

# BAINBRIDGE ISLAND OPEN SPACE STUDY

CITY OF BAINBRIDGE ISLAND  
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BAINBRIDGE ISLAND, WA 98110

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EDAW | AECOM





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# Acronyms and Abbreviations

ALEA	<i>Aquatic Lands Enhancement Account</i>
BILT	<i>Bainbridge Island Land Trust</i>
BIMC	<i>City of Bainbridge Island Municipal Code</i>
BIMPRD	<i>Bainbridge Island Metropolitan Parks and Recreation District</i>
CREP	<i>Conservation Reserve Enhancement Program</i>
CRP	<i>Conservation Reserve Program</i>
CTED	<i>Washington State Department of Community, Trade, and Economic Development</i>
CUT	<i>Current Use Taxation</i>
DNR	<i>Washington State Department of Natural Resources</i>
EQIP	<i>Environmental Quality Incentives Program</i>
FAR	<i>Floor area ratio</i>
FSA	<i>Farm Service Agency</i>
FSC	<i>Forest Stewardship Council</i>
GIS	<i>Geographic Information System</i>
GMA	<i>Washington State Growth Management Act</i>
HCA	<i>Habitat Conservation Area</i>
LCPA	<i>Least Cost Path Analysis</i>
LIP	<i>Landowner Incentive Program</i>
MOU	<i>Memoranda of Understanding</i>
MRSC	<i>Municipal Research and Services Center</i>
NAWCA	<i>North American Wetlands Conservation Act</i>
NRSC	<i>Natural Resources Conservation Service</i>
NSC	<i>Neighborhood Service Center</i>
OSC	<i>Open Space Conversion</i>
PDR	<i>Purchase of Development Rights</i>
PLID	<i>Planned Low Impact Development</i>
PUD	<i>Planned Unit Development</i>
RCC3	<i>Rural Character Conservation 3</i>
RCO	<i>Washington State Recreation and Conservation Office</i>
RCW	<i>Revised Code of Washington</i>
RUE	<i>Reasonable Use Exception</i>
SEPA	<i>Washington State Environmental Policy Act</i>
SLIMF	<i>Small and Low Intensity Managed Forests program</i>
SMP	<i>Shoreline Master Program</i>

SRFB	<i>Salmon Recovery Funding Board</i>
TDR	<i>Transfer of Development Rights</i>
UGA	<i>urban growth area</i>
USDA	<i>U.S. Department of Agriculture</i>
USFWS	<i>U.S. Fish and Wildlife Service</i>
WHIP	<i>Wildlife Habitat Incentives Program</i>
WWRP	<i>Washington Wildlife and Recreation Program</i>

## Executive Summary

Bainbridge Island is a unique island community with significant natural resources of large areas of forests, wetlands, and working farms, all within proximity to Seattle. Population growth of more than 25 percent is projected over the next 20 years, threatening the natural character of the island with development. It is of the utmost importance to accommodate this growth within a framework of a long-term, comprehensive plan while maintaining the island's vital open spaces. In 2006, Mayor Darlene Kordonowy appointed the 2025 Growth Advisory Committee (City of Bainbridge Island 2007b) to develop recommendations on how to accommodate the City's projected growth in a way that satisfies the mandates of the Growth Management Act (GMA), the spirit of the City's Comprehensive Plan, and the community's values and vision.

To assist in their study of where to cluster growth and where to maintain natural areas, the Growth Advisory Committee recommended that the City proactively identify priority open space lands based on biodiversity values, ecological integrity, recreation, and historical/cultural values. The following report documents the study initiated by the City to fulfill the Growth Advisory Committee recommendations. This Open Space Study



incorporates information from an assessment prepared by an unbiased party and input from knowledgeable island residents, stakeholders, and the public. The study also reviews available conservation strategies for preserving open space and to provide recommendations for preserving open space on the island. In addition, the study provides information on the location of high-value open spaces and those areas better suited for future density nodes on the island.

This Open Space Study fulfills the intended goals and presents an assessment of high-priority open space areas for conservation of vital environmental and human-value resources, as well as options to design a city-wide program to preserve open space and enhance the natural environment across the island. The study area for this analysis includes those freshwater and terrestrial environments landward of the marine high water mark. Summary information on shoreline resources was incorporated in this Open Space Study as applicable. The City's Shoreline Master Program update is addressing the management of the shoreline and marine resources in greater detail and will include a restoration and conservation plan that will cover the shoreline area in greater detail and specificity than this study. This Open Space Study also is not intended to address the layout of a trails network throughout the island. While information supplied during public workshops provided some key information on how best to incorporate open space and trails connections, developing a detailed trail layout is not within the scope of this study.

The Open Space Study is built upon a foundation of recent planning work completed by the City, including the 2025 Growth Advisory Committee study, recommendations of the Open Space Commission, the Trust for Public Lands Feasibility Study (TPL 2007), and the Bainbridge Island Wildlife Corridor Network Study (City of Bainbridge Island 2000). The evaluation process for determining a portfolio of priority open space areas followed a scientific framework and incorporated the knowledge and ideas of citizens. The project team applied integrated and comprehensive ecological thinking in developing the study, particularly by applying the landscape ecology concepts of habitat fragmentation, habitat patch size, and corridor ecology. Citizen involvement was crucial to the evaluation process. The City organized a stakeholder group that consisted of individuals from existing City citizen committees and other community groups. The group was instrumental in developing the public outreach, providing comments on interim products, assisting in public meetings, providing a wealth of detailed information on the island's open spaces, and providing insightful comments on the study. In addition, two public workshops were held to solicit input from citizens, and an additional meeting gathered together experts in conservation strategies to discuss open space preservation programs.

The analysis for assessing and prioritizing open space areas included these primary steps:

1. Assess environmental sensitivity and development vulnerability.
2. Review overlay of environmental sensitivity and development vulnerability.
3. Analyze habitat connectivity.
4. Incorporate local expertise on important ecologically sensitive areas via a public workshop.
5. Identify and target open space areas for further consideration.
6. Incorporate local information on important human-valued landscape elements in a second public workshop.
7. Refine and rank prioritized areas based on the area's score using comprehensive criteria.
8. Map and rank priority open space.

The open space areas were ranked into three priority groups for preservation based on professional analysis of the area's ecological and human values. The final ranking provides the City with a defensible mechanism to distinguish open space priority areas.

The results of this multistep process are presented in Chapter 2 of this study. In summary, the analysis identified 22 individual areas as high priority open space areas on Bainbridge Island, representing approximately 900 acres. An additional 20 areas were identified as medium priority open space areas (representing approximately 650 acres), and an additional 23 areas were identified as low priority open space areas (representing approximately 336 acres). The high, medium, and low categories were used rather than a straight numerical rating for all areas to allow some flexibility for decision-makers when implementing an overarching open space strategy. Detailed information on these high, medium, and low ranked priority open space areas is presented in Chapter 2 of this study, which includes a summary map of all identified parcels (see Figure 2.3-1 in Chapter 2).

Concurrent with the open space evaluation process, EDAW reviewed and evaluated regulatory and non-regulatory mechanisms for conserving open space in Washington State, with a special emphasis on programs that have proven successful on Bainbridge Island, and why other programs have not been successful. The challenge was to define the appropriate package of tools to successfully protect priority open spaces. These techniques vary widely in terms of their cost to the local jurisdiction, voluntary or regulatory nature, effectiveness, and the ability to permanently provide long-term preservation. The variety and extent of the open space areas indicate that a multi-pronged approach to



conservation is necessary. In local jurisdictions that have effective open land programs to protect important agricultural, natural, scenic, and open land resources, a mix of public, private, and nonprofit tools is used. Experience has shown that where there is a choice of techniques that can be tailored to the specific circumstances of a family or landowner, their economic and conservation objectives, and the nature of development pressures, there is the greatest potential for success. It is important to realize that there is not a single solution to long-term open space preservation.



A number of recommendations are provided to develop a multi-pronged approach to open space preservation. The key recommendations are:

**1. Broaden the Mandate for the Open Space Commission.** In the past, the City's Open Space Commission has served primarily as a screening body for determining which projects should be acquired with limited public funds. It should continue to play that role, and continue to also examine the full range of techniques available to protect land and assist the City Council in identifying those with the greatest potential for success and refine techniques that have so far been ineffective. Moreover, it needs to determine the best ways to leverage limited public funds to achieve conservation success and partner with other entities such as the Bainbridge Island Land Trust to maximize its effort. If appropriate, the Commission might be expanded in membership to ensure that it represents a broad and respected cross-section of interests on the island. Part of this expanded mandate would be to provide education and outreach for landowners that may be interested in participation, and for general understanding by Bainbridge Island's populace. Such citizen's commissions operating in other jurisdictions have provided local decision-makers with valuable input for creating

incentives, defining the criteria for reviewing projects, and screening and recommending projects for approval. The Open Space Commission should continue to include a representative of the Parks and Recreation District and continue to improve coordination with this entity. A staff position paid jointly by the Parks and Recreation District and the City would aid in this partnership effort.

**2. Increase Staff Capability to Support the Open Space Commission.** For the Open Space Commission to meet its increased mandate, it will need to have a dedicated staff person. Such staff capability need not be full time, but should have professional experience in land conservation so that the Commission can perform its expanded role. If the Commission is to perform its role in recommending and tailoring new approaches to protecting lands and reviewing applications for open space funding, it will need to have dedicated staff capability and expertise. This staff person can be shared by the Parks and Recreation District and City to foster collaboration and maximize efficiencies.

**3. Explore the Full Menu of Land Protection Techniques and Adopt or Modify Those that are Appropriate.** In the past, Bainbridge Island has relied on a few techniques to protect important open space lands. Each of the techniques, whether incentive or regulatory, should be critically evaluated in terms of its effectiveness. If a particular technique is not working well, ways to fine-tune the approach should be explored and recommended for adoption. At a minimum, the following additions or modifications to existing approaches should be explored:

a. **Refine the Cluster Subdivision Ordinance.** The existing Flexible Lots Subdivision ordinance does not appear to be effective in protecting open lands, changing development patterns, or creating interconnected open spaces. In general, cluster ordinances need to provide some level of incentive for landowners to consider using them, which generally relate to a density bonus, expedited review, or relaxation of certain standards (e.g., road width, curb and gutter, etc.) for such projects. Often, the level of incentive needs to be experimented with to achieve a desired result. Most cluster ordinances require at least 50 percent or more of the parcel to remain undeveloped in exchange for incentives, and the incentive is increased proportionately (sliding scale).

b. **Encourage Donation of Conservation Easements.** Local governments can encourage local residents to work with a land trust and protect their land through the use of conservation easements. Currently, the federal tax incentives for donating conservation easements are at an historic high. Some jurisdictions have established specific provisions in their codes that provide incentives for landowners to consider. Developing a closer working relationship

with the Bainbridge Island Land Trust, as described later, could assist in this effort.

c. **Purchase Development Rights (PDR) or Conservation Easements on Priority Lands.** In the past, the City has not acquired conservation easements with its funds. The City may be able to achieve its conservation objectives for certain lands by purchasing the development rights, through purchase of a conservation easement, instead of a full fee interest. The value of the development rights usually varies from 30 to 80 percent of the fair market value of the property. Through PDR, the landowner is able to obtain the equity or development value from the property, keep the land open or in productive agriculture or forestry, keep it in the family and pass it onto the next generation, and make needed capital investments with the proceeds. There are a number of new federal programs that assist with the purchase of conservation easements for lands with specific values, and many jurisdictions have been able to leverage their limited funds, matching local dollars with \$3 to \$4 from other sources.

d. **Utilize Creative Purchase Options.** When the City purchases land, or partial interests in land, creative purchase approaches should be utilized that effectively lower the cost to the City. As a public entity, the City enjoys a number of advantages in the way that it can creatively interact with landowners to effectively reduce its cost of purchase. Techniques that the City should explore include: bargain sale, donation with life estate, charitable gift annuity, lease option, rolling option, tax free interest, and land exchange.

e. **Improve Critical Area Overlay District.** A number of improvements could be made that would improve the effectiveness of this tool. Performance criteria for permitting uses in the district could be developed to promote the protection and preservation of the natural functions of the areas. Landowners could be actively encouraged to donate conservation easements as a way of realizing economic value for the natural resource qualities of these lands. Maintaining connectivity of resources from one property to another should also be encouraged. Currently, the overlay zoning is connected to the Transfer of Development Rights (TDR) process that is not functional. The relationship of the two should be amended so that they work together.

f. **Restructure the TDR Program.** By all accounts, the TDR program needs a thorough revision so that it can play an effective role in both protecting important lands and encouraging greater density, where appropriate. TDR is not a panacea, but in combination with other tools it can play an important role. An extensive analysis



of the City's TDR program was conducted by Makers (undated) that provided specific recommendations for restructuring the program. The City should implement these measures as soon as possible. Experimentation in developing the appropriate level of transfer incentive is essential. The City may well have to assist a number of transactions to "prime the pump" and get a market going. Crafting a successful TDR program will require significant effort and a period of experimentation to understand the dynamics of creating the TDR market. A pilot program could be used to explore the dynamics of making TDR work in a specific location, such as the Neighborhood Service Centers. A pilot program of modest experimentation could well define the elements of a successful program that could then be applied more widely. As recommended in the Makers report, a staff member will need to be dedicated to foster and implement this program.

g. **Attract Conservation Buyers where Appropriate.** A conservation buyer is someone who is interested in purchasing a special open, productive, or scenic property because of its special natural qualities and who can take advantage of the tax benefits of granting a conservation easement. The City could work with the Bainbridge Island Land Trust and local real estate brokers to identify properties and owners who might be matched when special properties are placed on the market. Multiple benefits spring from matching properties up with conservation buyers who voluntarily protect their properties with conservation easements.

h. **Establish a Technical Resource Team.** A strategy used by a number of jurisdictions and land trusts is the establishment of a Technical Resource Team that could be composed of a local attorney, land planner, estate planner, accountant, or others. The City's Open Space Commission has informally used this technique effectively. The team works on a confidential, no-cost basis with landowners to help them explore conservation, land planning and limited development options, and analyze legal, tax, and land planning options to assist landowners in considering a wide range of alternatives for protecting open lands. Often the costs of exploring these options are daunting to landowners, and providing this service on a pro bono basis would help landowners understand options and be better informed and more confident in deciding what to do with their land.

**4. Review Funding Options Based on the Trust for Public Lands (TPL) Report.** A variety of open space funding options can be used to protect important lands that have been identified for protection. These include various taxes (sales, property, real estate transfer, special purpose), impact fees, and other fees on development and creating a dedicated pool of funds with a general obligation bond. The TPL report



provides a detailed outline of the funding possibilities for the City. A bond measure would provide funding over a specific time period and has been successful in the past. Experience in other jurisdictions has shown that even a relatively small amount of local funding can be effective if it is leveraged with other state and federal sources. Moreover, when limited local funds are used effectively, citizens are likely to reauthorize funding or increase the level of funding when given the opportunity. Funds for long-term management of lands acquired and for monitoring conservation easement agreements should also be accommodated in the funding strategy.

**5. Use Priority Open Space Map for Reviewing Open Space Funding Requests.** For Bainbridge Island to effectively protect the important lands identified in this study, it will need to use the map of priority open space areas to evaluate potential projects as financial resources are available. This process provides assurance that projects targeted for funding are chosen on their merits. This process should include reviewing applications for open space funding on an annual or biannual basis, and could utilize the criteria and rating system established by the Open Space Commission.

**6. Continue to Work Corroboratively with Land Trusts.** Currently, Bainbridge Island works informally with the Bainbridge Island Land Trust on land protection efforts. There is the potential

for this relationship to be strengthened to the benefit of both entities. Jurisdictions with strong land protection programs have established working relationships with land trusts and often coordinate their activities. In other jurisdictions with PDR programs, a local land trust often negotiates the conservation easement with the landowner, and the community assists with funding for the project. In some cases, the community is a joint holder of the conservation easement, although the land trust has the responsibility for monitoring and enforcing the agreement. In some communities, the agreements to cooperate in certain ways are defined in Memoranda of Understanding (MOU) and adopted by the governing boards of the two entities.

**7. Enhance Existing Tools and Regulations for Open Space Protection or Enhancement.** Currently, as part of ongoing or near-term projects, the City has the opportunity to strengthen regulations and land use codes to protect open space or enhance the environment. First, the update of the land use code, specifically Titles 16, 17, and 18, can be strengthened in language to protect critical natural resources. Second, consolidated tree regulations can be strengthened to provide more protection of existing tree resources. Third, City-owned farmland can be preserved and regulated.







## 1.1 Background

Bainbridge Island is a unique community in the Puget Sound region for several reasons. Despite a growing population, the island still contains large areas of forests, wetlands, and working farms, all within proximity to Seattle. But by 2025, the island's population is expected to grow by more than 6,000 people, a growth of more than 25 percent. It is of the utmost importance to accommodate this growth within a framework of a long-term, comprehensive plan while maintaining the island's vital open spaces. A primary influence in how the City of Bainbridge Island will manage and frame its growth is the Washington State Growth Management Act (GMA). The GMA was developed with the goal of increasing density in urban areas and preventing sprawl outside of growth areas, while also protecting important environmental resources. GMA requires jurisdictions to institute a number of environmental protection measures, such as critical areas ordinances and other techniques to protect open space areas, but it also requires incorporated cities to meet growth and housing needs. Because all of Bainbridge Island is incorporated, it is subject to the urban mandates of the GMA.

If future growth were not concentrated within designated growth areas, it could lead to reduction of open space, increased effects on groundwater and other resources, and problems in providing infrastructure and public transportation options. In 2006, Mayor Darlene Kordonowy appointed the 2025 Growth Advisory Committee (City of Bainbridge Island 2007b) to develop recommendations on how to accommodate the City's projected growth in a way that satisfies the mandates of the GMA, the spirit of the City's Comprehensive Plan, and the community's values and vision.

The current growth strategy targets 50 percent of future growth into the



Winslow area, 5 percent into three Neighborhood Service Centers, and the remaining 45 percent into the open space residential area, which constitutes most of the island's land. The Growth Advisory Committee recommended that growth outside of Winslow should be clustered in three Neighborhood Service Centers to provide affordable housing, integrated services, and transportation options, while preserving open space throughout the island.

To assist in deciding where these cluster growth areas should be located, the Growth Advisory Committee recommended that the City be proactive in identifying priority open space lands based on biodiversity values, recreation, and historical/cultural values. This Open Space Study would need to incorporate information from an assessment prepared by an unbiased party and input from knowledgeable island residents, stakeholders, and the public. The study also needs to review available conservation strategies for preserving open space and to provide recommendations for preserving open space on the island. The Committee was particularly concerned with how the Open Space Study would inform where and where not to develop growth density nodes on the island.

The Open Space Study builds upon recent planning work completed by the City. These activities include:

- The 2025 Growth Advisory Committee study (City of Bainbridge Island 2007b), which includes a model of the green infrastructure of the island. The green infrastructure model identifies areas with development constraints, such as critical areas, dedicated open space, and park land. This map shows open space opportunities and natural systems that promote community values and should be protected in the future. This study takes these pieces of information and builds upon them in the environmental analysis.
- The Open Space Commission is a mayoral-appointed citizen committee. The Commission is charged with "recommending to the city council a program and process for acquiring or otherwise preserving forested areas, open space, wildlife habitat, farms and agricultural lands, and a program for overseeing, monitoring and auditing such improvements."
- The Wildlife Corridor Network study (2000) was a scientific report looking at habitat connections on the island. The Wildlife Corridor Network identified riparian and upland corridors that link the currently preserved open spaces on the island.

Concurrent with the Open Space Study, the Bainbridge Island Metropolitan Parks and Recreation District (a separate taxing entity from the City) is updating their comprehensive plan by revising their Parks, Recreation, and Open Space plan. This update will provide input for the Park, Recreation, and Open Space element in the City's Comprehensive Plan. The Parks, Recreation, and Open Space plan reviews the recreation



needs and solutions regarding active parks, trails, and open space on the island. Information generated from the Open Space Study will inform elements of the Parks, Recreation, and Open Space plan update. Public input regarding trail connections and new park elements was considered during the development of the City's Open Space Study and was also considered in the development of the District's plan update.



