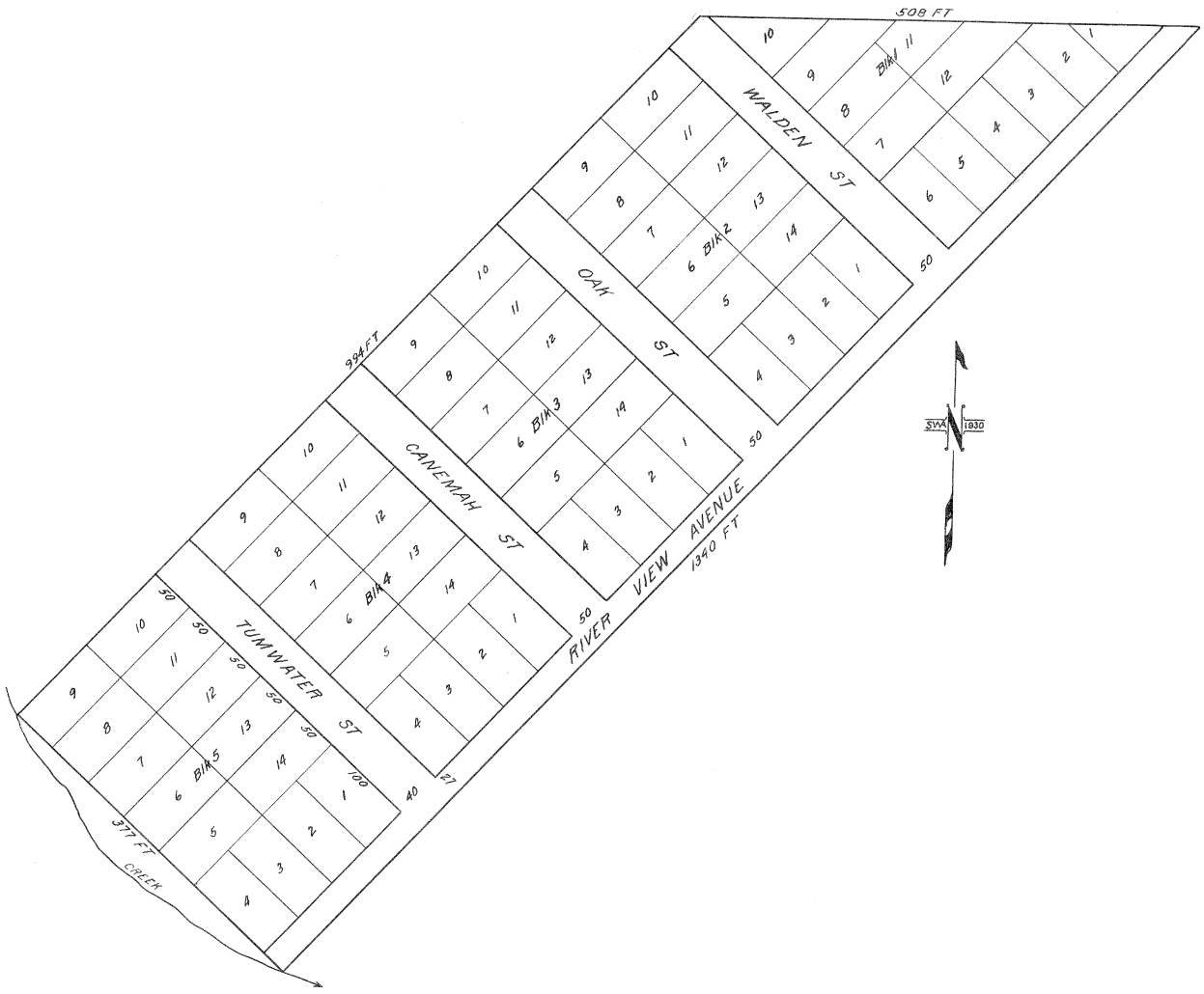
Project Name and Address
Hay Property
4325 Kelly Street
West Side Addition
Block 5, Lot 8

Project 4325
Date 9-4-18
Scale As Noted
Sheet 4

Figure 5

Plat- 036- P1

WEST SIDE ADDITION
TO
OREGON CITY
SCALE 1"=100'



KNOW ALL MEN BY THESE PRESENTS--THAT WE, JAMES P. SHAW AND EMILY C. SHAW HIS WIFE, DO HEREBY MAKE, ESTABLISH AND DECLARE THIS PLAT TO BE A MAP OF WEST SIDE ADDITION TO OREGON CITY, AND THE LANDS THEREIN REPRESENTED BEING SITUATED IN SECTION 36 IN TOWNSHIP 2 SOUTH RANGE 1 EAST OF THE WILLAMETTE MERIDIAN, AND MORE FULLY DESCRIBED AS BEGINNING AT THE NORTH WEST CORNER OF ROBERT MOORES DONATION LAND CLAIM IN SAID SECTION 36 T. 2 S. R. 1 E., RUNNING THENCE SOUTH 89° 45 E. 508 FEET TO A STAKE, THENCE S. 42° WEST 1340 FEET TO A CREEK, THENCE WESTERLY BY THE MEANDERS OF SAID CREEK TO DONATION CLAIM LINE BETWEEN JULIA ANN LEWIS AND ROBERT MOORE, THENCE ALONG SAID LINE N 42 E. TO PLACE OF BEGINNING.

WE HEREBY DEDICATE TO THE PUBLIC FOREVER AS STREETS AND ROADS ALL SUCH PORTIONS OF LAND UPON SAID MAP AS THE SAME ARE THEREUPON LAID DOWN AND MAPPED.

IN WITNESS WHEREOF WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS 15TH DAY OF JUNE, 1889.

IN PRESENCE OF)
H. E. CROSS)
CHAS E. BURNS)

JAMES P. SHAW SEAL
EMILIE C. SHAW SEAL

STATE OF OREGON)
COUNTY OF CLACKAMAS) SS

BE IT REMEMBERED THAT ON THIS 15TH DAY OF JUNE, 1889, BEFORE ME THE UNDERSIGNED NOTARY PUBLIC IN AND FOR OREGON PERSONALLY APPEARED THE ABOVE NAMED JAMES P. SHAW AND EMILIE C. SHAW, KNOWN TO ME TO BE THE PERSONS DESCRIBED IN AND WHO EXECUTED THE ABOVE DEDICATION AND TOWN PLAT, AND THE SAID JAMES P. SHAW AND EMILIE C. SHAW ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE USES AND PURPOSES THEREIN MENTIONED.

IN WITNESS WHEREOF I HAVE HEREUNTO SET MY HAND AND SEAL.

SEAL OF NOTARY

HARVEY E. CROSS
NOTARY PUBLIC FOR OREGON

STATE OF OREGON)
COUNTY OF CLACKAMAS) SS

I, N. O. WALDEN, BEING FIRST DULY SWORN DEPOSE AND SAY--I SURVEYED THE LAND REPRESENTED ON THE ANNEXED PLAT. THAT I HAVE CORRECTLY SURVEYED AND MARKED WITH PROPER MONUMENTS THE LAND AS REPRESENTED ON SAID PLAT. THAT I PLANTED A STONE MONUMENT INDICATING THE INITIAL POINT OF SUCH SURVEY OF FOLLOWING DIMENSIONS 6 X 6 X 6 AT THE N. W. CORNER OF SAID TRACT.

