WA Dairies Near Rivers & Streams

This is a summary description of dairies in Washington State that are near rivers and streams, as determined by a review of *County Maps with Dairy Locations from 2018 WSDA Agricultural Land Use with Dairies - ARC GIS Hub.*

Two of the dairies in this list have NPDES permits, one in Whatcom County and one in King County. Ecology's Permitting and Reporting Information System (PARIS) does not contain information on the lagoons for these facilities, so we do not know whether these structures have synthetic liners or not, and we do not know the lagoon depths. Ecology does not collect lagoon data on unpermitted dairies.

This quick screening yielded 51 dairies. Maps for those locations were copied from *Google Maps*. FEMA maps were used for flood plain data. Soil maps were obtained from the *NRCS Soil Survey* website. Dairy size was obtained from the *WA Geospatial Data Port – WA Dairies*. Data on contaminant levels in WA rivers and streams was obtained from Ecology's *Environmental Information Management System*.

Most of the identified dairies are in Whatcom County where rivers and streams abound. 29 of the dairies are in Whatcom, 6 in Skagit, 8 in Snohomish, 2 in King, 2 in Grays Harbor, 1 in Thurston, 1 in Lewis, and 2 in Yakima.

There are 19 large dairies (> 700 milk cows), 22 medium sized dairies (200 – 699 milk cows) and 10 small dairies (< 200 milk cows)

The average distance of lagoons to rivers and streams is 1,139 ft, but this is rather arbitrary. If we eliminate the Elma Dairy and the Bayside Dairy the average is 1,033 ft. The range is 100 ft to 4,000 ft.

- 100 500 ft = 19 dairies
- > 500 ft to 1,000 ft = 6 dairies
- > 1,000 ft to 1,500 ft = 12 dairies
- > 1,500 ft to 2,000 ft = 6 dairies
- > 2,000 ft to 2,500 ft = 6 dairies
- > 2,500 ft to 4,000 ft = 2 dairies

There are 13 dairies located in flood plains according to FEMA maps. There were no FEMA maps for the 6 dairies in Skagit County.

Ecology has documented water pollution for rivers and streams next to 28 of the dairies. Ecology's data on water pollution is mixed or unavailable for the other 23 dairies.

NRCS Soil Data showed:

- Poorly Drained Soil 11 dairies
- Somewhat Poorly Drained Soil 6 dairies
- Moderately Well Drained Soil 15 dairies
- Moderately Well Drained/ Excessively Drained Soil 1 dairy
- Moderately Well Drained/Poorly Drained Soil 3 dairies
- Moderately Well Drained/Somewhat Poorly Drained Soil 2 dairies
- Moderately Well Drained/Well Drained Soil 1 dairy
- Well Drained Soil 7 dairies
- Well Drained/ Somewhat Poorly Drained Soil 1 dairy
- Somewhat Excessively Drained Soil 2 dairies
- Excessively Drained Soil 1 dairy
- Well Drained/Excessively Drained/Somewhat Poorly Drained Soil 1 dairy

Depth to the water table ranged from 60 cm (24 inches) to > 200 cm (> 79 inches). 41 dairies had depth to groundwater less than 107 cm (42 inches). 10 dairies had depth to groundwater greater than 200 cm (79 inches).

FOTC believes there is a high likelihood of flow from manure lagoons to groundwater on dairies where the depth to groundwater is less than 42 inches.

Water flow from groundwater to surface water and from surface water to groundwater is well documented in the literature. But description of the flow at each of the 51 sites is beyond the scope of this overview.

FOTC believes there is increased risk of surface water pollution due to runoff on dairies where the soil is poorly drained. But proving this is beyond the scope of this overview.

Summary of Data

			Dairy	Distance	In Flood	Polluted	Depth to W.	Drainage	Lagoon
Facility Name	County	Permit #	Size	Lagoon to SW	Plain?	Stream?	Table in cm	Class	Depth
Fresh Breeze Organic									
Dairy	Whatcom		M	1,100	No	Yes	80	SPD	?
Van der Haak Farm	Whatcom		M	1,800	No	Yes	80 – 90	SPD	?
Steensma Dairy	Whatcom		M	1,800	No	Yes	80	SPD	?
Cedar Park Dairy	Whatcom		M	2,200	No	Yes	80 - 92	SPD	?
James Dairy	Whatcom		S	1,500	No	?	61 - 62	SPD/MWD	?
Dickinson Farms	Whatcom		S	450	Yes	Yes	> 200	WD	?
Riverside Dairy	Whatcom		M	200	Yes	Yes	> 200	MWD	?
Edelweiss Dairy	Whatcom		S	200	Yes	Yes	> 200	WD	?
Eagle Mill Farms & DJ Noon Challenge	Whatcom		L	1,400	Yes	Yes	92	MWD	?
Van Berkum & Sons	Whatcom		L	350	Yes	Yes	60	PD	?
Noteboom Farm	Whatcom		M	2,400	Yes	Yes	60	PD	?
Vande Hoef Dairy	Whatcom		L	1,600	Partially	Yes	> 200	WD	?
Dyna Moo	Whatcom		L	1,400	No	Yes	> 200	WD	?
Van Dellen Farms	Whatcom		M	2,500	No	Yes	92	MWD	?
Coldstream Farms	Whatcom		L	1,400	Yes	Yes	> 200	WD	?
Appel Brothers Dairy	Whatcom		M	2,200	No	Yes	> 200	MWD	?
Mendoza Dairy	Whatcom		M	200	No	?	60 - 92	PD/MWD	?
Hopewell Farms	Whatcom		S	1,200	No	?	60	PD	?
Pete De Jager Dairy	Whatcom		S	200	Yes	?	92	MWD	?
Udder Pride Dairy	Whatcom		M	1,400	No	?	92	MWD	?
TC Berkum Farm	Whatcom		M	2,100	No	?	92	MWD	?
JV Dairy	Whatcom	WAG994364	L	100	No	?	60 - 91	MWD/PD	?
Maarhuis Dairy	Whatcom		L	700	No	?	92	MWD	?
Hillview Dairy	Whatcom		M	900	No	?	60	PD	?

Vreugdenhil Farms	Whatcom		L	200	No	?	60	PD	?
Sundstrom Family									
Farms	Whatcom		S	800	No	Yes	80	SPD	?
Paradise Jerseys	Whatcom		M	500	No	Yes	45 - 61	MWD/PD	?
BJ Blok & Sons	Whatcom		L	800	No	?	> 200	WD	?
C & M Lagerwey	Whatcom		S	450	No	?	80	SPD	?
Baumgardner Dairy	Skagit		M	450	?	?	92	MWD/ED	?
High Valley Dairy	Skagit		L	200	?	Yes	30 - 54	MWD/SPD	?
Edensfall	Skagit		M	1,800	?	Yes	107	MWD	?
Bayside Dairy	Skagit		L	3,500	?	Yes	60	PD	?
Harmony Dairy	Skagit		L	1,800	?	Yes	35 - 60	PD	?
River Bend Dairy	Skagit		M	750	?	Yes	35 - 70	PD	?
SDI Farms #2	Snohomish		S	2,000	No	Yes	92	MWD	?
Normanna Farm	Snohomish		S	150	No	Yes	92	MWD	?
Natural Milk	Snohomish		L	1,500	No	Yes	90	PD	?
Natural Milk Farms 2	Snohomish		M	300	No	Yes	90 - 92	WD/MWD	?
Frohning Dairy	Snohomish		S	1,000	Yes	?	92	MWD	?
John Deck Dairy	Snohomish		M	1,200	Yes	?	92	MWD	?
Werkhoven Dairy	Snohomish		L	1,200	Yes	?	92	MWD	?
People's Creek Dairy	Snohomish		M	300	No	?	90 - 92	PD	?
Green Acres	King		M	150	Yes	?	92	ED	?
Keller Dairy	King	WAG994453	L	400	Yes	?	107 - 137	WD	?
Jose Torres Dairy	Grays Harbor		M	1,200	No	?	60	MWD	?
Elma Dairy	Grays Harbor		L	4,000	No	?	> 200	SED	?
James Road Dairy	Thurston		L	100	No	?	> 200	SED	?
Osborn Dairy	Lewis		M	350	No	?	69 - 92	PD	?
Double P Dairy	Yakima		L	2,500	No	Yes	76 -> 200	WD/SPD	?
Riverview	Yakima		L	1,200	No	Yes	92 -> 200	WD/ED/SPD	?

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Sources of Data with Links

County Maps with Dairy Locations from 2018 WSDA Agricultural Land Use with Dairies - ARC GIS Hub, at https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=46.515663%2C-120.387262%2C12.00

Aerial maps of dairies from Google Maps at https://www.google.com/maps

FEMA maps of flood plains from

https://msc.fema.gov/portal/search?AddressQuery=Snohomish%20County%20WA#searchresultsanchor

Ecology Water Quality Data from

https://apps.ecology.wa.gov/eim/search/Eim/EIMSearchResults.aspx?ResultType=EIMTabs&LocationWRIAs=1

WA Geospatial Data Port – WA Dairies from

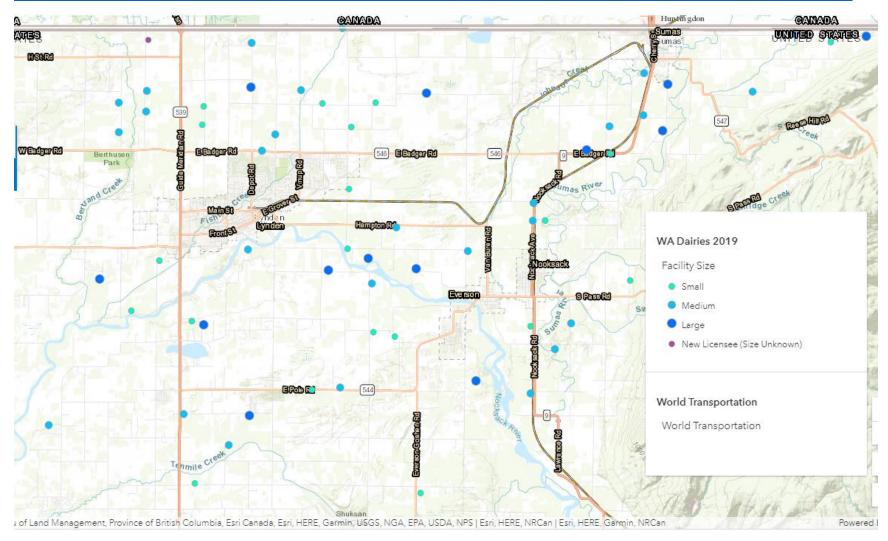
 $\frac{https://geo.wa.gov/datasets/26add7da921d4aa68ccb50ce191c6182_0/explore?location=47.458863\%2C-119.576737\%2C7.00\&showTable=true$

Natural Resources Conservation Service Soil Survey from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

WA Ecology Permitting and Reporting Information System from https://apps.ecology.wa.gov/paris/PermitLookup.aspx

Whatcom County

 $\underline{https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520\%2C-122.361976\%2C12.00}$



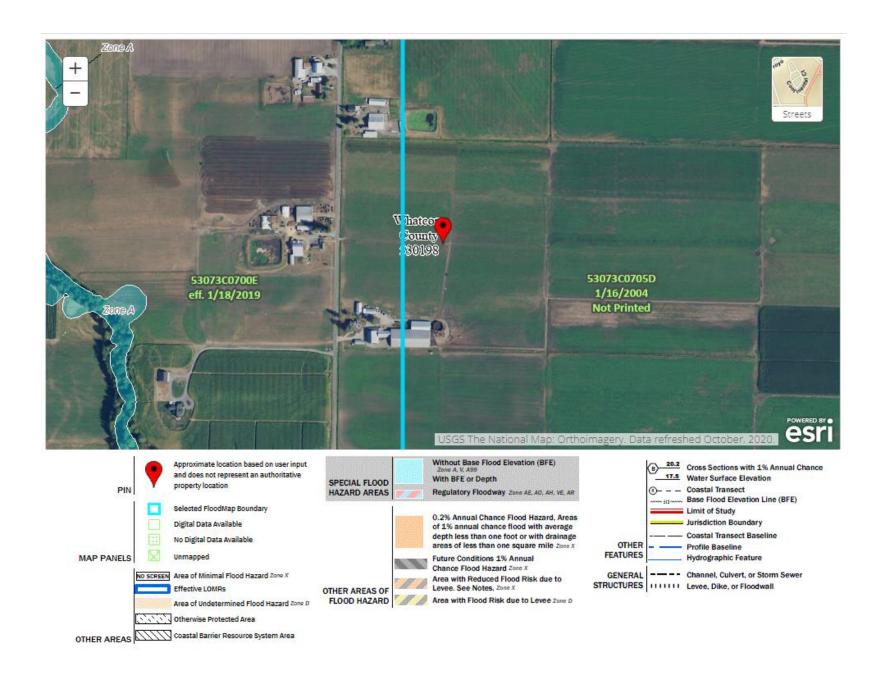
Bertrand Creek

Fresh Breeze Organic Dairy

9412 Jackman Road, Lynden WA

 \approx 1,100 feet from lagoon to Bertrand Creek







Depth to Water Table: 80 cm



Drainage Class: Somewhat Poorly Drained

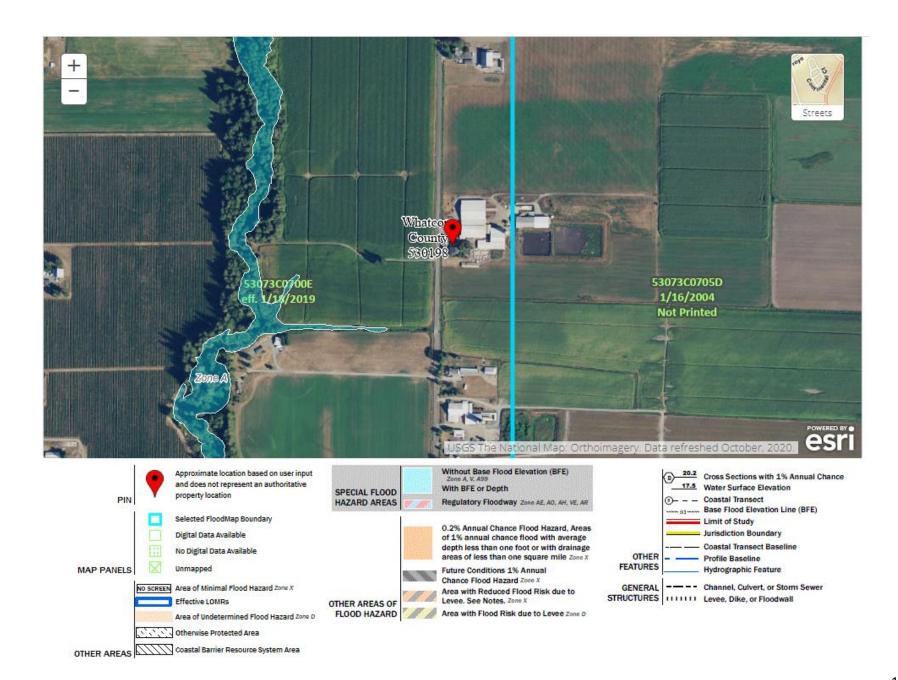
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Van der Haak Farm

9220 Jackman Road, Lynden WA

 \approx 1,800 feet from Lagoon to Bertrand Creek

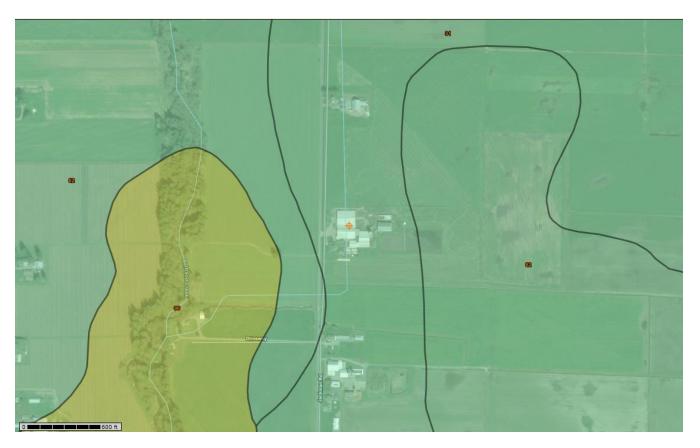






Depth to Water Table: 80 - 90 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Somewhat Poorly Drained

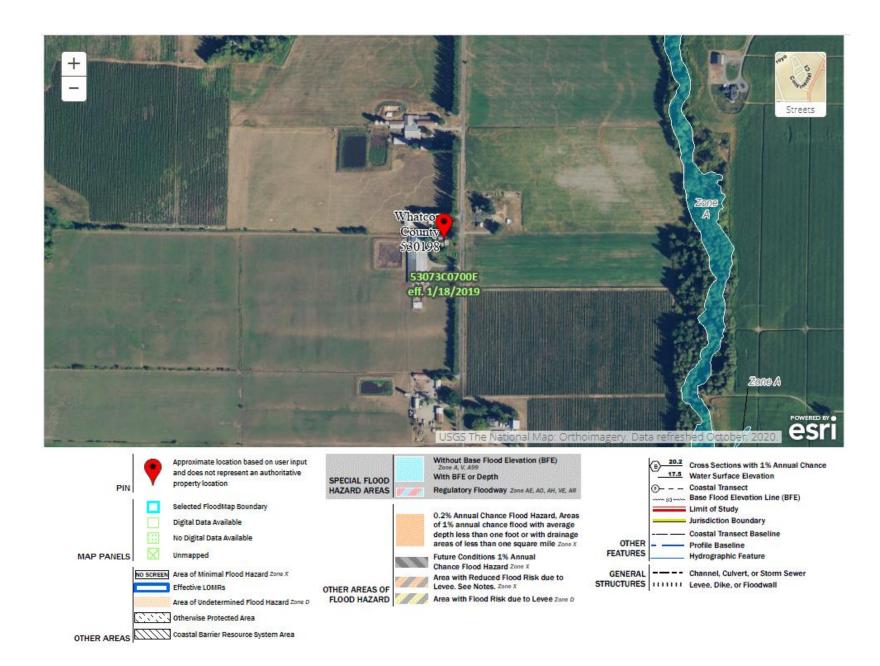
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Steensma Dairy

9295 Axling Road, Lynden WA

 \approx 1,800 feet from lagoon to Bertrand Creek







Depth to Water Table: 80 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Somewhat Poorly Drained

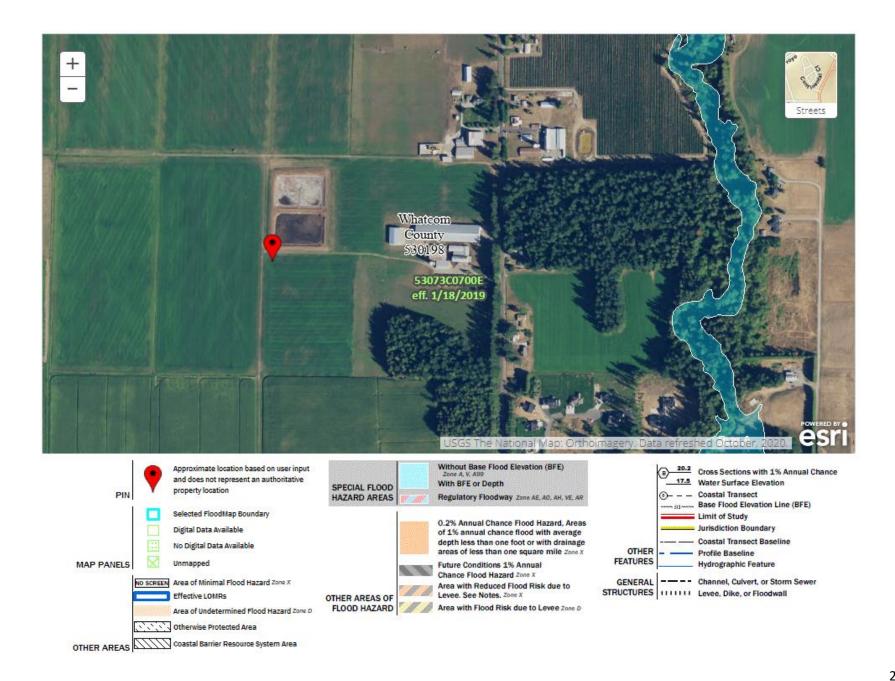
- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Cedar Park Dairy LLC

9041 Axling Road, Lynden WA

 \approx 2,200 feet from lagoons to Bertrand Creek







Depth to Water Table: 80 - 92 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Somewhat Poorly Drained

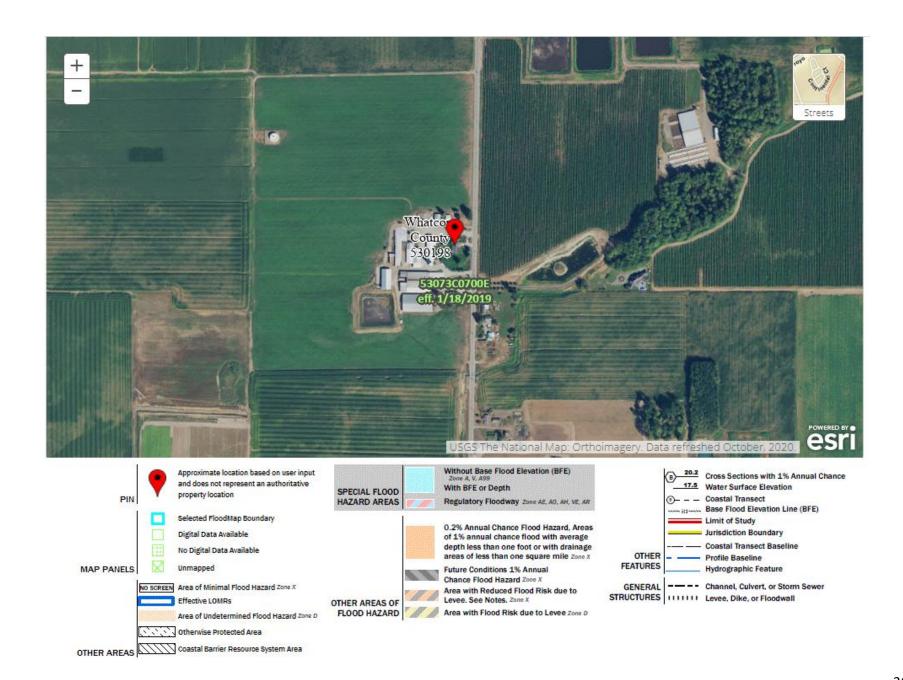
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