## 1.2 Open Space Project Overview

The City of Bainbridge Island selected EDAW to prepare their Open Space Study. As a consultant, EDAW provides the City with an unbiased assessment and works in coordination with the City to develop a study that meets the City's goals and supports the public interest as well.

This Open Space Study has three main goals:

- Develop a map of priority open space areas on Bainbridge Island that provides guidance for the City on where to conserve open space and where best to locate future density nodes.
- Use available resources, independent analysis, and input from the public to identify open space lands within the range of biodiversity, historical/cultural, and working lands that are represented on the island.
- Provide effective conservation mechanisms that have been used in Washington State and those specifically used on Bainbridge Island, and provide recommendations for improving the existing mechanisms or for implementing new approaches.

It is important to note that this Open Space Study is limited in the scope and geography assessed. The study boundaries for this project included all of Bainbridge Island from the ordinary high tide elevation landward. While information from the City's Nearshore Assessment (Williams et al. 2004) was included, elements of the nearshore environment and on-water transport are better suited for evaluation and management recommendations under the Shoreline Master Program (SMP). In addition, the human-valued landscape elements that were included in the analysis were limited to nature-oriented uses, or open space human endeavors, such as trails, historic places, or working landscapes. Finally, the open spaces assessed are separate from the active park and recreation facilities addressed by the Parks and Recreation District in the Parks, Recreation, and Open Space plan.

The public process was instrumental in developing and refining the Open Space Study. The City organized a stakeholder group that consisted of individuals from existing City citizen committees and other community groups. The committees and groups invited to participate on the Open Space Stakeholder Group (Stakeholder Group) are listed below.

- 2025 Growth Advisory Committee
- 90-Day Farmland Task Force
- Bainbridge Island Land Trust

- Bainbridge Alliance for Puget Sound
- Bainbridge Island Watershed Council
- Bloedel Reserve
- Community Forestry Commission
- Harbor Commission
- Historic Preservation Commission
- IslandWood
- Kitsap Audubon Society
- Non-Motorized Transportation Advisory Committee
- Open Space Commission
- Sustainable Bainbridge
- The Greening of Winslow, Bainbridge Island Metropolitan Parks and Recreation District (BIMPRD)
- Trail Committee BIMPRD

The Stakeholder Group met one to two times each month from January through July 2008. The group was instrumental in developing the public outreach, providing comments on interim products, assisting in public meetings, providing a wealth of detailed information on the island's open spaces, and providing insightful comments on the study.

In addition to Stakeholder Group meetings, the City held two public workshops to discuss the Open Space Study. The first concentrated on identifying the ecological values of open space on the island, and the second concentrated on identifying human-value landscape elements such as working lands, historic resources, and trail connections among identified priority areas. These workshops are described more fully later in this report.

The Open Space Study development process is illustrated in Figure 1.1-1. Briefly, the steps included the following:

1. Identify potential, valuable open spaces through a review of existing documents, aerial photographs, and stakeholder group discussions
2. Conduct spatial analysis to identify priority environmental resources (wetlands, critical habitat, etc.)
3. Compare the open spaces that were identified as a priority to their relative development vulnerability (distance to sewer, build out analysis, ownership)
4. Prioritize the open spaces by assigning a relative value based on their environmental characteristics and development vulnerability (high, medium, low)
5. Refine the priorities based on stakeholder and community input





As a first step, EDAW identified candidate open spaces through a review of existing planning documents including the 2025 Growth Advisory Committee Final Report, Wildlife Corridor Network study, the Trust for Public Land (TPL) feasibility study (TPL 2007), and the work conducted by the Open Space Commission. In addition, EDAW identified open spaces through discussions with the Stakeholder Group, discussions with City staff, and a review of aerial photographs. Next, the team conducted a thorough scientific spatial analysis to identify the priority environmental resources, such as overlaying wetlands, critical habitat, and natural shorelines. The environmental resources were overlaid with development vulnerability to identify those areas that are both environmentally sensitive but also under a high development pressure. Using input from the public workshops, these areas were prioritized by assigning a relative value based on their environmental characteristics and development vulnerability (high, medium, low). Further input on human-value landscape elements was incorporated into the candidate open space area list. Final refinement of the portfolio of open space areas and further classification based on the overall environmental and human value of the property was conducted as a final step. Recognizing that the urban area of Winslow has different open space needs than the greater island, the project team used a different set of criteria to evaluate open space for the Winslow area than was used for the rest of the island. The evaluation criteria used for Winslow are detailed in the methodology described in Chapter 2. After thorough public engagement, the portfolio of open space areas were ranked in priority importance based on multifaceted criteria. The result is a refined list of priority open space areas, ranked by their environmental and human-value landscape elements.

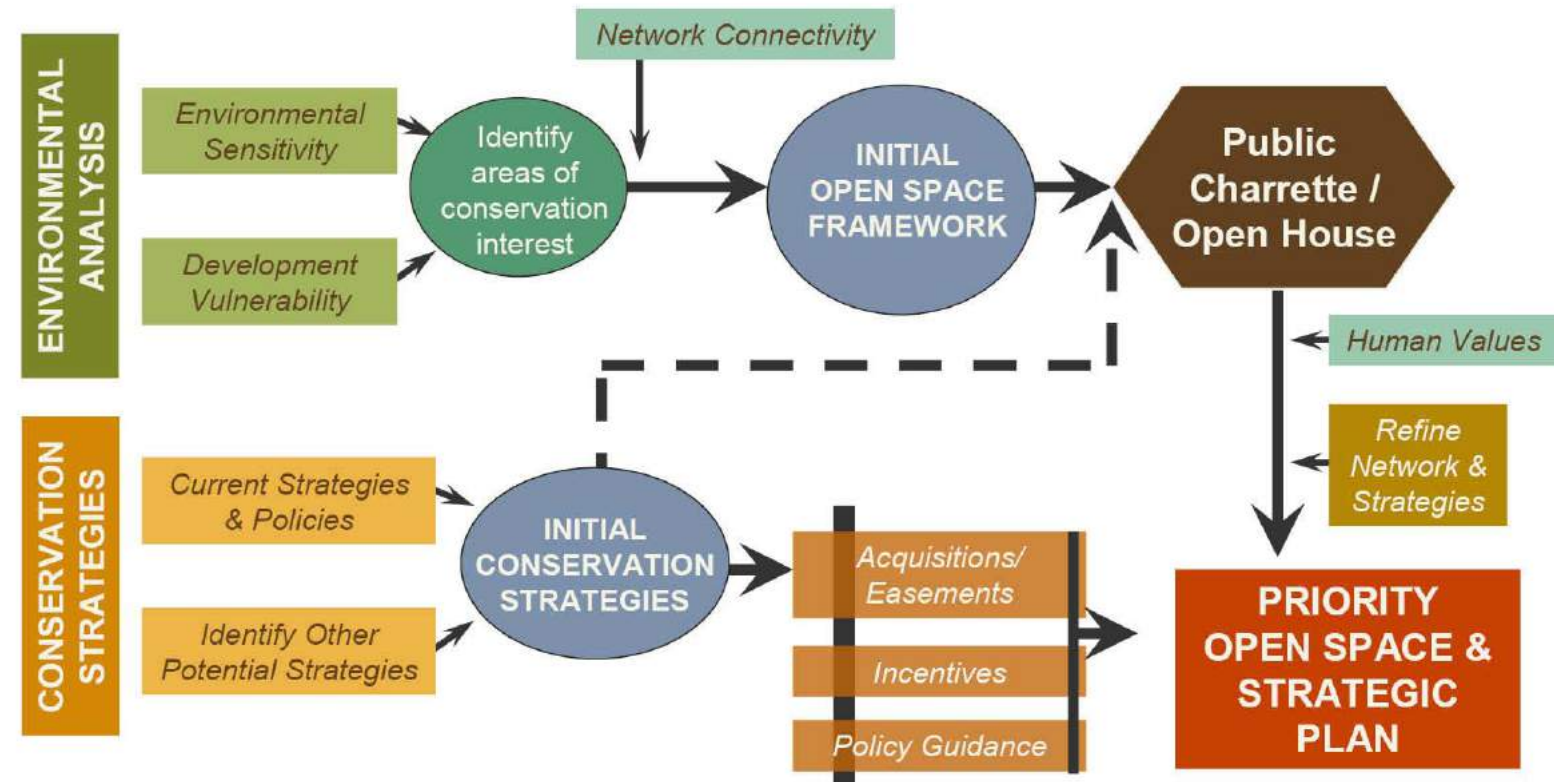
Concurrent with the open space evaluation process, EDAW reviewed and evaluated regulatory and non-regulatory mechanisms for conserving open space in Washington State, with a special emphasis on what has been proven successful on Bainbridge Island. To discuss the range of open space conservation options for Bainbridge Island, City staff, members of the Open Space Committee, the Bainbridge Island Land Trust, other knowledgeable citizens, and Marty Zeller of Conservation Partners in Denver, Colorado, all met in a conservation mechanisms discussion.

The following sections describe the methods and results of the open space evaluation, including citizen participation, and provide a data summary and maps of the identified priority areas.

The Open Space Study is described in detail in the following three chapters:

- Chapter 2.0: Priority Open Space Evaluation
- Chapter 3.0: Strategies for Open Space Preservation
- Chapter 4.0: Conclusions

Figure 1.1-1. Open Space Study Process









A landscape ecology approach was used to identify priority open spaces throughout the island. This scientific analysis was supplemented by stakeholder and citizen input, then further refined by a second scientific criteria evaluation. The following section provides a brief description of landscape ecology concepts and principles that guide the evaluation methods section. Section 2.2 describes the specific methods used to evaluate and rank priority areas.

## 2.1 Principles of Landscape Ecology

### BACKGROUND

Landscape ecology, a scientific discipline, studies ecology, biology, and physical form through the exploration of spatial relationships. Landscape ecology examines spatial heterogeneity and pattern; it is the study of how to efficiently detect and characterize a diverse landscape, how the landscape develops and changes through time, and how the landscape characteristics affect populations, communities, and ecosystem processes. Landscape ecology takes into account time, species, place, productivity, and disturbance, thus providing information on the structure and function of the ecosystem. Studying all aspects of a landscape on a spatial scale yields information that highlights what makes various land areas valuable for different species, communities, and ecosystems.

The German biogeographer Carl Troll (1939) introduced the term landscape ecology, relating the term to large-scale considerations of geography, topography, and vegetation from the unique perspective offered by aerial photography. Since then, ecologists have offered a variety of definitions. Two of these are:

“Landscape ecology...focuses on (1) the spatial relationships among landscape elements, or ecosystems, (2) flows of energy, mineral nutrients, and species among the elements, and (3) the ecological dynamics of the landscape mosaic through time.” (Forman 1983)

“Landscape ecology deals with the effects of the spatial configuration of mosaics on a wide variety of ecological phenomena.” (Wiens et al. 1995).

These definitions emphasize two important elements of landscape ecology that clarify the science:

1. Landscape ecology explicitly addresses the importance of spatial configuration for ecological processes; and
2. Landscape ecology often focuses on spatial extents that are much larger than those traditionally studied in ecology.

The language of landscape ecology borrows from key concepts in conservation biology. Table 2.1-1 presents relevant ecological terms.

Rather than concentrating on a particular species’ home range requirements, landscape ecology looks at habitat functions on a broader level, considers interacting ecological functions, and corridor connections.

**TABLE 2.1-1. CONSERVATION BIOLOGY TERMS**

TERM	DEFINITION
Configuration	Specific arrangement of spatial elements (spatial structure, patch structure).
Connectivity	Spatial continuity of a habitat or cover type across a landscape.
Corridor	Relatively narrow strip of a particular type that differs from the areas adjacent on both sides.
Cover type	Category within a classification scheme defined by the user that distinguishes among different habitat, ecosystems, or vegetation types on the landscape.
Edge	Portion of an ecosystem or cover type near its perimeter and within which environmental conditions may differ from interior locations in the ecosystem; also used as a measure of the length of adjacency between cover types on a landscape.
Fragmentation	Breaking up of habitat or cover type into smaller, disconnected tracts.
Heterogeneity	Quality or state of consisting of dissimilar elements, as with mixed habitats or cover types occurring on a landscape; opposite of homogeneity, in which elements are the same.
Landscape	Area that is spatially heterogeneous in at least one factor of interest (Turner et al. 2001).
Matrix	Background cover type in a landscape, characterized by extensive cover and high connectivity; not all landscapes have a definable matrix.
Patch	Surface area that differs from its surroundings in nature or appearance.
Scale	Spatial or temporal dimension of an object or process, characterized by both grain and extent.

While site-specific ecological values include features such as rare plant locations, avian nest trees, or amphibian breeding locations, landscape ecology looks at the spatial pattern of elements in relation to other elements and their patterns (Turner et al. 2001). Table 2.1-2 presents the principles used by Turner et al. (2001).

The project team applied integrated and comprehensive ecological thinking in developing the Bainbridge Island Open Space Study. Of particular application to developing the study and selecting a priority open space network were the landscape ecology concepts of habitat fragmentation, habitat patch size, and corridor ecology. These concepts provided the scientific basis for the development of the evaluation methods, and this connection is described in Section 2.2, below.

### HABITAT FRAGMENTATION AND HABITAT PATCH SIZE

Habitat fragmentation is of special concern in landscape ecology studies and is particularly applicable to the ecological function of habitats on Bainbridge Island. The unorganized spreading of land clearing and home building at low densities in rural settings, often referred to as “exurban” development, is the fastest-growing type of land use in the U.S. (Theobald 2001). This type of land use is having significant effects on terrestrial and aquatic resources in the Puget Sound region.

Broad-scale forest clearing and conversion to agriculture or residential land use has harmful effects on the natural environment and native plant and animal communities. Historically, forest clearing has led to increased erosion and transport of sediments and nutrients into estuaries and the lower portions of river systems (Wolman 1967; Trimble 1974; Mead 1982; Meybeck 1982). Freshwaters become degraded by these increasing inputs of silt, nutrients, and pollutants from agriculture, forest harvest, and cities (Carpenter et al. 1995 and 1998). In addition, dissecting habitat tracts into smaller, unconnected units severely constrains the ability of land to support native wildlife and plants.

Such human-induced fragmentation leads to the formation of habitat “patches” or areas of habitat interspersed amongst non-habitat areas. The composition and configuration of the patches on a landscape can affect how wildlife and plants use the landscape (Figure 2.1-1). In addition, the size and shape of a patch determine the habitat value the patch provides for different species. A habitat patch increases the amount of edge habitat and decreases the amount of interior habitat available compared to a homogenous landscape of habitat. Species that are particularly vulnerable to edge effects and habitat patch size dynamics are those that require larger areas of habitat and avoid habitat edges. At the edge of a forest patch, for instance, there is generally more light, a warmer, drier



**TABLE 2.1-2. PRINCIPLES FOR HABITAT PROTECTION AT THE LANDSCAPE SCALE**

BIOLOGICAL PRINCIPLES FOR HABITAT PROTECTION AT LANDSCAPE SCALES	
Principle 1	Maintain large, intact patches of native vegetation by preventing fragmentation of these patches by development.
Principle 2	Establish priorities for species protection and protect habitats that constrain the distribution and abundance of these species.
Principle 3	Protect rare landscape elements. Guide development toward areas of landscape containing common features.
Principle 4	Maintain connections among wildlife habitats by identifying and protecting corridors for movement.
Principle 5	Maintain significant ecological processes such as fires and floods in protected areas.
Principle 6	Contribute to the regional persistence of rare species by protecting some of their habitat locally.
Principle 7	Balance the opportunities for recreation by the public with the habitat needs of wildlife.
PRINCIPLES FOR WILDLIFE CONSERVATION AT THE SITE SCALE	
Principle 1	Maintain buffers between areas dominated by human activities and core areas of wildlife habitat.
Principle 2	Facilitate wildlife movement across areas dominated by human activities.
Principle 3	Minimize human contact with large native predators.
Principle 4	Control numbers of mid-size predators, such as some pets and other species associated with human-dominated areas.
Principle 5	Mimic features of the natural local landscape in developed areas.
OPERATIONAL PRINCIPLES	
Principle 1	Be willing to use rules of thumb based on scientific findings that may someday prove to be false.
Principle 2	Understand that complex environmental problems do not have a single, scientific solution founded on "truth."
Principle 3	Begin all conservation plans with clearly stated, specific goals for wildlife protection.
Principle 4	Insist that the analysis used for setting conservation priorities can be understood by everyone who is affected by it.
Principle 5	Realize that all models are wrong, but some are useful.
Principle 6	Make plans adaptive by evaluating the consequences of actions. Learn by doing.
Principle 7	Seize opportunities to enhance wildlife habitat by intelligent design of developments.

Source: Table 10.2. Principles for Habitat Protection at the Landscape Scale (Turner et al. 2001).

microclimate, and greater access for organisms that frequent open habitat. The interior of a forest patch tends to be shadier, cooler, and moister, and is often off limits to organisms that use open habitat.

The first attempt to theorize how species deal with disconnected patches of habitat was presented in A. MacArthur and E. O. Wilson's *The Theory of Island Biogeography*, published in 1967. The original theory dealt with the diversity of species on islands as a function of island size and distance from the mainland (MacArthur and Wilson 1967). The four basic tenets of the theory are:

- Larger islands support more species.
- Islands closer to the mainland are more diverse.
- Small islands suffer higher rates of extinctions than large islands.
- Islands close to the mainland experience lower extinction rates.

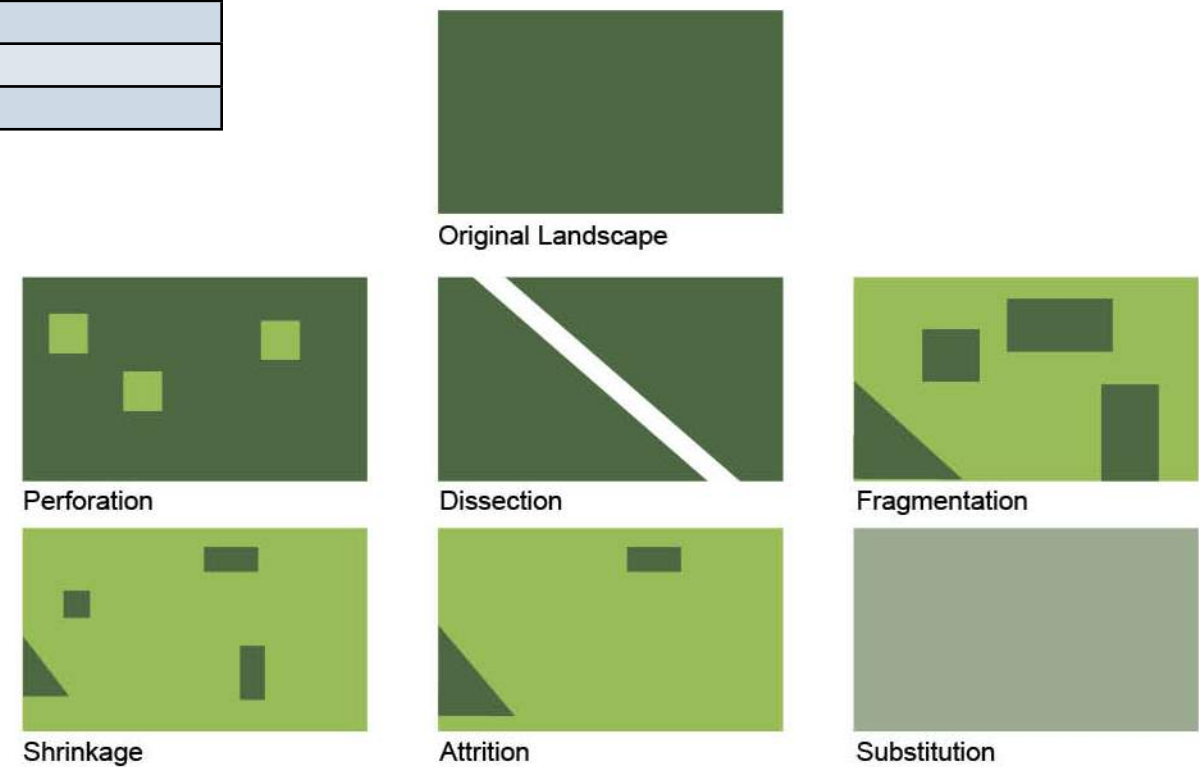
The theory was extrapolated to isolated terrestrial "islands" such as alpine zones atop mountains (Vuilleumier 1970), caves (Culver 1970), and later to

islands of habitat caused by human-use patterns and the design of nature reserves (Burkey 1989, Sole and Simberloff 1986, and Shafer 1990). Although research since the theory was initially published indicates that species movements between fragmented tracts is complex and often associated with population sources and sinks (metapopulations), the theory of island biogeography has provided a sound basis for analogous interactions of habitat patch size and species biodiversity. A metapopulation is a collection of subpopulations, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat, forming an interconnected set of subpopulations that function together as a demographic unit.

