



Watershed Assessment of Manzanita

Streamflow restoration
and new funding tools



CITY OF
BAINBRIDGE ISLAND



Why?

Flow control needed

- Incised channels
- Minor flooding

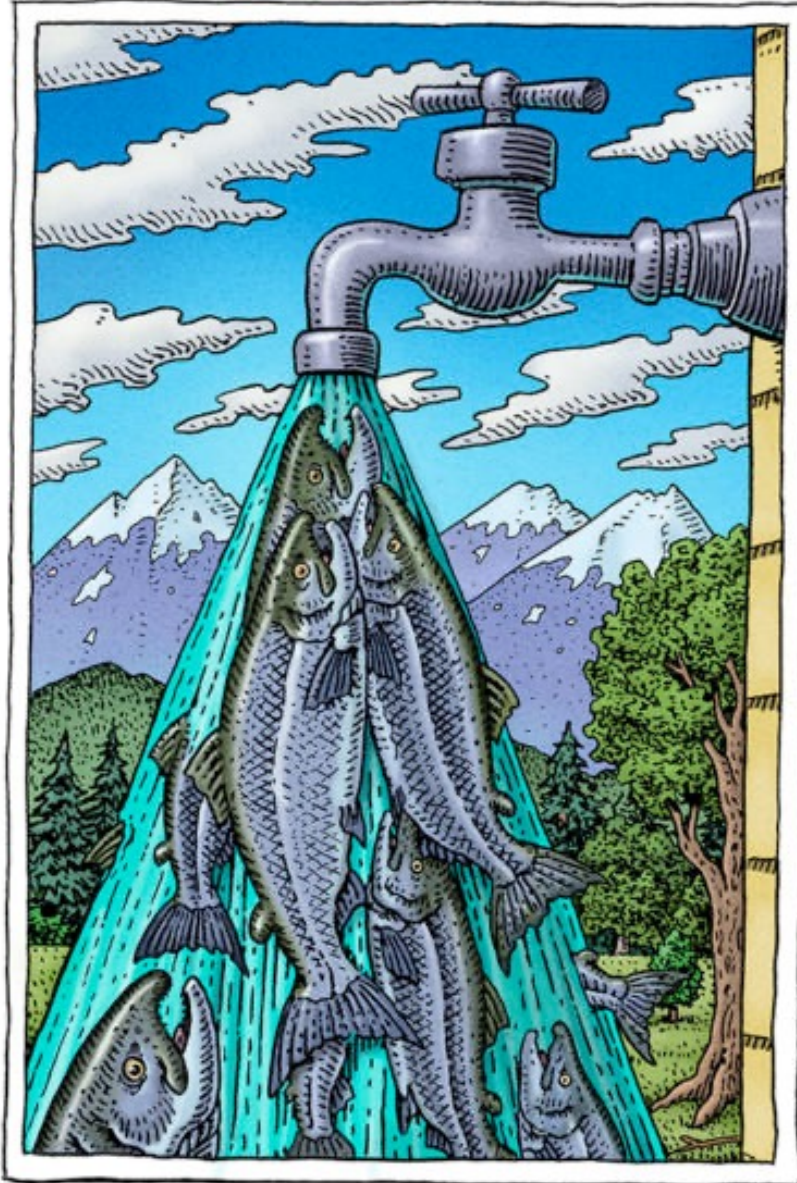


Why?