South Fork Dakota Creek

James Dairy

8305 N Enterprise Rd, Custer WA \approx 1,500 feet from lagoon to South Fork Dakota Creek







Depth to Water Table: 61 - 62 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Somewhat Poorly Drained/Moderately Well Drained

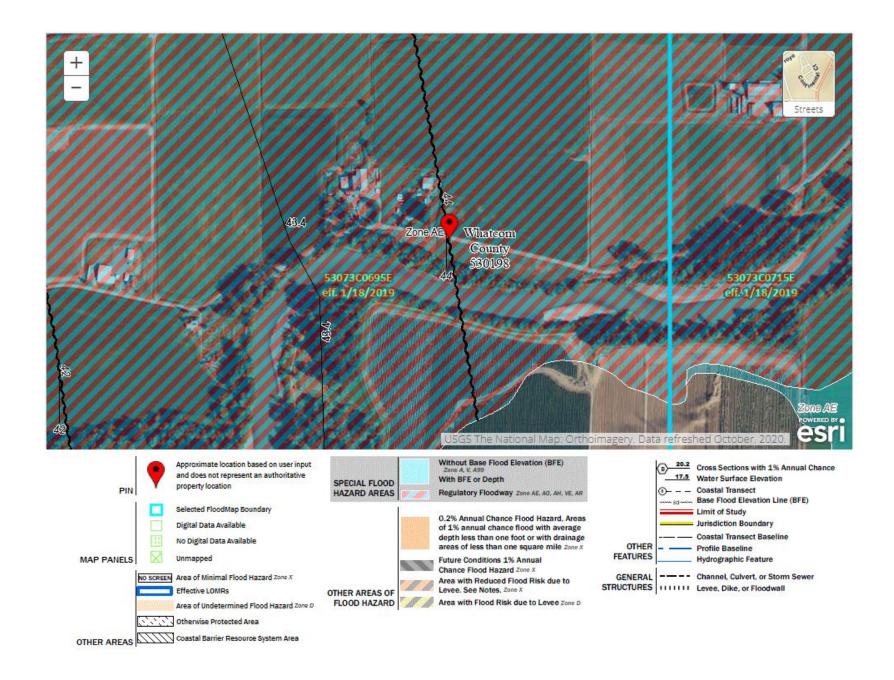
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Nooksack River

Dickinson Farms

517 River Road, Lynden WA \approx 450 feet from lagoon to Nooksack River, in flood plain







Depth to Water Table: > 200 cm

- 0 25
- **25 50**
- 50 100
- **100 150**
- 150 200
- > 200
- Not rated or not available



Drainage Class: Well Drained

- Excessively drained
- Somewhat excessively

drained

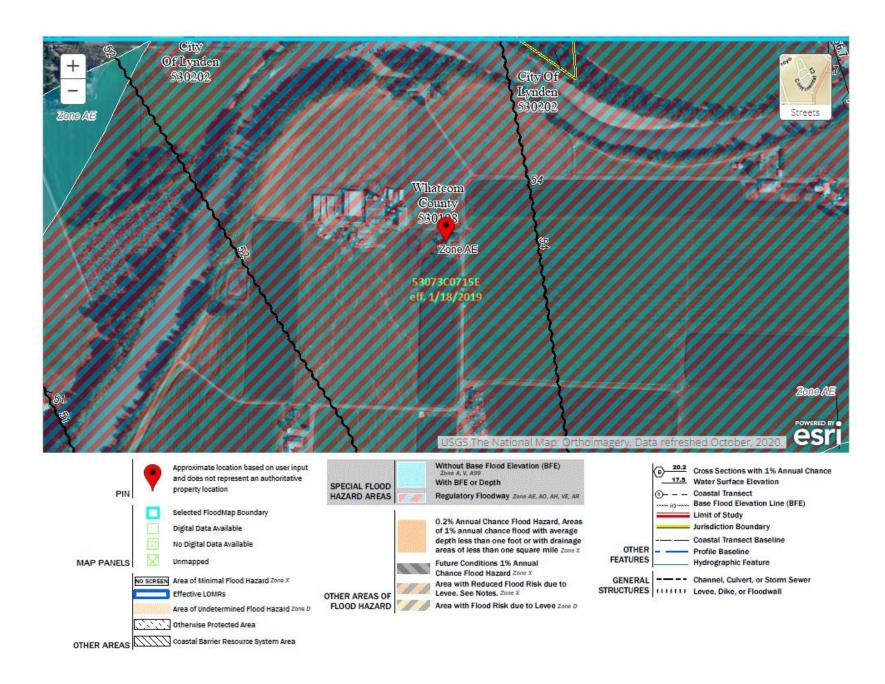
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Riverside Dairy

670 Polinder Road, Lynden WA

 \approx 200 feet from the lagoon to the river, in flood plain







Depth to Water Table: 92 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



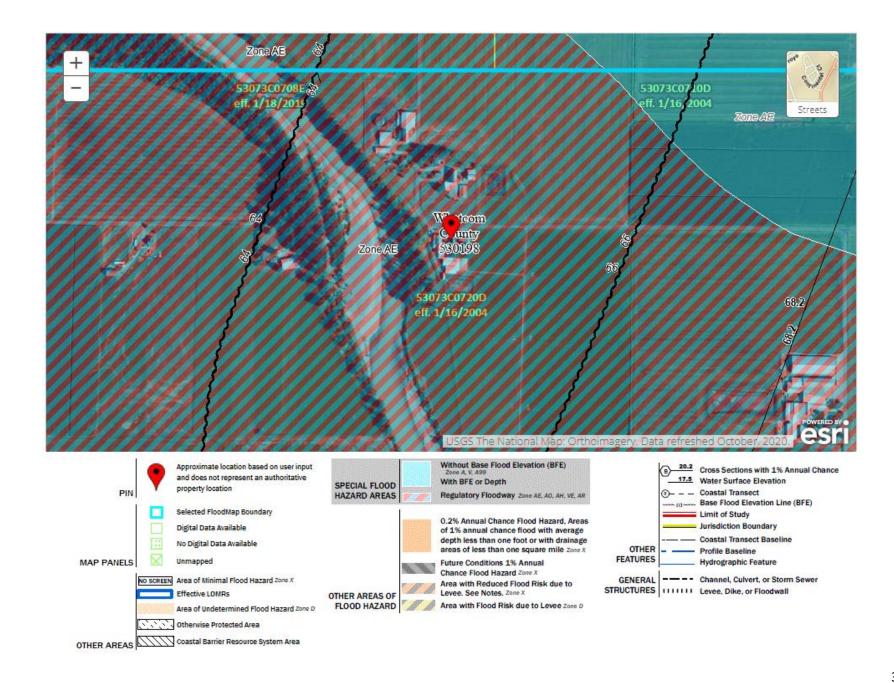
Drainage Class: Moderately Well Drained

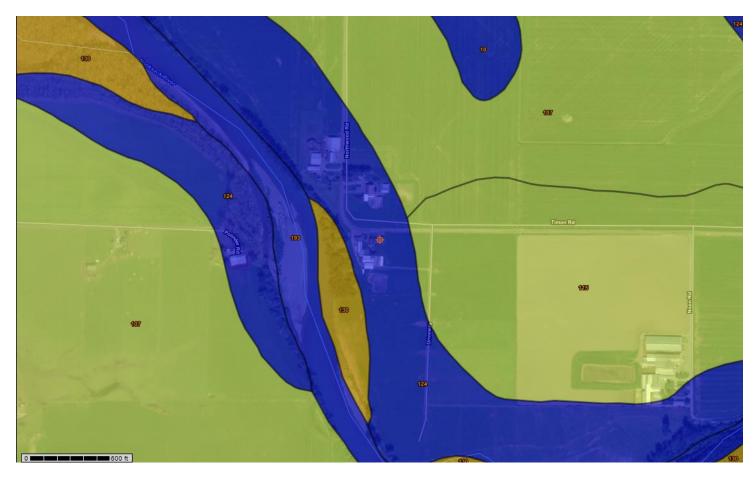
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Edelweiss Dairy

1519 Timon Road, Everson WA \approx 200 feet from the lagoon to the Nooksack River, in flood plain

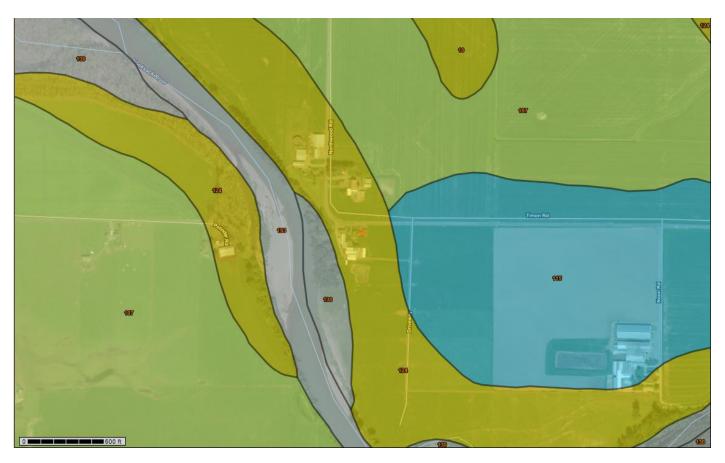






Depth to Water Table: $> 200 \ cm$

- 0 25
- <u>25 50</u>
- 100 150
- **150 200**
- > 200
- Not rated or not available

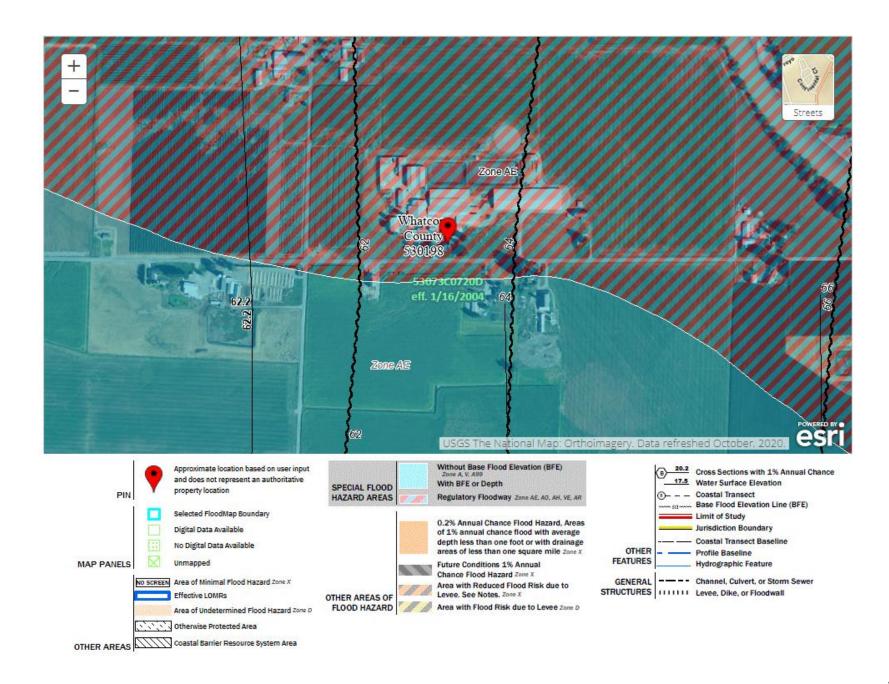


- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Eagle Mill Farms and DJ Noon Challenge

1364 Abbott Road, Lynden WA \approx 1,400 feet from the lagoons to the Nooksack River, in flood plain



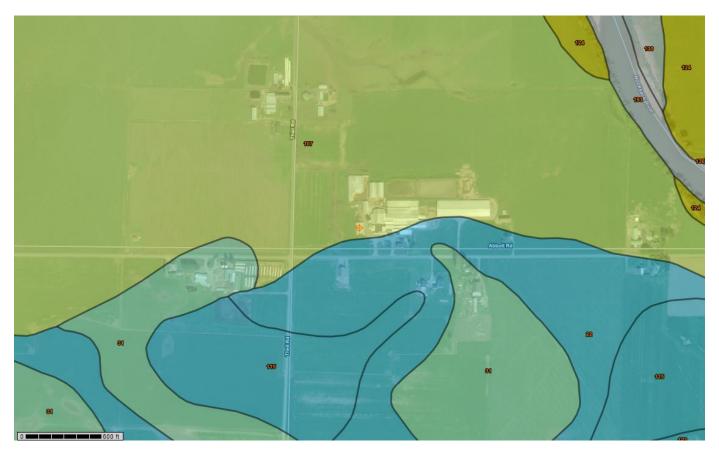




Depth to Water Table: 92 cm



- 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained

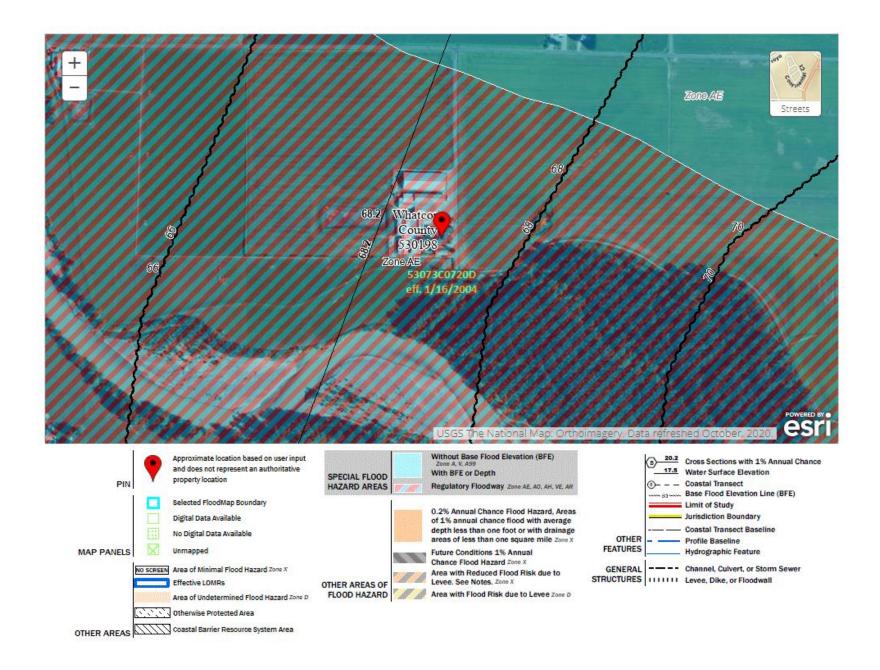
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

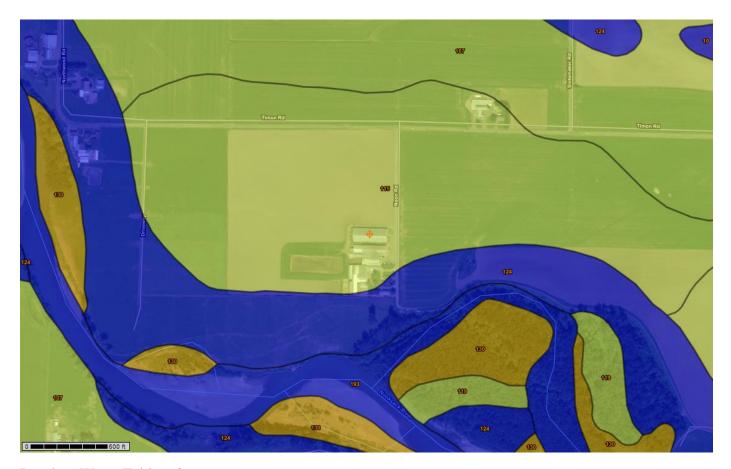
Van Berkum & Sons Dairy

1679 Timon Road, Everson WA

 ≈ 350 feet from the lagoons to the Nooksack River, in flood plain







Depth to Water Table: 60 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

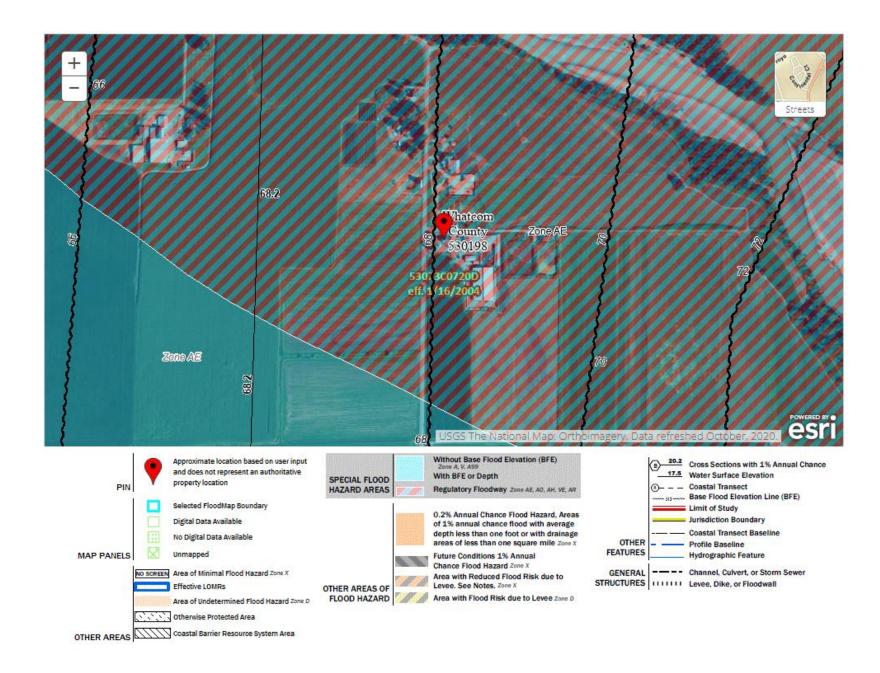
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

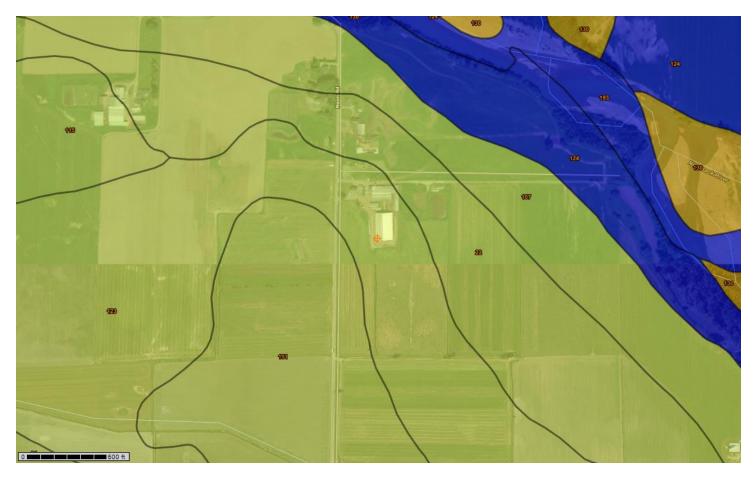
Noteboom Farm LLC

7800 Noon Road, Lynden WA

 \approx 2,400 feet from the lagoons to the Nooksack River, in flood plain







Depth to Water Table: 60 cm

- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

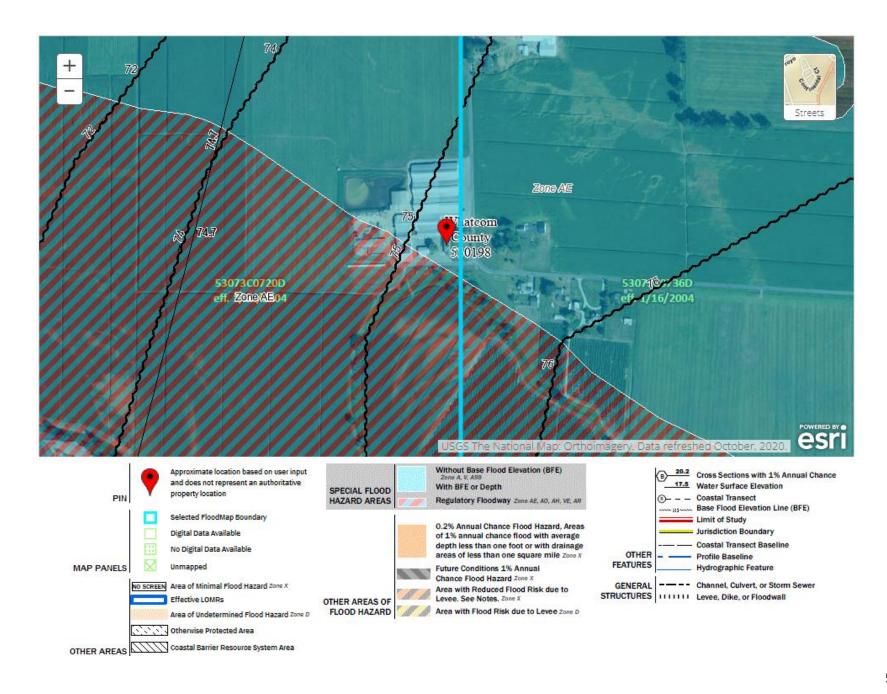
- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Vande Hoef Dairy LLC

2121 Stickney Island Rd, Everson WA

 \approx 1,600 feet from the lagoon to the Nooksack River, partially in flood plain