When a patch gets sufficiently small or elongated in shape, all interior habitat is lost, leading to a loss

of interior species and dominance by edge species (Turner et al. 2001). Effects depend upon the particular species in question and that species' habitat preferences. Mills (1996) found a range in how small mammals responded to edge habitats in Douglas-fir (*Pseudotsuga menziesii*) forests in Oregon. Townsend's chipmunk (*Tamias townsendii*) showed habitat-use effects near the edge, red-back vole (*Clethrionomys californicus*) and deer mouse (*Peromyscus maniculatus*) were more sensitive and showed effects within 148 feet of the edge, and Trowbridge's shrew (*Sorex trowbridgei*) showed no response to edges. These scientific studies demonstrate that patch size and the effect of habitat edges can profoundly affect native species.

More generalist species such as raccoon (*Procyon lotor*), coyote (*Canis latrans*), and black-tailed deer (*Odocoileus hemionus*) thrive along edges while habitat specialists that have a narrower range of habitat tolerance, such as pileated woodpecker (*Dryocopus pileatus*), orange-crowned warbler (*Vermivora celata*), and red-backed voles, require larger areas of intact habitat. Some species that thrive in edge habitat have detrimental effects on other species. Nest predation and nest parasitism by such species as cowbirds (*Molothrus sp.*) increased along habitat edges. The loss of intact habitat through fragmentation into small habitat patches can decrease the biodiversity of an area and reduce the success of key Northwest forest species.



**Figure 2.1-1. Spatial Processes in Land Transformation** Source: Forman (1995)



Let's start by imagining a fine Persian carpet and a hunting knife. The carpet is twelve feet by eighteen, say. That gives us 216 square feet of continuous woven material. We set about cutting the carpet into 36 equal pieces, each one a rectangle, two feet by three feet. When we're finished cutting, we measure the individual pieces, total them up – and find that, lo, there's still nearly 216 square feet of recognizably carpet-like stuff. But what does it amount to? Have we got 36 nice Persian throw rugs? No. All we're left with is three dozen ragged fragments, each one worthless and commencing to come apart.

.....An ecosystem is a tapestry of species and relationships. Chop away a section, isolate that section, and there arises the problem of unraveling

--- David Quammen, *The Song of the Dodo: Island Biogeography in an Age of Extinction*

Odell and Knight (2001) found that even low levels of human development can have detrimental effects on forest-dwelling birds that are associated with interior habitat. Bird species such as black-capped chickadee (*Poecile atricapillus*), orange-crowned warbler, black-headed grosbeak (*Pheucticus melanocephalus*), and others showed a negative response up to 100 feet from residential development. When planning for biodiversity, it often is best to consider the most sensitive species response.

In general,

- Larger, more diverse patches support more species;
- The shape of boundary can influence species relative abundance;
- Connectivity is a scale-dependent, threshold phenomenon; and
- Characteristics of the surrounding landscape can strongly influence local populations.

Researchers have found strong correlations between habitat patch size and biodiversity, including several studies conducted in the Puget Sound region. Gavareski (1976) studied parks of different sizes in Seattle, Washington. He found a correlation with park size, complexity of vegetation communities, and avian species diversity. For these reasons, larger parks tended to support higher avian species diversity. More complex habitat components were required for the occurrence of species such as winter wren (*Troglodytes troglodytes*), Bewick's wren (*Thryomanes bewickii*), Swainson's thrush (*Catharus ustulatus*), and black-throated gray warbler (*Dendroica nigrescens*). Species that increased in abundance in smaller, more modified areas included rock dove (*Columba livia*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*), which are all non-native species.

In a larger scale study of the relationship between landscape reserve size and avian species occurrence, Donnelly and Marzluff (2004) found that larger reserves in Puget Sound contained richer bird communities than smaller reserves. The number of bird species present within native forest communities decreased as the reserve area decreased and species reached individual thresholds of occurrence. The maximum number of species was present when a reserve was at least 103 acres in size. The authors recommended that 103 acres be used as a threshold for preserving the composition of native bird communities in forested habitat. In addition to these recommendations, the authors also noted that individual species exhibited varying tolerances to reserve size. For instance, American robins (*Turdus migratorius*) were quite successful in urban reserves while native forest birds were not present in smaller reserves. Golden-crowned kinglet (*Regulus satrapa*), a common forest species in the Pacific Northwest, was almost always present in reserves larger than 52 acres, but was absent from smaller reserves. Because many species exhibited such thresholds of occurrence, a collection of medium and small reserves will not be sufficient to conserve species such as the golden-crowned kinglet or to preserve regional bird diversity (Patterson 1987). These scientific studies

in ecosystems similar to those found on Bainbridge Island demonstrate that habitat patch size does affect native species and biodiversity. Larger, connected reserves will support the more sensitive species and lead to a representative collection of native species.

## CORRIDORS

Corridors, or connections between relatively isolated habitat areas, can provide opportunities for species to move between suitable habitat in areas of less suitable habitat. Corridors are linear landscape elements that connect two or more patches of natural habitat and facilitate movement between them (Soule and Gilpin 1991). Corridors are important for maintaining viable populations and overall biodiversity in fragmented landscapes (Forman 1995, Kubes 1996, Bennett 1999, Perault and Lomolino 2000). Connectivity, the extent to which a species or population can move among landscape elements in a mosaic of habitat types (Taylor et al. 1993), can be maintained through linear corridors or stepping-stone corridors, depending on the species (Figure 2.1-2). Among scientists, the design and efficacy of corridor features are in debate (Hobbs 1992, Simberloff et al. 1992). Although a summary of published literature indicates that corridors are valuable conservation tools that should be employed where possible to connect disjunct open spaces (Beier and Noss 1998), they do not function as primary habitat. Careful consideration is required in designing corridor widths and making tradeoffs regarding conservation, corridors, or larger open space areas. Corridors are not an all-encompassing solution to conservation problems nor should they be used to justify small reserves. Corridors can be a cost-effective complement to the strategy of preserving large and small reserves in fragmented landscapes (Noss 1987).

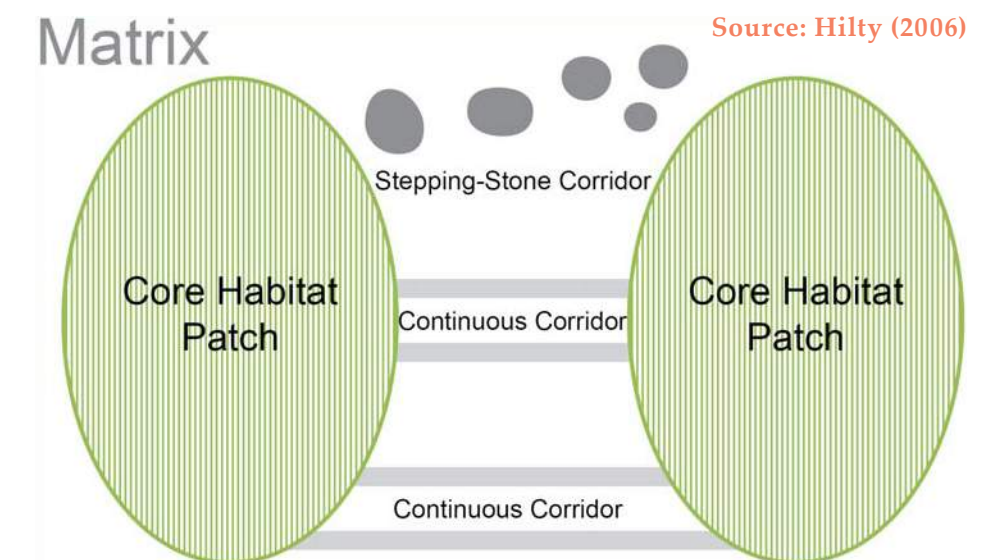


Figure 2.1-2. Habitat Connectivity and Corridor Structure



The Bainbridge Island Wildlife Corridor Network (Wildlife Corridor Network) was a study that developed a link of riparian and upland corridors throughout the island, attempting to link protected parcels in an efficient manner. The Wildlife Corridor Network was developed using focal wildlife species for upland forest, upland edge, and riparian habitats. While dominated by birds, the focal species also included small and medium sized mammals and amphibians. The Wildlife Corridor Network is referenced in the City's Comprehensive Plan. Also, the critical areas review process takes the Wildlife Corridor Network into consideration during permitting, but there are no specific regulatory requirements in the Bainbridge Island Municipal Code or mitigation requirements applying to corridor disturbance. Subdivisions specifically designated as providing open space values require incorporation of the wildlife corridors into the designated open space of the plat. In addition, many of the corridors follow the riparian areas, which are often protected under the Critical Areas Ordinance. Wildlife Corridor Network widths range from 150 to 300 feet, depending on habitat conditions and are mapped at the 300-foot width. Given the range of edge effects as discussed above, corridors should be planned to be at least 200 feet wide to meet biodiversity goals.

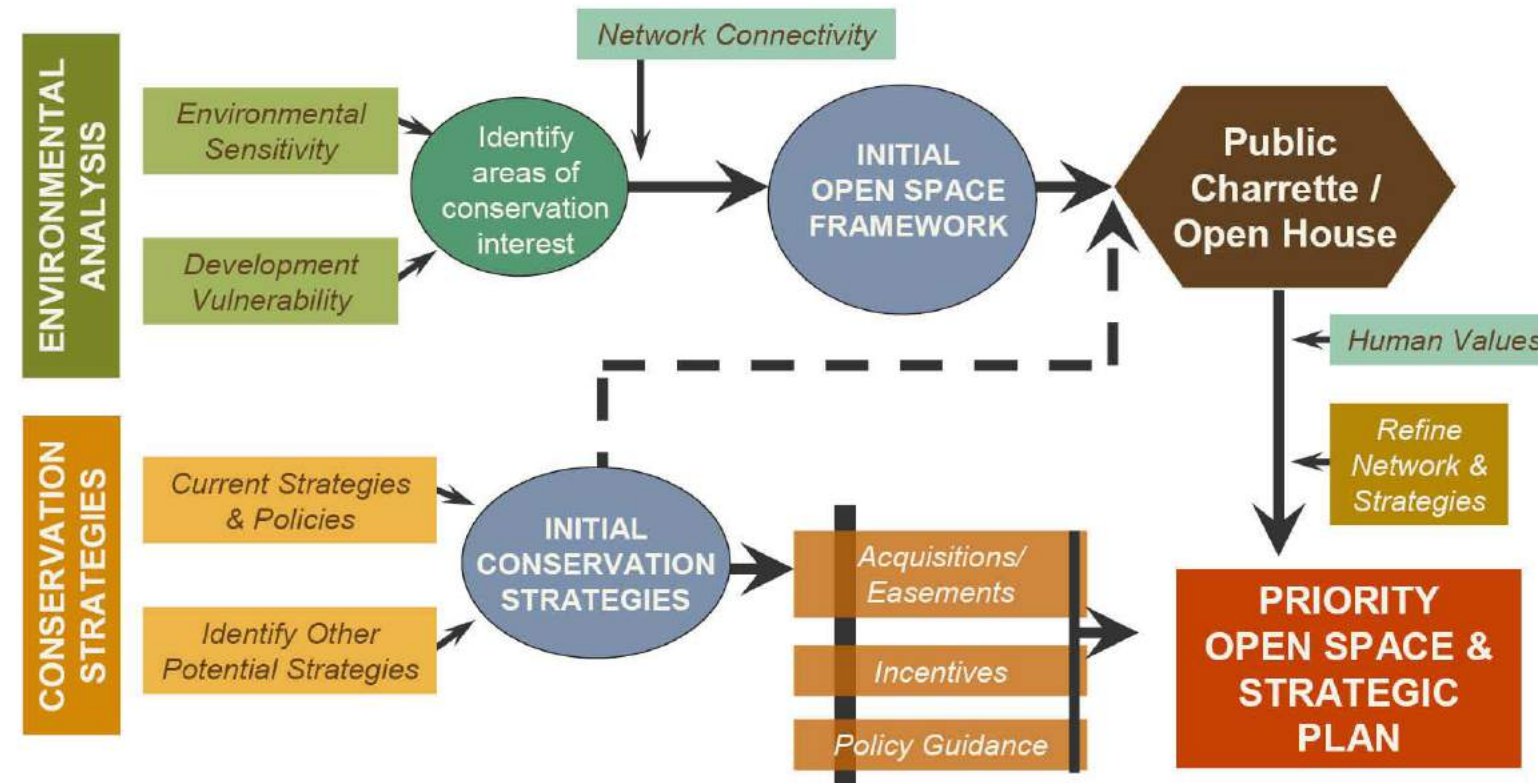
## 2.2 Evaluation Methods

The evaluation included these primary steps (illustrated in Figure 2.2-1):

1. Assess environmental sensitivity and development vulnerability.
2. Review overlay of environmental sensitivity and development vulnerability.
3. Analyze habitat connectivity.
4. Incorporate local expertise on important ecologically sensitive areas with public input in a public workshop.
5. Identify and target open space areas for further consideration.
6. Incorporate local information on important human-valued landscape elements in a second public workshop.
7. Refine and rank prioritized areas based on the area's score using comprehensive criteria.
8. Map and rank priority open space.

Steps 1 thru 4 of the evaluation methods provide information regarding the landscape ecology principles described in Section 2.1. The environmental sensitivity model and habitat connectivity analysis proxy the concepts of habitat fragmentation, patch size, and corridor ecology for the landscape of Bainbridge Island. These evaluation methods help to identify the most valuable habitat for a majority of species through the

Figure 2.2-1. Open Space Study Process (repeated Figure 1.1-1 for convenience)



identification of non-fragmented, large patches (areas) of intact habitat connected to other patches with wide corridors of existing habitat.

The initial evaluation model of assessing the environmental sensitivity and development vulnerability used in this process is the same one used by the Washington Biodiversity Council (2007) to evaluate biodiversity significance and the future risk to biodiversity posed by development. The two-pronged approach spatially analyzes biodiversity significance and development vulnerability. These are overlaid together to identify areas with a high value of biological richness as well as those at risk of being lost due to development.

- High priority areas are those with a high biodiversity value and a high risk of future development because these areas are both ecologically important, as well as threatened by pressure from fast-paced growth.
- Conversely, areas with low biodiversity value and low risk of development are not priority areas.

The following sections describe the evaluation process in more detail.

Because the analysis on Bainbridge Island included other sensitive environmental factors beyond biodiversity indices, the evaluation method was expanded to consider total environmental sensitivity, not exclusively biodiversity significance. However, the environmental sensitivity focuses on native habitat preservation. In addition, only available City of

Bainbridge Island geographic information system (GIS) data were used in this analysis. Data have either been developed by the City of Bainbridge Island GIS staff or previous consultants or have been gathered from state sources (e.g., the Washington Department of Fish and Wildlife [WDFW]). Data regarding wetlands, streams (location and classification), tree cover, land cover, priority species locations and habitat, shoreline assessment, aquifer recharge, parcel ownership, location of sewer districts, and potential build-out capacity were all used in this analysis. To refine the environmental sensitivity results, more data would be needed. These data would include specific information regarding habitat quality, vegetation associations, and more information on tree cover (including age class, structure, etc.). In addition, the new data on aquifer recharge zones will be important to incorporate into the analysis results later.

### WINSLOW

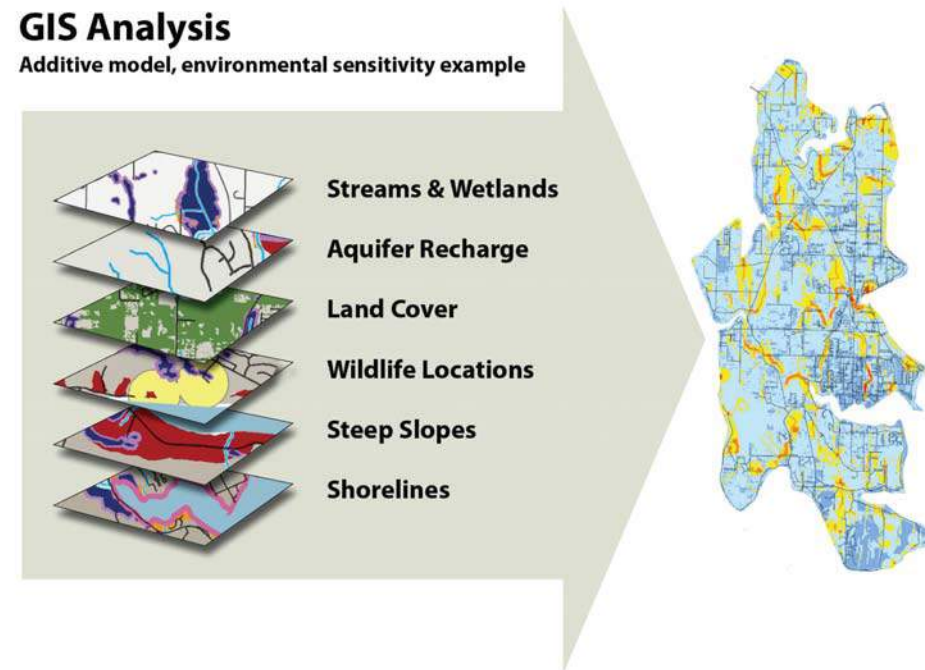
Winslow has different open space needs and different open space availability than the rest of the island. Because Winslow is an urban environment that is mostly developed, often at higher densities than elsewhere on the island, it has different environmental issues and open space needs and availability than the rest of the island. Undeveloped open space land in Winslow tends to be found on isolated lots and in human-impacted areas. Despite these limitations, open space preservation in



Winslow is critical because of the threat of development and because citizens prize what open space is available. Winslow was treated differently in public meetings, in the analysis, and the final criteria ranking to identify its important open spaces. Decisions for Winslow were often based on stakeholder and public input, rather than solely on the GIS analysis of environmental sensitivity because of the already impacted nature of the environment in Winslow. In the final decision ranking, Winslow parcels were separated and compared amongst each other for open space value and ranking, rather than being compared to the full suite of areas. The differential treatment of Winslow from the island helps to identify important urban green spaces and open spaces that may have been lost in the complete analysis of the island.

**TABLE 2.2-1. RESOURCE AREAS CONSIDERED IN THE ENVIRONMENTAL SENSITIVITY MODEL**

Resource Area	Buffer	Point Value
Wetlands	Critical Area Ordinance buffer based on wetland classification	0 to 9 points
Streams	Critical Area Ordinance buffer based on stream classification	0 to 9 points
Shorelines	200-foot buffer	0 to 9 points, sliding scale - based on the Bainbridge Island Nearshore Assessment
Vegetation associations	None	0 to 9 points, sliding scale - forests through pastures
Eagle nests/ heron rookeries	800 feet	0 to 9 points
Steep slopes	None	0 to 9 points
Aquifer recharge zones	None	0 to 9 points, sliding scale – based on permeability
1: The source of the shoreline rating is based on the results of the Bainbridge Island Nearshore Assessment (Williams et al. 2004). These data are a compilation of information regarding the status of the nearshore and a model evaluating ecological impact.		



**Figure 2.2-2. GIS Analysis Additive Model**

**ENVIRONMENTAL SENSITIVITY**

A simple non-weighted, additive, arithmetic model was used to evaluate the relative environmental sensitivity of land on the island. Resources were given a value of 1 to 9, with 9 being the most sensitive. Table 2.2-1 lists the resource areas considered for environmental sensitivity in the GIS model.