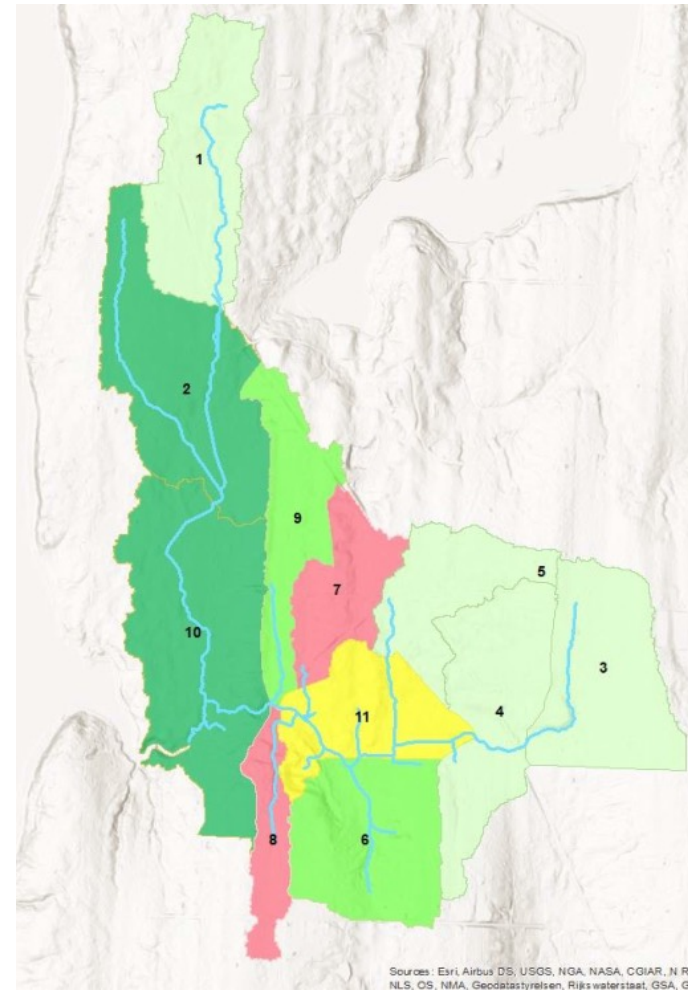
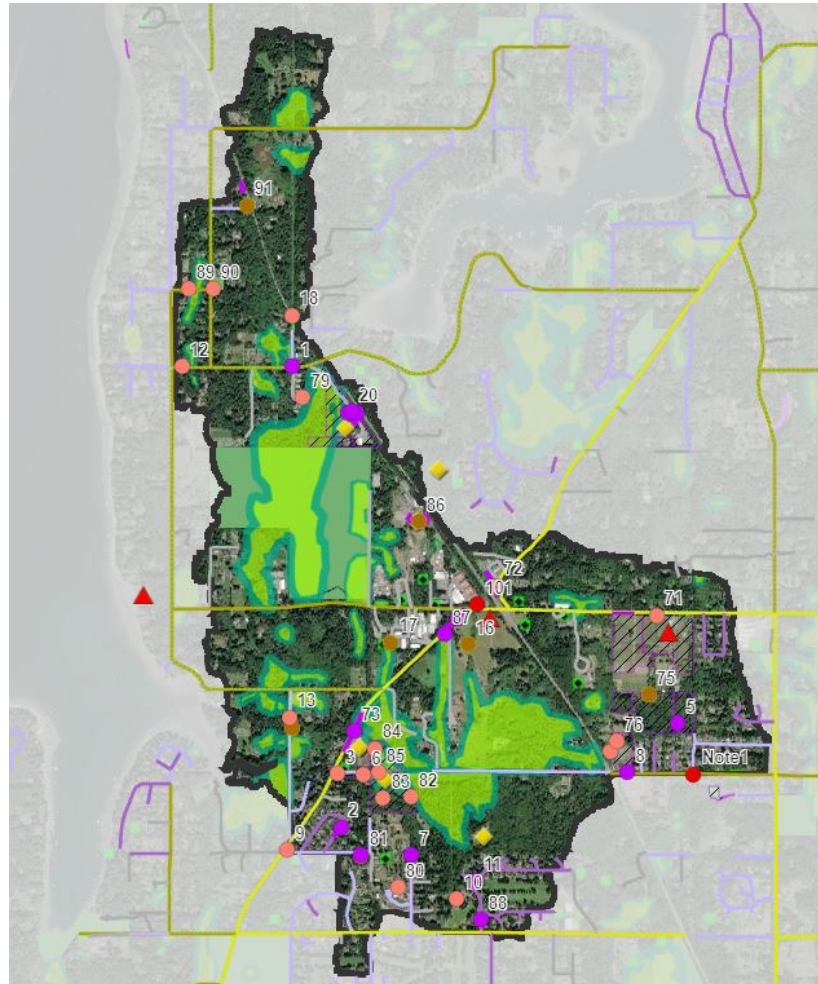
Local Principles

- Stormwater Mitigation
- SMAP Focus
- Climate Change Impacts
- Population Growth
- Salmon Recovery
- Macroinvertebrate Restoration
- Groundwater Management

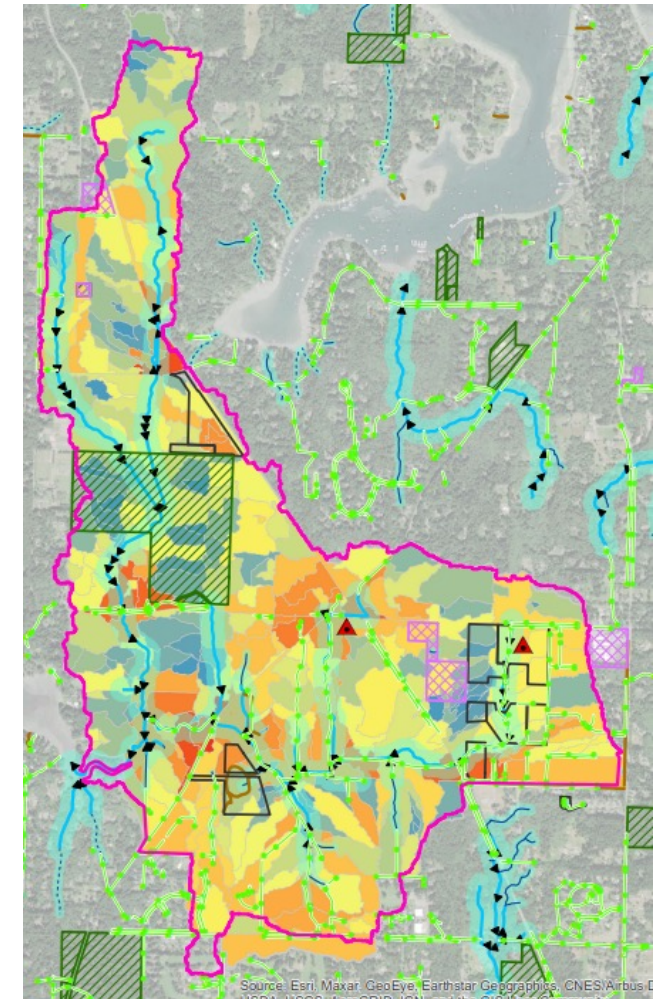
IT'S THEIR WATER TOO



What?