N. O. WALDEN

SUBSCRIBED AND SWORN TO BEFORE ME THIS 15TH DAY OF JUNE, 1889.

SEAL OF NOTARY

H. E. CROSS
NOTARY PUBLIC FOR OREGON

STATE OF OREGON)
COUNTY OF CLACKAMAS) SS

I HEREBY CERTIFY THAT THE WITHIN INSTRUMENT WAS FILED FOR RECORD JUNE 15TH, 1889, AT 3 O CLOCK AND---MIN. P. M. REQUEST OF SHAW AND RECORDED JUNE 15, 1889, IN BOOK OF PLATS.

H. H. JOHNSON, COUNTY CLERK

36

STATE OF OREGON)
COUNTY OF CLACKAMAS) SS

I, E. C. HACKETT, RECORDER OF SAID COUNTY, CERTIFY THE WITHIN AND FOREGOING TO BE A TRUE AND CORRECT COPY OF THE MAP NOW ON FILE IN MY OFFICE AND IN MY CARE AND CUSTODY. JUNE 25, 1930.

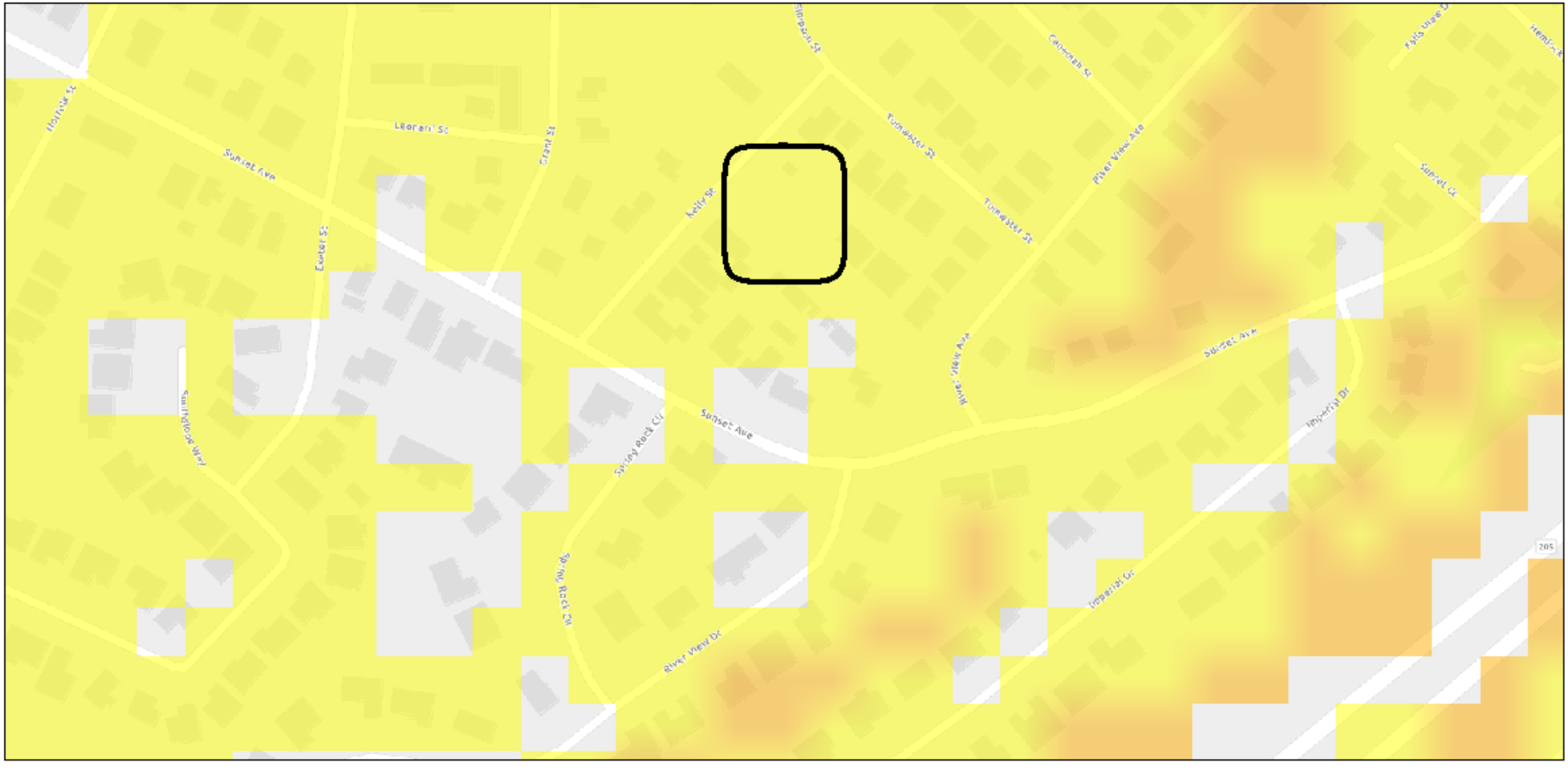
E. C. Hackett
COUNTY RECORDER

36

Figure 6

DOGAMI Landslide Hazard Map

4325 Kelly St- DOGAMI Landslide Hazard



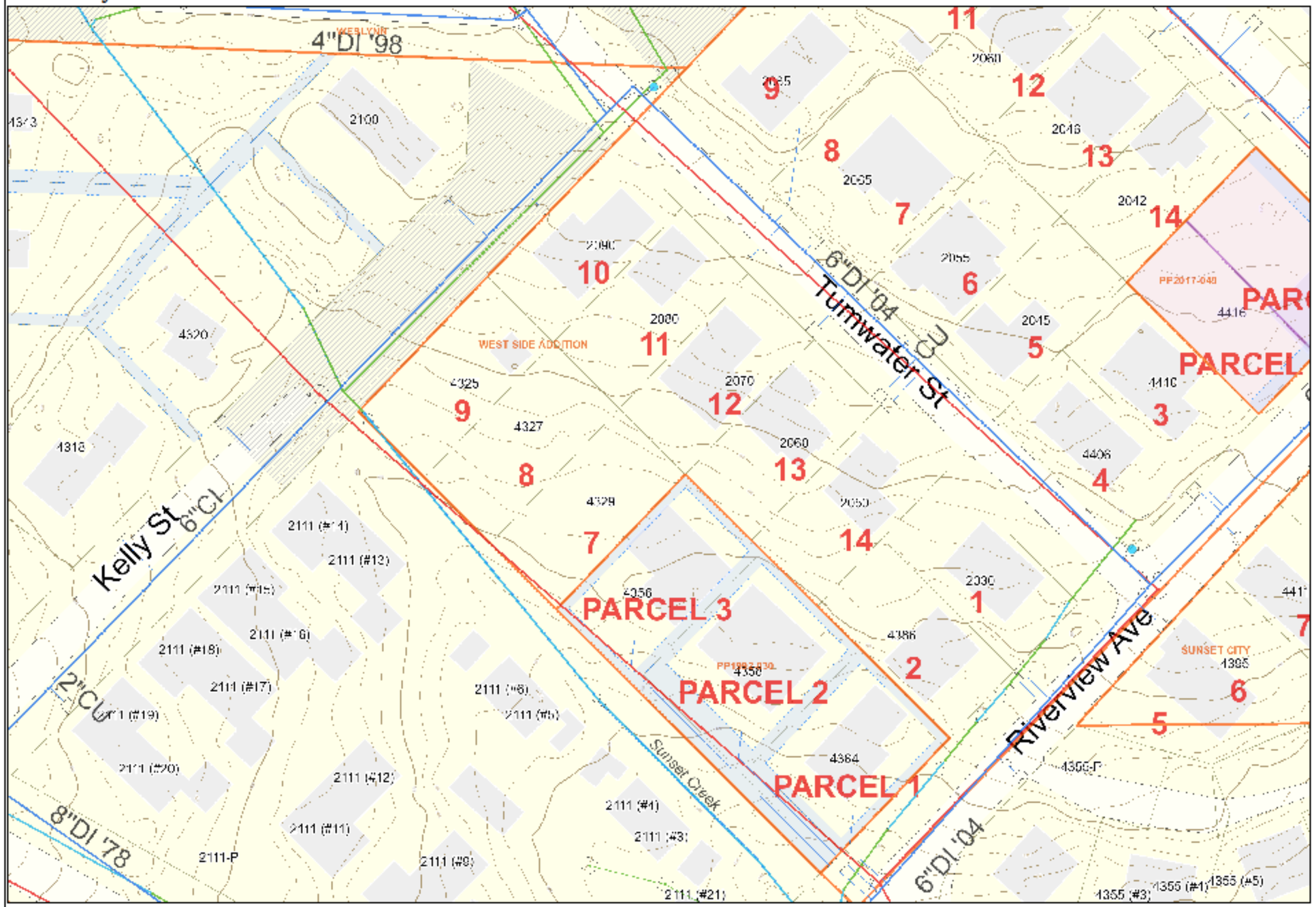
October 19, 2018
Landslide Hazard
Red: Band_1
Green: Band_2
Blue: Band_3

1:2,400
