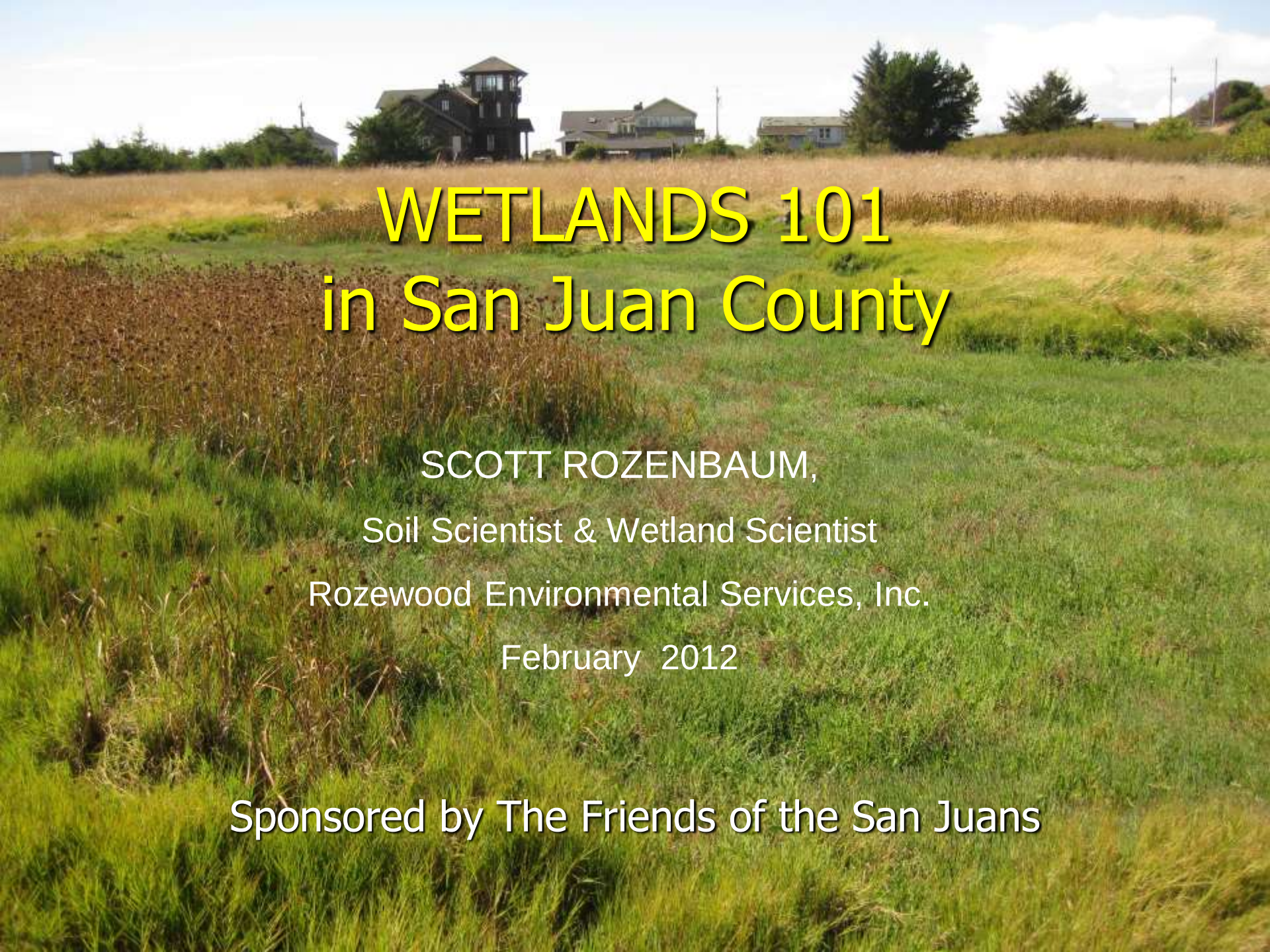


WETLANDS 101 in San Juan County

SCOTT ROZENBAUM,

Soil Scientist & Wetland Scientist

Rozewood Environmental Services, Inc.

February 2012

Sponsored by The Friends of the San Juans

What are Wetlands?

- Wet areas that are inundated or saturated long enough to affect and influence the vegetation community and soil development

- Wetlands are “areas inundated or saturated by surface water or ground water at a frequency or duration sufficient to support…a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas”.

Hydrology can be permanent or seasonal, tidal or non-tidal,

freshwater or saltwater

Examples of local forested wetlands (swamps)

Examples of local emergent wetlands (marshes)

Freshwater seasonally wet hayfield


Wet hayfield
in April

Examples of local peat wetlands (bogs)

Why are Wetlands Important? Beneficial Functions include:

- Water quality improvement
- Water storage & Flood control
- Wildlife habitat
- Maintain stream flows
- Nutrient recycling
- Food chain support
- Erosion control/stabilization shorelines
- Groundwater recharge
- Recreation & aesthetics
- Education & research

Wetlands are Regulated by:

- **Federal – usually U.S. Army Corps of Engineers**
- **State – Washington State Dept. of Ecology (WDFW, WDNR)**
- **Local – SJC CD&P**

SJC Unified Development Code (UDC)
(wetland section enacted 1992)

- **Defines Regulated Activities in wetlands & buffers**
- **Assigns Wetland Ratings (Categories I through IV)**
- **Assigns Buffer widths (35 feet through 150 feet)**
- **Regulatory Size Thresholds (depends on rating)**
- **Buffer averaging**
- **Enhancement criteria (non-compensatory)**
- **Mitigation Requirements (includes replacement amounts, long-term monitoring, & bonding ($)**

SJC Unified Development Code (UDC) (1992)

Wetland Rating	Buffer Width	Regulatory Size Threshold
• Category I (best or rarest)	150' or 200'	None
• Category II (good)	75' or 125'	2,500 sq. ft.
• Category III (average)	50' or 75'	5,000 sq. ft.
• Category IV (degraded, lower functions)	35' or 60'	10,000 sq. ft.