Once the resource areas were mapped and classified based on environmental sensitivity, elements were summed to give each area on the island a value of overall environmental sensitivity. Figure 2.2-2 illustrates the additive model process used in the GIS analysis. Thus, any area had the potential to receive a maximum of 63 points (although the highest value area had a value of 50), if that area had all of the sensitive environmental resources present. To clarify the analysis, the additive values were ranked from low to high environmental sensitivity. The ranking resulted in areas classified as low (<10), low/medium (11 – 20), medium (21 – 30), medium/high (31 – 40), and high (41 – 50) environmental sensitivity. Areas with overlapping resource values were rated high, and areas that were lacking in native vegetation or had low resource values were rated low. For instance, upland areas with residential densities received low environmental sensitivity scores, and undeveloped forested areas with streams, steep slopes, and high shoreline values (based on a model of ecological impacts from the Nearshore

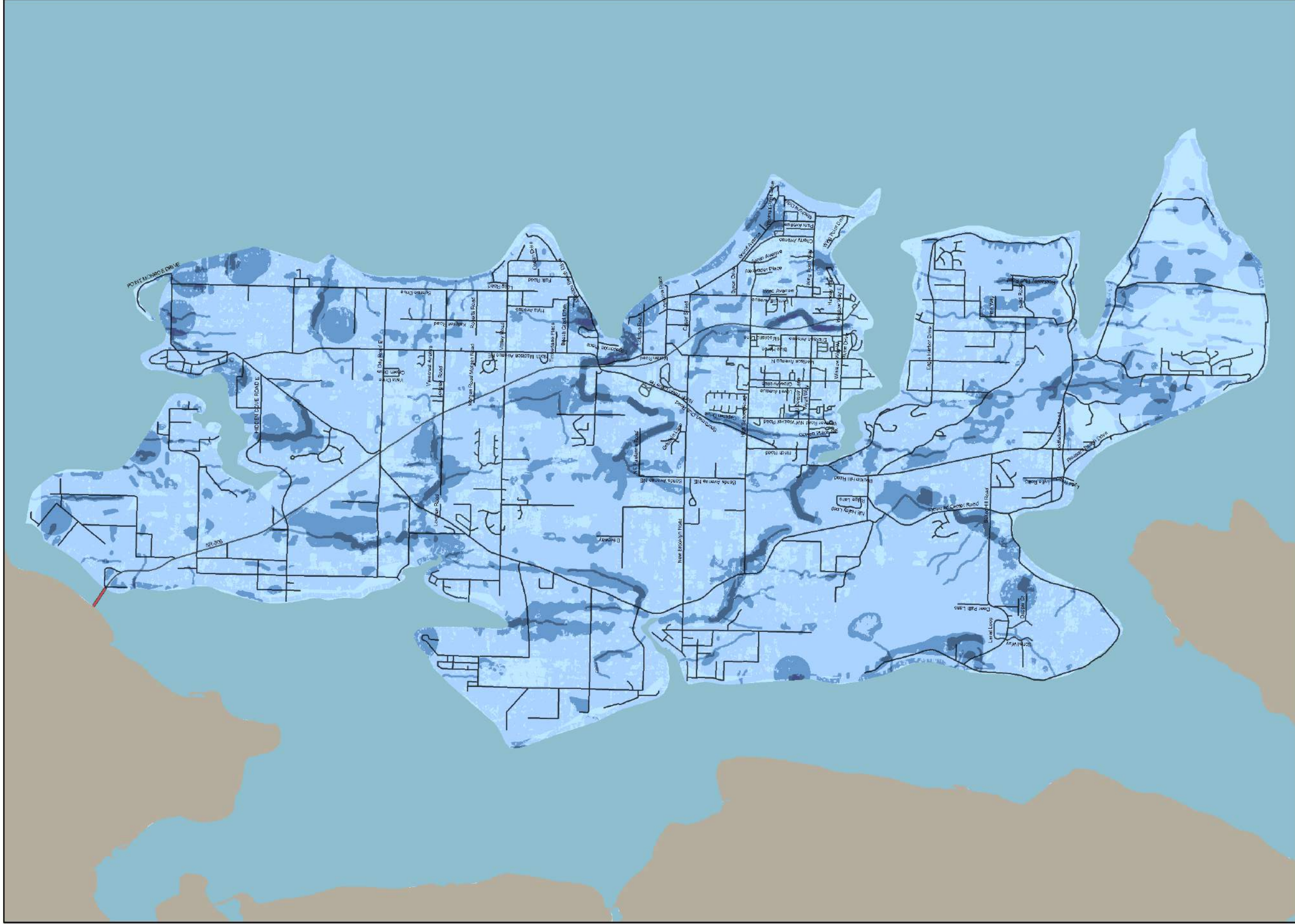
Assessment) were rated high. Because the Open Space Study only included lands higher than ordinary high tide, no marine information was used to assess environmental sensitivity. Figure 2.2-3 shows the results of the environmental sensitivity model.

A “nearest neighbor” analysis was conducted on the results of the environmental sensitivity model. The nearest neighbor analysis generalized the environmental sensitivity to provide information on the size of patches of environmentally sensitive areas. The analysis calculated the value of each area on the ground based on its environmental sensitivity, as well as the sensitivity of the areas around it. Thus, environmentally sensitive areas surrounded by areas that are not considered sensitive are shown to be small patches, while significant sensitive areas surrounded by other sensitive areas are highlighted as larger patches.

**In general, increasing the size of a habitat area by a factor of 10 causes a doubling of the number of species supported by that habitat.**

---- E. O. Wilson





**Figure 2.2-3 Environmental sensitivity analysis results**  
 Bainbridge Island Open Space Study





## DEVELOPMENT VULNERABILITY

A GIS development vulnerability model was developed to assess the relative risk of an area being developed and losing habitat value in the future. Tables 2.2-2 and 2.2-3 summarize the criteria used in the model.

**TABLE 2.2-2. RESOURCE FACTORS CONSIDERED IN THE DEVELOPMENT VULNERABILITY MODEL**

Development Risk Factor	Point Value
Ownership	Sliding scale based on public or private ownership
Distance to sewer	Sliding scale based on Euclidean distance to sewer districts
Build-out analysis	Sliding scale based on potential build-out <sup>1</sup>
1: GIS data on the build-out analysis were used from the Growth Advisory Committee 2025 study; figure 3: Island-wide, parcel-specific potential capacity	

**TABLE 2.2-3. SLIDING SCALE VALUE RANKING FOR LAND OWNERSHIP AND BUILD-OUT ANALYSIS USED IN THE DEVELOPMENT VULNERABILITY MODEL**

Land Ownership	Ranking
Privately owned – not yet built out to current zoning allowance	High (18)
Other privately owned land built out to current zoning	Medium High (9)
Protected by Critical Areas Ordinance	Medium (5)
Protected Area – publicly owned open space, private reserve, or covered by a conservation easement	Low (0-1)

Once the development criteria were mapped, the elements were summed to give each area on the island a value of overall development vulnerability. To clarify the analysis, the additive values were ranked from low to high development vulnerability. Areas with overlapping development risks received a high ranking, and areas that are publicly owned or are already protected received a low ranking. A high score

indicated that a site was susceptible to development while a low score indicated it was relatively safe from further development. Draft maps were provided to the City, and based on information provided by City staff and the Stakeholder Group, some changes were made to specific areas. Figure 2.2-4 shows the development vulnerability model results.

## REVIEW OVERLAP OF ENVIRONMENTAL SENSITIVITY AND DEVELOPMENT VULNERABILITY

To establish a full picture of the landscape, the environmental sensitivity ranked map and the development vulnerability ranked map were overlain to highlight priority areas based on the combined scores (see Figure 2.2-5). This overlap gave high scores to areas with high resource values and high development vulnerability, and low scores to areas with low resource values and low development vulnerability. The information provided by each model separately, and then viewed in an overlapping model, was used to develop the first draft of the priority open space network. This draft open space map, shown in Figure 2.2-5, served as the basis for further analysis. The study boundaries for this project included all of Bainbridge Island from the ordinary high tide elevation landward. While information from the City’s Nearshore Assessment was included, open space elements associated with the nearshore environment are more appropriately treated in the context of the shoreline restoration and conservation plan required under the forthcoming Shoreline Master Program (SMP) update.

## ANALYZE HABITAT CONNECTIVITY

The open space priority network aims to connect large protected areas with viable and protected wildlife corridors. Two methods were used to assess connectivity in developing the draft open space system. The first overlaid the existing Wildlife Corridor Network developed by the City on the draft open space map to see where the maps agreed and where they did not. The Wildlife Corridor Network and the draft open space map made extensive use of riparian corridors to connect large protected areas together. The team also used the upland Wildlife Corridor Network, but modified the original alignments to ensure that the corridors follow contiguous lengths of intact habitat, as some areas have been fragmented since the original creation of the network. When considering habitat quality and the effectiveness of corridor connections this open space evaluation used the focal wildlife species identified in the City’s Wildlife Corridor Network report (City of Bainbridge Island 2000).

The second method used to evaluate connectivity was a Least Cost Path Analysis (LCPA). The LCPA is a GIS model that illustrates the “least cost,”

or least dangerous way, for wildlife to travel from one area to another through fragmented habitat. The cost surface in the analysis was based on the vegetation cover, ranked according to the environmental sensitivity analysis and the distance from roads. The GIS algorithm calculated the “easiest” way for a wildlife species to travel between protected patches, such that they stay in safe vegetation cover and avoid developed areas. The model output was compared to the draft open space map, and the wildlife connections were adjusted accordingly.

## STAKEHOLDER AND PUBLIC INPUT

The City-organized Stakeholder Group met regularly from January through July 2008. The group provided input on the study design and draft mapping results throughout the project. Two public workshops were held to invite community input and refine the study results. The Stakeholder Group recommended that one workshop specifically include island residents with a strong knowledge of the area’s natural resources. This workshop was held on April 29, 2008, at the Bainbridge Island City Hall and attracted approximately 30 citizens. The participants divided into two groups, led by a facilitator. Each group was supplied with a map of the island and asked to provide input on areas that they considered important for biodiversity values. Each participant who nominated an area filled in a data sheet that provided examples of important environmental resource values and included the reason why they nominated each area. Copies of the completed data sheets are included in Appendix A. One group expressed some misgivings regarding the categories listed on the data sheet. In response, the facilitators did their best to capture the reasons each area was nominated. These reasons were later matched up with the existing data sheet criteria.

Following the workshop, the team ecologists and planners reviewed the workshop input and either included the nominated areas or did not include them in the open space area network. The team based inclusion on: habitat condition, connectivity, biodiversity values, and professional ecologist opinion. A small number of areas were not included because of a relatively high level of development and land clearing on the area, small parcel size, or isolation. However, if both groups in the workshop had identified an area, then it was included in the priority map even if it did not meet the screening criteria. The full suite of nominated areas from this workshop are included in maps in Appendix A.

A second public workshop was held on May 15, 2008. This workshop concentrated on human-valued landscape elements such as working lands, trail connections, and historic and cultural landscape considerations. After some discussion about the process and a presentation by the Parks and Recreation District, the participants divided into four breakout groups. About 60 island residents attended the workshop and



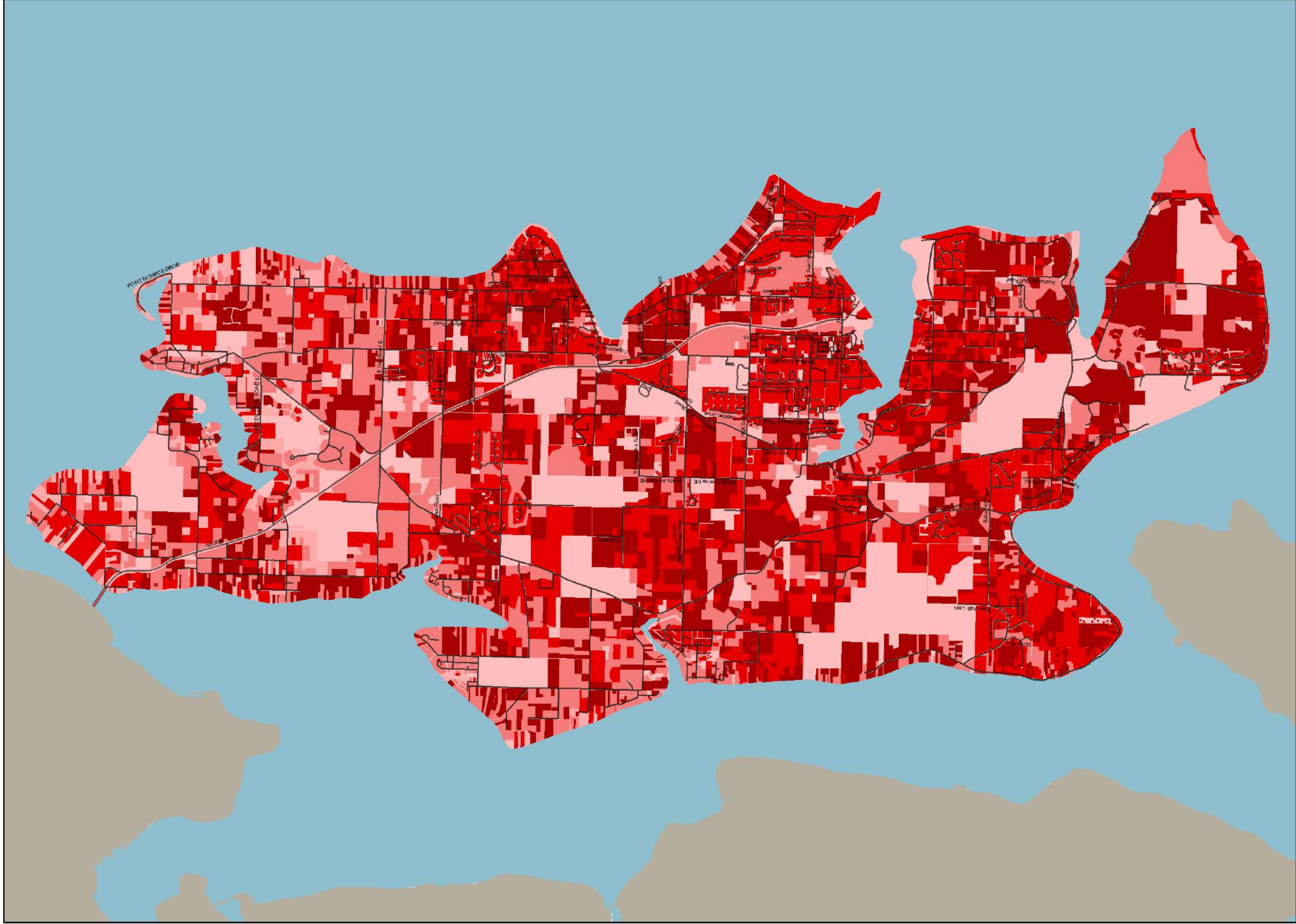


Figure 2.2-4 Development vulnerability analysis results

Bainbridge Island Open Space Study

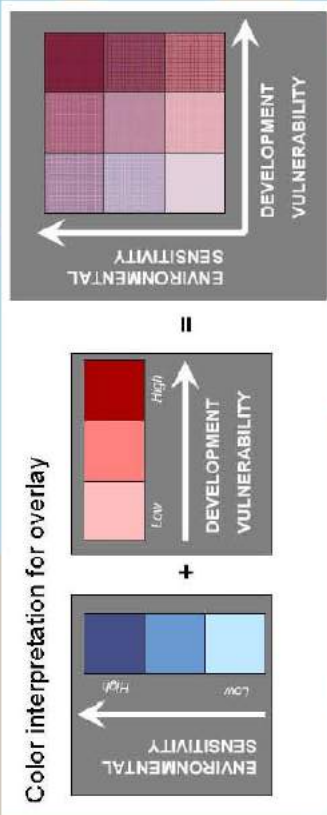
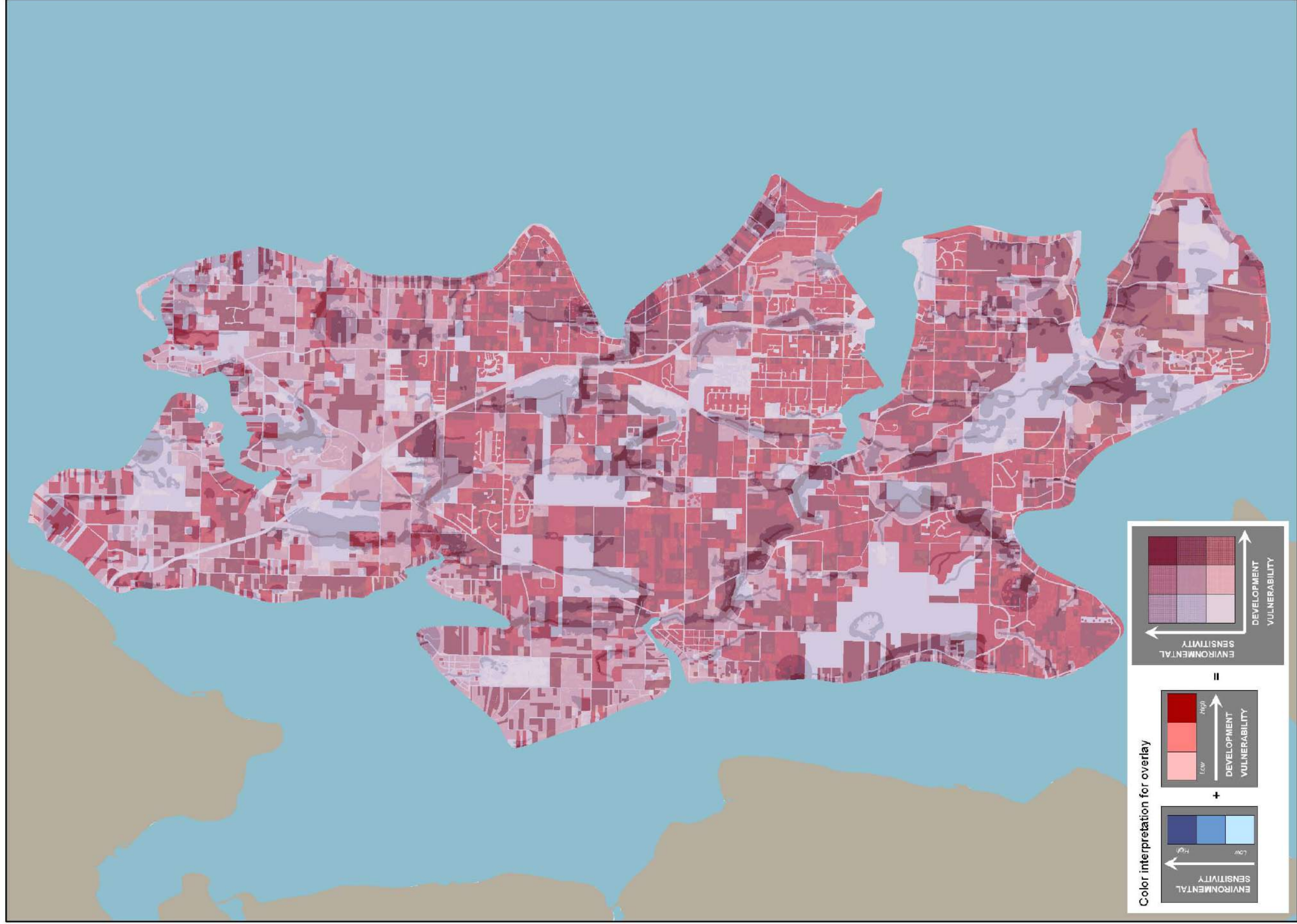


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October 2008





**Figure 2.2-5 Environmental sensitivity and development vulnerability analysis overlay**

Bainbridge Island Open Space Study

- |                                  |             |                                    |             |  |       |
|----------------------------------|-------------|------------------------------------|-------------|--|-------|
| <b>Environmental Sensitivity</b> | Medium      | <b>Development Vulnerability**</b> | Medium      |  | Roads |
| Low                              | Medium/High | Low                                | Medium/High |  |       |
| Low/Medium                       | High        | Low/Medium                         | High        |  |       |

Intensity of the purple color is dependent on the overlay of values.