0 0.02 0.04 0.08 mi
0 0.03 0.06 0.12 km

Figure 7

GIS Map with 2 ft Contours

4325 Kelly Street- Contours: 2 ft



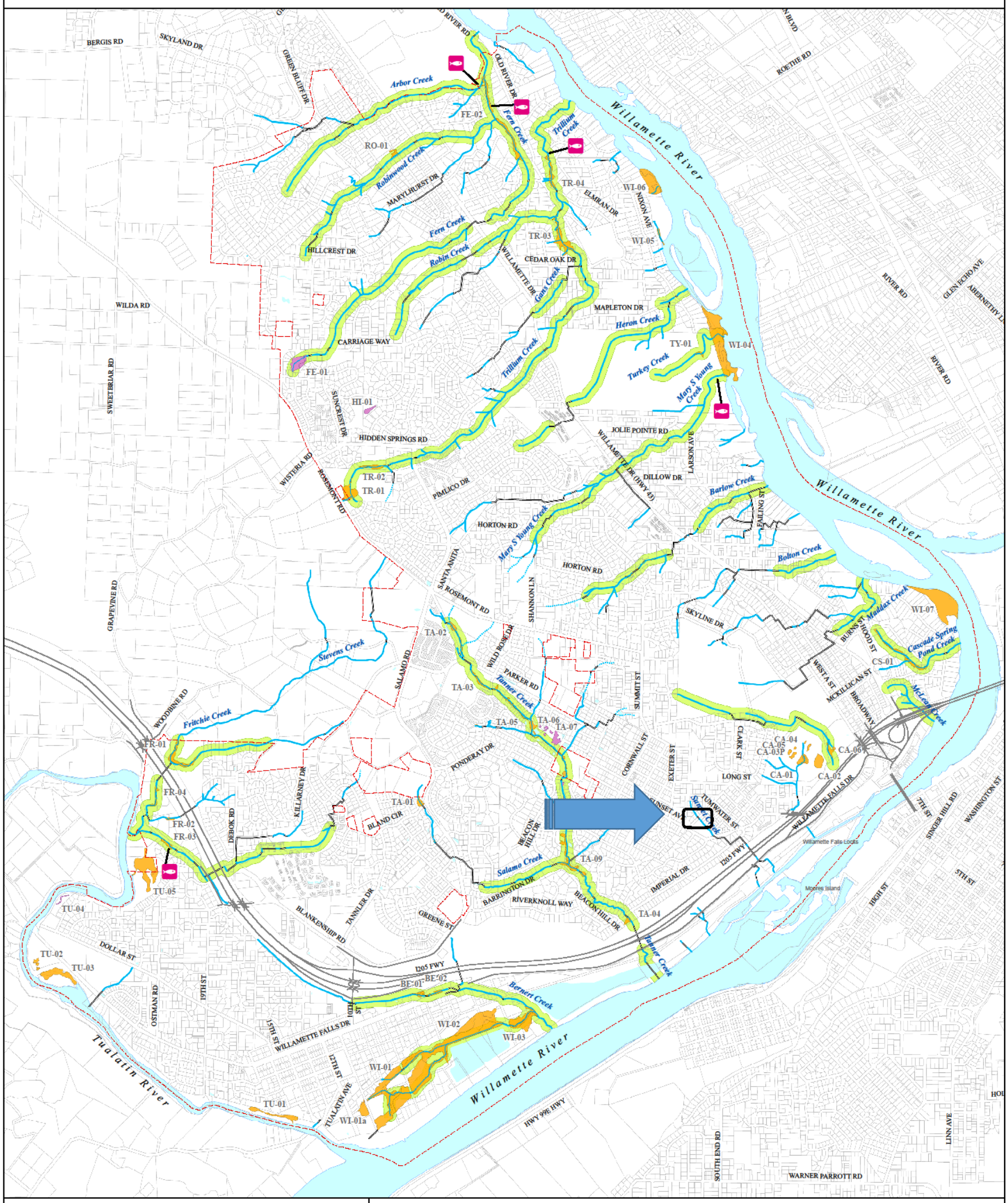
DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Map scale is approximate. Source: West Linn GIS (Geographic Information System) MapOptix.

Figure 8

City of West Linn WRA Map

MAY 2014

Water Resource Area (WRA) Map



Map Developed by West Linn Planning Department and GIS

MAP OVERLAYS:
*Streams, Pipe Segments, Other Open Ditches, and Significant Riparian Corridors
Map Source: "Significant Riparian Corridors West Linn Goal 5 Inventory, January 2007"
Map publication date: 1/2/2007.
Modified Streams and added Ephemeral Streams, April 2013, July 2013, September 2013

**Locally Significant Wetlands and Other Wetlands
Map Source: "Local Wetland Inventory, West Linn Goal 5 Inventory, January 2005"
Map publication date: 6/5/2006.