New Critical Areas Ordinance (est. 2012)

- Defines Regulated Activities in wetlands & buffers
- Wetland Importance/Sensitivity: High, Medium, Low
- Assigns Buffer widths (30 feet through 260 feet)
- Reduces Regulatory Size Thresholds
- No Buffer "averaging"
- Mitigation - mirrors Feds/State Requirements, long-term monitoring, & bonding ($)
- Bigger impacts (> 1,500 sq. ft.) based on Reasonable Use will require mitigation.*

Wetland Importance/Sensitivity Types

TYPES	Buffer Width	Regulatory Size Threshold
HIGH	80’ to 260’	250 sq. ft.

cottonwood/aspen, bog, mature forest, lakeside, rare species, salmonid, tidal wetland (large), prairie

MEDIUM	50’ to 260’	1,000 sq. ft.

structurally diverse, large ponded, small tidal, tidally contiguous, salmonid watershed, high connectivity

LOW	30’ to 230’	2,500 sq. ft.

wet pasture/hayfields, shrub wetland, young forested wetland

Wetlands in Urban Growth Areas

	Buffer Width	Regulatory Size Threshold
• HIGH	80’ to 260’	250 sq. ft.
• MEDIUM	50’ to 260’	1,000 sq. ft.
• LOW	30’ to 230’	2,500 sq. ft.
• UGA Wetlands	30’ to 115’ **	

** If mitigation of adverse impacts is provided


High Importance:
• Large Aspen Wetlands

High Sensitivity:

- **Bogs and Fens**

High Importance:

- **Mature Forested Wetlands**


High Importance:
• Tidal Wetlands

Medium Importance:

- **Large Pond Wetlands**

Medium Importance:

- **Salmonid Watershed Wetlands**

Medium Importance:

- **Structurally Diverse Wetlands**


Low Sensitivity:
• Seasonal Wet Hayfields

Low Sensitivity:

- **Seasonal Scrub-shrub wetlands**

Low Importance:

- **Younger forested wetlands**

Wetland Investigations:

- **Reconnaissance (short, quick)**
- **Delineation (detailed analysis)**
- **Mitigation**

Web Sources:

- San Juan County Possible Wetlands Map and Stream Map
- NWI – National Wetlands Inventory
- FPARS – Forest Practices Application Review System – WDNR
- Web Soil Survey – 2009 soils survey of SJC – Soil Data – Land Classification – Hydric

San Juan County
Wetlands Critical Areas Ordinance

Janice Biletnikoff

San Juan County Planning Department

February 29, 2012

SJC Site-Specific Buffer Sizing Procedure

- Planning Commission in Nov. 2011
- Previous version had become oversimplified and less site-specific; inter-relationships among factors were not well-supported by the science.
  - Collapsed or combined variables were less meaningful.
  - Weighting development intensity as more important than transport factors was incorrect.
- At County Council's request, Staff and Dr. Adamus collaborated with a "Technical Team" of local experts to work through several buffer-sizing models and approaches. The current approach benefitted greatly from that work.
- Goal: Site-specific approach, tailored to both the site and type of development proposed.
  - Balancing accuracy with complexity
  - The new approach attains this goal

SJC Site-Specific Buffer Sizing Procedure

The new approach:

- **Split the assessment into two components (which are overlain, not cumulative), to increase the precision of the buffers:**
  - **Water Quality Buffer is based on the wetland's *sensitivity to contaminants* and whether or not the water is used for human consumption.**
  - **Habitat Buffer is based on the wetland's importance and its *sensitivity to disturbances*.**
    - ***Are trees present within the wetland itself?***
- **Flow Path Model**
  - **How the Water Quality Buffer is determined.**

Flow Path Model

- **This will replace the existing prescriptive buffer sizing protocol with a site-specific procedure.**
  - **Based on the characteristics of the land and wetland and the intensity of the development.**
    - **Flexible; looks beyond the wetland type**
  - **Flow path: A single line through what is (or will be) the most impervious area of the development. This line intersects contour lines, heading downhill from the nearest parcel boundary down to the wetland.**
  - **The Composite Runoff Coefficient represents the overall runoff impacts of the proposed development (based on the Rational Method).**

Buffer Sizing Procedure – Basic Steps

Step 1: Determine if the proposed development is within 260 feet of a wetland. *(This may require the assistance of a qualified wetlands professional.)*

Step 2: Determine if the proposed development drains to the wetland. *(The edge must be delineated by a qualified wetlands professional.)*

Step 3: Determine the wetland type and Water Quality rating.

Step 4: Determine the flow path through the area of the development that has (or will have) the most impervious surfaces and contains the proposed development.

Step 5: Calculate the Composite Runoff Coefficient for the entire flow path (including any applicable adjustments for slope of vegetated areas and for drainageways or streams).

Buffer Sizing Procedure – Basic Steps

Step 6: Determine the required Water Quality Buffer, based on the:

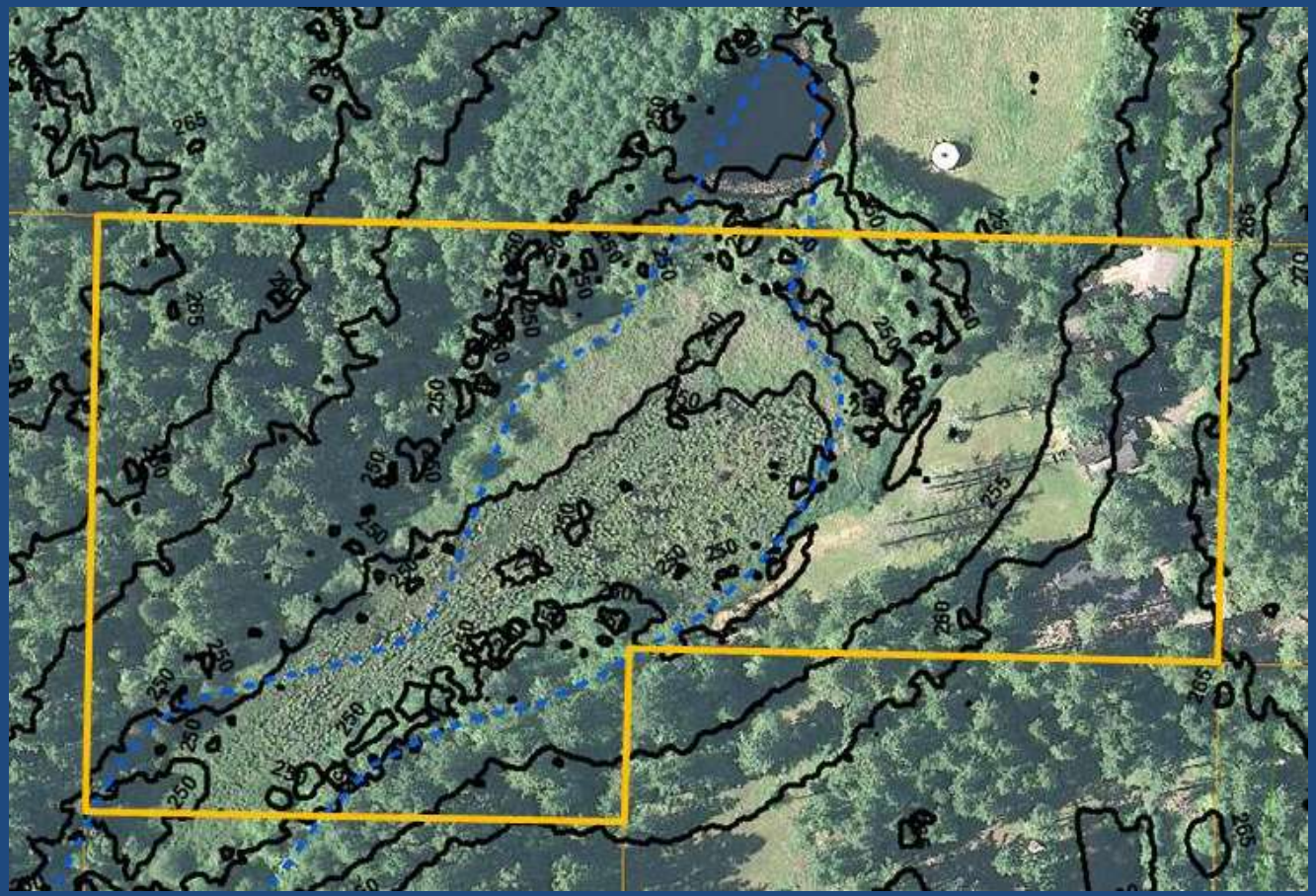
1. **Composite Runoff Coefficient;**
2. **Water Quality Rating; and**
3. **Total impervious area**

Step 7: Determine the required Habitat Buffer, based on the:

1. **Habitat Importance/Sensitivity Rating; and**
2. **Presence of trees in the wetland**

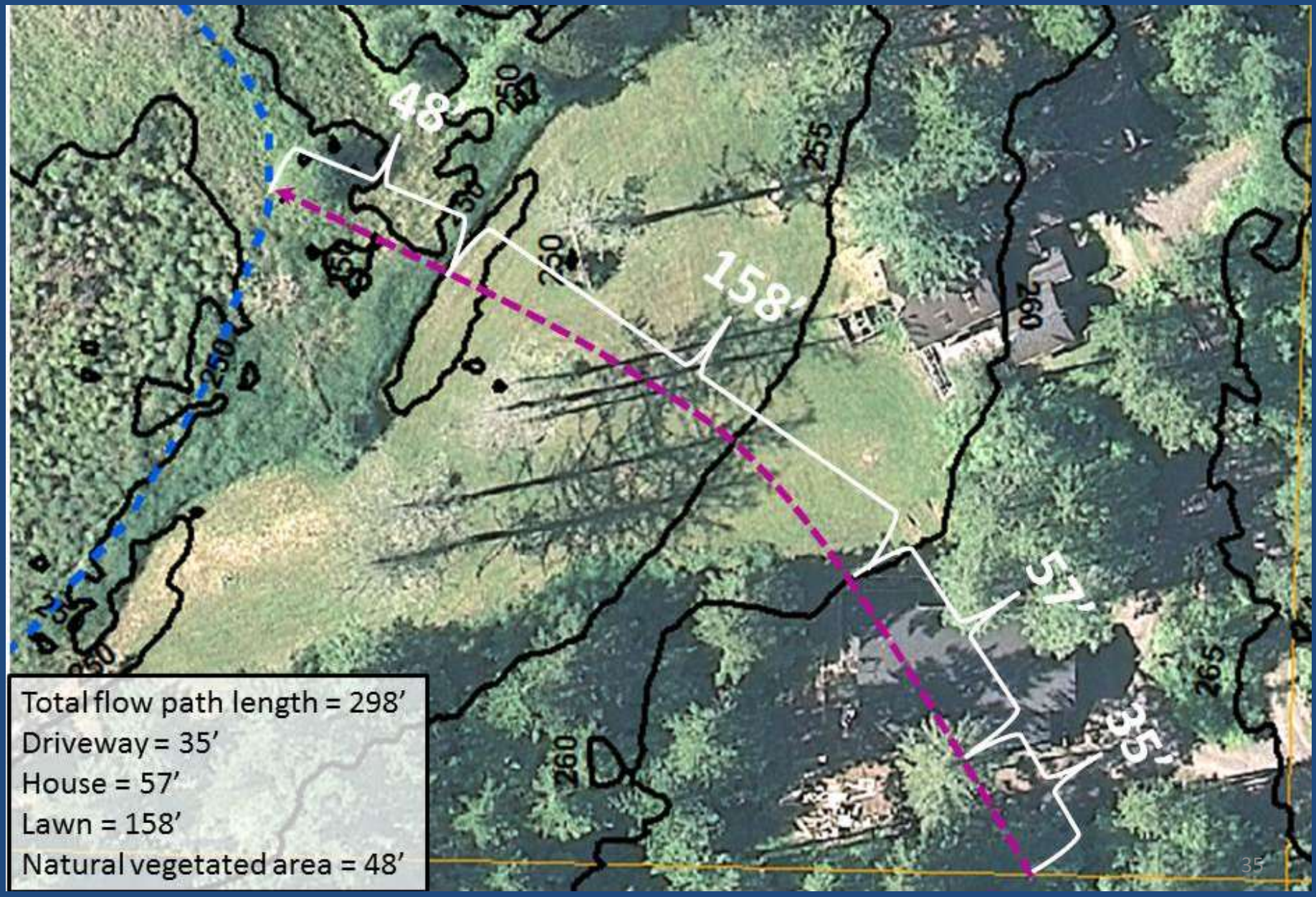
Examples…

EXAMPLE 1



- Fairly flat 8-acre parcel (property line in orange)
- Possible Wetland outlined in blue
- 5-foot contours in black

