

Case Studies and Other Data Sources/Resources

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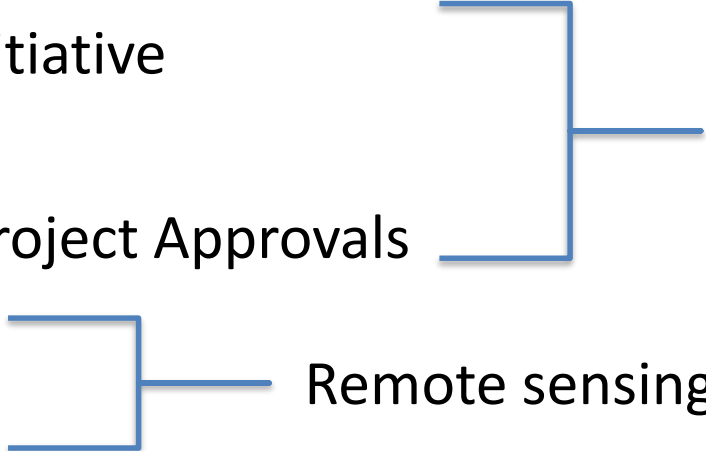
Washington Department of Ecology



February 27, 2018
Seattle Workshop

Case Studies of Monitoring Programs

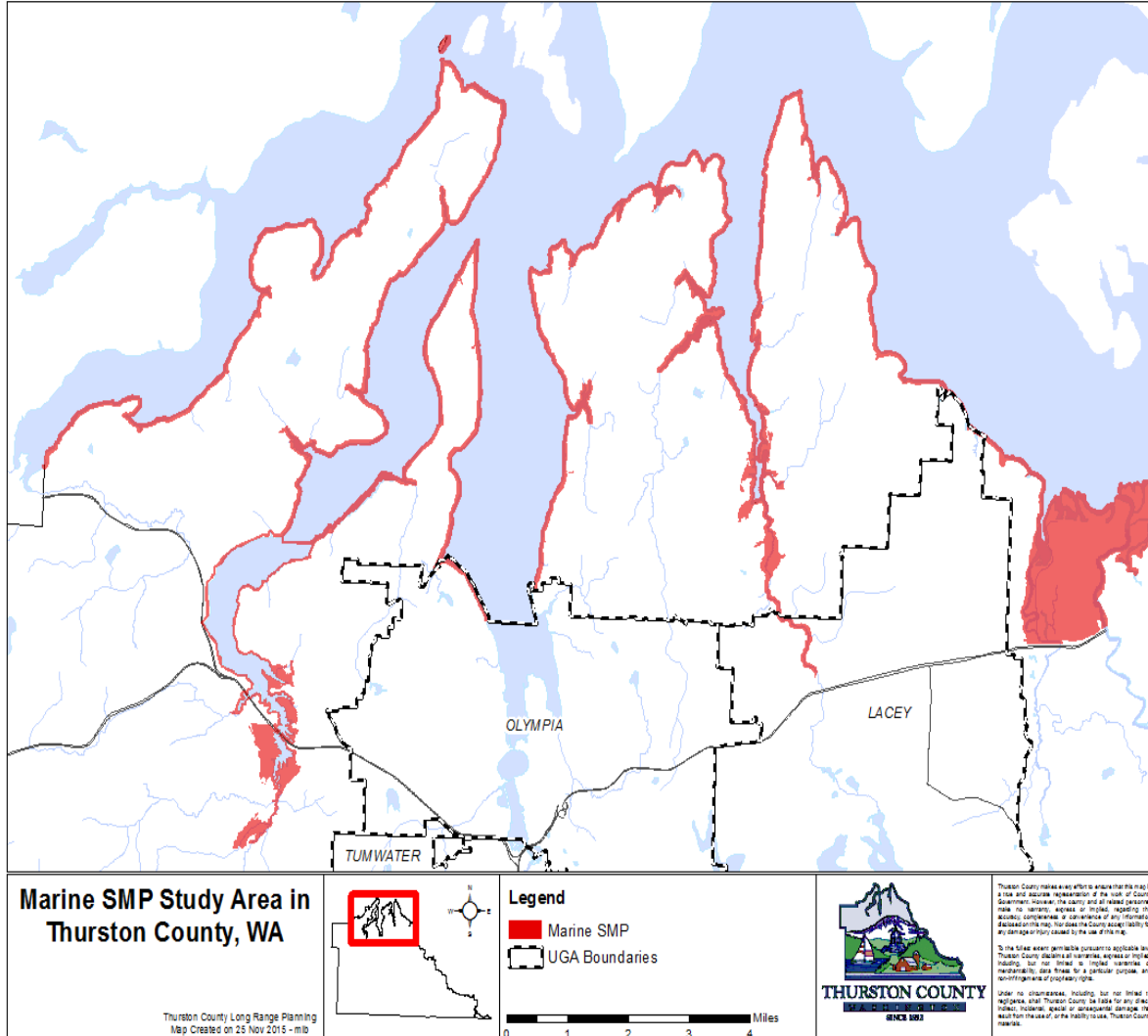
Retroactive evaluations:

- San Juan County Initiative
 - Jefferson County
 - WDFW Hydraulic Project Approvals
 - Snohomish County
 - Thurston County
- 
- Permit records,
site visits
- Remote sensing component
- The diagram consists of two blue line drawings. The first is a bracket on the right side of the first three items in the list (San Juan County Initiative, Jefferson County, and WDFW Hydraulic Project Approvals), with a horizontal line extending to the text 'Permit records, site visits'. The second is a bracket on the right side of the last two items (Snohomish County and Thurston County), with a horizontal line extending to the text 'Remote sensing component'.

Ongoing compliance monitoring

- City of Kirkland
- Ecology Wetland Regulatory Effectiveness
- US Army Corps Mitigation Compliance

Thurston County HRCD pilot project



Measure change in
the marine SMP area
using WDFW High
Resolution Change
Detection

Pilot test of HRCD to
measure compliance

6-year retroactive
study of permits

Total Change in Shoreline

Super easy

Year	Sum of Total Change	Sum of Canopy Loss	Sum of Impervious Gain	Sum of Semi-Impervious Gain
2006-2009	3.37 acres *	2.14 acres	1.56 acres	0.19 acres
2009-2011	3.91 acres *	2.47 acres	1.15 acres	0.28 acres
2011-2013	4.23 acres	3.14 acres	0.80 acres	0.32 acres
Grand Total	11.52 acres	7.75 acres	3.51 acres	0.79 acres

< ½ of 1% of total marine area

* Acreage change due to Nisqually Restoration Project removed (~26 ac)

Change by Environment Designation

Easy math!

Environment Designation	Total Change (acres)	Canopy Loss (acres)	Impervious Gain (acres)	Semi-Impervious Gain (acres)
Conservancy	4.27	3.38	0.77	0.27
Natural	0.02	0.02	0.02	0
Rural	7.22	4.34	2.72	0.52
Grand Total	11.52	7.75	3.51	0.79

7.05 acres per 1,000 acres of **Rural** designation changes

2.33 acres per 1,000 acres of **Conservancy** designation changes

0.68 acres per 1,000 acres of **Natural** designation changes

$$\frac{\text{acreage of total change in Natural area in marine SMP from 2006–2013}}{\text{acreage of Natural designation in marine SMP}} * 100$$

Unpermitted Events

Tedious and difficult

No “developments” were out of compliance... (some development doesn’t need a permit)



2006-2009



38 unpermitted events

- 16 tree removal
- 6 development
- 2 redevelopment
- 13 natural
- 1 non-natural

75 events total

2006-2009

2009-2011

2011-2013

9 unpermitted events

- 8 tree removal
- 1 development

50 events total

24 unpermitted events

- 14 tree removal
- 4 development
- 3 natural
- 1 non-natural
- 1 forestry
- 1 stream

71 events total

Ecology Wetlands Evaluation Program *

Site inspections

- As-built
- Mid-monitoring
- End of monitoring (*10 years*)

Formal follow-up letters

Review reports

- Track deadlines
- Ensure reports have complete information per Ecology's Order

** 401 WQ certifications for compensatory mitigation projects*



	Element	What to Look For (add in specifics from order, mitigation plan, and/or as-built)	Comments or Deviations from the Plan/Permit	Follow-up / Contingency	For Administrative Use
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On-the-Ground Elements

1.	Grading	<i>(for example, slopes, elevations, topographic features, microtopography, soil treatment)</i>			
2.	Water/ hydroperiod	<i>(for example, water-control structures, specified water regime, wetland hydrologic indicators)</i>			
3.	Planting	<i>(including: presence, numbers, location, spacing, and size of planted or seeded vegetation species or plant communities; plant protectors, irrigation)</i>			
4.	Management/ control of invasive species	<i>(for example, mowing, rolling, spraying, covering with plastic)</i>			
5.	Habitat features	<i>(for example, nest boxes, snags, stumps, LWD, brush piles)</i>			
6.	Required acreage of mitigation	<i>(Does mitigation area appear to be the appropriate size?)</i>			
7.	Other	<i>(for example, buffers, signs, fences, trails)</i>			



Wetlands Program Benefits



Increased mitigation success: work with the applicant to address issues that would result in site failure.

