

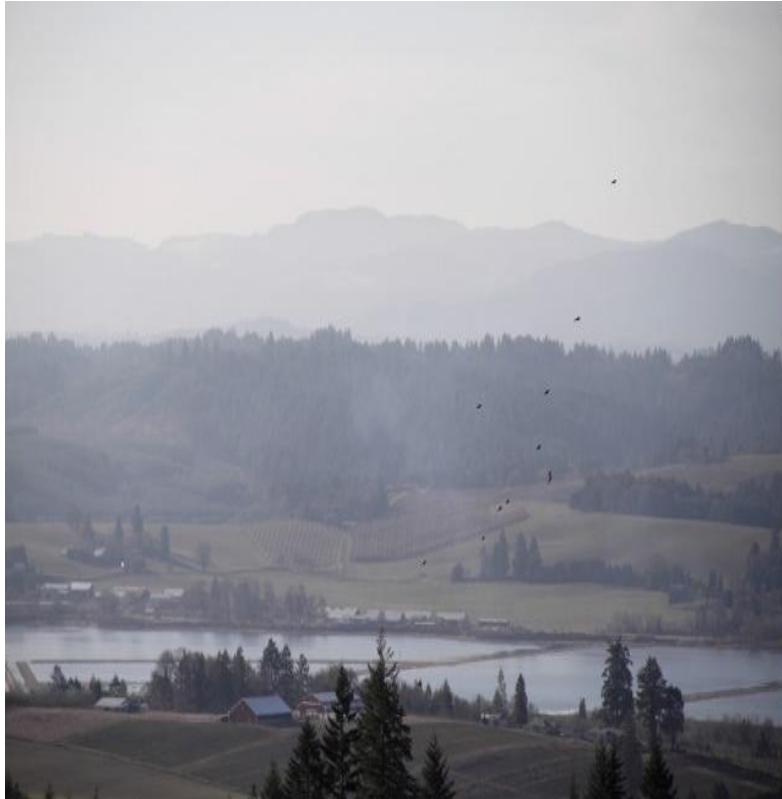
THE TRUST *for* PUBLIC LAND  
CONSERVING LAND FOR PEOPLE



**Tualatin River Watershed Demonstration Project:**  
*Drinking Water Source Protection and Restoration*

# Tualatin Watershed Demonstration Project

## *The Watershed*



- Located west of the Portland Metro area
- Serves as the primary source of drinking water for residents of Washington County, the fastest growing county in Oregon
- Population growth and land use changes are expected to increase, potentially threatening the quality of the drinking water supply for the region

# Tualatin Watershed Demonstration Project

## Goals & Tasks

- **Primary Goal**
  - **Develop GIS-based tool** to identify (1) *healthy lands* within the watershed, and (2) *impaired lands* within the watershed that should be restored to protect water quality.
- **Primary Tasks**
  - Review current conditions,
  - Develop and deliver to Oregon Department of Environmental Quality a GIS-based land protection and restoration model, focusing on drinking water source and habitat protection, and
  - Draft a final report. (available at [www.landuseandwater.org](http://www.landuseandwater.org))



# **Tualatin Watershed Demonstration Project**

## *Development of the GIS Tool*

- 1. Project partners set landscape analysis goals**
- 2. Stakeholder group guides tool development**
  - Suggest criteria for landscape analysis goals and existing GIS datasets that reflect criteria
- 3. Project partners refine landscape criteria for each goal**
  - Stakeholder review and evaluation
- 4. Stakeholder group weights landscape criteria**
- 5. GIS model combines criteria into prioritization results and maps**





# **Tualatin Watershed Demonstration Project**

## *Development of the GIS Tool*

### **Cities, Agencies & Organizations Represented on the Technical Advisory Team**

Oregon DEQ  
Oregon DHS  
Oregon DLCD  
Oregon FWS  
US EPA  
USGS  
NRCS

Metro Regional Government  
Washington County  
Clean Water Services  
City of Hillsboro  
The Nature Conservancy  
Tualatin Watershed Council



# Tualatin Watershed Demonstration Project

## *GIS Data Layers*

### Land Uses and Characteristics

Land Uses and Urban Growth Boundaries  
Oregon Water Bodies and Water Courses  
Tualatin Watershed Vacant Lands  
Regional Vegetation/Land Use Raster  
Impervious Surface  
Wetland Connections  
Oregon Cropland  
Public Land Survey System

### Water Quality Permits

NPDES General  
NPDES Industrial to Surface Water  
NPDES Domestic to Surface Water  
Water Pollution Control Facility General  
Water Pollution Control Facility Industrial  
Water Pollution Control Facility Domestic