***Taxlot Base Map provided by Clackamas County GIS, 2013

WETLANDS/GOAL 5 DISCLAIMER (DSL STANDARD):
Information shown on this map is for planning purposes only and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised to contact the Oregon Division of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

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Goal 5 Significant Riparian Corridors*

- Significant Riparian Corridors
- Streams
- Ephemeral Stream
- Piped Segments
- Upper Stream Reach of Fish Inventory 2003/2004 Survey

Goal 5 Wetland Inventory**

- Locally Significant Wetlands, DSL 2005
- Other Wetlands, DSL 2005
- TA-05 Specific Wetland Identifier
- Rivers & Ponds
- West Linn City Limits
- Taxlot Base Map***

0 0.25 0.5 1 Miles

Map Created: 6/6/2014

LOC: G:\PROJECTS\GIS\GOAL5_2006\SIGRIPARIAN\SIGRIPARIAN_WETLANDS_201406V6_FINAL.MXD | KAHA
VERSION 5 TO VERSION 6: REMOVED "PROPOSED" FROM MAP TITLE

West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

Exhibit 1

Wetland Determination

4325 Kelly Street West Linn Wetland Determination

PREPARED FOR: Dennis Caudell, Paradise Homes
PREPARED BY: Turnstone Environmental Consultants, Inc. (Turnstone)
COPIES: Jeff Reams (Turnstone)
DATE: December 17th, 2018

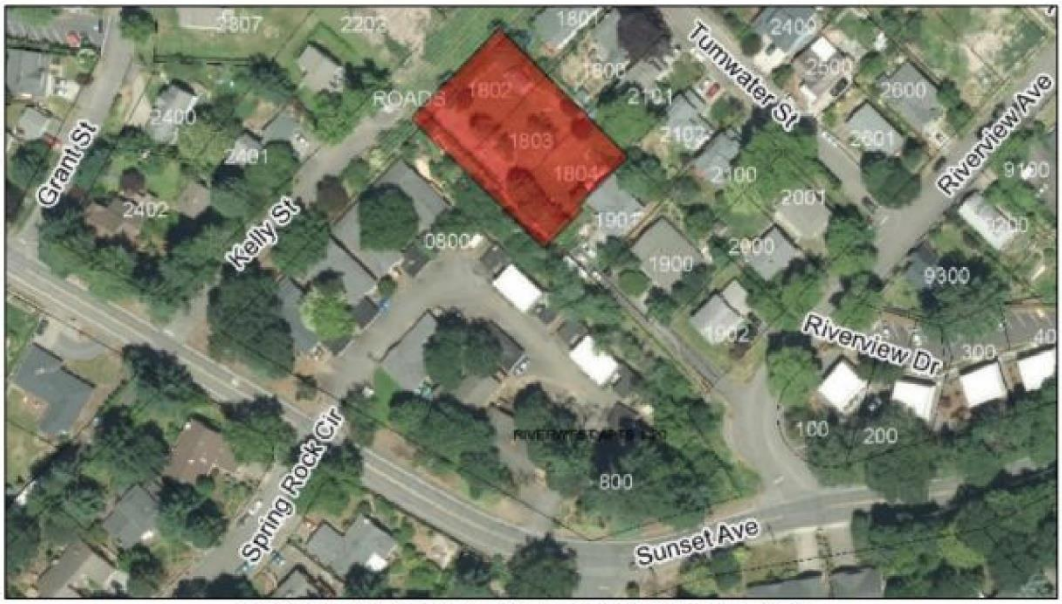
Introduction

Turnstone conducted a wetland and waterways determination for a 0.43-acre Study Area that includes the entirety of tax lots 1802, 1803, 1804 and a portion 800 (tax maps 21E36AA & 21E36AD) in West Linn, Clackamas County, Oregon. The Study Area also includes a small portion of public road right of way north of the existing terminus of Kelly Street. The purpose of this memorandum is to provide information that will help guide future land use planning for the parcel and ensure compliance with regulatory statutes related to protection of wetlands and other waters. The client wishes to develop tax lots 1802, 1803 and 1804 as single-family residences and has commissioned this report to convey the location and condition of aquatic resources that may be subject to city regulations. A portion of the Study Area adjacent to the channel of Sunset Creek is included in the City of West Linn's Water Resource Area (WRA) map and subject to protection through development buffers (Appendix A-Figure 1).

Study Area Setting and Land Use

The legal description of the Study Area is SE 1/4 of NE 1/4, Section 36 in Township 2 South, Range 1 East. The centroid coordinates for the Study Area are 45.3570923°, -122.6249728°. The Study Area is situated on situated on a southeast-facing slope and local topography is influenced by the drainage swale occupied by Sunset Creek.

Study Area (shaded) overview map



Source: West Linn GIS (Geographic Information System) MapOptix.

The portions of tax lots 1802, 1803 are currently maintained as a landscaped yard, with lawns and ornamental tree and shrub plantings. Mature Leyland cypress (*Cupressus* x *leylandii*), Deodar cedar (*Cedrus deodara*) and quaking aspen (*Populus tremuloides*) trees along with ornamental grasses (*Miscanthus sinensis*) and flowering cherry trees (*Prunus pendula*) are planted along the Study Area lot lines. The portion of tax lot 800 included in the Study Area contains the channel of Sunset Creek and is a combination of landscaped areas and riparian vegetation dominated by willows (*Salix* cf. *sitchensis*). Local land use is dominated by medium-density single-family homes. The Study Area is within the Abernethy Creek-Willamette River catchment area (HUC10: 1709000704). No wetlands included in the National Wetland Inventory (NWI) are located in the Study Area (USFWS 2018). The nearest NWI wetlands are located along Tanner Creek to the southwest, at Camassia Natural Area to the Northeast and along the Willamette River to the south. Beyond the channel of Sunset Creek, no wetlands or waters are identified in the West Linn local wetland inventory (Winterbrook 2003).

Methods

Field investigation of the Study Area was conducted on December 5th, 2018. The field investigation utilized the "Routine Onsite" method from the Corps Wetland Delineation Manual (USACE, 1987) as guidance. The Study Area was traversed by foot and a visual assessment was conducted for hydrophytic vegetation, suspect topographical features, and wetland hydrology indicators. Two sample plots were placed upslope of the Sunset Creek channel to document upland (non-wetland) conditions there. Sample plot soil pits were dug to a depth of 20". Absolute aerial cover of plant species was reported for tree, shrub and herb layers, utilizing 10-, 5-, 1-meter square plots respectively. Soil colors (wet) were determined using Munsell soil color charts (Gretag Macbeth 2000). Ordinary High-Water Lines (OHWLs) were determined by mapping the upland limit of the physical and biological characteristics outlined in Army Corps of Engineers Regulatory Guidance Letter 05-05 (USACE 2005). Considering that the timing of field investigation coincided with a dry period, wetland hydrology would be assumed for plots possessing both positive hydric soil and hydrophytic vegetation determinations, though in practice each sampling area resulted in upland soil and vegetation determinations.

