

Ebey's Prairie Watershed Stormwater Remediation Grants

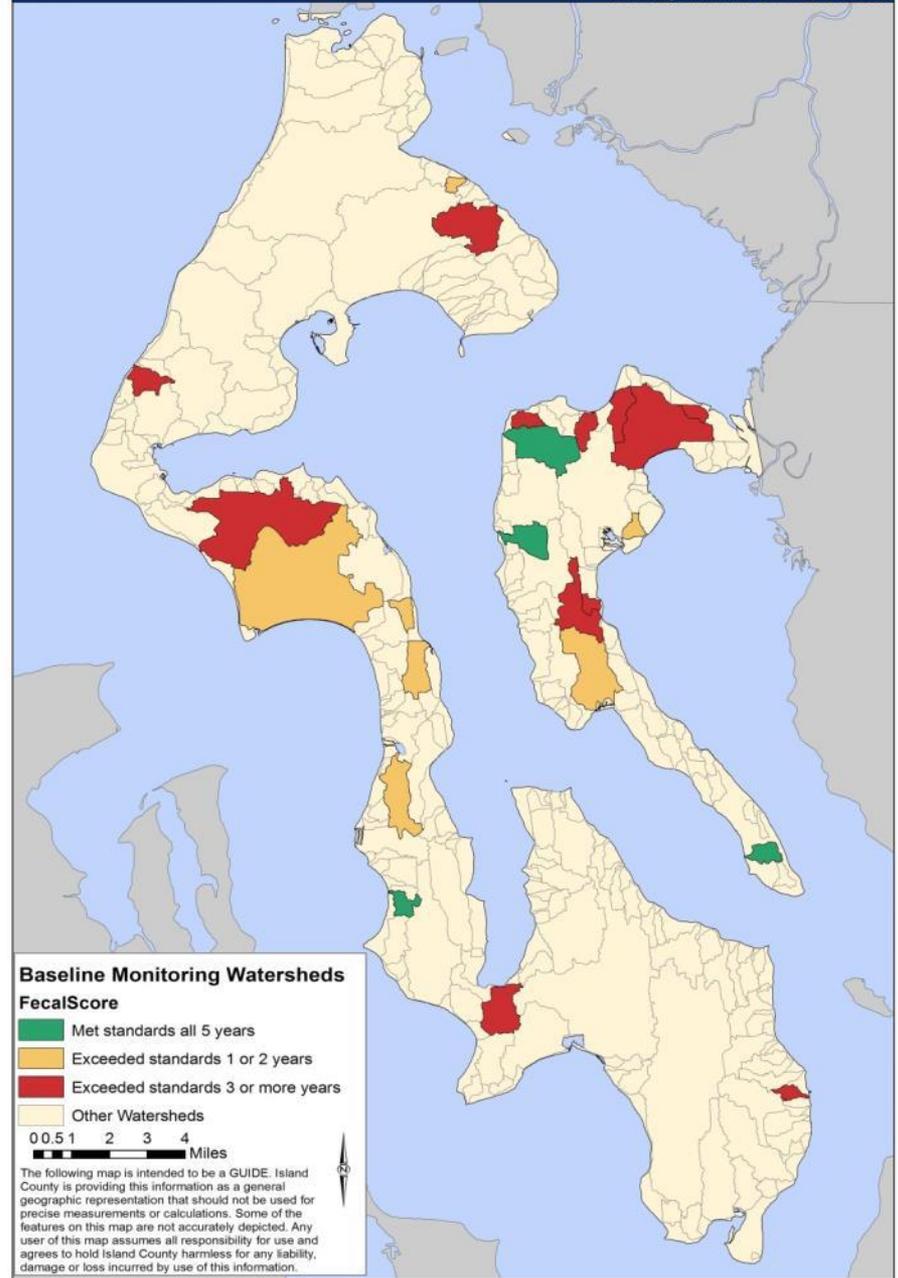


Fecal Coliform Results by Watershed

The Island County Surface Water Monitoring Program Report (2012) ranked Ebey's Prairie as having the lowest 5-year water quality index score of any of the watersheds they monitor.

5-Year Fecal Score for Baseline Watersheds, 2007-2011

Island County Environmental Health - Natural Resources



Ebey's Landing Fecal Coliform Data Summary

Fecal Coliform (CFU/100mL)						
Year	2007	2008	2009	2010	2011	2012
n	23	22	19	18	18	23
Minimum	<1	<1	<1	<1	<1	7
Maximum	3000	20500	12000	9900	73600	5600
Geometric Mean	105	76	250	89	86	114
% over 100	67%	38%	50%	47%	39%	39%
Exceedence?	Yes	Yes	Yes	Yes	Yes	Yes

The outfall at Ebey's Landing has exceeded state standards for Fecal Coliform every year since sampling began in 2007.

