

East Bethany Concept Plan

Exhibit 3



SCALE: IN FEET
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 DATE: 03 May, 2010
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WASHINGTON COUNTY, OREGON



Environmental Science & Assessment, LLC

MEMORANDUM

DATE: May 5, 2010

TO: Matt Wellner Metropolitan Land Group

CC: Jon Reimann CardnoWRG

FROM: Jack Dalton

RE: East Bethany (Area 9B): Natural Resource Analysis

This memo provides a summary of findings of a natural resource analysis conducted for the Metro 9B Rural Reserves area east of the Bethany area along NW Springville Road (Township 1 North, Range 1 West, Section 16). The study area includes the limits of Metro Area 9B within Section 16 (Attachment A).

The analysis will review existing natural resource mapping and inventories available from federal, state and local sources. The review will compile resource information to evaluate the justification of this area as meeting the definition of the *Natural Landscape Features* for Rural Reserves, as provided by Metro to local jurisdictions to assist in urban/rural reserve land use designation.

NATURAL RESOURCE ANALYSIS

ES&A reviewed all relevant existing natural resource mapping for the parcel. From the resource information, ES&A made a determination, from a natural resource perspective, of the strength of the designation as Rural Reserve over Urban Reserve as follows in the findings section.

Resource Mapping

Reviewed data included:

- *U.S. Geological Survey (USGS) 1:24,000 Topographic Map: Linnton, Oregon quadrangle (USGS, 1990)*. The USGS map for the area shows two tributaries for Abbey Creek flowing westerly then flowing north through Area 9B to a confluence with the main stem of the creek north of Area 9B. A third tributary to Abbey Creek flows southwest from the area around NW Germantown Road north of Area 9B. The Abbey Creek watershed encompasses the northern two-thirds of Area 9B and the southern edge of the area is within the Bronson Creek watershed (Attachment A).

- *Metro 2008 Aerial (MetroMap)*. The aerial indicates the area is a mix of agricultural land and large-acre parcels with mixed forest cover. The southern tributary of Abbey Creek is forested with a mixed riparian community, although the tributaries to the north are more densely vegetated with a primarily conifer forest community. Metro mapping also includes several wetland areas located along the stream tributaries and a large wetland complex just outside of the southwest corner of Area 9B (Attachment A).
- *Summary of the Natural Landscape Feature Inventory – Natural Landscape Features Map (Metro, February 2007)*. The Metro *Natural Landscape Features Inventory* mapped the area along the eastern edge of Area 9B as “Significant Natural Resources, Tree canopy and Parklands” and highlights two areas identified two landscape features near Area 9B: Rock Creek Headwaters (22) and Forest Park Connections (23). The mapping also designated habitat connections from the area north of Area 9B extending to forested habitat on the north end of the Tualatin Hills and east to Sauvie Island. All of these landscape features are primarily outside of Area 9B, except for the eastern edge of Area 9B mapped within the tree canopy land cover.
- *Nature in Neighborhoods – Regionally Significant Fish and Wildlife Habitat Inventory Map (Metro, December 2005)*. The Abbey Creek stream segments within Area 9B are mapped as an equal mix of Riparian Corridors/Wildlife Habitat Class I and Class II. The stream segments in Area 9B are comprised of fragmented short segments of Class I and Class II habitat, primarily as a function of forest clearing and adjacent land uses. The Abbey Creek tributaries north of Area 9B are comprised of longer, intact Class I segments, due to primarily more intact forest habitat along the tributaries.
- *Multnomah County SEC-S Resource Mapping (Mult. Co. Land Use Planning Division)*. Multnomah County maps the primary Abbey Creek tributaries with a SEC-S overlay and has added some secondary tributaries with the SEC-S overlay. The mapping also adds a tributary of Bronson Creek in the southeastern corner of Area 9B (Attachment A). It should be noted these overlays are the same as those mapped within the existing urban/residential zoned portions of the county and do not indicated resources of special value beyond other tributary/wetland systems.
- *StreamNet (Pacific State Marine Fisheries Board/ODFW)*. StreamNet maps habitat used by winter Steelhead for spawning and rearing in the middle Abbey Creek tributary (along the northern edge of Area 9B). No fish distribution is shown for the southern tributary within Area 9B. A short segment of the middle tributary is also mapped as habitat used for rearing and migration in the main stem segment north of Area 9B. Steelhead is a federally listed threatened species by the National Marine Fisheries Service (71 FR834, January 5, 2006).