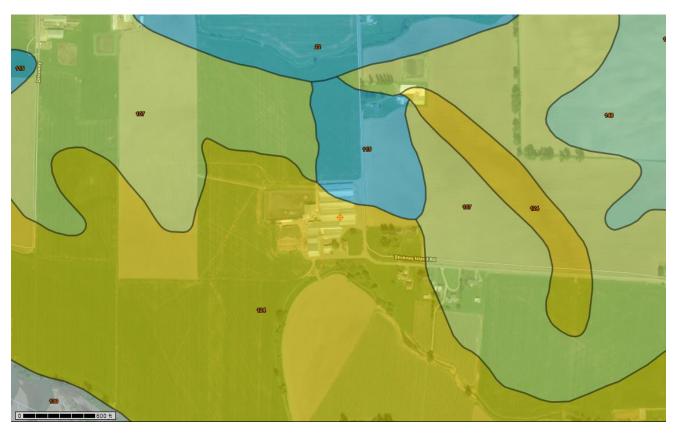






Depth to Water Table: $> 200 \ cm$

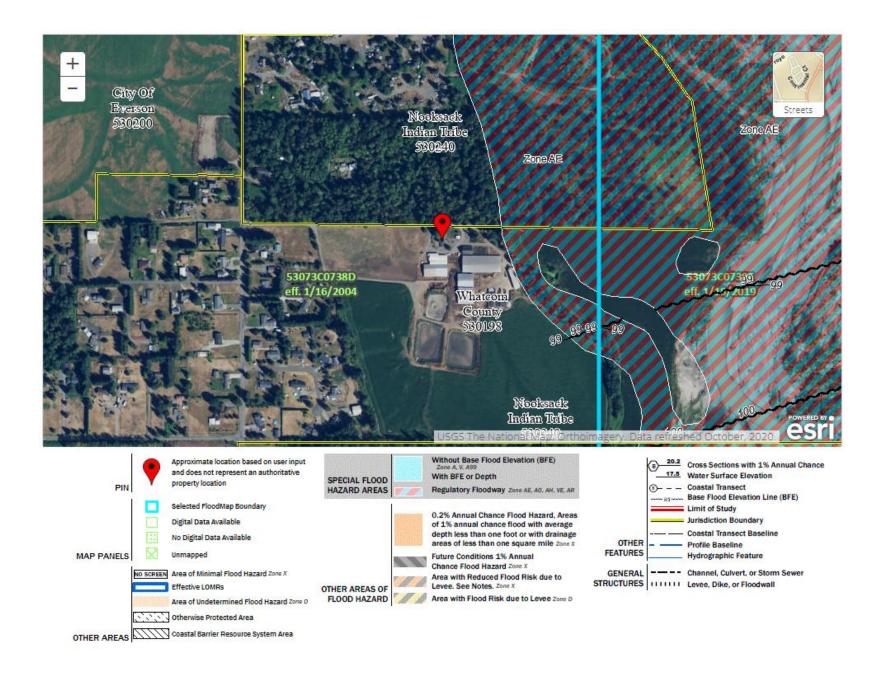
- 0 25
- 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available

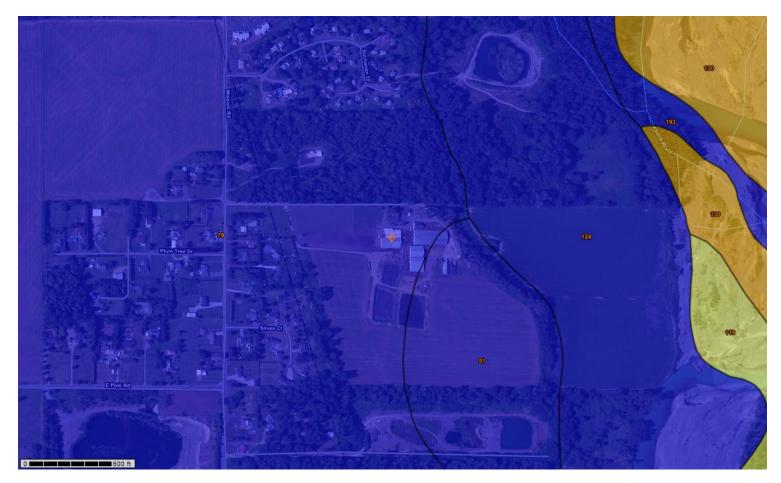


- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Dyna Moo Dairy







Depth to Water Table: > 200 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



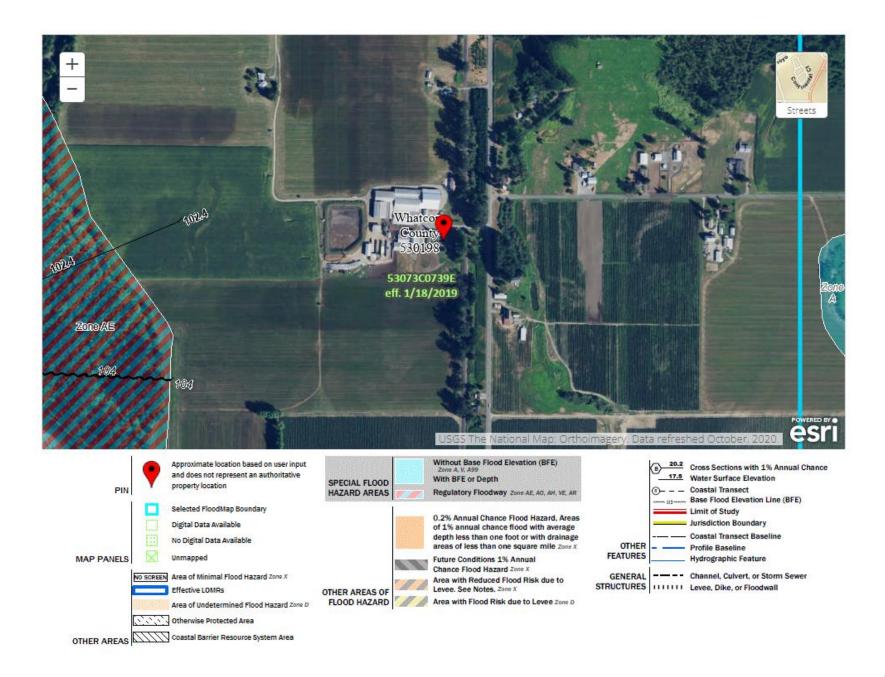
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

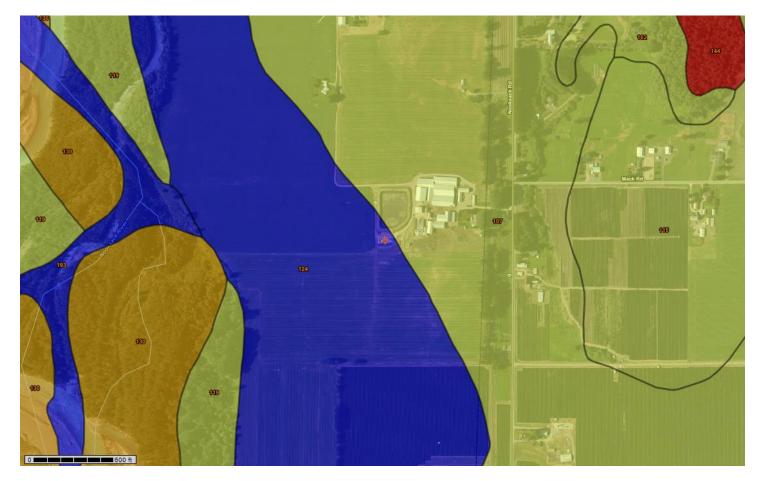
Van Dellen Farms LLC

6881 Nooksack Rd, Everson WA

 \approx 2,500 feet from the lagoon to the Nooksack River

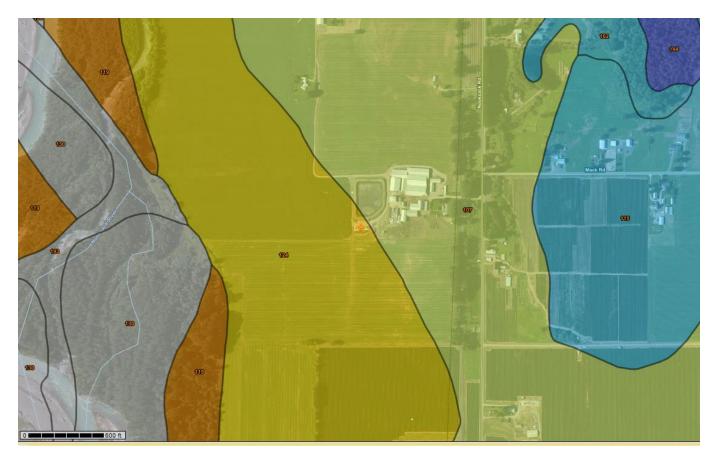






Depth to Water Table: 92 cm

- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



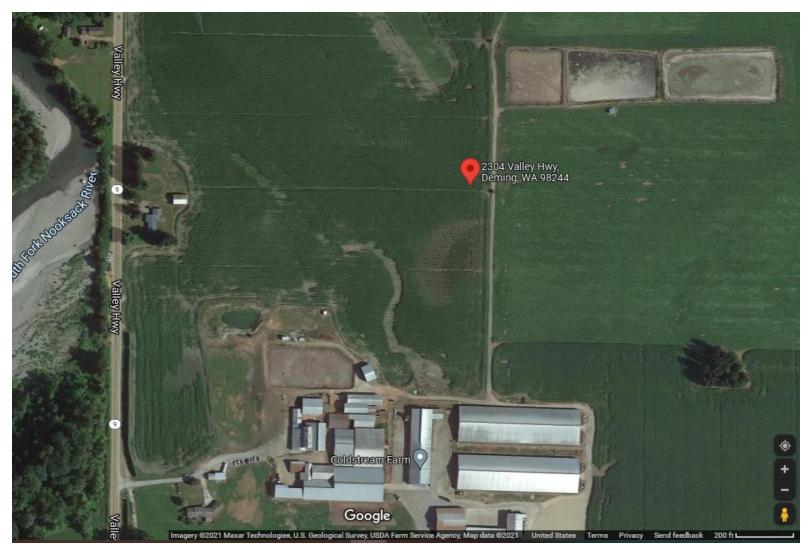
Drainage Class: Moderately Well Drained

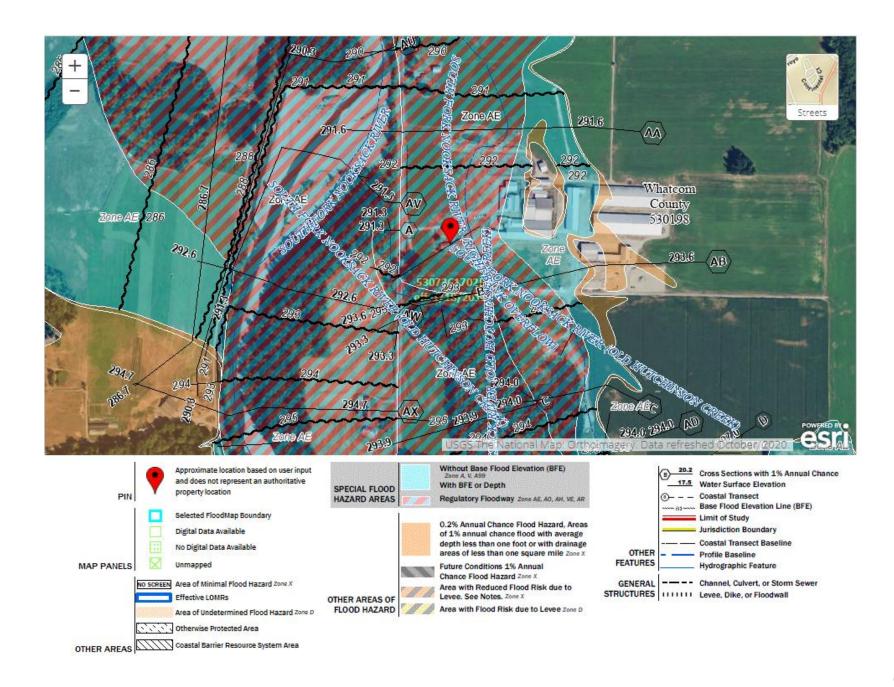
- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

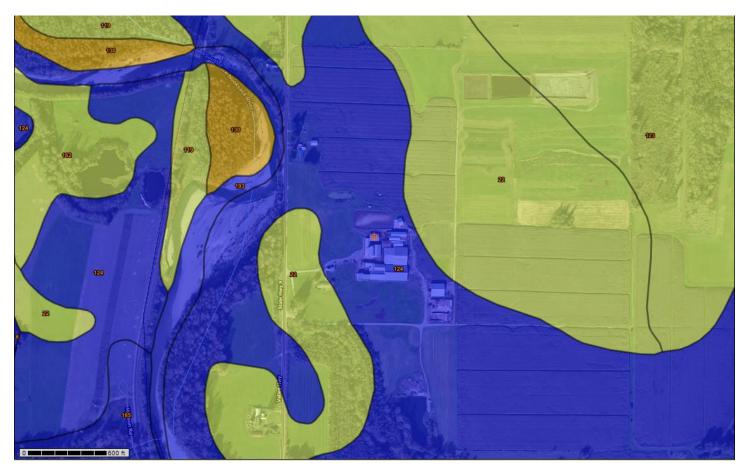
Coldstream Farms LLC

2304 Valley Highway, Deming WA

 \approx 1,400 feet from the lagoons to the Nooksack River, in flood plain







Depth to Water Table: $> 200 \ cm$

- 0 25
- <u>25 50</u>
- 100 150
- **150 200**
- > 200
- Not rated or not available



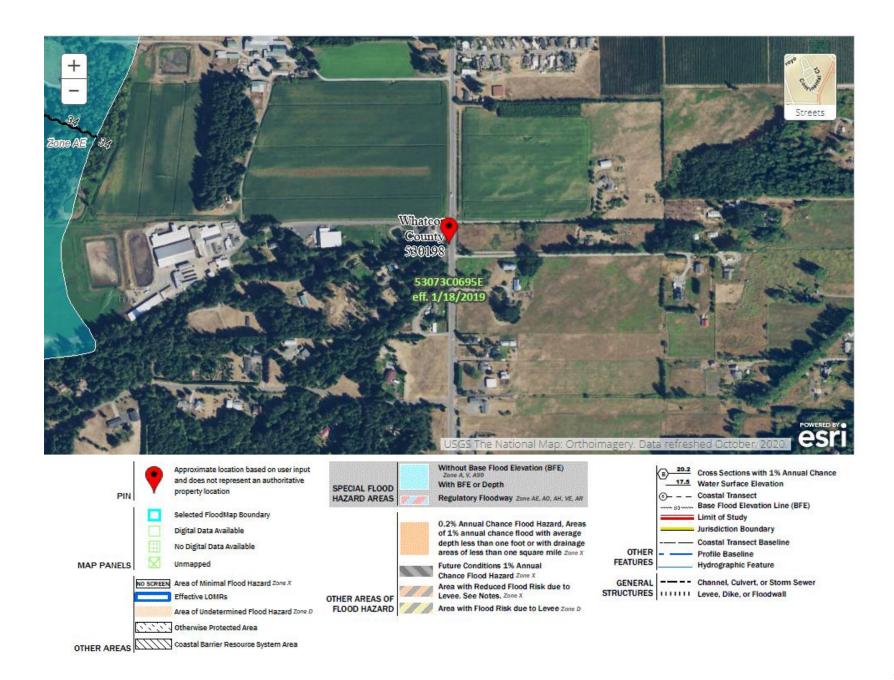
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

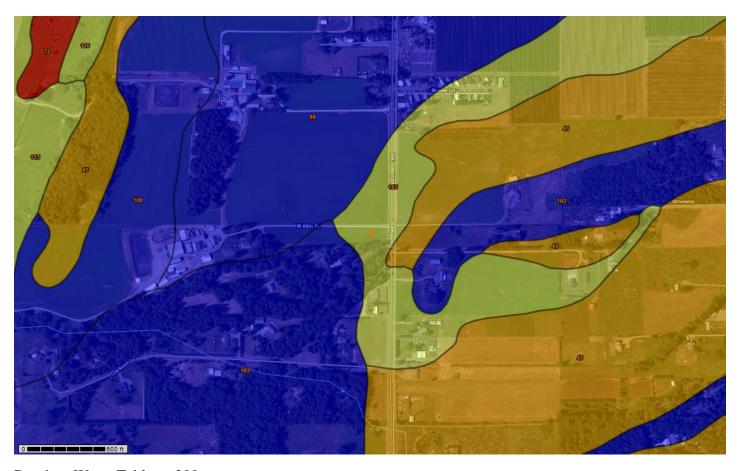
Appel Brothers Dairy

6605 Northwest Road, Ferndale WA

 \approx 2,200 feet from lagoon to Nooksack River







Depth to Water Table: $> 200 \ cm$

- 0 25
- ___ 25 50
- **50 100**
- **100 150**
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained

- Excessively drained
- Somewhat excessively

drained

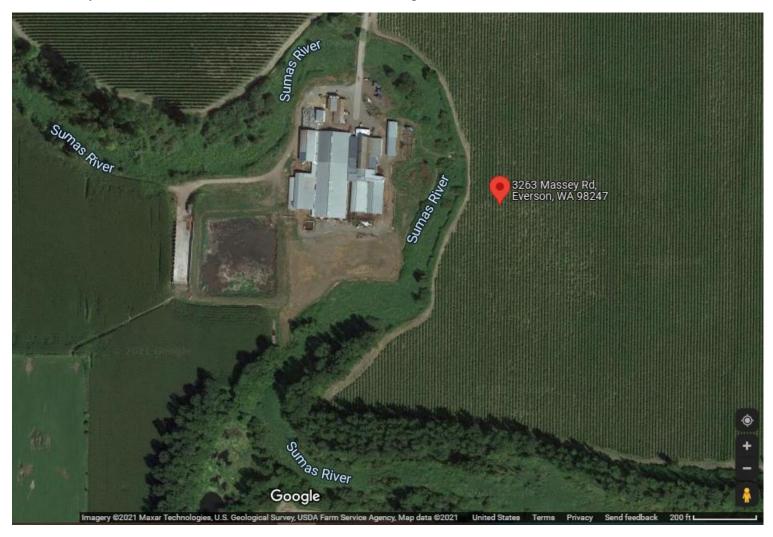
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

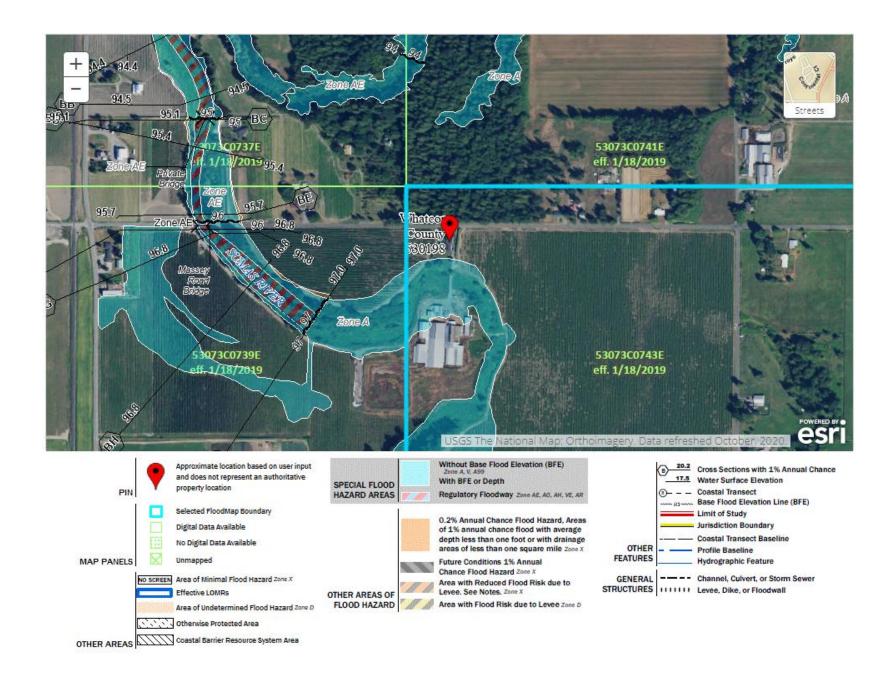
Sumas River

Mendoza Dairy

3263 Massey Rd, Everson WA

 \approx 200 feet from lagoon to the Sumas River







Depth to Water Table: 60 - 92 cm

- 0 25
- 25 50
- 50 100
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained/Moderately Well Drained

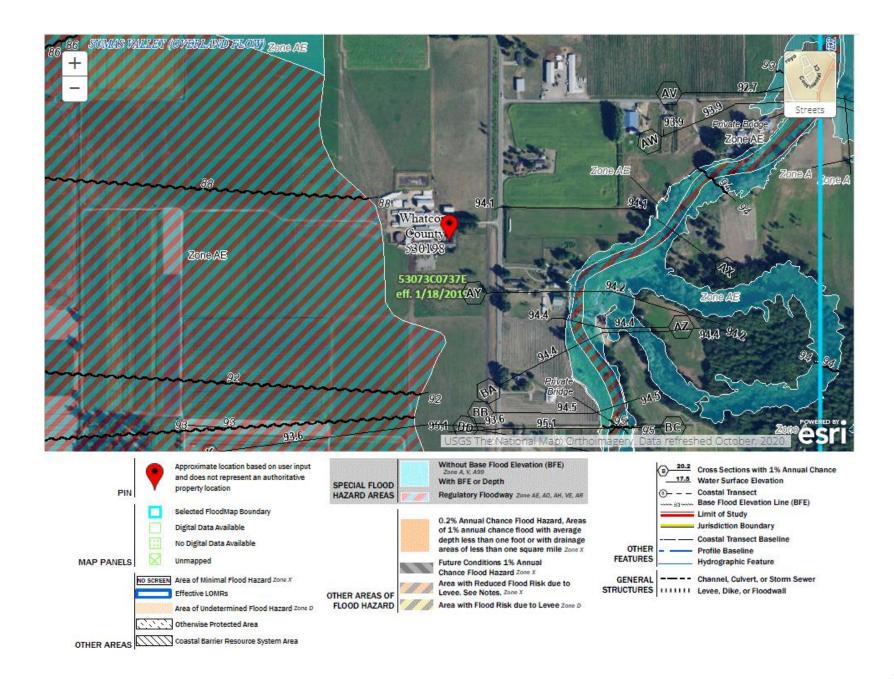
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Hopewell Farms

7433 Nooksack Rd, Everson WA

 \approx 1,200 feet from the lagoon to the Sumas River







Depth to Water Table: 60 cm

- 0 25
- **25 50**
- 50 100
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