Improved permitting decisions: lessons learned during site visits can be applied to review of current mitigation proposals.

Voluntary compliance: improves when people expect oversight (less time needed to check on every project)

Improved **consistency and predictability** by standardizing permit conditions or project plan requirements

New Guidance: Local Buffer Compliance



Characterizing Wetland Buffers in Washington State

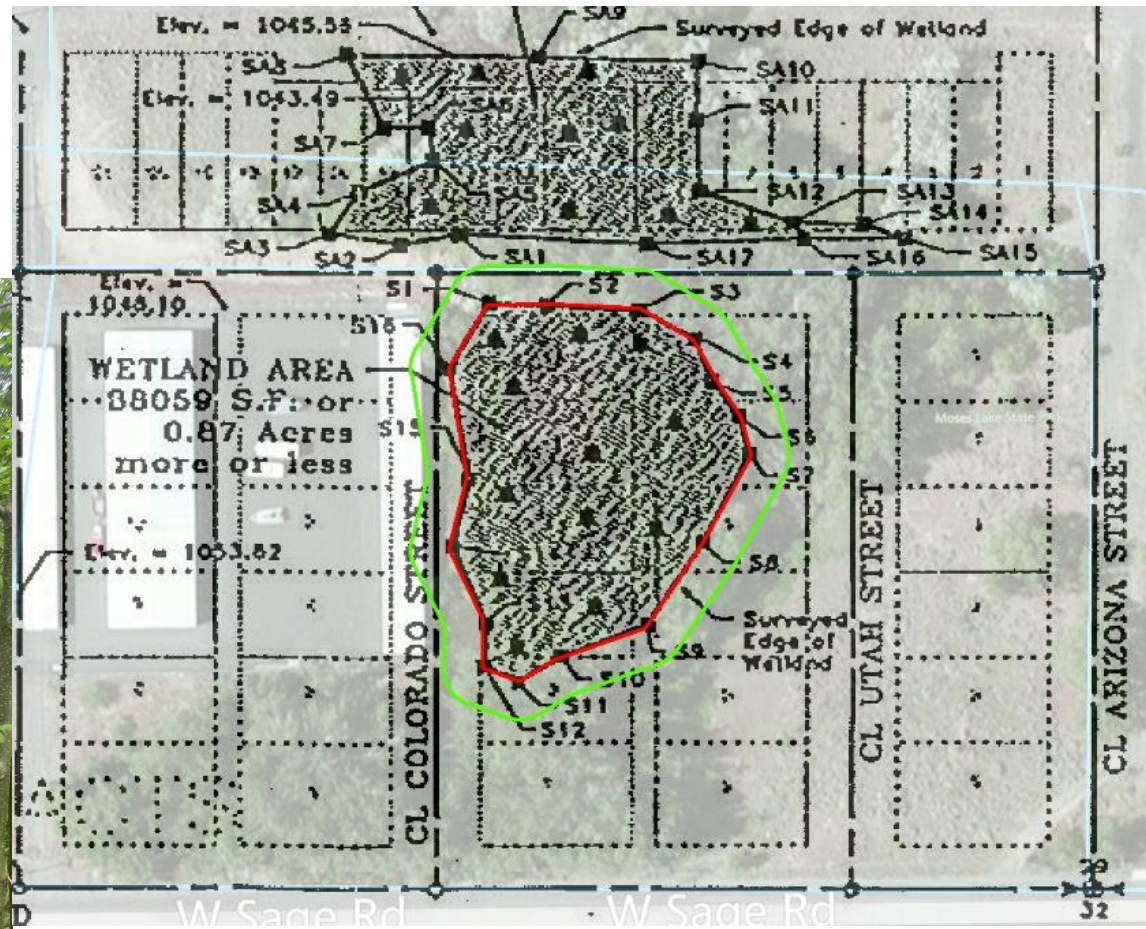
September 2017
Publication No. 17-06-008

Outlines **steps** for characterizing how well regulations are protecting buffers.