Sources: Esri, Airbus DS, USGS, NOAA, NASA, CGIAR, N. Robi
NLS, OS, NMA, Geodatasystemen, Rijkswaterstaat, GSA, Geo

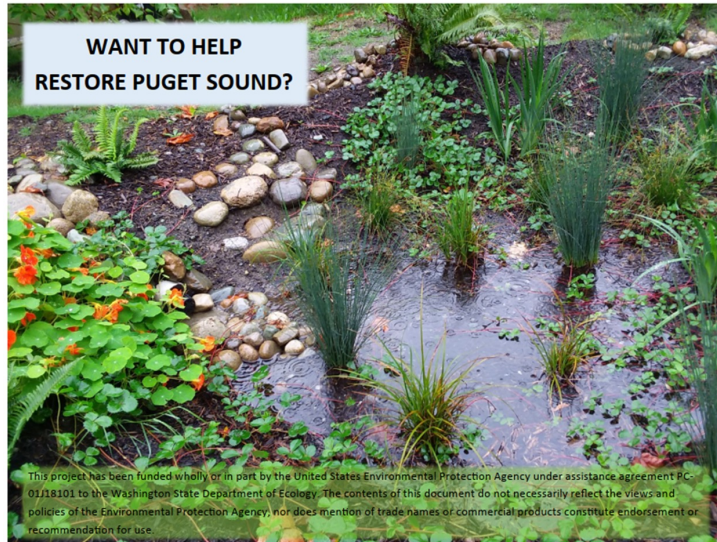


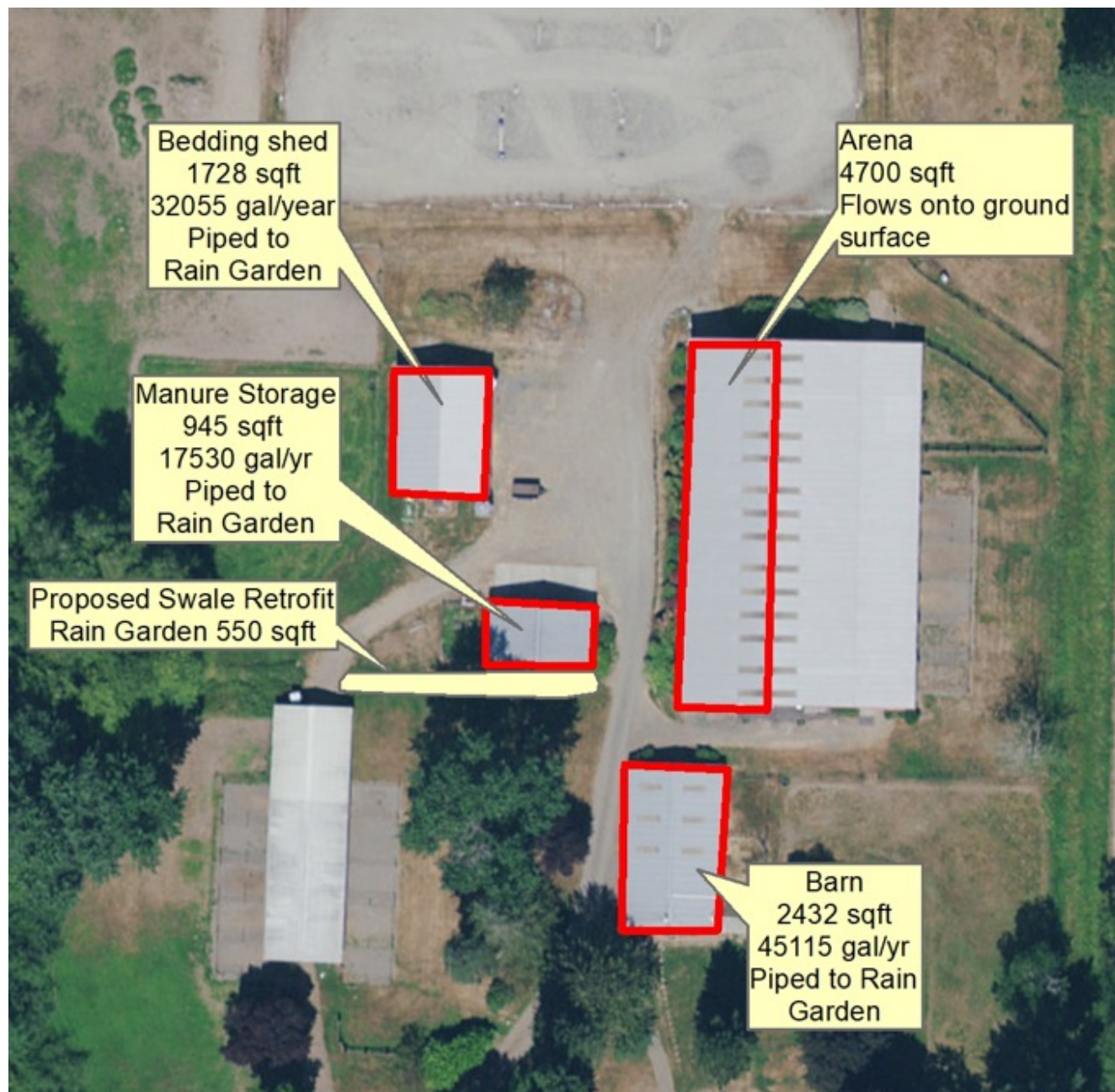
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus
USNA, USGS, AeroGRID, IGN, and the GIS User Community