\*\* Transparent overlay

0 0.5 1 2 Miles



EDAW | ACCOMI

October 2008



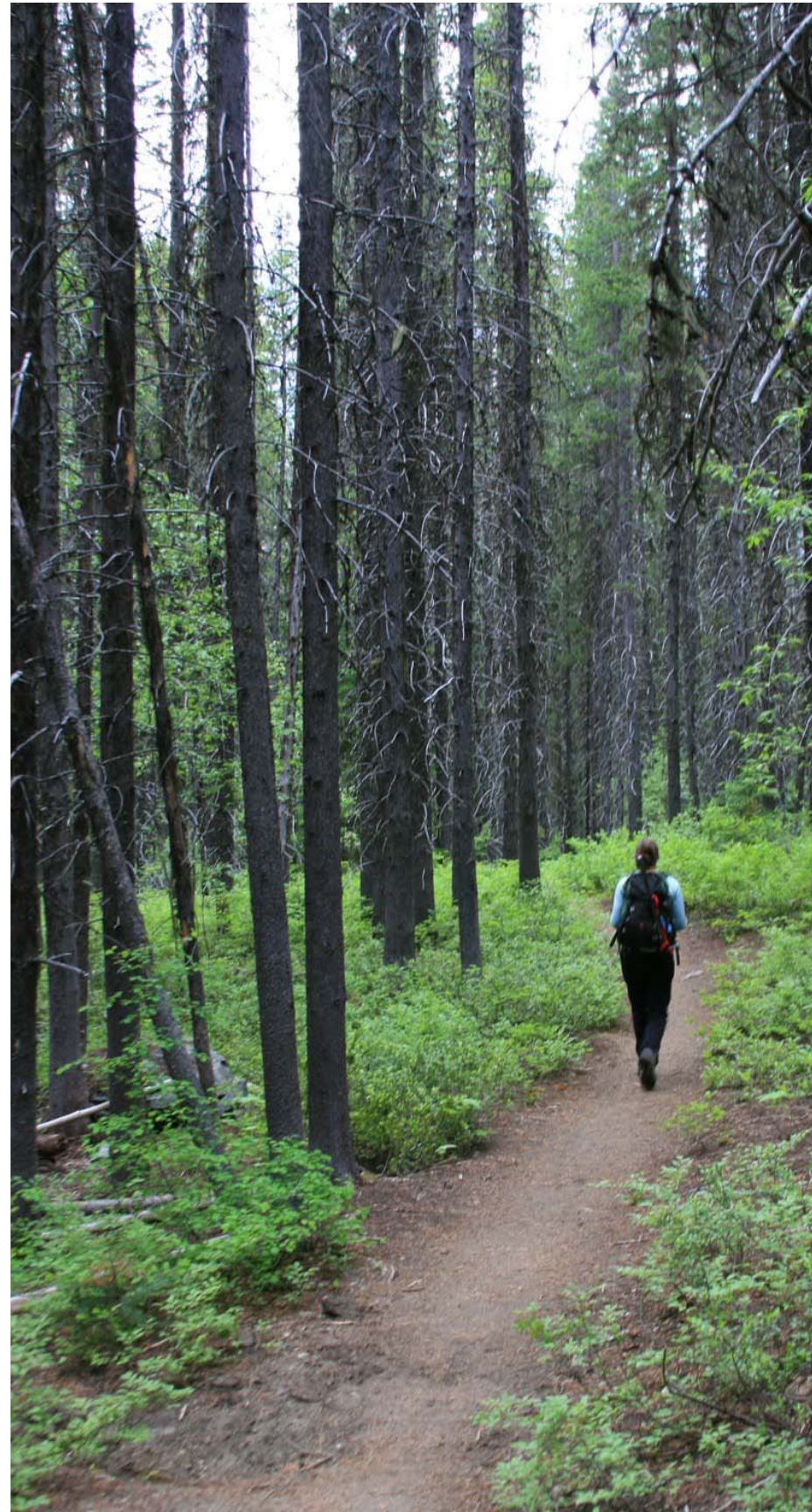
participated in the breakout session. Each group was provided with a large format GIS map of the priority open space areas (as identified in the initial analysis, first public workshop, and after being refined) overlaid on an aerial photograph of the island. The participants were asked to identify important trail connections, historic or cultural areas of importance, scenic viewsheds, or working lands they thought were important open spaces on the island. Participants who nominated lands filled out data sheets to document the reasons for including this land area (see Appendix B). The stakeholders and citizens expressed the need to use different criteria when evaluating open space planning in Winslow. Because Winslow has a different availability of open space than the rest of the island (only smaller parcels are undeveloped), and because Winslow is an urban environment, the analysis treated Winslow differently. The decisions for Winslow were based more on stakeholder and public input, rather than the GIS analysis of environmental sensitivity because of the already impacted nature of its environment. For this purpose, in the public workshop, a separate GIS map/aerial photograph displaying the Winslow Town Center on a larger scale was also provided to each group. In Winslow, small, undeveloped parcels could provide critical park space close to downtown regardless of the parcel size. These areas can provide active park use with some ecological value, or pocket parks in a dense and growing sector of the island.

Following the workshop, EDAW staff evaluated the input and included nominated areas as priority areas based on such factors as the area's connectivity to other protected open space areas, if the area has multiple resource values for human and ecology values, and professional ecologist opinion. As with the first public workshop, if more than one group nominated a land area in the breakout session, it was included as a priority area even if it did not meet the screening criteria.

Both public workshops provided a wealth of information. Particularly during the end of the second workshop, participants searched for second and third tier options for land preservation after identifying their first tier choices. A handful of land areas identified by individuals were not included as priorities because of their small size (< 5 acres) and isolation. These same size criteria were not used for the Winslow area, where different considerations regarding priorities for open space preservation and use apply.

## MAP AND RANK PRIORITY OPEN SPACE

Once the input from the workshops was incorporated into the priority open space map, two ecologists visited each nominated area to conduct a field reconnaissance, assess the resource values and connectivity, review adjacent land use, and photograph each site as access allowed. Following the field reconnaissance, each area was classified based on its biophysical



and use characteristics according to specific, comprehensive criteria. These criteria incorporate the landscape ecology principles described above, the environmental sensitivity and development vulnerability data and results from the GIS model, public input, and the human-valued landscape elements. The criteria were refined by the Stakeholder Group prior to implementation. Each area achieved a cumulative score by adding the criteria scores and categorizing them as high, medium, or low priority based on the area's total score. The criteria ranking were based on scientific data, modeling, stakeholder input, and professional ecologist opinion that were developed to identify the areas with the highest priority for the City to conserve as open space. The following criteria and ranking methods, developed by EDAW, are described below.

### Connectivity

- Low – isolated from natural habitats of significant size, not strategically situated for interconnection to existing protected areas.
- Medium – not broadly joined to large areas of natural habitat, but is close to or connected by marginal habitat.
- High – adjacent to protected areas, forms a strong corridor link, or is connected by a viable corridor.

### Habitat Quality

- Low – some minor degradation and/or low habitat diversity.
- Medium – good diversity of vegetation communities and successional stages; size and shape of undisturbed area offers moderate amount of interior habitat.
- High – high diversity of vegetation community; large area of interior habitat from this one area or combined with adjacent protected areas.

### Nature-Oriented Human Use Potential

- Low – suitable for limited passive recreation, but special management actions would be needed to avoid potential adverse effects on natural resources.
- Medium – good for several types of passive recreation, such as nature trails.
- High – outstanding site for a variety of passive recreation users. Excellent for nature trails and potential for long-term scientific studies.

### Vulnerability

- Low – majority of area is protected under the City's Critical Areas Ordinance.
- Medium – privately owned by several landowners.
- High – privately owned by one or two landowners.



### Rarity/Sensitivity/Diversity

- Low – common community types for Bainbridge Island and Puget Sound region. No known occurrences of rare species or priority habitat species and habitat types present.
- Medium – good example of a natural community. Habitat type well represented statewide but scarcer on Bainbridge Island. May have one rare species or habitat type occurrence. (This category included intact and natural wetlands.)
- High – excellent example of natural community that is relatively scarce or dwindling on Bainbridge Island. Has unique landscape or habitat elements, or rare species occurrence.

### Working Landscapes/Sustainability

- Low – relatively small farm, < 5 acres. Isolated from other open space areas. Disturbed ground cover. High-intensity horse farms.
- Medium – medium-size farm, 5 to 10 acres. Moderate connections to other open spaces. Christmas tree farms or sustainable, small-scale animal product farms.
- High – relatively large farms for Bainbridge Island, >10 acres. Row crops or working forestlands. Good connections to existing open spaces.

The criteria were developed by EDAW ecologists to prioritize areas of high habitat value, intact habitat, valuable landscapes, and important human use areas. The criteria did not include elements that were not considered in the plan, such as marine systems (see the *Introduction* section for an explanation of what is not included in the study). Once the broad categories were established, the areas were ranked on a finer scale within each category. Thus, the high, medium, and low priority open spaces were further subdivided into high, medium, and low within each overall category. This was done for two reasons. First, it provides a tiered approach that gives City planners a more detailed level of priority for the conservation of different open spaces on the Island. This detailed level of priority gives City staff, nongovernmental agencies, and citizens a fuller sense of the relative value of open spaces on the island. Second, it provides some flexibility in an open space preservation program and is more realistic, given the scale and precision of available data and the limited time and funding available for field assessments.



## 2.3 Results

### EVALUATION MODEL RESULTS

The environmental sensitivity model drew attention to areas of high environmental value, and thus areas of high habitat value (Figure 2.2-3). By identifying locally sensitive environmental areas, the model represents habitat values and helps locate areas where a variety of species and specific habitats can be preserved. In particular, the model highlighted wooded areas with wetlands and streams, as well as areas with sensitive species, natural shorelines, and wooded land cover. These areas are sensitive and represent important habitats found on the island. In addition, by capturing areas with numerous environmental resources, these areas will also capture a greater number of habitats and species. The analysis was limited by the amount and quality of data available. For example, the lack of a detailed layer of vegetation associations or vegetation characteristics (e.g., tree age class) hindered the model's ability to distinguish wildlife habitat value most accurately. However, given available data, the model did represent currently available habitat.

The development vulnerability model highlighted parcels that are in danger of development. The ownership data, as well as the potential build out of parcels given current zoning regulations, drove the results of the analysis. Privately owned parcels that can be subdivided or are vacant and without sensitive areas protected by the Critical Areas Ordinance were ranked high for development vulnerability. Parcels that are publicly owned were ranked low for development vulnerability. The results of the model indicate a heterogeneous mosaic of vulnerability across the island. Because of current protection of certain parcels, Critical Areas Ordinance restrictions as well as past development patterns, the parcels are a seemingly random assortment of development vulnerability.

The overlay of environmental sensitivity and development vulnerability yielded informative results (see Figure 2.2-5). The combined analysis emphasizes areas that the City should target for open space preservation:

- Areas with both high environmental sensitivity and high development vulnerability (dark purple areas on the map) are priorities for the City to preserve as open space. These areas require protection because they are important ecologically and are also at risk of being lost due to human development.
- Areas that ranked high in environmental sensitivity but occur in areas with a low vulnerability ranking are not a priority for the City because these areas are already protected, or may not be developed.
- Areas that ranked as low environmental sensitivity, no matter what level of development vulnerability, are not a priority for the City's Open Space Study because these areas do not contribute to the City's ecological goals for its open space program.

Thus, the overlay of environmental sensitivity and development vulnerability highlights important areas to prioritize in preserving open space. The overlay also helps verify the Wildlife Corridor Network's planned connections to link larger open spaces. Corridors that ranked high for both environmental sensitivity and development vulnerability were carried forward into the priority open space network. Overall, the overlay results provided a firm basis for the open space network. These





results were then refined with extensive public input and information regarding human-valued landscape elements.

## PUBLIC INPUT

Public input into the open space prioritization process was vital for identifying important ecological areas on the island and for brainstorming the nature-oriented human use potential of each of the areas. In the second public workshop, citizens identified viewsheds that make Bainbridge Island unique, cultural and historical icons on the island, and opportunistic nature-oriented recreation corridors. Local knowledge and on-the-ground experiences were invaluable to the process and added much, especially regarding trail connections through and between open space areas. Some ideas that surfaced in the public workshop were not nature and land oriented and therefore not relevant to the Open Space Study. These ideas were not carried forward in the selection of priority areas; however, all ideas are captured in Appendices A and B. The public input refined the GIS model results to establish a draft list of priority areas on the island.



## PRIORITY AREA MATRIX

The priority areas were ranked based on several criteria, which helped to differentiate and further clarify ranking for future planning. Table 2.3-1 shows each area's ranking on a scale of 1 to 5 for each criterion, with 5 being the highest value. Each criterion's rank was then added for an overall ranking that served as the primary decision-making factor for prioritizing the areas. The criteria ranking are based on scientific data, modeling, stakeholder input, and ecologist professional opinion, and the criteria were developed to identify the areas with the highest priority for the City to conserve as open space.

Connectivity was ranked first. As noted earlier, larger patches of intact habitat are of greater value because these patches contain more interior, valuable habitat and support greater numbers of species. Corridors

to connect intact patches must be sufficiently large to provide species transport between patches. Areas were ranked based on the quality of connectivity to the existing and new open space network. Larger corridors of intact habitat were ranked higher.

The next factor examined was habitat quality. Areas that were undisturbed and more mature ranked higher because these areas' value to species is greater. Areas with disturbed habitat, non-native habitats, or severely fragmented habitats ranked lower because they are less valuable to species.

The next criterion was nature-oriented human use potential. This criterion took into account the suggestions from the second public workshop where many trail connections and future trail ideas were proposed. Coupling human and wildlife connectivity corridors in a natural setting may make the best of all uses for open space corridors. Areas with existing trail connections or easy trail linkages were ranked high on this criterion.

Vulnerability to development was the next criterion examined and was based on the tax parcel ownership information. Areas that are currently protected under the City's Critical Areas Ordinance or Shoreline Master Program are afforded a certain amount of development protection and are therefore less vulnerable to development. On the other hand, areas owned by a single land owner have a higher chance of being sold and fully developed. Vulnerability ranking was high for areas with larger tracts owned by one or two landowners, and lower for areas already under some environmental protection regulation.

The final criterion was split into two categories, one for natural areas and one for working landscapes. The nature-oriented areas were ranked on rarity/sensitivity/diversity, which categorized each area based on the presence or absence of rare or sensitive species or environments, and whether or not it supported a high diversity of species. Areas with known occurrences of sensitive species or areas known to support a high diversity of species were ranked high in rarity/sensitivity/diversity. On the other hand, working landscapes were ranked based on working landscapes/sustainability, which measured the ecological value of the



working area. Areas with more natural environments and less ground disturbance were working landscapes with the greatest habitat value, and therefore ranked the highest in the working landscapes/sustainability criterion.

The project team ranked each area using the above criteria based on determinations regarding the habitat, ecological value, and human value of the area as detailed above. The sum of these rankings gave each area a value as a priority open space. The team based the final ranking decision for the open space areas on the criteria sum value in conjunction with information regarding the site visit information, and professional ecologist opinion.

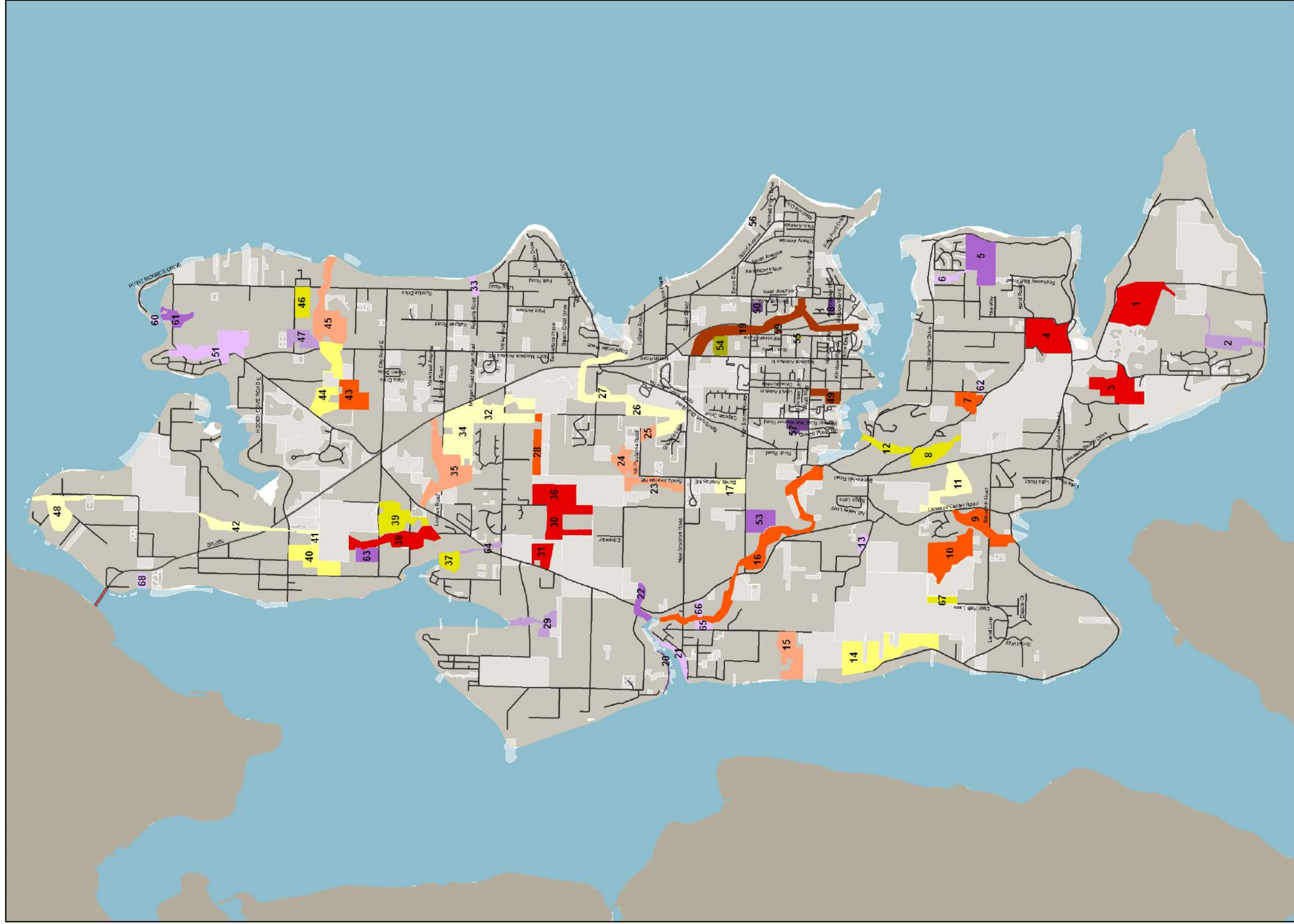
Overall, the areas fell into three priority groups for open space preservation. The ranked criteria indicate the value of each area. Areas that are high priority for open space preservation tend also to rank high for several priority ranking criteria. Areas that are lower priority for open space preservation may rank high for one or two criteria, but are ranked low for the other criteria. This final ranking provides the City with a defensible mechanism to distinguish between the open space priority areas.

## IDENTIFIED PRIORITIES

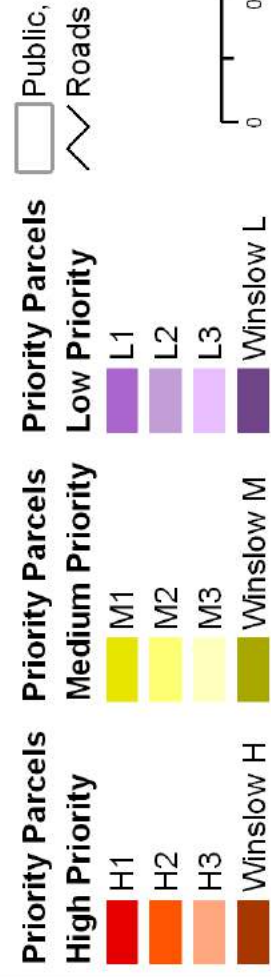
The final priority open space area list and map represent the culmination of analysis, multiple steps of refinement, and incorporation of public discussion. The prioritization ranking in Table 2.3-1 and Figure 2.3-1 is proposed as a guide to give the list of areas a relative measure of each one's importance in relation to the other areas. Because the ranking is based on rigorous analysis and thorough inspection of criteria, it is defensible. The prioritization gives the City a quick guide to identify lands that are key to preserving open space on Bainbridge Island.