EXAMPLE 1 – Flow path



EXAMPLE 1 – Water Quality Buffer

Composite Runoff Coefficients						
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Surface Type (by segment along the flow path)	**Base Runoff Coefficient**	**Slope Adjustment (0.01 per % of slope, up to 30%)**	**Drainageway and Stream Adjustment**	**Sum of Columns 2, 3, & 4**	**Length of the Segment (in Feet)**	**Col. 5 x Col. 6**
Driveway	0.85	---	---	0.85	35	29.75
House	0.85	---	---	0.85	57	48.45
Lawn	0.09	0.06	---	0.15	158	23.7
Natural vegetated area	0.05	0.00	---	0.05	48	2.4
				Total for Column 6 (add all rows)	298	---
					Total for Column 7 (add all rows)	104.3
					Divide the total of Col. 7 by the total of Col. 6; this is the Composite Runoff Coefficient:	0.35

- **Wetland Type:** Unclassified wetland
- **Water Quality Sensitivity:** HIGH ("Wetland with no surface water outflow during most years")
- **Water Quality Buffer= 140'**

Buffers to Protect Water Quality			
Composite Runoff Coefficient for the Flow Path	Required Buffer (in Feet)		
	Column 1	Column 2	Column 3
	Low Water Quality Rating[1], AND area draining to wetland includes less than 5,000 s.f. of impervious surfaces, AND less than ¾-acre lawn or garden	High Water Quality Rating[2], OR area draining to wetland includes 5,000 s.f. or more of impervious surfaces, OR ¾-acre or more of lawn or garden	Wetlands Within Lopez Village and Eastsound UGAs[3]
< 0.10	30	80	30
0.10 - < 0.15	41	90	30
0.15 - < 0.20	52	100	30
0.20 - < 0.25	63	110	32
0.25 - < 0.30	74	120	37
0.30 - < 0.35	86	130	43
0.35 - < 0.40	97	140	49
0.40 - < 0.45	108	150	54
0.45 - < 0.50	119	160	60
0.50 - < 0.55	130	170	65
0.55 - < 0.60	141	180	71
0.60 - < 0.65	152	190	76
0.65 - < 0.70	163	200	82
0.70 - < 0.75	174	210	87
0.75 - < 0.80	186	220	93
0.80 - < 0.85	197	230	98
0.85 - < 0.90	208	240	104
0.90 - < 0.95	219	250	109
≥0.95	230	260	115

Note:
[1] Based on 70% pollutant removal.
[2] Based on 75% pollutant removal.
[3] Requires the mitigation of adverse impacts in accordance with SJCC 18.30.110.