### Potential Sources of Contaminants

Potential Contaminant Sources Identified in Source Water Assessments for Public Water Systems  
Leaking Underground Storage Tank Sites  
Hazardous Waste Sites  
Septic by Tax Lot  
Confined Animal Feeding Operations  
Environmental Clean-up Sites  
Underground Injection Control Sites  
Underground Storage Tank Sites  
State Fire Marshal Facilities  
Water Quality Outfall Locations

### Sensitive Areas

#### Vulnerable Soils

- High Permeability Soils
- High Runoff Potential
- Highly Erodible Land Class 1

#### Landslide Locations

#### Metro Title 13 Lands

#### Water Quality Limited Streams and Lakes

#### Flood Zones

#### Groundwater Well Locations

#### Willamette Basin Effective Shade

#### Habitats of Concern

#### Oregon Fish Habitat Distribution

#### Groundwater & Surface Water Drinking Water Source Areas – Public Water Systems

#### Synthesis Conservation Opportunity Areas

#### Tualatin River HUC5 with Barney Reservoir



# **Tualatin Watershed Demonstration Project**

## ***Results***

- **Source water protection and land prioritization maps show where communities should invest limited resources to meet related goals**
  - Protecting Water Quality in Source Areas
  - Restoration of Water Quality in Source Areas
  - Habitat Conservation Opportunities

