

**WEST SHORE HOOD CANAL
OUTFALL WINDSHIELD SURVEY:**

**SR 101
MP 293.5 TO 341.0**

**Compiled by:
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**Washington State Department of Transportation
Environmental Affairs Office
Water Quality Unit
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WEST SHORE HOOD CANAL OUTFALL WINDSHIELD SURVEY: SR 101 - MP 293.5 TO 341.0

The Hood Canal is a salt water fjord created by Pleistocene glaciation. Its setting is dramatic, particularly in clear weather. Snow capped Cascade volcanoes line the eastern horizon and the Olympic Mountains rise precipitously to the west. This windshield survey covered the area from north of Quilcene to south of the Skokomish River.

Hood Canal has long been known for excellent commercial and sport fishing. Oysters, clams, crabs, and shrimp have also been abundant. Early pioneers here enjoyed a relatively comfortable life of easily available food all year around.

Western Washington's population increased dramatically during the last 40 years. The west shore of Hood Canal is now largely settled with the homes of retirees and seasonal residents. Many of these beachfront houses are connected to septic systems that are totally inadequate. Domestic sewage leakage has caused the closure of oyster and shellfish beds in some areas. The diversity and abundance of fish and marine life has also decreased.

Highway stormwater runoff has the potential to reduce water quality. WSDOT began to inventory and characterize stormwater outfalls in 1993. Detailed field surveys have been completed for most highways in the major population centers. Less intensive windshield surveys have been completed in some potentially sensitive rural locations, such as this portion of SR 101.

Outfall surveys are an important tool in planning for the protection of water resources. This survey had three main purposes:

1. Locate stormwater outfalls by geographic coordinates
2. Describe the roadway drainage areas and surrounding environment, and
3. Rate each outfall.

WSDOT has no future plans to prioritize the highest rated outfalls because of budget restrictions. No new construction or stormwater outfall retrofitting is currently planned along this section of SR 101.

Locating Stormwater Outfalls

Stormwater outfalls were located in latitude and geographic coordinates. These locations were recorded using Global Positioning System (GPS) equipment. This equipment consisted of a Trimble Pathfinder portable receiver and an MC-V Asset Surveyor Data Logger. GPS recorded accurate latitude-longitude coordinates by capturing and processing simultaneous signals from a minimum of four satellites.

Locations for the Hood Canal Windshield Survey were established by recording "quick points", i.e. GPS outfall locations from a moving vehicle. This was done by activating the receiver and data logger while passing markings on the shoulder of the road designating the presence of culverts.

Some outfalls couldn't be recorded due to variations in satellite location and impediments to signal reception. In these cases a formula using accumulated route mileage (ARM) from the Washington State Highway log was used to determine geographic coordinates. The collected coordinates were then processed and transferred to a Geographic Information Systems (GIS) layer.

Describing Highway Drainage Areas

The windshield survey described the highway drainage areas and surrounding (particularly up-gradient) environment. Narrative observations of outfall sites were recorded on a dictaphone. Environmentally sensitive sites were also recorded with a video camera.

The parameters of these observations included:

1. Drainage pattern of highway run-off;
2. Description of local topography ;
3. Impacts of local topography on the quality and/or quantity of highway runoff;
4. Local land use and potential water quality impacts; and
5. Highway runoff destinations, such as Hood Canal and local.

Individual sub-basin watershed boundaries were identified by comparing topographic boundaries from USGS quadrangle maps to Washington State highway logs. These sub-watersheds were broken down from the major watersheds described in West Shore Hood Canal Watersheds, a document prepared by The Puget Sound Cooperative River Basin Team in 1995.

Sub-basin boundaries correspond to smaller, but significant creeks and rivers in the survey area. They are noted by milepost ranges in this report. Mileposts listed in this report are followed by an upper cased L or R. This refers to the left or right side of the highway where the outfall is located. The right side of the highway is the

right side in ascending highway mileposts. In the case of State Route (SR) 101, mileposts (MPs) ascend traveling south toward Olympia. The right side of SR 101 faces west and the left faces east.

After data was collected, the outfalls were rated for potential water quality impacts. Each outfall was rated as either high, medium or low. High priority outfalls have a greater potential to adversely affect water quality than medium or low priority outfalls.

Several factors were used to prioritize outfalls for future retrofitting. These factors include the type and size of receiving waterbody, the presence of sensitive resources, beneficial uses, and pollutant loading. For example, stormwater entering a more sensitive waterbody such as a small stream or sensitive wetland would have a higher priority than stormwater entering a tideland area.

Waterbody types to which stormwater is being discharged were designated as groundwater, small stream, large stream, rivers, wetlands and tidelands. Size of the receiving waterbody in this survey refers primarily to streams and rivers.

Rivers were defined by name on USGS maps. Lilliwaup, Wakitetickeh, and Fulton Creeks were considered large streams because they were five miles or longer. The remainder were small streams less than five miles long.

The project covered 210 outfalls. 34 of the outfalls (16%) were rated as high priority retrofit sites. 73 outfalls (35%) were medium and 103 outfalls (49%) were low priority.

The WSDOT stormwater outfall inventory and characterization program uses pollutant loading as one of the criteria for rating outfalls. Pollutant loading refers to the amount of pollutants in highway runoff. Contaminant loading is directly correlated with traffic volume. The higher the traffic volume, the higher the contaminant loading.

In this survey area traffic volume is approximately 3000 vehicles per day. This is low traffic compared to other state highways. Therefore pollutant loading contributed by SR 101 in this region is considered low. By contrast, Interstate 5 in the city of Seattle has some areas with traffic volumes exceeding 200,000 vehicles per day.

Principal contaminants found in highway run-off are sediments, hydrocarbons, total and dissolved heavy metals (lead, cadmium, zinc and copper). Typically, highway run-off does not contain significant concentrations of fecal coliform unless contaminated by off-site drainage.

In 1996, the WSDOT Water Quality Unit studied a low traffic area similar to this section of SR 101.¹ The study found that contaminants contributed by off-site sources greatly exceeded contaminants generated by highway use.

The West Shore Hood Canal windshield survey specifically focused on potential impacts to shellfish and finfish. Clearly, off-site drainage mixed with highway run-off impacts these resources.

Effects of stormwater run-off to the beaches of Hood Canal and its impact on shellfish posed the greatest challenge in outfall rating. Windshield surveying driving in a vehicle past outfalls was not as precise compared to stopping and making detailed observations.

It was often difficult to determine where stormwater discharged. The alternatives were:

1. Direct discharge to the beach;
2. Direct discharge to saltwater; or
3. Infiltration to ground water before reaching the beach.

Fred Tharp, WSDOT Hydraulics Design Engineer provided the survey team with the construction history of the highway. This allowed the survey team make the following drainage assumptions that were reasonably accurate for most situations.

In beachfront development areas, culverts were installed beneath the property and discharge directly to the beach. Culverts discharged directly to the beach in undeveloped sections. When the highway was up gradient from the canal, the culvert was assumed to discharge onto the embankment and follow eroded rills down to Hood Canal beaches. Some outfalls that listed Hood Canal as the receiving waterbody probably infiltrated into ground water before reaching the beach as subsurface flow.

Another challenge was defining impact on shellfish resources. Virtually every beach in the survey area had some sort of shellfish habitat. It was extremely difficult to assess habitat value and stormwater run-off susceptibility. All outfalls discharging to Hood Canal were rated low, except in areas where off-site development clearly demonstrated the potential to degrade highway run-off quality.

Stream sensitivity to pollutants was based on their size (discussed above), potential off site pollutant loading, and environmental significance. Streams not listed in the Catalog of Washington Streams, Washington Department of Fish and Wildlife, 1975 were rated low. Most of the unnamed-unmapped streams in the area were seasonal channels draining small gullies or ravines. Stream sensitivity was rated medium or high, when there was significant offsite development.

¹ SR 101: Chinook Vicinity Water Quality, WSDOT, Environmental Affairs Office, Water Quality Unit, 1996.

Salmon production and spawning bed quality were also considered in terms of run-off quality sensitivity. The Duckabush River, Lilliwaup Creek, Eagle Creek, and Jorstad Creek have some of the highest quality spawning beds in the entire Puget Sound region.

Outfalls discharging to Scharer or Wakitekeh creeks were rated as medium. These creeks have gradient and physical barriers with limited salmon production and spawning grounds. Therefore the impacts of water quality degradation to salmon were rated less severe.

Outfalls that infiltrate have the potential to recharge and possibly impact groundwater. Outfalls receiving up-gradient drainage from forested areas before infiltrating to ground water were rated low. Outfalls receiving significant off-site drainage were rated as medium. These ratings were based on the amount of pollutant loading associated with development in the area. Most infiltration originating from stormwater outfalls occurred on forested hill slopes with lateral sub-surface flow.