- *National Resource Conservation Service Multnomah County Soil Survey.* The soil survey maps most of the Area 9B as Cascade silt loam with slopes ranging between 3 to 60 percent slopes (7B, 7C, 7D, 7E). Other soils include several areas of Cornelius silt loam, 3 to 8 percent slope (10B) and a couple of areas as Delena silt loam, 3 to 12 percent slope (14C). The areas of greater than 25 percent slopes are located in the northeast corner of Area 9B (7D, 7E); otherwise most of the site is mapped with slopes between 3 and 15 percent slopes. No significant hydric (wetland) soils are mapped within Area 9B, reflecting the sloping land forms (Attachment A).
- *National Wetland Inventory (NWI): Linnton, Oregon (U.S. Fish and Wildlife Service [USFWS] Online Wetlands Mapper).* The NWI map for Area 9B shows the main stem of Abbey Creek and several emergent wetlands in the southeastern corner of Area 9B.
- *Willamette Valley Synthesis – Conservation Opportunity Areas (The Nature Conservancy, October 2009).* The eastern half of Area 9B is targeted as a conservation opportunity area and is contiguous with a linear area along the western slope of the Tualatin Hills adjacent to Forest Park. It should be noted that the area designated for conservation within Area 9B does not connect habitat (i.e., wildlife travel corridors, migration corridors) between Forest Park and any targeted conservation areas to the west, since the area west of Area 9B is currently developed. The main portion of the targeted conservation area is mostly north and east of Area 9B (although the main stem of Abbey Creek is not included for some reason).

Natural Landscape Features Findings

ES&A analyzed the existing resource mapping for Area 9B to determine the degree to which it meets Metro's *Factors for Designation of Lands as Rural Reserves for Natural Landscape Features*. An evaluation of how Area 9B meets each of the eight (a-h) natural landscape features used to help determine the rural reserve designation are summarized as follows.

a) *An area potentially subject to urbanization:*

Since Area 9B is directly adjacent to existing residential development to the west, this area could easily be used for urban use, expanding upon the existing utility and roadways built as part of the adjacent development. No natural barrier, such as a large drainage or steep slopes, exists between the existing Bethany residential development and Area 9B

b) *Natural disasters/hazard areas*

Steeper topography is located along the northwestern edge of Area 9B. Hazard mapping for slopes compiled by Metro's Natural Hazards Program

does not indicated any high hazard areas within Area 9B and low to moderate slope hazard areas are located only along the north and eastern edges of Area 9B (Metro 1999).

Relative earthquake hazard designation by Metro is moderate to low-moderate in most of the Area 9B, with several high hazard areas mapped just east of Area 9B (Metro 1999).

c) *Important fish, plant or wildlife habitat*

Habitat for winter steelhead is mapped by StreamNet on segments of Abbey Creek north of Area 9B. Habitat for spawning and rearing within in the segments mapped is likely limited due to past and current agricultural uses along these stream segments. It should be noted that this fish habitat mapping is based on preliminary conclusions by the Pacific State Marine Fisheries Board and ODFW and does not indicate field-verified fish occurrences in a given year, only that no downstream barriers exist to potential use by fish.

The slopes along the Abbey Creek tributary in the northern portion of Area 9B are relatively intact forested areas (based on aerial photographs) although targeted clearing is evident throughout the existing forested areas. The mix of pasture and forest vegetative communities in the main portion of Area 9B do likely provide travel corridors for wildlife and other habitat component, including forage, nesting, cover. However, most of the area south and west of the main Abbey Creek tributaries have been impacted by past land use practices, resulting in the majority of the southern portion of the Area 9B (along Springville Road) having been cleared of native forest cover.

It would be important for potential development in Area 9B to provide protections to avoid water quality and quantity impacts in the upper watershed areas contributing to these stream segments. All of the riparian habitat could remain protected as open space if this area was developed for urban use under local land use riparian buffer regulations. Other methods for protecting the more intact natural resource features would be to set aside larger contiguous open space tracts along and adjacent to the northern Abbey Creek tributaries to act as fish and wildlife preserve areas. Additionally, some areas mapped within Area 9B are mapped as low to moderate slope hazard areas that will naturally limit practical development options and these areas could be included in the open space tracts.

d) *Necessary to Protect water quality or quantity (streams, wetlands, riparian areas)*

Abbey Creek is the main waterway in Area 9B. The stream segment within the area is the southernmost tributary to the main Abbey Creek reach. The southern quarter of Area 9B lies within the northern reaches of

the Bronson Creek watershed (Attachment A). Very few wetland or larger open water/waterway features are present within the area due to the moderately sloping and steep topography throughout the area. Surface water flow to the main tributaries occurs primarily as sheet flow and flows through land currently ranging from grass pastures to mixed forested areas.

