

**Henderson Inlet  
and  
Nisqually Reach  
Shellfish Protection Districts  
Implementation Work Plan**



March 1, 2005

# Nisqually Reach and Henderson Inlet Shellfish Protection Districts Implementation Work Plan

## INTRODUCTION

In response to the Washington Department of Health restricting harvest of the commercial shellfish beds due to high bacteria levels the stakeholder committees for both the Nisqually Reach and Henderson Inlet Shellfish Protection Districts submitted to the Thurston County Board of County Commissioners their Reports and Recommendations in July 2003. These reports recommended long-term strategies necessary to protect the commercial shellfish resources in the Nisqually Reach and Henderson Inlet. These reports completed Phase 1 as outlined in Resolutions # 12679 and #12680 adopted on December 17, 2001.

In response to completing Phase 1 the Board of County Commissioners on December 8, 2003 adopted Resolutions #13065 and #13066. These resolutions requested the District Stakeholder groups to combine their efforts and go the next phase and assist in developing an implementation work plan.

This report is the Implementation Work Plan for both the Nisqually Reach and Henderson Inlet Shellfish Protection Districts. This Plan identifies on-going and additional activities that are necessary to address shellfish protection. This report has three sections:

SECTION 1.....Page 1

This section contains the recommendations from both Districts' Report and Recommendations and the **current** implementation work.

SECTION 2.....Page 17

This section contains **additional** work needed to implement the recommendations.

SECTION 3.....Page19

This section contains a matrix with a summary of the recommendations, the work being done to implement the recommendations, and additional work needed.

## Acknowledgement

This work would not have been accomplished without the work of the stakeholders of the Nisqually Reach and Henderson Inlet Shellfish Protection Districts' Stakeholder Committees and with staff support from Thurston County, City of Lacey, City of Olympia, Thurston Conservation District, Puget Sound Action Team, Washington State Department of Health, and Washington State Department of Ecology.

### Nisqually Reach Shellfish Protection District Stakeholder Committee:

Christine Buckley	Fred Michelson	Bryan D. Wilson
Linda Malatesta	Tris Carlson (Vice-Chair)	David Troutt
Lisa Dennis-Perez		

### Henderson Inlet Shellfish Protection District Stakeholder Committee:

Steve Langer (Chair)	Peter Heide	Mark Sloan
E. (Jerry) Yamashita	Mark Blosser	Lisa Dennis-Perez
Toby Jewett		

### Staff and guest support:

Lisa Dennis-Perez (City of Lacey)	Mark Blosser (City of Olympia)
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Chris Hempleman (Ecology)	Debbie Sargent (Ecology)
Mark Fischer (Puget Sound Restoration Fund)	

## SECTION 1

Below is a list of the recommendations summarized from the July 2003 Nisqually Reach and Henderson Inlet Shellfish Protection Districts' Reports and Recommendations. Following each recommendation or grouping of recommendations is the work either already accomplished or is currently being done to implement the corresponding recommendation as of February 2005.

### **SEPTIC SYSTEM RECOMMENDATIONS:**

1. Declare both Districts as an "Area of Special Concern" for septic systems.
2. Require Operational Certificates and an Operational and Maintenance Program.
3. Dye test all shoreline parcels every 6 years.
4. Perform follow-up inspections of new systems 6 to 12 months after installation..

#### **Work being done to implement the above recommendations:**

Environmental Health Division is developing a risk based O&M (Operation and Maintenance) program for Henderson Inlet as part of a larger effort included in a Centennial Clean Water Grant. This program considers all the elements recommended by the stakeholder group. The Henderson is intended to act as a pilot for Nisqually District.

EHD briefed the Board of County Commissioners in 2004 on June 16<sup>th</sup>, August 18<sup>th</sup>, and October 13<sup>th</sup>, and on February 2<sup>nd</sup>, 2005. The Board approved the outreach program including a public workshop scheduled for Nov. 18<sup>th</sup>, 2004 at the County fairgrounds. A thirty-nine pg. document answering all the questions from the workshop was sent to about 300 citizens on January 14<sup>th</sup>, 2005.

5. Provide low interest loans regardless of income for repair of failing systems.

#### **Work being done to implement the above recommendation:**

Done. Ecology has approved the application for future funding. EHD is negotiating a contract that will allow the loan program to continue through 2007.

SPD (Shellfish Protection District) funded EHD to create a "small works" grant for minor repairs up to \$500, and to do a Day of Caring septic system repair.

6. Continue and possibly expand the education and outreach program.

#### **Work being done to implement the above recommendation:**

Thurston County Environmental Health Division: Septic System education is part of the county's ongoing septic system operation and maintenance program. A new workshop for alternative systems was developed and conducted in 2004 within the Henderson SPD, and two more will be conducted in 2005. EHD will conduct one general septic system workshop in the Nisqually and Henderson area each of the next three years. The septic help line, which provides technical assistance to septic system owners, continues to be available. EHD will continue to look for funding to enhance on-site education.

Thurston Conservation District and EHD are implementing a pilot watershed pledge project for both the Henderson and Nisqually Shellfish Protection Districts. The project

## SEPTIC SYSTEM RECOMMENDATIONS (CONTINUED):

was field tested in Henderson with a goal of 25 TCD Cooperators with conservation plans and 25 neighborhood association residents in 2004. As of November 2004, there are 32 pledges in the program. The program will expand into both the Henderson and Nisqually Districts with a goal of 75 participants in 2005 with full implementation anticipated in 2006.

The City of Lacey continues to sponsor the Henderson Inlet Watershed Tour to raise awareness of issues affecting shellfish harvest and water quality.

Continue education and public outreach programs depending on available funding by grants, O&M program which funds 6-8 workshops per year, the SPF (Shellfish Protection Fund), and other sources of funding.

## STORMWATER RECOMMENDATIONS:

1. Support land-use and stormwater facilities that minimize the collection and transport of fecal coliform bacteria, optimize treatment, and ensure performance. This includes adopting LID (low-impact development) standards and revising the stormwater design manual.

### **Work being done to implement the above recommendation:**

The four local jurisdictions continue their work on a revised regional stormwater manual. Anticipated adoption is in FY 2005. However, the manual does not resolve the issue of fecal coliform in stormwater. Commonly used and current technology does not exist or is fiscally infeasible to treat stormwater for fecal coliform bacteria. However, promising technology is being tested.

Olympia has installed Gunderboom, Inc. and Envirovision will monitor the sediment exclusion curtain in the Fones Rd. / Taylor Wetland regional stormwater facility and report by April. The curtain is expected to remove a high percentage of particles and attached bacteria, resulting in a cleaner discharge to the wetland. Results may not be known until the next rainy season due to the recently unusually dry weather.

Olympia will install and monitor an experimental stormwater spray irrigation system in the Cooper Crest Development (Green Cove Creek Watershed). This spray facility is estimated to reduce flows from the pond by 80%.

Lacey, Olympia, and Tumwater and the County recently completed a grant funded pilot program in 2004 to increase stormwater pond maintenance for subdivisions and commercial properties. The pilot program provides a framework to continue outreach throughout the Shellfish Protection Districts and the utility service areas.

The County has completed a 2004 project to map stormwater facilities within the Henderson Inlet watershed. This should help in prioritizing private and public activities to improve maintenance of stormwater facilities.

In 2005, the County Stormwater Utility intends to train representatives from 50 homeowner associations in pond maintenance and institute annual inspection reports from these trained volunteers. Signs will be installed at stormwater ponds. Also, instituting systematic County maintenance of facilities for which we have legal

STORMWATER RECOMMENDATIONS (CONTINUED);

responsibility. Stormwater facilities with direct discharge to surface waters are a priority. This activity is funded by stormwater utility rates.

The County has created a LID (Low Impact Development) Steering Committee to assist in the development of an action plan to create Thurston County LID regulations and standards. The LID Steering Committee has a representative from the shellfish protection district stakeholder committee. The committee will be kept informed of the progress of this project. The Committee has agreed to finish their first phase and meet with the Board in early 2005.

2. In areas with Hydrologic Soil Groups C & D (tight soils) within the District:

- a. Revise zoning to prohibit development at urban densities in rural areas; or

**Work being done to implement the above recommendation:**

Zoning Changes: As part of the GMA (Growth Management Act) update the Board has directed staff to review existing areas of more intensive rural development (rural areas zoned to a density greater than 1 unit per 5 acres; this includes areas within the shellfish protection districts) as part of a 2005 work program. The project is called LAMIRD – Limited Area of More Intensive Rural Development.

Revised rural zoning are in the 2005 work program by the Development Services Department Advance Planning.

Cluster development ordinances: The Board has adopted an interim ordinance not allowing density bonuses for rural cluster developments.

- b. Require development standards that do not allow the surface discharge of stormwater.

**Work being done to implement the above recommendation:**

County: This should be considered in the Low Impact Development regulations and standards for Thurston County. See #1 above.

Lacey: At present, the drainage manual allows for property owners with poor soils to request a variance that allows surface discharge if there are no reasonable alternatives.

This requirement could be included in the drainage manual as a new, more restrictive standard. However, inclusion in the drainage manual would require directive from electeds (city and county). This will be a controversial issue since private property owners will object to restrictions since alternatives are not yet proven or developed. Also, in the special case of steep slopes this approach is contradictory to the current approach by allowing development to pipe stormwater off-site for infiltration.

Olympia: Olympia Development Standards Chapter 9 provides the Green Cove Creek watershed's low-impact development requirements. Approved by the City Council, Chapter 9's revisions require new developments to install pervious sidewalks, retain large treed areas, and fully disperse all stormwater onsite.

The draft stormwater manual requires that the pre-development (forested condition) rate and duration of stormwater discharges be matched/not be increased, for frequencies ranging from 1/2 of the 2-year event up to the 50-year event. This provides excellent

## STORMWATER RECOMMENDATIONS (CONTINUED):

stream protection against streambank and channel erosion (for medium to large rain events), but is ineffective for the common, smaller rain events. This protection level is the same as proposed by Ecology in its most recent 2001 manual, and it was found to represent the "best available science" by the Governor's Independent Science Panel.

- c. Require higher standards for OSS (On Site Septic System designs) in Hydrologic Soils Groups C&D<sup>1</sup> within the Nisqually SPD.