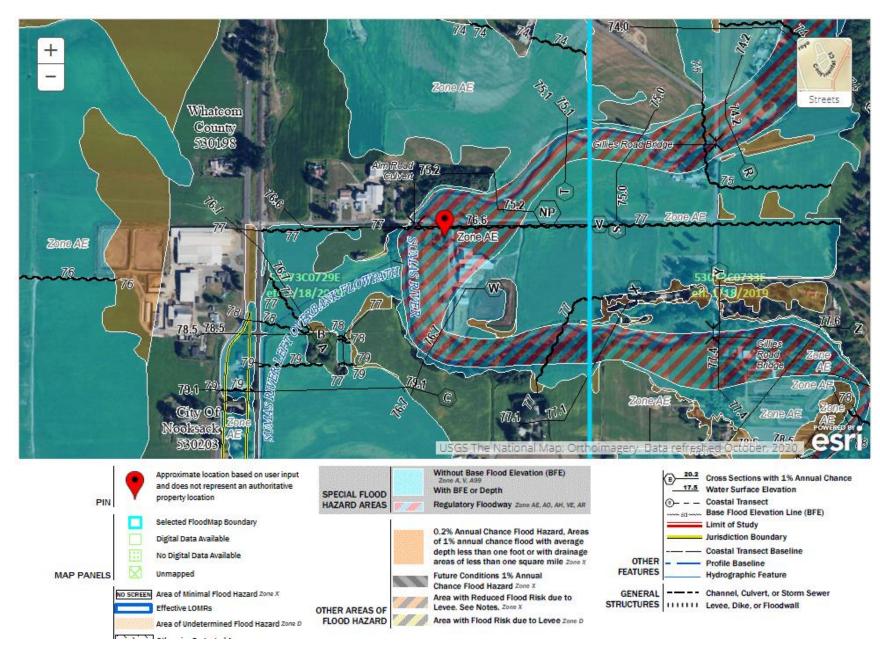
- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Pete de Jager Dairy

3183 Alm Rd, Everson WA

 ≈ 200 feet from the lagoon to the Sumas River, in flood zone







Depth to Water Table: 92 cm

- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



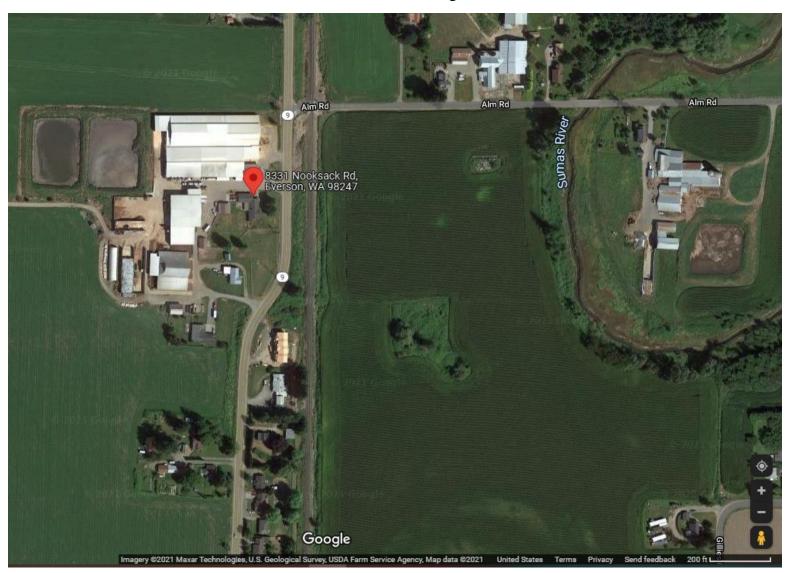
Drainage Class: Moderately Well Drained

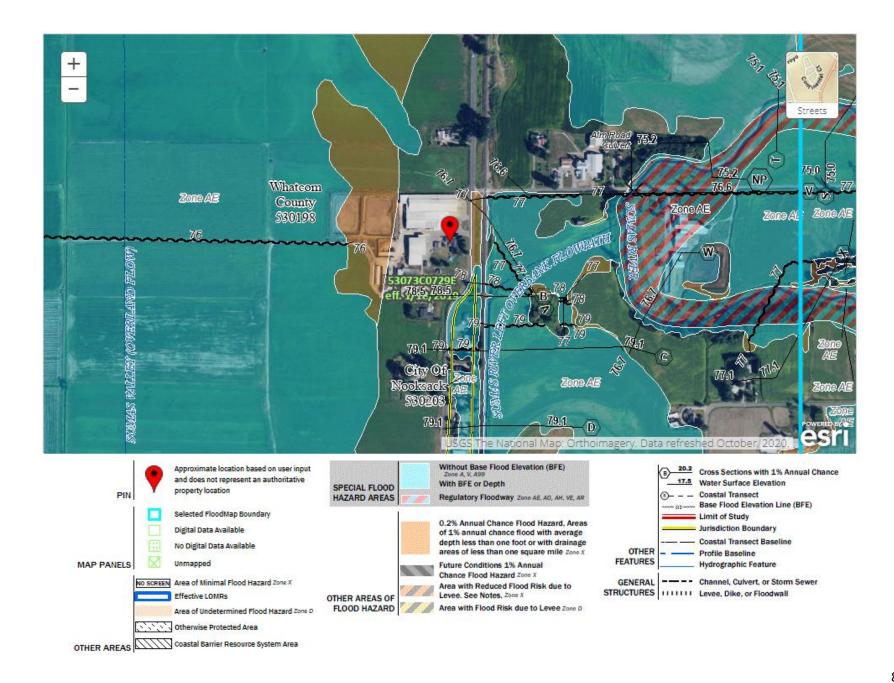
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Udder Pride Dairy

8331 Nooksack Rd, Everson WA

 \approx 1,400 feet from the lagoons to the Sumas River







Depth to Water Table: 92 cm

- 0 25
- **25 50**
- 50 100
- 100 150
- **150 200**
- > 200
- Not rated or not available



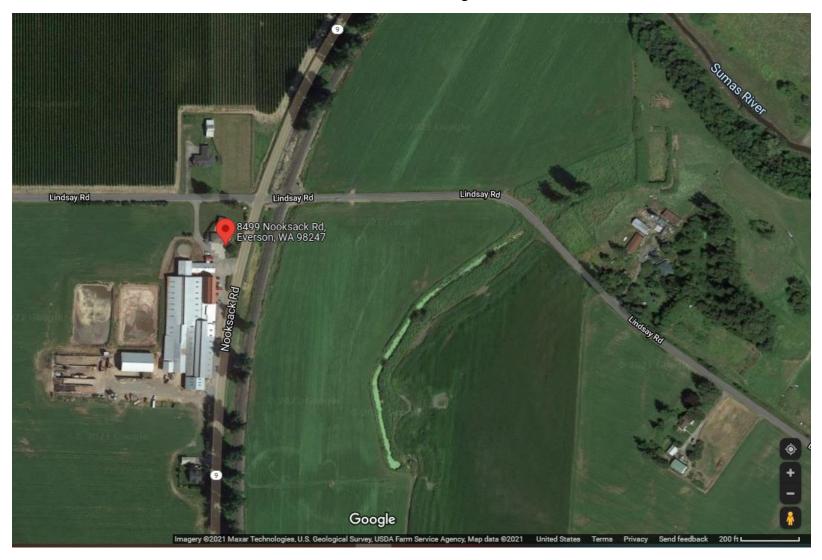
Drainage Class: Moderately Well Drained

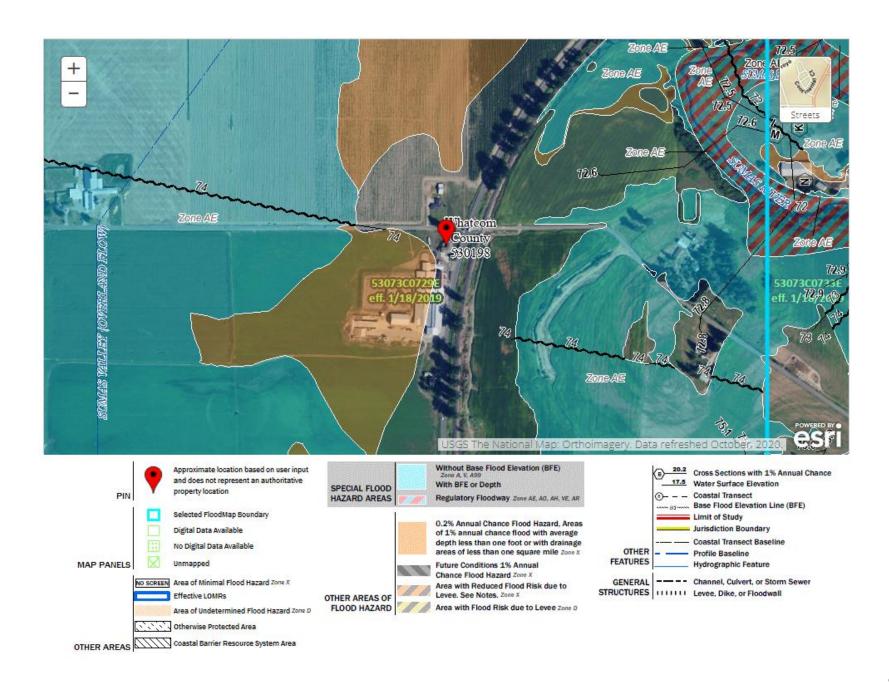
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

TC Berkum Farm

8499 Nooksack Rd, Everson WA

 \approx 2,100 feet from the lagoons to the Sumas River







Depth to Water Table: 92 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained

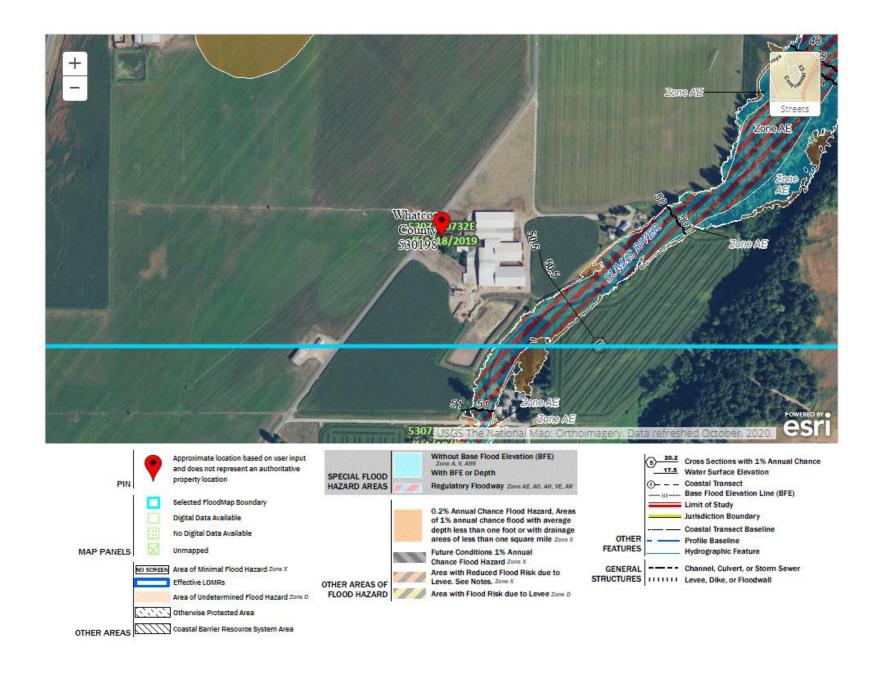
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

JV Dairy LLC

9056 Telegraph Rd, Sumas WA

 ≈ 100 feet from the lagoon to the Sumas River







Depth to Water Table: 60 - 91 cm

0 - 25

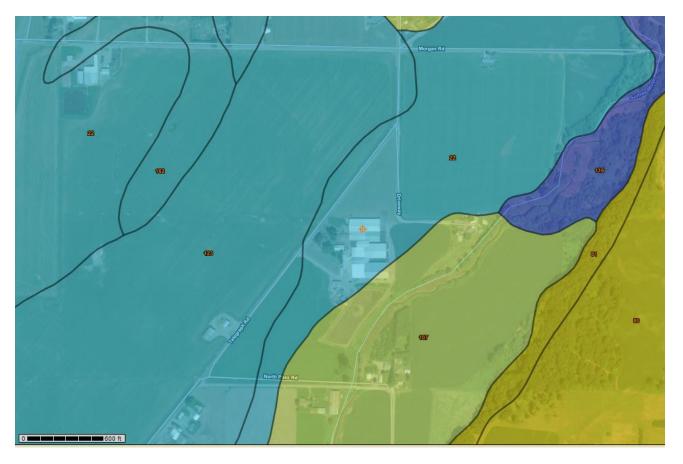
25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



Drainage Class: Moderately Well Drained/Poorly Drained

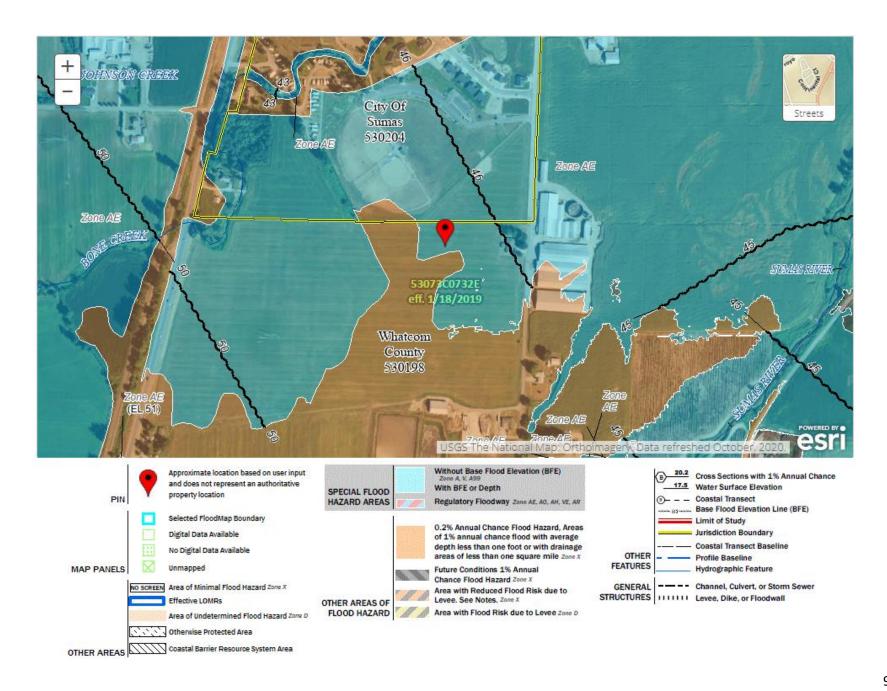
Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

Maarhuis Dairy LLC

9489 Hovel Rd, Sumas WA

 ≈ 700 feet from the lagoons to the Sumas River







Depth to Water Table: 92 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained

- Excessively drained
- Somewhat excessively drained
- uranieu
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

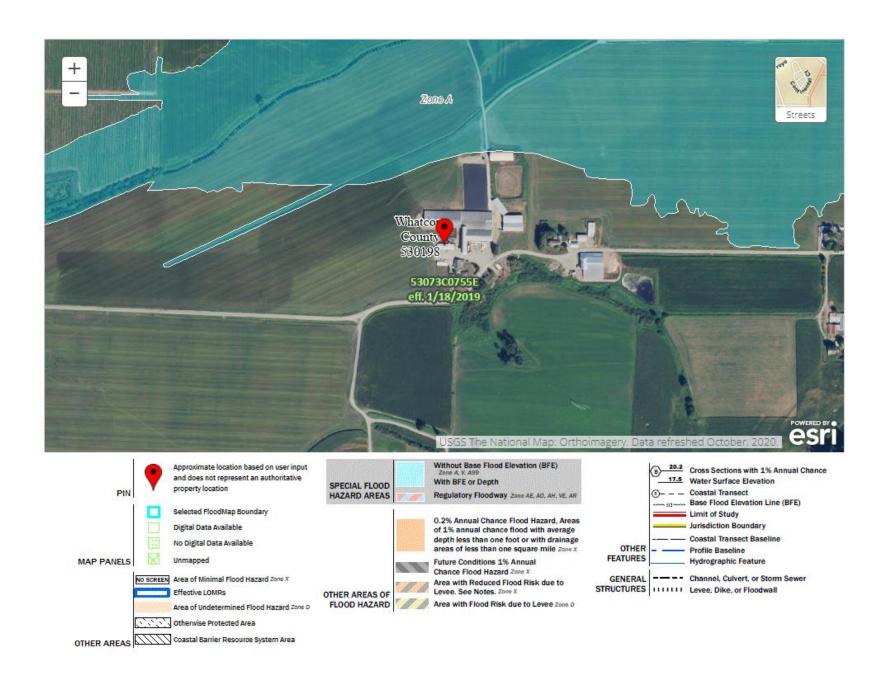
Saar Creek

Hillview Dairy

4938 Hillview Rd, Sumas WA

 ≈ 900 feet from lagoon to Saar Creek







Depth to Water Table: 60 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



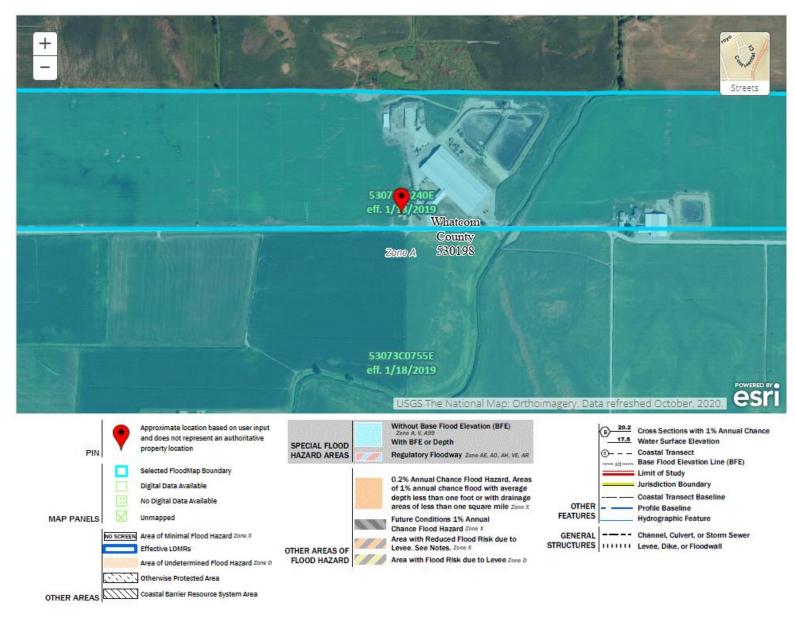
Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

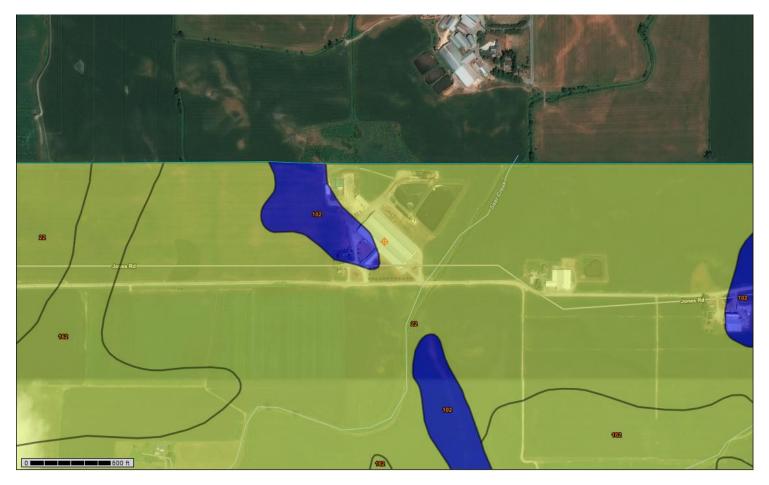
Vreugdenhil Farms LLC

5202 Jones Rd, Sumas WA \approx 200 feet from lagoons to Saar Creek





(Mapping stops at the Canadian Border)



Depth to Water Table: 60 cm (Soil Mapping stops at the Canadian Border)

- 0 25
- 25 50
- **50 100**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

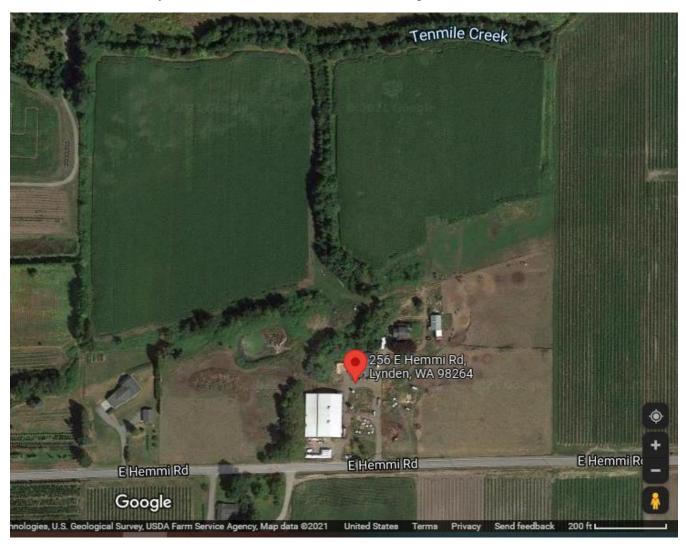
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