The wider the riparian zone along the stream corridors in the headwaters, the better filtration will occur with the stormwater flow to the creek. However, other methods for mitigating water quality and quantity impacts are available in an urban setting, including preserving large tracts of open space along each reach of the Abbey Creek tributaries.

e) *Provide a sense of place*

The main portion of Area 9B is a mix of large to medium-sized parcels with some agricultural element. Some parcels are primarily pasture grasses, but most parcels have a mix of forested and open cleared pastures. Area 9B is located on the southern tributary to the main natural feature, Abbey Creek and the main stream segments are all north of this area. The forested habitat is fragmented outside of the riparian corridors from a mix of land uses. Area 9B is made up of very similar landscape features to those found in the existing Bethany area to the west. Overall, no one natural feature or land use characterizes this area.

f) *Serve as a Buffer or boundary area*

The main portion of Area 9B is located on the smaller southern tributary to Abbey Creek. The only natural landscape feature that may serve as a buffer or natural border is north of this area on the main channel of Abbey Creek. Most of the more intact forested habitat is located north of this area along the western edge of Forest Park. Potential development within Area 9B does not further fragment the open space directly adjacent to Forest Park or wildlife corridors between Forest Park and the remainder of the West Hills open space.

g) *Provide separation between cities*

The forested habitat on the sloped topography directly east of Area 9B would adequately (and naturally) serve as a buffer between the residential development in the Bethany area and the open space within Forest Park to the east. Most of the land in Area 9B is similar topographically and in land use to those properties directly west in Washington County (Attachment A).

h) Provide easy access to recreational opportunities in rural areas (trails, parks)

No existing trail system exists within Area 9B and most of the properties restrict any pedestrian or recreational opportunities. The only linear feature that currently could function as a trail is the power line corridor along the western edge of the area. Many opportunities for new trails exist along the outer edges of the Abbey Creek riparian corridors, if the area was developed as residential.

Conclusion

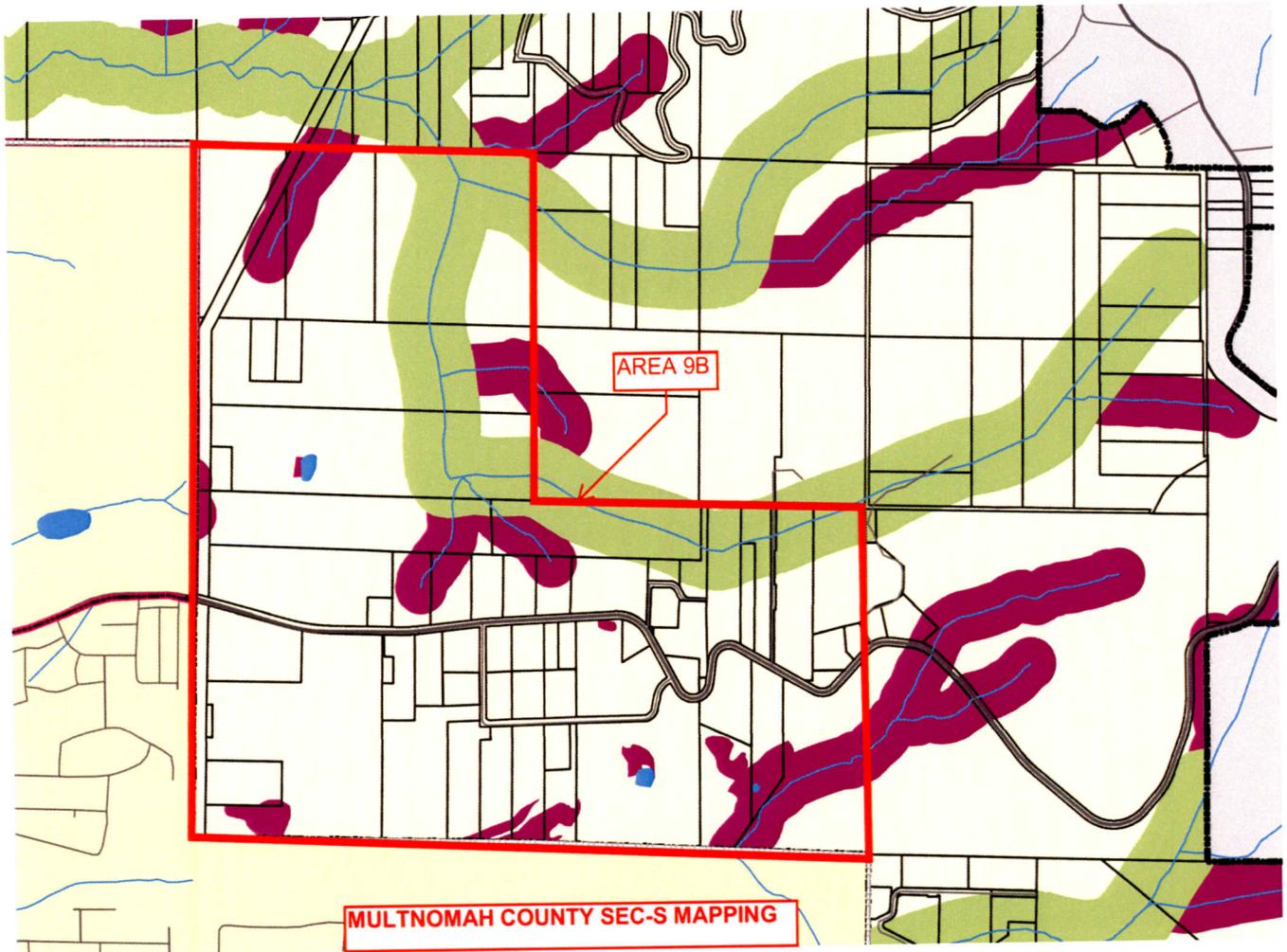
Area 9B is located within a transition area between the rolling hill landscape with cleared pastures to the west and the steeper forested habitat to the east. The main portion of Area 9B is very similar to the landscape located directly west in the existing Bethany area. The most significant landscape feature is Abbey Creek and the associated steeper topography on the eastern edge of Area 9B.