There were a few outfalls that discharge to wetlands. The majority of these were estuarine wetlands. Outfall impacts were rated according to the amount of pollutant loading associated with development and the size of the wetland.

Information regarding the environmental conditions of the survey area was obtained from published literature and through personal contacts. West Shore Hood Canal Watersheds, The Puget Sound Cooperative River Basin Team, 1995, provided information on the land use, geology, water quality and watershed management practices within the survey area. Shellfish and Finfish--Resources At Risk in the Hood Canal Watershed, Hood Canal Technical Work Group, 1995, described threatened resources within the Hood Canal Watershed.

Soils Surveys for Mason and Jefferson Counties, U.S. Geologic Survey, 1975, provided information on the drainage tendencies of various soil types within the survey region. Catalog of Washington Streams, Washington Department of Fish and Wildlife, 1975, helped identify over forty rivers and streams associated with SR 101 in the survey area. This report also provided additional historical information on overall water quality and the status of fisheries resources in the watersheds.

1996 Washington State Water Quality Assessment 303(d) and 305(b) Report Companion Document, Washington State Department of Ecology, Water Quality Program, 1996, gave specific assessments of water resource impairments in the survey area.

WSDOT recognizes and thanks of Donna Simmons, Project leader of the Hood Canal Coordinating Council for sharing her expertise and assisting with this survey.

Information is also available as a Geographic Information. This can be obtained by contacting:

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Environmental Affairs Office, Water Quality
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Olympia, WA 98504-7331
Tel. (360) 705-7426
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The table below outlines the details of what was observed in each sub-basin. This inventory starts south of Potlach State Park. It proceeds north by sub-basin to just north of Quilcene.

<p align="center">SR 101 MASON COUNTY WRIA 16 PURDY CREEK BASIN MP 339.2 - 341.0</p>		
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MP	RECEIVING WATER	COMMENTS
339.3 R/L	Purdy Cr.	Purdy Cr. crossing. Drainage from ditches on both sides of road discharge into Purdy Cr. at this location. Flat low-lying area in this vicinity. Rating: medium
339.75 R	Purdy Cr.	Storm run-off in ditch on SR101 sloped from the south. Enters cross-culvert and discharges down embankment into Purdy Cr. Rating: high
339.8 R	Purdy Cr.	Storm run-off in ditch on SR101 sloped from the south. Enters cross-culvert and discharges down embankment into Purdy Cr. Rating: high
339.85 R	Purdy Cr.	Storm run-off in ditch on SR101 sloped from the south. Enters cross-culvert and discharges down embankment into Purdy Cr. Rating: high
339.9 R	Purdy Cr.	Storm run-off in ditch on SR101 sloped from the south. Enters cross-culvert and discharges down embankment into Purdy Cr. Rating: high
340.1 R	Purdy Cr.	Storm run-off in ditch on SR101 sloped from the south. Enters cross-culvert and discharges down embankment into Purdy Cr. Rating: high
340.3 R	Purdy Cr.	A cross culvert carries run-off from a south sloped ditch on SR101 into Purdy Cr. Slope above ditch pretty well vegetated but shows evidence of past slides. Scattered business development. Rating: high
340.4 R	Purdy Cr.	Grate inlet on SR 101 L receives highway run-off from the south through ditch. Highway sloped toward left to facilitate drainage toward grate inlet. Outfall also receives flow from Eagle Point Dr. Discharges down embankment into Purdy Cr. paralleling SR101. Rating: high

<p align="center">SR 101 MASON COUNTY WRIA 16 WEAVER CREEK BASIN MP 339.0 - 339.2</p>		
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MP	RECEIVING WATER	COMMENTS
339.12 R/L	Weaver Cr.	Weaver Cr. crossing. Drainage from ditches on both sides of road discharge into Weaver Cr. Flat low-lying area in this vicinity. Rating: medium

<p align="center">SR 101 MASON COUNTY WRIA 16 SKOKOMISH RIVER BASIN MP 335.63 - 339.0</p>		
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MP	RECEIVING WATER	COMMENTS
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335.65 L	Wetland tributary to Skokomish R.	A drainage ditch on SR 101 R sloped from the north receives flow from SR 101 and from a small creek, possibly unnamed creek #0216. There is no visible flow in this creek at this time. The run-off from this ditch discharges to a wetland tributary of the Skokomish River adjacent to Hood Canal. Rating: medium
335.8 L	Wetland tributary to Skokomish R.	Drain ditches on both sides of SR 101 from the south discharge into a forested wetland region. A forested area to the west may contribute stormwater flow to this outfall. Light residential and commercial area. Rating: medium
336.4 L	Wetland tributary to Skokomish R.	Drainage ditch on SR101 R sloped from the south from approximately MP 337 along with a ditch sloped from the north discharges into a wetland on SR101 L. Rating: medium
337.1 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. Outfall discharges to wetland on SR101 L. Rating: medium
337.23 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. This ditch also receives run-off from adjacent hillside which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium
337.3 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. This ditch also receives run-off from adjacent hillside which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium
337.45 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. This ditch also receives run-off from adjacent hillside which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium

337.65 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. The ditch also receives run-off from adjacent hillside which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Groundwater seepage occurs on the hill slope and contributes flow to this outfall. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium
337.7 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. Ditch also receives run-off from adjacent hill side which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium
337.8 L	Wetland tributary to Skokomish R.	Cross-culvert receives run-off from ditch on SR101 R sloped from the north. SR101 sloped to the right to facilitate drainage to this ditch. This ditch also receives run-off from adjacent hillside which shows evidence of past slides. Slope appears unstable and erosion potential high. Upper reaches of hill slope has been logged. Outfall discharges in to large wetland tributary of Skokomish R. on SR 101 L. Rating: medium
338.8 R/L	Skokomish R.	Skokomish River crossing. Receives flow from the large (somewhat vegetated) channels on both sides of SR101 flowing from the north. This is a flat low lying region with farmlands present. Entering Skokomish Indian Reservation. Rating: medium

<p align="center">SR 101 MASON COUNTY WRIA 16 ENATI CREEK BASIN MP 333.06 - 335.63</p>

MP	RECEIVING WATER	COMMENTS
333.1 L	Hood Canal	Ditches sloped from the north and south on SR101 R. Receives flow from SR101 as well as from adjacent forested hillside with some development up slope. Discharges via cross-culvert to Hood Canal beach. Rating: medium
333.4 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside with some development up slope. Discharges via cross-culvert under private property onto Hood Canal beach. Rating: medium

333.5 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside with some development up slope. Discharges via cross-culvert under private property onto Hood Canal beach. Appears to be a shellfish bed. Rating: medium
333.55 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside with some development up slope. Discharges via cross-culvert under private property to a Hood Canal beach. Rating: medium
333.6 L	Hood Canal	Ditches on SR101 L from the north and south receives flow from the roadway as well as from the forested hillside with some development up slope. They converge here and discharge via cross-culvert to Hood Canal. This culvert most likely runs under private property and onto Hood Canal beach. Rating: medium
333.85 L	Wetland	The cross culvert at this location serves as a conveyance between wetlands on opposite sides of SR101. The wetland on SR101 R receives flow from ditches from both the north and south. Wetland on SR101 L is adjacent to Hood Canal. Rating: low
333.9 L	Groundwater Infiltration	Near entrance to Potlatch a small, unincorporated, residential and light commercial community. Drainage ditch on SR101 R sloped from the south discharges via cross-culvert to forested area adjacent to Hood Canal. Rating: low
334.3 L	Wetland	Ditches with good vegetative lining receive flow from SR101 and adjacent forested hillside. The ditch discharges via cross-culvert into a wetland adjacent to Hood Canal. Wetland part of unnamed Cr. #0220. Rating: low
334.4 L	Unnamed Cr. #0220/Hood Canal	Unnamed Cr. #0220 crosses at this location and has significant flow near City of Tacoma Public Utilities power plant. This Creek is within the Hood Canal tidal zone. The creek receives flow from ditches on the right and left of SR101 and sloped from the north. It discharges between two private beach front residences and on to Hood Canal Beach. Rating: medium
334.65 L	Wetland	Ditch on SR101 R sloped from the south. Receives run-off from highway and discharges via cross-culvert into wetland adjacent to Hood Canal. Located next to the Kiwanis Community Club House. Rating: medium