### **Work being done to implement the above recommendation:**

Article IV: Rules and Regulations of the Thurston County Board of Health – Governing Disposal of Sewage contains provisions to design OSS based on soil type.

3. Educate or regulate homeowners, recreational users, and businesses to dispose of pet waste and diapers properly, detect and correct overflowing septic systems, and identify and eliminate other sources of bacteria.

### **Work being done to implement the above recommendation:**

Olympia will fabricate and install “Scoop!” stations, which will include signs, pet waste bag dispensers, and information racks, at key locations in various watersheds, including Woodard Creek. They will continue its illicit discharge detection and elimination activities. While focused downtown (where leaky pipes and cross connections are more likely), this work is also examining outlying areas. Routine water quality monitoring results help us to identify stream reaches having potential bacteria sources, where follow-on work will be pursued as needed.

This action item will also be included in the EHD and TCD watershed pledge project described below.

Thurston Conservation District in 2004 aired two TCTV television shows and held two workshops on water quality / agriculture and published two ads in the Olympia and Yelm newspapers about conservation.

Thurston County's Environmental Health Division and Water and Waste Management developed a new pet waste brochure and poster for distribution to the general public in 2003. In 2004 thirty posters and 10,000 brochures were distributed by EHD, W&WM, PSI (Pacific Shellfish Institute), and Animal Control. Posters and brochures will be printed and distributed to 50 sites in 2005 by PSI. This activity is funded by the Shellfish Protection Fund.

Pacific Shellfish Institute will deliver presentations on impact of dog waste to neighborhood associations and the Community Shellfish Farm. PSI will distribute pet waste brochures and collect pledges at community events using Scooby-Doo, the mascot. This activity is funded by the Shellfish Protection Fund.

Environmental Health Division will review Henderson and Nisqually publicly accessible shorelines to determine need for signs or facilities for dog waste disposal. This activity is funded by the Shellfish Protection Fund.

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<sup>1</sup> Soil Survey of Thurston County, Washington, USDA SCS1982, p.125.

## STORMWATER RECOMMENDATIONS (CONTINUED):

The Watershed Pledge Program (see Septic Recommendations) applies to this element. South Sound GREEN and Nisqually River Education Project included in their 2002/03 school year were activities to bring a greater awareness to the shellfish issues. These activities included:

- 2 major water quality bacteria monitoring events throughout South Sound.
- Bacteria monitoring every month at 9 stations by River Ridge, Yelm, and Timberline High School students.
- The annual GREEN Student Congress included the topic of shellfish bed downgrades in their data analysis.
- The Henderson Inlet Community Shellfish Farm hosted almost 40 students to a workshop, “Tidal Treasures: Farming the Sea”.
- Students assisted in many streamside revegetation projects.

In 2005 South Sound GREEN will add more students and the Shellfish & the Shoreline to their program, and will provide for 20 busloads of students to the nearshore program at the Community Shellfish Farm. In addition, they will begin saltwater monitoring at shoreline sites. A take-home piece for families will be included.

Thurston Conservation District and SSGREEN will produce a video that showcases nearshore education programs. TCD/SSGREEN will produce a BMP implementation video. Both will be shown on TCTV.

If funded, SSGREEN will conduct four forage fish workshops for students/teachers. GREEN students will monitor 13 sites in Henderson. SSGREEN will be conducting revegetation projects on at least 3 sites, including Harmony Farms. In June 2005, the Student Congress will include shellfish/nearshore habitat workshops.

The Summer Teacher Institute included “Watersheds, Shellfish and the Near-Shore Environment” dealing exclusively with shellfish protection issues. In June 2005, it will include coastal restoration.

4. Educate and provide supplies for pet waste management at private stormwater ponds.

### **Work being done to implement the above recommendation:**

Thurston County Environmental Health Division and Water & Waste Management and Cities have held 8 stormwater pond maintenance workshops where the attendees learn of the negative impacts of dog waste to stormwater quality (2004).

Thurston County Environmental Health Division and Water & Waste Management created and posted two signs at Woodland Creek Community Park and a dog waste disposal station with dog waste bags at Lake Lois Park (2004).

The Cities and County have adapted the EHD sign and now offer the sign and optional bag dispensers to interested Homeowners Associations and homeowners for posting in common areas, planter strips, etc.

## STORMWATER RECOMMENDATIONS (CONTINUED):

The County's Water and Waste Management Department in 2004 installed seven "don't let your pooch pollute" signs, 6 of which have bag dispensers, at homeowner green spaces within Henderson Inlet. County Stormwater Utility newsletter will continue to promote installation of dog waste signs. Public outreach program for private stormwater facilities in the rural area is included in the 2005 W&WM work program.

## AGRICULTURAL RECOMMENDATIONS:

1. Enforce current agricultural regulations.

### **Work being done to implement the above recommendation:**

Thurston County Environmental Health Division will continue to investigate agriculture related water quality complaints. EHD works with the TCD to track landowners' progress in developing and implementing resource management plans for those properties in violation of Article VI, Thurston County Nonpoint Source Pollution Ordinance.

TCD responds to referrals from EHD, meets with the landowners, recommends corrective action, and/or prepared conservation plans for the land owners, and transmits the recommendations back to EHD.

2. Review whether current regulations are enforceable.

### **Work being done to implement the above recommendation:**

Thurston County Environmental Health Division is reviewing and updating Article VI, the county's non-point source pollution ordinance and is proposed to be completed in 2005.

3. Conservation District will follow up on Conservation Plans and work with landowners on the implementation of best management practices (BMPs).

### **Work being done to implement the above recommendation:**

Thurston Conservation District prepared 5 conservation plans in the Nisqually Watershed and will follow-up on several completed plans (2004). TCD will continue follow-up on several completed plans and develop an additional 4 plans by June 2005. TCD goal is for the implementation of 75% of the best management practices by August 2005.

The Nisqually grant expires June 2005. The Nutrient Reduction / Riparian Assessment grant will fund further riparian planting projects within both Districts.

Funding is available from the TCD for fencing and riparian planting in both the Henderson and Nisqually Watersheds. In 2004 one fencing project of over 22,000 feet has been completed. Riparian plantings are under development. The Shellfish Protection Fund will provide cost-share for additional fencing and riparian planting; developing 5 conservation plans in the Henderson watershed; and providing technical assistance to implement BMPs to a minimum of 20 residents in the Henderson watershed.

4. Hold workshops that address topics such as composting of manure, pasture management, etc

AGRICULTURAL RECOMMENDATIONS (CONTINUED):

**Work being done to implement the above recommendation:**

Thurston Conservation District conducted 2 agricultural workshops in the Nisqually and one in the Henderson watersheds in 2004 and is planning for two workshops in 2005 for both Districts.

5. Develop a program that would assist non-commercial farms that have livestock, but limited acreage and manure storage. This program would have a pickup service that would take the manure to a centralized composting area.

**Work being done to implement the above recommendation:**

Thurston Conservation District continues to maintain a manure-brokering list that identifies farms that give away or sell manure.

6. Set up an on-going maintenance program for private and publicly owned tide gates in the McAllister Creek watershed (Nisqually SPD).

**Work being done to implement the above recommendation:**

WSDOT (Washington State Department of Transportation) owns the publicly owned tidegates and are responsible for their maintenance. The TMDL Detailed Implementation Plan will include this in their program.

7. Set up guidelines to determine the appropriate number of animals per acre.

**Work being done to implement the above recommendation:**

Thurston Conservation District will provide recommendations and guidelines to EHD as part of the update of the county's non-point ordinance (Article VI) in 2005.

8. Develop and implement an ongoing program of water sampling of ditches and streams near farms to track the progress of best management farm practices.

**Work being done to implement the above recommendation:**

Thurston Conservation District, in conjunction with Ecology, is continuing to monitor water quality along portions of the McAllister Creek. The grant funding for this project ends June 2005.

9. Reward landowners who do a good job with their farm practices.

**Work being done to implement the above recommendation:**

Thurston Conservation District will proactively inform qualified property owners of the CREP program. The CREP (Conservation Reserve Enhancement Program) established by NRCS (Natural Resource Conservation Service) takes effect in 2004. This program will reward landowners who have installed conservation practices.

TCD has developed a reward program in the Watershed Pledge Project.

TCD re-established their landowner recognition program for Thurston County. Awards were presented at the November 2004 Open House.

10. Provide information on alternative sources of organic fertilizer for organic growers. (Nisqually SPD).

AGRICULTURAL RECOMMENDATIONS (CONTINUED):

**Work being done to implement the above recommendation:**

Thurston Conservation District currently provides information concerning alternative sources of organic fertilizer.

11. Provide for WCC (Washington Conservation Corps) crews to assist landowners implementing farm practices such as fencing and creating riparian buffer areas. (Henderson SPD)

**Work being done to implement the above recommendation:**

Thurston Conservation District in 2004 funded the WCC crew to assist landowners on four projects. The TCD is now without a WCC crew due to increasing program costs and is negotiating for a replacement. Currently, labor assistance can usually be arranged for private landowners on a case-by-case basis.

12. Work with realtors to educate new property buyers on farm practices that protect water quality. (Henderson SPD)

**Work being done to implement the above recommendation:**

Thurston Conservation District participates in the WSU (Washington State University) Extension Service program that provides in-service training to realtors on agricultural issues.

13. Continue to encourage WSDOT to move McAllister Creek back to its original channel. (Nisqually SPD)

**Work being done to implement the above recommendation:**

Need to assess the feasibility of this recommendation.

14. Require all agriculture lands with livestock to manage buffers along streams and rivers to reduce bacterial loading. (Henderson SPD)

**Work being done to implement the above recommendation:**

Thurston Conservation District manages the CREP (Conservation Reserve Enhancement Program) that provides financial assistance to landowners to plant buffers and construct fences see #9 above.

The County's Non-Point Ordinance already includes this provision [Section 4.2 (a)].

15. Provide support and funding for the development and continuation of a Community Shellfish Farm that will promote community involvement and public awareness of water quality issues that effect shellfish harvesting. (Henderson SPD)

**Work being done to implement the above recommendation:**

The Commissioners approved the 2004 and 2005 work plans from the Shellfish Protection Fund to include funding the activities of the Community Shellfish Farm.

Activities in 2004 included:

- Involved 75 volunteers in planting 300,000 oysters donated by Western Oyster Company on tidelands leased from Washington State University.