The final portfolio of areas presents the City with numerous opportunities for open space preservation. Because of the current network of open space area and the remaining tracts of natural areas, the City has numerous opportunities for open space preservation on Bainbridge Island. However, the ranking of priority areas helps demonstrate that not all available areas are equal, and the City must consider the full criteria rankings for each area when deciding steps for future conservation.





**Figure 2.3-1 Priority open space areas**  
Bainbridge Island Open Space Study



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0 0.5 1 2 Miles

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TABLE 2.3-1. PRIORITY RANKING FOR OPEN SPACE AREAS ON BAINBRIDGE ISLAND

HIGH PRIORITY										
Priority I <sup>a</sup>	Priority II <sup>a</sup>	Area ID	Acres	Connectivity	Habitat Quality	Rarity/ Sensitivity/ Diversity	Nature- Oriented Human Use Potential	Vulnerability	Working Landscapes/ Sustainability	SUM
H	H1	1	78.4	5	5	1	3	3		17
H	H1	3	49.8	5	5	3	3	3		19
H	H1	4	57.7	5	5	1	3	5		19
H	H1	30	43.5	5	5	1	5	5		21
H	H1	31	19.0	5	5	1	5	5		21
H	H1	36	38.8	5	5	1	5	5		21
H	H1	38	46.7	5	3	3	3	1		15
H	H2	7	18.6	3	1		3	3	5	15
H	H2	9	39.1	1	5	5	1	1		13
H	H2	10	57.5	5	5	1	3	3		17
H	H2	16	97.6	3	5	3	3	1		15
H	H2	28	18.8	5	3	3	3	5		19
H	H2	43	32.0	1	5	3	3	3		15
H	H3	15	39.5	5	1	5	1	3		15
H	H3	23	20.4	5	3	3	1	1		13
H	H3	24	21.9	5	3	3	1	1		13
H	H3	25	7.6	5	3	3	1	1		13
H	H3	35	67.1	3	5	3	1	1		13
H	H3	45	61.9	1	3	5	1	1		11
H	Winslow H	19	76.0	5	5	3	1	1		15
H	Winslow H	49	13.2	1	3	1	5	5		15
H	Winslow H	59	1.2	1	3	1	5	5		15

a Priority I and Priority II ranking for each candidate open space area was based on the sum of the criteria ranking and value of the area in the suite of open space areas on Bainbridge Island. The Priority II ranking was conducted specifically to provide more distinction on the relative value of the open space areas.



TABLE 2.3-1. PRIORITY RANKING FOR OPEN SPACE AREAS ON BAINBRIDGE ISLAND (CONTINUED)

MEDIUM PRIORITY										
Priority I <sup>a</sup>	Priority II <sup>a</sup>	Area ID	Acres	Connectivity	Habitat Quality	Rarity/ Sensitivity/ Diversity	Nature- Oriented Human Use Potential	Vulnerability	Working Landscapes/ Sustainability	SUM
M	M1	8	29.9	3	3	1	5	1		13
M	M1	12	15.8	1	3	1	5	1		11
M	M1	37	15.5	1	3	3	1	1		9
M	M1	39	40.1	3	5	1	3	3		15
M	M1	46	20.3	1	1		1	5	5	13
M	M1	67	9.2	5	5	1	1	5		17
M	M2	14	83.5	5	3	1	3	3		15
M	M2	40	38.7	5	1		1	3	3	13
M	M2	44	49.7	3	5	1	3	3		15
M	M3	11	42.8	3	3	1	5	3		15
M	M3	17	17.8	3	1	1	3	5		13
M	M3	26	42.4	3	5	3	3	1		15
M	M3	27	41.2	3	5	3	1	1		13
M	M3	32	52.3	3	3	1	5	3		15
M	M3	34	62.7	3	3	1	5	3		15
M	M3	41	8.1	3	3	1	3	1		11
M	M3	42	25.6	3	3	1	5	3		15
M	M3	48	41.7	3	1	5	1	3		13
M	Winslow B	54	11.9	3	3	1	5	5		17
M	Winslow B	55	0.6	1	1	1	5	5		13

a Priority I and Priority II ranking for each candidate open space area was based on the sum of the criteria ranking and value of the area in the suite of open space areas on Bainbridge Island. The Priority II ranking was conducted specifically to provide more distinction on the relative value of the open space areas.



TABLE 2.3-1. PRIORITY RANKING FOR OPEN SPACE AREAS ON BAINBRIDGE ISLAND (CONTINUED)

LOW PRIORITY										
Priority I <sup>a</sup>	Priority II <sup>a</sup>	Area ID	Acres	Connectivity	Habitat Quality	Rarity/ Sensitivity/ Diversity	Nature- Oriented Human Use Potential	Vulnerability	Working Landscapes/ Sustainability	SUM
L	L1	5	54.3	1	3	1	3	5		13
L	L1	22	12.4	3	3	1	3	1		11
L	L1	53	26.3	1	3	1	3	5		13
L	L1	61	15.3	1	3	5	1	1		11
L	L1	63	13.1	1	1		1	3	3	9
L	L2	2	30.1	1	3	1	3	1		9
L	L2	29	21.6	3	1	1	3	3		11
L	L2	47	21.3	1	3	1	3	3		11
L	L2	64	6.2	3	1	1	1	3		9
L	L3	6	8.1	3	1	1	3	3		11
L	L3	13	5.8	1	3	1	1	3		9
L	L3	21	11.2	1	1	3	1	1		7
L	L3	33	6.2	1	3	1	1	1		7
L	L3	51	58.5	1	5	1	3	1		11
L	L3	60	3.0	1	1	3	1	1		7
L	L3	62	2.4	1	1	1	3	3		9
L	L3	65	6.6	1	1		1	5	1	9
L	L3	66	5.1	1	1		1	5	1	9
L	L3	68	6.2	1	1	3	3	1		9
L	Winslow L	18	4.7	1	1	1	3	5		11
L	Winslow L	50	4.4	1	3	1	3	5		13
L	Winslow L	56	0.5	1	1	1	3	5		11
L	Winslow L	57	11.7	1	1	1	5	5		13
<p><sup>a</sup> Priority I and Priority II ranking for each candidate open space area was based on the sum of the criteria ranking and value of the area in the suite of open space areas on Bainbridge Island. The Priority II ranking was conducted specifically to provide more distinction on the relative value of the open space areas.</p>										



Successful open space protection programs have a diverse mix of approaches to protecting open land resources that are important to the community. Instead of relying on any one approach, they offer landowners options that can be tailored to a variety of situations. Approaches to open space preservation can be placed in two broad categories: regulatory strategies and incentive-based strategies. The following narrative describes regulatory and incentive-based strategies in general terms and identifies examples implemented in Washington State and elsewhere in the country. It also describes strategies currently being employed within the City of Bainbridge Island and presents some general recommendations. This section concludes with recommendations about the application of these methods on Bainbridge Island, and specific next steps for the City to take to be successful in protecting its open space resources. The goal is to enhance the City's open space conservation strategies such that the City has a suite of methods to use to conserve the priority open space areas identified in Chapter 2.

Bainbridge Island is in a unique position because the Parks and Recreation District is a separate government entity from the City, while in many cities the parks department handles open space preservation. The City and Parks and Recreation District have historically collaborated on many projects including partnership on the Open Space Commission and the open space bond. The regulatory relationship between the Parks and Recreation District and the City is that the Parks and Recreation District prepares a park plan that is adopted in the City's Comprehensive Plan.

## 3.1 Regulatory Strategies

Regulatory strategies consist of limitations or prohibitions on activities that could adversely affect natural resources or open space values. Federal, state, and local ordinances are the most common examples of these mechanisms. A regulatory approach is generally preferred where widespread development trends pose a threat to significant resources and there is a popular consensus for such approaches.

One benefit that regulations provide is that they can reduce uncertainty regarding outcomes, as long as the regulations are well written, properly implemented, and enforced. Because compliance with regulations is mandatory, the primary associated expense is for program oversight. This mandatory nature also means that regulations are generally applied to reduce harm, not to confer benefits. Caution is required so as to not regulate beyond what is necessary to reduce the adverse effects of development on natural resources and protected open space. Where ordinances are felt to be overreaching, legal challenges may occur.

Although regulations generally have long life spans, they are always subject to modification. It is possible that amendments to, or repeal of, regulations could have widespread effects on associated open space resources.

### ZONING

In its most basic form, zoning presents an easily understood method for controlling development by identifying zones and describing the types and intensities of activities that may take place within these areas. However, because zoning was initially devised to regulate development, special efforts must be made to address open space protection in traditional zoning ordinances (Arendt 1992). Typically, this has been handled using two approaches:

1. Through the creation of independent open space zones to protect open space and sensitive areas by allowing limited development; and
2. Through the incorporation of open space protections into other zoning district regulations.

The first of these approaches is the most efficient, because it conforms to the traditional zoning concept of segregated land uses, but it is not easy to implement. The second approach is more difficult because it requires that benefits provided by open space protection be balanced against the

negative impacts, such as limitations on property use. Because some areas on Bainbridge Island were developed previously and at a higher density than is reflected by the current zoning or as designated in the Comprehensive Plan, the City should conduct a detailed analysis of current zoning to ensure it is meeting the Comprehensive Plan goals.

A weakness of traditional zoning is that it performs best when it addresses a limited range of land uses and becomes inefficient as the number of zoning classifications increases. Because open spaces are generally defined by complex and site-specific natural systems, traditional zoning may not be the best management tool. For example, mandatory open space set-asides, which mandate that a set percentage of each parcel remain as open space, are equitable and can protect large quantities of open space. However, set asides are not particularly efficient and will not necessarily protect the most important open spaces. The City does use Open Space Residential zoning in the Comprehensive Plan (R-0.4, R-1, and R-2), which is intended to allow for low density development and to retain natural systems. Many subdivisions also require open space to be set aside for protection.

In cases where particular types of open space predominate, a traditional approach may be suitable. To address more complicated situations, a number of variations on traditional zoning regulations (described below) have been developed.





## OVERLAY ZONING

Overlay zones are assigned to specific areas and apply supplemental regulations to the underlying zone to address site-specific characteristics or special goals. Regulations imposed through an overlay zone are additive, in that the regulations pertaining to the original, underlying zoning also apply within the overlay zone. One weakness of overlay zoning is that the overlay regulations must be coordinated with the regulations of any zone on which the overlay may be placed and with any other overlay zones with which it may coincide.

### Example Programs

#### *Port Angeles - Planned Low Impact Development Overlay Zone*

The City of Port Angeles has approved a Planned Low Impact Development (PLID) Overlay Zone (Chapter 17.40 Port Angeles Municipal Code), within which natural stormwater management is emphasized. Among its requirements, the PLID restricts impervious surface and requires planting and maintenance of trees in Protected Native Growth Areas. (The PLID zone integrates a number of other strategies identified in this document including cluster zoning, incentive zoning, and performance zoning.)

#### *Renton - Urban Separator Overlay*

The City of Renton has approved an Urban Separator Overlay (Section 4-3-110 Renton Municipal Code) in which cluster development, high levels of open space retention, and public access to open space are required. Among the intentions of this overlay are recreational, environmental, and wildlife benefits.

#### *Bellevue - Critical Areas Overlay District*

The City of Bellevue has a Critical Areas Overlay District (Part 20.25H Bellevue Land Use Code) that applies to parcels that include designated critical areas or critical areas buffers. It integrates pertinent Critical Areas Ordinance protections.

### Bainbridge Island

The City currently defines a Critical Areas Overlay District; land within this district is eligible to serve as a sending area for the City's Transfer of Development Rights (TDR) program.

### Recommendations

Overlay districts can be a useful tool to increase density in more urban zones, such as Winslow, and help prevent development sprawl in the less developed areas of the island. Overlay districts can also be used to encourage more environmentally friendly practices, which will help to maintain and enhance habitat. For instance, an overlay district for stormwater could promote low-impact development techniques. And overlay zones could also be used to protect the aquifer recharge areas. Use of an overlay zone could be a tool in encouraging cluster development and a more effective use of TDRs. These elements are discussed in more detail under the *Transfer of Development Rights* section, below. The Critical Areas Overlay District could be a sending zone for TDR (as described later in this report) but can also have performance criteria if development is pursued in the zone. Presumably, the resources in the critical areas need to be protected by either conditioning development so that it is compatible or sending it somewhere where it will be.

## CLUSTER ZONING

Cluster zoning (also known as open space zoning) is a type of subdivision regulation used to maintain the development rights of a particular parcel while protecting open space areas. On parcels designated for cluster zoning, the same number of units would be allowed as under regular zoning. However, development would be limited to a portion of the parcel, with the remainder maintained as open space, concentrating the density of development on a portion of the property. To facilitate this concentrated development, the cluster zoning ordinance may also provide exceptions to other land use regulations, such as setback and maximum building height regulations.

### Example Programs

#### *Olympia - Mandatory Clustering*

The City of Olympia permits mandatory clustering, whereby the Planning Director or Hearing Examiner may require clustering to protect groundwater, trees, scenic vistas, or trails, or to buffer incompatible uses (Section 18.04.080(F)(1) Olympia Municipal Code). To accomplish this, a reduction of lot dimensions, sizes, or setback requirements of up to 20 percent may be allowed. Voluntary cluster zoning, with the same 20 percent reduction, is also possible.

#### *Clallam County - Rural Character Conservation 3 Zone (RCC3)*

Clallam County sets the maximum residential density within its RCC3 zone at one dwelling per 10 acres, unless the cluster development option



is exercised (Section 33.10.060(9) Clallam County Code). Under the cluster development option, the maximum density is one dwelling per 2.4 acres, but 55 to 60 percent of the parcel must be included in remainder lots, which the land divider may identify as common open space.

### Bainbridge Island

#### *Flexible Lot Design / Cluster Zoning*

The City currently has a cluster subdivision ordinance, entitled Flexible Lot Design. All residential subdivisions are required to adhere to the City's flexible lot design process and standards (Sections 17.04.080 and 17.12.090 of the Bainbridge Island Municipal Code [BIMC]). These standards are intended to promote "the preservation of open space, consolidation of open space, and clustering of development within residential subdivisions" (Section 17.04.020 BIMC). The Flexible Lot Subdivision process provides two alternative subdivision methods, open space or clustering. Under the open space subdivision option, open space features to be protected are, in order of desirability: critical areas and areas contiguous with critical areas and their buffers; native forests; mature vegetation on ridgelines; pastures and farmland; and trails and greenways. The list of open space priority features to be protected when creating short subdivisions (those with four or fewer lots) includes a number of additional features: wildlife corridors, significant trees, and shoreline view areas, in addition to other prioritized features.

The second Flexible Lot residential subdivision method is through a clustered subdivision option. Using this approach, a portion of each lot is designated as a developable home site, within which dwellings and





other structures must be located. These home sites are then located in proximity to one another, in clusters of four or more home sites.

Within single-family residential zones, these subdivision standards require either a minimum level of open space protection or implementation of cluster development. For subdivisions of more than four lots, at least 25 percent of the total subdivision area must be protected as open space, and an incentive (decreased minimum lot size) is available for protecting an additional 15 percent of the subdivision

(Section 17.04.082D(3) BIMC). For subdivisions of four or fewer lots, open space can make up to 25 percent of the subdivision area, based on how much of the site consists of priority open space features. As an incentive to protect open space, if at least 40 percent of the subdivision is permanently protected as open space, up to nine lots may be created under the short plat process. If required open space cannot be provided within a subdivision (that is, if it burdens development of the property excessively), it is possible for a fee to be paid in lieu of providing open space.

As discussed by City planners in a meeting on June 4, 2008, the clustering option is currently not common, in part due to regulations such as the 10,000 square foot limit on home-site areas and the requirement that home sites be located within 25 feet of one another. The number of residences possible in a cluster is also limited due to septic system requirements; the City should explore the potential for using creative solutions for cluster housing management. Kitsap County indicates that it is possible to use smaller wastewater treatment package plants to accommodate cluster development, but some criteria must be met to provide space for alternative drainfields as an emergency option.

According to the Bainbridge Island Community Forest Management Plan, flexible lot design has been effective in maintaining canopy cover in residential areas (City of Bainbridge Island 2006). However, the BIMC does not currently require that new open space be contiguous with open space on adjacent lands, except for the open space subdivision option.

#### *Planned Unit Developments*

The City's subdivision ordinance also permits creation of Planned Unit Developments (PUDs) (Chapter 18.120 BIMC). These PUDs provide developers with greater flexibility in terms of site planning and zoning. The design of a residential PUD must be consistent with the City's flexible lot design standards and process. However, since the City adopted Flexible Lot Subdivision Design, the PUD process has not been utilized.

#### **Recommendations**

Previously, the City had required larger open space preservation areas for cluster developments, but these regulations were determined not to be justified based on a Washington State Supreme Court Case (*Isla Verde International Holdings v. City of Camas*, further discussed in the Fee-based Programs section of this chapter). As a result of the court ruling, the City conducted a study in setting the percentage of open space area required to be preserved in the open space subdivision option. However, the City should investigate other alternative cluster development regulations in the Puget Sound region to determine if these meet the state law and may be applicable to the island. The goal would be to increase the amount of open space required for cluster development. Clustering is discussed

further in this document under the *Transfer of Development Rights* section. Most cluster ordinances are options to underlying zoning and are much more rigorous than the City's ordinance. Most start with at least 50 percent of site being in open space; some have a sliding scale going up to 80 or 90 percent open space and provide modest density bonuses as inducements to landowners. Also, the community's mapping of open space and natural resources should guide where open space is located and encourage connections between these areas or the open lands will become simply unconnected fragments. The City could consider several other cluster categories to encourage greater open space and provide inducements to landowners to donate conservation easements. These new options would be aimed at changing development patterns to retain natural character and agricultural activity. For example, a provision could be created that encourages conservation easements and gives donors of easements expedited permit approval for any reserved rights in the easement. The idea is to create subdivision options that create the kind of mix of natural and developed areas described in the City's Comprehensive Plan as the goal for the island. Unfortunately, the existing subdivision and zoning codes are a recipe for splitting the undeveloped areas into fragments with little connected open space.







## LARGE LOT ZONING

Large lot zoning (> 5 acres for each dwelling unit) is an easily applied approach that has been popular in rural areas. However, it has generally been unsuccessful in limiting sprawl and its associated impacts such as increased infrastructure and street maintenance costs. In many cases, large lot zoning ordinances have mandated minimum lot areas that are too large to maintain as typical residential yards (leading to the spread of invasive species) and too small to use for traditional rural activities such as agriculture (Arendt et al. 1994). Large lots also have other negative impacts, including decreased visual quality due to widely distributed residential development.

It is possible for large lot zoning to protect open space in some instances, such as where the majority of the parcel would be subject to Critical Areas Ordinances, mandatory clustering requirements, or other limits on development, and where suitable maintenance can be provided. In such cases, the amount of land zoned for large lot development should be limited to what is necessary to protect the identified resource. However, because of inherent difficulties associated with this type of zoning, its use

should be considered carefully prior to implementation. No new large lot zoning areas should be contemplated because it contributes to sprawl. Where large lot zones already exist, cluster options should be provided that are attractive to landowners and that will change development patterns. Open space areas that are created should be connected and relate to mapped information on natural resources. This will allow for open space preservation and corridor enhancement given these types of residential zoning designations.

### Example Programs

#### *Edmonds - Large Lot Zoning*

During the City of Edmonds' 2004 Comprehensive Plan update process, the City evaluated the need for and effect of large lot zoning. The city determined that such lots are beneficial in that they protect adjacent critical areas by limiting disturbance (City of Edmonds 2005). Large lots not able to be justified by the presence of critical areas were rezoned to meet higher residential density requirements.

## Bainbridge Island

### *Large Lot Zoning*

Bainbridge Island currently permits large lot subdivisions, in which lots must be 5 acres or larger in area (Chapter 17.16 BIMC). However, with the exception of one 13-lot subdivision near Port Blakeley, this option has not been employed.