334.7 L	Wetland/ Hood Canal	Drainage ditch sloped from the north. Receives runoff from SR 101 and drain ditch serving North Hurley Road to the west. A cross culvert carries this run-off into a wetland (fed by unnamed Cr.) adjacent to Hood Canal. Small businesses and residences in this area. Rating: medium
335.2 L	Unnamed Cr. #0218/Hood Canal	Drainage ditch on SR 101 R drains SR 101 and adjacent forested hillside. Sloped from the north Enters unnamed Cr. #0218 and drains into wetland/riparian area adjacent to Hood Canal. This area is in a light business area just south of Minerva Beach RV park and Potlatch State Park. the creek is within Hood Canal tidal zone. Rating: medium
335.3 L	Hood Canal	Drainage ditch sloped from the north on SR101 R receives highway run-off as well as runoff from adjacent forested hillside. Cross-culvert carries runoff to outfall on Hood Canal beach Potlatch Shellfish bed. Rating: medium
335.4 L	Hood Canal	Drainage ditch sloped from the north on SR101 R receives highway run-off as well as runoff from adjacent forested hillside. Cross-culvert carries runoff to outfall on Hood Canal beach Potlatch Shellfish bed. Rating: medium
335.52 L	Enati Cr./Hood Canal	Enati Cr. crossing receives flow from ditch on SR101 R sloped from the north. Enati Cr. discharges into Hood Canal. This portion of the creek is within the Hood Canal tidal zone. The area is relatively flat. There is a structure in the stream bed that appears to impede the movement of fish up-stream. A sewage treatment facility is adjacent to the left. Rating: medium

<p align="center">SR 101 MASON COUNTY WRIA 16 HILL CREEK BASIN MP 331.84 - 333.06</p>
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MP	RECEIVING WATER	COMMENTS
332.1 L	Hood Canal	Storm run-off flows into a catch basin. Commercial properties with in this area make contributions to this outfall. Runoff to the outfall comes from 2 gas stations in the middle of Hoodsport. Any fuel spills likely to happen would discharge through these CBs with no containment. It is believed that this CB discharges via culvert to the beach of Hood Canal. Rating: high
332.4 L	Hood Canal	Cross-culvert receives flow from ditch on SR101R sloped from the north. The pavement is sloped toward Hood Canal so the majority of the flow is sheetflow toward that side. The culvert runs under private property and onto the beach. In Hoodsport area. Rating: medium

332.45 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside and discharges via cross-culvert to a Hood Canal beach. Rating: medium
332.6 L	Hood Canal	Ditch on SR101 R receives flow from roadway. Pavement is sloped toward the west to facilitate drainage to the ditch. Ditch also receives flow from adjacent hill slope. There is has evidence of slides occurring in the upper slope reaches along with some recent logging. It appears that erosion potential is high. Run-off is carried via cross-culvert under private property and discharges to a Hood Canal Beach. Rating: medium
332.64 L	Hill Cr./Hood Canal	Sheetflow is channeled from the south into Hill Cr. off SR101 L. Hill Cr. is within the Hood Canal tidal zone. Commercial and residential area just south of unincorporated Hoodsport. Rating: medium
332.8 L	Hood Canal	A ditch sloped from the south on SR101 R receives flow from SR101 and from adjacent hill slope. This hill is very unstable as evidenced by recent slides. Discharges via cross-culvert onto Hood Canal beach. Rating: medium
332.9 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside. Discharges via cross-culvert to Hood Canal beach. Rating: medium
332.95 L	Hood Canal	A ditch sloped from the north on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside with some development up slope. Discharges via cross-culvert onto Hood Canal beach. Rating: medium
333.05 L	Hood Canal	A ditch sloped from the south on SR101 R receives flow from SR101. Flow also comes from adjacent forested hillside with some development up slope. Discharges via cross-culvert to Hood Canal beach. Rating: medium

<p align="center">SR 101 MASON COUNTY WRIA 16 FINCH CREEK BASIN MP 331.26 - 331.84</p>

MP	RECEIVING WATER	COMMENTS
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331.3 L	Hood Canal	Ditch on SR101 R receives highway runoff. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Significant development up-gradient. Ditch discharges via cross-culvert onto Hood Canal Beach. Rating: high
331.4 L	Hood Canal	Ditches from the north and south on SR 101 R converge here and discharge via culvert to SR101L. Flows under a private business and to a Hood Canal Beach. Rating: high
331.45 L	Hood Canal	Ditch on SR 101 R receives flow mainly from Hoodspport commercial and upland areas. The upland areas has some development and looks like there has been some fairly recent sliding. A catch basin on SR101 L receives most of the flow from the highway. The highway has been sloped to facilitate drainage to this CB. This CB discharges via culvert beneath some private residences directly to a Hood Canal Beach. Rating: high

<p align="center">SR 101 MASON COUNTY WRIA 16 CLARK CREEK BASIN MP 330.28 - 331.26</p>

MP	RECEIVING WATER	COMMENTS
330.5 L	Hood Canal	Ditch on SR101 R receives runoff from highway. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Logging has occurred in the upper reaches of the hill slope. Ditch discharges via cross-culvert under private property onto Hood Canal Beach. Rating: low
330.9 L	Hood Canal	Ditch on SR101 R receives highway runoff from highway. Pavement sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Logging has occurred in the upper reaches of the hill slope. Ditch discharges via cross-culvert under private property to a Hood Canal Beach. Rating: low
330.95 L	Hood Canal	Ditch on SR101 R receives highway runoff from highway. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Logging has occurred in the upper reaches of the hill slope. Ditch discharges via cross-culvert under private property to a Hood Canal Beach. Rating: low
331.2 L	Hood Canal	Ditch receives runoff from highway. Pavement is sloped to facilitate run-off to the ditch. Ditch also receives run-off from adjacent hill slope which shows significant erosion. Ditch discharges via cross-culvert to a Hood Canal Beach. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 MILLER CREEK BASIN MP 329.69 - 330.28</p>		
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MP	RECEIVING WATER	COMMENTS
329.7 L	Hood Canal	Ditch on SR101 R receives runoff from highway which is sloped in that direction to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope and has been logged in the upper reaches of the hill slope. Private residences are located up slope. Ditch discharges via cross-culvert under private property onto Hood Canal Beach. Rating: medium
329.9 L	Hood Canal	Holiday Beach Community. A ditch on SR101 R receives flow primarily from uplands to the west. This includes some residential development and flows through culvert interconnecting with CB. CB receives most of the highway runoff. This is then discharged via a culvert beneath private property to a Hood Canal Beach. Rating: medium
329.93 L	Miller Cr.	Entering Holiday Beach at the Miller Cr. crossing, bridge # 101-411.25. Holiday Beach is primarily a residential community. Ditches from the south and the north on SR101 R enters the creek at this location. Miller Creek at this location is within the Hood Canal Tidal zone. Contribution to run-off from Holiday Beach Development high. Rating: high
330.1 L	Hood Canal	Ditch on SR101 R receives runoff from highway. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Area has been logged in the upper reaches of the hill slope. There are a few private residences up slope. Ditch discharges via cross-culvert under private property onto Hood Canal Beach. Rating: medium
330.2 L	Hood Canal	Ditch on SR101 R receives runoff from highway. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope which shows significant erosion. Area has been logged in the upper reaches of the hill slope. Ditch discharges via cross-culvert under private property to a Hood Canal Beach. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 SUND CREEK BASIN MP 328.95 - 329.69</p>		
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MP	RECEIVING WATER	COMMENTS
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329.07	Sund Cr.	Sund Cr. crosses at Bridge #101-411. Ditches on SR101 R from the north and the south enter Sund Cr. The creek flows beneath the bridge and between two private residences before entering Hood Canal. Sund Cr. at this elevation is within the Hood Canal tidal zone. Rating: medium
329.6 L	Hood Canal	Ditch on SR101 R receives runoff from highway. Pavement is sloped to facilitate run-off to ditch. The ditch also receives run-off from adjacent hill slope. Area has been logged in the upper reaches of the hill slope. Ditch discharges via cross-culvert under private property to a Hood Canal Beach. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 LITTLE LILLIWAUP CREEK BASIN MP 328.14 - 328.95</p>
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MP	RECEIVING WATER	COMMENTS
328.2 L	Ground Water Infiltration	Ditch on SR101 R receives flow from primarily the hill slope to the west. Highway in this area is sloped to the east (left) which means the majority of highway run-off is sheetflow. However the ditch receives storm-runoff from the highway to the south of this location. It discharges via culvert onto a wooded area adjacent to Hood Canal. Soil permeability is high in this area. Hard pan material is fairly shallow. These factors combined with steep slopes could facilitate subsurface flow down to Hood Canal. Rating: low
328.4 L	Hood Canal	Ditch on SR101 R sloped from the north receives runoff from highway. Pavement is sloped to the right to facilitate drainage in that direction. Run-off in ditch flows via culvert under highway to a Hood Canal beach. Rating: low
328.5 L	Hood Canal	A paved Ditch on SR101 R receives runoff from highway. Pavement is sloped to the right to facilitate drainage in that direction. Run-off in ditch flows via culvert under highway to a Hood Canal beach. Rating: low
328.8 L	Hood Canal	Ditch on SR101 R sloped from the north receives runoff from highway. Pavement is sloped to the right to facilitate drainage in that direction. Run-off in ditch flows via culvert under highway, beneath private residences and to a Hood Canal beach. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 LILLIWAUP CREEK BASIN MP 326.64 - 328.14</p>