## AGRICULTURAL RECOMMENDATIONS (CONTINUED):

- Expanded the community farm to include 14 privately owned tidelands totaling approximately 13 acres. In each of these cases, property owners are now personally invested in cleaning up the harbor and monitoring water quality conditions in the hope of harvesting their oysters.
- Conducted five tideland tours involving 135 local elected officials, science writers, teachers and residents.
- Worked with Thurston Conservation District to produce a 30-minute videotaped discussion on the Henderson project that was broadcast on the local community cable channel in April 2004.
- Gave presentations to the Thurston County Commissioners and the Conservation District Board of Supervisors in December 2003 and September 2004 to build and sustain local government support for pollution control and community shellfish farming.
- Maintained project visibility through newspaper and magazine articles and at special events

Thurston Conservation District produced a television program on TCTV on the shellfish issue and highlighted the Community Shellfish Farm and hosted a community leaders' tour of the Henderson watershed and the Community Shellfish Farm.

South Sound GREEN has a cooperative project going on with the Community Shellfish Farm. See Stormwater Recommendations #3 for details.

16. Locate drainage tiles and adjust agriculture practices near them that protect water quality. (Nisqually SPD).

### **Work being done to implement the above recommendation:**

Thurston Conservation District: No action on this recommendation.

Funding and the inability to locate information on the location of the tiles have prevented the TCD from moving forward with this recommendation.

17. Assist farmers in building composting and manure storage facilities by obtaining funding resources. (Nisqually SPD)

### **Work being done to implement the above recommendation:**

Thurston Conservation District notifies landowners of the availability of the EQIP Program established by NRCS, which provides cost share funding for manure storage facilities including advertising in the Nisqually Valley News and The Olympian newspapers. Also, TCD has funding available for riparian planting and fencing.

## LAND USE RECOMMENDATIONS:

1. Require new development to meet Low Impact Development (LID) Standards in the areas of the district zoned 1 unit per acre or higher and are most prone to stormwater run-off.
  - a. Identify locations where LID Standards have practical application using criteria such as soil types, vegetation, and proximity to sensitive resources.

LAND-USE RECOMMENDATIONS (CONTINUED):

**Work being done to implement the above recommendation:**

Olympia requires single-family in-fill development to achieve full dispersion of stormwater onsite using certain low-impact techniques, such as pervious pavements, roof water infiltration, compost-amended soils, and rain gardens. New commercial developments are strongly encouraged to construct parking areas with pervious asphalt, which can be installed at a lower overall cost than regular pavement.

Thurston County has created a Low Impact Development Steering Committee to assist in the development of an action plan to create LID regulations and standards for Thurston County. The Shellfish Protection Districts are represented on the LID Steering Committee.

- b. Immediately institute interim standards requiring 100% infiltration for development in areas based on soil type, proximity to sensitive areas, and areas zoned 1 residential unit per acre or higher while LID Standards are developed.

**Work being done to implement the above recommendation:**

Thurston County will need to take this to the Board for consideration through the Low Impact Development considerations. A determination will need to be made whether this recommendation applies to the urban and urban growth areas.

- c. Request the City of Lacey to require Low Impact Development in the northern area of the city boundaries in the Hawks Prairie Planned Community located near the marine shoreline of the Nisqually Reach.

**Work being done to implement the above recommendation:**

City of Lacey: The Hawks Prairie Planned Community development plan has been approved for years (though all parcels haven't yet been platted). Planners feel that we would not have any legal standing to impose this requirement at this point in the process. Also, as mentioned, LID standards have not been proven nor developed, and developers cannot be required to implement standards that don't yet exist. The marine shoreline is a small portion of the planned community and is currently low density – 0-4 residents per acre. Developers can certainly be encouraged and educated to use LID techniques.

2. Develop regional Low Impact Development standards:
  - a. Require LID for redevelopment in the Urban Growth Area where possible. Research ways to incorporate LID techniques on redeveloping sites.
  - b. Regional standards are needed to be maximally effective across jurisdictions.
  - c. Adjust LID standards as additional science is developed on the impacts to shellfish growing areas

**Work being done to implement the above recommendation:**

County: The County's LID Steering Committee is assessing the feasibility of regional standards. The results of their work will be forwarded to the BoCC for consideration.

City of Lacey: This seems to be the essential piece to successful use of LID in the districts. It is distinctly different than establishing ordinances that allow for LID. One

LAND-USE RECOMMENDATIONS (CONTINUED):

option for facilitating standards is to encourage electeds to take this need to the regional planning council. The regional council could then set up a sub committee to develop the standards for adoption by the jurisdictions. (Apparently, this approach/process has proven successful with other similar regional issues).

City of Olympia: Olympia’s elected officials have shown interest in expanding low-impact development requirements citywide. Staff has worked with an Ecology committee to evaluate practices and has been encouraging LID technique use where appropriate. Staff has conducted test pours of several porous concrete products, and has demonstrated several sidewalk cleaning machines (which would maintain the porous surfaces). LID techniques are included in the revised stormwater manual.

3. Declare an emergency down zone of 1 unit to 2 acres for rural areas that are currently zoned 1 unit to 1 acre within the shellfish protection district before further development occurs, and codify the down zone during the comprehensive plan update. (Nisqually SPD)

**Work being done to implement the above recommendation:**

Thurston County - Zoning Changes: As part of the GMA update the Board has directed staff to review existing areas of more intensive rural development (rural areas zoned to a density greater than 1 unit per 5 acres; this includes areas within the shellfish protection districts) as part of a 2005 work program. . The project is called LAMIRD – Limited Area of More Intensive Rural Development

Thurston County Cluster development ordinances: The Board has approved an interim ordinance (PRRD) not allowing density bonuses in rural developments.

The “emergency” down zone is not being considered at this time and would need Board directive. To implement this recommendation further site-specific evaluation will need to occur to predict the impacts of bacteria loading to the marine waters. This evaluation will need to consider the natural runoff characteristics including slope, soils, vegetative cover, and effective impermeable surface to name a few.

4. Update current CAO (Critical Areas Ordinance) using best available science to provide adequate buffers that will remove bacteria from surface water.

**Work being done to implement the above recommendation:**

The Best Available Science states that generally 100’ to 141’ buffers are sufficient to remove bacteria from surface flows.

Thurston County is updating its CAO (Critical Areas Ordinance) using Best Available Science. Draft CAO should be out for public hearing in early-mid 2005.

Olympia: Draft revised Olympia CAO provides such buffers.

5. Use the Special Management Area provisions of the Critical Areas Ordinance in the unincorporated and rural areas of the Shellfish Protection Districts to: (Henderson SPD)

**Work being done to implement the above recommendation:**

The revised CAO won’t include a Special Management Area provision

- a. Develop stricter development standards.

LAND-USE RECOMMENDATIONS (CONTINUED):

- b. Retain at least 65-70% tree canopy.

**Work being done to implement the above recommendation:**

The recommendations to develop stricter development standards and retain a 65-70% tree canopy applies more to zoning ordinance than CAO, which will be updated in 2005.

- c. Increase setbacks from shoreline.

**Work being done to implement the above recommendation:**

Thurston County's revised CAO will most likely have greater setbacks for new development than the current regulation.

- d. Set higher septic system standards.

**Work being done to implement the above recommendation:**

The recommendation to set higher septic system standards are being addressed above in the Septic System section.

6. Recommend wording change to Comprehensive Plan Chapter #3 – Natural Resource Lands – Propose Policy (Aquaculture Resources - #3). (Nisqually SPD only)

Proposed Policy – Uses of lands that are ~~adjacent~~ near to designated marine aquaculture areas should be compatible, such as forestry and low density rural residential. Those uses should not increase stormwater runoff or otherwise degrade water quality of aquaculture use.

**Work being done to implement the above recommendation:**

This was completed in 2003.

7. Natural Environment Chapter 9 should address not only commercial and recreational shellfish on public lands but also shellfish harvest on private lands. (Nisqually SPD).

**Work being done to implement the above recommendation:**

This was completed in 2003.

8. Continue program to purchase land and build regional stormwater facilities in developed areas to meet newly revised stormwater retention standards as the opportunity arises. (Henderson SPD).

**Work being done to implement the above recommendation:**

Thurston County: In 2004 stormwater treatment and flood elimination project is being constructed for the Thompson Place area, in the Woodland Creek basin. For Mallard Pond (McAllister basin) a water quality, flood and erosion control project is under design. These projects are among the priority projects as determined by competitive rating process. The rating system uses about a twenty-category evaluation process among which the location and benefit to shellfish are considered.

Lacey: On-going - Lacey and Olympia just completed the Fones Road Regional Stormwater Treatment Facility. Lacey is still pursuing a regional facility for College Ditch, but the property owner is hesitant

LAND-USE RECOMMENDATIONS (CONTINUED):

Olympia: Two new ponds are in-place and functioning on the Fones Road Ditch, a headwater tributary to Woodard Creek. The facilities treat South Sound Center and Pacific Avenue stormwater, and are jointly managed by Lacey and Olympia. We have outfitted the downstream pond with a Gunderboom bacteria treatment curtain, and will monitor its effectiveness. No new facilities planned in 2005 but the City has annual land purchase funds and work with local land trusts to acquire sensitive properties.

9. Use funding sources such as the Conservation Futures Fund to: (Henderson SPD).
  - a. Purchase of shoreline properties, if possible; or
  - b. Purchase development rights or conservation easements from willing sellers. This is an effective tool to permanently protect valuable wildlife riparian areas as well as protect water quality from further degradation.

**Work being done to implement the above recommendation:**

The Conservation Futures program allows this sort of acquisition but needs to compete with other proposed projects each year. If anyone knows of property that meets this criteria they will need to fill out a Conservation Futures Project Form. The proposed project will then compete against others during each cycle.

10. Increase enforcement of current land use regulations and institute adequate penalties to remove incentives to ignore the regulations. (Henderson SPD)

**Work being done to implement the above recommendation:**

Thurston County: In 2003 the County created a five-person compliance section to increase enforcement of land use, building codes, and on-site septic systems regulations. The compliance section is authorized to issue civil infractions as needed. The penalty amounts are adequate at this time. This program is now being reviewed in the DSD (Development Services Department) Cost Recovery project and decisions will be made regarding the level of service.