Based on pilot of 10 random projects from:

- Pierce County
- Tacoma
- Marysville
- Moses Lake

Review Permits, Assess Sites



Compare Permit Requirements to CAO

Wetland Category	Buffer width (in feet) based on habitat score			
	3-4	5	6-7	8-9
Category I: Based on total score	75	105	165	225
Category I: Bogs and Wetlands of High Conservation Value	190			225
Category I: Coastal Lagoons	150		165	225
Category I: Interdunal				225
Category I: Forested	75	105	165	225
Category I: Estuarine	150 (buffer width not based on habitat scores)			
Category II: Based on score	75	105	165	225
Category II: Interdunal Wetlands	110		165	225
Category II: Estuarine	110 (buffer width not based on habitat scores)			
Category III (all)	60	105	165	225
Category IV (all)	40			



- Was permit issued according to CAO requirements?
- Was buffer width more or less protective than basic CAO buffer?

Is justification for changes documented?

Consistent w/CAO criteria?

Compare Permit to Built Conditions



Is vegetation
management
consistent?
Fencing?



Signage?

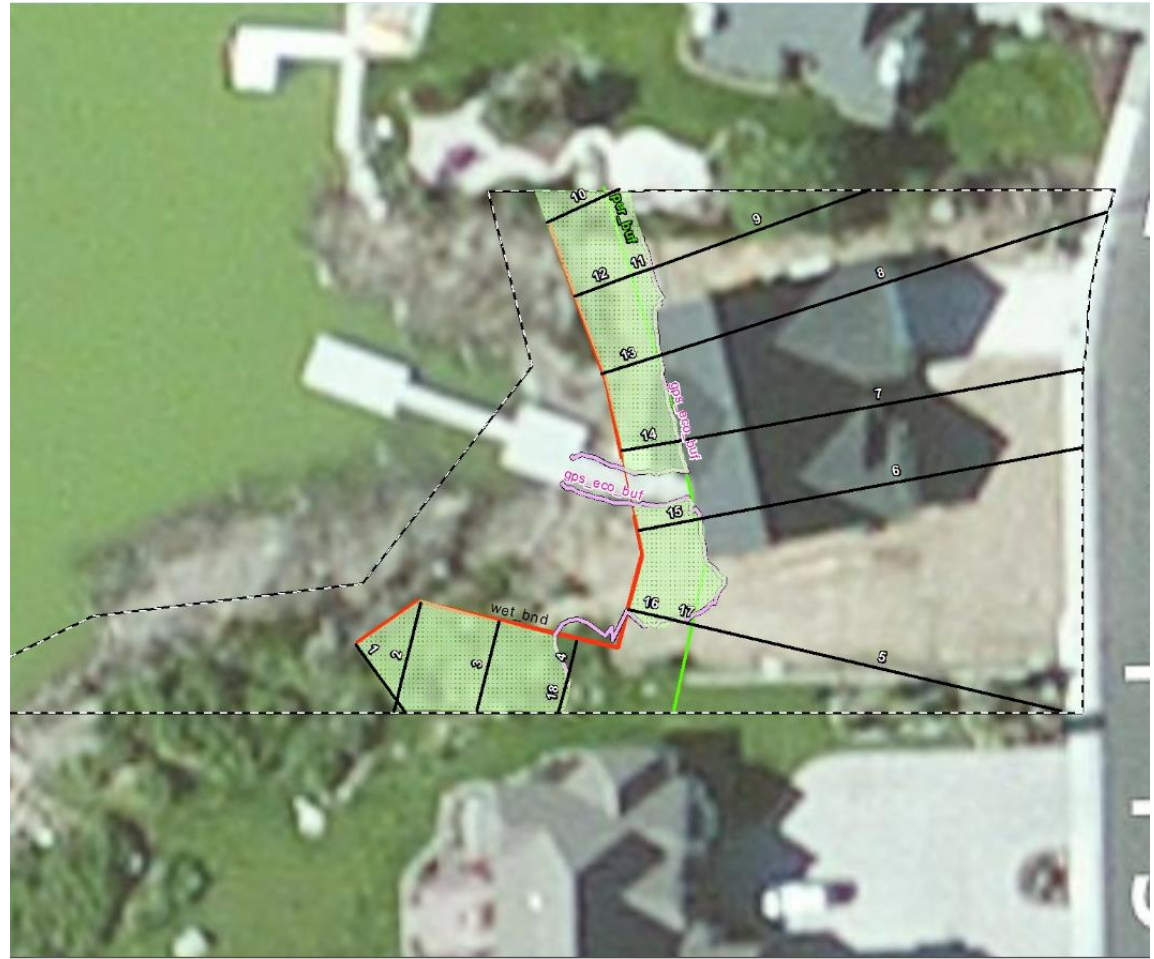
Characterize Ecological Condition of Buffer

% of wetland edge
adjacent to
“ecologically
significant buffer”

Width of ecologically
significant buffer

Area of ecologically
significant buffer

What are dominant
stressors?