Looking northeast towards SP_01

Results

No wetlands are present within the Study Area and each of the sample plots resulted in upland determinations. The location of Study Area sample plots is illustrated in Appendix B-Figures 1 & 2. Wetland delineation data forms and ground-level photographs are included in Appendix C. Soils in the Study Area are predominately dark brown (7.5YR 3/3) and silt loam in texture and do not the redoximorphic features associated with persistent seasonally high ground water. A single soil map unit (major component) is present in the Study Area: "Saum silt loam, 8 to 15 percent slopes" (NRCS 2018). The map unit is non-hydric and described as well-drained. Soils observed during field investigation closely resemble the pedon descriptions of "Saum" soils. Study Area sample plots were dominated by ornamental trees and lawn grasses including perennial ryegrass (*Lolium perenne*) along with a mix of annual weeds including common groundsel (*Senecio vulgaris*), crabgrass (*Digitalis sanguinalis*), dovefoot geranium (*Geranium molle*), subterranean clover (*Trifolium subterraneum*) and annual bluegrass (*Poa annua*). Within the Study Area, channel of Sunset Creek is located primarily on tax lot 800 with a small portion on the adjacent public road right of way. Vegetation along the northern section of the creek is maintained as a backyard, with lawn grasses interspersed by raised beds and ornamental plantings. Vegetation along the lower, southern portion of the creek is more natural in character and hosts native riparian species including willows, western red-cedar (*Thuja plicata*) and ferns (*Athyrium filix-femina*). The channel is somewhat incised and the OHWL was determined by mapping the top of bank. The channel, along with the proposed 15' development buffer is illustrated in Appendix B-Figures 1 & 2.

Looking south toward SP_02

Mapping Method

Sample points and waterway lines were collected using an EOS™ Arrow Gold GPS receiver paired with a mobile computer equipped with ESRI™ Collector software. RTK positioning over a digital cellular network was utilized to correct GPS data and points are accurate to within 4 cm. To calculate areas and create associated figures, GPS data was collected in a WGS 84 geographic coordinate system and later transformed into a local coordinate system, NAD 1983 State Plane Oregon North FIPS3601 Feet. A CAD file has been provided to the client for incorporation into proposed site layout exhibits.

Looking at Sunset Creek on the north portion of tax lot 800.

Looking northwest from the south-central portion of the Study Area

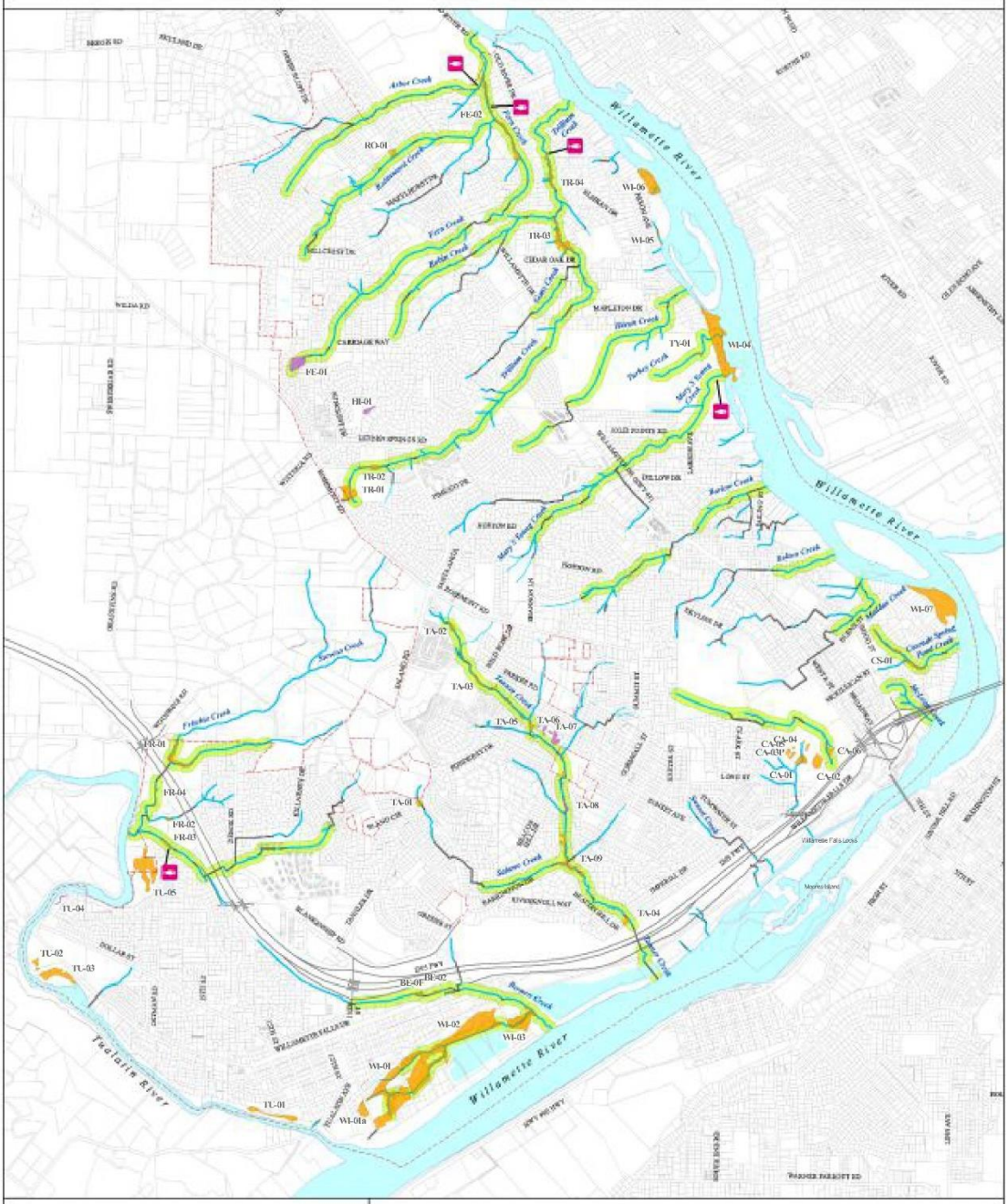
Appendix A:

West Linn WRA Map

Appendix A-Figure 1

MAY 2014

Proposed Water Resource Area (WRA) Map



Map Developed by West Linn Planning Department and GIS

MAP OVERLAYS:
*Streams, Pipe Segments, Other Open Ditches, and Significant Riparian Corridors
Map Source: "Significant Riparian Corridors West Linn Goal 5 Inventory, January 2007"
Map publication date: 1/2/2007.
Modified Streams and added Ephemeral Streams, April 2013, July 2013, September 2013

**Locally Significant Wetlands and Other Wetlands
Map Source: "Local Wetland Inventory, West Linn Goal 5 Inventory, January 2005"
Map publication date: 6/5/2006.

***Taxlot Base Map provided by Clackamas County GIS, 2013

WETLANDS/GOAL 5 DISCLAIMER (DSL STANDARDS):
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Goal 5 Significant Riparian Corridors*

- Significant Riparian Corridors
- Streams
- Ephemeral Stream
- Piped Segments
- Upper Stream Reach of Fish Inventory 2003/2004 Survey

Goal 5 Wetland Inventory**

- Locally Significant Wetlands, DSL 2005
- Other Wetlands, DSL 2005
- TA-05 Specific Wetland Identifier
- Rivers & Ponds
- West Linn City Limits
- Taxlot Base Map***

0 0.25 0.5 1 Miles

Map Created: 5/13/2014

LOC: G:\PROJECTS\GIS\GOALS_2006\SIGRIP\MAPS\SIGRIPARIAN_WETLANDS_20140505_PROPOSEDAMD1.MXD

West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

Appendix B:

Wetland Determination Maps

Figure 2:

Wetland Determination Aerial Photo Map

Legend

- Photo Points
- Culvert Head

Sample Points

- Upland
- Clackamas County Tax Lot
- Waterway Area (top of bank)
- Waterway 15' buffer
- Study Area (0.428 acres 18,622 SqFt.)