Lacey: Lacey has a full-time enforcement officer. Still, even with a dedicated enforcement officer, it is difficult to catch violations before they are a done deal. On-going education – like consistent welcome packets and occasional reminders about land clearing restrictions – is essential.

Olympia: Olympia has 2 full-time land use and 1 full-time environmental code enforcement officers. Code enforcement has been a City Council priority, and recent results have been deemed satisfactory. The City has enhanced its website with email complaint forms.

11. Promote proactive assessment of streams and marine shorelines for buffer zone and other land use violations. (Henderson SPD)

**Work being done to implement the above recommendation:**

Same as above #10.

12. Educate stream and marine shoreline owners regarding the function and value of buffers of native vegetation dominated by mature conifers. Provide incentives and/or technical

## LAND-USE RECOMMENDATIONS (CONTINUED):

assistance to property owners interested in protecting and/or re-establishing native shoreline buffers. (Henderson SPD).

### **Work being done to implement the above recommendation:**

Thurston County: Water & Waste Management has a project scheduled in the fall 2004 to restore the shoreline along Henderson Inlet at Harmony Farm [a CLT (Capital Land Trust) easement property].

Water & Waste Management and the City of Lacey are working together on shoreline revegetation projects on Woodland Creek.

Lacey has a Plant Grant program for streamside property owners along Woodland Creek to help reestablish riparian buffers. The City is continuing to revegetate along Woodland Creek Community Park.

Olympia: Olympia has funds and work crews available to purchase and plant riparian vegetation.

This action will also be included in the TCD and EHD watershed pledge program described earlier.

## **WILDLIFE**

Fully address human and domestic animal source pollution (as recommended in other sections) and take remedial actions. If water quality does not improve, further investigate wildlife source pollution through following steps:

1. Identify possible areas of wildlife concentrations and seasonal usage of sites.
2. Develop strategies to identify species that contribute most to fecal coliform contamination.
3. Monitor over a significant period of time the wildlife populations and any increase in populations in areas of greatest fecal contamination.
4. If a direct correlation can be made between high fecal counts and specific species, formulate a remediation plan.
5. Continue research and publication reviews on source identification methods.
6. Explore new technologies and other techniques to lower fecal coliform levels such as mycoremediation and riparian zone revegetation.

### **Work being done to implement the above recommendation:**

There are activities throughout this report to help fully address human and domestic animal source pollution.

Environmental Health completed a DNA-typing study of E. coli bacteria for the McAllister Creek area in July 2004. The study helps identify the sources of bacterial pollution in the creek and Nisqually Reach. The results were presented to the Board of Health in June 2004, and to the shellfish committee in July 2004. A DNA study was also performed for Henderson Inlet.

## **ADAPTIVE MANAGEMENT**

### **Adaptive Management Work Plan (Nisqually SPD)**

The implementing agencies will cooperate to develop an adaptive management strategy, and will use and refine it on a regular basis. The strategy will be consistent with WAC 365-195-900, which requires local governments to use adaptive management to protect critical areas (such as surface waters) when the best available science is inadequate. The strategy will also be consistent with local government, state, and federal goals and objectives. Changes in implementing agency work plans resulting from adaptive management will likely have budgetary impacts. As assignments change, both budget and funding must change. Therefore, adaptive management will also need to consider mechanisms to adjust income (such as shellfish district or stormwater utility fees) to provide necessary funding.

### **Adaptive Management Work Plan for implementing agencies: (Henderson SPD only)**

1. Cooperate to develop an adaptive management strategy. The strategy will be consistent with federal, state, and local requirements.
2. Support monitoring programs needed to obtain environmental and performance-related data and information. Programs may target specific stream reaches or discharges, quality indicators, or runoff conditions.
3. Coordinate with government agencies or community based groups to assess data and measure performance.
4. Share information with the public and consider their feedback in revising programs.
5. Use data, assessments, and feedback to evaluate and modify programs, thereby improving predictability, efficiency, and cost-effectiveness, while working toward achieving bacteria standards.

#### **Work being done to implement the above recommendation:**

Data from current and past water quality sampling efforts that are part of the Clean Water Act TMDL process and ongoing WDOH (Washington Department of Health) shellfish area monitoring will be used as benchmarks to help measure success.

An adaptive management strategy will need to be developed once the TMDL process is completed and as major categories of recommendations are approved and implemented.

## **GOVERNANCE**

### **Implementation Oversight Committee:**

The stakeholders have determined that it is important that there be some form of continued citizen involvement during Phase 2 (implementation). It is recommended to combine the two shellfish district stakeholder groups into one committee for both. Their role would be to advise the Board of County Commissioners and City Councils, assist in developing a Phase 2 implementation work plan, and to track completed actions with effectiveness in improving water quality. They should meet only when necessary and each year the Board of County Commissioners will evaluate whether to continue the committee.

## GOVERNANCE:

### **Work being done to implement the above recommendation:**

This action item is being implemented. The two district stakeholder groups have been combined.

The Board of County Commissioners agreed that their role is to advise them on actions needed to address the water quality that is impacting shellfish beds.

The joint stakeholder group is currently working on a Phase 2 implementation work plan. The joint group also served as the core for an advisory group to develop a framework for the Risk Based Operation and Maintenance On-Site Sewage Program (addressing one of the recommendations above).

The combined district stakeholder group will continue contingent on available funding.

**Boundary (Nisqually SPD):** The stakeholder group recommends the District boundary be reestablished based on surface water that influences the water quality of the shellfish beds in the Nisqually Reach and McAllister Creek areas. The new boundary should be determined using the most current topographical technology and information.

### **Work being done to implement the above recommendation:**

This issue has yet to be resolved. This issue will most likely be discussed at the time of implementation of a risk-based O&M program for on-site sewage systems or at a time when implementing a recommendation will require an accurate assessment of what parcels should be included.

Consideration should be made on whether the boundary should be changed or whether any new program should apply to a smaller number of property owners within the boundaries (e.g. the septic program). This may result in keeping the boundary but designating where the limited number of properties the program applies.

**Boundary (Henderson SPD):** The boundary for the Henderson Inlet Shellfish Protection District was based on using past basin planning areas with the intention that the stakeholder group would review and make recommendations as part of their final report. The stakeholder group is recommending that the District boundary be reestablished based on surface water runoff from land within the current District boundary that influences the water quality of the shellfish beds in Henderson Inlet, taking into consideration the travel time needed for viable fecal coliform bacteria to reach the Inlet. The new boundary should be determined using the most current topographical technology and information.

### **Work being done to implement the above recommendation:**

The District boundary is currently included in the discussion on developing a Risk Based O&M (Operation and Maintenance) On-Site Sewage Program.

The O&M stakeholder group recommends keeping the district boundaries in tact as originally proposed when the district was formed. They also want the county to consider including only those properties that would impact the water quality of Henderson Inlet as participating in the O&M program.

## GOVERNANCE:

Consideration should be made on whether the boundary should be changed or whether any new program should apply to a smaller number of property owners within the boundaries (e.g. the septic program). This may result in keeping the boundary but designating where the limited number of properties the program applies.

## SECTION 2

### Additional work needed to implement the recommendations of the Shellfish Protection Districts.

In June 2003, the Board asked the Combined Shellfish Protection Districts' Stakeholder Group to develop an Implementation Work Plan. While doing this work the committee has recognized that there is a tremendous amount of work occurring that will help reduce the bacterial loading in Henderson Inlet and the Nisqually Reach. The Stakeholder Group recommends continuing with the same level of the current work and has provide a list of additional actions that are needed.

#### Septic System Additional Work Needed:

1. Recommend that the Board adopt the proposed Septic System Operation and Maintenance Proposal for the Henderson Inlet Watershed.
2. Recommend expanding the program into the Nisqually Reach District once the O&M program is implemented in Henderson Inlet Watershed.

#### Stormwater Additional Work Needed:

1. Recommend the Board adopt the revised Regional Stormwater Manual.
2. Recommend the Board adopt Low Impact Development regulations and standards. (Consider Olympia's Green Cove Creek LID approach for use in the Henderson and Nisqually watersheds).
3. Consider using Gunderboom in County stormwater facilities, if the current experimental project by Olympia to improve stormwater quality is successful.
4. Prohibit urban densities in the rural area by providing this recommendation to the cluster development task force.
5. Expand current program in providing pet waste supplies to more subdivisions.

#### Agriculture Additional Work Needed:

1. TCD needs to provide information on alternative sources of organic fertilizer for organic growers in the Nisqually Valley.

#### Land Use Additional Work Needed:

1. There are several Land Use Recommendations that need to be provided to both the LID and the LAMIRD (Limited Area of More Intensive Rural Development) work groups.
2. Local jurisdictions should utilize the Thurston Regional Planning Council to facilitate developing regional Low Impact Development standards.
3. The committee recommends increasing enforcement of land use regulations. Even though the jurisdictions have enforcement programs the committee recommends additional work is needed including:
  - A. Local jurisdictions should review and identify specific regulations that warrant penalty adjustments.

- B. Review should include an evaluation of the need, efficacy, and potential funding sources for additional enforcement officers.

Adaptive Management Additional Work Needed:

1. An adaptive management strategy will need to be developed once the TMDL process is completed and as major categories of recommendations are approved and implemented.

Governance:

1. The Board, upon receipt of the Implementation Work Plan and following the Shellfish Protection District's Stakeholder Group's review of the Critical Areas Ordinance and revision of the Septic System O&M Program, should evaluate whether to continue the committee or defer to the group established to support the TMDL process.

## SECTION 3

# Nisqually Reach and Henderson Inlet Shellfish Protection Districts<sup>2</sup> Implementation Work Plan Matrix

### SEPTIC SYSTEM RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
1. Declare both Districts as an “Area of Special Concern” for septic systems	EHD (Environmental Health Division) is developing a risk based O&M (Operation and Maintenance) program for Henderson Inlet as part of larger effort covered by a Centennial Clean Water Grant.	Board adoption of proposed O&M program.
2. Require Operational Certificates and an Operational and Maintenance Program	This program considers all the elements recommended by the stakeholder group.	County should implement the Risk Based O&M program for Henderson Inlet watershed.
3. Dye test all shoreline parcels every 6 years.	The Henderson is intended to act as a pilot for Nisqually District.	Once implemented in Henderson District, expand the program into Nisqually District.
4. Perform follow-up inspections of new systems 6 to 12 months after installation.	EHD briefed the Board of County Commissioners on June 16, August 18 <sup>th</sup> , and October 13, 2004. The Board approved the outreach program including a public workshop scheduled for Nov. 18 <sup>th</sup> at the Fairgrounds. A 39 pg. document answering all the questions from the workshop was sent to about 300 citizens on January 14 <sup>th</sup> . Contact Linda Hofstad (EHD) 754-4111.  Additional briefing time will be scheduled.	
5. Provide low interest loans regardless of income for repair of failing systems.	Done. Ecology has approved the application for future funding. EHD is negotiating a contract that will allow the loan program to continue through 2007.  SPD (Shellfish Protection District) funded EHD to create a “small works” loan for minor repairs up to \$500, and to do a Day of Caring septic system repair.	No further action needed.