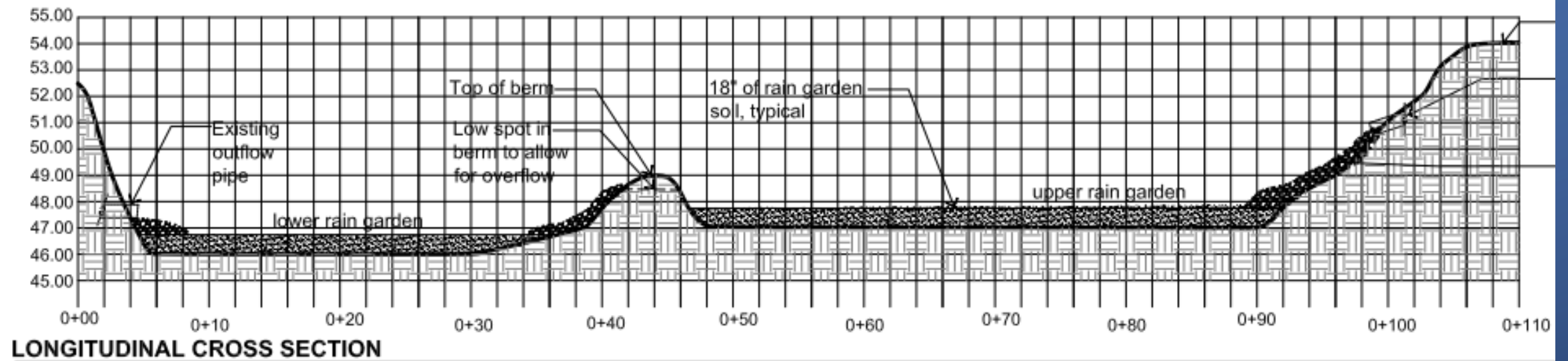
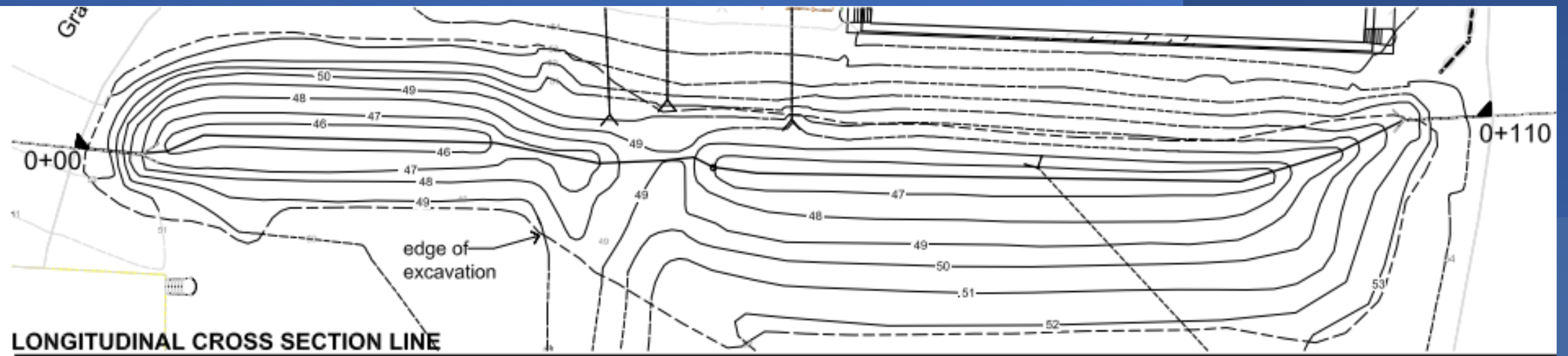


Private Property Outreach

- Partnership with Kitsap Conservation District for landowner outreach
- Also providing technical assistance with low impact development design/construction.







Funding

- Looking at other's successes and failures
- Understanding potential use by future development
- Estimating costs and appetite of a new program for BI



Program	Fee Rate	Fee Unit	Standardized (\$/SF imperv)	Fee Frequency
Washington, DC	\$3.78	\$/gal retention	\$2.83/yr	Annual
Chattanooga	\$45	\$/CF retention	\$3.75	One-time
Grand Rapids	\$8.24	\$/gal retention	\$21.54	One-time
	\$5.26	\$/gal retention maintenance		
Prince George's Co	\$16,000	\$/acre imperv	\$0.36	One-time
Aspen	\$70	\$/CF retention	\$4.89	One-time
Portland	\$3.70	\$/SF imperv	\$3.70	One-time
Saint Paul	Linear: \$75,000 Parcel: \$100,000	\$/acre imperv	\$2.29	One-time
Tacoma	\$0.97 (flow ctrl)	\$/SF imperv	\$0.97	One-time
San Francisco	\$920,000	\$/acre imperv	\$21.00	One-time