N

1:400

Paradise-Kelly St. Wetland Determination

Clackamas County, Or.

12/11/2018

Notes:

1. *All wetland points and boundary features were collected with a resource grade GPS and have an accuracy of 1 meter or less.*
2. *Tax Lot boundaries provided by Clackamas County, accuracy unkown.*
3. *Aerial Photo source: DigitalGlobe. Photo Date: 5/27/2017*
4. *Native size of map layout is 11"x17".*

TURNSTONE ENVIRONMENTAL CONSULTANTS

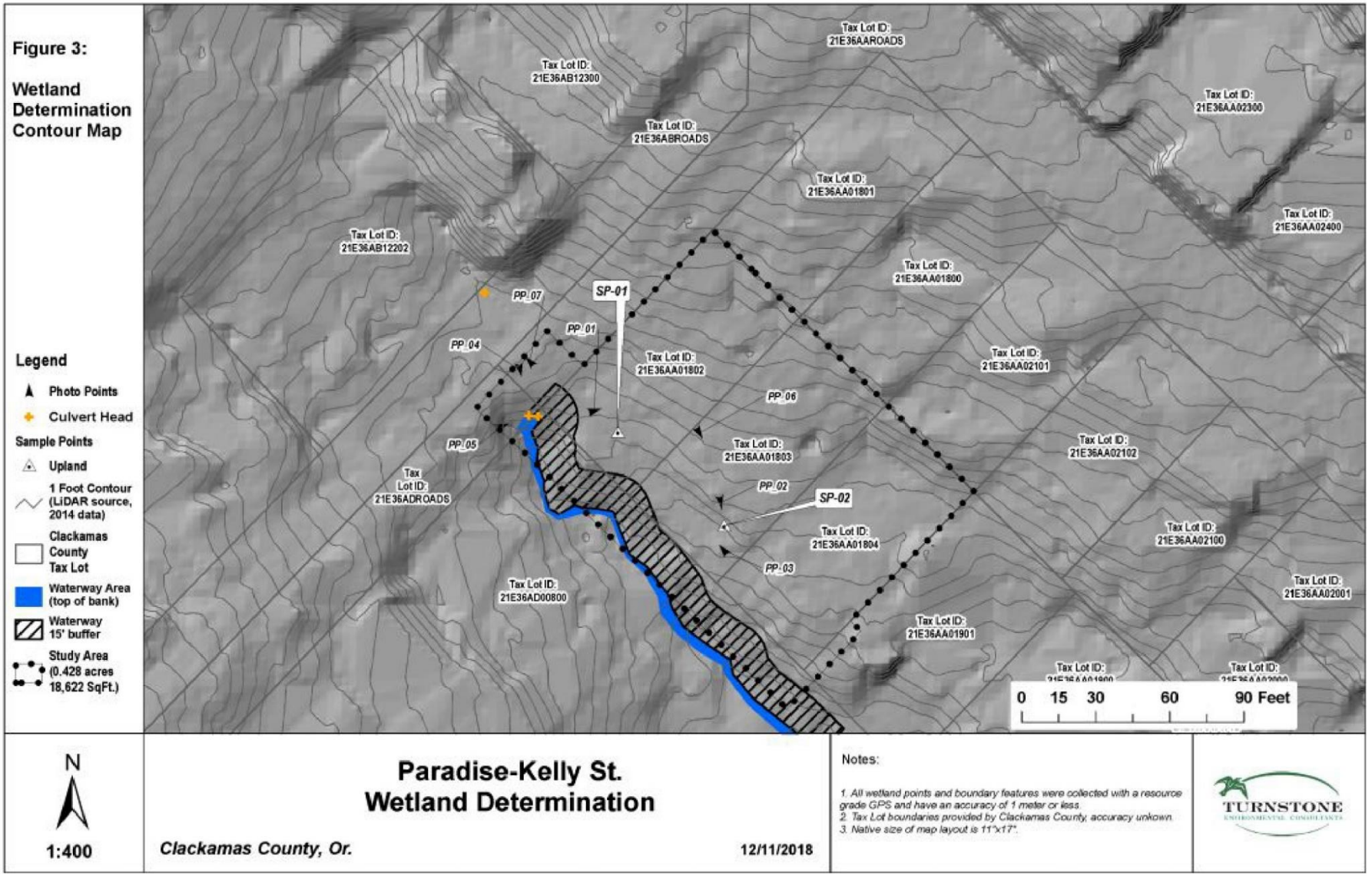
Figure 3:
Wetland Determination Contour Map
Legend
Photo Points
Culvert Head
Sample Points
Upland
1 Foot Contour (LiDAR source, 2014 data)
Clackamas County Tax Lot
Waterway Area (top of bank)
Waterway 15' buffer
Study Area (0.428 acres 18,622 SqFt.)
Tax Lot ID: 21E36AAROADS
Tax Lot ID: 21E36AB12300
Tax Lot ID: 21E36AA02300
Tax Lot ID: 21E36ABROADS
Tax Lot ID: 21E36AA01801
Tax Lot ID: 21E36AA02400
Tax Lot ID: 21E36AB12202
Tax Lot ID: 21E36AA01800
SP-01
PP_07
PP_01
PP_04
Tax Lot ID: 21E36AA01802
Tax Lot ID: 21E36AA02101
PP_06
PP_05
Tax Lot ID: 21E36AA01803
Tax Lot ID: 21E36AA02102
Tax Lot ID: 21E36ADROADS
PP_02
SP-02
Tax Lot ID: 21E36AA01804
Tax Lot ID: 21E36AA02100
PP_03
Tax Lot ID: 21E36AD00800
Tax Lot ID: 21E36AA02001
Tax Lot ID: 21E36AA01901
0 15 30 60 90 Feet
N
1:400
Paradise-Kelly St.
Wetland Determination
Clackamas County, Or.
12/11/2018
Notes:
1. All wetland points and boundary features were collected with a resource grade GPS and have an accuracy of 1 meter or less.
2. Tax Lot boundaries provided by Clackamas County, accuracy unkown.
3. Native size of map layout is 11"x17".
TURNSTONE
ENVIRONMENTAL CONSULTANTS

Appendix C:

Wetland Determination Data Forms &

Ground-level Photographs

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: 4325 Kelly Street **City/County:** West Linn **Sampling Date:** 05-Dec-18

Applicant/Owner: Dennis Caudell-Paradise Homes **State:** OR **Sampling Point:** SP_01

Investigator(s): Joe Bettis **Section, Township, Range:** S 36 T 2 S R 1 E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 10.0 % / 5.7°

Subregion (LRR): MLRA 2 **Lat.:** 45.35713 **Long.:** -122.625154 **Datum:** WGS 84