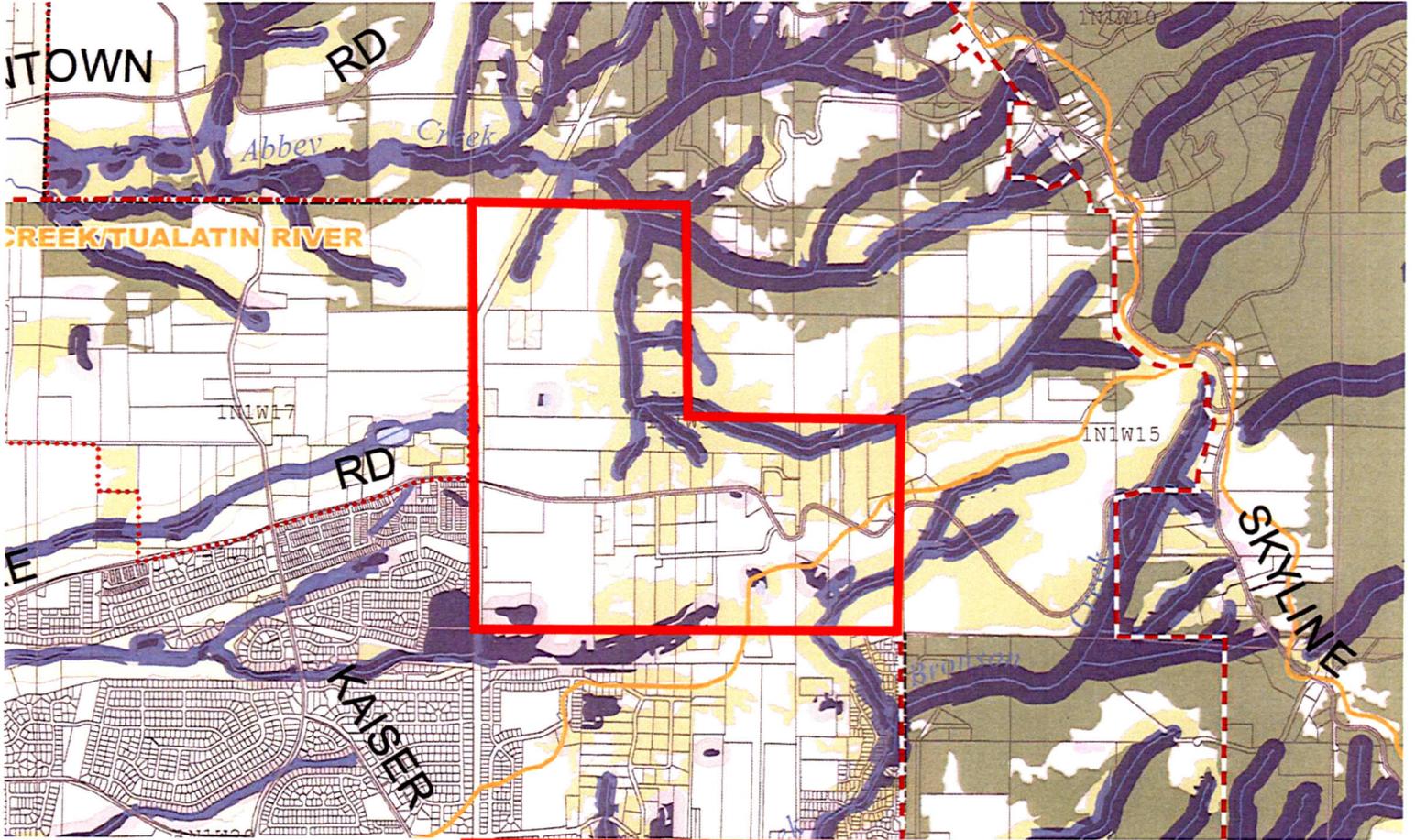
Area 9B is primarily located south and west of the specific landscape features mapped by Metro's *Natural Landscape Features Inventory* and it is not located on a main "Habitat Connection" corridor, which extend north and east to other landscape features. Most of the more intact forested habitat is located north of this area along the western edge of Forest Park, which will continue to serve as a landscape feature separation between urban areas of Washington County and the West Hills. The only natural landscape feature that may serve as a buffer or natural border is north of this area, on the main channel of Abbey Creek.