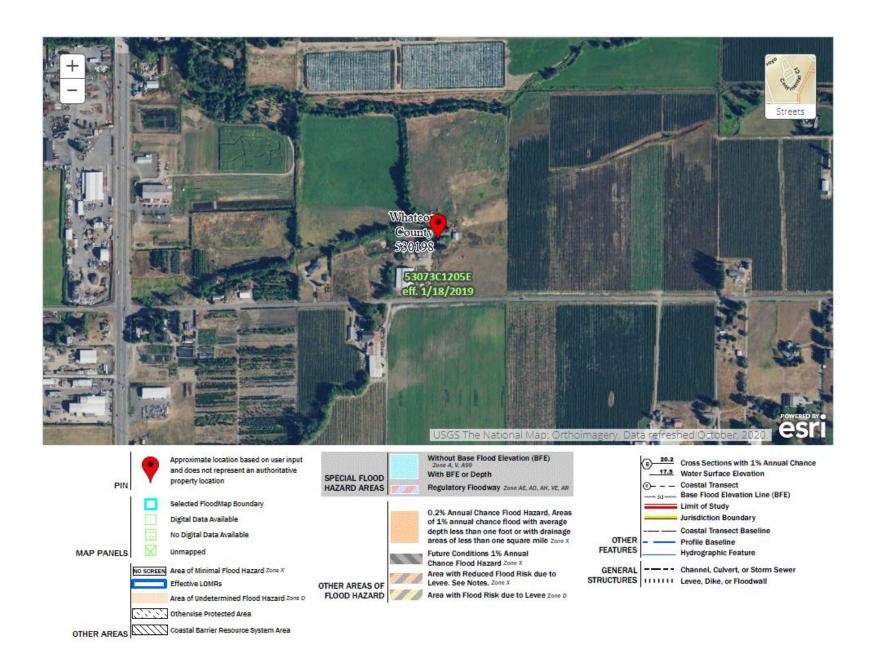
Ten Mile Creek

Sundstrom Family Farms

256 East Hemmi Rd, Lynden WA

 ≈ 800 feet from lagoon to Tenmile Creek







Depth to Water Table: 80 cm



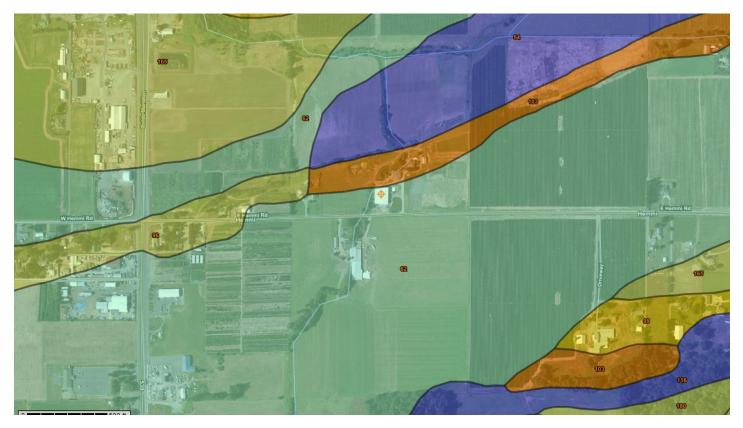
25 - 50

100 - 150

150 - 200

> 200

■ Not rated or not available



Drainage Class: Somewhat Poorly Drained

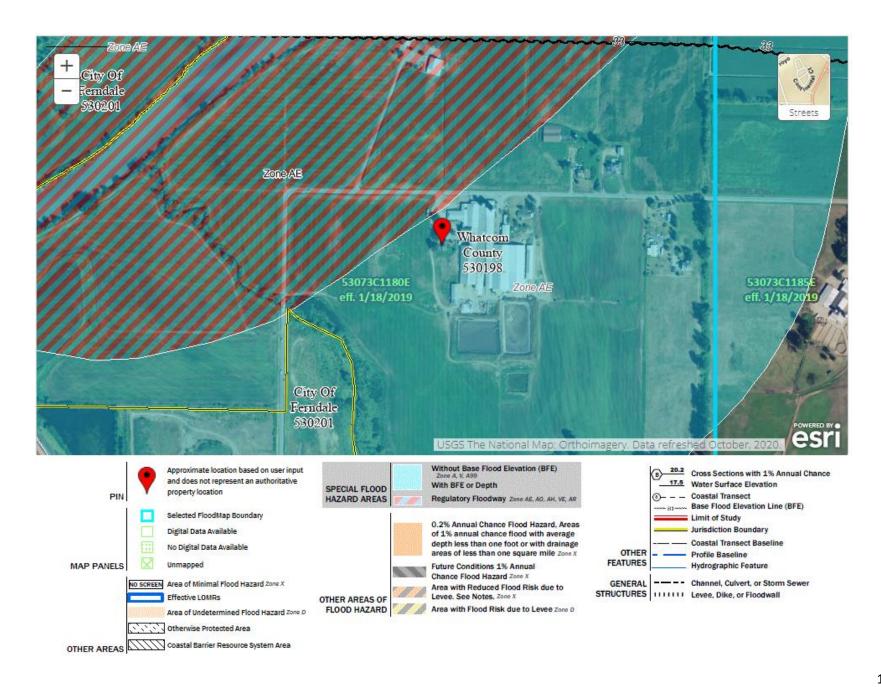
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Paradise Jerseys LLC

1625 Paradise Rd, Ferndale WA

 ≈ 500 feet from lagoons to Ten Mile Creek







Depth to Water Table: $45-61\ cm$

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained/Poorly Drained

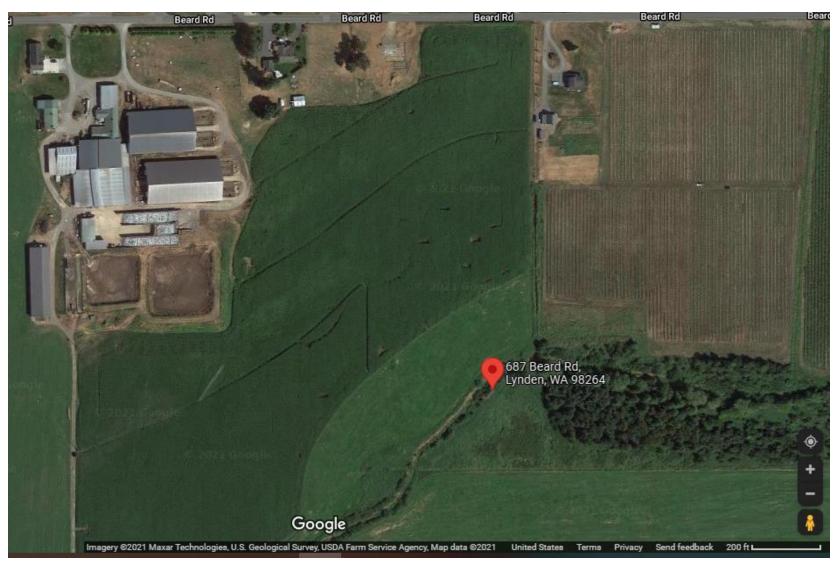
- Excessively drained
- Somewhat excessively

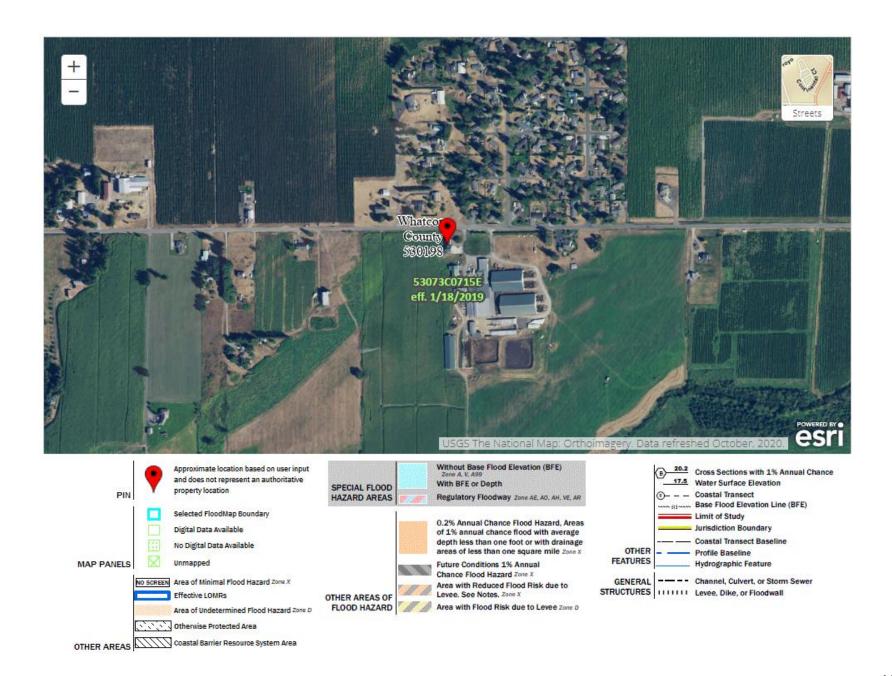
drained

- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

BJ Blok & Sons Dairy

687 Beard Rd, Lynden WA \approx 800 feet from lagoons to Fourmile Creek







Depth to Water Table: $> 200 \ cm$

- 0 25
- ___ 25 50
- **100 150**
- 150 200
- > 200
- Not rated or not available



Drainage Class: Well Drained

- Excessively drained
- Somewhat excessively

drained

- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

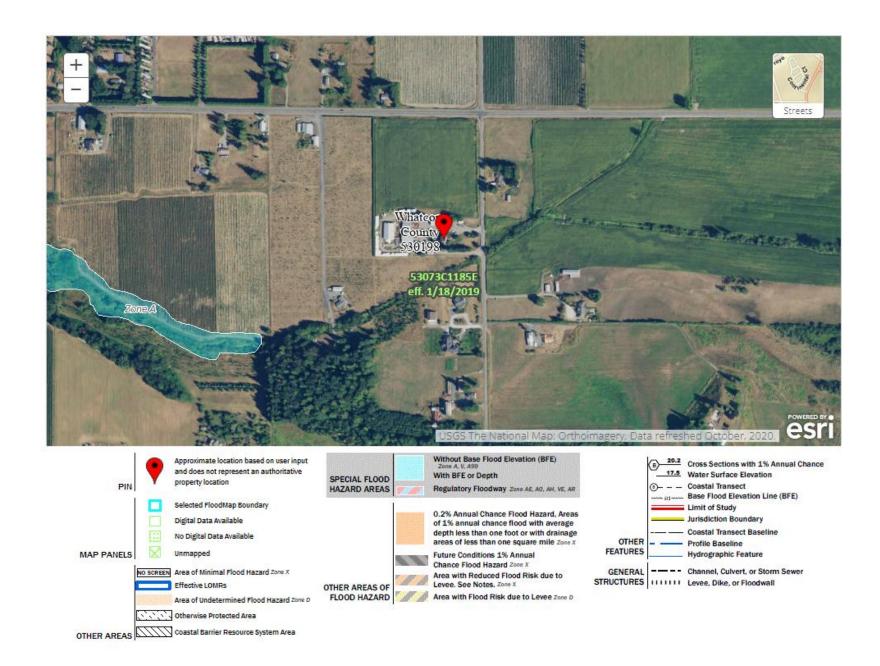
Deer Creek

Curt and Michael Lagerwey

5643 Aldrich Rd, Bellingham WA

 ≈ 450 feet from lagoon to Deer Creek







Depth to Water Table: 80 cm

0 - 25

25 - 50

100 - 150

150 - 200

> 200

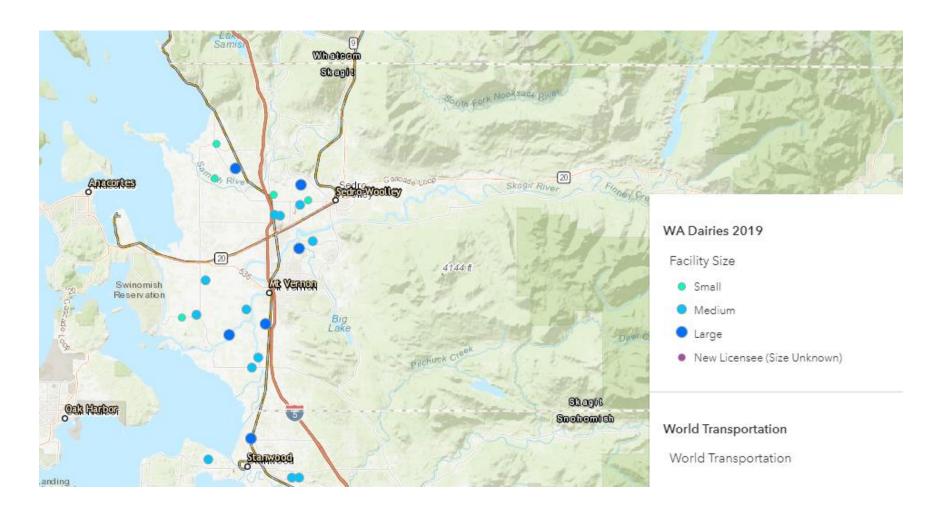
■ Not rated or not available



Drainage Class: Somewhat Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Skagit County
https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520%2C-122.361976%2C12.00



No FEMA Maps available for Upper Skagit County

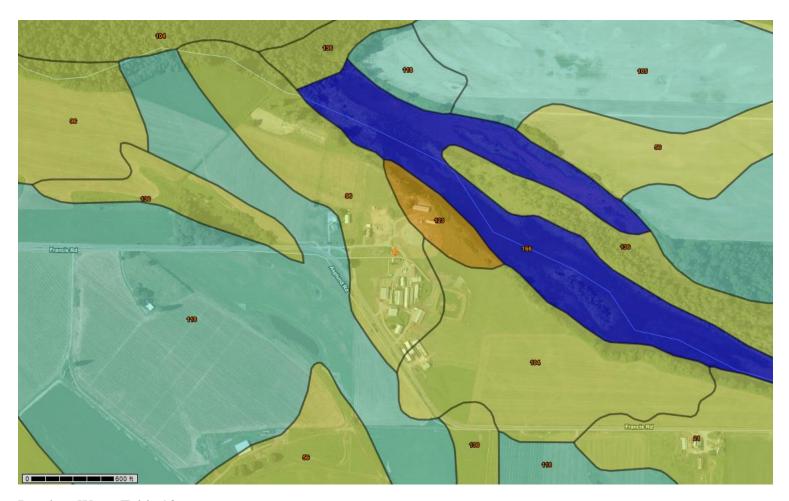
DeBays Slough

Baumgardner Dairy

21760 Francis Rd, Mt. Vernon WA

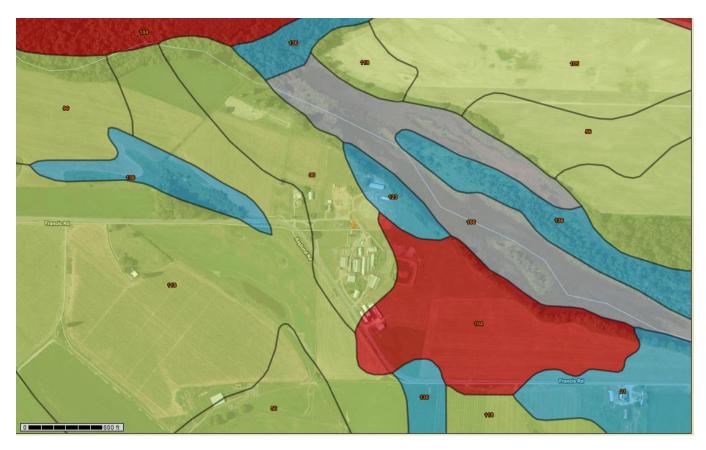
 \approx 450 feet from lagoon to DeBays Sough





Depth to Water Table 92 cm

- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained/Excessively Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

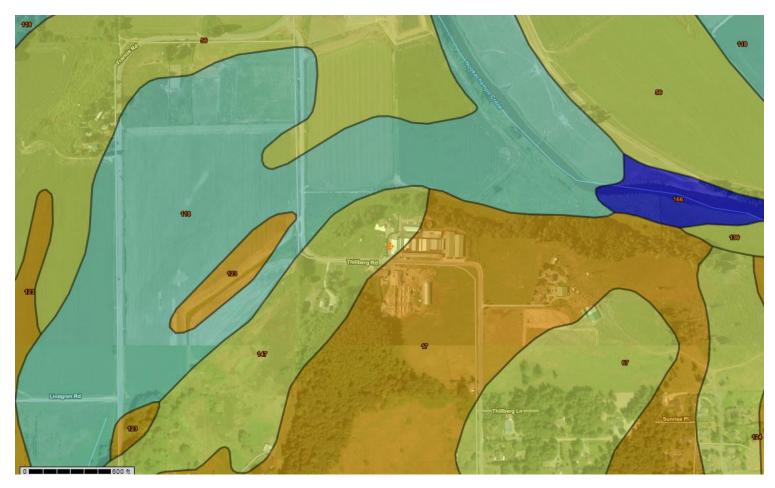
Skagit River

High Valley Dairy

12797 Thillberg Rd, Mt. Vernon WA

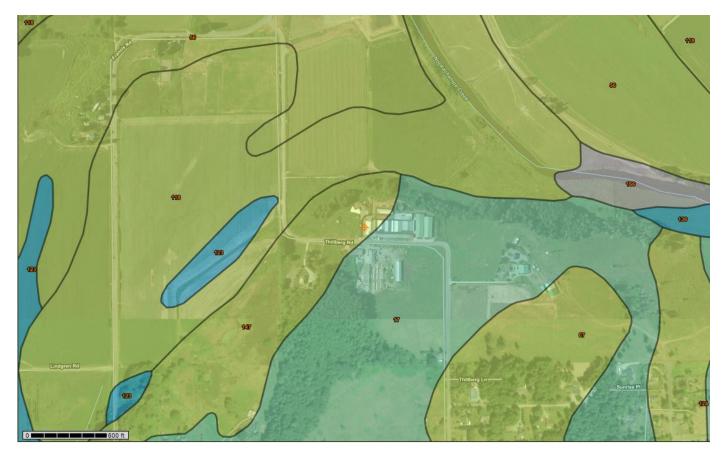
 ≈ 200 feet from lagoons to Nookachamps Creek, $\approx 1{,}000$ ft to Skagit River





Depth to Water Table: 30 - 54 cm

- 0 25
- **25 50**
- 100 150
- 150 200
- > 200
- Not rated or not available



Drainage Class: Somewhat Poorly Drained/Moderately Well Drained

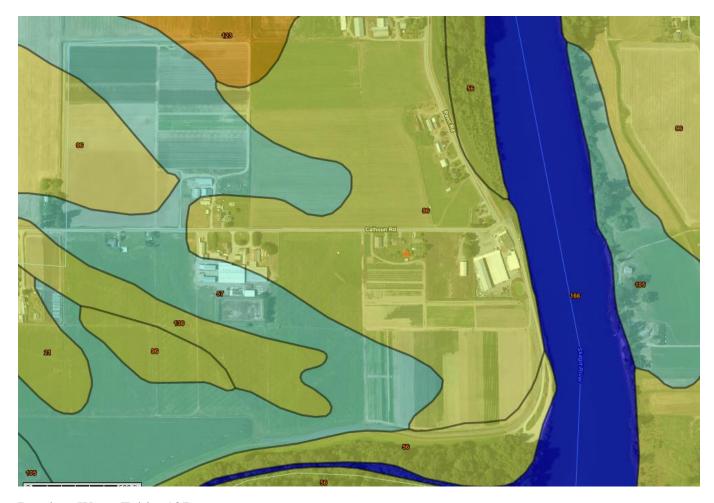
- Excessively drained
 Somewhat excessively drained
 Well drained
 Moderately well drained
 Somewhat poorly drained
 Poorly drained
 Very poorly drained
 Subaqueous
- Not rated or not available

Edensfall LLC

17230 Calhoun Rd, Mt. Vernon WA

 \approx 1,800 feet from large lagoon to Skagit River





Depth to Water Table: 107 cm

0 - 25 25 - 50

50 - 100

100 - 150

150 - 200

> 200

■ Not rated or not available



Drainage Class: Moderately Well Drained

Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

Bayside Dairy LLC

18550 Hickox Rd, Mt. Vernon WA

 $\approx 3{,}500$ feet from lagoon to Skagit River





Depth to Water Table: 60 cm

0 - 25

25 - 50

100 - 150

150 - 200

> 200

■ Not rated or not available

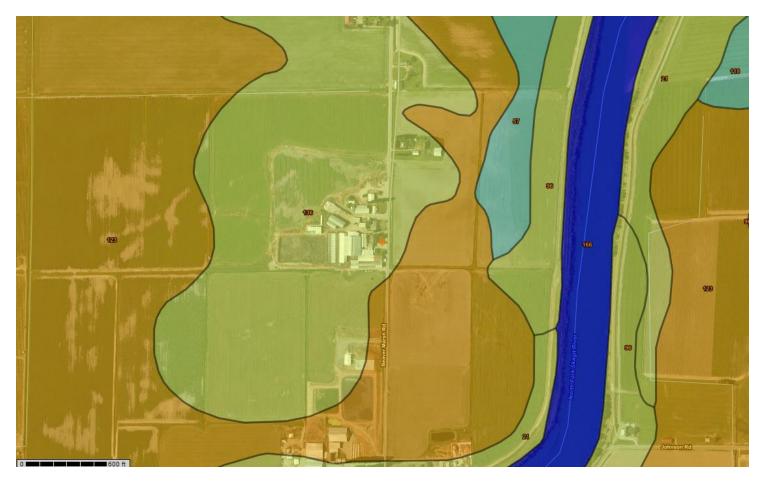


Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Harmony Dairy LLC





Depth to Water Table: 35 - 60 cm

- 0 25
- ___ 25 50
- 100 150
- 150 200
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

 ≈ 800 feet from lagoons to Skagit River





Depth to Water Table: 35-60 cm

0 - 25

25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

River Bend Dairy

20281 Dike Rd, Mt. Vernon WA

 ≈ 750 feet from lagoon to Skagit River





Depth to Water Table: 35 - 70 cm

- 0 25

- 100 150
- **150 200**
- > 200
- Not rated or not available

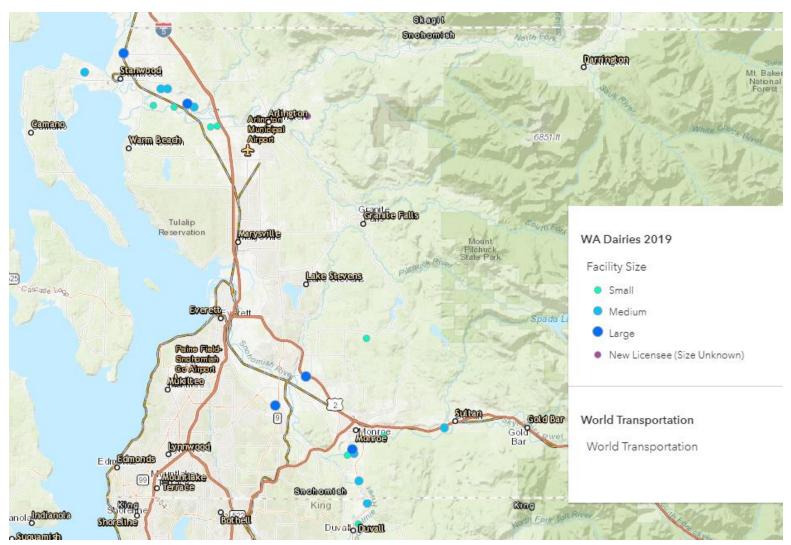


Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Snohomish County

 $\underline{https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520\%2C-122.361976\%2C12.00}$