Status

Design

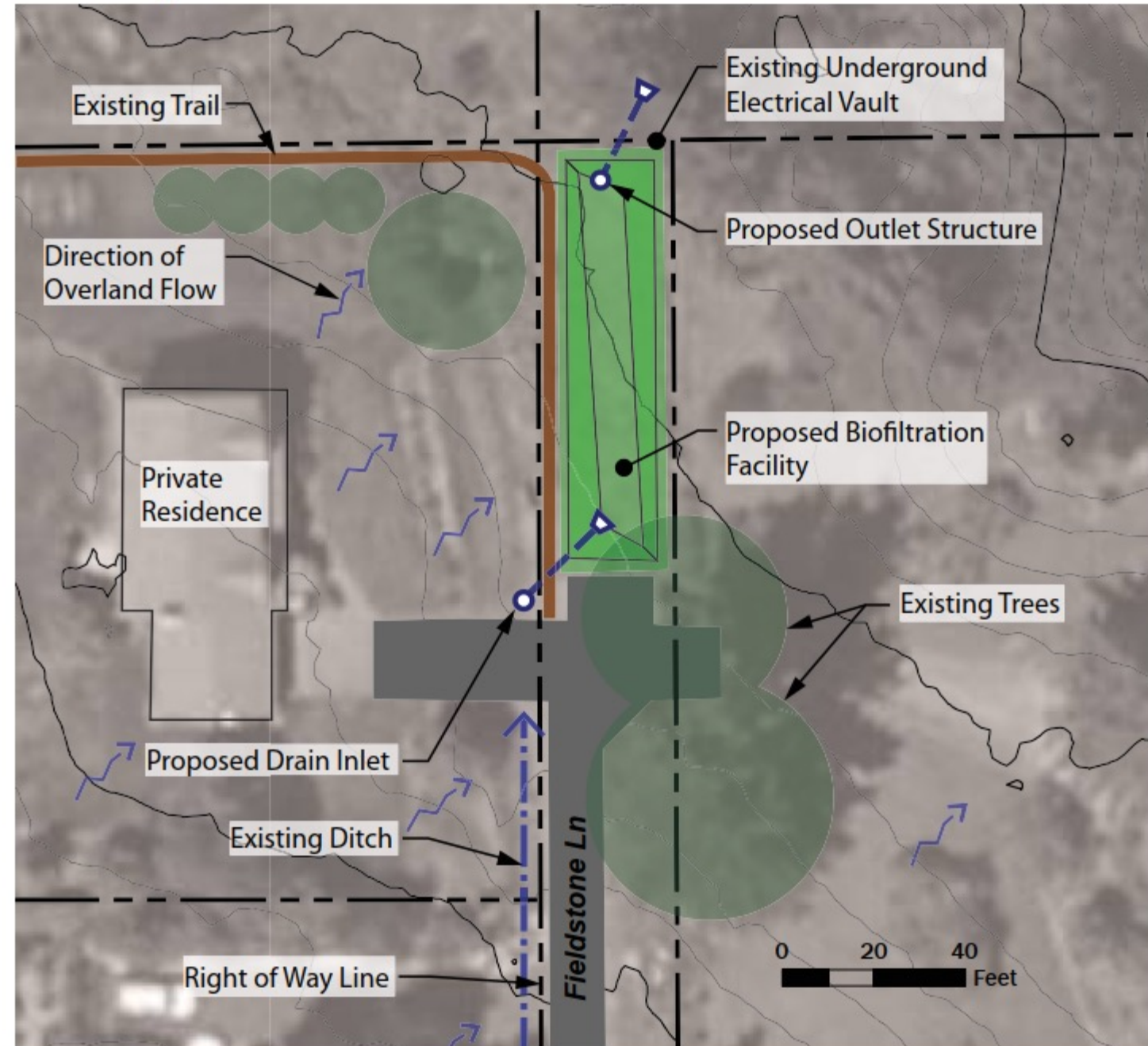
- Completed 30% design work on Fieldstone Lane Bioretention Retrofit
- Completed 100 % design and bid package for Bainbridge Island Native Food Forest Stormwater Park