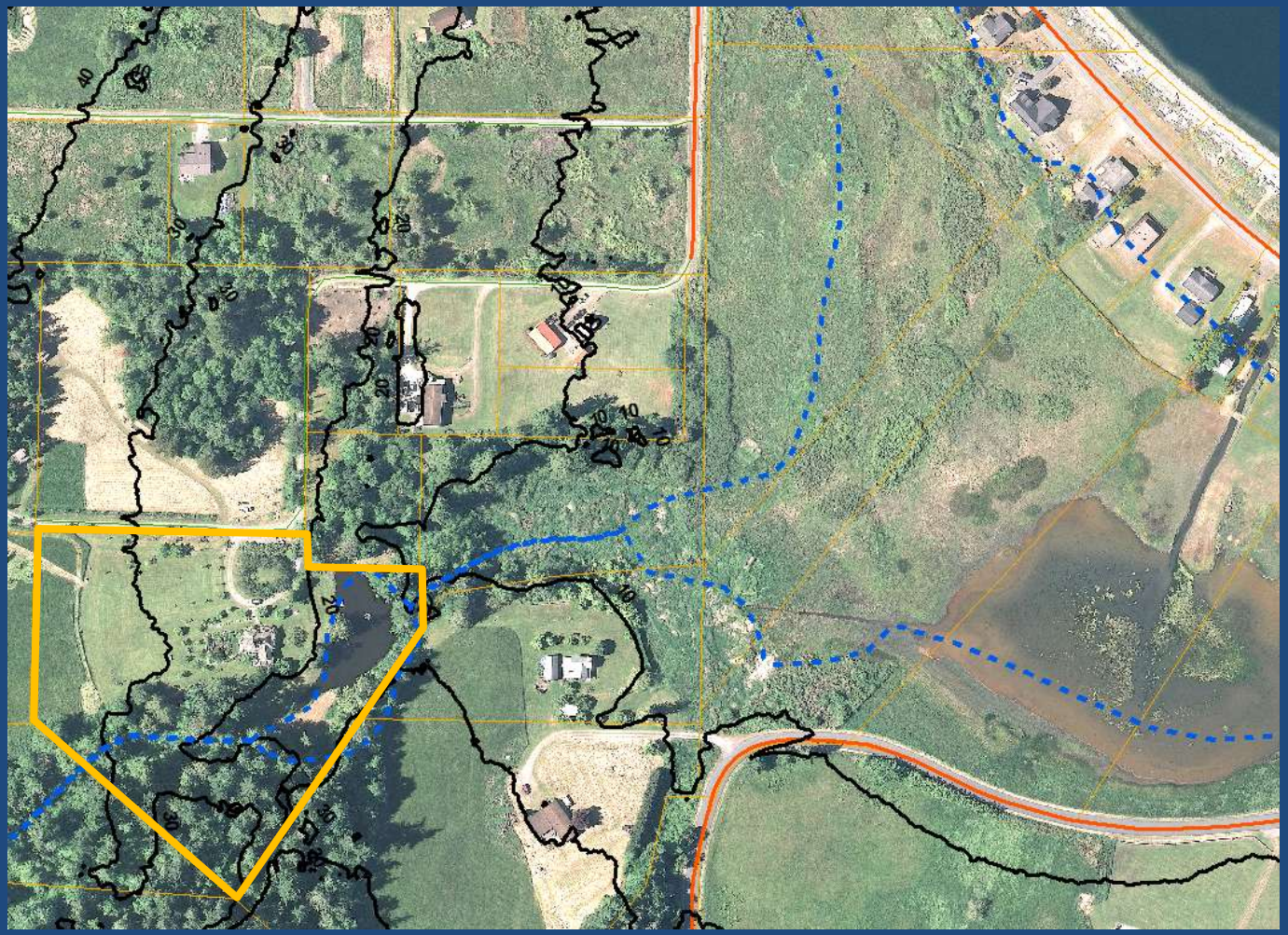
EXAMPLE 1 – Habitat Buffer

Buffers to Protect Habitat	
Habitat Importance/Sensitivity Rating	Required Buffer (in Feet)
Low[1]	30
Medium[1]	50
High[1]	80

[1] If the wetland itself contains ten (10) or more trees (or five [5] trees in mature forested wetlands or Aspen/cottonwood wetlands) with most of the trunks within 90 feet of another tree in the stand, a forested buffer of 90 feet is required around the cluster of trees. This is to protect the wetland trees from blow down, and to preserve the microclimate within the wetland. If there are no trees in the area determined to be the forested buffer, this requirement does not apply.

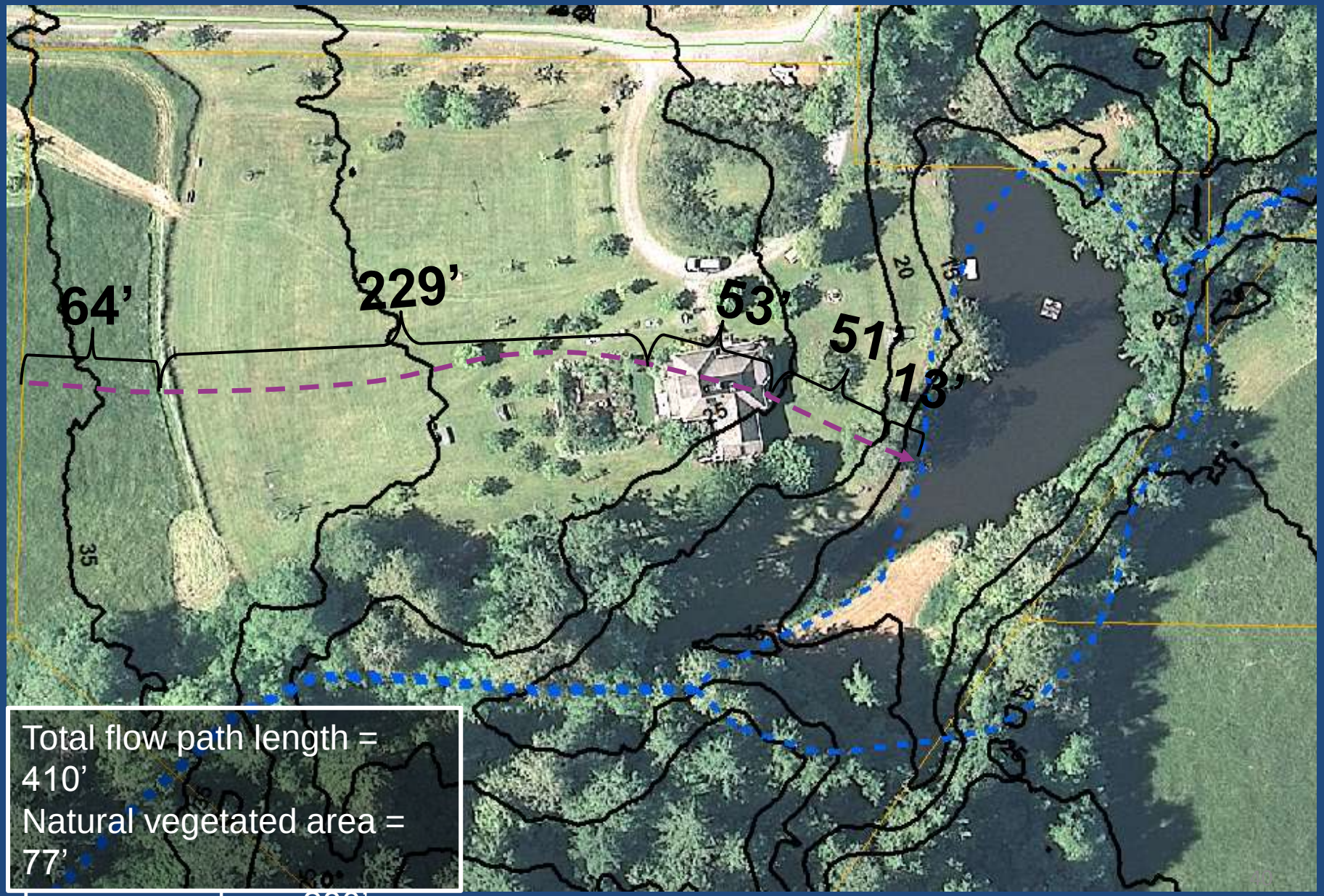
- **Habitat Importance/Sensitivity Rating:** LOW ("All other wetland types not listed above")
- No trees within the wetland- just herbaceous vegetation
- **Habitat Buffer= 30'**

EXAMPLE 2



- Fairly flat 4.4-acre parcel (property line in orange)
- Possible Wetland outlined in blue
- 10-foot contours in black