Most of the factors provided by Metro to local jurisdictions for considering important natural landscape features (OAR 660, Division 27) do not strongly indicate a rural reserve designation for Area 9B. No one landscape feature characterizes the area; the area lacking both intact wildlife habitat high quality agricultural potential. The area itself does not possess a strong sense of place since it is in a transition zone with both agricultural uses and forested tracts surrounding single family residences. Hazard areas are mapped as low to moderate, similar to the existing neighborhoods to the west. The stronger landscape features providing a natural boundary are located in the steeper topography along the main segments of Abbey Creek north of Area 9B.

Area 9B will remain important for providing water quality and quantity components to the Rock Creek headwaters. However, methods for mitigating water quality and quantity impacts are available in an urban setting, including preserving large tracts of open space along each reach of the Abbey Creek tributaries. Similarly, designation of Area 9B as a rural reserve will not preserve the primary wildlife travel corridors or other habitat components not already found within the larger West Hills area, based on the Metro natural landscape mapping.

ATTACHMENT A – NATURAL RESOURCE MAPPING





Nature in Neighborhoods - Regionally Significant Fish and Wildlife Habitat Map (Metro) --- Area 9B



AREA 9B

E Bethany Area



Legend

Ohio_wet_scan

- 0
- 1
- Out of range

Interstate

Major Roads

- Other Road
- Interstate
- State highway
- US highway

Roads

- Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

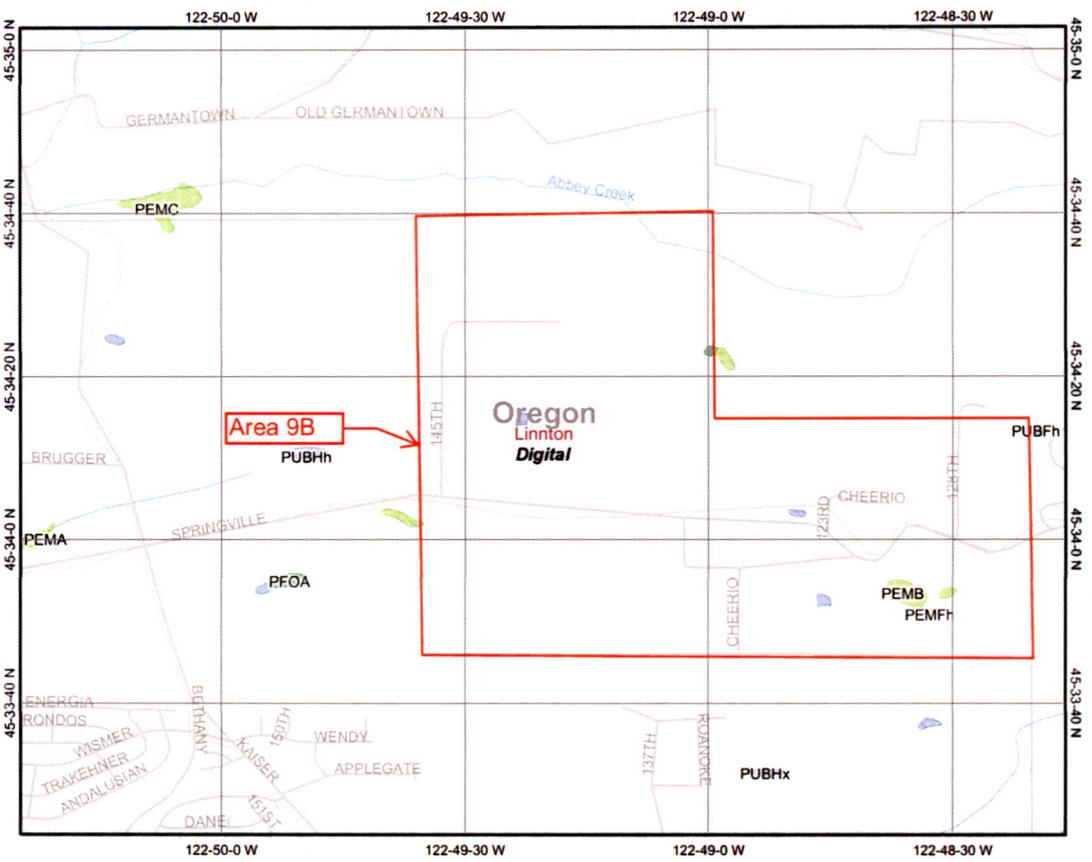
Lower 48 Available Wetland Data

- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

- Counties 100K
- States 100K
- South America
- North America

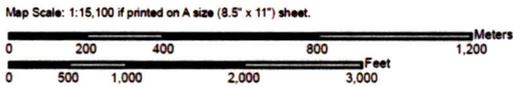
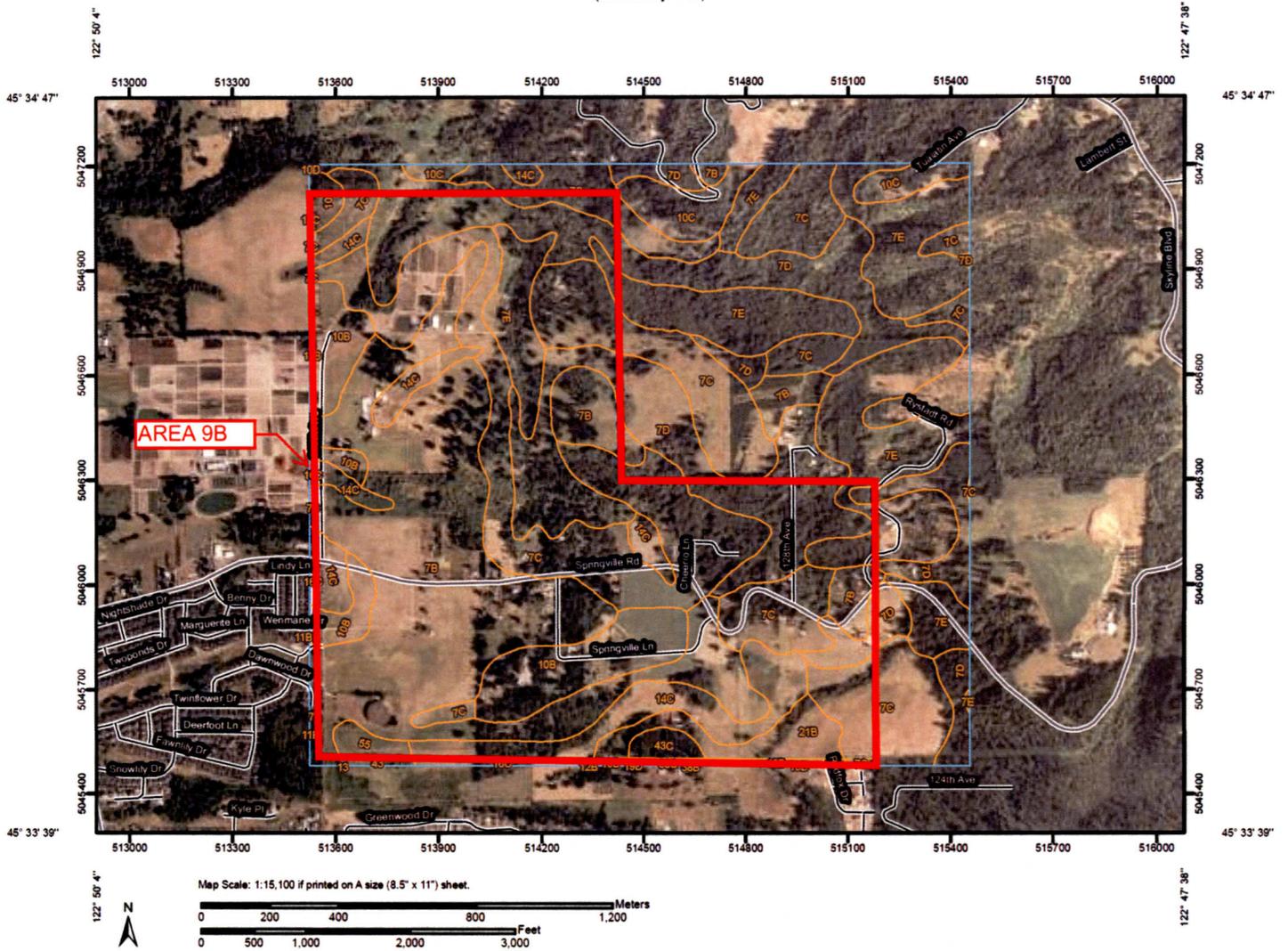
Scale: 1:21,330