MP	RECEIVING WATER	COMMENTS
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328.1 L	Ground Water Infiltration	Ditch sloped from the north on SR 101. Receives run-off from highway, forested hill slope and Canal View Road. Cross-culvert carries this run-off under private property onto a riparian area adjacent to Hood Canal. Soil Permeability is high in this area of Hood Canal. Rating: low
327.9 L	Ground Water Infiltration	Grate inlet on SR101 R receives flow from ditch sloped from the south. This run-off is carried via cross-culvert to an eroded rill. it discharges onto a riparian area adjacent to Hood Canal. Soil Permeability is high in this area although hard pan material is fairly shallow. These factors combines with steep slopes could facilitate subsurface flow down to Hood Canal. Rating: low
327.7 L	Hood Canal	Drain ditch on SR101 L receives runoff from the hill slope to the west as well as from highway. Discharges via cross-culvert to a Hood Canal Beach. Entering Lilliwaup area. Rating: low
327.4 L	Hood Canal	Lilliwaup is a small unincorporated community with a small commercial and residential area. Cross-culvert at this location discharges into Lilliwaup Bay, a tide flats area. The origin of the culvert is unknown as the whole area is paved. Most likely there are one or more catch basins that receive runoff from the highway and the private and commercial properties in the area. Rating: high
327.1 L	Small unnamed Cr./ Hood Canal	Small unnamed unmapped creek receives run-off from drain ditch on SR101 R. Runoff comes from adjacent uplands and possibly overflow from tidal wetlands west of SR101. Discharges via cross-culvert to Lilliwaup Bay, a tide flats area. This is within the Hood Canal tidal zone. Rating: low
327.08 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides. Pavement is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal in the Lilliwaup tide flats area. Rating: medium
326.9 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides. SR 101 is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low

326.8 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides. At this location the hill slope is significantly eroded. SR 101 is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low
326.7	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides and is significantly eroded. There also appears to be groundwater seepage from the hill slope that discharges into this ditch. SR 101 is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 EAGLE CREEK BASIN MP 323.38 - 326.64</p>

MP	RECEIVING WATER	COMMENTS
323.5 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
323.7 L	Unnamed-unmapped creek/Hood Canal	Unnamed unmapped creek receives flow from ditches from the north and south. These ditches receive run-off primarily from the forested hill slope to the west. Run-off from SR101 is directed along right shoulder of road by raised, paved curbing. Most highway run-off flows directly into the stream. Cross culvert discharges flow of creek into eroded rill on left side of SR101 slope down to Hood Canal. Rating: low
324.15 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent hill slope and SR 101. Hill slope looks unstable with clear evidence of recent slides with heavily eroded channels cut into the bank. Ditch discharges via cross culvert to wooded area above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
324.25 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent hill slope and SR 101. Ditch discharges via cross culvert onto wooded area above Hood Canal and into eroded rill leading down to Hood Canal beach. Rating: low

324.3 L	Unnamed-unmapped creek/Hood Canal	Unnamed unmapped creek crosses at this location. Ditches from the north and south which drain SR101 discharge into this creek. Ditches also contain run-off from Charlane Rd. with private residences up slope. These ditches intersect with SR 101 from the west. Cross culvert discharges run-off to Hood Canal beach. Rating: medium
324.4 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal. Flows to eroded rill leading down to Hood Canal beach. Rating: low
324.5 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to Hood Canal beach. Rating: low
324.9 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal. Flows to eroded rill leading down to Hood Canal beach. Rating: low
325.0 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
325.1 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal and into eroded rill leading down to Hood Canal beach. Rating: low
325.2 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert onto wooded area above Hood Canal and into eroded rill leading down to Hood Canal beach. Rating: low
325.4 L	Hood Canal	Outfall receives flow from ditch on SR101 R sloped from the south. There is a significant stand of bamboo around the ditch. The flow of water out of the cross culvert on SR101 L is audible indicating the presence of a small stream or wetland on west side of highway. There is a small residential section slightly up slope to the west. Culvert discharges into eroded rill leading down to Hood canal beach. Rating: medium

325.5 L	Hood Canal	Drain ditch on SR101 R sloped from the north receives runoff from adjacent wooded hill slope and SR 101. Ditch discharges via cross culvert to a Hood Canal beach. Rating: low
325.57 L	Unnamed-unmapped creek/Hood Canal	Ditches sloped from the north and south converge here with an unnamed and unmapped creek from the hill slope to the west. These ditches receive run-off from the adjacent hill slope, where there are two private residences. Hill slope to the west looks fairly stable with Cedar trees and deciduous trees. Cross-culvert carries creek flow and runoff to Hood Canal beach. Rating: medium
325.6 L	Unnamed-unmapped creek/Hood Canal	Ditches sloped from the north and south converge at the bottom of a gully. There is an adjacent hill slope to the west. Appears to be a small dried creek bed at the bottom of this gully where ditches converge. Run-off from highway and the gully flow via cross culvert beneath private property onto Hood Canal beach. Rating: medium
325.7 L	Unnamed-unmapped creek/Hood Canal	Ditches sloped from the north and south converge at the bottom of a gully. There is an adjacent hill slope to the west. Appears to be a small dried creek bed at the bottom of this gully where ditches converge. Run-off from highway and the gully flow via cross culvert. Flows into a small wetland area adjacent to Hood Canal, as well as some beachfront private residences. Rating: low
325.8 L	Hood Canal	Drain ditch on SR101 R sloped from the north receives runoff from adjacent hill slope and SR 101. Ditch is heavily vegetated with thick grass and tansy weeds. Hill slope to the west looks fairly stable with Cedar trees and deciduous type trees. Cross-culvert carries runoff to Hood Canal beach. Rating: low
325.97 L	Hood Canal	Drain ditch on SR101 R sloped from the north receives runoff from adjacent hill slope. There is a small residential area up slope. Logging appears to have occurred in the upper reaches. Hill slope appears fairly stable. Ditch discharges via cross culvert to a Hood Canal beach. Rating: medium
326.19 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope and SR 101. Ditch discharges via cross culvert to a Hood Canal beach. Rating: low
326.2 L	Unnamed-unmapped creek/Hood Canal	Unnamed and unmapped creek crosses at this location. Creek receives flow from ditch on SR101 R sloped from the north. Creek and stormwater carried onto Hood Canal beach via cross culvert. Rating: medium

