

Whidbey Island and Snohomish Conservation Districts: Providing Special Benefits to Island County Land and Landowners



FINAL REPORT

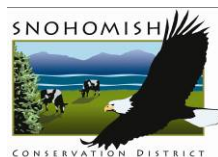
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In compliance with RCW 89.08.400

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1. Executive Summary

Conservation challenges. Island County is served by two Conservation Districts: Whidbey Island Conservation District (WICD), established in 1967, includes Whidbey Island and the other small, uninhabited islands of Island County; Snohomish Conservation District (SCD), established in 1967, includes Camano Island for reasons of accessibility. Island County's unique geography, located in the middle of Puget Sound, creates some challenging natural resource conservation issues, including storm water pollution of Puget Sound and ground water recharge of the Islands' drinking water aquifers. The County's growing population has increased the pressure on its natural resources, and the fact that 70% of the population dwells in rural areas creates both conservation challenges and opportunities.

WICD and SCD have responded to increasing conservation challenges by providing natural resource programming in four main areas that include: Conservation Planning and Technical Assistance, Low Impact Development, Sustainable Farm and Forest Lands, and Conservation Outreach, Education, and Partnerships. The county's increasing population, along with more stringent environmental regulations, has increased the need for all the Districts' programs; while at the same time sources of funding for programming have diminished. The Conservation Districts are now proposing an assessment as part of their strategy for maintaining the stability and quality of services to Island County landowners. With the assessment in place, the Districts will be better positioned to provide services where they are needed in Island county (instead of only where grants are available). The assessment will also increase the District's ability to compete for larger grant funding for Island County conservation efforts. The purpose of this document is to objectively present the services and activities of the District and the benefits they provide to the land and landowners of Island County per the requirements of RCW 89.08.400, which authorizes the assessment.

Natural Resource Planning and Technical Assistance. Conservation District programs provide broad benefits to all Island County residents, as well as specific benefits targeted to specific land classifications. Through its Natural Resource Planning and Technical Assistance program, CD staff assists rural, agricultural, suburban, and urban landowners with the development and implementation of natural resource conservation practices that protect and enhance water quality, improve fish and wildlife habitat, and reduce storm water runoff. These practices are commonly referred to as Best Management Practices or "BMPs". This on-the-ground work done directly with landowners is the hallmark of Conservation Districts and sets them apart from other conservation organizations. Natural Resource Planning and Technical Assistance is the largest programming area at the Conservation District. With assessment in place, this program area will continue to be a major area of services, projects, and benefits.

Landowners contact the District and request assistance on a strictly voluntary basis. Services are provided to landowners by certified farm and forest planners and licensed engineers free of charge. Best management practices exist for farming, forest, and residential lands. District staff provides planning and implementation services targeted to the specific type of land and particular site needs. In addition, the District assists landowners in accessing financial assistance

to implement BMPs, which could range from installing a backyard rain garden to installing a livestock fence.

Among the many physical benefits of BMPs to the land are reducing soil erosion, cleaning storm water, and keeping surface and ground water free of animal waste (Figure 4). CD staff will play an important role in assisting landowners to obtain compliance with Island County's new critical areas ordinance. Over 500 parcels of land in agricultural uses alone will be required to comply. The assessment will ensure the availability of staffing at the District to assist with this ordinance.

Low Impact Development techniques such as bioswales, rain gardens, green streets, and pervious pavers are effective ways to deal with storm water, particularly in rural areas such as Island County. WICD is a leader among State Conservation Districts in providing LID informational workshops and technical assistance for landowners, technical LID installation training, and development of on-the-ground demonstration projects. As the lead organization of the LID Summit group, WICD serves as a clearinghouse of information on LID topics in Island County, and is coordinating LID efforts throughout Island County.

LID practices benefit water quality in Puget Sound by reducing the *volume* of storm water runoff into the Sound, and by filtering and treating remaining storm water runoff before it reaches local streams, wetlands, and eventually Puget Sound or the groundwater system. Allowing surface and storm waters to infiltrate the soil through LID techniques such as rain gardens, returns water to the aquifer and 'recharges' it. In addition to the physical benefits to the land through the use of LID practices, Island County's drinking water and its rural character can be preserved (Figure 9). WICD's LID programming makes delivery of LID services by all agencies throughout Island County more efficient, and in many cases can effectively reduce the cost of storm water management in urban areas.

Sustainable farm and forest lands. Island County's landscape is often described as pastoral, due to the estimated 24,000 acres of land on which some kind of agricultural activities are taking place, as well as the thousands of acres of forest lands on the islands. As the County grows and develops, it is critical that these lands are maintained, not only to preserve the aesthetics of the islands, but to protect their environmental health as well. Despite the District's limited resources to address protection of these lands, WICD staff has built strong partnerships with other organizations such as WSU Forest Stewardship Education, DNR, and the Whidbey-Camano Land Trust, to bring conservation resources to these lands and landowners. With assessment funding, the District could energize these strategic partnerships to reach more landowners; currently WICD staff offers limited forest management planning services to private landowners. The opportunities to increase sustainable farm and forest programming are numerous and exciting, including improving water and nutrient management on local farms through irrigation and use of biosolids, and developing a more robust agrotourism industry in the County. Production of local food, fiber, and sustainable wood products are other tangible benefits that arise from this program area.

Outreach, Education, and Partnerships: While all of the District's program areas contribute benefits, the nexus that weaves them together and supports them all are the District's Outreach, Education, and Partnership efforts. Most often, residents first come into contact with WICD and

SCD through their many public outreach activities including the Districts' newsletters and websites, conservation displays at local events, their annual Plant Sale, or their annual open house where conservation partners are recognized and honored with awards. Further involvement may entail participation in one of the District's many workshops, trainings or conservation tours. Many residents who end up taking advantage of the Districts' planning or technical assistance services first interact with the district through its educational programs.

WICD and SCD partner with over 30 local state and national groups to work toward common natural resource goals. The benefits of building these partnerships are that limited technical and financial resources are utilized more efficiently among coordinated agencies, and that individuals and organizations gain access to accurate, timely information to address their natural resource needs. In parallel with these partnerships, WICD staff has a direct on-the-ground working relationship with the County's private landowners. It is this "nexus" position that gives the District a unique ability to bring about highly successful natural resource improvements. With the assessment funding in place, the Districts will implement new activities in this program area, including a Firewise program and development of a volunteer network.

Large benefits at a very small price. Benefits derived from Conservation District programming and services clearly outweigh the small budget used to deliver them. The special benefits that result from WICD and SCD services are not just one time benefits. Investments in natural resource improvements, such as fencing livestock out of streams or installing a rain garden to capture storm water, provide long term benefits that continue over the entire time the improvement is in place. Benefits are both specific to particular land classifications (e.g. rural, residential, urban, forestry, agriculture) and generalized to the watersheds, airsheds, and aquifers of Island County. With assessment funding, the District seeks to stabilize its financial and staff resources and gain greater flexibility to address unmet conservation needs in Island County.

The Conservation District employs a proven model of educating and working directly with landowners to bring about increased protection of natural resources in Island County. The types of programming offered by the district, such as its Low Impact Development services and sustainable farming initiatives, are effective ways to accommodate future growth in the County in a sustainable, cost-efficient manner. The District Staff and Board of Supervisors have an award-winning track record of delivering sound, local conservation services and vision.

The natural resource challenges facing Island County in the near and long term future are enormous and complex. Clean up of Puget Sound water quality, protection of the County's drinking water from salt water intrusion, and protection of habitat and critical areas are but a few of these complicated challenges. WICD and SCD's expertise and success in building partnerships between organizations, landowners, and other stakeholders will be indispensable in addressing and solving these natural resource issues.

2. Introduction

2.1 Brief history and description of the District. Whidbey Island Conservation District (WICD) was created in 1967 as non-regulatory subdivision of state government. For over forty years the District has served residents of Whidbey Island in conserving and protecting natural resources through technical and financial assistance as well as through educational outreach. The District works with private landowners, the general public, local government entities, and interest groups to resolve natural resource issues within the district.

WICD is one of 47 Conservation Districts throughout Washington State. The scope and authority of Conservation Districts in Washington come from the Conservation District Act of 1973, and are enumerated in RCW 89.08. Whidbey Island and the other small, uninhabited islands of Island

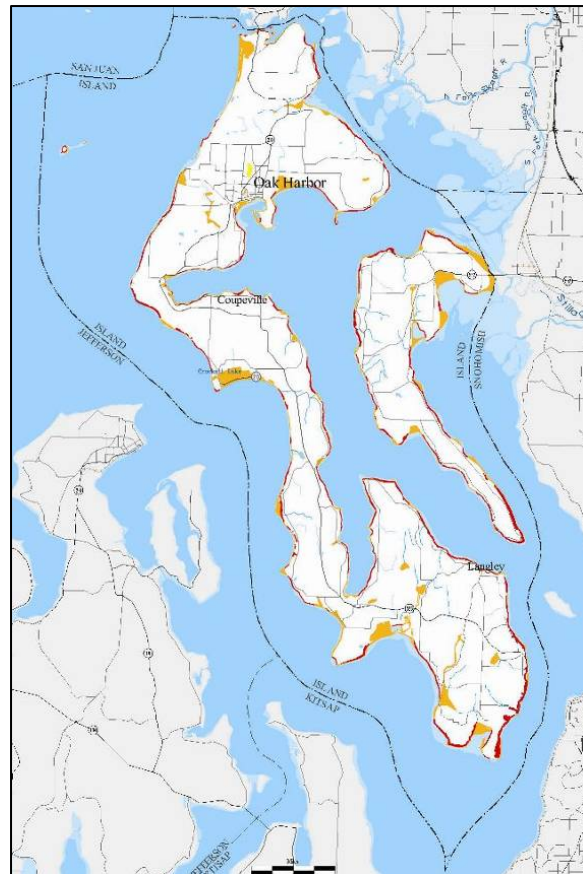
County are included in the WICD. Camano Island, for reasons of accessibility, became part of the Snohomish Conservation District in 1961. Conservation services to Camano Island residents are provided by Snohomish Conservation District (SCD) under a contract agreement with Island County.