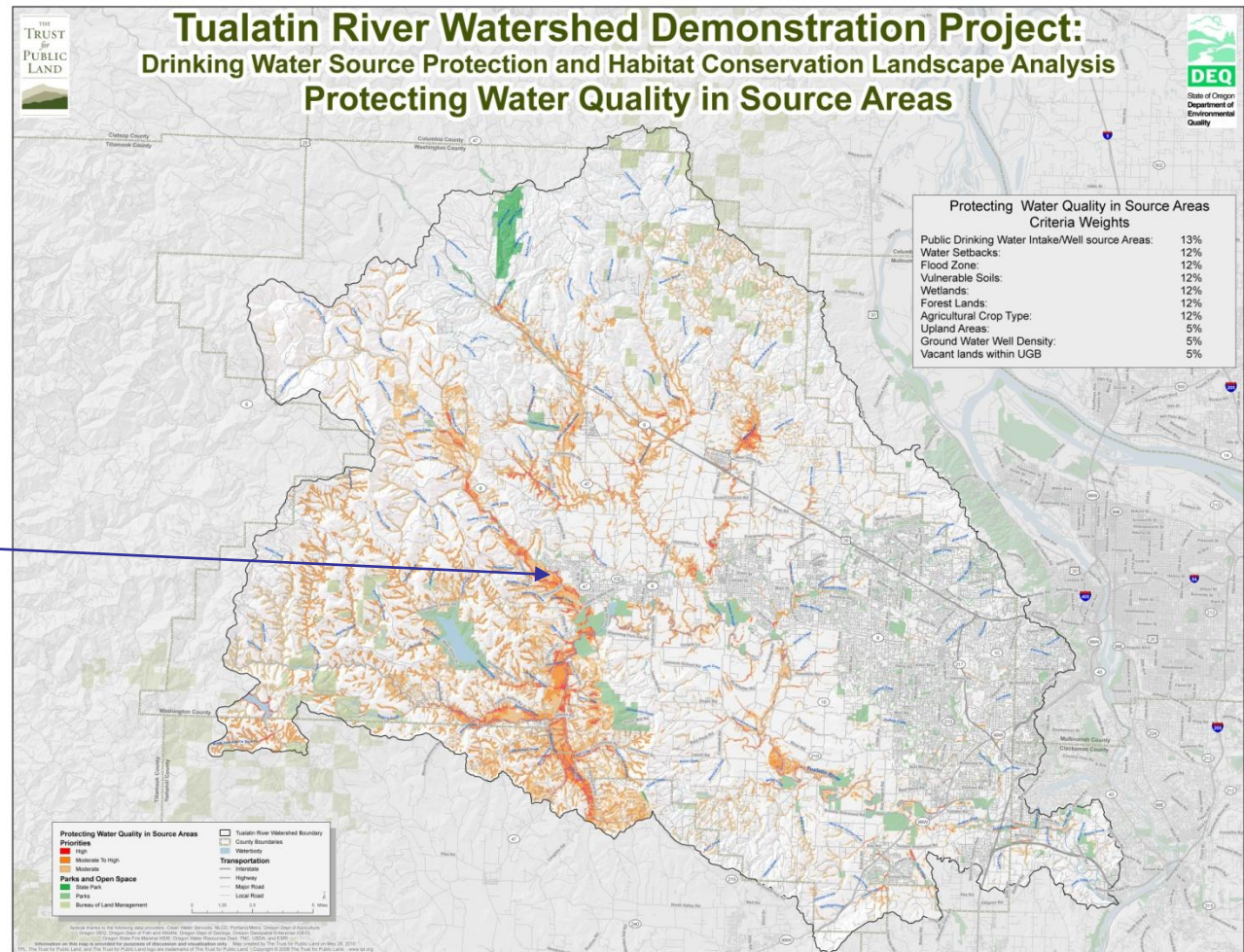


**80,000 acres are highlighted in orange and red as the most important lands for water quality protection**

**(18% of the study area)**

**Only 6,000 of those acres are highest priority**

**(1% of the study area)**





**32,000 acres are highlighted as the most important lands for restoration  
(7% of the study area)**

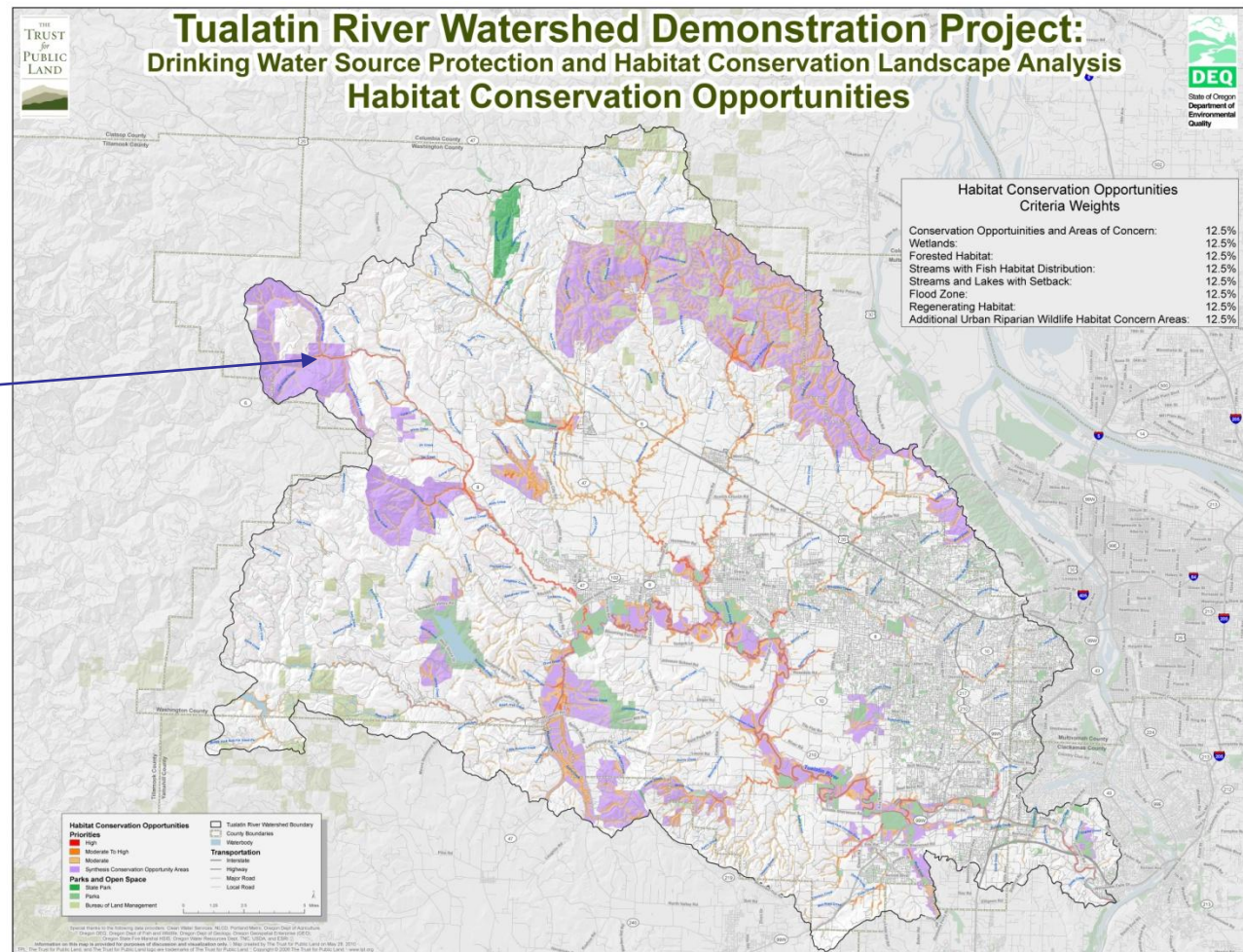




# Tualatin Watershed Demonstration Project Results

56,000 acres are highlighted as priority for habitat conservation (12% of the study area)