### Recommendations

The creation of large lot subdivisions is known to lead to rapid conversion of undeveloped or under-developed properties, resulting in low-density sprawl and loss of existing open space. Although large lot development within the City is currently very limited, it is recommended that large lot subdivisions not be permitted, or only permitted in limited portions of the City designated to remain as low-density residential development. If large lot subdivisions are retained, tree retention and open space maintenance requirements should be strictly enforced, as yard maintenance and upkeep issues associated with large lot developments are well documented. These recommendations will help preserve or enhance open space in the face of potential low-density development sprawl. In addition, other land conservation methods (e.g., conservation easements) can be used when the development is planned to prioritize open space preservation.

## TREE CONSERVATION ORDINANCES

A variety of tree protection ordinances exist. Among other factors, these ordinances vary in terms of their priorities (such as protection of visual quality, water quality/erosion control, and protection of heritage trees), the activities that they regulate (clearing during development, planting after development, tree maintenance and replacement), and the areas in which regulations are enforced (street rights-of-way, public properties, or private properties). Tree conservation ordinances do not directly protect open space but, through restrictions on activities such as tree clearing, can maintain and improve habitat conditions by limiting vegetation removal. Conservation of trees, even when not located within dedicated open space areas, fulfills a range of desirable and necessary functions.

A common method for regulating tree conservation is to require that a set percentage of tree cover be maintained on a property. A simple percentage-based approach, however, is generally not sufficient to ensure that the tree cover retained will serve its intended purpose. It is preferable that regulations be written to specify the configurations and types of trees necessary to meet the conservation goals. For example, fragmentation of tree cover is likely to occur unless it is specified that



tree cover be contiguous within a parcel and contiguous with tree cover on adjacent parcels, particularly open space parcels. As with other regulations, monitoring and enforcement are critical.

Where tree conservation regulations are strong, Duerksen and Richman (1993) suggests that compensation mechanisms, such as the ability to transfer development rights or preferential tax assessments, may be warranted to reduce the economic impacts of the regulation.

### Example Programs

#### *Redmond - Tree Protection Ordinance*

Redmond's tree protection ordinance (Redmond Community Development Guidelines 20D.80.20) specifies minimum retention requirements of 35 percent of the trees on a parcel. It also notes that incentives are available for higher levels of tree protection, although it does not identify specific incentives. Trees within Native Growth Protection Areas (critical areas) are not allowed to be removed except under special circumstances.

#### **Bainbridge Island**

Tree conservation is primarily regulated by two portions of the BIMC: Chapter 18.85 (Landscape Requirements), Chapter 15.18 (Land Clearing), and Chapter 16.22 (Vegetation Management).

Per Section 18.85.060 of the BIMC, significant trees (12-inch diameter breast height) and tree stands are required to be preserved, except within the Central Core and Ferry Terminal Overlay Districts, to protect the forested character of Bainbridge Island. Thirty percent of the tree canopy on a site is to be retained, or 15 percent of significant trees. (Canopy retention is not the optimal method of measurement, as it ignores other factors such as the tree's size and age.)

The land clearing ordinance (15.18.40 BIMC) allows clearing of up to six significant trees or 2,500 square feet (ft<sup>2</sup>) of land in a 12-month period and requires a land clearing permit for any greater clearing activity. This ordinance applies to all properties, but there are no limits on clearing for developed lots. As remedies for unauthorized removal, the City requires replacement of significant trees and tree stands (along with native shrubs and ground cover) or levies a fine. Because some clearing without a permit is possible every 12 months, the rule provides limited long-term habitat protection.

Clearing activity that involves cutting and/or removal of 5,000 or more board feet of timber requires a vegetation management permit from the City and a Forest Practices Permit from the Washington State Department of Natural Resources (DNR) (Chapter 16.22 BIMC).

The Community Forestry Commission is working with staff and consultants to consolidate applicable regulations, including the City's clearing ordinance and tree retention ordinance. This amendment will also address best management practices for tree protection.

### Recommendations

Tree protection ordinances, particularly in more urban zones, can ensure that developed areas retain tree canopy. This is a mechanism for protection or maintenance of trees that add value to open space and habitat. The current land clearing ordinance does not protect open space because it constrains clearing to 2,500 ft<sup>2</sup> for each calendar year. Thus, a land owner could continue to clear 2,500 ft<sup>2</sup> annually without obtaining a permit, and through the permitting process could clear up to 5,000 board feet per year. The City should evaluate eliminating the annual allowance and changing applicability of the clearing limit to a single event for residential lots, but allow flexibility for sustainable forest management. In addition, the City should evaluate the Community Forestry Commission's recommendations regarding the consolidation of vegetation management issues within the existing regulatory structure, including how those recommendations could be used to implement the recommendations of this Open Space Study. Finally, to make the tree ordinance as effective as possible, the City must strengthen enforcement and fines for violation of tree protection regulations. Currently, the City has the opportunity to improve this tool and should strengthen the tree protection ordinance.

## STATE ENVIRONMENTAL REGULATIONS

### State Environmental Policy Act (SEPA)

The SEPA review process provides a structured method for identifying possible adverse effects of specific development projects or governmental policies and for describing how such effects would be mitigated. Mitigation is then carried out using other existing regulatory tools, such as land use or building permits.

SEPA regulations do include some restrictions that may limit its usefulness for open space protection. First, SEPA mitigation activities must be tied to the particular development or site being reviewed. This would mean, for example, that open space near a project would be protected, regardless of its strategic value. Also, some small-scale proposals are exempt from SEPA review. Because SEPA review is conducted on a project-by-project basis, it does not facilitate a comprehensive open space preservation strategy. However, it may serve as a review tool to ensure adherence to existing, overlapping regulations.

### Critical Areas Ordinance

The Washington State GMA (Chapter 36.70A Revised Code of Washington [RCW]) requires protection of five classes of land. Two of these classes (Wetlands, Fish and Wildlife Habitat Conservation Areas) provide public benefits and can be adversely affected by development. The other three classes are lands where development could threaten human safety or lead to potential property damage (Geologically Hazardous Areas, Frequently





Flooded Areas, and Aquifer Recharge Areas). Cities and counties are required to classify, designate, and limit effects on critical areas within their jurisdictions and to codify associated regulations in a set of Critical Areas Ordinances. However, each jurisdiction has a good deal of latitude regarding how the effects are specifically regulated.

Critical Areas Ordinances often protect vital natural systems that contribute to the open space system of a municipality. Riparian corridors, linkages of streams and wetlands, form connected natural corridors. These corridors, offered some protection by the Critical Areas Ordinance, can connect open spaces across a landscape.

Critical Areas Ordinances provide a degree of basic protection for some critical open space areas, but protections have definite limits based on what is necessary to safeguard natural functions and the public safety. For example, it is occasionally permitted to build in a floodplain, if certain engineering standards are met and if there is no impact on flood waters. Also, because areas protected by Critical Areas Ordinances are strictly defined, protected critical areas may not be able to meet other open space goals, such as maintaining natural character or protecting views, due to their size and configuration. For this reason, it may be useful to create additional mechanisms to supplement protections provided by Critical Areas Ordinances.

On-site mitigation of adverse effects on natural systems does not generally achieve the stated goal of retaining stream or wetland functions. The Washington State Department of Ecology (2006) noted that "...the success of concurrent mitigation is variable and a significant percentage of concurrent mitigation projects are not successfully replacing wetland functions." Thus, mechanisms to avoid adverse effects are more effective than mitigation through replacement.

### Example Programs

#### Washington State Mitigation Banks

Mitigation banking provides a way to address unavoidable impacts on wetlands by facilitating the creation or restoration of wetlands at another location. This is an open space tool because there is an opportunity for the City to develop a larger wetland habitat through mitigation banking, rather than just mitigating impacts on an isolated site-by-site basis. Rather than allowing a large number of small replacement wetlands to be created, the banking program coordinates the creation of one or more large wetlands. This helps to ensure that the wetland will be fully functional and is more efficient than maintaining a number of smaller wetlands (Ecology 2008). Other benefits are that mitigation activity is not handled by the developers, reducing their level of risk and that, because the replacement wetland must be in place prior to activity taking place

in the affected wetland, temporary loss of wetland habitat does not occur (CTED 2003).

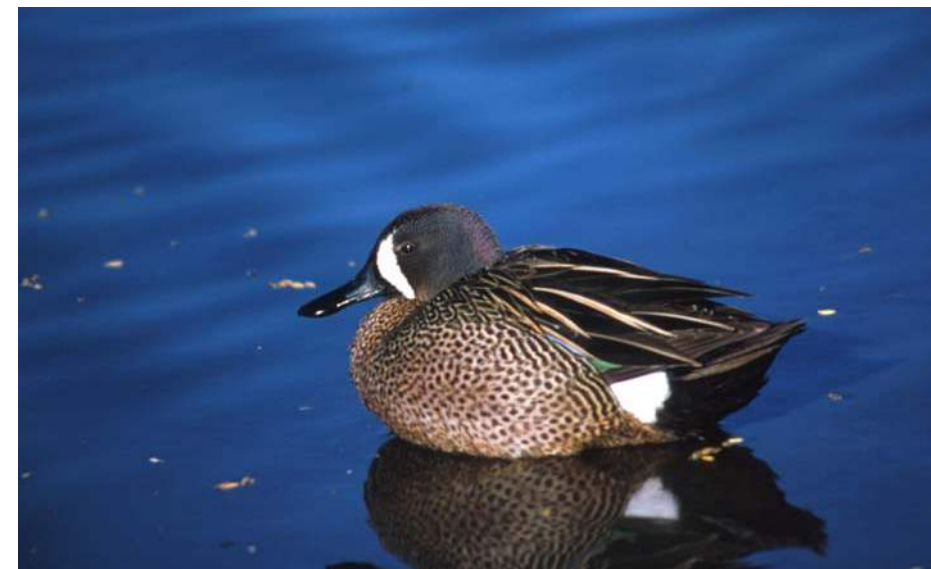
The concept of mitigation banking can be applied to a variety of resources; while only being used for wetlands in Washington State, the Puget Sound Shared Strategy has considered its use for salmon recovery (Washington Biodiversity Council n.d.).

One of the more successful mitigation banking programs in the Pacific Northwest is being implemented in the City of Eugene, Oregon. This program allows filling of low-value, degraded wetlands within the city's growth area if developers purchase credits from a city-owned and operated restoration bank (City of Eugene and Lane County 2004). The bank then undertakes mitigation by removing dikes along creeks, restoring wetlands, and implementing the West Eugene Wetlands Plan. This is not a GMA-related project.

### Bainbridge Island

The City of Bainbridge Island has developed its Critical Areas Ordinance according to Best Available Science guidelines and GMA regulations. Chapter 16.20 BIMC regulates the following critical areas:

1. Geologically hazardous areas, including erosion hazard areas, landslide hazard areas, and seismic hazard areas. Development is restricted (prohibited on slopes of 40 percent or greater) but permitted with a Reasonable Use Exception (RUE) (see below).
2. Wetlands, with some wetlands (4,000 ft<sup>2</sup> or less in area) able to be developed if proper mitigation is provided.
3. Frequently flooded areas, with development permitted if base flood storage volume is not impacted.



4. Fish and wildlife habitat conservation areas. Certain areas are included by default, and certain areas are included if nominated and subsequently designated. Performance standards are defined for various uses in Habitat Conservation Areas (HCAs) and HCA buffers.
5. Aquifer recharge areas. Only certain activities are required to undergo evaluation as to their suitability within aquifer recharge areas, and the ordinance does not protect these areas as open spaces.

Development within wetlands is currently rare but could increase as the supply of easily developable lots decreases (Stephen Morse, Record of Communication [ROC], 2008). To some degree, the potential for development of wetlands is facilitated by the availability of undeveloped legacy lots, created prior to the current environmental regulations. In cases where development has been permitted to affect wetlands, mitigation has generally been handled on site.

Mitigation banking, which would facilitate off-site mitigation, is permitted, but the City does not currently operate a mitigation bank. Conservation easements may also be considered as an appropriate mitigation for impacts on wetlands or stream or their buffers.

To prevent critical areas regulations (or similar restrictions) from eliminating all reasonable use of a property, a property owner can request a Reasonable Use Exception (RUE) from restricting regulations (Section 16.20.080 BIMC). However, properties eligible for inclusion in the TDR program, open space acquisition program, or other similar programs are generally not eligible for a RUE. The RUE is a voluntary permit program, and it is up to the landowner to participate. The City also has the option to purchase development rights rather than issue a RUE.

The City allows project proponents to develop and implement a habitat management plan if it can be shown that such a plan will provide more protection than the standard buffer criteria in the Critical Areas Ordinance.

### Recommendations

The City has identified potential wildlife corridors throughout the island, many of which follow riparian corridors protected by the Critical Areas Ordinance. However, these riparian corridor elements are not included as fish and wildlife conservation areas in the Critical Areas Ordinance and are afforded protection only when these corridors overlap with other critical areas features such as streams and wetlands. The upland portions of the corridor are intended to connect existing protected lands and riparian areas, and these corridors take a serpentine course through green remnants of developed areas. Thus, it would not be advisable to include the upland corridor areas in the Critical Areas Ordinance since the corridors are not based on habitat functions, but rather connections



to habitat areas. In addition, the previously completed Wildlife Corridor Network study utilized aerial photographs, land use analysis, and limited field investigation and was not a rigorous scientific analysis. The designated upland corridors were not meant to serve a regulatory function, but to provide City planners with additional conservation information. Thus, adding upland portions of these corridors to the Critical Areas Ordinance is not recommended without further scientific study and determination of the habitat function and delineation of the most appropriate upland corridor connection.

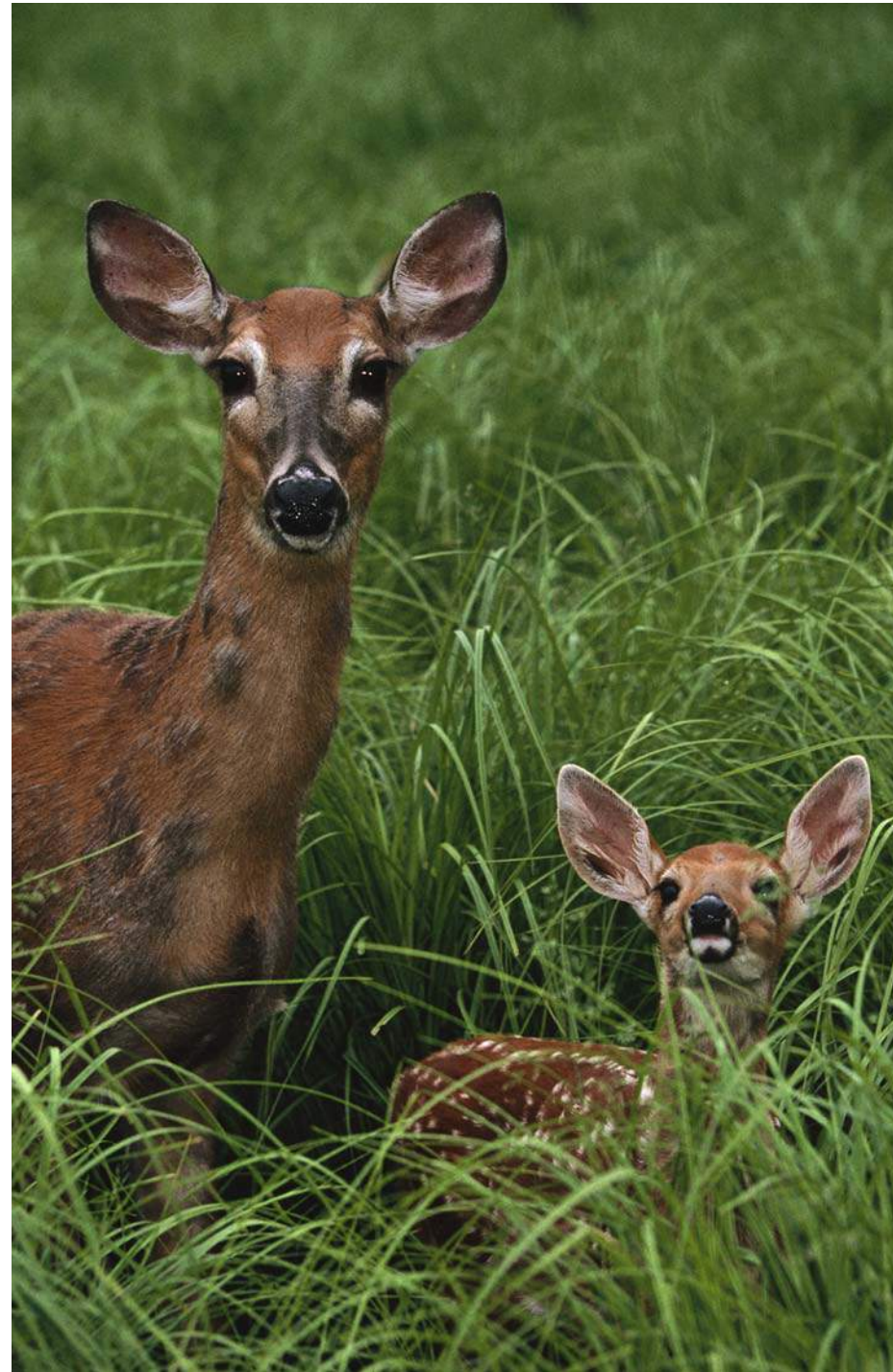
One area for improving implementation of the Critical Areas Ordinance and its influence on open space conservation is to coordinate wildlife management plans and wetland and stream mitigation with the priority habitat map developed under this process. When an applicant submits a habitat management plan or a proposed wetland/stream mitigation plan, these elements are handled on a case-by-case basis. A more comprehensive approach would be to develop a strategy for each of the island's watersheds. The strategies would identify how potential mitigation areas relate to high-value open space areas so that mitigation or habitat management plans can improve adjoining parcel habitat values, connectivity, and ecological resource functions.

## FEE-BASED PROGRAMS

Fee-based programs require that a developer provide land, infrastructure, financial compensation, or some other payment to a municipality to offset adverse effects created by development. In part, because they allow the costs of new development impacts to be shifted to developers rather than placed on a community's existing tax base, fees have become a popular method of addressing development impacts. In general, these fees serve as a method to decrease development and provide funds that may be used for protecting open space.

### Required Dedication

Under the state subdivision law, municipalities can require that developers dedicate open space to the public as a condition for subdivision approval. The area to be dedicated is commonly calculated as a percentage of the subdivision area or as a given area per residential unit, but many variations on these approaches exist (ERO Resources Corporation 2002). However, the 2002 Washington State Supreme Court case, *Isla Verde International Holdings v. City of Camas*, overturned an open space dedication requirement on the grounds that the city had shown neither that the required dedication was roughly proportional to the development's impacts nor that the dedication was reasonably necessary. This case also showed that a municipality cannot require a park or open space



dedication as well as a park or open space impact fee. Therefore, formulas for calculating dedications should be carefully considered.

Dedicated land is typically part of the subdivision being created. For this reason, its usefulness as open space may be limited depending on the subdivision's size, location, design, and other factors. To some degree, these weaknesses can be overcome by placing conditions on the configuration and location of dedicated lands. These are site-

specific factors that must be considered at the permit stage to ensure that dedicated open space is created at the most efficient location, such as adjacent to compatible land uses and existing or planned corridor connections.

Because dedications and other exactions have a history of being contested in court, it is important that a municipality employing this mechanism be able to demonstrate that the fee is proportional to the effect.

### Example Programs

Requiring dedication of open space for parkland is a widespread practice.

### Bainbridge Island

Chapter 17.08 BIMC permits mandatory dedication for park and recreation purposes, if the dedication is found to be reasonably necessary as a result of the proposed development. Voluntary payment of a fee in lieu of dedication is permitted, with City approval, as a complete or partial substitute for dedication of park and recreation land. Both the developer and the City must agree upon the improvement where the fee will be applied; the payment must also be spent within 5 years of collection or refunded with interest. The City may also approve open space covenants for private parks or recreational facilities as fulfilling some or all of the required dedication.