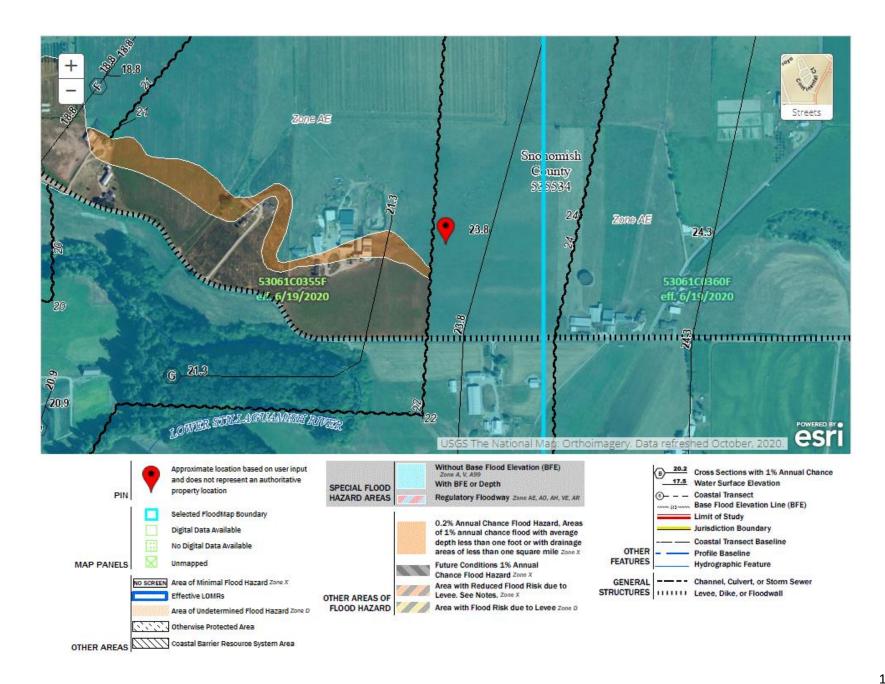
Stillaguamish River

SDI Farms #2

6321 Norman Rd, Stanwood WA

 \approx 2,000 feet from lagoon to Stillaguamish River







Depth to Water Table: 92 cm

0 - 25 25 - 50 50 - 100 100 - 150 150 - 200 > 200 Not rated or not available



Drainage Class: Moderately Well Drained

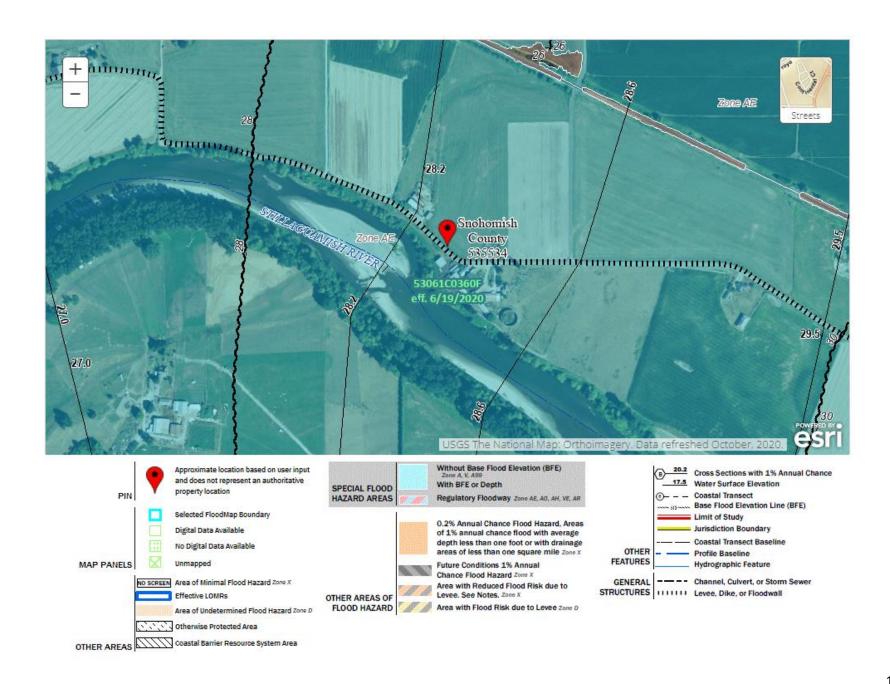
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

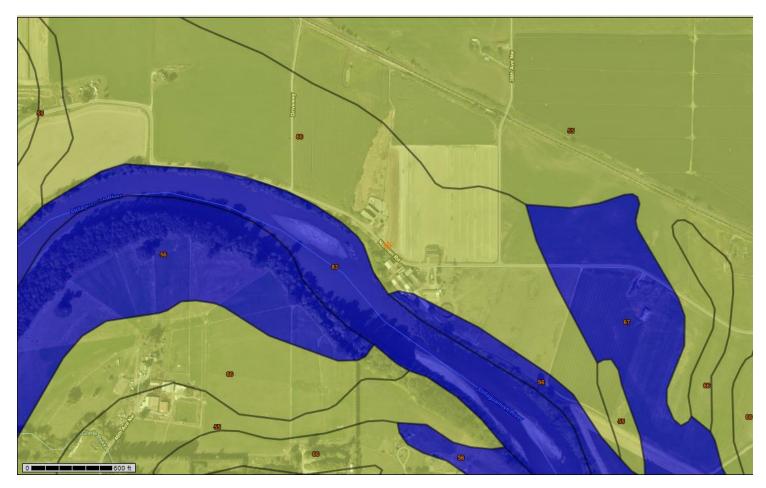
Normanna Farm

3891 Norman Rd, Stanwood WA

 ≈ 150 feet from manure storage to Stillaguamish River







Depth to Water Table: 92 cm

0 - 25

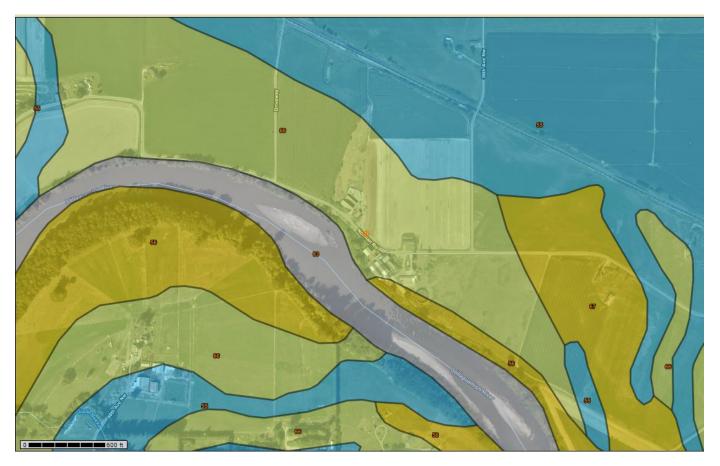
___ 25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



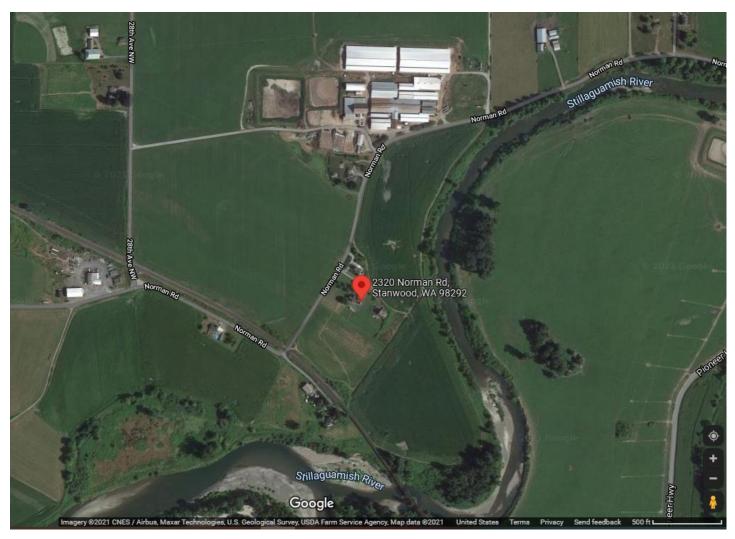
Drainage Class: Moderately Well Drained

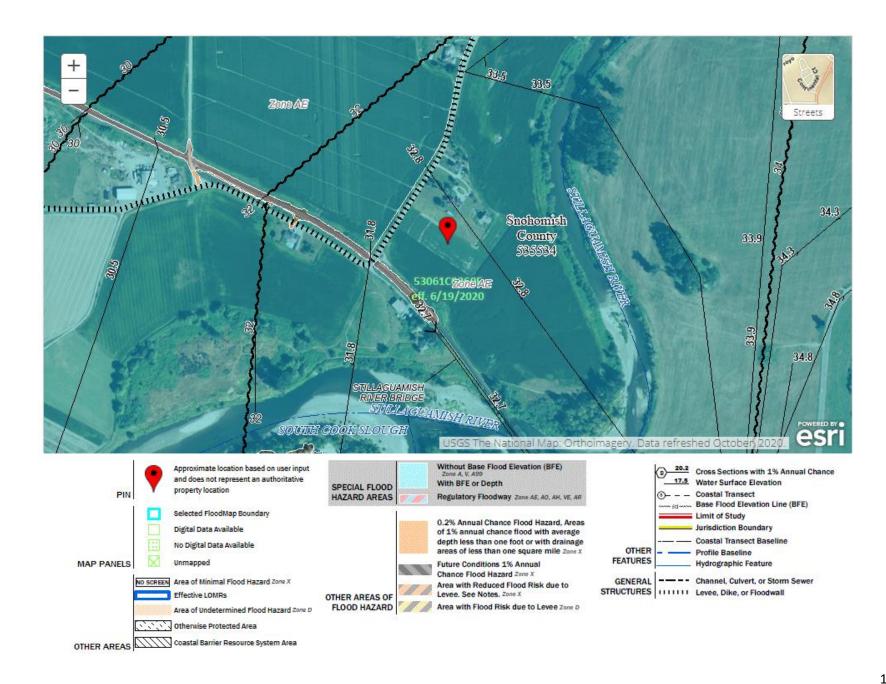
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Natural Milk LLC

2320 Norman Rd, Stanwood WA

1,500 feet from lagoon to Stillaguamish River







Depth to Water Table: 90 cm

0 - 25

___ 25 - 50

100 - 150

150 - 200

> 200

Not rated or not available

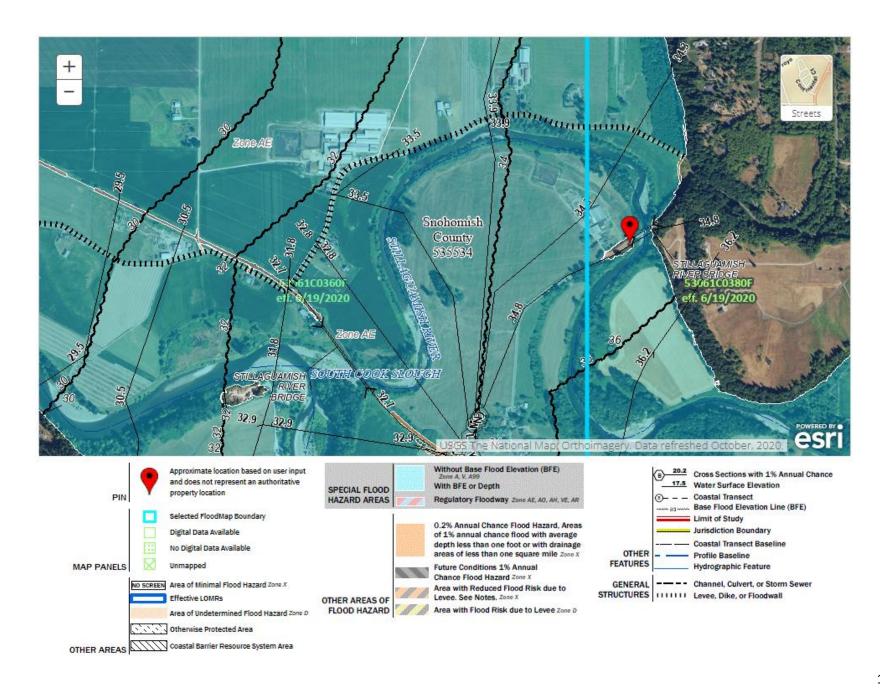


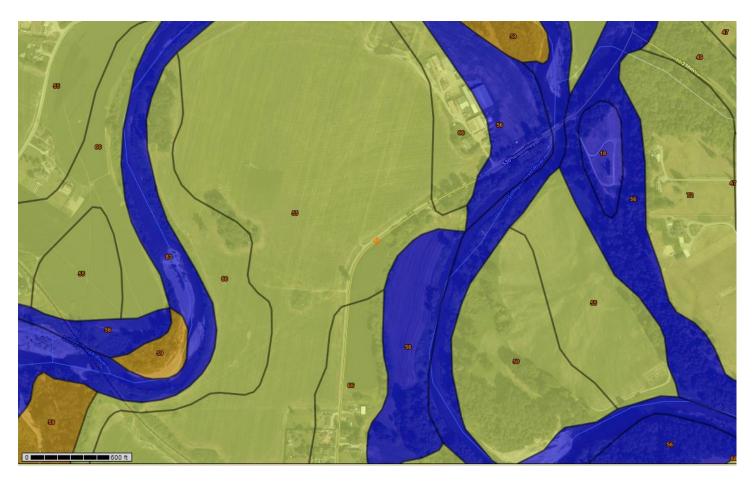
Drainage Class: Poorly Drained

- Excessively drained
 Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Natural Milk Farms 2 $23529 \ \text{Pioneer Highway, Stanwood WA} \qquad \approx 300 \ \text{feet from lagoon to Stillaguamish River}$

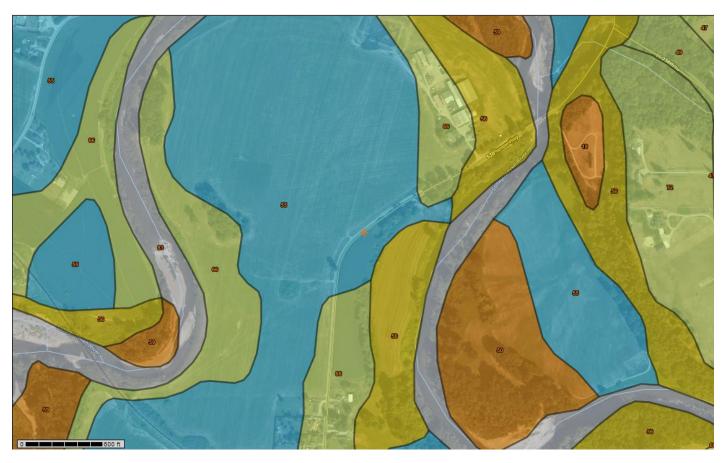






Depth to Water Table: 90 - 92 cm

- 0 25
- ___ 25 50
- **100 150**
- 150 200
- > 200
- Not rated or not available



Drainage Class: Well Drained/Moderately Well Drained

Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

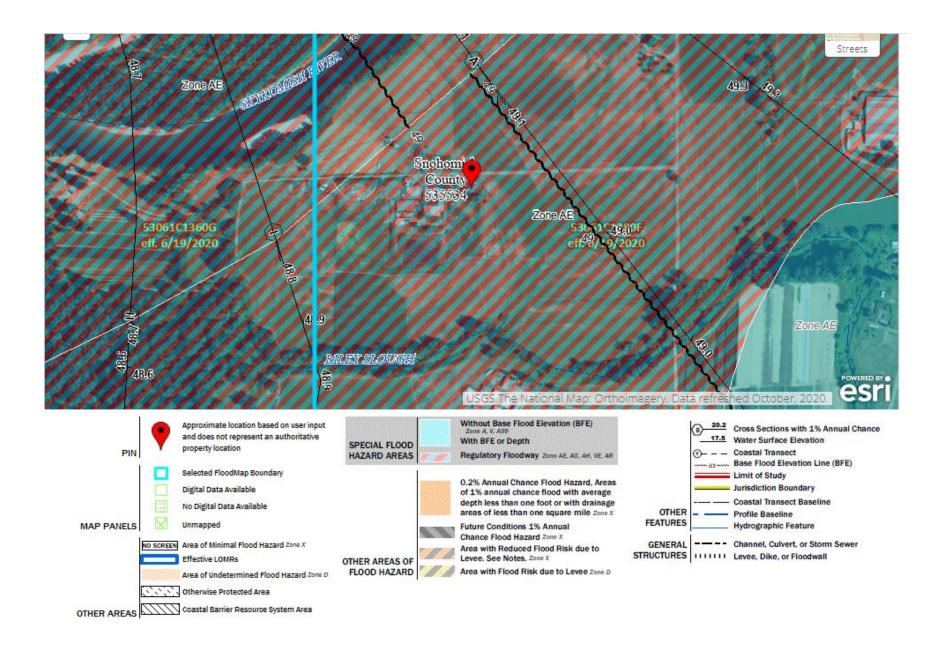
Snohomish/Skykomish River

Frohning Dairy

17506 SE 190th St., Monroe WA

 \approx 1,000 feet from lagoon to Skykomish River, in a flood plain







Depth to Water Table: 92 cm

0 - 25

___ 25 - 50

100 - 150

150 - 200

> 200

☐ Not rated or not available



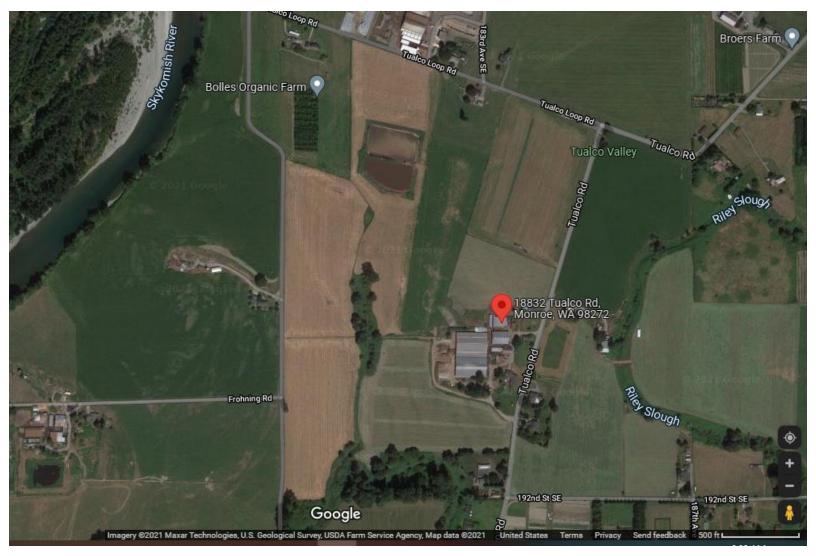
Drainage Class: Moderately Well Drained

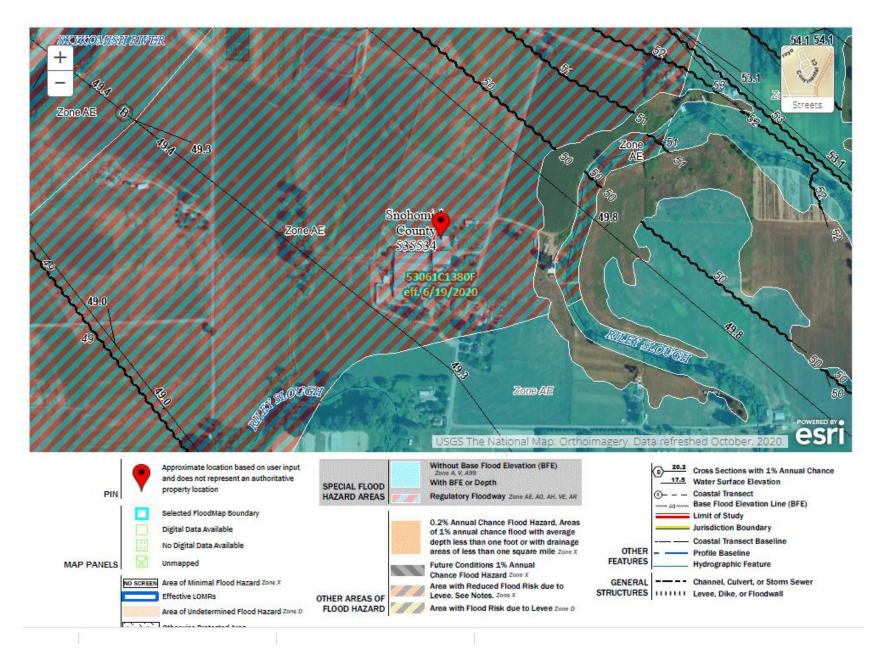
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

John Deck Dairy

18832 Tualco Rd, Monroe WA

 \approx 1,200 feet from lagoons to Skykomish River, in a flood plain

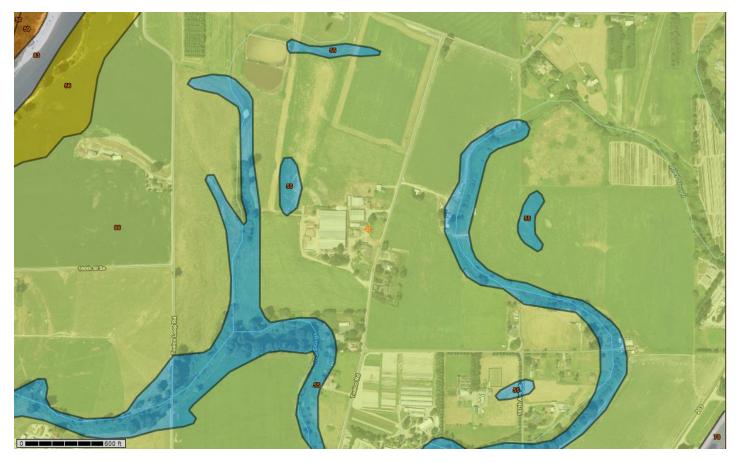






Depth to Water Table: 92 cm

- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Moderately Well Drained

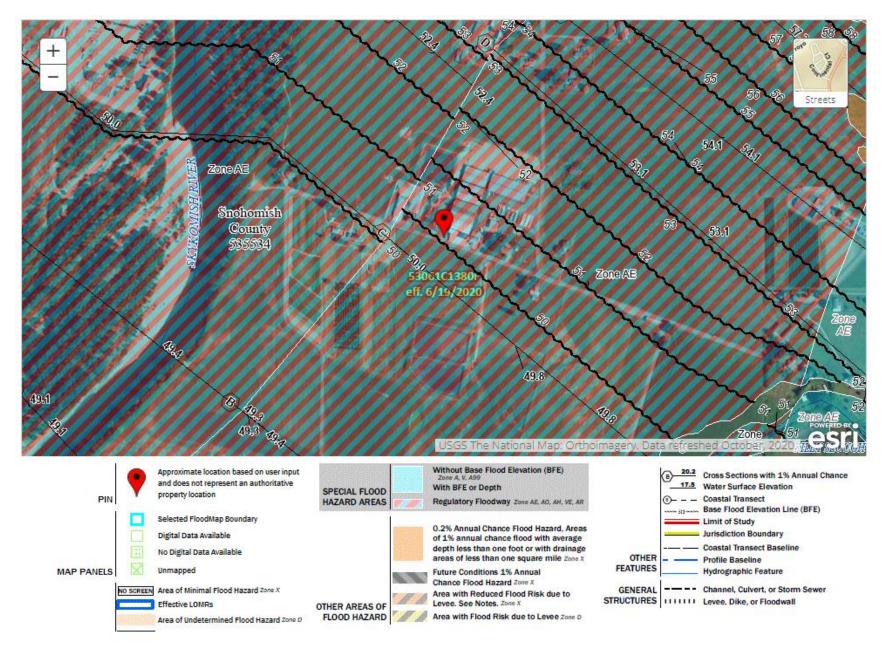
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