Map center: 45° 34' 13" N, 122° 49' 20" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Soil Map—Multnomah County Area, Oregon, and Washington County, Oregon
(E. Bethany Area)



Soil Map—Multnomah County Area, Oregon, and Washington County, Oregon
(E. Bethany Area)

MAP LEGEND

 Area of Interest (AOI)	 Very Stony Spot
Soils	 Wet Spot
 Soil Map Units	 Other
Special Point Features	Special Line Features
 Blowout	 Gully
 Borrow Pit	 Short Steep Slope
 Clay Spot	 Other
 Closed Depression	Political Features
 Gravel Pit	 Cities
 Gravelly Spot	Water Features
 Landfill	 Oceans
 Lava Flow	 Streams and Canals
 Marsh or swamp	Transportation
 Mine or Quarry	 Rails
 Miscellaneous Water	 Interstate Highways
 Perennial Water	 US Routes
 Rock Outcrop	 Major Roads
 Saline Spot	 Local Roads
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	
 Spoil Area	
 Stony Spot	

MAP INFORMATION

Map Scale: 1:15,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Multnomah County Area, Oregon
Survey Area Data: Version 8, Feb 8, 2010

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 8, Feb 8, 2010

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

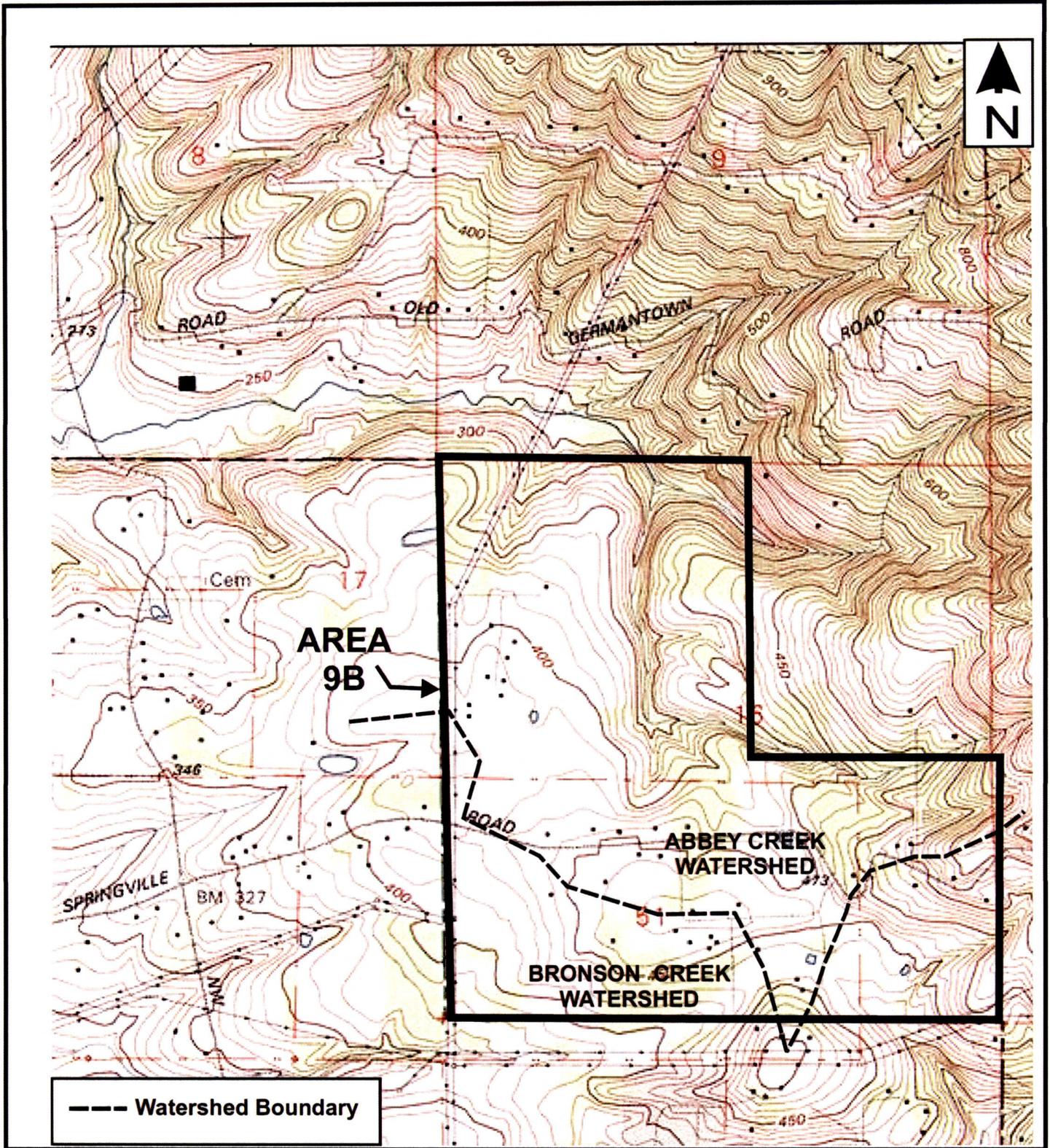
Date(s) aerial images were photographed: 8/4/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Multnomah County Area, Oregon (OR051)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7B	Cascade silt loam, 3 to 8 percent slopes	178.3	21.7%
7C	Cascade silt loam, 8 to 15 percent slopes	212.2	25.8%
7D	Cascade silt loam, 15 to 30 percent slopes	156.1	19.0%
7E	Cascade silt loam, 30 to 60 percent slopes	126.6	15.4%