EXAMPLE 2– Flow path (with 5-foot contours)



EXAMPLE

Composite Runoff Coefficients						
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Surface Type (by segment along the flow path)	**Base Runoff Coefficient**	**Slope Adjustment (0.01 per % of slope, up to 30%)**	**Drainageway and Stream Adjustment**	**Sum of Columns 2, 3, & 4**	**Length of the Segment (in Feet)**	**Col. 5 x Col. 6**
Natural vegetated area	0.05	0.05	---	0.10	64	6.4
Lawn/garden	0.09	0.03	---	0.12	229	27.48
House	0.85	---	---	0.85	53	45.05
Lawn	0.09	0.10	---	0.19	51	9.69
Natural vegetated area	0.05	0.30	---	0.35	13	4.55
				Total for Column 6 (add all rows)	410	---
					Total for Column 7 (add all rows)	93.17
					Divide the total of Col. 7 by the total of Col. 6; this is the Composite Runoff Coefficient:	0.22

- **Wetland Type:** Salmonid watershed wetland
- **Water Quality Sensitivity:** HIGH
- **Water Quality Buffer= 110'**

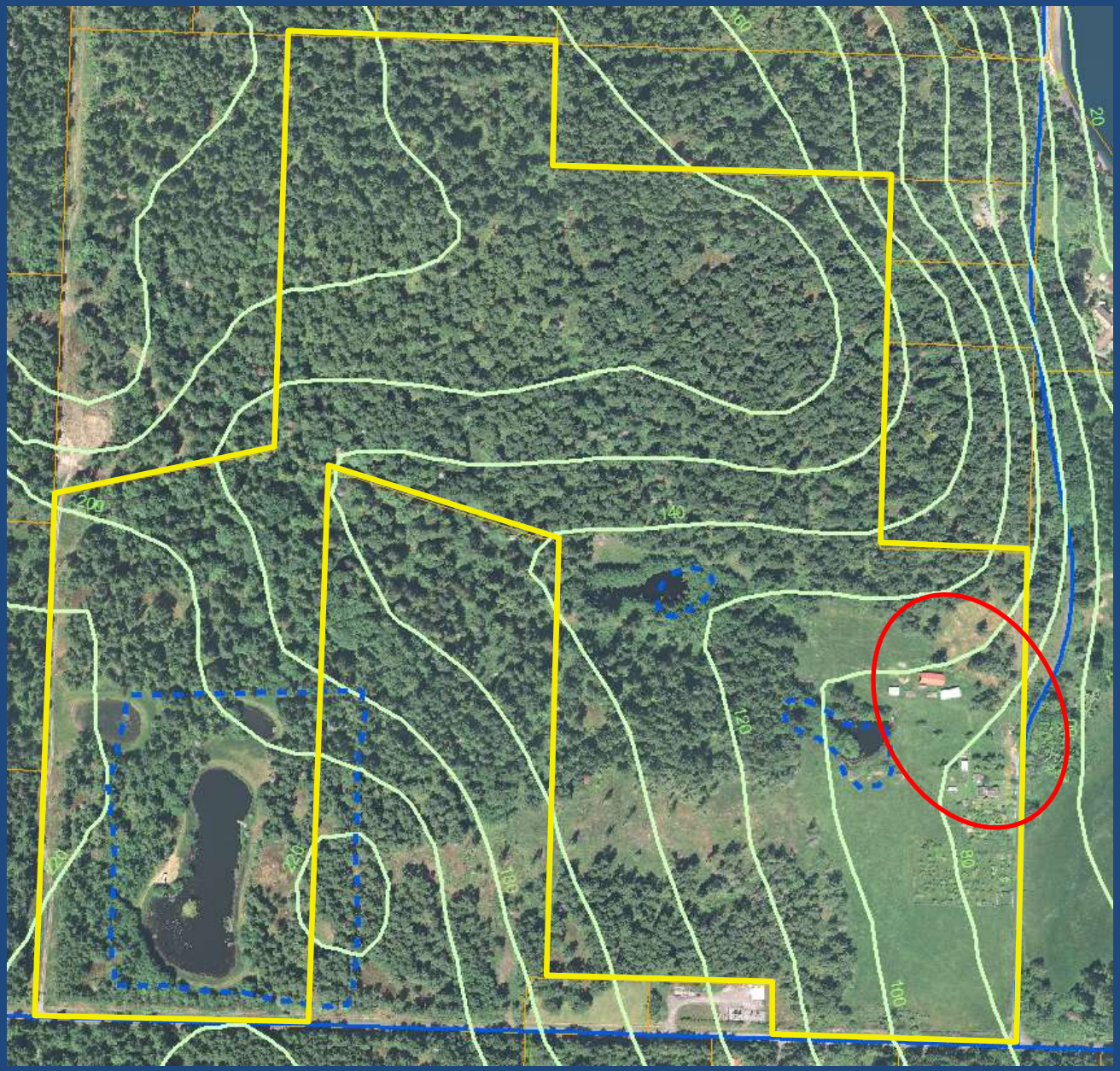
EXAMPLE

Buffers to Protect Habitat	
Habitat Importance/Sensitivity Rating	Required Buffer (in Feet)
Low[1]	30
Medium[1]	50
High[1]	80