<sup>2</sup> Unless otherwise stated each recommendation comes from both the Nisqually Reach and Henderson Inlet Shellfish Protection District

## SEPTIC SYSTEM RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>6. Continue and possibly expand the education and outreach program.</p>	<p>EHD – Septic System education is part of the county’s ongoing septic system operation and maintenance program. A new workshop for alternative systems was developed and conducted in 2004 within the Henderson SPD, and two more will be conducted in 2005. EHD will conduct one general septic system workshop in the Nisqually and Henderson area each of the next three years. The septic help line, which provides technical assistance to septic system owners, continues to be available. EHD will continue to look for funding to enhance on-site education.</p> <p>TCD (Thurston Conservation District) and EHD are implementing a pilot watershed pledge project for both the Henderson and Nisqually Shellfish Protection Districts. The project was field tested in Henderson with a goal of 25 TCD Cooperators with conservation plans and 25 neighborhood association residents in 2004. As of 11/04 there are 32 pledges in the program. The program will expand into both the Henderson and Nisqually Districts with a goal of 75 participants in 2005 with full implementation anticipated in 2006.</p> <p>Staff contact: Kathy Whalen (TCD) 754-3588 ext. 114 and Rachael Donnette (EHD) 754.4111 ext. 7244.</p> <p>The City of Lacey continues to sponsor the Henderson Inlet Watershed Tour each year to raise awareness of issues affecting shellfish harvest and water quality.</p> <p>Staff contact: Lisa Dennis-Perez (Lacey) 438-2687</p> <p>Continue education and public outreach programs depending on available funding by grants, O&amp;M program which funds 6-8 workshops per year, the SPF (Shellfish Protection Fund), and other sources of funding.</p>	<p>Need to continue at current level.</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>1. Support land-use and stormwater facilities that minimize the collection and transport of fecal coliform bacteria, optimize treatment, and ensure performance. This includes adopting LID (low-impact development) standards and revising the stormwater design manual.</p>	<p>The four local jurisdictions continue their work on a revised regional stormwater manual. Anticipated adoption in FY 2005. However, the manual does not resolve the issue of fecal coliform in stormwater. Commonly used and current technology does not exist or is fiscally infeasible to treat stormwater for fecal coliform bacteria. However, promising technology is being tested.</p> <p>Olympia has installed Gunderboom, Inc. and Envirovision will monitor the sediment exclusion curtain in the Fones Rd./Taylor Wetland regional stormwater facility and report by April. The curtain is expected to remove a high percentage of particles and attached bacteria, resulting in a cleaner discharge to the wetland. The City is hoping to have the curtain installed by year's end. Contact: Mark Blosser (Olympia) 753-8320.</p> <p>Olympia will install and monitor an experimental stormwater spray irrigation system in the Cooper Crest Development (Green Cove Creek Watershed). This spray facility is estimated to reduce flows from the pond by 80%.</p> <p>The cities of Lacey, Olympia, and Tumwater and the County recently completed a grant funded pilot program in 2004 to increase stormwater pond maintenance for subdivisions and commercial properties. The pilot program provides a framework to continue outreach throughout the SPDs and the utility service areas.</p> <p>The County has completed a 2004 project to map stormwater facilities within the Henderson Inlet watershed. This should help in prioritizing private and public activities to improve maintenance of stormwater facilities.</p> <p>In 2005, the County Stormwater Utility intends to train representatives from 50 homeowner associations in pond maintenance and institute annual inspection reports from these trained volunteers. Signs will be installed at stormwater ponds. Also, instituting systematic County maintenance of facilities for which we have legal responsibility. Stormwater facilities with direct discharge to surface waters are a priority. Funded by stormwater utility rates. Contact: Susie Vanderburg (W&amp;WM) 754.3588, ext. 6377.</p>	<p>Local jurisdictions should adopt the revised Regional Stormwater Manual. Olympia adopted the Manual on January 11<sup>th</sup>.</p> <p>LID (Low Impact Development) Steering Committee work regarding areas where LID would be beneficial should be used to help meet the intent of Land Use recommendations 1, 2, &amp; 5. Coordinate with Lacey and Olympia.</p> <p>Local jurisdictions should create a formal plan to evaluate effectiveness and water quality benefits of LID projects as they are completed, to assist in Adaptive Management.</p> <p>Local jurisdictions should revisit the effect of this recommendation in light of LID accomplishments at time of next stormwater manual update and possibly modify the Stormwater Manual to reflect this new knowledge.</p> <p>If Gunderboom is found to be effective evaluate retrofit on select ponds and outfalls.</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>1. (Continued)</p>	<p>Staff contacts: Mark Blosser (Olympia) 753-8320; and Lisa Dennis-Perez (Lacey) 438-2687; Kevin Dragon (County) 357-2491.</p> <p>Thurston County has created a LID Steering Committee to assist in the development of an action plan to create a Thurston County LID Ordinance. The LID Steering Committee has a representative from the shellfish protection district stakeholder committee. The committee will be kept informed of the progress of this project. The Committee has agreed to finish their first phase and meet with the Board in early 2005. Staff Contact: Mark Swartout (County) 709-3079.</p>	
<p>2. In areas with Hydrologic Soil Groups C &amp; D (tight soils) within the District:</p> <p>a. Revise zoning to prohibit development at urban densities in rural areas; or</p>	<p><u>Zoning Changes:</u> As part of the GMA (Growth Management Act) update the Board has directed staff to review existing areas of more intensive rural development (rural areas zoned to a density greater than 1 unit per 5 acres; this includes areas within the shellfish protection districts) as part of a 2005 work program. The project is called LAMIRD – Limited Area of More Intensive Rural Development.</p> <p>Revised rural zoning are in the 2005 work program by the Development Services Department Advance Planning. Contact: Jennifer Hayes (County) 786.5477.</p> <p><u>Cluster development ordinances:</u> The Board has adopted an interim ordinance not allowing density bonuses for rural cluster developments.</p>	<p>This recommendation should be forwarded to Thurston County Development Services and considered formal input into their efforts to revise rural zoning in 2005.</p>
<p>b. Require development standards that do not allow the surface discharge of stormwater.</p>	<p><u>County:</u> This should be considered in the Low Impact Development Ordinance for Thurston County. See #1 above.</p> <p><u>City of Lacey:</u> At present, the drainage manual allows for property owners with poor soils to request a variance that allows surface discharge if there are no reasonable alternatives.</p> <p>This requirement could be included in the drainage manual as a new, more restrictive standard. However, inclusion in the drainage manual would require directive from electeds (city and county). Political will on a controversial issue – private property owners will object to restriction since alternatives are not yet proven / developed (LID standards and</p>	<p>Local jurisdictions should adopt the revised stormwater manual. Further protections may be accomplished through work of the LID steering committee and implementation of Land Use recommendations.</p> <p>Consider Olympia’s Green Cove Creek LID approach for use in Henderson and Nisqually watersheds.</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
2 b. (Continued)	<p>quantified positive impacts for shellfish issues lacking). Also, in the special case of steep slopes this approach is contradictory to the current approach by allowing development to pipe stormwater off-site for infiltration.</p> <p><u>City of Olympia:</u> Olympia Development Standards Chapter 9 provides the Green Cove Creek watershed’s low-impact development requirements. Approved by the City Council, Chapter 9’s revisions require new developments to install pervious sidewalks, retain large treed areas, and fully disperse all stormwater onsite.</p> <p>The draft stormwater manual requires that the pre-development (forested condition) rate and duration of stormwater discharges be matched/not be increased, for frequencies ranging from 1/2 the 2-year event to the 50-year event. This provides excellent stream protection against streambank and channel erosion (for medium to large rain events), but is ineffective for the common, smaller rain events. This protection level is the same as proposed by Ecology in its most recent 2001 manual, and it was found to represent the "best available science" by the Governor's Independent Science Panel.</p>	
c. Require higher standards for OSS (On Site Septic System designs) (Nisqually SPD).	Article IV: Rules and Regulations of the Thurston County Board of Health – Governing Disposal of Sewage contains provisions to design OSS based on soil type.	No further action required.
3. Educate or regulate homeowners, recreational users, and businesses to dispose of pet waste and diapers properly, detect and correct overflowing septic systems, and identify and eliminate other sources of bacteria.	<p>Olympia will fabricate and install “Scoop!” stations, which will include signs, pet waste bag dispensers, and information racks, at key locations in various watersheds, including Woodard Creek.</p> <p>Olympia will continue its illicit discharge detection and elimination activities. While focused downtown (where leaky pipes and cross connections are more likely), this work is also examining outlying areas. Routine water quality monitoring results help us to identify stream reaches having potential bacteria sources, where follow-on work will be pursued as needed.</p>	<p>Continue education programming at current levels.</p> <p>In 2006, local jurisdictions should assess the need, and pursue funding if necessary, for additional enforcement of the County non-point ordinance and other relevant</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>3. (Continued)</p>	<p>This action item will also be included in the EHD and TCD watershed pledge project described below.</p> <p>TCD in 2004 aired two TCTV television shows and held two workshops on water quality / agriculture and published two ads in the Olympia and Yelm newspapers about conservation.</p> <p>EHD/W&amp;WM (Water and Waste Management) in 2003 developed a new pet waste brochure and poster for distribution to the general public. In 2004 thirty posters and 10,000 brochures were distributed by EHD, W&amp;WM, PSI (Pacific Shellfish Institute), and Animal Control. Posters and brochures will be printed and distributed to 50 sites in 2005 by PSI. Funded by the Shellfish Protection Fund.</p> <p>PSI will deliver presentations on impact of dog waste to neighborhood associations and the Community Shellfish Farm. PSI will distribute pet waste brochures and collect pledges at community events using Scooby-Doo, the mascot. Funded by the Shellfish Protection Fund.</p> <p>EH will review Henderson and Nisqually publicly accessible shorelines to determine need for signs or facilities for dog waste disposal. Funded by the Shellfish Protection Fund.</p> <p>The Watershed Pledge Program (see Septic Recommendations) applies to this element.</p> <p>South Sound GREEN and Nisqually River Education Project included in their 2002/03 school year activities to bring a greater awareness in the shellfish issues. These activities included:</p> <ul style="list-style-type: none"> <li>▪ 2 major water quality bacteria monitoring events throughout South Sound.</li> <li>▪ Bacteria monitoring every month at 9 stations by River Ridge, Yelm, and Timberline High School students.</li> <li>▪ The annual GREEN Student Congress included the topic of shellfish bed downgrades in their data analysis.</li> <li>▪ The Henderson Inlet Community Shellfish Farm hosted almost 40 students to a workshop, “Tidal Treasures: Farming the Sea”.</li> </ul>	<p>local statutes as part of Adaptive Management.</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>3, (Continued)</p>	<ul style="list-style-type: none"> <li>▪ Students assisted in many streamside revegetation projects.</li> </ul> <p>In 2005 South Sound GREEN will add students, Shellfish &amp; the Shoreline to their program, funding 20 busloads to the nearshore program at the Community Shellfish Farm. In addition, will begin saltwater monitoring at shoreline sites. A take-home piece for families will be included.</p> <p>TCD/GREEN will produce a video that showcases nearshore education programs. TCD/GREEN will produce a BMP implementation video. Both will be shown on TCTV.</p> <p>If funded, SSGREEN will conduct four forage fish workshops for students/teachers. GREEN students will monitor 13 sites in Henderson.</p> <p>GREEN will be conducting revegetation projects on at least 3 sites, including Harmony Farms.</p> <p>In June 2005 the Student Congress will include shellfish/nearshore habitat workshops. For project GREEN contact Anne Mills (TCD) 754.3588 ext. 108.</p> <p>The Summer Teacher Institute included “Watersheds, Shellfish and the Near-Shore Environment” dealing exclusively with shellfish protection issues. In June 2005 it will include coastal restoration. Contact Chris Maun 458.6137.</p> <p>Action will continue depending on available funding. Contact Kathy Whalen (TCD) 754-3588 ext. 114 and Rachael Donnette (EHD) 754.4111 ext. 7244 and Pacific Shellfish Institute (PSI) contact Aimee Christy @ 754.2741</p>	
<p>4. Educate and provide supplies for pet waste management at private stormwater ponds.</p>	<p>EHD/W&amp;WM and cities have held 8 stormwater pond maintenance workshops where the attendees learn of the negative impacts of dog waste to stormwater quality (2004).</p> <p>EHD/W&amp;WM created and posted two signs at Woodland Creek Community Park and a dog waste disposal station with dog waste bags at Lake Lois Park (2004).</p>	<p>Consider expanding program to include more subdivisions in the two watersheds.</p>