Methods, Forms

Worksheet For Reviewing a Permit

Permit # _____

Date of permit _____ Date of CAO in effect when vested _____

Date of Review _____ Reviewed by: _____

Category of wetland for which permit is required

Category I _____

Category II _____

Category III _____

Category IV _____

Other _____

Basic buffer width specified in the permit _____ (including adjustment for habitat points and impact-reducing measures if properly documented) (N/A if not discussed in permit)

Allowable discretionary changes to buffer width

Averaging _____ how much _____

Reduction if enhanced _____ how much _____

Increases for _____ what conditions _____

Other _____

Other required _____

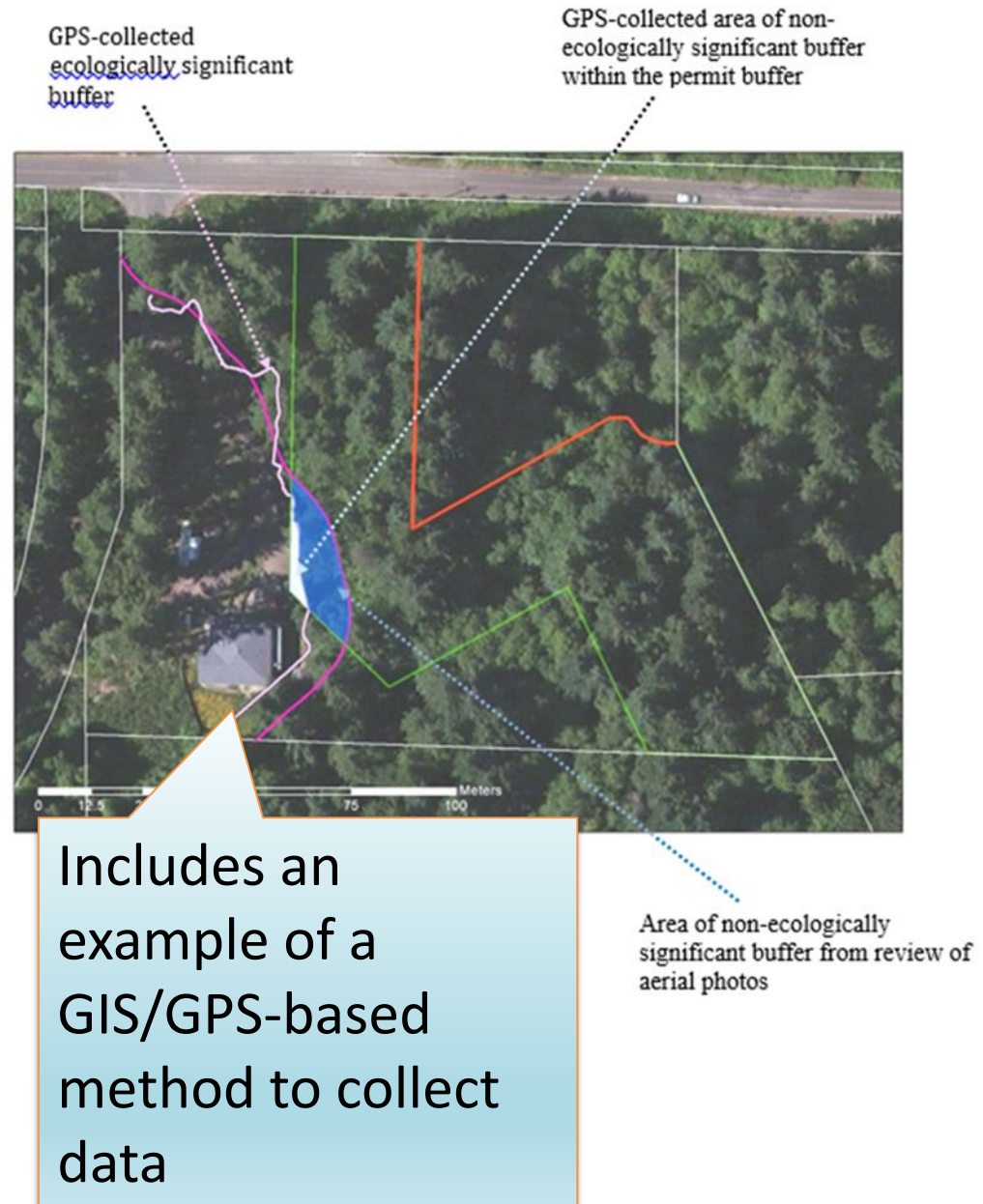
Enhanced _____

Significant _____

Feasible _____

Other _____

Includes samples of forms used in these steps.