326.25 L	Hood Canal	Drainage ditch on SR101 R receives flow from the hill slope to the west. Exposed rock is visible, indicating a more impervious surface. SR 101 is sloped to the east. This ditch will not receive much run-off from the highway at this location but the road is sloped toward the ditch north of this location. Cross culvert carries run-off to Hood Canal beach. Rating: low
326.29 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides. There is also flow from a small channel up the hill slope with small amount of water present flowing into the ditch. There is a private residence above the visible area of the flow. SR 101 is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: medium
326.3 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides and is significantly eroded. There also appears to be groundwater seepage from the hill slope that discharges into this ditch. SR 101 is sloped to facilitate drainage toward the ditch. A cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low
326.5 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides and is significantly eroded. SR 101 is sloped to facilitate drainage toward the ditch. The cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low
326.55 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides and is significantly eroded. This hill slope forms a gully like area which during the rainy season may facilitate a small stream entering the ditch or cross culvert. SR 101 is sloped to facilitate drainage toward the ditch. The cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low
326.6 L	Hood Canal	Drain ditch on SR101 R sloped from the north. Receives runoff from adjacent hill slope which shows signs of past slides and is significantly eroded. This hill slope forms a gully like area which during the rainy season may facilitate a small stream entering the ditch or cross culvert. SR 101 is sloped to facilitate drainage toward the ditch. The cross culvert carries run-off from the ditch to the beach of Hood Canal. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 JORSTAD CREEK BASIN MP 320.65 - 323.38</p>		
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MP	RECEIVING WATER	COMMENTS
320.9 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101 and adjacent forested hill slope. Ditch discharges via cross culvert to steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
321.03 L	Hood Canal	Ditch flowing from the north. Receives flow from SR 101 and forested hillside from the west. Hillside is very well vegetated with deciduous trees. There are a few residences up gradient. The ditch discharges via cross culvert to Hood Canal beach. Rating: medium
321.05 L	Hood Canal	Ditch flowing from the north. Receives flow from SR 101 and hillside from the west. Hillside is very well vegetated with deciduous trees. There are a few residences up gradient. The ditch discharges via cross culvert to Hood Canal beach. Rating: medium
321.1 L	Hood Canal	Ditch flowing from the north. Receives flow from SR 101 and forested hillside from the west. Hillside is very well vegetated with deciduous trees. There are a few residences up gradient. The ditch discharges via cross culvert to beach of Hood Canal. Rating: medium
321.2 L	Hood Canal	Ditch flowing from the north. Receives flow from SR 101 and hillside from the west. Hillside is very well vegetated with deciduous trees. There are a few residences up gradient. The ditch discharges via cross culvert to Hood Canal beach. Rating: medium
321.4 L	Hood Canal	Ditch contains abundant wetland vegetation. Sloped from the north. Receives run-off from the highway and well vegetated hill slope from the west. Discharges to Hood Canal beach. Rating: low
321.45 L	Jorstad Cr.	Jorstad Cr. Crossing, Bridge # 101-405. Ditches from the north and south on SR101 R discharge onto a delta area at mouth of Jorstad Cr. Mouth of Jorstad Cr. is within Hood Canal tidal zone. Rating: high
321.8 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101 adjacent hill slope with residences up gradient. Ditch discharges via cross culvert onto steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: medium

321.9 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101. Adjacent forested hill slope with residences up gradient. Ditch discharges via cross culvert to steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: medium
321.95 L	Hood Canal	Drain ditches on SR101 R are sloped from the south. Receives runoff from SR 101. Adjacent hill slope has been re-forested recently and appears quite stable with very little erosion. There is flow coming from a private drive leading uphill to the west. It is suspected this run-off is coming from a wetland or a small drainage stream up gradient. This flows into the drainage channel which has water present and wetland plant life growing in abundance. This channel discharges via cross culvert to a steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
322.1 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101. Adjacent hill slope has been re-forested recently and appears quite stable with very little erosion. Ditch discharges via cross culvert onto steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
322.2 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101. Adjacent hill slope has been re-forested recently and appears quite stable with very little erosion. Ditch discharges via cross culvert onto steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
322.3 L	Hood Canal	Drain ditches on SR101 R sloped from the south. Receives runoff from SR 101. Adjacent hill slope has been re-forested recently and appears quite stable with very little erosion. Ditch discharges via cross culvert onto steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
322.5 L	Hood Canal	Drain ditches on SR101 R sloped from the north. Receives runoff from adjacent hill slope and SR 101. Ditch discharges via cross culvert to steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low
322.6 L	Hood Canal	Drain ditches on SR101 R sloped from the north and south. Receives runoff from adjacent hill slope and SR 101. Ditch discharges via cross culvert to steep wooded slope above Hood Canal. Flows into eroded rill leading down to Hood Canal beach. Rating: low

322.65 L	Hood Canal	Drain ditch on SR101 R sloped from the south. Receives runoff from adjacent forested hill slope and SR 101. Ditch discharges via cross culvert to wooded area above Hood Canal. Then flows into eroded rill leading down to Hood canal beach. Rating: low
322.7 L	Hood Canal	Ditches from the north and south on SR101 R discharge via cross culvert toward a residential section of Ayock Pt. It is believed this outfall discharges into creek described at MP 322.7 L. Rating: low
322.8 L	Unnamed Creek/Hood Canal	Unnamed unregistered creek shown on USGS-- <u>Eldon</u> 7.5 minute quad. topographic map. crosses SR101. This creek receives run-off from ditch on SR101 R sloped from the south. Discharges via cross culvert onto residential area of Ayock Pt. Ultimately discharges to beach of Hood Canal. Rating: medium
322.9 L	Wetland	Drainage channel from the south. Receives flow from hill slope to the west and SR101. Runoff discharges via cross culvert into a wooded wetland area adjacent to Hood Canal. Rating: low
323.1 L	Hood Canal	Drainage channel from the south. Receives flow from wooded hill slope to the west and SR101. Runoff discharges via cross culvert beneath private property onto beach of Hood Canal. Rating: low

<p align="center">SR 101 MASON COUNTY WRIA 16 HAMMA HAMMA RIVER BASIN MP 318.86 - 320.65</p>

MP	RECEIVING WATER	COMMENTS
319.6 L	Hood Canal	Ditch sloped from the north on SR 101 R. Receives flow from highway and hill slope above. Discharges via cross culvert to Hamma Hamma delta area in Hood Canal. Rating: high
319.95 R	Hamma Hamma River	Ditch sloped from the south on SR 101 R. Enters Hamma Hamma River. This ditch from approximately MP 320.6 receives run-off from heavily eroded slopes to the west. There is evidence of recent sliding. A cross culvert carries run-off from ditch to a river delta area within Hood Canal tidal zone. Rating: high

<p align="center">SR 101 MASON COUNTY WRIA 16 WAKETICKEH CREEK BASIN MP 317.71 - 318.86</p>
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MP	RECEIVING WATER	COMMENTS
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317.8	Hood Canal	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried through the ditch from the south beneath private property along beach of Hood Canal. Rating: low
317.9 L	Hood Canal	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried through the ditch from the south. Discharges to bank above Hood Canal beneath private property along beach of Hood Canal. Rating: low
318.2 L	Hood Canal	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried through the ditch from the north. Discharges to bank above Hood Canal. Flows into eroded rill leading down toward Hood Canal. Rating: low
318.4 L	Hood Canal	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried through the ditch from the north. Discharges to high, steep bank above Hood Canal. Flows into eroded rill leading down toward Hood Canal. Bank is heavily forested and appears stable. Rating: low
318.5 L	Waketickah Cr.	Naturally channeled canal carries sheetflow from the south and enters Waketickah Cr. delta area. At this location. This region of Waketickah Cr. is within the Hood Canal tidal zone. Rating: high
318.5 L	Hood Canal	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried through the ditch from the north. Discharges to Hood Canal beach. Rating: low
318.52 L	Waketickah Cr.	CB located at North end of bridge #101-402 with culvert discharging onto rock bank of the creek. This culvert probably carries stormwater from residential area to the north of creek. This region of Waketickah Cr. is within the Hood Canal tidal zone and forms a delta area. Rating: high

318.53 L	Waketickah Cr.	Culvert discharges stormwater from ditch along SR101 R. Highway sloped to the west to facilitate drainage toward the ditch. Storm water is carried from the north. Culvert discharges into briar patch. Stormwater flows into delta area of Waketickah Cr. in Hood Canal. This region of Waketickah Cr. is within the Hood Canal tidal zone. Rating: high
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<p align="center">SR 101 MASON COUNTY WRIA 16 SCHAERER CREEK BASIN MP 314.25 - 317.71</p>
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MP	RECEIVING WATER	COMMENTS
314.8 L	Unnamed Creek # 0329	Unnamed Creek # 0329 Crosses SR101. At SR101 R the creek receives run-off from ditches from both the north and south. There are some private residences associated with the Triton Heights development in the area. On the left side of SR101 the creek receives flow from a ditch sloped from the north. The creek discharges into Triton Cove of Hood Canal. Rating: medium
314.9 L	Hood Canal	Ditch sloping from the south on SR101 R discharges via cross-culvert. Flows into an eroded rill down steep forested bank on SR 101 L to Hood Canal beach. Rating: low
314.95 L	Hood Canal	Located just south of Triton Heights Rd. and Webster Ln. Ditch on SR101 L receives flow from highway and from forested slope above the ditch. This slope shows some signs of past erosion. Slope now appears stable with moderate forestation and under growth. This ditch discharges via cross-culvert into an eroded rill down steep forested bank from SR 101 L to a Hood Canal beach. Rating: low
315.2 L	Schaerer Cr.	Schaerer Cr. crosses SR101 at this location. Ditches from the left and right enter the creek from the north. The creek flows into Hood Canal forming a small delta area. Rating: high
315.37 L	Hood Canal	Cross-culvert receives flow from same channel referred to at outfall 315.4. It also receives flow from a separate ditch from the north on right side of road. This cross-culvert presumably runs under private residences and directly into Hood Canal. Rating: low
315.4 L	Hood Canal	Channel on SR101R flows into a cross-culvert. The culvert presumably runs under an RV park area adjacent to other residences. Flows directly into Hood Canal. Rating: low