## STORMWATER RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
4. (Continued)	<p>The cities and county have adapted the EHD sign and now offer the sign and optional bag dispensers to interested Homeowners Associations and homeowners for posting in common areas, planter strips, etc.</p> <p>In 2004, the County Stormwater Utility installed seven “don’t let your pooch pollute” signs, 6 of which have bag dispensers, at homeowner green spaces within Henderson Inlet. County Stormwater Utility newsletter will continue to promote installation of dog waste signs.</p> <p>Public outreach program for private stormwater facilities in the rural area is included in the 2005 W&amp;WM work program. Contact: Susie Vanderburg (W&amp;WM) 357.2491 ext. 6377.</p>	

## AGRICULTURE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>1. Enforce current agricultural regulations.</p>	<p>EHD will continue to investigate agriculture related water quality complaints. EHD works with the TCD to track landowners' progress in developing and implementing resource management plans for those properties in violation of Article VI, Thurston County Nonpoint Source Pollution Ordinance.</p> <p>TCD responds to referrals from EHD, meets with the landowners, recommends corrective action, and/or prepared conservation plans for the land owners, and transmits the recommendations back to EHD.</p> <p>Currently enforcing the Thurston County Non-Point Ordinance, which is complaint driven.</p> <p>Staff contact: Kathy Whalen (TCD) 754-3588 ext. 114 and Sue Davis (EHD) 754.4111 ext.7316.</p>	<p>Need to continue at current level.</p>
<p>2. Review whether current regulations are enforceable</p>	<p>EHD is reviewing and updating Article VI, the county's non-point source pollution ordinance. Proposed to be completed in 2005.</p>	<p>EHD staff should complete their review and Board should revise ordinances as necessary to ensure enforceability.</p>
<p>3. Conservation District will follow up on Conservation Plans and work with landowners on the implementation of best management practices (BMPs).</p>	<p>TCD prepared 5 conservation plans in the Nisqually Watershed and will follow-up on several completed plans (2004). TCD will continue follow-up on several completed plans and develop an additional 4 plans by June 2005. 75% BMP (Best Management Practices) implementation is projected by August 2005.</p> <p>The Nisqually grant expires June 2005. The Nutrient Reduction / Riparian Assessment grant will fund further riparian planting projects within both Districts.</p> <p>Funding is available from the TCD for fencing and riparian planting in both the Henderson and Nisqually Watersheds. In 2004 one fencing project of over 22,000 feet is being completed. Riparian plantings are under development. The Shellfish Protection Fund will provide cost-share for additional fencing and riparian planting; developing 5 conservation plans in the Henderson watershed; and providing technical assistance to implement BMPs to a minimum of 20 residents in the Henderson watershed. Contact: Kathy Whalen (TCD) 754-3588 ext. 114.</p>	<p>Continue follow up work, especially on farms that abut streams.</p>

## AGRICULTURE RECOMMENDATIONS

<b>Summary Recommendation</b>	<b>Work being done to implement the recommendations</b>	<b>Additional work needed</b>
4. Hold workshops that address topics such as composting of manure, pasture management, etc	TCD conducted 2 agricultural workshops in the Nisqually and one in the Henderson watersheds. There are two workshops planned for 2005 in both Districts. Contact: Kathy Whalen (TCD) 754-3588, ext. 114	Need to continue at current level.
5. Develop a program that would assist non-commercial farms that have livestock, but limited acreage and manure storage. This program would have a pickup service that would take the manure to a centralized composting area.	TCD continues to maintain a manure-brokering list that identifies farms that give away or sell manure. Brian Thompson (TCD) 754-3588, ext. 137.	Need to continue at current level.
6. Set up an on-going maintenance program for private and publicly owned tide gates in the McAllister Creek watershed (Nisqually SPD).	WSDOT (Washington State Department of Transportation) owns the publicly owned tidegates and are responsible for their maintenance.	Defer to TMDL (Total Maximum Daily Load) process to determine the need for (benefit of) implementation.
7. Set up guidelines to determine the appropriate number of animals per acre.	TCD will provide recommendations and guideline to EHD as part of the update of the county's non-point ordinance (Article VI) in 2005. Contact: Kathy Whalen (TCD) 754-3588, ext 114.	No further action needed beyond completion of Column 2 activities.
8. Develop and implement an ongoing program of water sampling of ditches and streams near farms to track the progress of best management farm practices.	TCD, in conjunction with Ecology is continuing to monitor water quality along portions of the McAllister Creek. The grant funding for this project ends June 2005. Contact: Kathy Whalen (TCD) 754-3588 ext. 114.	As part of the TMDL process, TCD, EHD, and DOE (Ecology) should review need for and recommend, as needed, a program for on-going monitoring.

## AGRICULTURE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>9. Reward landowners who do a good job with their farm practices.</p>	<p>The CREP (Conservation Reserve Enhancement Program) established by NRCS (Natural Resource Conservation Service) takes effect in 2004. This program will reward landowners who have installed conservation practices. TCD will proactively inform qualified property owners of this program. Contacts: Jeff Swotek (NRCS) 704-7750 and Kathy Whalen (TCD) ext. 114.</p> <p>TCD has developed a reward program in the Watershed Pledge Project. TCD re-established their landowner recognition program for Thurston County. Awards were presented at the November 2004 Open House. Contact Kathy Whalen (TCD) 754.3588 ext. 114.</p>	<p>Need to continue at current level.</p>
<p>10. Provide information on alternative sources of organic fertilizer for organic growers. (Nisqually SPD).</p>	<p>TCD currently provides information concerning alternative sources of organic fertilizer.</p>	<p>TCD should review potential water quality benefit, and if warranted, include this in development of farm plans and BMP recommendations.</p>
<p>11. Provide for WCC (Washington Conservation Corps) crews to assist landowners implementing farm practices such as fencing and creating riparian buffer areas. (Henderson SPD)</p>	<p>In 2004, the TCD has funded the WCC crew to assist landowners on four projects. The TCD is now without a WCC crew due to increasing program costs and is negotiating for a replacement. Currently, labor/crew assistance can usually be arranged for private landowners on a case-by-case basis.</p>	<p>Continue to find replacement work crew.</p>
<p>12. Work with realtors to educate new property buyers on farm practices that protect water quality. (Henderson SPD)</p>	<p>TCD participates in the WSU (Washington State University) Extension Service program that provides in-service training to realtors on agricultural issues.</p>	<p>Need to continue at current level.</p>
<p>13. Continue to encourage WSDOT to move McAllister Creek back to its original channel. (Nisqually SPD)</p>	<p>Need to assess the feasibility of this recommendation.</p>	<p>Defer to TMDL process to determine the need for (benefit of) implementation.</p>