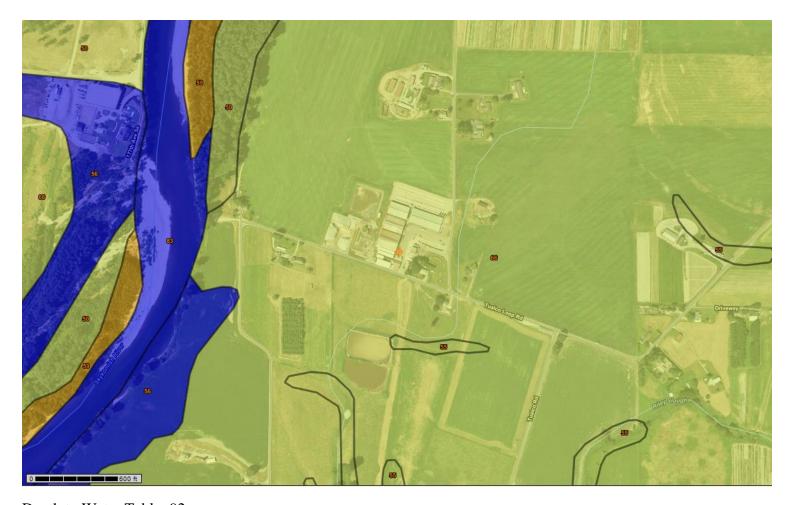
Werkhoven Dairy

18125 Tualco Loop Rd., Monroe WA

 \approx 1,200 feet from lagoon to Skykomish River, in a flood plain







Depth to Water Table: 92 cm

0 - 25

___ 25 - 50

100 - 150

150 - 200

> 200

■ Not rated or not available



Drainage Class: Moderately Well Drained

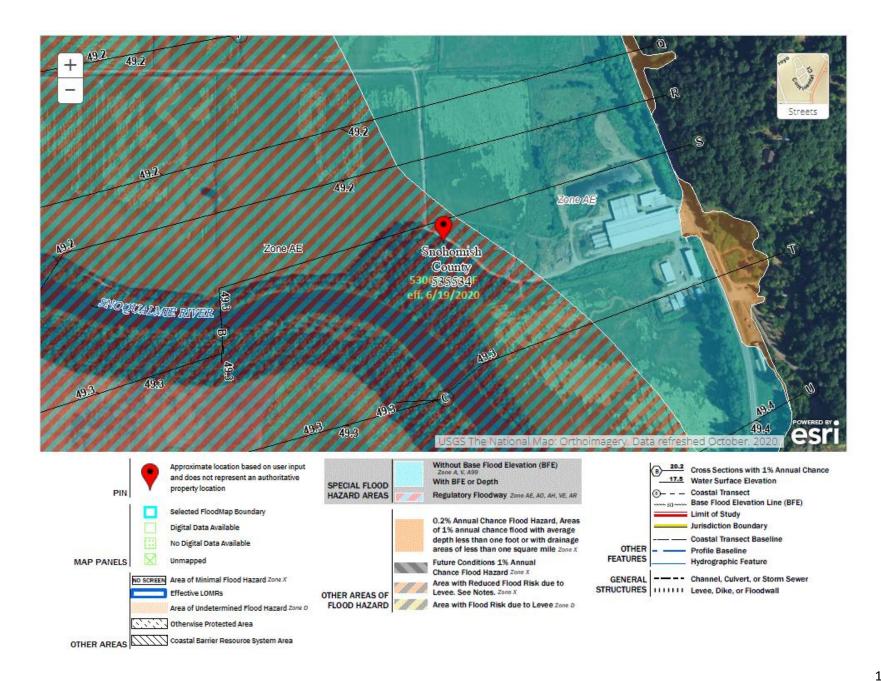
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

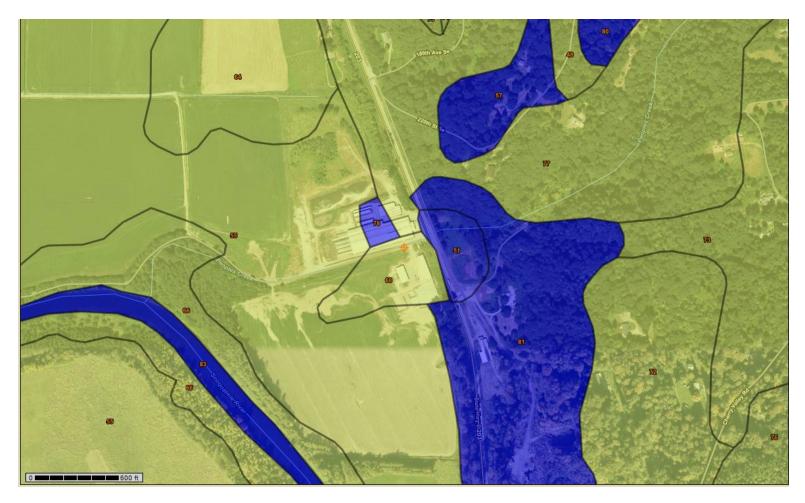
People's Creek Dairy

22426 State Route 203, Monroe WA

 ≈ 300 feet from lagoon to People's Creek

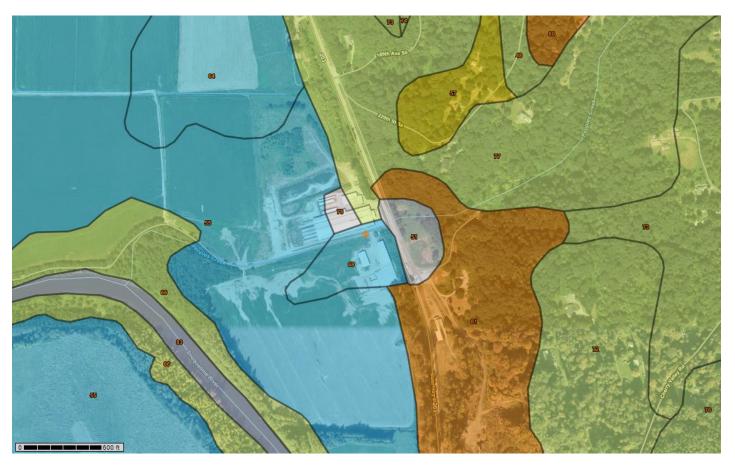






Depth to Water Table: 90 - 92 cm

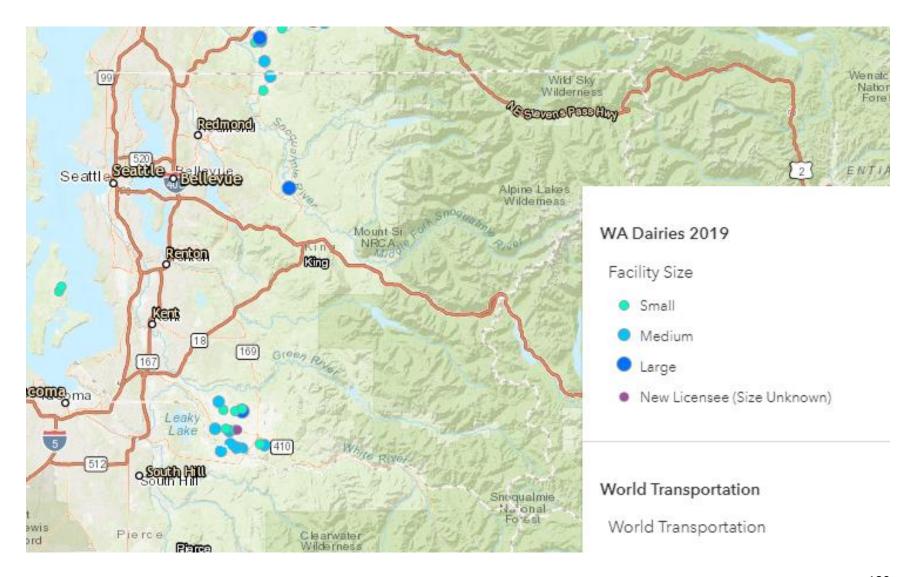
- 0 25
- **25 50**
- **100 150**
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

King County
https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520%2C-122.361976%2C12.00



Snoqualmie River

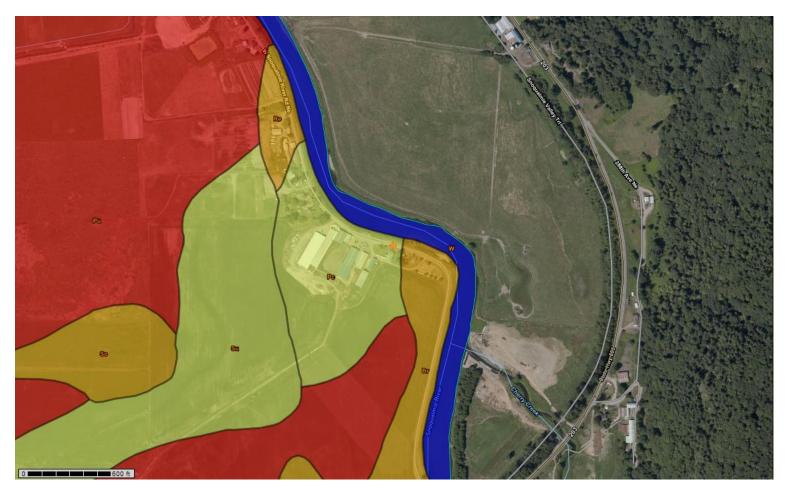
Green Acres Dairy

19605 W Snoqualmie River Rd, Duvall WA

 ≈ 150 feet from lagoon to Snoqualmie River, in a flood plain







Depth to Water Table: 92 cm

0 - 25

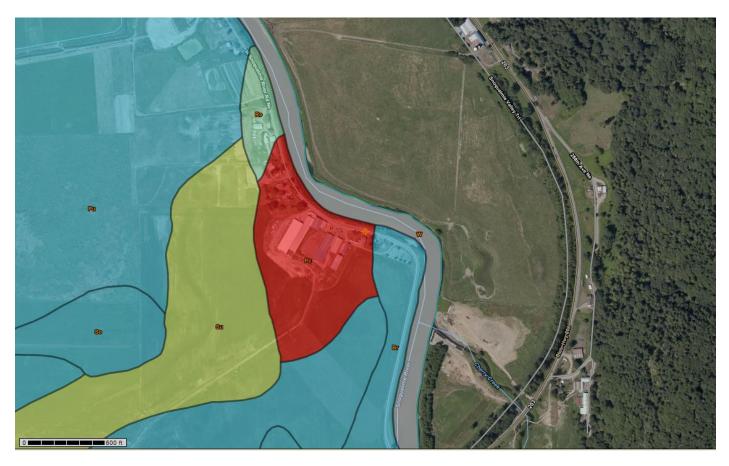
___ 25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



Drainage Class: Excessively Drained

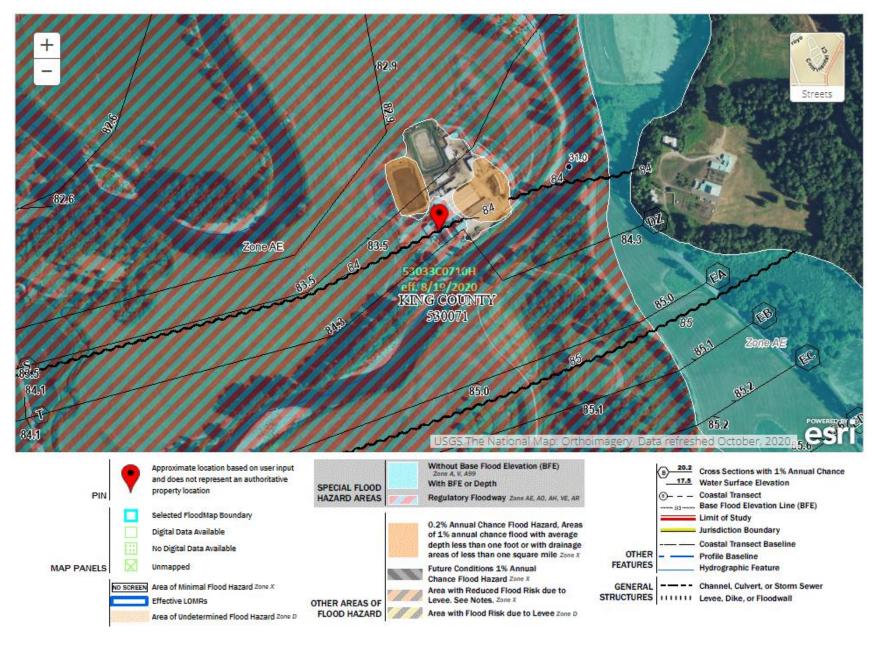
- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

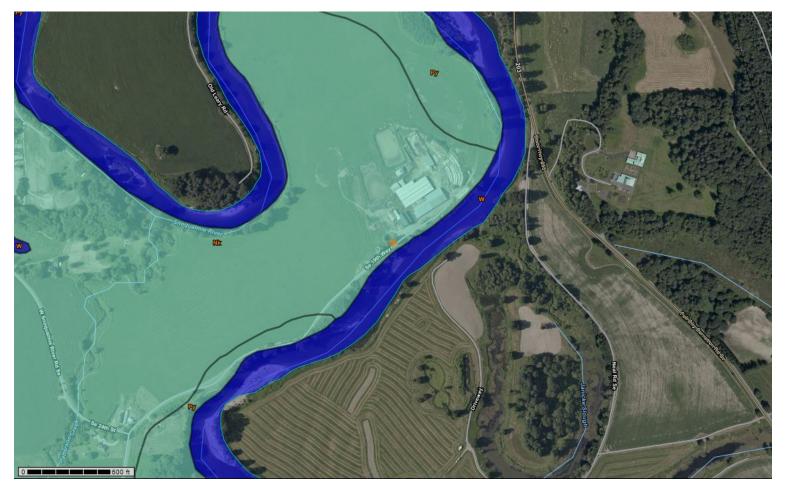
Keller Dairy

31700 SE 19th Way, Fall City WA

 ≈ 400 feet from lagoons to Snoqualmie River, in a flood plain

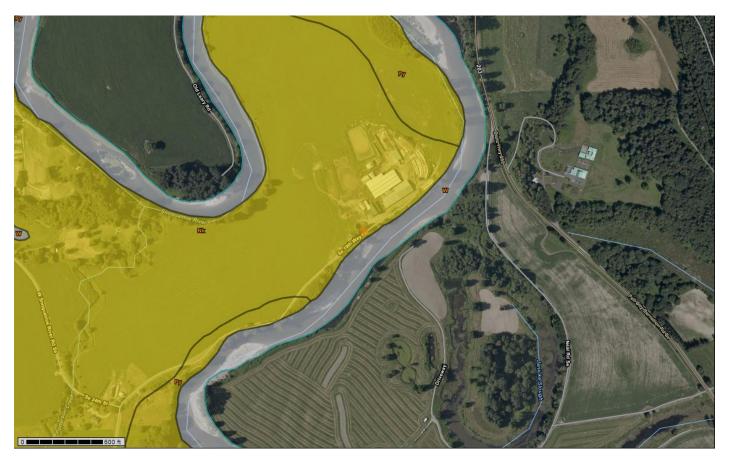






Depth to Water Table: 107 – 137 cm

- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available

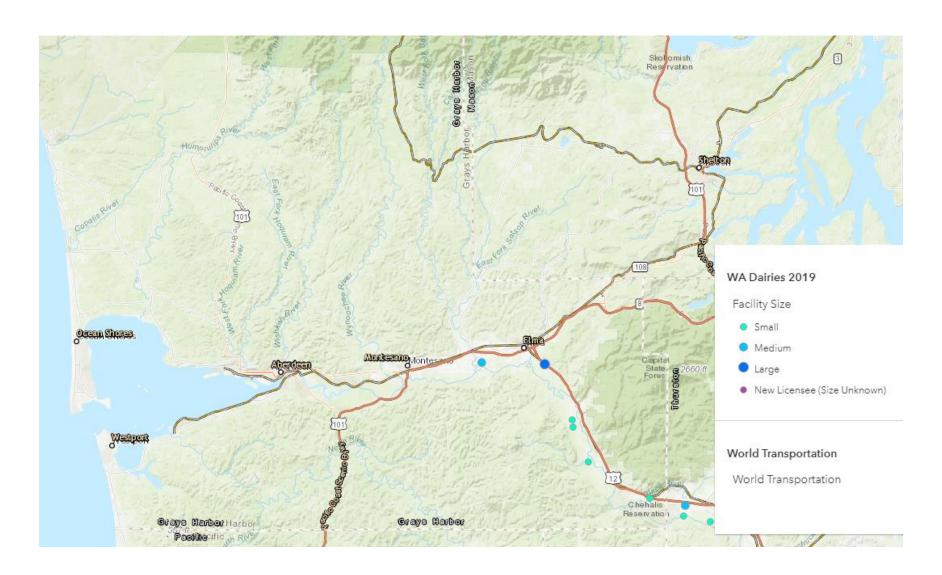


Drainage Class: Well Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Grays Harbor County

 $\underline{https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520\%2C-122.361976\%2C12.00}$

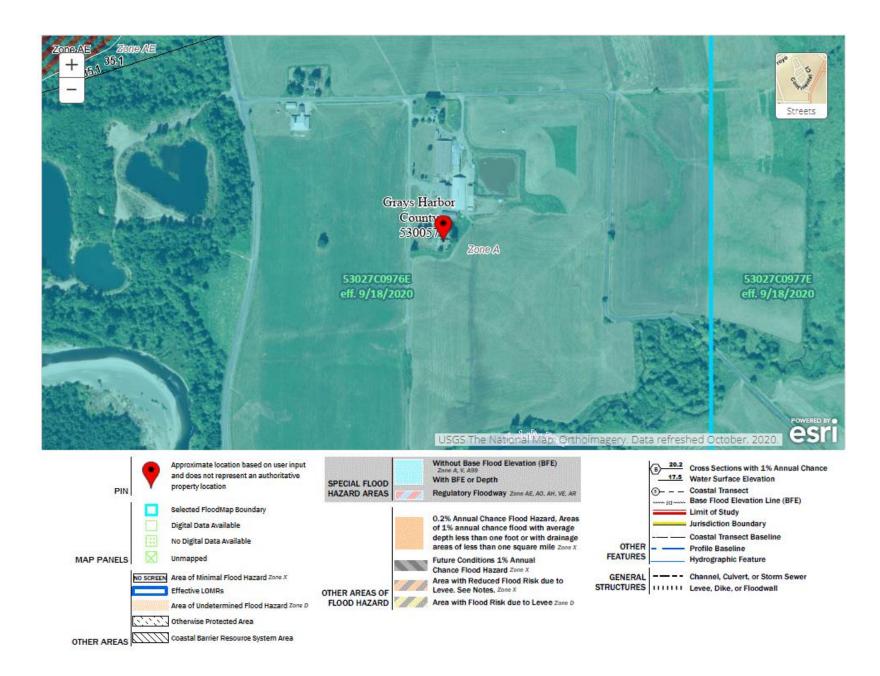


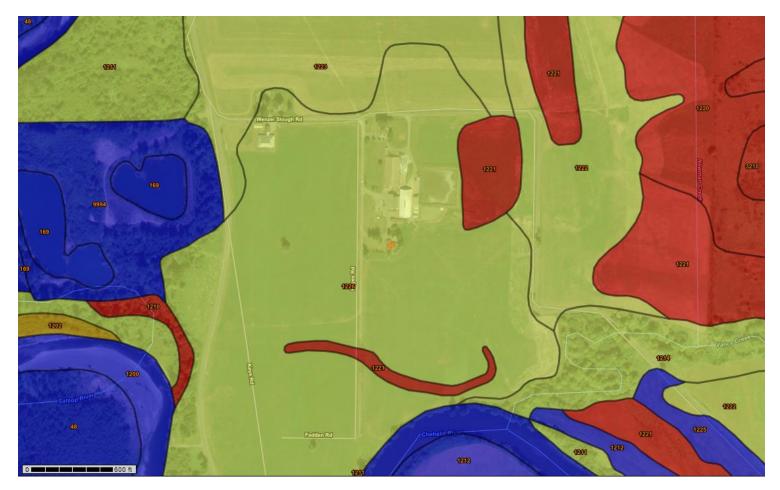
Chehalis River

Jose Torres Dairy

759 Wenzell Slough Rd, Elma WA \approx 1,200 feet from lagoon to Chehalis River







Depth to Water Table: 60 cm

0 - 25

25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



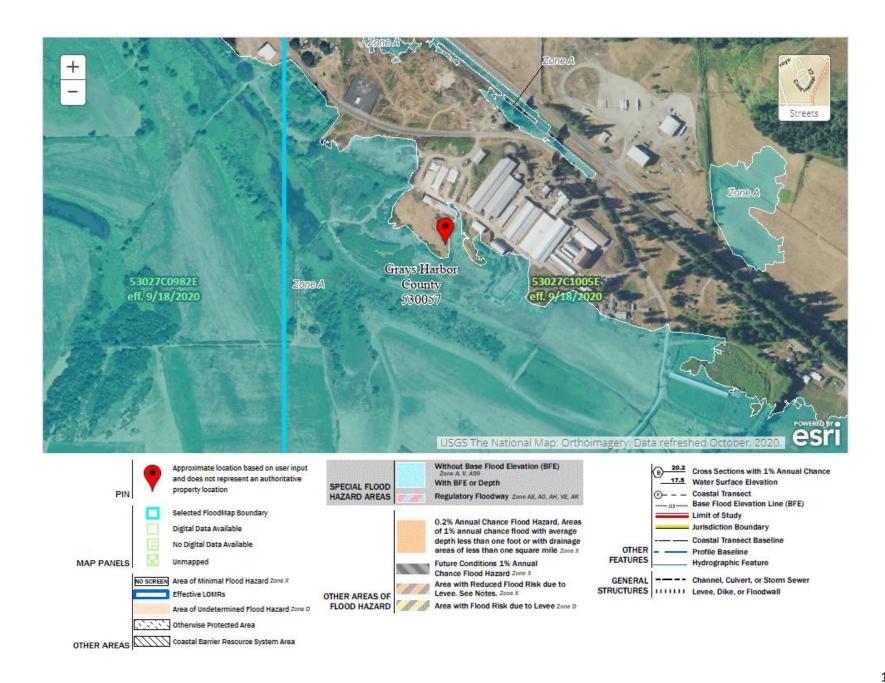
Drainage Class: Moderately Well Drained

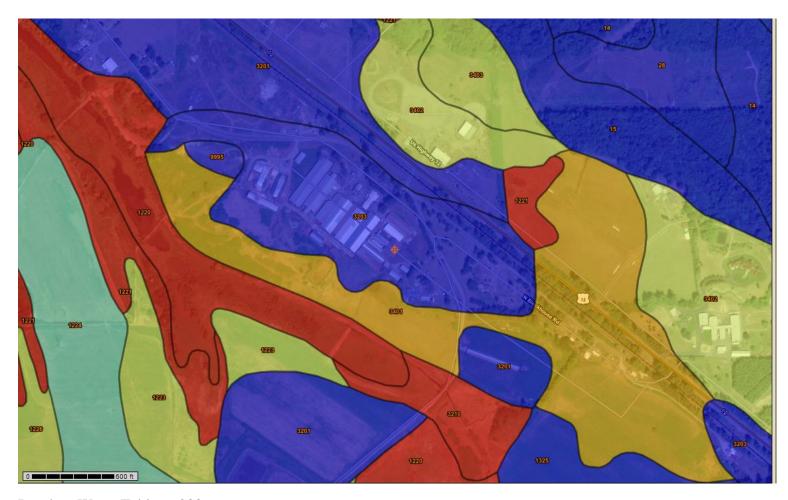
- Excessively drained
- Somewhat excessively
- drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Elma Dairy