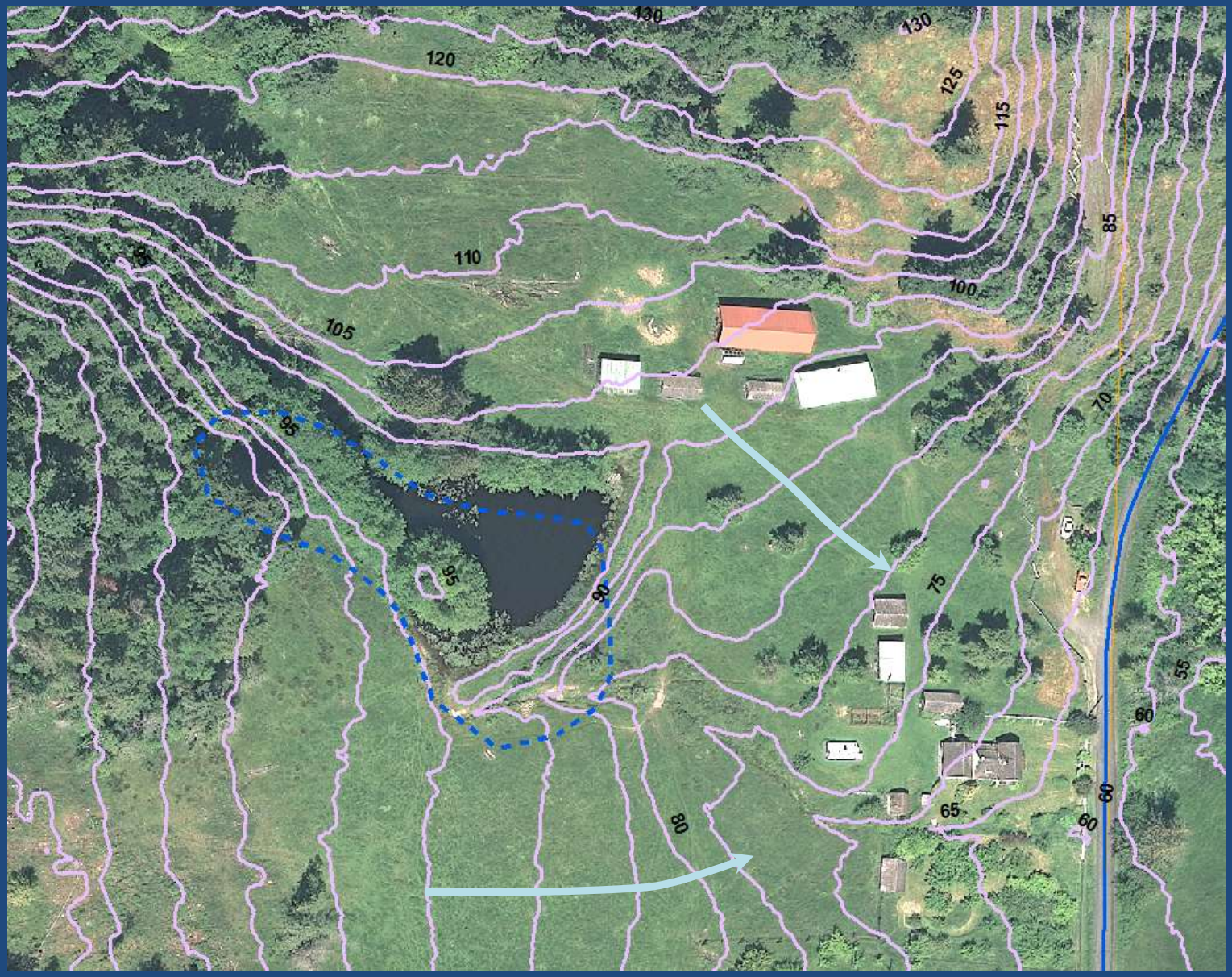
[1] If the wetland itself contains ten (10) or more trees (or five [5] trees in mature forested wetlands or Aspen/cottonwood wetlands) with most of the trunks within 90 feet of another tree in the stand, a forested buffer of 90 feet is required around the cluster of trees. This is to protect the wetland trees from blow down, and to preserve the microclimate within the wetland. If there are no trees in the area determined to be the forested buffer, this requirement does not apply.

- **Wetland Type:** Salmonid watershed wetland
- **Habitat Importance/Sensitivity Rating:** MEDIUM
    - No trees within the wetland- just herbaceous vegetation
- **Habitat Buffer= 50'**

EXAMPLE 3: Parcel where development drains away (downslope) from wetland: 20-foot contours shown



Closer view: 5-foot contours



Questions?

CRITICAL AREAS & AGRICULTURE

AGRICULTURAL RESOURCES COMMITTEE RECOMMENDATIONS

AGENDA

ARC mandate is to protect, restore and strengthen agriculture in SJC. Est 2005.

- Overview of approaches for protection of viable agriculture while still protecting critical areas
  - Voluntary Stewardship Program (ESHB 1886)
  - Critical Areas Ordinance Wetland Section

History

- 2006: Ongoing litigation between protection of critical areas (salmon habitat) vs protection of agricultural lands led to Ruckelshaus Comm.
  - Moratorium on adoption of CAO regarding ag and critical areas
- July 2011: State adoption of Voluntary Stewardship Program (VSP) (ESHB 1886) moratorium lifted, requiring counties to adopt policies that meet multiple goals of GMA:
  - protection of critical areas, and
  - protection of viability of agriculture.
  - Protection of agriculture as important as protection of critical areas
- January 2012: SJC Council voted to opt-in to VSP.
  - Moratorium continues until funding form state to develop VSP

What does this mean for CAO?

ARC recommended a parallel approach

1. SJC Council should opt-in to Voluntary Stewardship Program (adopted 1/2012)

and

2. CAO must include language that defines "existing and ongoing" and "new and expanding" agricultural activities in critical areas
   - Take the time to address issue in CAO now, in case VSP does not work

•

VOLUNTARY STEWARDSHIP PROGRAM

- Voluntary watershed based approach
  - Allows success to be based on achieving watershed goals for protection of critical areas
  - Not parcel specific compliance based
- Funding to be available for counties that opt in
- Local control – can establish relevant goals that reflect local agriculture
- Cannot be litigated
- County can opt out if benchmarks not achieved
- **Compliance through CAO may still be necessary for county to meet GMA requirement to protect critical areas**
-

VOLUNTARY STEWARDSHIP PROGRAM

Why ARC recommends that county opt-in:

- Voluntary approach
- ***Some*** funding is available – whereas no funding for CAO
- Win-win as long as agriculture friendly CAO is simultaneously adopted - VSP and CAO can be dovetailed
- Buys time to develop broad stakeholder input
- County can always opt-out if
  - funding not sufficient, and/or
  - if benchmarks not achieved
- Encourages innovative approach that reflects agriculture in SJC today, and supports expansion of agriculture in the future

CAO

- ARC recommends adoption of farm friendly policy that will
  - Encourage ***existing and ongoing agricultural activities*** as long as there is no additional negative impact to critical areas;
    - Under existing and ongoing agriculture, agricultural activities may change as long as they do not result in new negative impacts.
    - Such as rotational management of crops; fallowing of fields and cover crops to improve fertility; seasonal grazing; etc.
  - Support ***new agricultural activities*** that do not result in negative impacts to critical areas.