2.1.1 Island County's unique geography: Island County encompasses a land area of 208 square miles and is located at the juncture of Puget Sound, the Strait of Juan de Fuca, and the Georgia Strait. Whidbey Island is the largest island in Puget Sound and the longest Island in the contiguous United States. Island County has more water than land area: The County has a total area of 517 square miles, of which 309 square miles of it (59.71%) consists of the waters of Puget Sound.

Because of their long, thin geography, Whidbey and Camano Islands combined have 190 miles of shoreline (Figure 1). Therefore, virtually every land use in Island County affects the surrounding waters of Puget Sound; in particular, *storm water*¹ runoff into Puget Sound is a severe problem. Residential development encompasses much of the shoreline and is expanding into rural and forested areas. Meanwhile, agriculture and forestry continue to be important land uses in Island County.

2.1.2 Growing rural and urban populations: While urban centers house roughly 1/3 of Island County's population, the vast majority of residents – over two thirds – live in unincorporated rural areas. Since the last population census in 2000, the population of Island County has grown 11%, or 1.4% annually; in 2008 it was estimated to be 79,000 people. According to projections

Figure 1: Island County and Puget Sound



by Washington State Office of Financial Management, the population in Island County is likely to grow by 30,000 - 50,000 new people over the next 20 years.²

Cities will no doubt grow to accommodate these new individuals, but most residents will continue to live in rural areas outside the urban growth areas. This growing rural population presents unique natural resource challenges for Island County, and places a much bigger responsibility for resource protection on individual landowners.

2.2 Island County's water resource challenges: Ground water, surface water, and storm water management are all serious challenges for Island County. 72% of the drinking water in Island County is provided by a sole source aquifer.³ Saltwater intrusion and insufficient ground water recharge to replenish the aquifer are major resource concerns. The City of Oak Harbor and Navy base drinking water comes from the Skagit River and is piped to North Whidbey. Watersheds such as the Maxwellton, Glendale, Cultus, Crescent and Lone Lake watersheds have poor water quality created by unregulated practices on adjacent lands. Penn Cove and Holmes Harbor are both considered to have impaired water quality under Section 303(d) of the Federal Clean Water Act, due in part to storm water run off and other factors, such as failed septic systems. A Shellfish Protection District was created for Holmes Harbor in 2007 to cope with escalating concerns.



Beach and bluff at Ebey's Landing National Historic Reserve

2.3 WICD and SCD conservation response and need for the proposed assessment: As conservation challenges have increased, Whidbey Island CD and Snohomish CD have responded by providing programming in four main areas including: Conservation Planning and Technical Assistance, Low Impact Development, Sustainable Farm and Forest Lands, and Conservation Outreach, Education, and Partnership programming. Funding for these services has historically come from grants, which are increasingly difficult to obtain. In addition, Island County is a small county with no large salmon river systems, and it must compete for dwindling grant dollars against higher priority watersheds. Aquifer protection and non-point pollution have historically not been competitive for grant funded projects.

As environmental conditions have worsened, local, state, and federal governments have enacted increasingly complex regulations intended to protect these resources, such as Island County's new critical areas protection ordinance. These new regulations impose more restrictions on natural resource use and have further increased demand for all of WICD and Snohomish CD's services. WICD and SCD provide non-regulatory technical assistance to landowners in order to help them comply with county regulations.

In order to meet the increasing need and make funding of their programs more reliable, the Districts now seek to obtain an assessment, including an annual flat per-parcel fee of five dollars

(\$5.00) plus a five cent (\$0.05) per-acre fee. The total amount of revenue generated by the assessment will be approximately \$243,000 annually. Revenues generated from Whidbey Island parcels will benefit WICD programming, while revenues from Camano Island parcels will support SCD activities specific to Camano Island. WICD and SCD have worked together for over 40 years to coordinate and deliver conservation services to Island County, and this strong relationship will continue with close collaboration to see that landowners on both islands are served through the assessment. The Districts will work together to coordinate projects to be completed and implement accountability measures as described in Section 4 later in this report.

Establishing assessment based funding is just one part of the District's strategy for building capacity and stable program delivery. In addition, the district will continue to:

- provide professional-level training for all staff
- maintain and enhance effective Board of Supervisors leadership
- promote relationships with other partner organizations
- continue exemplary and efficient district operations
- seek and expand as much as possible its grant funding

2.3.1 Better grant leveraging: WICD is a small District in terms of its size and budget, which is currently \$278,000. Securing an assessment as base funding would stabilize the District's program implementation capacity at a basic functional level, which the District will then build upon. Grants will remain critical to WICD programming, and funding secured through the assessment will help the District to meet the "match" requirements of most grant programs. Almost all grant programs require the grantee to match the funded amount, often at a 1:1 ratio. WICD's current match resources are extremely limited, and this in turn limits the kind and size of grants it can apply for.

2.3.2 More flexibility to address local conservation needs: In addition to assisting the District leverage funding for more and larger grants, the assessment will also enable WICD to direct the focus of its services to *areas of need* rather than to areas prioritized by grant programs. Examples of areas currently underfunded by grants in Island County are farm and forest land conservation planning and sustainable agriculture programming.

2.4 Purpose and scope of this Special Benefits Analysis: Under RCW 89.08.400 which authorizes the assessment process, the District must demonstrate that the special benefits to the land from District activities and programs equal or exceed the amount of the proposed special assessment.* The purpose of this document is to objectively present the services and activities of the District and the benefits they provide to the land and landowners of Island County. These benefits are described and quantified to the extent possible in Chapter 3. Specific benefits associated with the different land use classifications developed for this assessment are discussed when applicable. Benefits are identified for both the current programming provided by the District and the expanded programming that would be provided should the assessment be authorized by Island County Board of Commissioners. In Chapter 4 the costs of providing these benefits are discussed. The final chapter, Chapter 5, draws conclusions about the unique role

* Actual language from RCW 89.08.400: "...the special assessments to be imposed on any land will not exceed the special benefit that the land receives or will receive from the activities of the Conservation District."

WICD plays in delivering conservation benefits to Island County lands and the efficiency and cost-effectiveness of the District. Because of the limited historical data available for this project, the analysis in this report is limited to a mostly *qualitative* discussion of benefits. Where possible, quantification of the goods and services provided by the District is provided.

3. Benefits to the land provided by Conservation District activities and programs

In the following section, WICD and SCD's four main programming areas in Island County are briefly described, followed by a discussion of the specific benefits of each program area.

General vs. specific benefits: These programs provide both broad benefits to Island County residents, as well as specific benefits targeted to specific land classifications. For example, all land types such as urban, rural, agricultural, and forest lands benefit from technical assistance provided by the District, as well as environmental improvements such as increased water conservation. Similarly, all land classes reap the benefits from land owner education gained through Conservation District workshops and training.

Certain elements of District programs provide specific benefits directly to certain land classifications. A good example of this is the District's development of forest and farm management plans, which provide direct benefits to forestry and agricultural land classifications, respectively. These direct benefits notwithstanding, many environmental improvements resulting from these programs indirectly benefit other lands. Similarly, LID and Backyard Conservation programming are often highly compatible with urban and rural land uses. However, results of implementing these programs provide benefits to other lands as well. Natural resource improvements to air quality, water quality or habitat made on individual parcels do not stop at property lines, but rather are enjoyed widely by all citizens who share the same airshed, watershed, or aquifer.

3.1 Natural Resource Planning and Technical Assistance

Through this program, Conservation District staff assists rural, agricultural, suburban, and urban landowners with the development and implementation of natural resource conservation practices that protect and enhance water quality, improve fish and wildlife habitat, and reduce storm water runoff. These practices are commonly referred to as Best Management Practices⁴ or "BMPs." Examples of BMPs include capturing roof water runoff, fencing livestock out of creeks and streams, and installing rain gardens. WICD resource planners work to ensure that natural resources are being protected while meeting the landowners' objectives.

This on-the-ground work done directly with landowners is the hallmark of Conservation Districts and sets them apart from other conservation organizations. Natural Resource Planning and Technical Assistance is the largest programming area at the Conservation District, using a large portion of programming funds. With assessment in place, this program area will continue to be a major area of services, projects, and benefits.

All land use types have access to WICD services: The District helps landowners successfully achieve their management and resource protection goals by providing planning and engineering services, as well as various kinds of technical assistance, free of charge and regardless of land use classification. The District also provides these services to local organizations such as Whidbey Camano Land Trust, and to and government agencies such as Island County. WICD natural resource planners work with the full range of land uses, from large commercial livestock and produce farms to hobby farms, and from backyard gardeners to lakeside homeowners. The planning services range from development and implementation of Nutrient Management Plans and water quality improvements to backyard wildlife habitat improvements. Engineering services are provided by licensed engineers and include project planning and design, surveying, construction inspection, assistance in obtaining permits and regulatory agency approval, and general engineering consulting. Examples of technical assistance include soil testing, habitat restoration, GIS/GPS mapping, and mud and manure management.

3.1.1 Farm and forestry management planning: The District works with commercial and non-commercial farms and small forest and woodlot owners to address a wide range of natural resource issues. District staff helps landowners develop farm plans or forest management plans,* and then provides technical assistance, education, and access to Federal and State cost sharing funding opportunities to implement the BMPs recommended in the plan.

Landowners contact the District and request assistance on a strictly voluntary basis. Plans are developed after an initial site visit and follow-up discussions with the landowner.

Whidbey Island has many small livestock owners whose cumulative affect on water quality is sometimes serious - partly because they lack the training of commercial farmers and partly because they often lack the resources to implement the needed BMPs. The assessment will provide the stability of trained staff to get conservation plans in place and then assist the landowners with technical assistance to implement BMPs identified in the plan.

Nuts and bolts of a farm or forest management plan: The farm or forestry plan consists of a series of management and infrastructure recommendations focused on improving the conditions of soil, water, air, plants, and animals (wild, domestic, and human) at the facility or property. For example, some common recommendations at small farm facilities include installation of barn gutters to capture and control rain runoff, development of designated animal containment areas, fencing to exclude animals from environmentally sensitive areas, development of grazing strategies, manure management and storage, composting, etc. The elements of a forest management plan for a

Figure 2: Basic Elements of a Small Forest Management Plan

- Inventory
- Landowner objectives
- Record of management decisions and time line for implementation
- Specifications for accomplishing decisions
- Plan map and soils information

* A farm or forest management plan is a comprehensive series of actions developed to meet a landowner's goals while protecting water quality and the natural resources. Some of the factors considered in a farm or forestry management plan are property size, soils type, slope of the land, proximity to streams or water bodies, type of livestock or crops, the farmer's goals, resources such as machinery or buildings, and finances available.

typical small forest are included in Figure 2. Once the forest management plan is complete, the property may be eligible for Open Space taxation status through the County Assessor's Office. This is often the financial incentive landowners need to keep their lands in forest or farm use. District staff assists farm and forest landowners access to cost share financing to implement elements of their management plan. Once the plan is developed, implementation of the plan is ongoing and may take several years, depending on the complexity of the plan.