New: Guide for Using Ecology Air Photos



DEPARTMENT OF
ECOLOGY
State of Washington

Washington Oblique Aerial Photography



September 2017
Publication no. 17-06-026

1997



2002



2006



2016



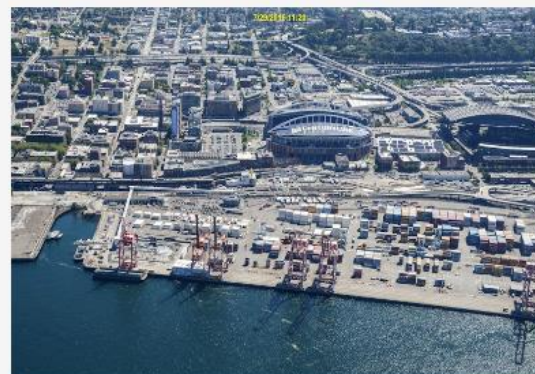
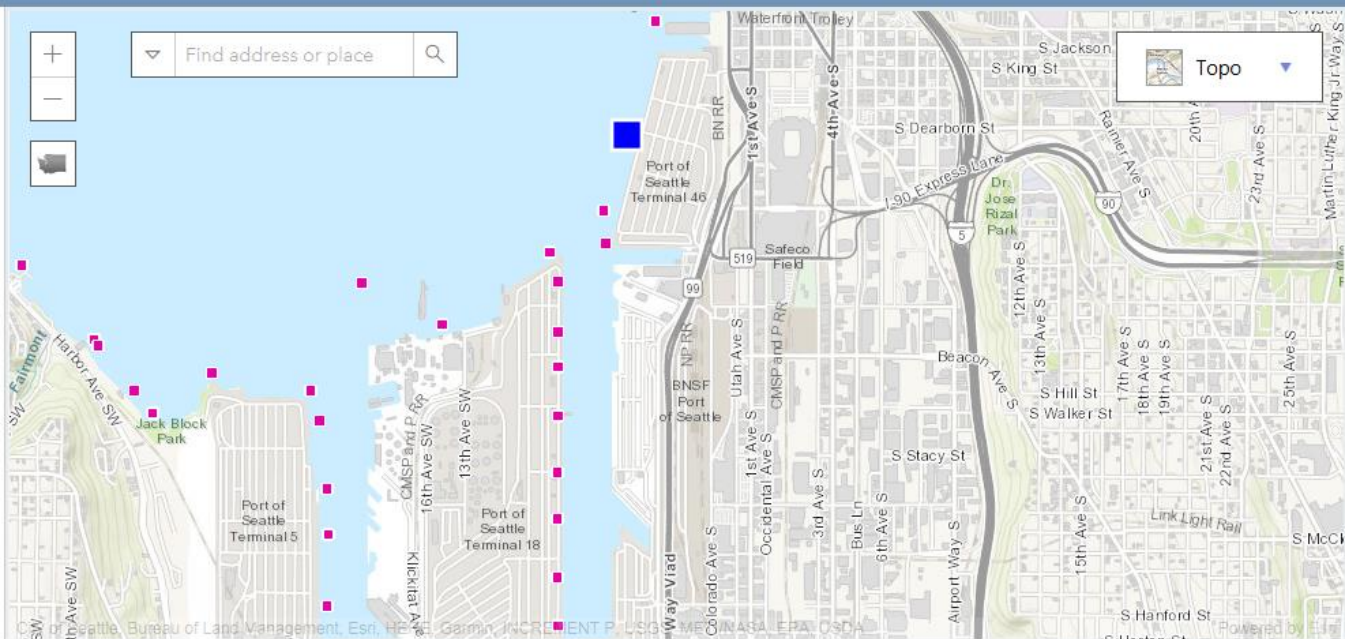
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Elliott Bay (7/29/2016)

2016 ☒

[Back](#)



2006 ☐

2000 ☐

1990 ☒



1970 ☒