315.5 L	Hood Canal	A catch basin receives run-off on SR101 R and from forested slope above the ditch. This slope shows some signs of past erosion. It now appears stable with moderate forestation and under growth. Storm run-off is channeled to this CB by asphalt curbing on roadside. The highway is sloped to the right to facilitate drainage to this side of the road. A cross-culvert carries run-off to SR101 L. There it discharges into an eroded rill down steep forested bank on SR 101 L to Hood Canal beach. Rating: low
315.58 L	Hood Canal	Ditch on SR101 L receives flow from highway as well as from forested slope above the ditch. This slope shows some signs of past erosion. It now appears stable with moderate forestation and under growth. This ditch discharges via cross-culvert into an eroded rill down a steep forested bank on SR 101 L to Hood Canal beach. Rating: low
315.6 L	Hood Canal	Ditch on SR101 L receives run-off from the north as well as from forested slope above the ditch. This slope shows some signs of past erosion. Slope now appears stable with moderate forestation and under growth. This ditch discharges via cross-culvert into an eroded rill on a steep forested bank from SR 101 L above Hood Canal. Rating: low
315.7 L	Hood Canal	Outfall receives flow from a ditch (sloped from the north) on SR101 R through a cross-culvert. This culvert discharges onto a steep forested bank on SR 101 L above Hood Canal. To the North on SR101 R some light logging and grading has taken place possibly for future development in this area. Rating: low
315.8 L	Hood Canal	A catch basin receives run-off on SR101 R. Storm run-off is channeled to this CB by asphalt curbing on road side. Highway is sloped to the right to facilitate drainage to right side of road. A cross-culvert carries run-off to SR101 L. There it discharges into an eroded rill down steep forested bank on SR 101 L to beach of Hood Canal. Rating: low
316.2 L	Unnamed Creek	Unnamed and unmapped creek located in dip in road with no flow at this time. Stream bed receives flow from ditches on SR101 R sloped from both the north and south. Outfall discharges onto a steep forested bank beneath a residential area along beach of Hood Canal. Rating: medium

316.5 L	Hood Canal	Ditch on SR101 L receives flow from highway as well as from forested slope above the ditch. This slope shows some signs of past erosion. Slope now appears stable with moderate forestation and undergrowth. This ditch discharges via cross-culvert to an eroded rill down a steep forested bank on SR 101 L above Hood Canal. Rating: low
316.57 L	Unnamed Creek	Unnamed and unmapped creek with no flow at this time. Ditch sloping at SR101 R enters creek sloping from the south. Drainage area for this ditch is small. Highway is sloped toward the ditch from the crest of a hill about 100 yards south of where ditch enters creek bed. Creek and ditch discharge through a cross culvert. This discharges into an eroded rill leading down to Hood Canal. Rating: medium
316.6 L	Hood Canal	Ditch on SR101 R receives north flowing drainage from highway and from wooded slope above the ditch. This slope shows some signs of past erosion. Slope now appears stable with moderate forestation and under growth. Outfall discharges to a steep forested bank beneath a residential area along beach of Hood Canal. Rating: low
316.8 L	Hood Canal	Ditch on SR101 L receives flow from highway as well as from forested slope above the ditch. This slope shows some signs of past erosion. Slope now appears stable with moderate forestation and under growth. This ditch discharges via cross-culvert to a steep forested bank on SR 101 L above Hood Canal. Flows into eroded rill leading down toward Hood Canal. Rating: low
317.5 L	Unnamed Creek	Unnamed and unmapped creek with no flow at this time. Ditches sloped from the south on both sides of SR101 discharge into this creek bed. Cross-culvert facilitates flow across SR101. Creek discharges into Hood Canal. Rating: medium
317.6 L	Hood Canal	Cross culvert discharges run-off from ditch (SR 101 L) flows from the north. Outfall discharges to bank above Hood Canal. Flows into eroded rill leading down toward a Hood Canal beach. Rating: low
317.65	Creek #0325	Unnamed Creek #0325 Crosses SR101. Ditches on the left and right of SR101 enter this creek from both the south and north. The highway is sloped toward the east so the majority of the run-off goes to the ditches on SR101 L. The creek discharges into Hood Canal where the sediment load of the creek has created a small delta. Nearby trailer court could negatively affect water quality. Rating: high

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 SCHAERER CREEK BASIN MP 314.25 - 314.5</p>
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MP	RECEIVING WATER	COMMENTS
314.4 L	Hood Canal	Drainage ditch at SR101 R flowing from the south discharges runoff through a cross culvert. It presumably crosses under the residential area just to the north of Triton Cove State Park. Slope above and to the west of drain ditch shows signs of erosion. This erosion may contribute to the sediment load of this outfall. Rating: low
314.5 L	Unknown	Triton Cove State Park. Ditch on SR101 slopes from the south. Highway slopes toward the ditch to facilitate drainage. Ditch also receives flow from forested slope above and to the west. This slope appears stable with heavy vegetation retarding erosion. Cross culvert discharges into a manhole hub. This serves as a connection point for CBs within the state park parking lot. The inter- connection discharges through a main culvert to Hood Canal. The mouth of this culvert could not be located. It may be submerged. There are two unburied plastic culverts that discharge stormwater directly on to Park grounds. The run-off from these culverts go to CBs within the park. Rating: low

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 FULTON CREEK BASIN MP 313.13 - 314.25</p>

MP	RECEIVING WATER	COMMENTS
313.55 L	Fulton Cr.	Fulton Cr. crossing, Bridge #101-269. Fulton Cr. receives run-off from ditches from the north and the south on SR101 R. A small delta has formed at the mouth of the creek. Rating: high
313.8 L	Hood Canal	Ditch sloping from the south on SR101 R discharges via cross-culvert. Runoff flows into an eroded rill down a steep forested bank on SR 101 L to a Hood Canal beach. Rating: low
313.9 L	Hood Canal	Catch basin at SR101 L receives run-off from SR101. Pavement is sloped to facilitate drainage to the catch basin. There is a cross-culvert from the ditch on SR101 R which enters this catch basin. Culvert discharges into an eroded rill down a steep forested bank on SR 101 L to a Hood Canal beach. Rating: low

314.2 L	Hood Canal	Ditch sloping from the south on SR101 R discharges via cross-culvert. Runoff flows into an eroded rill down a steep forested bank on SR 101 L to Hood Canal beach. Rating: low
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<p align="center">SR101 JEFFERSON COUNTY WRIA 16 MCDONALD CREEK BASIN MP 311.75 - 313.13</p>

MP	RECEIVING WATER	COMMENTS
312.29 L	McDonald Cr./McDonald Cove	This outfall is just north of McDonald Cr. bridge. Outfall receives significant flow via cross-culvert from north sloped ditch on SR 101 R. The highway north of the bridge has a significant slope. This ditch receives flow from the highway for considerable distance. Outfall discharges on to McDonald Cove tideflats. Rating: high
312.32 L	McDonald Cr.	McDonald Cr. crossing , Bridge #101-268. McDonald Cr. receives storm runoff from the south sloped ditch on SR101 R. McDonald Donald Cr. discharges into McDonald cove at this location, There is a small delta area at mouth of creek. Rating: high

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 DUCKABUSH RIVER BASIN MP 309.26 - 311.75</p>
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MP	RECEIVING WATER	COMMENTS
309.3 L	Groundwater Infiltration-- Hood Canal	Ditch on SR101 L receives flow from highway and recently logged slope above. There are signs of erosion and sliding, probably due to the recent logging. Cross-culvert discharges into a construction site that has recently been bulldozed. Eroded rills visible from storm run-off and directed toward Pleasant Harbor. Soil in this region moderately drained but underlain by compact glacial till. Runoff is slow but during heavy storm events runoff could reach Pleasant Harbor , an area with private residences. Rating: medium
309.89 L	Duckabush Delta	Ditch on SR101 R is slightly sloped from the north. Cross culvert from ditch flows into unnamed cr. (# 0439) and discharges to Duckabush mud flats. Light residential area and entrance to Duckabush recreation area at this location. Rating: high
310.2 L	Duckabush Delta	Duckabush River crosses SR101 at this location at bridge #101-266. Receives sheet runoff on SR101 L through a natural channel that discharges into Duckabush Delta. Rating: high