For forest lands up to about 20 acres in size, a forest management plan typically takes one week to a week-and-a-half to complete including field work, writing, and review of the plan with the landowner. Farm plans typically take two weeks or 80 hours to complete. With larger parcels or those with critical areas, the plans become more complicated and require more time. In all cases, services are provided free of charge to the private landowner. In the case of forest management plans, WICD prioritizes forested parcels with critical areas and small landowners with financial needs who are in danger of losing their Forestry Open Timber tax designation.

Figure 3 is a summary of recent conservation planning and technical assistance work provided by the District in the last few years. All of these activities are grant funded and have different completion periods, which are listed in parenthesis at the end of each bullet point.

3.1.2 Backyard conservation and wildlife habitat:

Over the past 35 years, the National Wildlife Federation Certified Wildlife Habitat™ program has certified over 100,000 US gardens located in backyards, apartment balconies, schoolyards, and businesses as “wildlife friendly.” This Certification is available to

any individual willing to create the five components of habitat in their garden, including food, water, cover, places to raise young, and sustainable gardening practices. WICD is currently working with the local chapter of Audubon, local wild bird supply retailers, and other partners to create awareness of this program on Whidbey Island. This certification identifies rain gardens and other LID practices as wildlife friendly. Landowners not seeking certification can also work with the District to implement these same practices.

Figure 3: Sample of grant funded farm and forest management planning and technical assistance provided by WICD

- Completion of farm plans for livestock owners within South Holmes Harbor Shellfish Protection District (2008-2012)
- Provide technical assistance to 20 farm and forest landowners (2009)
- Completion of 3 forest management plans (1 on Lone Lake) (2009)
- Provide technical assistance to 10 forest landowners to update forest management plans and implement forest management BMPs (2009)
- Provide technical assistance on BMPs for 5 farms in the Strawberry Point area (2007-2009)
- Provide access to cost share funding to local landowners for implementation of BMPs
- Complete riparian and wetland restoration plantings on land in South Holmes Harbor Shellfish Protection District (Freeland Creek)

WICD assists landowners with Island County Rural Stewardship Plan: Island County's Rural Stewardship Plan is a new (2008) voluntary program that applies to property owners within unincorporated Island County whose residential parcel is one acre or larger. A Plan can be developed for anywhere conservation practices will protect water quality and habitat, including but not limited to wetlands. In exchange, Rural Stewardship participants qualify for front-of-the-line permit processing, and may choose either a reduction in property tax valuation, or a lowered land use intensity rating.⁵

The Conservation District's role in this new program will be to provide interested landowners with technical assistance to implement the LID requirements of their stewardship plan. LID techniques implemented will be applicable to each specific property's characteristics and uses. Technical assistance will include site consultations, planning, design of LID features, and cost sharing if available.

3.1.3 Cost sharing for BMP implementation: A number of county, state, and federal government programs provide partial funding to assist landowners in covering the cost of implementing conservation practices. These programs are referred to as cost sharing programs, and sources of funding include: the WSCC livestock cost share program; the NRCS EQIP (Environmental Quality Incentive Program); and the Ag Water Enhancement Program (AWEP) recently funded for the Puget Sound area through the 2008 Farm Bill. WICD and SCD assist landowners in obtaining cost sharing funds for implementation of BMPs and implementation of sustainable practices. In most cases, cost sharing on installation of BMPs covers only 50% of the project costs. The remaining project costs must be covered by the landowner, and can include use of on-site equipment, the landowner's time, cash, and other material resources.

The CD will use some portion of assessment funding to help landowners find cost share funding to defray the cost of BMP implementation, including BMPs implemented as part of complying with the County's new critical areas ordinance (see Section 3.1.6). This will leverage assessment funds with federal and state dollars.



District Engineer, Tom Slocum

3.1.4 Civil engineering services: WICD offers civil engineering services for soil, water, and habitat conservation projects on private and public lands located on Whidbey Island. These services are provided regardless of land-use classification, and are implemented on rural, agricultural, forestry, and urban lands, free of charge to the private landowner. Services include project planning, design, and assistance with obtaining permits and regulatory agency approval. WICD can also assist in identifying public or private funding opportunities for project construction when available. Recent WICD engineering projects include:

- Design, permitting, and funding assistance for installation of creek crossings for livestock
- Design and permitting assistance for wetland habitat enhancement projects
- Storm water management planning

- Design and funding assistance for culvert replacement and bridge installations to restore salmon passage
- Design and permitting of irrigation water storage ponds
- Technical assistance with low impact residential development, including design of rain gardens
- Design, permitting, and funding for replacement of tidegates to improve fish passage

3.1.5 Physical benefits of BMPs to the land: BMPs such as Use Exclusion and Fencing practices keep livestock contained and away from environmentally sensitive areas such as wetlands and streams. This helps reduce soil erosion and keeps water free of animal waste. Other agricultural BMPs such as Prescribed Grazing and Pasture and Hay Planting improve soil and forage productivity and provide food for wildlife. Animal related BMPs such as Filter Strips, Gutters and Downspouts, Underground Outlets, Waste Storage, Composting and Waste Utilization reduce air pollution and odors, as well as prevent excess nutrients and pathogens from reaching ground and surface water. Tree/Shrub Establishment, Critical Area Planting, and Brush Management can significantly decrease soil erosion by helping reduce runoff and flooding. In addition, these practices improve water quality and fish and wildlife habitat by creating shade and preventing nutrients from reaching nearby water bodies. These physical benefits are summarized in Figure 4, and further detail of these practices can be found on the NRCS website at: <http://www.nrcs.usda.gov/technical/Standards/nhcp.html>.

BMP direct and indirect benefits to the land: While BMPs confer direct benefits to the natural resources on the parcels where they are implemented, they also improve water quality, air quality, and wildlife habitat far beyond the physical boundaries of the specific parcel. In addition, they indirectly help maintain the esthetics and rural character of the island.

3.1.6 Critical Areas Protection: Island County’s regulations governing protection of critical areas on rural and agricultural lands are currently on hold pending recommendations by the Ruckelshaus Center⁶ and resolution of judicial proceedings consequent to the Western Washington Growth Management Hearings Board. Recommendations from the Ruckelshaus Center are likely to be issued to the State Legislature in late 2009, which could mean Island County’s new critical areas ordinances (CAO) could come into effect as soon as 2010.

All Critical Areas protected regardless of farm size: These new rules will require many landowners participating in any scale of agriculture, ranging from recreational livestock and hobby farms to commercial agricultural

Figure 4: Physical benefits to the land from WICD planning, TA, and Engineering

- Reduce soil erosion
- Water bodies kept free of animal waste
- Improve soil and forage productivity
- Provide food for wildlife
- Reduce air pollution and odors
- Prevent excess nutrients and pathogens from reaching ground and surface waters
- Reduce runoff and flooding
- Improve water quality and fish habitat
- Indirectly benefit downstream properties with same physical improvements
- Maintain the esthetic and rural character of Whidbey Island

businesses, to follow Natural Resource Conservation Service (NRCS) Best Management Practices (BMPs) for farming activities. Smaller agricultural activities on “low-intensity” sites would be able to fill out a standard checklist to determine their proximity to and impact on critical waterways; and would be required to implement recommended BMPs based on their specific situation. Under the new ordinance, all rural agriculture landowners, regardless of property zoning, will be required to file this checklist with the County or they will automatically have to comply with new critical areas ordinances in effect for all other non-agricultural rural land uses. Owners of properties located in or near critical areas and more commercial entities will have to document implementation of BMPs, and in many cases will be required to have custom farm plans developed and implemented.

Figure 5: Estimated number of parcels that may require a Standard or Custom Farm Management Plan under IC Ordinance C-150-05

Land Use Zone	Acres in this zone identified as having streams	Average Parcel Size (ac.)	# of parcels that may require a farm plan
Commercial Agriculture	1,650	23.4	70
Rural Agriculture	2,625	23.4	112
Rural	2,530	7.4	340
TOTAL	6,805		522

Data Source: All data presented in this table come from Island County Planning Commission Findings, Ordinance C-150-05, Exhibit C, Pages C-9 thru C-11.

On-the-ground Help with Farm Plans and BMPs: Under the new CAO, an estimated 500+ parcels in the Rural Agriculture, Commercial Agriculture, and Rural areas will be required to complete the Standard Farm Management Plan (checklist), obtain assistance with custom farm plans, and/or implement some kind of BMPs (Figure 5). Figure 5 displays an estimate of the number of parcels that may require a farm plan of some kind and which contain *streams*. However, the CAO will also address agricultural uses associated with *wetlands* and *critical aquifer recharge areas*. Hence, the number of parcels will probably be greater than 500. Some farms may already have functional farm plans in place, in which case they would be exempt from the new critical areas ordinance.

The Conservation Districts’ role as a provider of certified farm planning and technical assistance services is written into the ordinance. Consistent CD staffing will be needed to assist this large number of landowners with technical and engineering services within the three year compliance period for implementation of the BMPs. There are very few certified farm planners working in the private sector who would be able to do this work, so the burden of producing certified farm plans will fall primarily to Conservation Districts. Assessment funds will provide staffing stability to the District so that the District is adequately prepared with trained staff to assist with implementation of the ordinance on this large scale. WICD and SCD could play an important role in helping rural landowners understand the new critical areas ordinances through outreach and education efforts including workshops and trainings. Contracts for specific services provided by WICD and SCD to the County would be needed periodically, above and beyond the

assessment, to complete the large amount of work the ordinance will require on both Whidbey and Camano Islands.