Overlap with Synthesis Conservation Opportunity Areas, which are priority areas identified by the Nature Conservancy, are highlighted in purple



# Tualatin Watershed Demonstration Project

## *Utilizing the GIS Tool for Land Conservation*

- Land conservation professionals identified factors that are practical considerations for their work, like size of property, adjacency to certain natural resources, property value, etc.
- The high priority GIS results can be narrowed by applying these criteria, built into the GIS tool, and running a parcel search





# Tualatin Watershed Demonstration Project

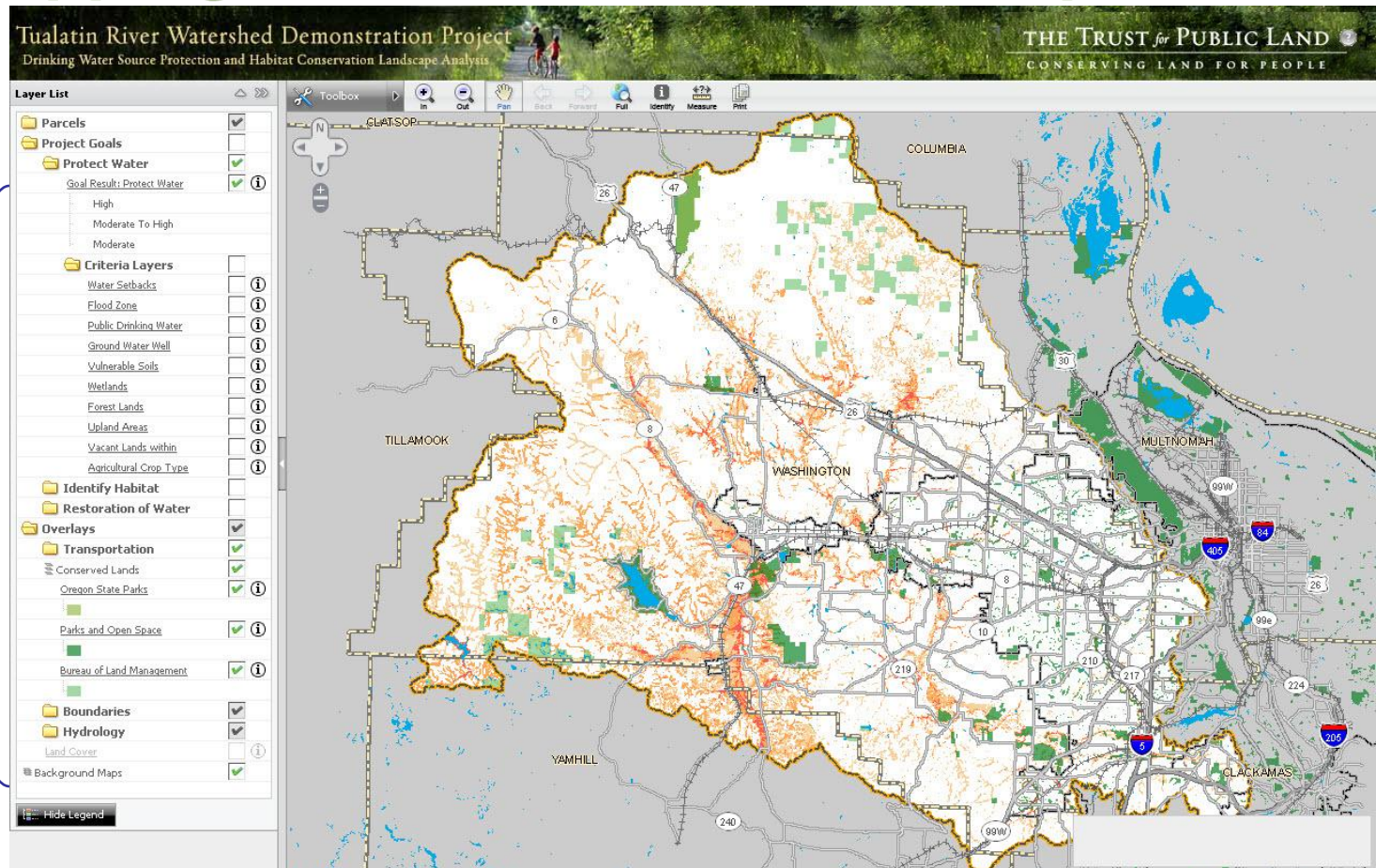
## Results

- **Online Mapping Site (OMS)**
  - <http://tplgis.org/Tualatin/>
    - Properties can be scored and ranked based on meeting certain criteria
    - TPL has hosted the OMS for the last two years
    - Site is password protected due to parcel-level data
  - **Interactivity:** site users work from the lists they create to identify lands for conservation
  - **Custom Reports:** site users can create a report for an individual parcel