Summary of Grant Tasks

- Water Quality Monitoring
- Flow Monitoring
- Mapping of Stormwater Infrastructure
- Pollutant Source Tracking and ID
- Public Outreach & Education
- Technical Assistance & Farm Planning

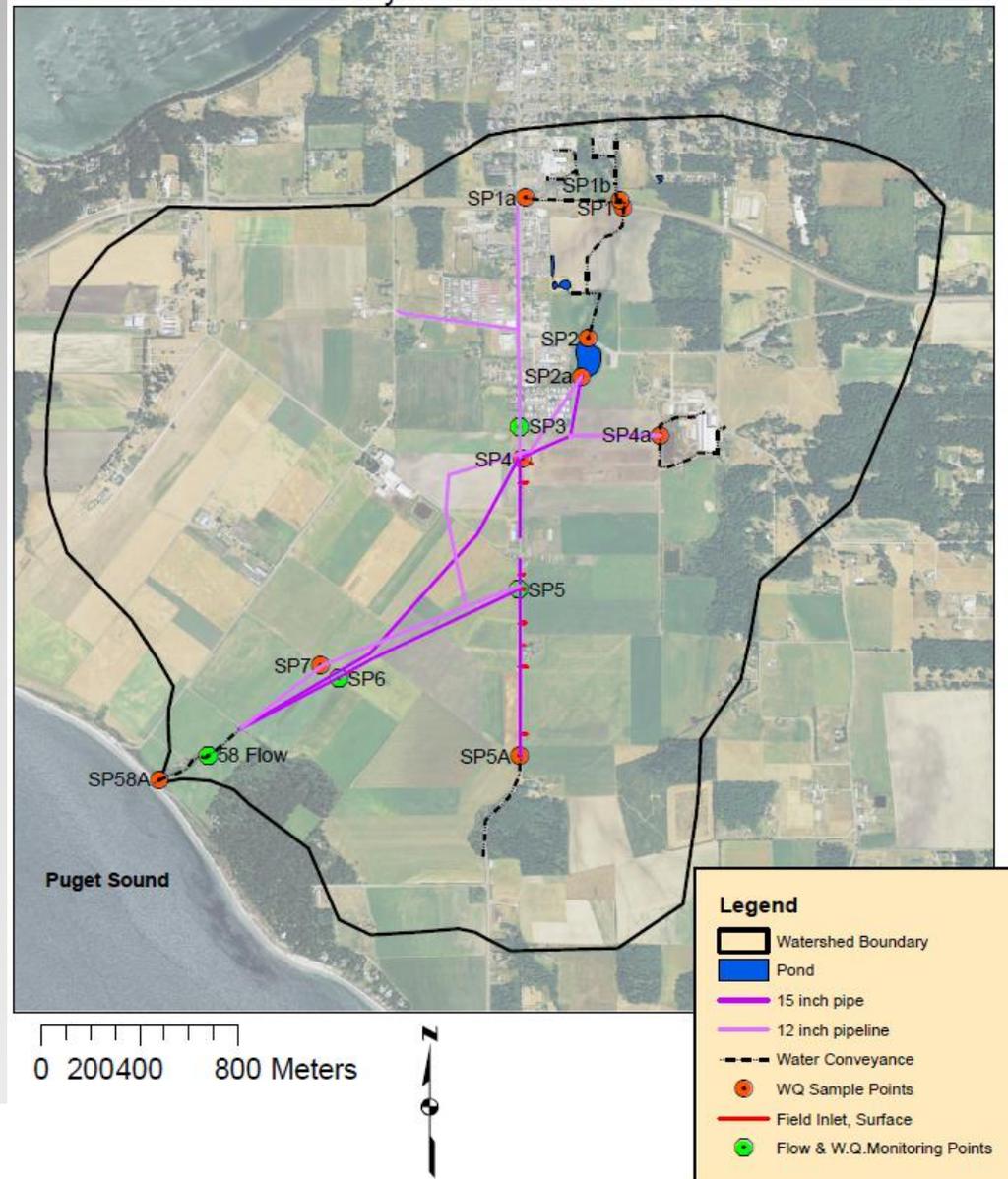


Ebey's Prairie Watershed Water Quality & Flow Monitoring



Stormwater Sampling Points

- Under this grant we began sampling water quality at 7 points.
- Flow data is taken at sample points SP3, SP5, and SP6.
- The County also takes water quality samples at the outfall, SP58a.