3.2 Low Impact Development

Low Impact Development or “LID” emphasizes on-site treatment and infiltration of storm water as an alternative to conventional storm water controls. LID practices encompass a variety of storm water management techniques including bioswales, rain gardens, green streets, and permeable paving.⁷ These practices mimic the hydrology of the original, natural landscape which allows rainfall to soak into the ground. These techniques reduce the runoff of storm water into nearby water bodies, provide filtration of the water, and recharge ground water supplies. LID practices applicable to Island County include retaining native vegetation, minimizing clearing and grading, reducing impervious surfaces, infiltration of storm water using rain gardens and bioswales, and use of native plants for landscaping.

An important part of WICD’s mission is to continue education and outreach on the subject of LID, with the goal that eventually builders, planners, permitting agencies, and Whidbey Island residents all consider incorporating LID practices into every project in the early stages of development. To serve this mission, the District offers an abundance of LID focused services and programming for Island County lands and landowners. These include implementation of on-the-ground demonstration projects, development of LID informational and training workshops, presentations to local garden clubs and other interested groups, acting as a clearinghouse for LID information, providing resource lists of materials and contractors on Whidbey, publication of LID informational materials, and coordination of LID activities throughout greater Island County.

Figure 6: Completed WICD Low Impact Development Projects

- Rain garden at Bayview High School
- Rain garden at the Island County Annex
- Pervious concrete walkway at the South Whidbey Sports Complex
- LID residential housing development, The Highlands at Langley
- Freeland Park storm water improvements – coming June 2009

3.2.1 On-the-ground LID projects: WICD is working to implement LID practices as part of both urban and rural developments and re-developments. Appendix A is a list of 16 completed LID projects that the public can visit at anytime around Whidbey Island. WICD has been a direct project partner in four of these projects, with another currently underway in Freeland in partnership with Island County (Figure 6). In addition, WICD staff has been involved in or provided information and resources for numerous other private, residential rain gardens and other LID practices. A sample of typical LID services provided by WICD to landowners, including technical assistance, site-visits, and engineering, is shown in Figure 7. For their part, SCD currently has staff members that are securing their LID certifications, and will be able to provide the same technical assistance and engineering on Camano Island that WICD’s certified staff provides on Whidbey Island. SCD is currently working with a Dept of Ecology grant on an LID project near Camano Island. SCD would like to include Camano Island residents in the workshops and technical assistance offered through this grant, but there is currently no funding

to do so. The assessment would make LID programs more readily available to Camano Island residents.

Leading the way to a responsible development future: The Highlands, a residential development in Langley, is a good example of the value WICD can bring to the growing number of LID projects in Island County. Started in 2006, The Highlands is one of the first

residential LID developments on Whidbey Island. WICD worked with the developer and the City of Langley to provide recommendations for incorporating LID practices into this new residential neighborhood. WICD staff also participated in the planning and design of infiltration systems and created a handbook, *Living Responsibly in a Green Community*, as a guide for Highlands homeowners in natural yard care, home and property maintenance, and use of non-toxic herbicides, fertilizers, and pesticides. WICD uses The Highlands site as a teaching resource to train other developers and educate local citizens about implementing LID practices.

Figure 7: Sample of LID services provided by WICD

- Provide 20 LID on-site consultations to landowners
- Complete 5 backyard conservation plans
- Provide technical assistance for 10 landowners for drainage and runoff issues in “neighborhoods of concern” in Holmes Harbor area.
- Complete 8-10 site visits and provide TA and Engineering design for specific LID elements for Strawberry Point residents
- Provide technical assistance for LID retrofitting of homes located on Lone Lake

3.2.2 Informational and technical workshops: With its existing resources, WICD currently produces between two and five informative LID workshops each year for residents, municipalities, architects, landscapers, contractors and anyone interested in Low Impact Development (LID). Past workshops have covered such topics as an introduction/overview of Low Impact Development, and hands-on demonstration workshops on installing pervious concrete and rain gardens. As many as 50 people frequently attend any one of these workshops. Demand for these informational sessions is expected to increase as water quality and quantity issues become more acute in Island County and as citizens become more educated about LID opportunities. Funding from the proposed assessment will be used to support more education and outreach staff time, allowing for the coordination of more workshops per year on various LID topics. SCD would also coordinate and offer LID workshops on Camano Island.

3.2.3 LID technical training and certification: Due to the relatively new products and practices associated with LID, certified installers are needed for many types of LID installations. WICD is assisting local contractors to gain certification in these practices. For example, pervious concrete is a newer product and its placement is very different from traditional concrete. As of February 2008, there were no certified pervious concrete installers in Island County. In June of 2008, WICD developed and held a hands-on Pervious Concrete Demonstration Workshop in partnership with the Island County Marine Resources Committee and Island County Public Health. As a result of this workshop, 6 local contractors attended the National Ready Mixed Concrete Association’s (NRMCA) Pervious Concrete Installer Certification Program.

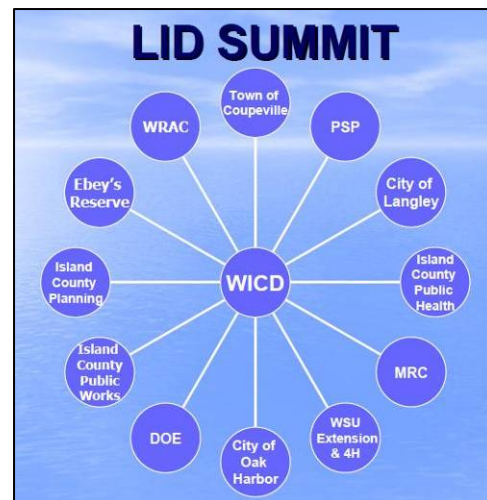
Through the LID Summit group (see below), WICD encourages staff from local jurisdictions to attend training and certification opportunities such as the Puget Sound Low Impact Development Technical Workshop Series sponsored by WSU and the Puget Sound Partnership.⁸

3.2.4 WICD's role as LID Clearinghouse: WICD receives a steady stream of requests from homeowners and many others involved in the Island County homebuilding industry for more information on LID or "Green" practices. WICD has become the de facto clearinghouse for LID information in Island County (and beyond, in some cases). WICD publishes informational sheets and packets on LID or "Green" practices. Attendees at the District's LID workshops received an informational packet containing numerous handouts and resources. For those interested but unable to attend the workshop, WICD staff follow-up after the workshop and provide them with materials and technical assistance, as needed.

In addition, WICD maintains an LID Resources List of experienced and/or certified local and regional LID contractors, suppliers, designers, and installers. This information is readily available to anyone in Island County through WICD's website.

3.2.5 LID Summit --Creating efficiency through coordination: In 2007, WICD staff identified the need to coordinate the diverse array of agencies interested in LID related topics. As a result, WICD formed the LID Summit Group. This group of representatives from Whidbey Island cities and towns, county departments, and local and state organizations (Figure 8)⁹ continues to meet monthly with the purpose of coordinating Low Impact Development (LID) efforts on Whidbey Island and promoting the advancement of the concept throughout Island County. The group has enjoyed many positive outcomes to date including:

Figure 8: Members of LID Summit Group



- Successful collaboration on funding and implementation of LID projects, including workshops and demonstration sites
- Coordination of a tour in April of 2009 of LID projects on Whidbey with funding from WICD and the MRC (Marine Resources Committee) for LID technicians and the general public
- Improved communication, collaboration, and sharing of information between Island County departments and municipalities that would not have taken place outside this forum
- Provide feedback to the Puget Sound Partnership for development of PSP programming that meets on-the-ground needs
- Broader acceptance and wider scale adoption of LID practices across Island County
- Increased awareness of LID issues that are particular to Island County
- Fruitful discussion of numerous LID topics from the technical to the political
- Collaboration and partnership development for seeking grant funding for future LID demonstration sites and resources

The LID Summit group was invited to present their activities to the Island County Council of Governments in March of this year, and as a result was asked to return quarterly to give an update on its work. This group will continue to play an important role as Low Impact Development need and interest increases across Island County.

3.2.6 Benefits of LID to Whidbey Island land and landowners

Environmental improvements provided by LID implementation benefit everyone:

Several researchers describe the environmental benefits of LID including those listed in Figure 9.^{10,11,12} These benefits accrue directly to the specific lands on which they are implemented, as well as the entire aquifer in the case of groundwater recharge. When the amount of polluted runoff that reaches the shoreline is reduced, Puget Sound as a whole benefits. All citizens of Island County benefit from improvements in the quality and quantity of these vital water resources.

Figure 9: Environmental Benefits of Low Impact Development

- Reduce flooding
- Improve water quality
- Increase groundwater recharge
- Reduce public expenditures on storm water infrastructure
- Improve air quality
- Reduce ambient air temperatures and reduced energy demand
- Enhance aesthetics and property values
- Gain useable space

Storm water control with LID practices improves water quality: State and Federal rules for the control of storm water have become more stringent over time. However, most areas of Island County, with the exception of Oak Harbor, fall under older storm water rules that don't require any filtering or treatment before storm water reaches streams, wetlands, and Puget Sound. This means storm water in Island County currently can and often does deliver pollutants directly into critical areas and the waters of Puget Sound surrounding the islands. The long, thin island geography of Island County makes storm water control a particularly urgent water quality issue, as discussed in the introduction.

Island County and the local jurisdictions are ahead of the curve in terms of storm water rules, and in many cases they are independently adopting, encouraging, and/or requiring LID practices to control storm water. LID practices benefit water quality in Puget Sound by reducing the *volume* of storm water runoff into the Sound, and by filtering and treating remaining storm water runoff before it reaches local streams, wetlands, and eventually Puget Sound or the groundwater system.



LID and drinking water protection: With the exception of Oak Harbor, approximately 72% of Island County residents obtain drinking water from ground water wells supplied by underground aquifers. Island County was federally designated as a Sole Source Aquifer in 1982. Consequently, when federal funding is used for a project, stringent review ensures that local aquifers will not be impacted. Sole Source Aquifer status as authorized by section 1424(e) of the Federal Safe Drinking Water Act does not mean

Island County has only one aquifer. It simply designates groundwater as the principle drinking water source for the area, which if contaminated would create a significant public health hazard.