# Tualatin Watershed Demonstration Project

## Online Mapping Site Demonstration: Map Viewer



Data layers on left

- Can access individual criteria layers

- Various overlays

# Tualatin Watershed Demonstration Project

## Online Mapping Site Demonstration: Query

Query: Washington

Percent: Overall Protect Water Quality Source Areas >= 50 %

And Acreage > 100

Add Query is case sensitive ☐

Execute

Users have the ability to do specific queries on model results and parcel attributes



### Layer List

- ☒ **Parcels**
  - ☐ Vacant Lands
  - ☒ **Washington**
  - ☒ Clackamas
  - ☒ Columbia
  - ☒ Multnomah
  - ☒ Yamhill
- ☐ **Project Goals**
- ☒ **Overlays**
  - ☒ **Transportation**
  - ☒ Conserved Lands
    - ☒ Oregon State Parks
  - ☒ Parks and Open Space
  - ☒ Bureau of Land Management
- ☒ **Boundaries**
- ☒ **Hydrology**
- ☐ Land Cover
- ☒ Background Maps



### Report

#### Washington

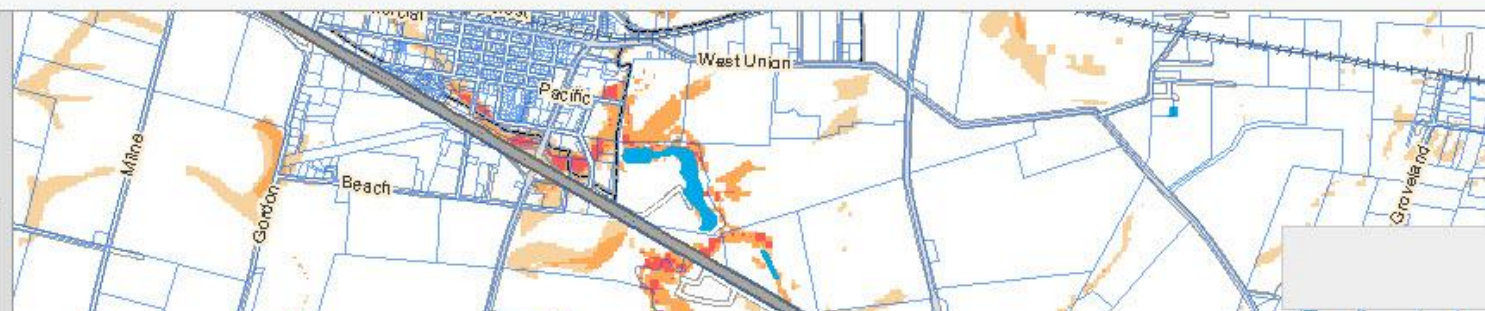
Displaying results for **123 features** in the **Washington** layer.

#	Feature Actions	Parcel ID	Address	City	Zip Code	Assessed Value	Vacant	County	Acres	Acres: Overall Pro
1		1S4000004900	50250 SW SCOGGINS VALLEY RD	Gaston	97119	0	Vacant	Washington	2,440.40	1921
2		1S5000007000				960,000	Vacant	Washington	615.96	327.8
3		1S6000000101				1,477,650	Vacant	Washington	464.01	389.3
4		1S5000006700				608,400	Vacant	Washington	369.59	185.1
5		1S3070000103	2525 SW FERN HILL RD			190,350	Vacant	Washington	361.82	182.7
6		1S4340000600	47439 SW PATTON VALLEY RD	Gaston	97119	1,245,380	Occupied	Washington	344.85	255.1
7		1S4240000601				549,500	Vacant	Washington	241.73	242
8		1S5000004700				240,000	Vacant	Washington	237.18	155.1
9		1S5000007100				360,000	Vacant	Washington	236.67	156.7
10		1S4020000100	45288 SW RITCHEY RD	Forest Grove	97116	520	Vacant	Washington	221.94	132.9

Double-click to view details

1 2 3 4 5 6 7 8 9 10 ...