Ebey's Prairie Watershed Fecal Coliform Data Summary

April-June 2013

November 2013-June 2014

Sampling Site	# of visits	Geometric Mean	Minimum	Maximum	Standard Deviation	# of visits	Geometric Mean	Minimum	Maximum	Standard Deviation
58a	5	211	22	2,800	1,316	18	152	1	4,800	1,404
SP1	5	108	2	910	373	9	362	14	18,700	6,204
SP2	5	7	1	27	12	5	117	5	755	377
SP3	5	17	1	260	110	16	29	2	1,570	421
SP4	5	70	1	6,000	2,982	17	505	2	100,000	24,337
SP5	6	75	1	1,600	621	15	28	1	673	199
SP6	5	11	2	88	35	9	6	1	1,700	563
SP7	6	9	1	96	36	18	3	1	80	19

Flow Monitoring Sites

Flow Monitoring at Sample Site 3



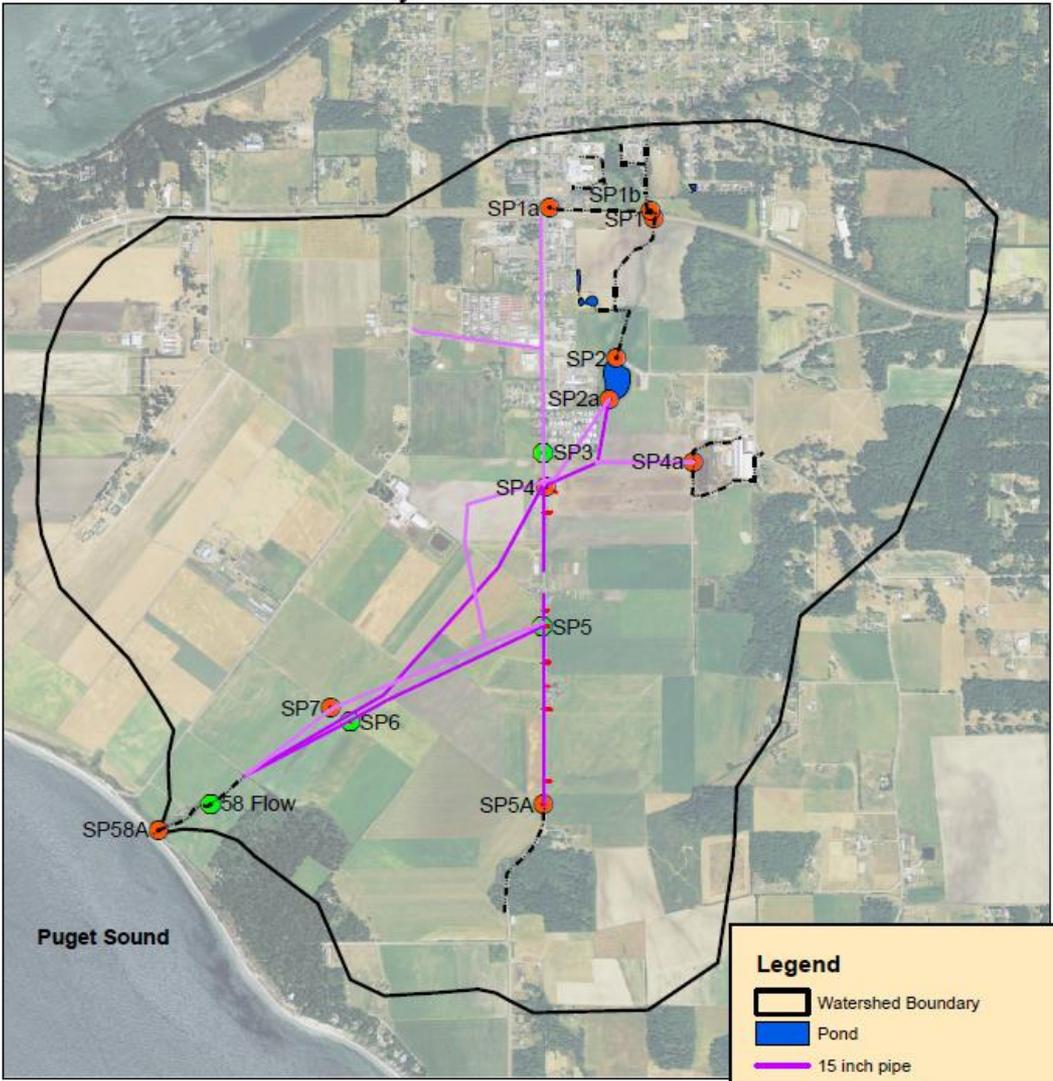
Flow Monitoring at Sample Site 6



Ebey's Prairie Watershed Stormwater Infrastructure



Stormwater Drainage Infrastructure



0 200 400 800 Meters



Legend

- Watershed Boundary
- Pond
- 15 inch pipe
- 12 inch pipeline
- Water Conveyance
- WQ Sample Points
- Field Inlet, Surface
- Flow & W.Q. Monitoring Points



01/30/2013



Ebey's Prairie Watershed Stormwater Pre-Design Grant



01/30/2013





- National Estuary Program (NEP) money administered through Department of Ecology.
- This grant used the data gathered in the previous grant to identify sites for stormwater treatment facility installations.
- WICD produced two 30% engineered pre-designs for stormwater treatment facilities within the watershed.