Island County Health Department has tools in place to address groundwater recharge through land use protections. When storm water is piped out to Puget Sound in the conventional, collective manner, as it is currently, it is being removed from the water cycle that replenishes the drinking water supply. Conversely, LID techniques, such as rain gardens, allow storm waters to infiltrate the soils and recharge the aquifer. Critical Aquifer Recharge Area (CARA) protection is part of Island County's Critical Areas Ordinance (IC Code 8.09), and its purpose is to protect groundwater in areas susceptible to surface contamination and subsequent recharge contamination. Proposed projects with potential for groundwater contamination require a hydrogeologic site evaluation.

Preserving Island County's rural character through LID practices: By retaining native vegetation and using many small-scale storm water management approaches rather than large, unsightly storm water detention ponds, LID can help preserve the rural and open space character of the islands that entices so many people to live there. In addition, LID practices such as clustered development, reduce impervious surfaces, and the use of natural drainage features will guarantee that development in Island County will be done thoughtfully and in a way that fits the existing landscape.

LID cost savings: In many cases LID practices can be more cost-effective than their conventional counterparts. In other instances, the costs are similar or higher for LID practices. The economics will frequently depend on the specific site conditions, and whether long term maintenance costs and practice effectiveness are considered.¹³ In an analysis of 17 LID case studies in 2007, US Environmental Protection Agency (EPA) found that in general, for projects where open space was preserved and cluster development designs were employed, infrastructure costs were lower. In most cases, significant savings were realized due to reduced costs for site grading and preparation, storm water infrastructure, site paving, and landscaping. Total capital cost savings ranged from 15 to 80 percent with LID methods, with only a few exceptions where LID project costs were higher than conventional costs.¹⁴

How the assessment will help deliver LID value to Island County lands: Under current grant funding, WICD's LID programming fluctuates widely depending on grant availability. In contrast, with assessment funding in place, 20% of WICD's programming would be dedicated to LID related activities. This allocation can increase as new LID needs are identified. In addition, assessment resources will help implement many recommendations made by the LID Summit group, including education to contractors and the general public about how LID makes a cumulative difference on a yard-by-yard, parcel-by-parcel basis.

3.3 Preserving Sustainable Farm and Forest Lands



3.3.1 Farm and forest land uses in Island County: Farming activities occur in all land use classifications in Island County and are distributed throughout the county. A 2005 survey conducted by Island County identified approximately 10,000 acres of land zoned in Commercial and Rural Agriculture designations. Agricultural activities are taking place on an additional 14,000 acres of Rural zoned land. Despite agriculture's prevalence, recent statistics from the 2002 Census of Agriculture show a

steady decline in most economic indicators for Island County farming, in comparison to other Puget Sound farming communities.¹⁵

On the forestry side, there are currently a total of 971 parcels in forestry designations in Island County -- 489 parcels are designated Commercial Timber and are greater than 20 acres in size, while another 482 parcels are designated Open Space Timber and are larger than 5 acres in size.¹⁶ Over 60% of the land area of Island County is considered rural, and a majority of this land contains some forest land.

3.3.2 The assessment's important role in sustaining agricultural and forest lands: Far more sustainable farm and forest programs are needed to keep lands in farming and forestry than currently exist in Island County. Current WICD services in this area are limited to assisting landowners with development of farm and forest management plans and technical assistance (See section 3.1.1), and are restricted to specific grant funding. In addition to WICD, one small group, Whidbey Sustainable Ag, is working with Island County to address code and other issues that create obstacles to economic development for farming. Whidbey Sustainable Ag works in tandem with the Northwest Agriculture Business Center to link local farmers with value added technical education and services.

In forestry, many small forest landowners do not realize the conservation or economic benefits of actively managing their forest lands. With better funding availability, WICD could play a larger role in creating this awareness. Currently, demand for forest management planning services at the district exceeds the District's ability to supply them due to a lack of grant funding. Education and training in Best Management Practice for small forest loggers is also an unmet need in Island County. WICD's goal is to provide annual Forest Stewardship training on Whidbey in collaboration with the WSU Forest Stewardship Coached Planning program and the Department of Natural Resources (DNR).¹⁷

Collaboration with local, regional, and state organizations: WICD and SCD already have good working relationships with conservation groups such as the Whidbey-Camano Land Trust. This organization in particular is interested in protecting working agricultural and forest lands. With assessment funding, WICD and SCD staff would work with this and other groups to facilitate this protection. Regional resources, such as the Northwest Agriculture Business Center, exist to support economic development for farms, and WICD staff would also utilize these resources for the benefit of Island County landowners. Examples of projects that could be completed by working in partnership with other organizations include support of local branding efforts for agricultural and forestry products, local meat processing, and expansion of the annual Farm Tour. Finally, staff would liaison with the State Office of Farmland Protection to keep the District informed of relevant changes to state policies and funding that could benefit Whidbey Island resource lands.

3.3.3 Economic opportunities for local area farms:

Coupeville reclaimed water project: The Town of Coupeville seeks to reduce the amount of untreated storm water and discharge from the town's waste water treatment plant flowing into Penn Cove and Puget Sound. Penn Cove is listed by DOE as having impaired water quality. In addition, ground water in the Coupeville area is at high risk for seawater contamination according to Critical Aquifer Recharge Area (CARA) mapping by Island County. To address these two critical water issues, The Town of Coupeville has been conducting a technical and

economic feasibility study which explores the use of the town's reclaimed storm and waste water for irrigation of farmlands in central Whidbey Island.

Central Whidbey Island is one of the driest areas of western Washington. Due to the rain-shadow effect of the Olympic Peninsula Mountains, total average rainfall for Island County is between 18 and 20 inches annually. There is no irrigation water currently available in Central Whidbey farming areas, and the potential availability of reclaimed water presents an array of economic opportunities for local area farms. Due to early active participation of the Central Whidbey Community and the establishment of the Ebey's Landing Historical Reserve, prime farmland has been protected from development and will remain in agricultural production in perpetuity.

WICD continues to play an active and ongoing role in this project, serving as a liaison between the central Whidbey farming community and the feasibility project engineers as they attempt to answer key questions about potential demand for reclaimed water, water delivery, and other feasibility factors. In this role, WICD has organized informational and technical meetings for local area farm owners on deficit irrigation, irrigation efficiencies, and the use of reclaimed irrigation water. The reclaimed water project will be an ongoing project of interest for WICD, and with available assessment funding, WICD staff will be able to pursue and develop new irrigation-related economic opportunities for all Whidbey farms. WICD will also provide assistance in identifying cost share opportunities to landowners to implement water conservation BMPs associated with this project.



Biosolids: Similar to the reclaimed water project, Island County and Coupeville are currently considering increased local land application of biosolids from local waste treatment facilities, as well as the establishment of a centralized composting facility for the island. Currently a high percentage of these nutrients are shipped off the island. This project fits directly into the District's farmland sustainability goals: As the dairies have disappeared from Island County, soils have become nutrient deficient, and synthetic fertilizers are required to maintain soil productivity. Biosolids may be an inexpensive, alternate source of nutrients, as well as an economic opportunity for some Island County farms. This is a complex issue that will require extensive coordination among many stakeholders. Given adequate funding such as the assessment, WICD could facilitate this discussion between local farmland owners and the relevant public agencies.

3.3.4 Mapping of critical farm and forest lands: With assessment funding, WICD will seek with its partners to complete a map of Island County identifying critical natural resource lands. This map could include prime farmlands that need to be protected, farmable lands that are available to be farmed by new or existing farmers, and resource lands struggling to maintain their management plans and/or open space status. The map will be a digital tool which can be continually updated and which would help identify priority areas for WICD and partner

organization actions. Having this information readily available will go a long way towards making the District more efficient and effective at achieving its conservation goals, and will enable the District to work more effectively with relevant partners. WICD would also coordinate with SCD for consistent mapping methods and outcomes for Camano Island. This need is currently unfunded due to lack of grant availability. WICD already has some mapping experience of this nature: In 2006 WICD assisted NRCS in the completion of the update to the Island County soils map by helping soil scientists gain access to private lands for soil sampling purposes.



3.3.5 Farm and forest lands protect the rural character of Island County:

The Board of Island County Commissioners eloquently described the important benefits farming provides in creating the rural character of Island County: *“Farming plays a very important role in Island County, even though many farms are small in scale. Large or small, throughout both islands, all farms in Island County, including tree farms, have unique value by contributing to the County's rural character. Though it is hard to describe in words, “rural character” is a crucial element of the County's economy and culture -- and one of the few things virtually all residents agree is essential to the quality of life here. Rural character not only makes people “feel good” about the place where they live and provides a cultural connection to the County's past -- it also has a very clear dollars-and-cents benefit. Rural character (which would not exist without the County's farms and forests) is the basis for the County's important tourist industry. It is also a magnet for retirees and their dollars, as well as for businesses that consider locating here to provide a higher quality of life for their employees.”*¹⁸

Agrotourism and the Whidbey Island Farm Tour: While Island County farms and forests provide the rural basis on which a diverse tourism industry can flourish, tourism also presents a very real economic opportunity for Island County farms, specifically in the form of agrotourism. Wineries, u-pick fruit facilities, and produce stands are all examples of farm-related agrotourism enterprises. This economic opportunity cannot be overstated in Island County, where tourism is a major basis of the economy. For example, according to Ebey’s Landing National Historical Reserve, the park receives over 1.1 million unique, non-resident visitors each year.¹⁹ Each year, an increasing number of local, regional, and some out-of-state visitors attend the Whidbey Island Farm Tour, organized and hosted by WICD; last year the tour attracted approximately 3,000 people. The tour helps to promote agrotourism at 15-20 local area farms. The District would seek to expand the Farm Tour, both in attendance and number of farms participating, with assessment funding.

3.3.6 Local food production benefits all residents: By helping rural farms remain sustainable, WICD is supporting a local food production system that provides benefits to all Island County residents. With increasing food contamination incidences and concern about food transportation costs, more people are demanding greater local food production, as evidenced by the growth of local farmer’s markets, farm stands, and local purchasing by grocers and restaurants. By increasing the direct connection and trust between the farmer and the consumer, local food production can reduce this risk. Local food production also reduces global warming caused by

fuel burned to deliver long-distance products to island consumers. Greater local food production and sales can also represent a direct economic benefit to local farms in terms of higher sales volumes and prices. Local food production can create a self-reinforcing, healthy and sustainable food cycle for all Island County residents.