Hide Legend



### Layer List

- ☒ **Parcels**
  - ☐ Vacant Lands
  - ☒ Washington
  - ☒ Clackamas
  - ☒ Columbia
  - ☒ Multnomah
  - ☒ Yamhill
- ☐ **Project Goals**
- ☐ **Overlays**
  - ☒ **Transportation**
  - ☒ Conserved Lands
    - ☒ Oregon State Parks
    - ☐ Parks and Open Space
    - ☒ Bureau of Land Management
- ☒ **Boundaries**
- ☒ **Hydrology**
  - ☐ Land Cover
- ☒ Background Maps

Hide Legend

### Report

#### Washington

- ☐ Zoom to Feature
- ☐ Add to selection
- ☐ Parcel Profile Report
- ☐ Feature Map
- ☐ Additional Parcel Information

Feature: 2N2310001000

#### Feature Details

Parcel ID	2N2310001000
Address	12930 NW SHADYBROOK RD
City	North Plains
Zip Code	97133
Assessed Value	115,110
Vacant	Occupied
County	Washington
Acres	71.62
Adjacent to Conserved Land	No
Adjacent to Tualatin River	No
Adjacent to Other Named Stream	Yes
Contains Waterbody	No
Contains Farmland Soil	Prime
Within UGB	No
Within Conservation Opportunity Area	No
Within Forest Legacy	No
Acres: Conservation Opportunities and Areas of Concern	0
Percent: Conservation Opportunities and Areas of Concern	0.00 %







Navigation: [Washington County](#) » [GIS](#) » Reports: [A&T Report 2N2310001000](#) |

- General Information

- [interactive maps](#)
- [map gallery](#)
- [data catalog](#)
- [contacts](#)
- [other gis links](#)
- [gis introduction](#)
- [frequently asked questions](#)

- Property Search

- [property / taxlot](#)
- [tax maps](#)

+ Survey Search

+ Land Services

+ Building Services

## Assessment & Taxation Report

### General Property Information

Site Address:	12930 NW SHADYBROOK RD. NORTH PLAINS OR, 97133
Tax Lot ID:	2N2310001000
Property Account ID:	R789196,
Property Classification:	5515
Neighborhood Code:	2N34
Latitude / Longitude:	45.6092151 / 122.978442

### Sales / Deed Information

Sale Date	Sale Instrument	Deed Type	Sale Price
			\$
			\$
			\$

### Assessed Values for Account R789196

Roll Date:	09/21/2009
Taxcode:	001.24
Market Land Value:	\$0
Market Bldg Value:	\$55,190
Special Market Value:	\$575,710
Market Total Value:	\$630,900
Taxable Assessed Value:	\$95,450
Legal:	No Legal Found
Lot Size:	A&T Acres: 74.00
Bldg Sq Ft:	2036
Year Built:	1910

### Improvement Information

Total Improvement Value:	\$55,190
Plumbing	BATH=01
Bedrooms	04

### Improvement Details

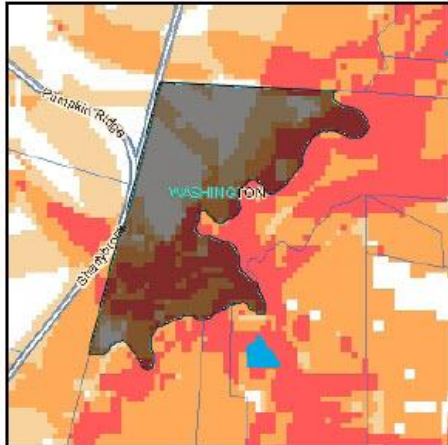
Description	Value	Square Feet
FEEDER BARN	\$6,480	5200
MAIN AREA	\$14,400	1312
MULTIPURPOSE BUILDING	\$8,330	1800
MULTIPURPOSE BUILDING	\$18,930	2240
UPPER STY FIN	\$7,050	724



## Tualatin River Watershed Demonstration Project

### Drinking Water Source Protection and Habitat Conservation Landscape Analysis

Washington County



#### Detailed Parcel Information:

Address: 12930 NW SHADYBROOK RD  
City: North Plains  
Zip Code: 97133  
  
Parcel ID: 2N2310001000  
Vacant: Occupied  
Assessed Value: 115,110  
Acres:\*\* 71.62

#### Parcel Prioritization Results

Adjacent to Conserved Land:	No	Contains Farmland Soil:	Prime
Adjacent to Tualatin River:	No	Within UGB:	No
Adjacent to Other Named Stream:	Yes	Within Conservation Opportunity	No
Contains Waterbody:	No	Within Forest Legacy:	No

#### Criteria Totals by Goal

##### Identify Habitat Conservation Opportunities:

	Acres*
Conservation Opportunities and Areas of Concern	0.00
Streams and Lakes with Habitat Setbacks	22.20
Fish Habitat Distribution	15.50
Wetlands with Habitat Setbacks	49.50
Flood Zone	57.70

\* Priority acres reflects a score of "3" or greater on a scale of 0 to 5. \*\*Acres was generated in GIS by TPL; Please do more research for exact acreage.