Soil Map Unit Name: Saum silt loam, 8 to 15 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) **(If no, explain in Remarks.)**

Are Vegetation [ ] **, Soil** [ ] **, or Hydrology** [ ] **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (•) No ( )

Are Vegetation [ ] **, Soil** [ ] **, or Hydrology** [ ] **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (•)	**Is the Sampled Area within a Wetland?** Yes ( ) No (•)
Hydric Soil Present?	Yes ( )	No (•)	
Wetland Hydrology Present?	Yes ( )	No (•)	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 10 m)				
1. Cedrus deodara	20	✓	57.1%	FACU
2. Cupressus x leylandii	15	✓	42.9%	FACU
3.	0		0.0%	
4.	0		0.0%	
	35		= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)				
1. Prunus avium	10	✓	50.0%	FACU
2. Buddleja davidii	5	✓	25.0%	FACU
3. Rubus armeniacus	5	✓	25.0%	FAC
4.	0		0.0%	
5.	0		0.0%	
	20		= Total Cover	
Herb Stratum (Plot size: 1 m)				
1. Poa annua	25	✓	43.9%	FAC
2. Senecio vulgaris	10	✓	17.5%	FACU
3. Lolium perenne	10	✓	17.5%	FAC
4. Geranium molle	5		8.8%	UPL
5. Trifolium subterraneum	5		8.8%	UPL
6. Hypochaeris radicata	1		1.8%	FACU
7. Veronica arvensis	1		1.8%	FACU
8.	0		0.0%	
9.	0		0.0%	
10.	0		0.0%	
11.	0		0.0%	
	57		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0		0.0%	
2.	0		0.0%	
	0		= Total Cover	

% Bare Ground in Herb Stratum: 45

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	62	x 4 =	248
UPL species	10	x 5 =	50
Column Totals:	112 (A)		418 (B)

Prevalence Index = B/A = 3.732

Hydrophytic Vegetation Indicators:

- [ ] **1 - Rapid Test for Hydrologic Vegetation**
- [ ] **2 - Dominance Test is > 50%**
- [ ] **3 - Prevalence Index is ≤3.0** [1]
- [ ] **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- [ ] **5 - Wetland Non-Vascular Plants** [1]
- [ ] **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ( ) No (•)

Remarks:

Cedrus deodara & Cupressus x leylandii wetland status assigned by observer.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

US Army Corps of Engineers — Western Mountains, Valleys, and Coast - Version 2.0

Soil

Sampling Point: SP_01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR	3/3	100					Silt Loam	
12-14	7.5YR	3/3	100					Silt Loam	5% charcoal & 1% 10YR 3/4 concretions by volume
14-20	7.5YR	4/3	100					Silt Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Diffuse boundary at 14"

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Dry to 20"

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

Plot ID: SP_01 Photo Path: C:\Users\Sedge\Documents\Projects\Paradise Homes_Kelly St_

Photo File: IMG_1067.JPG Orientation: -facing

Lat/Long or UTM : Long/Easting: -122.625154 Lat/Northing: 45.35713

Description:

Photo File: IMG_1065.JPG Orientation: -facing

Lat/Long or UTM: Long/Easting: 0 Lat/Northing: 0

Description:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: 4325 Kelly Street **City/County:** West Linn **Sampling Date:** 05-Dec-18

Applicant/Owner: Dennis Caudell-Paradise Homes **State:** OR **Sampling Point:** SP_02

Investigator(s): Joe Bettis **Section, Township, Range:** S 36 T 2 S R 1 E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 10.0 % / 5.7°

Subregion (LRR): MLRA 2 **Lat.:** 45.357029 **Long.:** -122.624983 **Datum:** WGS 84

Soil Map Unit Name: Saum silt loam, 8 to 15 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) **(If no, explain in Remarks.)**

Are Vegetation [ ] **, Soil** [ ] **, or Hydrology** [ ] **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (•) No ( )

Are Vegetation [ ] **, Soil** [ ] **, or Hydrology** [ ] **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ( ) No (•)	**Is the Sampled Area within a Wetland?** Yes ( ) No (•)
Hydric Soil Present? Yes ( ) No (•)	
Wetland Hydrology Present? Yes ( ) No (•)	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 10 m)			
1. Cupressus x leylandii	15	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. Prunus avium	10	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Lolium perenne	25	☑ 30.1%	FAC
2. Poa annua	15	☑ 18.1%	FAC
3. Hypochaeris radicata	15	☑ 18.1%	FACU
4. Trifolium subterraneum	5	☐ 6.0%	UPL
5. Geranium molle	5	☐ 6.0%	UPL
6. Senecio vulgaris	5	☐ 6.0%	FACU
7. Digitaria sanguinalis	5	☐ 6.0%	FACU
8. Equisetum arvense	5	☐ 6.0%	FAC
9. Malva neglecta	3	☐ 3.6%	UPL
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	83	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 20

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	50	x 4 =	200
UPL species	13	x 5 =	65
Column Totals:	108 (A)		400 (B)

Prevalence Index = B/A = 3.704

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrologic Vegetation
- ☐ 2 - Dominance Test is > 50%
- ☐ 3 - Prevalence Index is ≤3.0 [1]
- ☐ 4 - Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants [1]
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ( ) No (•)

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: SP_02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR	3/3	100					Silt Loam	5% charcoal by volume
16-20	7.5YR	4/3	100					Silt Loam	

[1]Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except in MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

Dry to 20"

US Army Corps of Engineers

Western Mountains, Valleys, and Coast - Version 2.0

Plot ID: SP_02 Photo Path: C:\Users\Sedge\Documents\Projects\Paradise Homes_Kelly St_

Photo File: IMG_1066.JPG Orientation: -facing

Lat/Long or UTM : Long/Easting: -122.624983 Lat/Northing: 45.357029

Description:

No Photo

Photo File: None.bmp Orientation: -facing

Lat/Long or UTM: Long/Easting: 0 Lat/Northing: 0

Description:

Plot ID: PP_03-04 Photo Path: C:\Users\Sedge\Documents\Projects\Paradise Homes_Kelly St_

Photo File: IMG_1069.JPG Orientation: South southeast -facing

Lat/Long or UTM : Long/Easting: -122.624983 Lat/Northing: 45.357029

Description: PP_03

Photo File: IMG_1070.JPG Orientation: South southeast -facing

Lat/Long or UTM: Long/Easting: 45.357201 Lat/Northing: -122.625326

Description: PP_04

Plot ID: PP_05-06 Photo Path: C:\Users\Sedge\Documents\Projects\Paradise Homes_Kelly St_