3.4 Public Outreach, Education, and Partnerships

This program area provides opportunities for landowners to attend free trainings, workshops, and educational tours that promote conservation of Island County’s natural resources. In addition, both Districts produce and distribute written and electronic information on numerous natural resource conservation topics. WICD partners with many local, regional, State, and Federal organizations, such as the Puget Sound Partnership, and integrates many of their conservation messages into its messaging. Figure 10 lists over 30 partners that WICD works with on a regular basis to achieve its natural resource conservation objectives.

Figure 10: WICD Community Partners



Most often, residents first come into contact with the Whidbey Island and Snohomish Conservation Districts through their many public outreach activities including the Districts’ newsletters and websites, conservation displays at local events, their annual Plant Sale, or their annual open house where conservation partners are recognized and honored with awards. Many residents who end up taking advantage of WICD and SCD’s planning or technical assistance services first interact with the district through its educational programs. In this way, the Public Outreach, Education, and Partnership program supports other District programs, such as Natural Resource Planning, Low Impact Development, and implementation of Best Management Practices. Outreach and Education services at WICD and SCD play an, at times, intangible but very real and important role in implementing actual conservation improvements on private lands. They are a critical part of fostering community support for conservation activities as a whole.

Benefits of Outreach, Education, and Partnerships

3.4.1 Workshops, training and tours: Figure 11 highlights examples of the kinds and number of workshops that WICD has sponsored over the last couple of years. Workshops are tailored to meet the conservation needs of specific land-use classes, such as rural, forest, and farm lands. Topics for these educational events range from conservation-wise shoreline living to installation of porous concrete, and manure management for livestock owners. All tours and workshops are

free or at very low cost to participants. The annual Farm Tour gives local area farms a chance to showcase their environmental stewardship, and provides an opportunity for the public and other farm owners to see sustainable farming practices first-hand. In addition, Snohomish CD has several “model farms” who partner with the District to offer tours and workshops on small farm BMPs. There are opportunities to create more of these model farms around both Islands to help educate landowners and the public.

Landowners who positively experience the Districts’ workshops and tours frequently enlist WICD and SCD’s assistance in implementing on-the ground conservation measures. Staff from

Figure 11: Sample of Workshops and Tours hosted by WICD

- 12 Low Impact Development (LID) informational workshops for diverse interest groups
- 2 LID demonstration workshops
- 2 LID tours
- 2 Bluff management/shoreline living workshops, one for Strawberry Point landowners with technical assistance follow-up
- 1 two-seminar series on LID, backyard conservation, rain water catchment, and other conservation topics for Holmes Harbor area residents
- Workshops for livestock owners in Holmes Harbor area on mud, manure, and pasture management
- 1 irrigation efficiency work session for Whidbey Island farms
- 4 Farm Planning for Water Quality workshops (in partnership with other agencies)
- Annual Farm Tour featuring 18-20 local area farms

both Districts strives to follow-up after educational events with further technical assistance, as needed.

3.4.2 Conservation Plant Sale: Each year both WICD and SCD host a conservation plant sale. The primary goals of the plant sale are outreach and restoration. On Whidbey Island, over 200 residents support the plant sale and purchase mostly native trees and plants for erosion control, restoration, and conservation landscaping. WICD staff uses the plant sale event as an opportunity to educate the public about conservation issues such as water quality and preservation, and services available at the District. In addition, the plant sale is essentially an indirect, on-the-ground restoration effort completed by many hands. Over 7,000 plants are purchased each year at the plant sale by over 200 Whidbey Island residents, and then planted out on the landscape. The event brings in

approximately \$14,000 in gross revenue for the District. SCD hosts a similar but somewhat larger plant sale at the Evergreen State Fairgrounds each year. Many Camano Island landowners attend this weekend event which attracts over 1,500 citizens from the District. Almost 70,000 plants are sold each year at the SCD plant sale, with gross revenues of over \$86,000.

3.4.3 Conservation clearinghouse: WICD already serves as a single point of contact for Whidbey residents interested in Low Impact Development. It is the goal of the District to expand this role and become a general conservation information clearinghouse. The District’s strong track record in creating partnerships to achieve specific conservation goals, along with its large body of printed resources puts it in a unique position to play this role. Figure 12 shows a sample of written and display materials created by the District in the past few years.

Figure 12: Sample of WICD written and display Resources

- Publication of Homeowners' How-To Guide for residents in Holmes Harbor area. Topics include: Low Impact Development (LID), Backyard Conservation, Natural Yard Care, Native Plants, Non-Point Pollution prevention, Shellfish Protection Districts, Sub/Urban Forestry, and Rain Water Catchment systems
- Production of localized Low Impact Development brochure with local examples and supplier list
- Develop brochures and Fact Sheets on "Living on a Fresh Water Lake"
- Creation of conservation practice exhibits for display at Island County Fair
- Installation of interpretive signs for Low Impact Development sites
- Provide Best Management Practice technical information through WICD Website



3.4.4 Building community partnerships: One of the District's strengths is its track record for bringing diverse (and sometimes opposing) groups together to work towards common natural resource goals. The benefits of building these partnerships are that limited technical and financial resources are utilized more efficiently among coordinated agencies, and that individuals and agencies gain access to accurate, timely information to address their resource needs. In parallel with these partnerships, WICD staff has a direct on-the-ground working relationship with the County's private landowners; it is this "nexus"

position that gives the District a unique ability to bring about highly successful natural resource improvements.

A good example of the District's skill as a facilitator of partnerships is WICD's role in the newly formed Sustainable Whidbey Coalition. This group is a broad assembly of public and private agencies and organizations. The goal of this group is to mobilize and coordinate efforts across Whidbey Island on a broad range of topics including Climate Change, local renewable energy projects, and public outreach and education on sustainability topics.

Both the specific programs offered by the District as well as the coordinating role it plays in Island County are exactly the kinds of things needed to clean up Puget Sound, according to the Puget Sound Partnership. As the PSP Action agenda gets under way to achieve a healthy Puget Sound by 2020, WICD, through its relationships with the PSP and other regional organizations, will play a pivotal role in ensuring that Island County fully participates in this region-wide effort.

New Outreach, education, and partnership opportunities are possible with assessment funding



3.4.5 Firewise Program: More than 60% of Island County is considered rural, and the vast majority of these lands contain mixed forests of some type. Whidbey Island in particular, with its low rainfall and persistent winds, is at high risk for wildfire. Firewise is a nationwide program;²⁰ In Washington State, 16 Conservation Districts are currently implementing Firewise programs under a two-year Federal grant awarded to the State Conservation Commission.

If assessment funding becomes available, WICD and SCD intend to offer this program to Island County communities living in or near forested lands. Through offering workshops, technical assistance, and free site visits, the District will help private homeowners assess their fire risk and offer assistance to reduce that risk. Through this program, at-risk property owners learn to be proactive about their own wildfire safety. District staff will partner with other local agencies such as DNR, the County Fire Marshall, and local fire jurisdictions to deliver these services in the most effective, efficient manner.

The benefits of this program include reduction in forest-fire fighting costs and avoided loss of lives and property from wildfires in Island County. Firewise practices such as woodland thinning, pruning, and other fuel reduction measures bring the additional benefit of *improved forest health* to lands in the District. The Firewise Program has proven to be highly effective: According to Firewise Communities national project manager, Judith Laraas Cook, “the Firewise Communities program currently enjoys a return on investment of approximately 5:1. That is, communities are investing in their own wildfire mitigation projects at five times the rate of agency/association fiscal support.”²¹

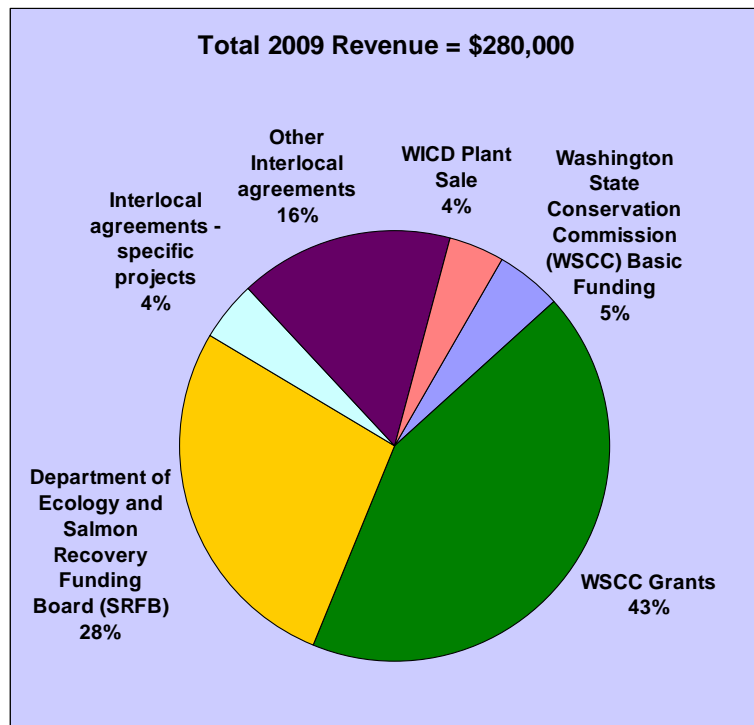
3.4.6 Developing a volunteer network and strengthening partnerships: Should assessment funding be secured, the District will be able to allocate more staff time to Outreach, Education, and Partnership activities. In addition to enhancing the District’s already dynamic outreach program, District staff will develop a volunteer network to implement a Backyard Habitat Conservation program and support other District programs such as the plant sale. The development of dedicated volunteers to assist with WICD programming serves the dual purpose of leveraging WICD services beyond budgetary constraints while creating an educated, public, base of support for conservation projects and programming in general.

Assessment funding will secure more stable staffing at the District. With this stability of resources, WICD can assist Island County in achieving more of the County Government’s conservation objectives, such as obtaining a special state permit for water catchment, and implementation of the new critical areas ordinance, among other resource conservation activities of interest to the County.