310.35 L	Duckabush Delta	Ditch sloped from the north on SR101 R discharges into Duckabush flats area . Rating: high
310.45 L	Duckabush Delta	Entering Duckabush flats area. Ditch on SR 101 R sloped from the south. Discharges on SR 101 L to Duckabush River delta in Hood Canal. Slope above ditch appears stable with adequate vegetation to resist erosion. Rating: high
310.9 R	Wetland	A wetland to the west receives stormwater flow from ditches sloped from the north and south on SR101 R. This wetland overflows into cross-culvert during heavy storm events. It and discharges to a flat forested area adjacent to Hood Canal. Rating: low
311.5 L	Groundwater infiltration	North sloped ditch on SR101 R discharges via cross-culvert to outfall on wooded area adjacent to Hood Canal. This is a light residential area. There is a private drive on SR101 R that appears to access some sort of development. The run-off from this flows into WSDOT drain system. Rating: low

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 JAMES CREEK BASIN MP 307.06 - 309.26</p>
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MP	RECEIVING WATER	COMMENTS
307.14 L	James Cr.	Ditches on both sides of the highway sloped from the south and discharge into James Cr. This is part of tidal zone of Hood Canal. Rating: medium
308.9 L	Hood Canal	Ditches from the north and south on SR101 R converge at a cross culvert and discharge down a steep forested hillside. Eroded channel visible down to Hood Canal Beach. Soil in this region moderately drained but underlain by compact glacial till. Runoff is slow but during heavy storm events runoff could reach Pleasant Harbor , an area with private residences. Rating: low

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 DOSEWALLIPS RIVER BASIN MP 304.78 - 307.06</p>
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MP	RECEIVING WATER	COMMENTS
305.3 L	Groundwater infiltration	Cross-culvert carries highway run-off from north sloped ditch on SR101 R. Discharges to sloped forested area. No signs of eroded channel on forested area. Hood Canal not visible from this point. Rating: low
305.4 L	Groundwater infiltration	Cross-culvert carries highway run-off from north sloped ditch on SR101 R. Discharges to sloped forested area. No signs of eroded channel on forested area. Hood Canal not visible from this point. Rating: low

305.44 L	Hood Canal	Olympic National Forest boundary, Seal Rock Campground Ditch on SR101 R sloped from the north discharges via cross-culvert flows onto or beneath an embankment into Hood Canal. No erosion channels formed by highway run-off were visible. Rating: low
305.45 L	Groundwater Infiltration	Ditches on both sides of SR101 sloped from the north. Ditch on right side of SR101 receives run-off from hill slope above. This hillside is moderately wooded with signs of erosion in the lower reaches. Just above the ditch the slope is bare with no vegetation and clear signs of erosion. Outfall discharges to an embankment above a graveled residential access road above Hood Canal. No signs of erosion from highway run-off on this slope were visible. Rating: low
305.6 L	Hood Canal--Groundwater infiltration	Outfall receives runoff from north flowing ditch on SR101 R. However road is sloped to the east. Much of the run-off from highway is sheetflow. The cross-culvert from the ditch flows onto high embankment above Hood Canal. Run-off is slow in this area Most stormwater is stored within soil and percolated to groundwater. Rating: low
305.8 L	Hood Canal	Cross-culvert carries highway run-off from north sloped ditch on SR101 R. Discharges into an eroded rill down embankment on SR 101 L to beach called Dosewallips Flats on Hood Canal. Rating; high
306.55 L	Wetland tributary to Dosewallips River	Converging ditches (well vegetated) from the north and south on SR101 R. Discharges through cross culvert to wetland tributary north of the Dosewallips River. Rating: medium
306.6 L	Dosewallips	Dosewallips crossing, Bridge #101-262. Just north of Dosewallips State park. Channels on both sides of highway sloped from the south carrying sheetflow. Discharges into the Dosewallips (Brinnon Mudflats). There is a small wetland to the north. Rating: high

**SR101 JEFFERSON COUNTY WRIA 16
TURNER CREEK BASIN MP 303.2 - 304.98**

MP RECEIVING COMMENTS
 WATER

303.5 R	Wetland	A channel sloped from the north runs between SR101 L and Bee Mill Road. Discharges via culvert to a wetland on SR101 R. The channel also receives flow from a culvert at 303.3 L. This may be a wetland tributary to an unnamed unmapped creek not located during survey but found on <u>Jefferson County Atlas</u> ,Totem Publications -1994 . This creek discharges to Right Smart Cove. This is a commercial/ agricultural area. Land uses include cattle grazing, small farms and a feed/hardware store. Rating: low
303.6 L	Hood Canal	Ditch on SR101 R sloped from the south. Receives flow from highway as well as from private residence on forested slope west of SR101. Outfall receives run-off from the ditch via cross-culvert. Discharges to embankment above Hood Canal. There are some private residences on Dabob Bay waterfront at bottom of embankment. It could not be determined if culvert runs under these residences and discharges directly into Dabob Bay. Rating: medium
303.75 L	Hood Canal	Ditch on SR101 R sloped from the south. Receives flow from highway as well as from forested slope to the west. Private residences located up slope. Slope appears to be stable and vegetated with younger trees. Erosion appears minimal. Outfall discharges into an eroded rill down bank above Hood Canal. Rating: medium
303.8 L	Hood Canal	Relatively flat area of the roadway. Pavement slightly sloped from the south. Drain ditch on SR101 R receives storm flow from roadway and from private residence on hill west of the highway. Outfall receives flow from ditch via cross-culvert. Discharges under private property onto beach of Hood Canal. Rating: medium
303.95 L	Hood Canal	Converging ditches from the south and north on SR101R. Receives flow from roadway as well as from private residences up slope from SR101 R. These ditches discharge via cross-culvert into an eroded rill down a steep wooded embankment above Hood Canal. Rating: medium
304.1 L	Unnamed Creek	And unnamed, unmapped creek with no flow at this time crosses SR101 via cross-culvert at this location. This creek receives flow from a north sloped ditch on SR101 R. Creek discharges down embankment into Hood Canal. Rating: medium
304.18 L	Hood Canal	Converging ditches from the south and north on SR101R. Receives flow from roadway as well as from private residences up slope from SR101 R. These ditches discharge via cross-culvert into an eroded rill down a steep wooded embankment above Hood Canal. Rating: medium

304.2 L	Hood Canal	Converging ditches from the south and north on SR101R. Receives flow from roadway as well as from private residences up slope from SR101 R. These ditches discharge via cross-culvert into an eroded rill down a steep wooded embankment above Hood Canal. Rating: medium
304.24 L	Turner Cr.	Low flow is present in Turner Cr. at this time. Ditch on SR101 R sloped from the south discharges into Turner Cr. at this location. Rating: high
304.3 L	Hood Canal-assumed	Two side by side culverts both receive flow from the ditch on SR101 R sloped from the south. Discharge into an eroded channel on forested light residential area above Hood Canal. It is assumed this channel discharges into vegetated ditch along Seal Rock road as in previous outfalls in the area. Rating: low
304.4 L	Hood Canal-assumed	Drainage ditch on SR101 L sloped from the south discharges via cross-culvert into an eroded channel on forested, light residential area above Hood Canal. It is assumed this channel discharges into vegetated ditch along Seal Rock road as in previous outfalls in the area. Rating: low
304.6 L	Hood Canal	This outfall receives flow from ditch on SR101 L sloped from the north. Discharges into a large culvert that runs under a mobile home and into Hood Canal. Rating: low
304.7 L	Hood Canal-assumed	Raised catch basin on SR101 L. Appears this CB would not receive significant run-off except during very heavy storm events due to being raised above ground level.
		A culvert enters this CB from ditch on SR101 R sloped from the north. This ditch also receives run-off from hillside above ditch. The hillside appears to have been logged in its upper reaches. But there are no significant signs of erosion. Outfall discharges down embankment through eroded channel into a well vegetated ditch along Seal Rock road. It is assumed that this ditch discharges into Hood Canal at some point. Rating: low
304.92 L	Groundwater infiltration	Cross-culvert carries highway run-off from north sloped ditch on SR101 R. Discharges to sloped forested area. No signs of eroded channel on forested area. Hood Canal not visible from this point. Rating: low