144 North Blockhouse Rd, Elma WA \approx 4,000 feet from lagoon to Chehalis River







Depth to Water Table: $> 200 \ cm$

- 0 25
- ___ 25 50
- **100 150**
- **150 200**
- > 200
- Not rated or not available

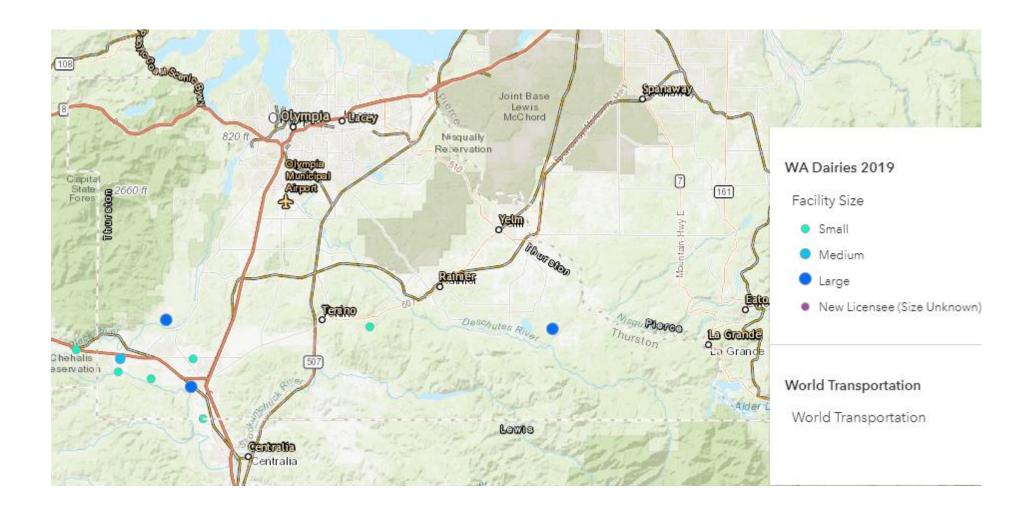


Drainage Class: Somewhat Excessively Drained

- Excessively drained Somewhat excessively drained Well drained Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Thurston County

https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520%2C-122.361976%2C12.00



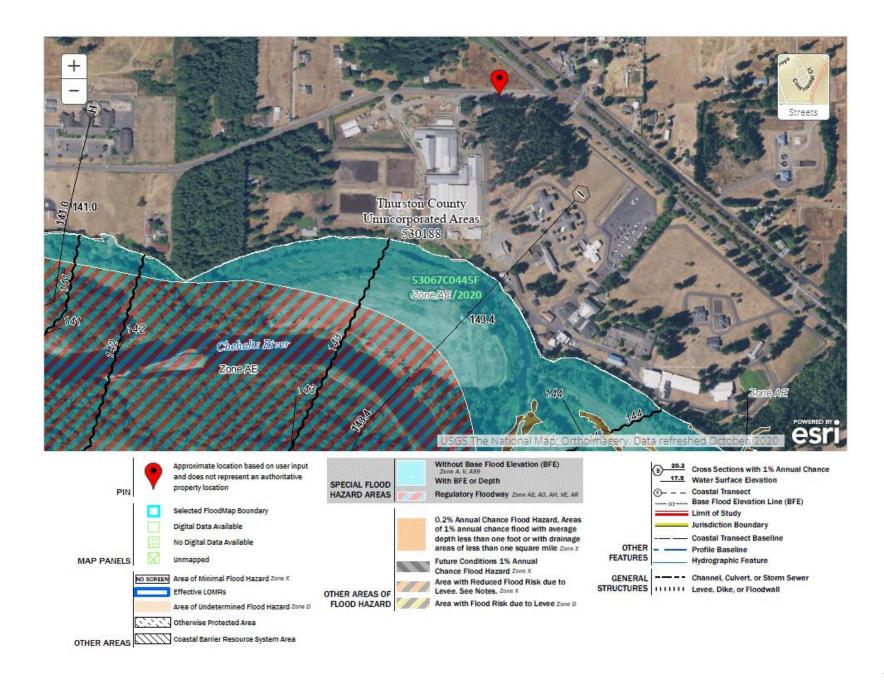
Chehalis River

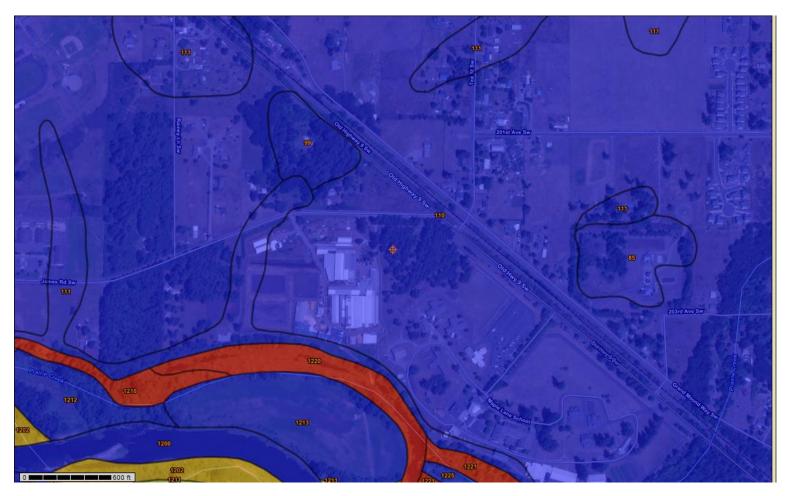
James Road Dairy

7049 SW James Rd, Rochester WA

 ≈ 100 feet from lagoons to Prairie Creek







Depth to Water Table: $> 200 \ cm$

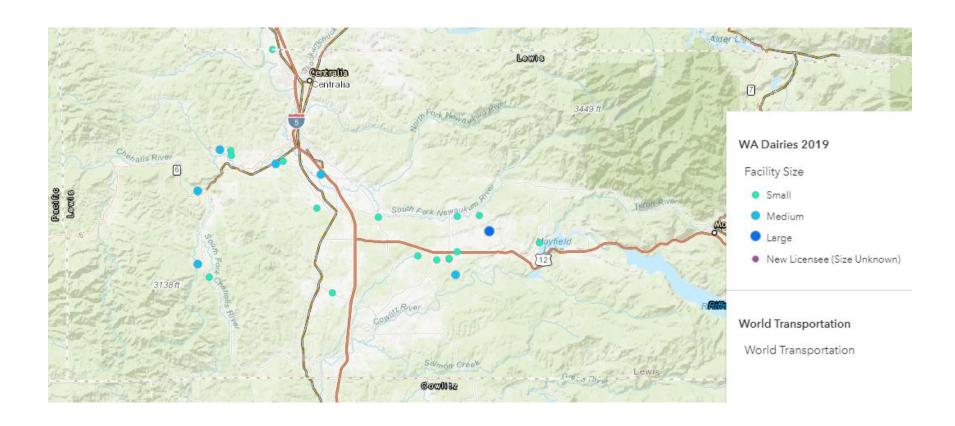
- 0 25
- **25 50**
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Somewhat Excessively Drained

Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

Lewis County
https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520%2C-122.361976%2C12.00



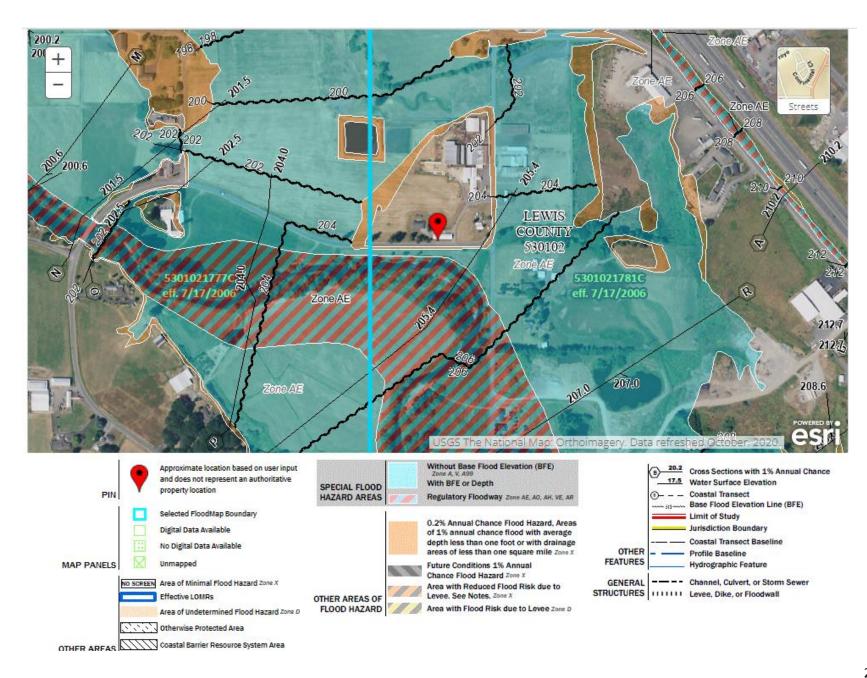
Newaukum River

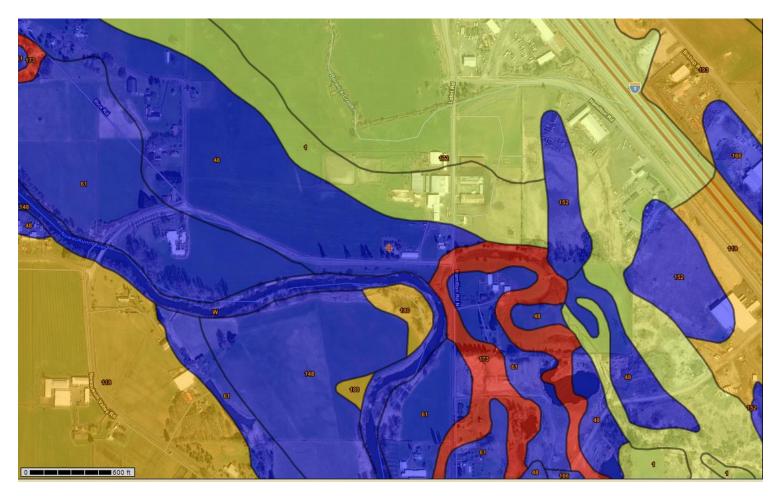
Osborn Dairy

228 Labree Rd, Chehalis WA

 ≈ 350 feet from lagoon to Newaukum River







Depth to Water Table: 69 - 92 cm

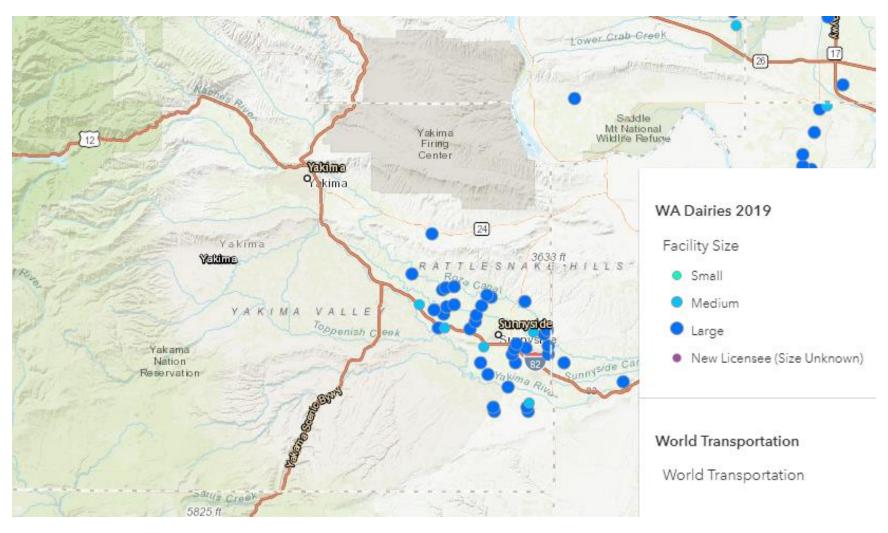
- 0 25
- ___ 25 50
- 100 150
- **150 200**
- > 200
- Not rated or not available



Drainage Class: Poorly Drained

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Yakima County
https://hub.arcgis.com/maps/84c611986e804a9e8da7a3b7b6b3a514/explore?location=48.927520%2C-122.361976%2C12.00



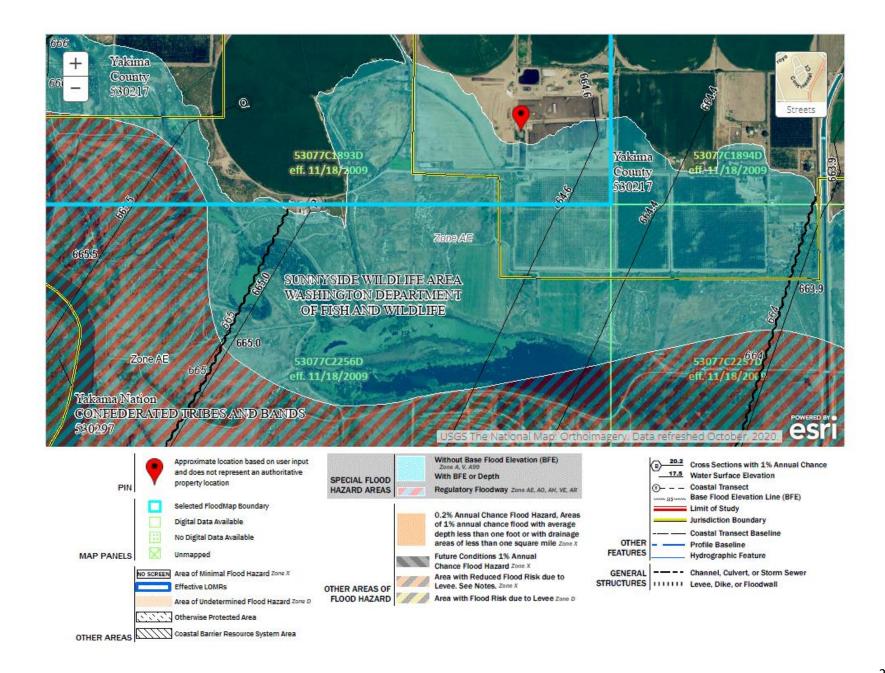
Yakima River

Double P Dairy

1741 Holaday Rd, Mabton WA \approx 2,500 feet from lagoon to Giffen Lake









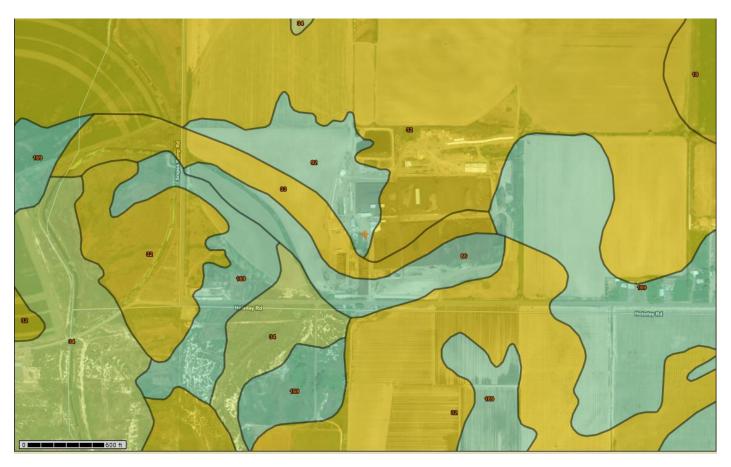
Depth to Groundwater: 76 cm to > 200 cm



150 - 200

> 200

Not rated or not available



Drainage Class: Well Drained to Somewhat Poorly Drained

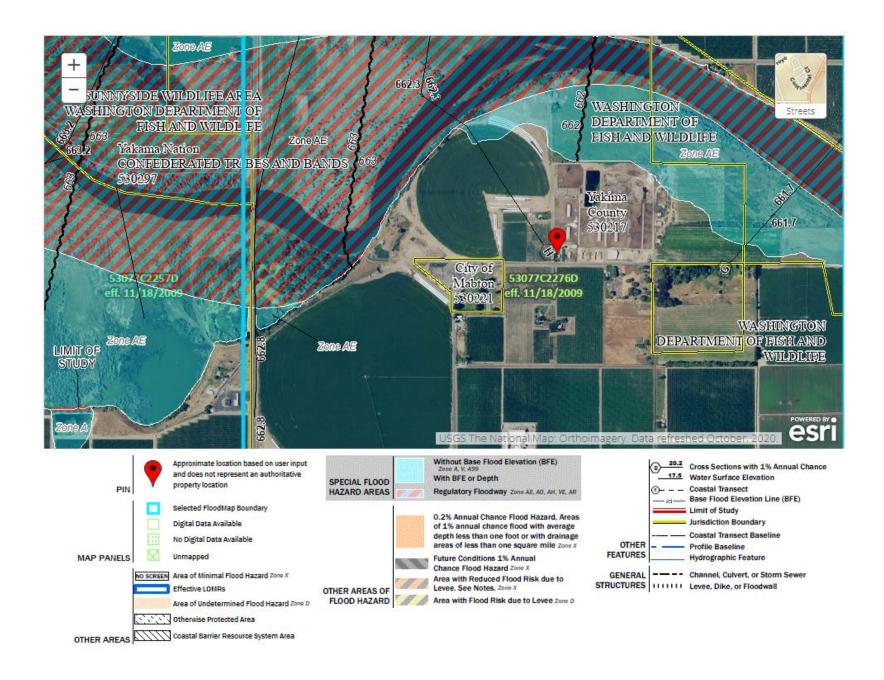
Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available

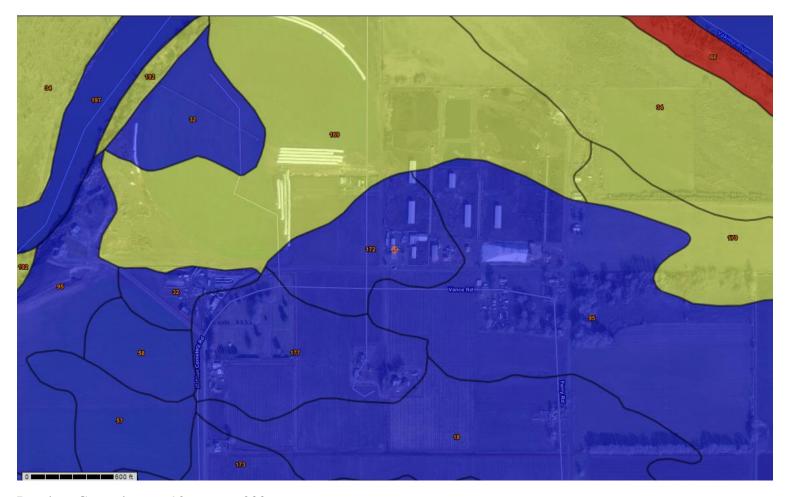
Riverview Dairy

1220 Vance Rd, Mabton WA

 \approx 1,200 feet from lagoons to Yakima River







Depth to Groundwater: 92 cm to > 200 cm

0 - 25

___ 25 - 50

100 - 150

150 - 200

> 200

Not rated or not available



Drainage Class: Well Drained/Excessively Drained/Somewhat Poorly Drained

Excessively drained
Somewhat excessively drained
Well drained
Moderately well drained
Somewhat poorly drained
Poorly drained
Very poorly drained
Subaqueous
Not rated or not available