Status

Fieldstone Lane Bioretention Retrofit

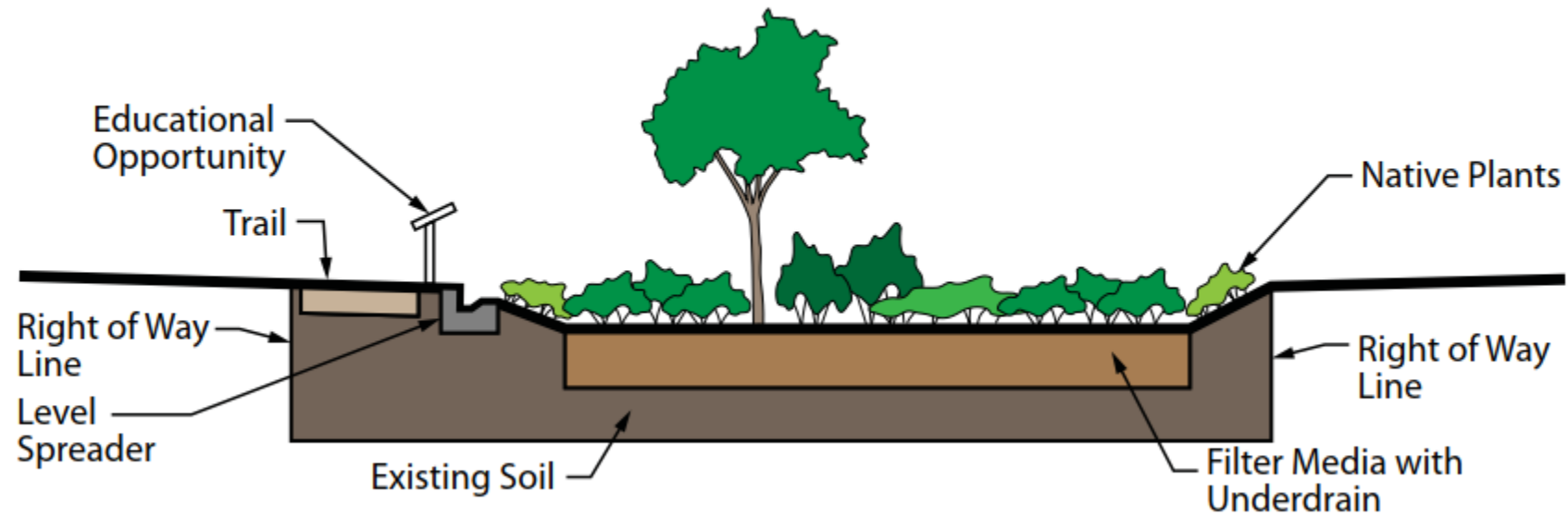
Concept Plan



Status

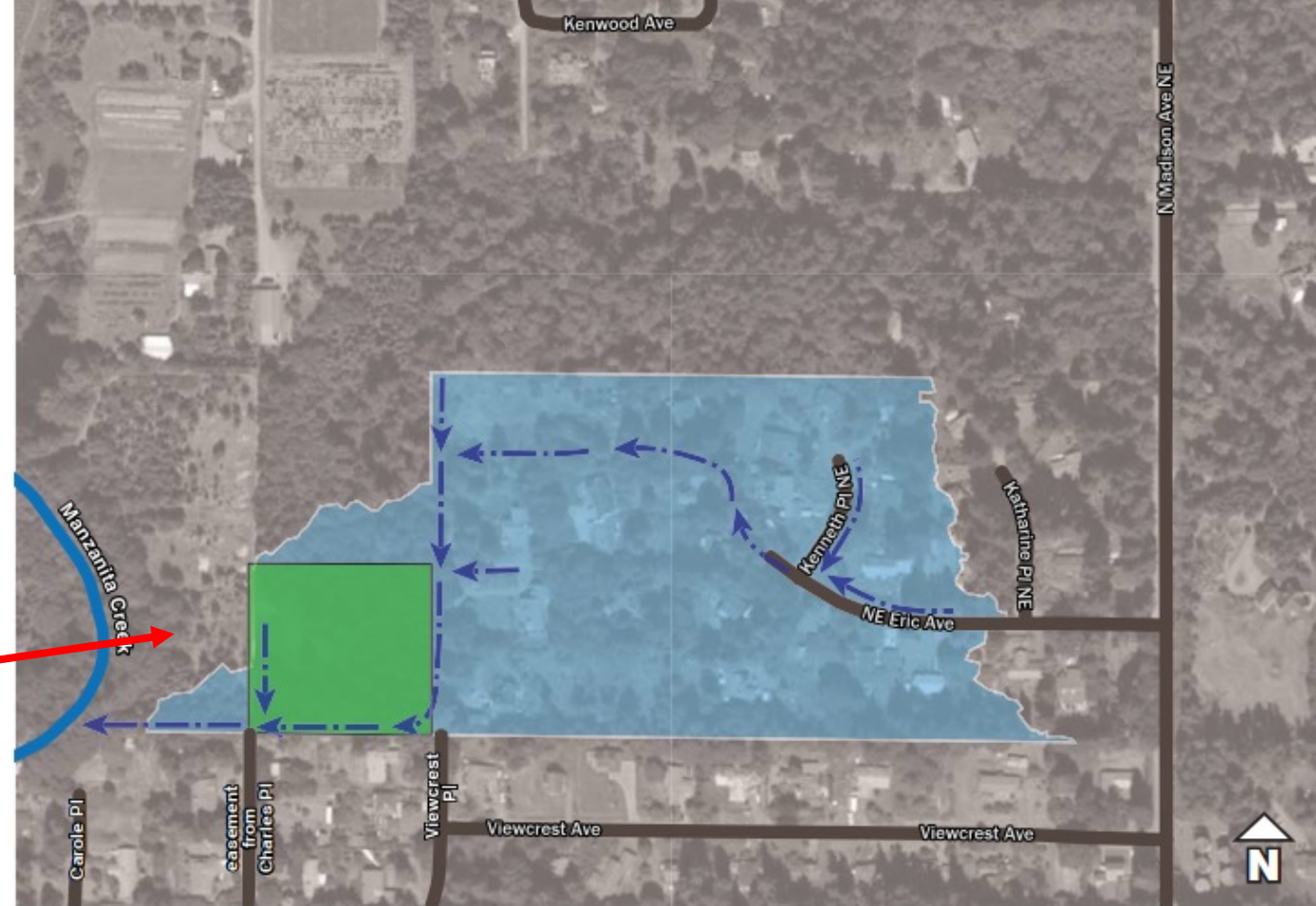
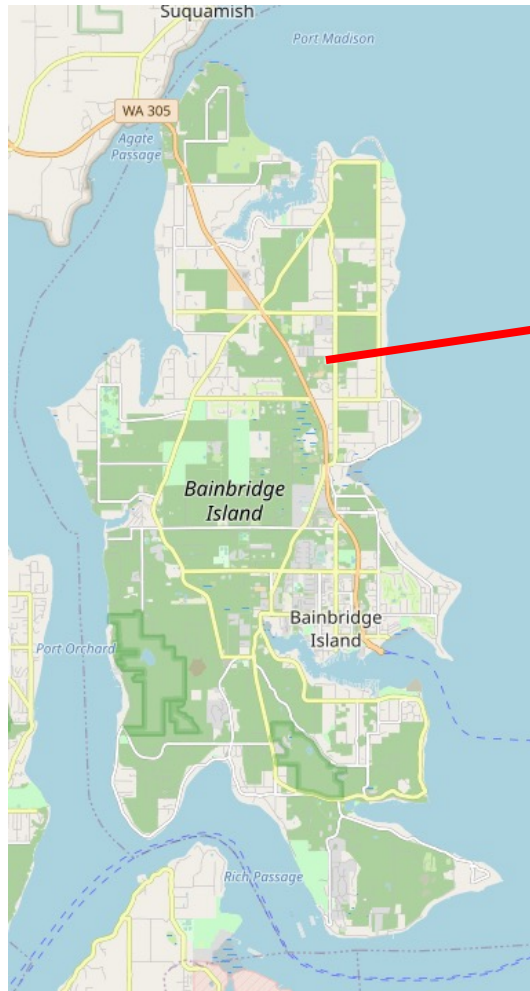
Fieldstone Lane Bioretention Retrofit