4. Cost of providing Conservation District services and activities

4.1 Sources of WICD operating revenues: The current (2009) operating budget of the Whidbey Island Conservation District is approximately \$280,000. Ninety five percent (95%) of the District’s operating resources come from various sources of grant funding, which can be seen in Figure 13. These grants are of various durations, from one to five years, but usually no longer than three years. Five percent (5%) of the District’s budget is a basic funding allowance (non-competitive) from the Washington State Conservation Commission (WSCC). Another 43% of WICD’s budget, totaling over \$120,000, consists of competitive grants from WSCC (Figure 13). These grants are expected to be cut significantly from the State Budget in 2010 – 2011 biennium, due to the current State budget crisis. As mentioned in Section 2.3, other sources of State and Federal grant funding are also declining.

Figure 13: WICD 2009 Revenue Sources



With these projected revenue shortfalls, the need for the assessment to support District programs has never been greater. Total projected revenues from the assessment are approximately \$242,679, with approximately \$185,030 generated from Whidbey Island parcels and \$57,649 generated from Camano parcels. With assessment funding in place, the District’s total operating budget would remain at approximately its current level, assuming there are not major cuts in key grant programs such as the Centennial Clean Water Fund grants from Department of Ecology. Although the total budget size will remain the same, there will be important shifts in budget allocation to various District programs to better serve the Islands as a whole.

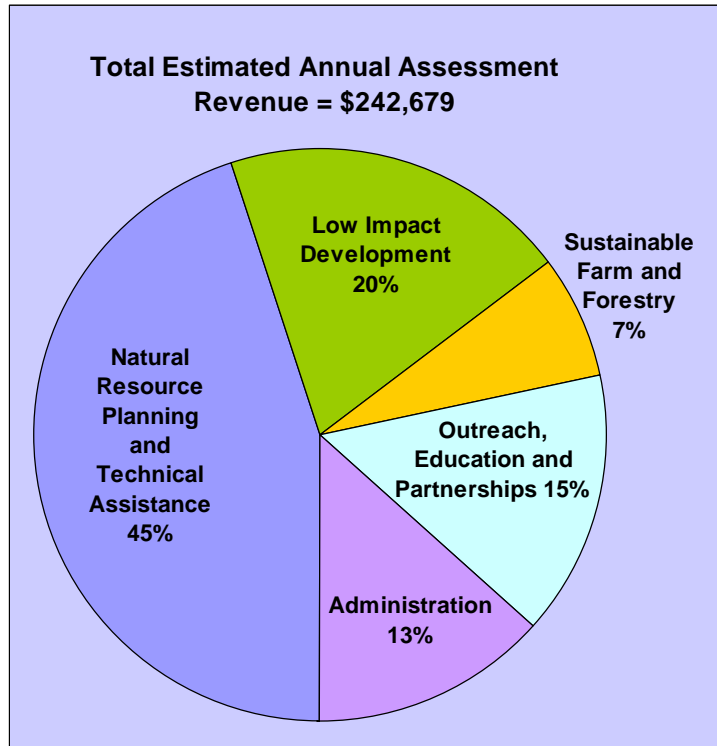
4.2 Need-based budget allocation: The District’s budget is currently driven by the availability of grants that support its various programming areas. With the assessment in place, the District will have more flexibility to target its spending toward identified conservation needs in the County, rather than have this process dictated by grant availability from one year to the next. The District’s Board of Supervisors, through their regular planning process, has identified areas within each program that need strengthening based on the current conservation needs of Island County lands. The Districts’ allocation of funds to different program areas under the assessment is shown in Figure 14. As before, the main area of services and benefits delivered by the

District is Natural Resource Planning and Technical Assistance, on-the-ground conservation work directly with private landowners. The second largest area of programming will be Low Impact Development, followed by Outreach, Education, and Partnerships, and Sustainable Farm and Forestry. Administration accounts for 13% of the program budget. Funds allocation can change over time as conservation needs change and are identified by the Board. Because this is a new assessment which will be implemented for the first time, funds are expected to be available for only the second half of the 2009-2010 fiscal year. The first full year of assessment funding is expected to be 2010-2011.

Figure 14: WICD and SCD Program Allocations 2009-2010

4.3 Staff and Board of

Supervisors: Whidbey Island CD currently has five staff members, including: the District Manager, a Natural Resource Planner, an Office Administrator, a Forest and Farm Conservation Planner, and access to a District Engineer, whose time is split between four Conservation Districts. Snohomish CD has a total of 10 staff including: The Acting District Manager, a Grants Administrator, Information and Education Coordinator, two Engineers (one of whom serves 4 CDs in the region), three Farm Planners, a Habitat Restoration Specialist, and an Office Administrator. District staff holds advanced business, technical, and agricultural degrees, as well as specific professional certifications needed to conduct the wide range of programming in the District. Brief staff bios are included in Appendix B.



WICD's full time Natural Resource Planner attended the full WSU/Puget Sound Partnership LID Technical Training Series and took the exams to receive LID Certification. With the exception of two Town of Coupeville Public Works staff, she is the only one in Island County who has attended the entire series and completed the exams. This makes WICD one of the few places where Island County residents can obtain assistance from an LID certified planner.

The Whidbey Island Conservation District is governed by a five member Board of Supervisors. The Board is comprised of Island County residents (three elected, two appointed) who have advanced biological, technical, business and legal degrees, and professional careers which directly support the work of the District. Together the board has a wealth of crop, livestock, forestry, and conservation experience which they utilize to help guide the policies of the District. All board members serve on a strictly volunteer basis. Brief bios of board members can be found in Appendix B.

4.4 Accountability for Special Assessment funds: WICD was awarded Northwest Area District of the Year by the Washington State Conservation Commission in October of 2008. This award recognized the successful rebuilding of the District into a model district in its manner of conducting business and providing resources to landowners. The award was also given in recognition of the District's innovative and skillful Board of Supervisors.

Both WICD and SCD will be held accountable to the Island County Board of Commissioners for assessment funds. This will consist of annual reporting to the County Commissioners, including annual submission of a proposed work plan and end-of-the-year progress reports; as well as other fiduciary agreements worked out with the County Commissioners and Treasurer.

Accountability is a key characteristic at the Conservation District: Whidbey Island and Snohomish Conservation Districts undergo a State audit every year. WICD passed its most recent audit in December of 2008, and has passed four consecutive years of audits with no findings. SCD has always been found in compliance with all State and Federal standards for reporting and use of funds.

Beyond the normal fiduciary responsibilities of the District, the nature of grant funding at WICD has created a culture of accountability, in which the District is held accountable for achieving the outcomes it sets forth in grant documents. No other agencies, either State or Federal, are accountable to a similar degree. This outcome-driven programming is a hallmark of Conservation Districts in general and of the current WICD Board of Supervisors in particular.

5. Net benefits of conservation services and conclusions

An abundance of benefits: WICD and SCD provide an astonishing array of services and associated benefits which have been clearly laid out in Section 3. Many of these benefits, such as those derived from the District's LID programming and its farm and forest management planning, are not readily available except through the Conservation District. The special benefits derived from WICD and SCD services are not just one-time benefits. Investments in natural resource improvements, such as fencing livestock out of streams or installing a rain garden to capture storm water, provide long term benefits that continue over the entire time the improvement is in place. Benefits are both specific to particular land classifications (e.g. rural, residential, urban, forestry, agriculture) and generalized to the watersheds, airsheds, and aquifers of Island County. With assessment funding, the District seeks to stabilize its financial and staff resources and gain greater flexibility to address unmet conservation needs in Island County

Big bang for the buck: Section 4 revealed the very small budget – well under \$300,000 – with which the above benefits are delivered. Although not quantified for this report, the Special Benefits to the lands of Island County clearly outweigh the small budget used to realize them. As much as half of current funding is subject to severe state budget cuts over the next biennium. While the assessment will not necessarily expand the District's budget, it will greatly stabilize the budget and ensure consistent delivery of services. The strong working relationship between WICD and SCD and their ability to partner effectively with other conservation organizations ensures that benefits are delivered in an equitable and cost-effective manner, without duplication of services. Providing overall vision and guidance is the District's Board of Supervisors, which has an award-winning track record of delivering sound, local conservation policy.

The right stuff: The Conservation District model of educating and working directly with landowners has proven effective at bringing about increased protection of natural resources, as measured by the number of residents that participate in District programs and implement Best Management Practices with District assistance. The types of programming offered by the district, such as its Low Impact Development services and sustainable farming initiatives, are effective ways to accommodate future growth in Island County in a sustainable, cost efficient manner.

The natural resource challenges facing Island County in the near and long term future are enormous and complex. Clean up of Puget Sound water quality, protection of the County's drinking water from salt water intrusion, and protection of habitat and critical areas are but a few of these complicated challenges. WICD and SCD's expertise, experience, and track record of building partnerships between organizations, landowners, and other stakeholders will be indispensable in addressing and solving these natural resource issues. The consistent, practical approach of the Conservation District will be needed into the long term future as Island County navigates through the complex challenge of creating a welcoming human environment for a growing populous while continuing to protect the precious natural environment that makes Island County such an attractive place to live. Stable funding through the assessment will enable the District to provide this long term support.

Appendix A: Whidbey Island Low Impact Development (LID) Examples

(Updated June 2008)

OAK HARBOR

- Fort Nugent Park, Oak Harbor Parks & Rec, Fort Nugent Rd: 100% on-site storm water retention using bioswales, ponds with native plants, and a pervious concrete pathway to football field and beneath bleachers.
- Harbor Station, mixed-use commercial development, corner NE 7th & SR 20: Runoff directed into planted bioretention strips with under-drains, filters through plants and topsoil, then into perforated pipe to underground retention area. On-site subsoils infiltrate poorly, so storm water must be piped off site, but LID systems will clean water and regulate runoff.
- Rain garden in the new Walgreens parking lot on the corner of Highway 20 and SE Pioneer Way.
- Oak Harbor High School's stadium has an infiltration gallery.

COUPEVILLE

- Coupeville High School, south of SR 20 at intersection of SE Main and Terry (new in 2007): Water from paved areas flows through bioswales into vegetated detention pond. Property is atop impermeable clay so on-site infiltration to groundwater not possible, but pond provides irrigation, wildlife habitat, education and surge protection as storm water runoff is slowed, filtered, and cleaned by plants and soil. Excess runoff is piped from pond into storm drain system.
- Island County Annex Building (corner of 6th and Main), rain garden retrofit plugged catch basin routing runoff from a parking area to a rain garden. A collaborative effort between several Island County Departments and the Whidbey Island Conservation District. Funded by the Department of Ecology.