<p align="center">SR101 JEFFERSON COUNTY WRIA 16 MARPLE CREEK BASIN MP 302.57 - 303.2</p>
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MP	RECEIVING WATER	COMMENTS
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303.1 L	Groundwater infiltration	A natural ravine in wooded area to the west receives flow from SR101. Discharges via cross-culvert to forested area to the east. There is not much slope. Observed no runoff channels from the culvert. Rating: low
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<p align="center">SR101 JEFFERSON COUNTY WRIA 17 SPENCER CREEK BASIN MP 299.99 - 302.57</p>
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MP	RECEIVING WATER	COMMENTS
299.9 R	Groundwater Infiltration	Walker Pass--elevation 727 ft. Drain ditch on SR 101 L receives run-off from hill slope to the east and discharges via cross culvert to fairly flat forested area to the west. Rating: low
300.2 R	Groundwater Infiltration	Highway run-off in drainage ditch on SR 101 L. Flow from the north is carried via cross culvert to outfall on SR 101 R. There it discharges to forested embankment. Rating: low
300.3 R	Spencer Cr.	Second Spencer Cr. Crossing. Receives direct flow into Spencer Cr. from ditch at SR101 L sloped from the north. Creek discharges through cross culvert to the west There creek starts to flow south. Rating: high
300.5 R	Wetland Tributary to Spencer Cr.	Drainage ditch on SR101 L. Receives runoff from highway as well as recently clear-cut hill. Run-off is transferred via cross culvert to a possible wetland area. Outfall was not quite visible from the vehicle.
		This may be a wetland tributary to Spencer Cr. or Spencer Cr. itself. According to local maps, Spencer Cr. flows to the south beside SR 101 in this area. Rating: low
300.8 R	Wetland	Ditch from the south from MP 301.9. Flows into a small depression/wetland at SR101 L. Flow from this wetland is transferred to downstream side of this wetland via cross-culvert to SR101 R. Rating: low
301.9 L	Spencer Cr.	Spencer Cr. crossing. Ditch on SR101 L sloped from the north. Receives run-off from highway and from slope to the west. Discharges to Spencer Cr. Creek follows a steep channel to Hood Canal. No flow in Spencer Cr. at this time. Rating: high
302.3 L	Groundwater Infiltration	Ditch on SR101 R sloped from the north. Receives run-off from highway and from hill slope to the west. Discharges via culvert to a steep wooded embankment and through gully to steep wooded embankment above Hood Canal. Rating: low
302.5 L	Groundwater Infiltration	Ditch on SR101 R sloped from the north receives run-off from highway and from rocky bluff to the west. Discharges via culvert into an eroded rill down a high steep wooded embankment above Hood Canal. Rating: medium

<p align="center">SR101 JEFFERSON COUNTY WRIA 17 BIG QUILCENE RIVER BASIN MP 294.32 - 299.99</p>

MP	RECEIVING WATER	COMMENTS
294.45 L	Wetland	Drainage ditches along both sides of highway toward the north end of Quilcene. Flow enters a wetland with a cross culvert providing flow to the east. The ditch on SR101 L also receives flow from a CB at 294.35 L. Rating: low
294.7 R	Catch Basin	CB receives flow from SR 101 sloped toward CB. The CB also receives flow from Herbert St. Flow includes probable run-off from Quilcene High School and adjacent residential area. CBs presumably flow into Quilcene storm sewer system and into Big Quilcene River, although this has not been confirmed. rating: low
294.73 R	Catch Basin	CB receiving flow from SR 101 sloped toward CB. The CB also receives flow from Herbert St. Flow also includes run-off from parking lot of Chevron gas station at this intersection.
294.8 R	Catch Basin	CBs presumably flow into Quilcene storm sewer system and into Big Quilcene River, although this has not been confirmed. Rating: low CB receiving flow from SR 101 sloped toward CB. The CB also receives flow from Rose St. and Old Church Rd. CBs presumably flow into Quilcene storm sewer system and into Big Quilcene River. The actual flow pattern has not been confirmed. Rating: low
296.65 R/L	Big Quilcene River	Channels on both SR 101 L and R sloped from the north and south. These discharge into the Big Quilcene River. The Quilcene National Fish Hatchery is located upstream. Diking and channelization downstream has destroyed spawning grounds and reduced salmon production. Rating: medium
297 R	Groundwater Infiltration	Ditch on SR101 L sloped from the south. Receives flow from the highway as well as hill slope. Discharges to forested area to the west above Big Quilcene River. Rating: low
297.3 R	Groundwater Infiltration	Ditch on SR101 L sloped from the south. Receives flow from the highway as well as hill slope. Discharges to forested area to the west above Big Quilcene River. Rating: low

297.45	Groundwater Infiltration	Departed Olympic National Forest at MP 297.9. Private residences located in the vicinity of Hiddenvale Rd. contribute run-off to ditch sloped from the south on SR 101 L. The ditch discharges run-off via cross culvert to a forested hillside to the west above Big Quilcene River. Rating: low
298.3 R	Unnamed Stream #0021	Ditch on SR 101 L sloped from the south. Discharges into a small unnamed creek (#0021). This creek discharges via cross culvert to SR 101 R to a forested hill slope. Rating: medium
298.5 R	Groundwater Infiltration	Ditch on SR101 L sloped from the south. Receives flow from the highway as well as hill slope. Discharges to forested hillside to the west above Big Quilcene River. Rating: low
298.6 R	Unnamed-Unmapped cCreek	Ditch on SR 101 L sloped from the south. Discharges into a small unnamed and unmapped creek. This creek discharges via cross culvert to SR 101 R to a forested hill slope. Rating: medium
298.9 R	Groundwater Infiltration	Ditch on SR101 L sloped from the south. Receives flow from the highway as well as hill slope. Discharges to forested hillside to the west above Big Quilcene River. Rating: low
299.1 R	Groundwater Infiltration	A large grate inlet receives flow from the south through a ditch on SR 101 L. Pavement sloped to facilitate drainage toward the ditch. This ditch also receives run-off from nearly vertical rock outcrop covered with wire mesh to prevent falling rocks. Discharges via cross culvert to steep forested hillside on SR 101 R. Discharge site is about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River. No significant eroded channel was observed from mouth of culvert down slope. This indicates run-off in most storm events percolates into the ground. Rating: low

299.2 R	Groundwater Infiltration	<p>A large grate inlet receives flow from the south through a ditch on SR 101 L. Pavement sloped to facilitate drainage toward the ditch. This ditch also receives run-off from nearly vertical rock outcrop covered with wire mesh to prevent falling rocks.</p> <p>Discharges via cross culvert to steep forested hillside on SR 101 R. Discharge site is about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River.</p> <p>No significant eroded channel was observed from mouth of culvert down slope. This indicates run-off in most storm events percolates into the ground. Rating: low</p>
299.3 R	Groundwater Infiltration	<p>A large grate inlet receives flow from the south through a ditch on SR 101 L. Roadway sloped to facilitate drainage toward the ditch. This ditch also receives run-off from nearly vertical rock outcrop covered with wire mesh to prevent falling rocks. Discharges via cross culvert to steep forested hillside on SR 101 R about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River.</p> <p>No significant eroded channel was observed from mouth of culvert down slope. This indicates run-off in most storm events percolates into the ground. Rating: low</p>
299.4 R	Groundwater Infiltration	<p>A large grate inlet receives flow from the south through a ditch on SR 101 L. Roadway sloped to facilitate drainage toward the ditch.</p> <p>This ditch also receives run-off from a nearly vertical rock outcrop covered with wire mesh to prevent falling rocks. Discharges via cross culvert to steep forested hillside on SR 101 R. Discharge site is about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River.</p> <p>No significant eroded channel was observed from mouth of culvert down slope. This indicates run-off in most storm events percolates into the ground. Rating: low</p>

299.5 R	Groundwater Infiltration	<p>A large grate inlet receives flow from the south through a ditch on SR 101 L. Pavement sloped to facilitate drainage toward the ditch. This ditch also receives run-off from nearly vertical rock outcrop covered with wire mesh to prevent falling rocks.</p> <p>Discharges via cross culvert to steep forested hillside on SR 101 R. Discharge site about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River. No significant eroded channel was observed from mouth of culvert down slope. This indicates that run-off in most storm events percolates into the ground. Rating: low</p>
299.6 R	Groundwater Infiltration	<p>A large grate inlet receives flow from the south through a ditch on SR 101 L. Roadway sloped to facilitate drainage toward the ditch. This ditch also receives run-off from a nearly vertical rock outcrop covered with wire mesh to prevent falling rocks.</p> <p>Discharges via cross culvert to steep forested hillside on SR 101 R. Discharge site is about 300 ft. in elevation above and about 500 to 700 ft. in horizontal distance from Big Quilcene River. No significant eroded channel was observed from mouth of culvert down slope. This indicates that run-off in most storm events percolates into the ground. Rating: low</p>
SR101 JEFFERSON COUNTY WRIA 17 LITTLE QUILCENE RIVER BASIN MP 293.50 - 294.32 (INCOMPLETE SUB-BASIN)		
293.5 R/L	Little Quilcene River	<p>Ditches on both sides of highway sloped from the north discharge into river. Rating: medium</p>