# Online Mapping Site Demonstration: Query Results

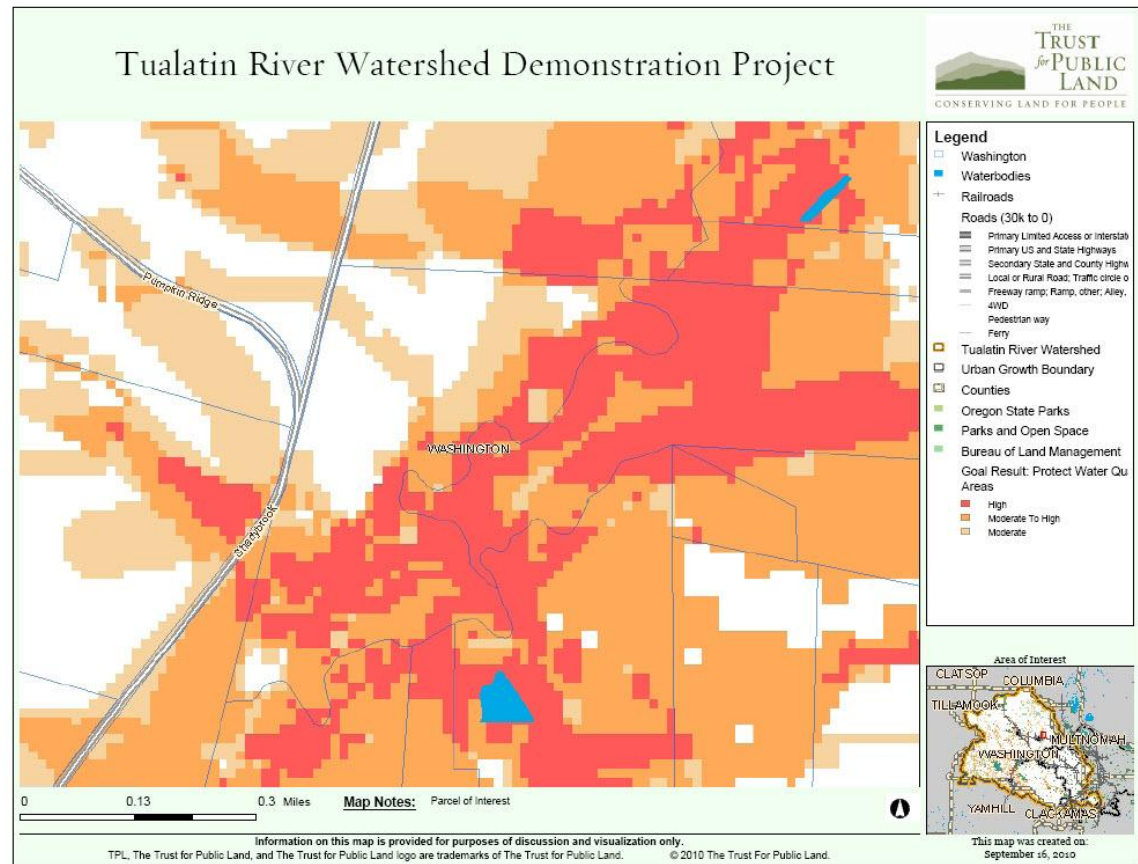
## Custom Parcel Report



# Tualatin Watershed Demonstration Project

## Online Mapping Site Demonstration: Query Results

Custom PDF Map





# Strategic Recommendations

## *Utilizing the GIS Tool for Source Water Protection*

- Voluntary Land Conservation
- Grants
- Technical Resources
- Local government awareness in development of protective ordinances
- Improvement in permitting and implementation of NPDES program
- Improvement in best management practices in drinking watersheds
- Siting decisions