CAO (cont)

- Alternative approaches to achieve protection of critical areas
  - Tailor approach based on approved farm plan documenting existing conditions, and presence of critical areas on that farm
  - Farmer can be responsible for documenting baseline conditions according to established protocol
    - Update annually to confirm compliance
  - Farm plan or BMPs may be required for new agriculture that affects critical areas

GOALS

- ARC recommends policies that will
  - Preserve & promote the viability of our *existing* agricultural activities
  - Encourage & support *new and expanding* agricultural activities
  - Promote sustainable stewardship of agricultural lands to ensure ongoing ecological health of critical areas and landscape
- Key criteria:
  - Flexibility – allow changing management practices including rotation
  - Goal oriented – with solutions tied to clearly identified impacts
  - Straightforward and predictable process
  - Options for approaches to achieving goal to protect critical areas

KEY QUESTIONS

- *What is the best approach that will ensure ongoing viability of agriculture while also protecting critical areas in SJC?*
  - Majority of ag lands occur on poorly drained soils
  - "Wet meadows" – grazed, wet pastures, no definition in SJC CAO
- *What is the extent and nature of impacts on critical areas as a result of agricultural activities?*
  - Small scale of agriculture in SJC w/ varying impacts
  - Market farms less impact than livestock operations – but depends on scale

KEY QUESTIONS (cont)

- *How can we document current conditions to be used as a basis to determine negative impacts?*
- *Can agriculture continue to be viable if agricultural activities are required to take place outside of critical areas?*
  - *Majority of farms have some critical areas*
  - *Wet meadows analysis is not completed*
- *How much of our agricultural lands are currently impacted by wetlands?*
  - *~ 80-90% of parcels that are actively farmed include wetlands*

SUMMARY

- Land use regulation and policy have a significant impact on the viability and future of agriculture.
- Careful drafting with consideration of potential impact will support long-range investment decisions essential to profitable farming.
- A VSP opt-in, in addition to agriculturally sensitive CAO track, will promote a farmer-friendly program that creates incentive for farmers to invest in their business while protecting functions of critical areas.

SUMMARY

- Key challenges:
  - Identify goals based on clear documentation of the problem, including baseline data that documents conditions existing at time of adoption
  - Outreach and buy-in from agricultural producers
  - Flexibility and options for achieving goals
  - Farmer friendly approach that is not costly, complex, or burdensome

Questions?

Wetlands and Us

Orcas Island

February 29, 2012

Kyle Loring, Friends of the San Juans

Hot Topics

- Brief History of Critical Areas Protections
- Current Status of San Juan County update
- Requirements vs. Goals
- Best Available Science

Critical Areas

- Critical Aquifer Recharge Areas
- Frequently Flooded Areas
- Geologically Hazardous areas
- Wetlands
- Fish and Wildlife Conservation Habitat Areas

Critical Areas Ordinance History

- **Primacy** -- Counties "shall designate critical areas…and adopt development regulations…protecting these designated critical areas." RCW 36.70A.040
- All counties must protect, even if not planning under GMA
- "The land speaks first."

Why Early Designation and Protection?

- Preclude urban development in areas unsuitable because of risks to human life and property
- Prevention of irreversible environmental harm, such as species loss
- Avoidance of high cost of substituting for lost hydrological and other environmental services

Requirements vs. Goals

Requirements Include

- Protect critical areas
- Conserve agricultural, forest, and mineral lands
- Establish Urban Growth Areas
- Avoid precluding Essential Public Facilities

Planning Goals

- Urban growth
- Reduce sprawl
- Transportation
- Housing
- Economic development
- Property rights
- Permits
- Natural resource industries
- Open space and recreation
- Environment
- Citizen participation and coordination
- Public facilities and services
- Historic preservation

Requirements Come First

Growth Management Hearings Board:

"[A] city or county's discretion to balance GMA goals is not a license to ignore the GMA's explicit requirements. Thus 'balancing' and 'deference' come into play when GMA mandates have been satisfied."

Wash. State Dep't of Ecology, et al., v. City of Kent, CPSGMHB No. 05-3-0034, Final Decision and Order, at 12-13 (April 19, 2006).

CAO Update Status

CARA – Completed 2008

Frequently Flooded Areas – Interim Final Adopted

Geologically Hazardous Areas – Interim Final Adopted

General Provisions – Interim Final Adopted

Wetlands – Planning Commission review March 6

Update Needs

- Maps
- Tailored approach, including new wetland rating system
- Modify buffers to better protect salmonids
- Activities in wetlands and buffers
- Minimum parcel size
- Mitigation

Best Available Science

1995 – In designating and protecting critical areas under this chapter, counties and cities shall include the best available science in developing policies and development regulations to protect the functions and values of critical areas

RCW 36.70A.172(1)

"Include"

- Scientific evidence in the record
- Reasoned process in evaluating scientific evidence
- Whether provisions fall within parameters of BAS – for all functions, including habitat
- Whether any departure is justified – must still protect

Public Comment

- Planning Commission -- March 6, 2012
- San Juan County Council -- 3 touches
- 3-minute public testimony

Nighttime Reading

- Growth Management Act -- RCW 36.70A
- Guidelines for critical areas protections -- WAC 365-190
- Best Available Science -- WAC 365-196
- San Juan County Critical Areas Ordinance website -- http://www.co.san-juan.wa.us/cao/default.aspx
- Department of Ecology wetlands BAS synthesis -- http://www.ecy.wa.gov/pubs/0506006.pdf
- Department of Ecology wetlands economic value -- http://www.ecy.wa.gov/pubs/97100.pdf