SOUTH WHIDBEY

- Bayview Corner Redevelopment, a project of Goosefoot; at corner of Bayview Rd and Marshview, just off SR 525: Showcases multiple LID features, including porous concrete parking areas and sidewalks; interlocking plastic grid (grass pave) parking area; walkway using interplanted recycled concrete pavers; composting toilet (public restroom) with solar power and rainwater collection for flushing; and reused building materials. Call or e-mail to arrange personal tour: 360-321-4535, info@goosefoot.org.
- Bayview High School: Rain garden and native plant restoration in historic schoolyard captures roof runoff. Call South Whidbey School District for visitation info: 360-321-2343.
- Clinton Beach, Port District of South Whidbey Island, adjacent to ferry landing: Vegetated roof on picnic shelter; porous surfaces and native landscaping for storm water infiltration.
- Langley Park and Ride and Fire Station near the fairgrounds will incorporate some type of LID due to it's location near Noble Creek (due 2008).
- Langley Middle School - A service learning group is working on a rain garden and a community garden that will be watered with collected rain water.
- South Whidbey Sports Complex – incorporated pervious concrete walkways into their new play area (due 2008)

RESIDENTIAL LID EXAMPLES

- Several subdivisions (15 and 20 lot and condo complexes) and single family homes have agreed to incorporate rain gardens and other LID practices based on recommendations from the Town of Coupeville.
- Pacific Crest Subdivision in Oak Harbor incorporates bioswales and narrow roads to reduce storm water impacts.
- Langley Two Totems project at the end of 1st St, courtyard has permeable concrete.
- The Highlands at Langley, a LID subdivision will contribute no storm water to city storm drains. All water will be managed on site through native vegetation, pervious pathways, bioswales, and rain gardens.

Appendix B: Whidbey Island Conservation District Staff and Board of Supervisors Bios

Karen Bishop – District Manager. Karen was hired as District Manager of WICD in June of 2007. Karen is a graduate of Washington State University with a degree in Business Management and Operations. She is also a graduate of Class 20 of the WA Agriculture and Forestry Leadership Program and currently serves on their Board of Directors. Karen spent several years co-managing their family dairy farm and currently owns with her husband a 600 acre crop and livestock farm in central Whidbey. Karen served for two years with the U.S. Peace Corps in Botswana, served on the Washington State Dairy Products Commission, regional Farm Service Agency committee, and continues to be active in her local community. Currently, Karen serves on the Board for the Northwest Agriculture Business Center. Karen manages WICD as well as working on agricultural and conservation projects for the district.

Stacy Smith – Natural Resource Planner. Stacy holds a BS and MS in Environmental Science, from the University of Idaho. She is experienced in storm water management and erosion and sediment control through developing a Best Management Practices (BMPs) Handbook for maintaining rural roads in Idaho, and her work as a Project Manager for Clear Water Compliance Services. Stacy has been with the Conservation District since October, 2007 working on Low Impact Development (LID) education and outreach as well as other conservation and water quality projects.

Ken Drecksel – Farm and Forest Conservation Planner. Ken holds a degree in General Agriculture from Washington State University with extensive Graduate studies in Soil Chemistry. Ken farmed with parents in Olympia and Yakima areas, raising beef, hay, and apples and has extensive knowledge and interest in horticulture. Ken was a Soil Conservationist and District Conservationist at a number of locations in Washington State before retiring from USDA Natural Resources Conservation Service. He has extensive knowledge and experience with planning and implementing agricultural and forestry conservation practices. Ken began working for WICD in December of 2007 as a part time forest and farm conservation planner.

Sandy Welch – Office Administrator. Sandy is a graduate of San Diego State University with a degree in Applied Art. She has a diverse background including woodworking, interior design, home design and construction, television cartoon animation, magazine layout and publication, church administration, and light bookkeeping. She spent many years as a freelance Graphic Designer, and brings that experience to a variety of publication projects at the District. Sandy joined the WICD as part-time administrative staff in September of 2006.

Karen Krug – Chairperson, Board of Supervisors. Karen Krug is the Chair of the Board of Supervisors and has served on the Board since 2005. She is also the NW Regional Director for the Washington Association of Conservation Districts and Chair of the Whidbey Island Farm Tour. She and her husband own a vineyard, winery, and farm off Maxwelton Road. They produce Pinot Noir wine, natural grass fed Angus beef (finished on apples), honey, and eggs. Previously, she was an international lawyer based in Central Asia (Kazakhstan, Uzbekistan), and is also a registered engineer.

Erin Borden – Member, Board of Supervisors. Erin has been a biologist and an outdoor enthusiast her entire life. She earned a B.A and M.S. in biology and a Ph.D. in Entomology from WSU. Erin spent twelve years teaching at two- and four-year colleges and three years doing research at U. C. Davis in Integrated Pest Management. Since having children, Erin has focused on using her knowledge running their family farm in California and now here on Whidbey. Erin feels the WICD is essential to retaining the rural character of Whidbey Island.

Everell "Duke" LeBaron – Member, Board of Supervisors. Duke was born and raised in Berkeley, California and received a BS in Business Administration from University of California. He worked in wholesale food in the Bay Area. After moving to Seattle in 1971, he owned two Service Stations. Duke received a MS in Appropriate Technology from Antioch University, Seattle in 1981. He owned a business "Wood Stove & More Store" selling wood stoves and designing passive solar homes. Duke developed a mini farm on a West Seattle city lot. In 1978, Duke purchased property on Whidbey and moved there full-time in 1986. Duke completed the WSU Livestock

Advisors Course and has raised poultry, sheep and pigs for many years. Duke currently works part-time at a local feed store.

Fran Einterz – Member, Board of Supervisors. Fran retired from the social services company he founded, Service Alternatives, and has been a full-time farmer since 1999. Currently a Livestock Advisor, Fran raises cattle on pasture and grows hay at the Jenne Farm on Ebey's Prarie. He serves as a Board member of both WICD and Ebey's Landing National Historical Reserve. Fran served as a Peace Corps volunteer in Kenya, worked with USAID in Uganda as well as CARE in Egypt. Fran holds a BA in Communications from Fordham University and a MBA from the University of Washington. Fran spends most days appreciating and protecting the rural character of Whidbey Island.

Rob Hallbauer – Member, Board of Supervisors. Rob received his B.S. degree in Conservation from North Carolina State University. He worked for the Island County Health Department for several years before starting his own business designing septic systems. Rob has a keen interest as well as in depth knowledge of soils on Whidbey Island. Rob lives on ten beautiful acres of Whidbey, where he enjoys growing trees.

ENDNOTES

¹ *Storm water* is rainfall that flows off of buildings, roads, parking areas, and lawns, and is often highly polluted. It is the leading contributor to water quality pollution in urban streams in Washington State. It is also a major source of pollution in Puget Sound and associated shellfish harvest areas. Large quantities of storm water flow can be erosive and can cause flooding and property damage.

² <http://www.ofm.wa.gov/pop/gma/comparison.pdf>

³ The exception is the City of Oak Harbor, which gets its drinking water from Skagit County via pipeline.

⁴ Best Management Practices (BMPs) are a set of standard natural resource conservation practices designed to protect soil, water, air, plant, animal, and human resources. They are based on extensive research and are localized so that they apply specifically to the geographic area for which they are prepared. See conservation practices specific to Island County, WA at: http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=WA

⁵ The rural stewardship plan is a voluntary program to provide tax incentives for landowners who implement conservation measures on their property:

<http://www.islandcounty.net/Planning/documents/Rural%20Stewardship%20Plan%20010308.pdf>. For more information: <http://www.islandcounty.net/planning/RSP.htm>. Website accessed March 4, 2009.

⁶ The Ruckelshaus Center process is governed by state legislation passed in 2007 (SSB 5247)

⁷ U.S. Environmental Protection Agency and Low-Impact Development Center. 2000. Low Impact Development (LID): A Literature Review. EPA Document No. EPA-841-B-00-005.

⁸ <http://capps.wsu.edu/conferences/lidworkshops/>

⁹ Figure 8 acronyms: DOE – Department of Ecology; MRC – Marine Resources Committee; PSP – Puget Sound Partnership; WRAC- Water Resources Advisory Committee

¹⁰ Braden and Johnston (2004) in “The Economics of Low Impact Development: A Literature Review.” Retrieved January 26, 2009 from http://www.econw.com/reports/ECONorthwest_Low-Impact-Development-Economics-Literature-Review.pdf

¹¹ Coffman (2002) in “The Economics of Low Impact Development: A Literature Review.” Retrieved January 26, 2009 from http://www.econw.com/reports/ECONorthwest_Low-Impact-Development-Economics-Literature-Review.pdf

¹² Lehner et al (2001) in “The Economics of Low Impact Development: A Literature Review.” Retrieved January 26, 2009 from http://www.econw.com/reports/ECONorthwest_Low-Impact-Development-Economics-Literature-Review.pdf

¹³ EcoNorthwest, 2007. The Economics of Low Impact Development: A Literature Review. Retrieved January 26, 2009 from http://www.econw.com/reports/ECONorthwest_Low-Impact-Development-Economics-Literature-Review.pdf

¹⁴ US Environmental Protection Agency, 2007. Reducing Storm water Costs through Low Impact Development (LID) Strategies and Practices. Publication Number EPA 841-F-07-006. Retrieved March 3rd 2009 from <http://www.epa.gov/owow/nps/lid/costs07/>

¹⁵ Island County Ordinance C-150-05, Exhibit C, pp C-8 – C-9.

¹⁶ Island County Assessors Office; phone conversation between author and Jan Graham, March 5, 2009.

¹⁷ <http://snohomish.wsu.edu/forestry/programs.htm#coachedplanning>

¹⁸ Amendment to Island County Comprehensive Plan, Exhibit A, Island County Ordinance C-150-05, *Island County Vision Statement – Page 12*

¹⁹ Phone and e-mail communication between author and Ebey’s Landing National Historical Reserve staff, 18 March, 2009.

²⁰ Firewise is active in 38 states. The number of Firewise Communities, defined as neighborhoods which have significantly reduced the risk of wildfires, has grown to over 450. Website: <http://www.firewise.org/>

²¹ E-mail communication from Judith Laraas Cook to the author 16 December, 2008.