## AGRICULTURE RECOMMENDATIONS

<b>Summary Recommendation</b>	<b>Work being done to implement the recommendations</b>	<b>Additional work needed</b>
<p>14. Require all agriculture lands with livestock to manage buffers along streams and rivers to reduce bacterial loading. (Henderson SPD)</p>	<p>TCD manages the Conservation Reserve Enhancement Program that provides financial assistance to landowners to plant buffers and construct fences.</p> <p>The County's Non-Point Ordinance already includes this provision (Section 4.2 (a)).</p>	<p>Need to continue at current level.</p>
<p>15. Provide support and funding for the development and continuation of a Community Shellfish Farm that will promote community involvement and public awareness of water quality issues that effect shellfish harvesting. (Henderson SPD)</p>	<p>The Commissioners approved the 2004 and 2005 work plan for the Shellfish Protection Fund to include funding the activities of the Community Shellfish Farm.</p> <p>In February 2004, the Farm hosted a field trip from the Science Writer's Conference. Contact Mark Fischer (CSF) 360. 866.8960.</p> <p>TCD produced a television program on TCTV on the shellfish issue and highlighted the Community Shellfish Farm.</p> <p>TCD hosted a community leaders' tour of the Henderson watershed and the Community Shellfish Farm.</p> <p>South Sound GREEN has a cooperative project going on with the Community Shellfish Farm. See Stormwater Recommendations #3 for details.</p>	<p>Financial support of the Community Shellfish Farm through Shellfish Protection Funds should continue.</p>
<p>16. Locate drainage tiles and adjust agriculture practices near them that protect water quality. (Nisqually SPD).</p>	<p>TCD – no action on this recommendation.</p> <p>Funding and the inability to locate information on the location of the tiles have prevented the TCD from getting moving forward with this recommendation.</p>	<p>Defer to TMDL process to determine the need for (benefit of) implementation.</p>
<p>17. Assist farmers in building composting and manure storage facilities by obtaining funding resources. (Nisqually SPD)</p>	<p>The EQIP Program established by NRCS provides cost share funding for manure storage facilities. Contacts: Jeff Swotek (NRCS) 704-7750 and Brian Thompson (TCD) 754-3588 ext. 137.</p> <p>TCD notifies landowners of the availability of this program and funding. They have also advertised in the Nisqually Valley News and The Olympian newspapers.</p> <p>TCD has funding available for riparian planting and fencing. Contact: either Kathy Whalen or Mike Kuttel (TCD) 754.3588.</p>	<p>Need to continue at current level.</p>

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>1. Require new development to meet Low Impact Development (LID) Standards in the areas of the district zoned 1 unit per acre or higher and are most prone to stormwater run-off.</p> <p>a. Identify locations where LID Standards have practical application using criteria such as soil types, vegetation, and proximity to sensitive resources.</p>	<p>Olympia requires single-family in-fill development to achieve full dispersion of stormwater onsite using certain low-impact techniques, such as pervious pavements, roof water infiltration, compost-amended soils, and rain gardens. New commercial developments are strongly encouraged to construct parking areas with pervious asphalt, which can be installed at a lower overall cost than regular pavement.</p> <p>Thurston County has created a LID Steering Committee to assist in the development of an action plan to create a LID Ordinance for Thurston County. The SPD is represented on the LID Steering Committee. Contact Mark Swartout (DSD)709.3079</p>	<p>Defer to the work of the LID steering committee to identify where LID is needed based on soil types, proximity to surface waters, etc.</p> <p>Submit this recommendation for the LAMIRD project.</p>
<p>b. Immediately institute interim standards requiring 100% infiltration for development in areas based on soil type, proximity to sensitive areas, and areas zoned 1 residential unit per acre or higher while LID Standards are developed.</p>	<p>The County will need to take this to the Board for consideration through the LID considerations.</p> <p>Need to determine whether this recommendation applies to the urban and urban growth areas.</p>	<p><u>County:</u> Defer to the work of the LID steering committee to identify where LID is needed based on soil types, proximity to surface waters, etc.</p> <p>See Stormwater recommendation 2 b.</p>
<p>c. Request the City of Lacey to require LID in the northern area of the city boundaries in the Hawks Prairie Planned Community located near the marine shoreline of the Nisqually Reach.</p>	<p>Hawks Prairie Planned Community is already planned. The development plan has been approved for years (though all parcels haven't yet been platted). Planners feel that we would not have any legal standing to impose this requirement at this point in the process. Also, as mentioned, LID standards have not been proven nor developed, and developers cannot be required to implement standards that don't yet exist. The marine shoreline is a small portion of the planned community and is currently low density – 0-4 residents per acre. Developers can certainly be encouraged, educated to use LID techniques.</p>	<p>Forward this recommendation to the Lacey Planning Commission as formal public input.</p>

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>2. Develop regional LID standards:</p> <ul style="list-style-type: none"> <li>a. Require LID for redevelopment in the Urban Growth Area where possible. Research ways to incorporate LID techniques on redeveloping sites.</li> <li>b. Regional standards are needed to be maximally effective across jurisdictions.</li> <li>c. Adjust LID standards as additional science is developed on the impacts to shellfish growing areas.</li> </ul>	<p><u>County:</u> The County’s LID Steering Committee is assessing the feasibility of regional standards. The results of their work will be forwarded to the BoCC for consideration.</p> <p><u>City of Lacey:</u> This seems to be the essential piece to successful use of LID in the districts. It is distinctly different than establishing ordinances that allow for LID. One option for facilitating standards is to encourage electeds to take this need to the regional planning council. The regional council could then set up a sub committee to develop the standards for adoption by the jurisdictions. (Apparently, this approach/process has proven successful with other similar regional issues).</p> <p><u>City of Olympia:</u> Olympia’s elected officials have shown interest in expanding low-impact development requirements citywide. Staff has worked with an Ecology committee to evaluate practices and has been encouraging LID technique use where appropriate. Staff has conducted test pours of several porous concrete products, and has demonstrated several sidewalk cleaning machines (which would maintain the porous surfaces). LID techniques are included in the revised stormwater manual.</p>	<p>Local jurisdictions should utilize the regional planning council to facilitate the development of regional LID standards. The regional council could set up a subcommittee to develop the standards for adoption by the jurisdictions. (Apparently, this approach/process has proven successful with other similar regional issues.)</p>
<p>3. Declare an emergency down zone of 1 unit to 2 acres for rural areas that are currently zoned 1 unit to 1 acre within the shellfish protection district before further development occurs, and codify the down zone during the comprehensive plan update. (Nisqually SPD)</p>	<p><u>Zoning Changes:</u> As part of the GMA update the Board has directed staff to review existing areas of more intensive rural development (rural areas zoned to a density greater than 1 unit per 5 acres; this includes areas within the shellfish protection districts) as part of a 2005 work program. . The project is called LAMIRD – Limited Area of More Intensive Rural Development</p> <p><u>Cluster development ordinances:</u> The Board has approved an interim ordinance (PRRD) not allowing density bonuses in rural developments.</p> <p>The “emergency” down zone is not being considered at this time and would need Board directive. To implement this recommendation further</p>	<p>No further action needed, beyond completion of Column 2.</p>

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
3. (Continued)	site-specific evaluation will need to occur to predict the impacts of bacteria loading to the marine waters. This evaluation will need to consider the natural runoff characteristics including slope, soils, vegetative cover, and effective impermeable surface to name a few.	
4. Update current CAO (Critical Areas Ordinance) using best available science to provide adequate buffers that will remove bacteria from surface water.	<p>The Best Available Science states that generally 100' to 141' buffers are sufficient to remove bacteria from surface flows.</p> <p><u>County:</u> Updating its CAO (Critical Areas Ordinance) using Best Available Science. Draft CAO should be out for public hearing in early-mid 2005. Contact County, John Sonnen 786.5467.</p> <p><u>Olympia:</u> Draft revised Olympia CAO provides such buffers.</p>	SPD should review draft CAO upon its completion to determine whether the intent of this recommendation has been met.
5. Use the Special Management Area provisions of the Critical Areas Ordinance in the unincorporated and rural areas of the Shellfish Protection Districts to: (Henderson SPD)	The revised CAO won't include a Special Management Area provision.	The intent of this recommendation should be forwarded to Thurston County Development Services and considered formal input into their efforts to revise rural zoning in 2005.
a. Develop stricter development standards.	The recommendations to develop stricter development standards and retain a 65-70% tree canopy applies more to zoning ordinance than CAO, which will be updated in 2005. Contact: Jennifer Hayes (DSD) 786.5477.	Further protections may be accomplished through work of the LID steering committee and implementation of other Land Use recommendations.
b. Retain at least 65-70% tree canopy.		
c. Increase setbacks from shoreline.	The revised CAO will most likely have greater setbacks for new development than the current regulation. Contact: John Sonnen (DSD) 786.5467	SPD should review draft CAO upon its completion to determine whether the intent of this recommendation has been met.
d. Set higher septic system standards.	The recommendation to set higher septic system standards are being addressed above in the Septic System section.	Need to continue at current level.

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>6. Recommend wording change to Comprehensive Plan Chapter #3 – Natural Resource Lands – Propose Policy (Aquaculture Resources - #3). (Nisqually SPD only)</p> <p>Proposed Policy – Uses of lands that are <del>adjacent</del> <u>near</u> to designated marine aquaculture areas should be compatible, such as forestry and low density rural residential. Those uses should not increase stormwater runoff or otherwise degrade water quality of aquaculture use.</p>	<p>This was completed in 2003</p>	<p>No further action needed.</p>
<p>7. Natural Environment Chapter 9 should address not only commercial and recreational shellfish on public lands but also shellfish harvest on private lands. (Nisqually SPD)</p>	<p>This was completed in 2003</p>	<p>No further action needed.</p>
<p>8. Continue program to purchase land and build regional stormwater facilities in developed areas to meet newly revised stormwater retention standards as the opportunity arises. (Henderson SPD)</p>	<p><u>County:</u> In 2004 stormwater treatment and flood elimination project is being constructed for the Thompson Place area, in the Woodland Creek basin. For Mallard Pond (McAllister basin) a water quality, flood and erosion control project is under design. These projects are among the priority projects as determined by competitive rating process. The rating uses about a twenty-category evaluation process among which the location and benefit to shellfish are considered.</p>	<p>No further action needed beyond current level, unless TMDL process identifies specific needs not currently included in local jurisdiction CIPs.</p>