Concept Section

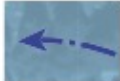


Status

Bainbridge Island Native Food Forest Stormwater Park



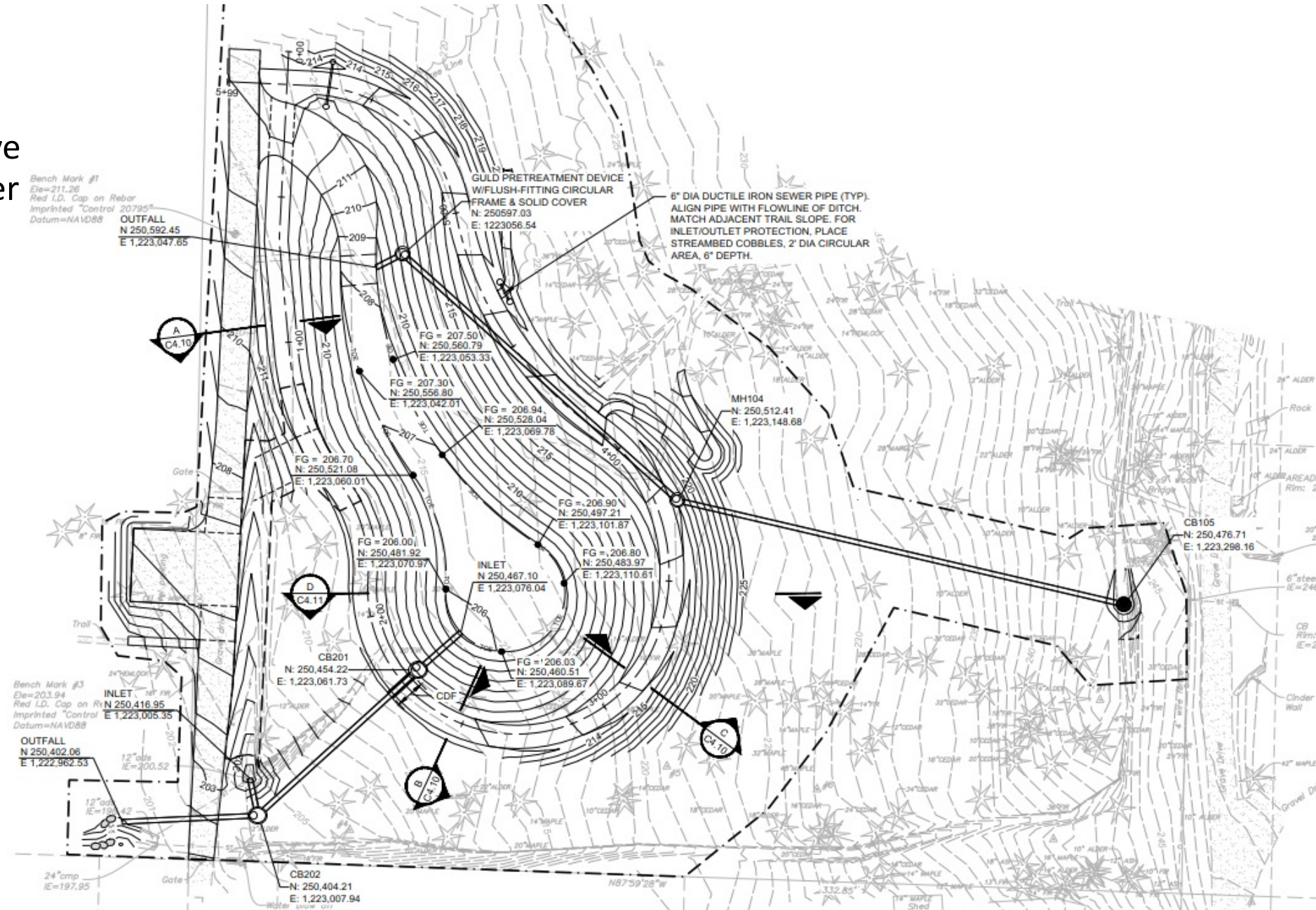
Legend

-  Project Site
-  Catchment Area
-  Channelized Flow

0 100 200 400
Feet

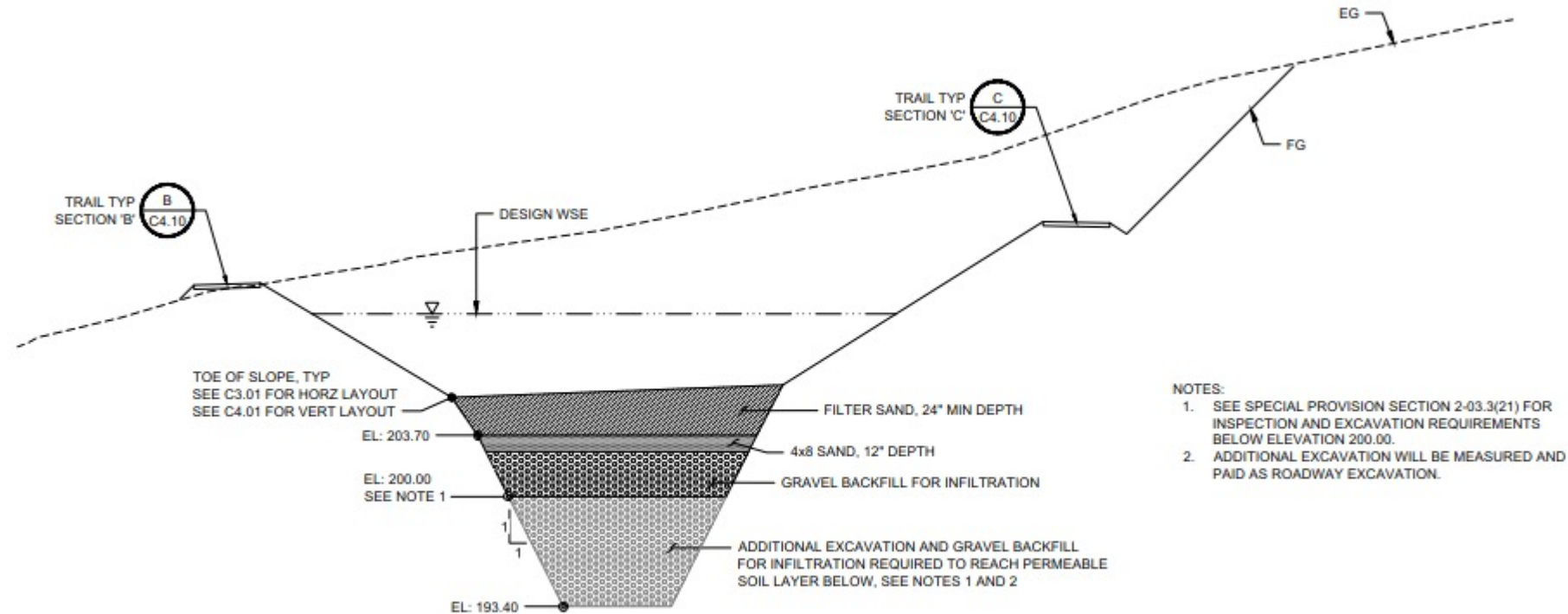


Bainbridge Island Native Food Forest Stormwater Park



Status

Bainbridge Island Native Food Forest Stormwater Park



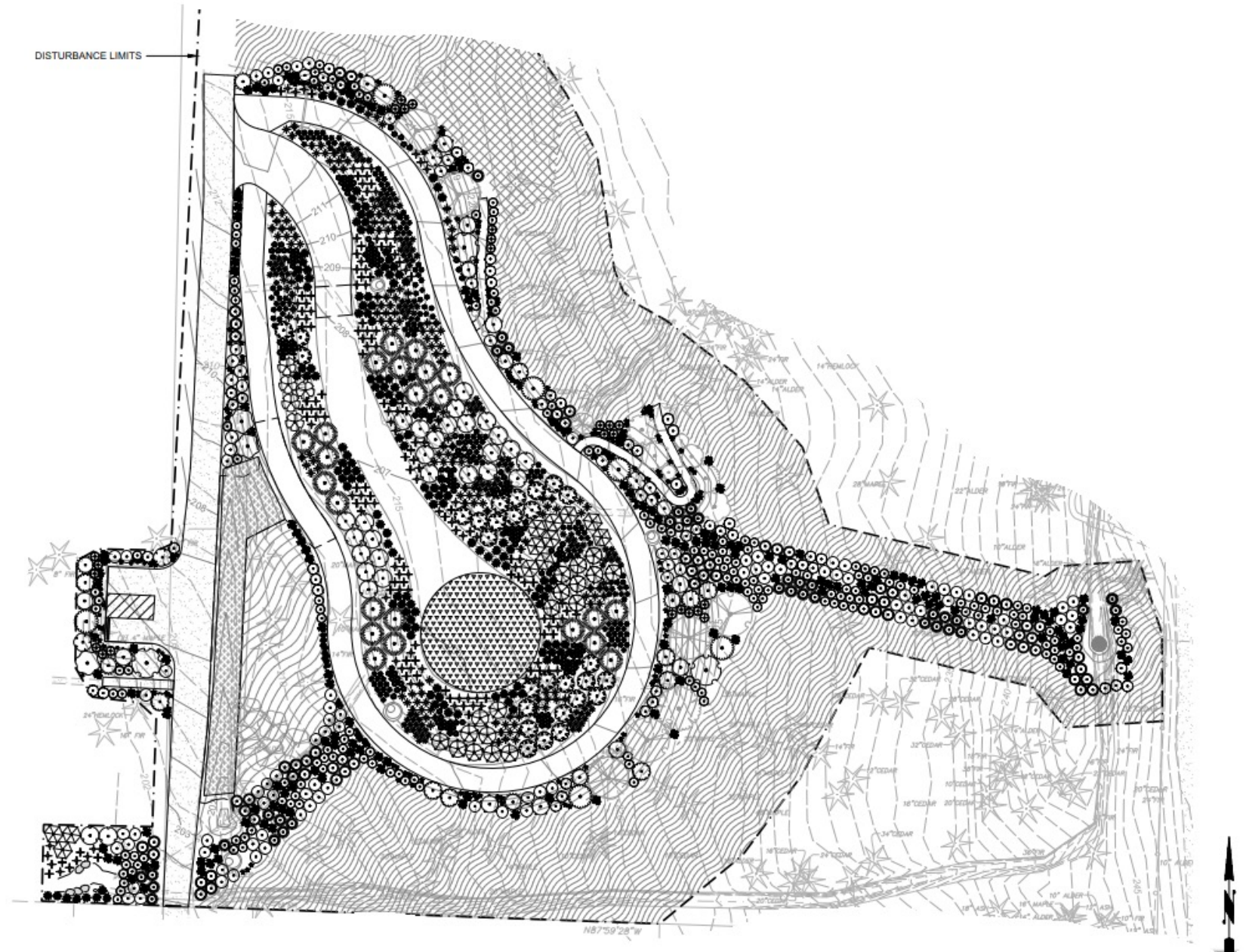
CROSS SECTION - SAND FILTER

SCALE: NTS

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C4.01

Status

Bainbridge Island Native Food Forest Stormwater Park





Thank You

- **Christian Berg**
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City of Bainbridge Island
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- *This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement PC-01J18101 to the Washington State Department of Ecology. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.*