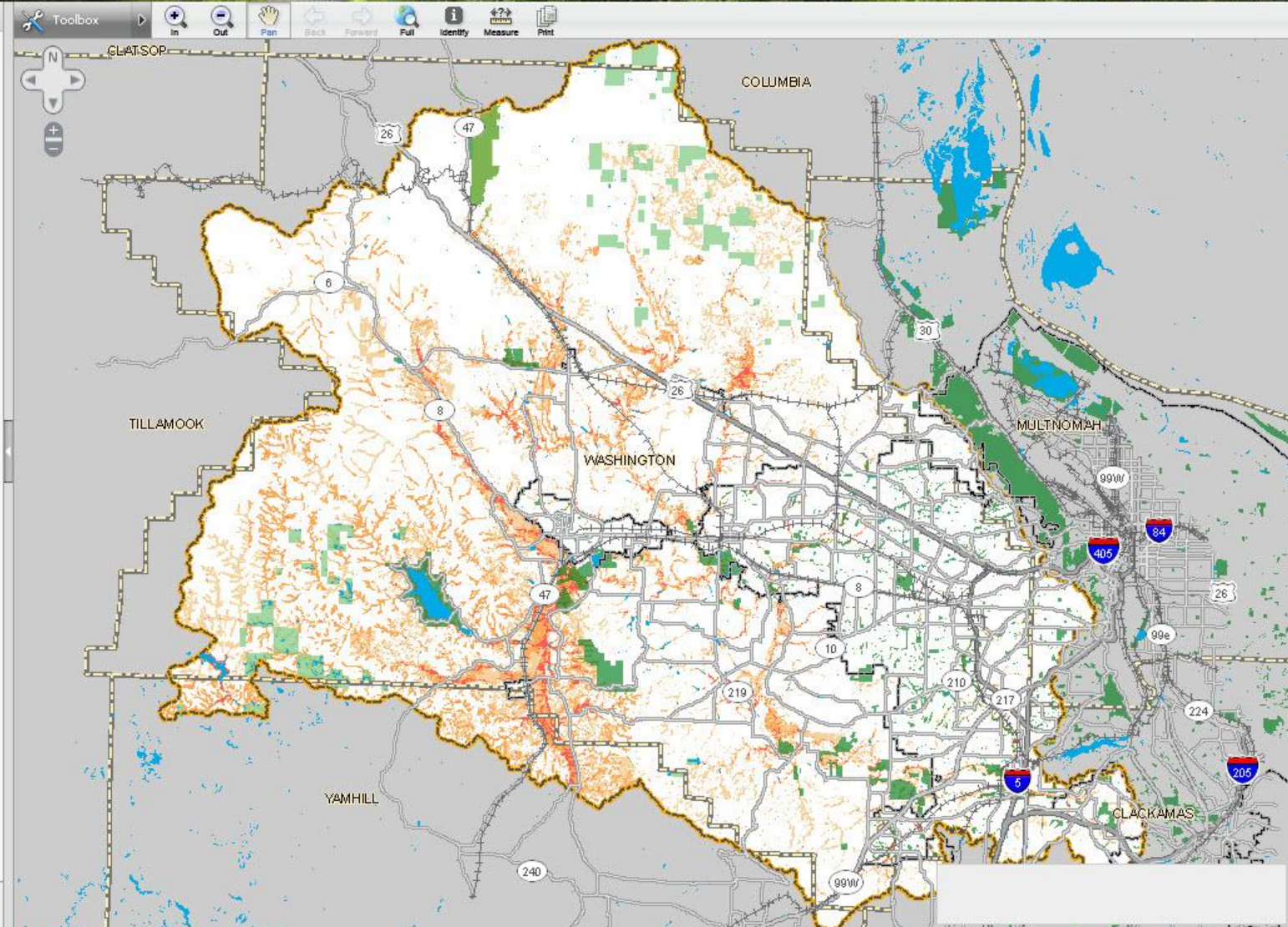
Oregon DEQ Drinking Water Protection Program plans to repeat this landscape analysis in other drinking watersheds across the state, using applicable location-specific datasets that parallel those identified through this process.



## Layer List

- ☒ Parcels
- ☒ Project Goals
  - ☒ Protect Water
    - Goal Result: Protect Water ☒ ⓘ
    - High ☐
    - Moderate To High ☐
    - Moderate ☐
- ☐ Criteria Layers
  - ☐ Water Setbacks ⓘ
  - ☐ Flood Zone ⓘ
  - ☐ Public Drinking Water ⓘ
  - ☐ Ground Water Well ⓘ
  - ☐ Vulnerable Soils ⓘ
  - ☐ Wetlands ⓘ
  - ☐ Forest Lands ⓘ
  - ☐ Upland Areas ⓘ
  - ☐ Vacant Lands within ⓘ
  - ☐ Agricultural Crop Type ⓘ
- ☐ Identify Habitat
- ☐ Restoration of Water
- ☒ Overlays
  - ☒ Transportation
    - ☒ Conserved Lands
    - ☒ Oregon State Parks ⓘ
    - ☒ Parks and Open Space ⓘ
    - ☒ Bureau of Land Management ⓘ
- ☒ Boundaries
- ☒ Hydrology
  - ☐ Land Cover ⓘ
  - ☒ Background Maps

Hide Legend





# Contact Information

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***aalbers.steven@deq.state.or.us***