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>8. (Continued)</p>	<p><u>City of Lacey:</u> On-going - Lacey and Olympia just completed the Fones Road Regional Stormwater Treatment Facility. Lacey is still pursuing a regional facility for College Ditch, but the property owner is hesitant</p> <p><u>City of Olympia:</u> Two new ponds are in-place and functioning on the Fones Road Ditch, a headwater tributary to Woodard Creek. The facilities treat South Sound Center and Pacific Avenue stormwater, and are jointly managed by Lacey and Olympia. We have outfitted the downstream pond with a Gunderboom bacteria treatment curtain, and will monitor its effectiveness.</p> <p>No new facilities planned in 2005 but the City has annual land purchase funds and work with local land trusts to acquire sensitive properties.</p>	
<p>9. Use funding sources such as the Conservation Futures Fund to: (Henderson SPD).</p> <ul style="list-style-type: none"> <li>a. Purchase of shoreline properties, if possible; or</li> <li>b. Purchase development rights or conservation easements from willing sellers. This is an effective tool to permanently protect valuable wildlife riparian areas as well as protect water quality from further degradation.</li> </ul>	<p>The Conservation Futures program allows this sort of acquisition but needs to compete with other proposed projects each year. If anyone knows of property that meets this criteria they will need to fill out a Conservation Futures Project Form. The proposed project will then compete against others during each cycle. Contact: Mark Swartout (DSD) 360.709.3079.</p>	<p>Local entities should continue regional collaboration through various planning efforts to prioritize acquisitions beneficial to water quality protection and habitat enhancement. Funding sources beyond Conservation Futures should be pursued to acquire identified properties or conservation easements. Need to identify properties that meet criteria for purchase of land and/or development rights.</p>

## LAND USE RECOMMENDATIONS

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>10. Increase enforcement of current land use regulations and institute adequate penalties to remove incentives to ignore the regulations. (Henderson SPD)</p>	<p><u>County:</u> In 2003 the County created a five-person compliance section to increase enforcement of land use, building codes, and on-site septic systems regulations. The compliance section is authorized to issue civil infractions as needed. The penalty amounts are adequate at this time. This program is now being reviewed in the DSD (Development Services Department) Cost Recovery project and decisions will be made regarding the level of service.</p> <p><u>City of Lacey:</u> Lacey has a full-time enforcement officer. Still, even with a dedicated enforcement officer, it is difficult to catch violations before they are a done deal. On-going education – like consistent welcome packets and occasional reminders about land clearing restrictions – is essential.</p> <p><u>City of Olympia:</u> Olympia has 2 full-time land use and 1 full-time environmental code enforcement officers. Code enforcement has been a City Council priority, and recent results have been deemed satisfactory. The City has enhanced its website with email complaint forms.</p>	<p>Local jurisdiction staff should review and identify specific regulations that may warrant penalty adjustment.</p> <p>Staff review should include an evaluation of the need, efficacy, and potential funding sources for additional enforcement officers.</p>
<p>11. Promote proactive assessment of streams and marine shorelines for buffer zone and other land use violations. (Henderson SPD)</p>	<p>Same as above #10.</p>	<p>Reassess the feasibility of this recommendation and refine if needed.</p>
<p>12. Educate stream and marine shoreline owners regarding the function and value of buffers of native vegetation dominated by mature conifers. Provide incentives and/or technical assistance to property owners interested in protecting and/or re-establishing native shoreline buffers. (Henderson SPD)</p>	<p><u>County:</u> W&amp;WM has a project scheduled in the fall 2004 to restore the shoreline along Henderson Inlet at Harmony Farm [a CLT (Capital Land Trust) easement property]. Contact: Susie Vanderburg (W&amp;WM) 360.357.2491.</p> <p>W&amp;WM and the City of Lacey are working together on shoreline revegetation projects on Woodland Creek.</p> <p><u>City of Lacey:</u> has a Plant Grant program for streamside property owners along Woodland Creek to help reestablish riparian buffers. The City is continuing to revegetate along Woodland Creek Community Park. Contact: Lisa Dennis-Perez (Lacey) 360.438.2687</p> <p><u>City of Olympia:</u> Olympia has funds and work crews available to purchase and plant riparian vegetation.</p> <p>This action will also be included in the TCD and EHD watershed pledge program described earlier.</p>	<p>Need to continue at current level.</p>

## WILDLIFE

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p>Fully address human and domestic animal source pollution (as recommended in other sections) and take remedial actions. If water quality does not improve, further investigate wildlife source pollution through following steps:</p> <ol style="list-style-type: none"> <li>1. Identify possible areas of wildlife concentrations and seasonal usage of sites.</li> <li>2. Develop strategies to identify species that contribute most to fecal coliform contamination.</li> <li>3. Monitor over a significant period of time the wildlife populations and any increase in populations in areas of greatest fecal contamination.</li> <li>4. If a direct correlation can be made between high fecal counts and specific species, formulate a remediation plan.</li> <li>5. Continue research and publication reviews on source identification methods.</li> <li>6. Explore new technologies and other techniques to lower fecal coliform levels such as mycoremediation and riparian zone revegetation.</li> </ol>	<p>There are activities throughout this report to help fully address human and domestic animal source pollution.</p> <p>Environmental Health completed a DNA-typing study of E. coli bacteria for the McAllister Creek area in July 2004. The study helps identify the sources of bacterial pollution in the creek and Nisqually Reach. The results were presented to the Board of Health in June 2004, and to the shellfish committee in July 2004. A DNA study was also performed for Henderson Inlet and showed similar results.</p>	<p>As the recommendations are implemented a determination will need to be made whether wildlife is a significant contributor and what can be done to address it.</p>

## ADAPTIVE MANAGEMENT

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p><b>Adaptive Management Work Plan (Nisqually SPD)</b></p> <p>The implementing agencies will cooperate to develop an adaptive management strategy, and will use and refine it on a regular basis. The strategy will be consistent with WAC 365-195-900, which requires local governments to use adaptive management to protect critical areas (such as surface waters) when the best available science is inadequate. The strategy will also be consistent with local government, state, and federal goals and objectives. Changes in implementing agency work plans resulting from adaptive management will likely have budgetary impacts. As assignments change, both budget and funding must change. Therefore, adaptive management will also need to consider mechanisms to adjust income (such as shellfish district or stormwater utility fees) to provide necessary funding.</p>	<p>Data from current and past water quality sampling efforts that are part of the Clean Water Act TMDL process and ongoing WDOH (Washington Department of Health) shellfish area monitoring will be used as benchmarks to help measure success.</p>	<p>An adaptive management strategy will need to be developed once the TMDL process is completed and as major categories of recommendations are approved and implemented.</p>
<p><b>Adaptive Management Work Plan for implementing agencies: (Henderson SPD only)</b></p> <ol style="list-style-type: none"> <li>1. Cooperate to develop an adaptive management strategy. The strategy will be consistent with federal, state, and local requirements.</li> <li>2. Support monitoring programs needed to obtain environmental and performance-related data and information. Programs may target specific stream reaches or discharges, quality indicators, or runoff conditions.</li> <li>3. Coordinate with government agencies or community based groups to assess data and measure performance.</li> <li>4. Share information with the public and consider their feedback in revising programs.</li> <li>5. Use data, assessments, and feedback to evaluate and modify programs, thereby improving predictability, efficiency, and cost-effectiveness, while working toward achieving bacteria standards.</li> </ol>	<p>An adaptive management strategy will need to be developed once the TMDL process is completed and as major categories of recommendations are approved and implemented.</p>	

## GOVERNANCE

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p><u>Implementation Oversight Committee:</u></p> <p>The stakeholders have determined that it is important that there be some form of continued citizen involvement during Phase 2 (implementation). It is recommended to combine the two shellfish district stakeholder groups into one committee for both. Their role would be to advise the Board of County Commissioners and City Councils, assist in developing a Phase 2 implementation work plan, and to track completed actions with effectiveness in improving water quality. They should meet only when necessary and each year the Board of County Commissioners will evaluate whether to continue the committee.</p>	<p>This action item is being implemented. The two district stakeholder groups have been combined. The Board of County Commissioners agreed that their role is to advise them on actions needed to address the water quality that is impacting shellfish beds.</p> <p>The joint stakeholder group is currently working on a Phase 2 implementation work plan. The joint group also served as the core for an advisory group to develop a framework for the Risk Based Operation and Maintenance On-Site Sewage Program (addressing one of the recommendations above).</p> <p>The combined district stakeholder group will continue contingent on available funding.</p>	<p>The Board, upon receipt of the Implementation Work Plan and following the SPD review of the CAO and revision of the proposed O&amp;M program, should evaluate whether to continue the committee or defer to the committee established to support the TMDL process.</p>
<p><u>Boundary (Nisqually SPD):</u> The stakeholder group recommends the District boundary be reestablished based on surface water that influences the water quality of the shellfish beds in the Nisqually Reach and McAllister Creek areas. The new boundary should be determined using the most current topographical technology and information.</p>	<p>This issue has yet to be resolved. This issue will most likely be discussed at the time of implementation of a risk-based O&amp;M program for on-site sewage systems or at a time when implementing a recommendation will require an accurate assessment of what parcels should be included.</p> <p>Consideration should be made on whether the boundary should be changed or whether any new program should apply to a smaller number of property owners within the boundaries (e.g. the septic program). This may result in keeping the boundary but designating where the limited number of properties the program applies.</p>	<p>Recommendations for revision of the boundary should be made at the time that the proposed Risk Based O&amp;M program is considered for this watershed.</p>

## GOVERNANCE

Summary Recommendation	Work being done to implement the recommendations	Additional work needed
<p><u>Boundary (Henderson SPD)</u>: The boundary for the Henderson Inlet Shellfish Protection District was based on using past basin planning areas with the intention that the stakeholder group would review and make recommendations as part of their final report. The stakeholder group is recommending that the District boundary be reestablished based on surface water runoff from land within the current District boundary that influences the water quality of the shellfish beds in Henderson Inlet, taking into consideration the travel time needed for viable fecal coliform bacteria to reach the Inlet. The new boundary should be determined using the most current topographical technology and information.</p>	<p>The District boundary is currently included in the discussion on developing a Risk Based O&amp;M (Operation and Maintenance) On-Site Sewage Program.</p> <p>The O&amp;M stakeholder group recommended keeping the boundaries in tact as originally proposed when the district was formed.</p> <p>Consideration should be made on whether the boundary should be changed or whether any new program should apply to a smaller number of property owners within the boundaries (e.g. the septic program). This may result in keeping the boundary but designating where the limited number of properties the program applies.</p>	<p>Recommendations for revision of the boundary will be included in the revised Risk Based O&amp;M program proposal.</p>