Photo File: IMG_1071.JPG Orientation: East northeast -facing

Lat/Long or UTM : Long/Easting: -122.624983 Lat/Northing: 45.357029

Description: PP_05

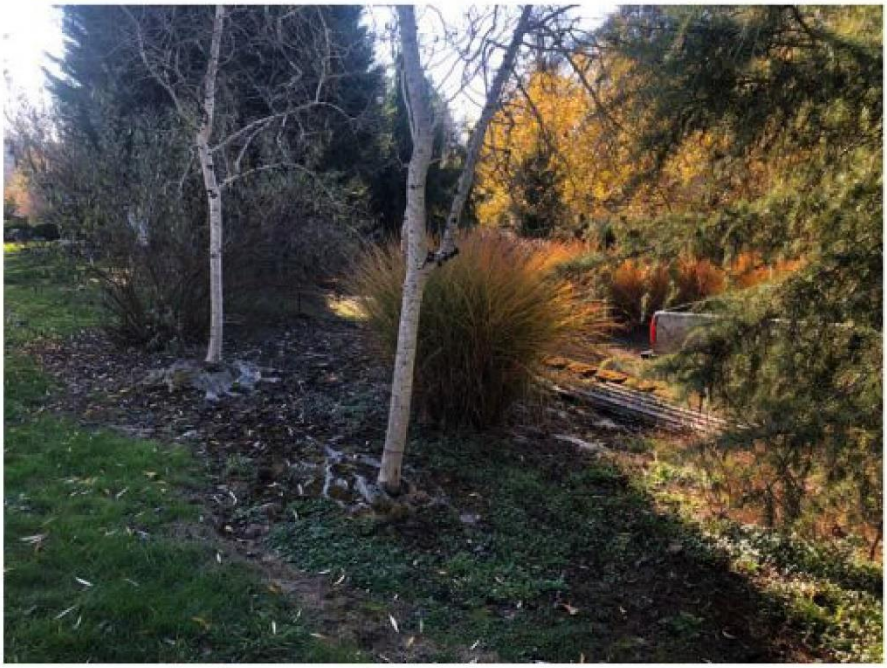

Photo File: IMG_1072.JPG Orientation: East southeast -facing

Lat/Long or UTM: Long/Easting: 0 Lat/Northing: 0

Description: PP_06

Plot ID: PP_07 Photo Path: C:\Users\Sedge\Documents\Projects\Paradise Homes_Kelly St_

Photo File: IMG_1073.JPG Orientation: Northwest -facing

Lat/Long or UTM : Long/Easting: -122.624983 Lat/Northing: 45.357029

Description:

No Photo

Photo File: None.bmp Orientation: -facing

Lat/Long or UTM: Long/Easting: 0 Lat/Northing: 0

Description:

Appendix D:

References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service.

Department of Geology and Mineral Industries (DOGAMI). September 2015. Lidar data for Oregon City Quadrangle (O45122C5), Clackamas County, Oregon. Accessed online November-December 2018.

Environmental Laboratory (U.S. Army Corp of Engineers) (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Gretag Macbeth. 2000. Munsell Soil Color Charts, 2000 Edition. Baltimore, MD.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE. 2005. Regulatory Guidance Letter 05-05: Guidance on Ordinary High Water Mark Identification.

USACE. 2016. State of Oregon-NWPL Final Draft Ratings.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey. Soil Survey Staff, Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed November-December 2018 (Microsoft Access Database).

U. S. Fish and Wildlife Service (USFWS). 2018. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/ Accessed November-December 2018

U. S. Geological Survey (USGS). 1985. 7.5' Quadrangles for Canby (O45122C6) and Oregon City (O45122C5).

Winterbrook Planning (Winterbrook). 2003. West Linn Wetland, Riparian and Wildlife Habitat Inventory.

Exhibit 2

Stormwater Design

January 2, 2019

4325 Kelly St
West Linn, OR

Stormwater Management Report (SWMR)
for Proposed Stormwater Rain Garden

Prepared for:

Paradise Homes
20659 NE Lakeside Drive
Fairview, OR 97024

Prepared by:

Aquarius Environmental, LLC
2117 NE Oregon Street, Ste 502
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AQUARIUS environmental

Stormwater Management Report (SWMR)

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Abbreviations

ac	acres
bgs	below ground surface
CB	catch basin
cfs	cubic feet per second
DB	Drainage Basin
DEQ	Oregon Department of Environmental Quality
gpm	gallons per minute
ID	inner diameter
IE	invert elevation
LF	linear feet
NPDES	National Pollution Discharge Elimination System
SBUH	Santa Barbara Urban Hydrograph
sq ft	square feet
SWMR	Stormwater Management Report
SWMM	*2016 City of Portland Stormwater Management Manual*

1 Engineer's Certification

I hereby certify that this Stormwater Management Report for 4325 Kelly Street has been prepared by me or under my supervision and meets minimum standards of the City of West Linn and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities designed by me.

Digitally Signed 1/02/19

RENEWAL DATE: 6/30/2020

Aquarius Environmental, LLC
Daniel A. Scarpine, P.E.
Principal Engineer

2 Project Summary

This project proposes to provide approximately 1,100 square foot driveway access to existing 3 lots (4325, 4327, 4329 respectively). Runoff from the driveway will convey to a proposed raingarden which manages stormwater from driveway surfaces.

In conformance with City of West Linn standards, AE prepared this Stormwater Management Report (SWMR) pursuant to the requirements of the *2016 City of Portland Stormwater Management Manual (SWMM)*. The following SWMR, along with a Plan Sheet (Appendix A), describes the sizing, location, and installation plans of the proposed rain garden.

2.1 Site Location

The project site (Site) is located at 4325 Kelly Street, West Linn, Oregon (21 E 36AA - Tax Lots 1802, 1803, 1804).

2.2 Site Description

The existing 15,000 square foot site is undeveloped. The Site is entirely zoned R4.5(Residential 4.5). New single family residential development is proposed. The site is located adjacent to the Sunset Creek water resource area (WRA)

3 Existing Stormwater Conditions

Currently runoff from the site conveys to Sunset Creek. The southwest portion of the Driveway/Parking area runoff was conveyed to an existing rain garden located west of the existing house.

4 Proposed Conditions

Approximately 1,100 square feet of new driveway will be constructed. A new proposed stormwater rain garden will be located on the southern edge of the roadway to collect, treat, and detain runoff prior to discharge to Sunset Creek.

Runoff from future house development will be separately managed by raingardens adjacent to any proposed homes.

5 Sizing

The proposed rain garden is sized following the presumptive approach sizing factor of 0.10 times the contributing impervious area.

	Impervious Area		Minimum Rain Garden Size (sq ft)
	Acre	Sq Ft	
Driveway Rain Garden	0.025	1,100	110

To uniformly distribute flow and collection, the proposed development has the raingarden parallel to the driveway which provides approximately 200 square feet of facility. This exceeds the minimum required by approximately 1.8X.

6 Operation & Maintenance (O&M)

Maintenance of the rain garden will be required to clean out potential settled solids and maintain the vegetation. The rain garden will require regular weeding and inspection of plants.

The rain garden shall be planted with plants on the 2016 SWMM Approved Plant list (Appendix H).

7 Engineering Conclusions

The proposed rain garden described in this SWMR is expected to meet the site's needs for driveway stormwater management.

Appendix A: Plan Set

Tumwater Street
Existing Structures (typ)
Existing garden structure- to be demo'd
Potential Footprint of Proposed New SFR (typ)
4325 Kelly Street
Kelly Street- Unconstructed (5th Ave)
Domestic Water
Materials Staging (typ)
WRA
Sunset
Creek
SLOPE TO CREEK
GARDEN SECTION
N.T.S.

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Building the Northwest Style at a Higher Level of Performance