10B	Cornelius silt loam, 3 to 8 percent slopes	44.1	5.4%
10C	Cornelius silt loam, 8 to 15 percent slopes	22.8	2.8%
10D	Cornelius silt loam, 15 to 30 percent slopes	0.0	0.0%
14C	Delena silt loam, 3 to 12 percent slopes	45.2	5.5%
21B	Helvetia silt loam, 3 to 8 percent slopes	14.2	1.7%
43C	Saum silt loam, 8 to 15 percent slopes	3.9	0.5%
55	Wapato silt loam	3.9	0.5%
Subtotals for Soil Survey Area		807.1	98.1%
Totals for Area of Interest		823.1	100.0%

Washington County, Oregon (OR067)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7B	Cascade silt loam, 3 to 7 percent slopes	3.6	0.4%
7C	Cascade silt loam, 7 to 12 percent slopes	0.6	0.1%
11B	Cornelius and Kinton silt loams, 2 to 7 percent slopes	2.1	0.2%
11C	Cornelius and Kinton silt loams, 7 to 12 percent slopes	0.1	0.0%
12B	Cornelius variant silt loam, 3 to 7 percent slopes	0.1	0.0%
13	Cove silty clay loam	0.0	0.0%
16C	Delena silt loam, 3 to 12 percent slopes	4.4	0.5%
19B	Helvetia silt loam, 2 to 7 percent slopes	2.4	0.3%
19D	Helvetia silt loam, 12 to 20 percent slopes	0.1	0.0%
38B	Saum silt loam, 2 to 7 percent slopes	0.0	0.0%
38C	Saum silt loam, 7 to 12 percent slopes	1.2	0.1%
43	Wapato silty clay loam	1.3	0.2%
Subtotals for Soil Survey Area		16.0	1.9%
Totals for Area of Interest		823.1	100.0%



Source: USGS 7.5-Minute Linnton, OR Quadrangle, 1990.

<p>Environmental Science & Assessment, LLC</p> 	<p>USGS Topographic Map East Bethany - Area 9B Multnomah County, Oregon</p>	<p>Attachment A</p> <hr/> <p>Approx. Scale: 1 in. = 2000 ft.</p>
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