Data from the first grant was used to focus efforts where water quality problems have been documented, and where treatment facilities are most feasible.

Filter Strips

- Used to filter stormwater runoff and increase infiltration.
- National Parks has agreed to require filter strips on all NPS fields.





Phytoremediation swale in Coupeville

- Small-scale
- Located close to stormwater sources
- Town of Coupeville owns and maintains
- Water quality data shows that it removes pollutants

NPS1 Farm – WICD produced a preliminary design to collect and transfer polluted stormwater from the farm and divert it to an unused lagoon for later use as irrigation water during the dry season.

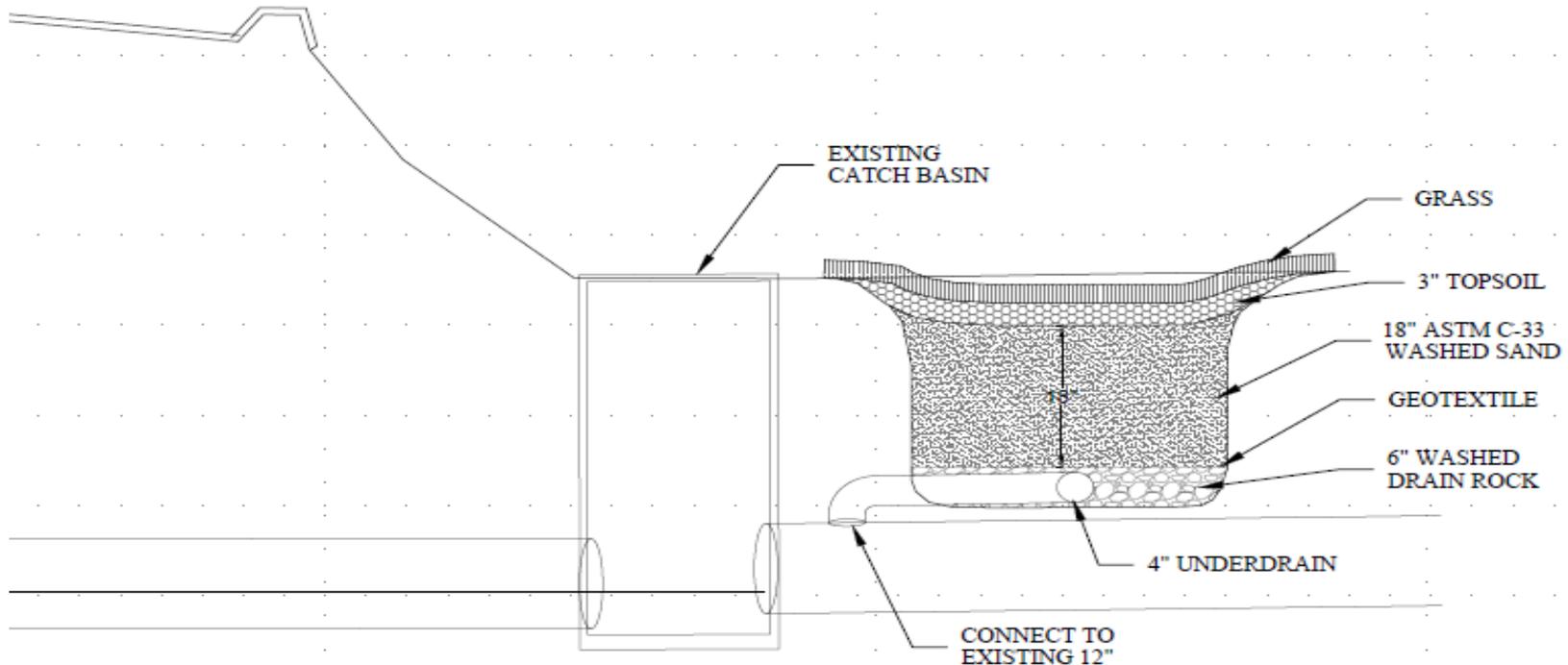


This system will eliminate stormwater discharge from the site, and provide valuable irrigation water during summer.



Engle Road Bioswale

East side Engle Rd.



Whidbey Island
Conservation District
1 NE 4th St. / PO Box 490
Coupeville, WA 98239
360-678-4708

**Engle Rd. Bioswale
Elevation Detail**

Date: _____ Sheet _____ of _____

Next Steps

- Complete the design and permitting work for the stormwater remediation projects.
- Secure funding for implementation.
- Construction!