### Recommendations

Dedications need to be justified due to potential negative effects of development and must be roughly proportional to the effects created. Thus, it would be beneficial for the City to revisit its park dedication requirements to determine if current requirements are sufficient to meet community needs or whether a greater level of dedicated area is justified. Because of the City's unique relationship with the Parks and Recreation District, the City needs to be especially cognizant of the application of fees.

### Impact Fees

In some cases, it may be more efficient to collect impact fees and use the fees to provide open space, rather than to require dedication of land. Impact fee application may require the study of level of service, legal justification, or further study for use. One benefit of the use of impact fees is that open space obtained using impact fees can more easily be



located where it will provide the greatest benefit, rather than being located within the proposed development. Another benefit is that impact fees can be pooled to allow a larger area of open space to be protected, again increasing the benefits provided. Chapter 82.02.020 RCW permits developers to make voluntary payment in lieu of dedication of land, if the dedication can be shown to be reasonably necessary as a result of the proposed development. The relationship between the Parks and Recreation District and the City, and the application of impact fees by either the Parks and Recreation District or the City, may change the way that the City can assess and collect impact fees for open space.

Coordination will also be required due to restrictions regarding what impacts fees may be expended on and the time period in which the fee must be expended. Under 82.02.020 RCW, the decision to make a payment rather than dedicate land is voluntary, and therefore a stable stream of payments cannot be guaranteed. The City will need to partner with the Parks and Recreation District to use impact fees for open space preservation. Because the Parks and Recreation District uses level of service calculations to assess public park needs (such as the number of swimming pools or tennis courts per population), a similar level of service type calculation may be needed to assess open space needs for the community.



Communities, such as Kirkland, have found that impact fees can finance improvements that benefit the whole community rather than one site, and can be applied to small-scale development that might otherwise be exempt from SEPA open space mitigation requirements. A large number of municipalities in Washington State currently impose impact fees to provide parks and open space. However, these are typically written

with an emphasis on providing parks, not open space. A list of example ordinances is available from the Municipal Research and Services Center (MRSC) of Washington.

### Example Programs

#### Groundwater Impact Fee

The Maryland Department of Natural Resources was requested to charge groundwater impact fees on applications for new septic systems and wells (Maryland Department of Natural Resources 2008). This strategy could provide funds for projects that restore and protect aquifer recharge areas as well as educate the public on aquifer-related issues. If fees were based on the sensitivity of the underlying aquifer, the fee could serve as a disincentive, directing development away from aquifer recharge areas or promoting lower-impact development.

### Bainbridge Island

Currently, the City of Bainbridge Island only assesses impact fees to finance public schools, per Chapter 15.28 BIMC.

### Recommendations

While the City does have the regulatory capacity to increase impact fees to raise money for open space, the use of this capacity for open space funding would raise housing costs and may conflict with other City initiatives such as affordable housing. In addition, there may be conflicts with impact fees currently being considered by the Parks and Recreation District for public parks. The money generated from such fees would not likely produce a substantial income stream and is not recommended.

### Other Regulations and Programs

A number of regulations also exist that are applicable to specific sites or that protect specific resources. Because of their specificity, it is difficult to determine whether they are applicable to particular jurisdictions without knowledge of site conditions.

### Example Programs

#### Bald Eagle Protection

Bald Eagle Protection Rules (Washington Administrative Code [WAC] 232-12-292) define buffer zones around eagle nests and roost sites to maintain bald eagle populations. Application of these rules is handled



by the WDFW in response to activities such as requests for building or timber harvest permits.

### Habitat Connectivity

Metro, the metropolitan Portland regional government, has developed a model habitat protection ordinance for cities and counties within Metro's jurisdiction (Metro 2008). This ordinance would require that the adverse effects of new development projects on habitat connectivity be analyzed and mitigated. The ordinance also suggests strategies to address effects, including the use of fencing, vegetation, and culvert or bridge design to facilitate wildlife passage. Metro also is investigating how code changes could require a jurisdiction to review habitat connectivity issues for linear projects such as roads, pipelines, and transmission lines. This could require that connectivity improvements such as adding oversized culverts to facilitate amphibian and small mammal movement be done as part of road improvement projects.

### Bainbridge Island

The City has identified a Wildlife Corridor Network, and this element is considered under a checklist for each permit application reviewed by the City. Staff review the application and attempt to accommodate the designated Wildlife Corridor Network in planning for the placement of structures and remaining vegetation areas. There is no regulatory constraint regarding the Wildlife Corridor Network unless it overlaps with other sensitive features covered under the Critical Areas Ordinance.



## Recommendations

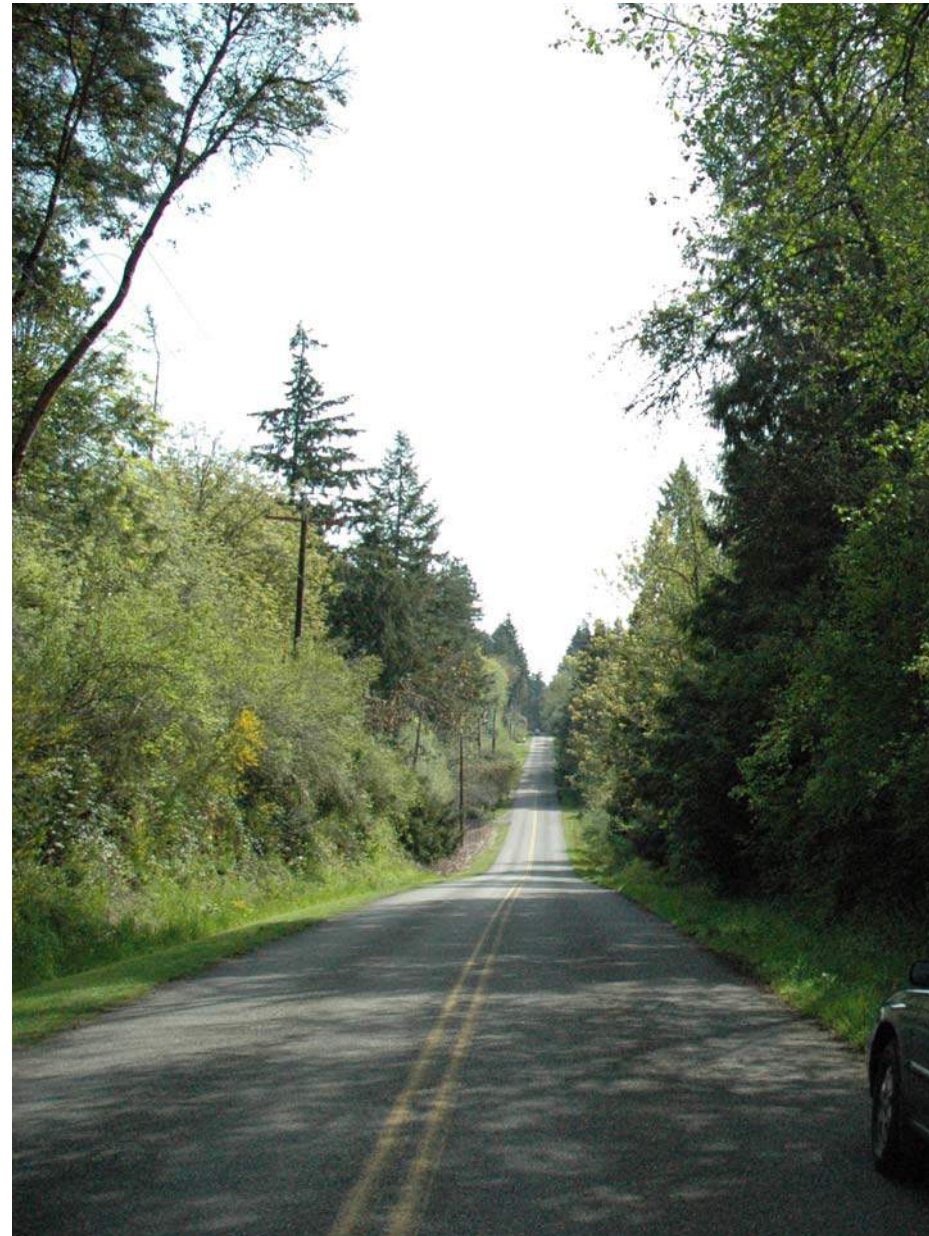
Roads are often a connectivity barrier to travel for small mammals, reptiles, and amphibians. The City should include Wildlife Corridor Network connectivity considerations when conducting major road corridor improvement projects. For instance, if a stretch of existing road will undergo major repairs, the City should have a requirement to evaluate the potential to improve habitat connectivity. This can be done with simple features such as the placement of oversized culverts to facilitate the movement of wildlife. Providing connectivity is particularly important where intact habitat is available on either side of the road or where there are known points of high small mammal, amphibian, or reptile road kills. The ongoing revision of the City's Comprehensive Plan and evaluation of the City Code provide opportunities to include such mandatory review procedures. To ensure that these reviews are implemented, habitat connectivity requirements need to be part of the code, not just part of the policies in the Comprehensive Plan.

## 3.2 Landowner Incentives

While regulations are currently the most commonly discussed approach to open space protection, landowner incentives have been growing in popularity and effectiveness. These are voluntary programs that provide financial or other incentives to land owners in exchange for providing or protecting open space with identified public values. Also included in this category are negative incentives, such as mechanisms that permit, but penalize for, the creation of minor adverse effects. In some cases, the popularity of these programs exceeds the funding available to provide incentives (Washington Biodiversity Council 2007).

In theory, the value of an incentive is determined by its attractiveness as opposed to other options, leading to an inherently efficient program. In most cases, however, the value of the incentive is set based on the perceived value estimate or other information sources. If an incentive's value is not accurately set, the program will not operate successfully; a program with insufficiently generous incentives will not attract participants while a program with overly generous incentives will be inefficient.

Because participation is voluntary, incentive programs tend to be more popular than regulatory methods, although they are sometimes open to the criticism that incentives constitute an unnecessary public expense. Their voluntary nature also means that they can be used to confer public benefits as well as reduce harm. The trade-off for this flexibility is that incentive programs can be more expensive than regulatory mechanisms,



due to the program's administrative costs (which may include program promotion) as well as the cost of the incentives themselves.

One weakness of their voluntary nature is that the property offered by landowners for enrollment may not meet the community's strategic open space goals. This can generally be mitigated by specifically tailoring the areas eligible for enrollment, establishing specific criteria for participation in an incentive program, or setting other conditions for inclusion.

It is possible to operate a number of incentive programs that provide landowners with a choice of incentives. Experience has shown that where communities offer landowners a diverse mix of incentives for protecting land, landowners are more likely to utilize incentives that can be tailored

to their specific circumstances. The range of landowner incentives that are available for open space protection is discussed below, with some specific examples provided.

## LAND ACQUISITION

### Fee-simple Purchase

The most obvious method of protecting open space is to purchase the land outright. The primary benefit of this approach is that it potentially provides the greatest degree of control over and protection for open space. Similarly, acquisition facilitates either public access to the property for recreational or other uses or restriction of access to sensitive areas, both of which may be difficult to obtain otherwise.

Acquisition also has a number of drawbacks. First, because a willing seller is required, lands most in need of protection or in the most advantageous location (i.e., contiguous with other open space) may not be available for purchase (Arendt et al. 1994). Although open space in need of protection may only make up part of a parcel, it is often necessary to purchase the complete parcel (easements and partial rights are discussed in other sections). The parcel can subsequently be subdivided and the portion not in need of protection can be sold, but this adds to the initial expense and creates extra work for the municipality. Overall, the cost of purchasing land outright will be greater when compared to the cost of other protection strategies, which can limit the total amount of land able to be protected. However, to determine the actual cost, the price of acquisition should be compared to the costs incurred by the public as a result of development on the land. Arendt et al. (1994) provides a number of examples where purchase costs were less than the cost of constructing infrastructure and of providing public services for a number of years. Purchase by the municipality also removes the property from tax rolls, reducing the municipality's future income as well as placing the burden for property maintenance on the municipality. In addition, an open space management plan may need to be implemented if resource values are to be maintained.

### Installment Purchase

An installment purchase is simply a purchase spread over a term of years to benefit both purchaser and seller. An interest rate is built into each installment payment, and one of the benefits of selling to a public entity is that the interest may be tax exempt, further increasing the seller's return.



### Donation

Ownership can also be transferred through a charitable donation of land to a public entity or to a nonprofit land trust. The owner can treat the value of the gift as a charitable contribution for income tax purposes; this option may be attractive for tax, family, or estate planning reasons.

### Donation with Reserved Life Estate

A landowner may wish to donate land to a public entity or land trust, but retain the use of all or a part of it during their lifetime or the lifetime of the immediate family.

### Bargain Sale

A bargain sale is a combination gift and sale of a property to a governmental or nonprofit entity. The landowner receives the benefit of both cash income and a charitable gift deduction for the difference between the fair market value and the bargain price.

### Purchase with Lease-back

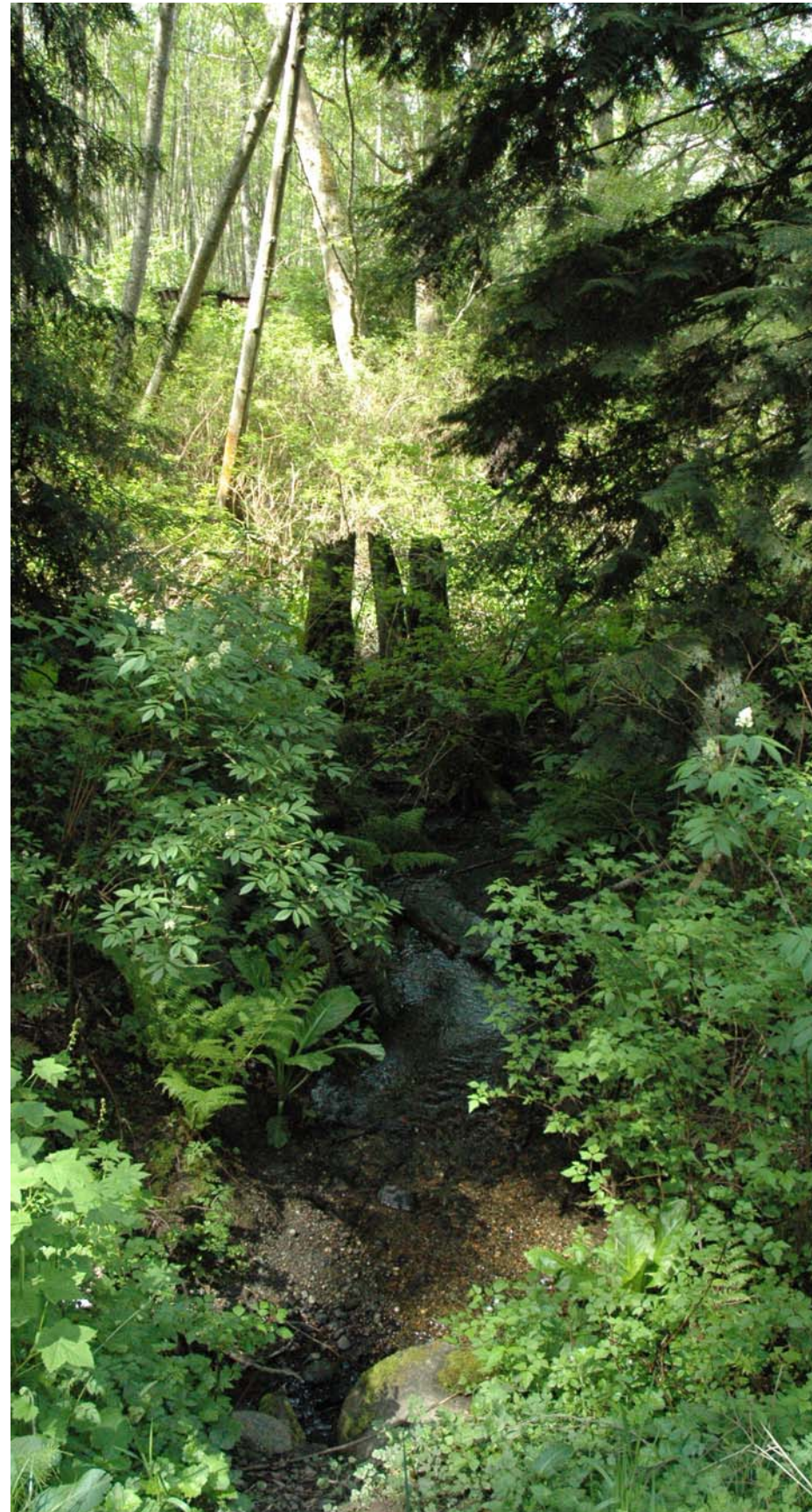
In some cases, it may be beneficial for land to be purchased and then leased back to the original owner. This strategy has been used in some cases to protect agricultural land, with the initial sale providing the property owner with capital necessary to finance an ongoing farming operation. The lease can then be conditioned with restrictions necessary to limit development or other activities that could negatively impact open space. The lease can also assign management responsibilities to the lessee, reducing the municipality's administrative burden.

### Purchase Option

Where the municipality does not have sufficient funds to purchase a desired parcel outright, it is sometimes possible to purchase an option to buy the land within a defined timeframe. Funds used to purchase the option are generally not refundable if the land is not acquired. This risk may be acceptable if the option provides the jurisdiction with sufficient time to raise funds for the purchase.

### Rolling Option

A rolling option is a series of options to buy portions of a property and thus extend the purchase over a period of years. Rolling options are frequently used by public entities that do not have sufficient funds for



a fair market purchase, but can expect an annual appropriation for a portion of the sales price. Generally, the least attractive portion of the property is sold first so that there is incentive for the public entity to complete the full purchase once the rolling option period begins.

### Lease Option

A lease-option agreement permits the City to lease a property for a period of time with an option to purchase the property during or at the end of the term of the lease. Such an arrangement would permit the City to determine whether it is in the City's interest to acquire the property, assess management costs, and provide additional time to assemble sufficient funds to complete the purchase.

### Right of First Refusal

The City could purchase a right of first refusal for a desired parcel, granting the municipality the right to purchase the property if and when it is placed on the market. Through a right of first refusal, a landowner agrees to inform the City of their intention to sell a property to another party, providing the City with the opportunity to match the best offer. Unlike a purchase option, right of first refusal generally has no time limit. A right of first refusal would not bind the City to acquire, but would give the City the opportunity to purchase if it desired.

### Land Exchange or Trade

Through what is referred to as a "1031 Exchange," a private landowner may exchange one property for another and postpone or avoid paying capital gains tax as a result. This can be an effective tool in two instances. First, public entities often have surplus lands that can be traded to a private landowner for more desirable open lands. Second, the City could acquire a parcel of land to be traded for a desirable open space parcel, thereby saving the private landowner capital gains tax that could lower the cost to the City. The tax consequences of land exchanges or trades can be beneficial to private landowners. They are also beneficial for public entities since they can reduce the funds required for acquisition. Land trades may be time consuming and may involve a high level of complexity but can be extremely beneficial for both parties.

### Example Programs

Purchase of land is a primary strategy employed by most municipalities in Washington State as well as some land trusts.



## Bainbridge Island

### Land Acquisition

Section 16.24.030 of the BIMC permits acquisition of development rights of farmland or open space “by purchase, gift, grant, bequest, devise, covenant or contract.” The code identifies eligible lands, in order of importance, as farmlands that the owner must sell because of the owner’s age or infirmity or because of economic pressure as the highest priority for purchase, followed by other farmlands and, last, open space land.

### \$8 Million Open Space Bond

In 2001, voters approved issuing \$8 million in general obligation bonds for the purchase of open space. After passage of the bond measure, the Open Space Commission was created and assigned the task of “acquiring or otherwise preserving forested areas, open space, wildlife habitat, farms and agricultural lands and creating new trails and passive parks...” (City of Bainbridge Island OSC 2007). Preservation strategies identified for use by the Open Space Commission included purchase, conservation easements, trail easements, sale of development rights, life estate, sale and lease-back, installment sale, and donation (City of Bainbridge Island OSC 2002).

The most common strategy has been purchasing land, with the Open Space Commission having purchased 19 parcels totaling 289 acres (OSC 2007). Because funds are not currently available to purchase all of the parcels that the Open Space Commission would like to protect, securing purchase options on some properties is being considered (OSC 2007).

Currently, the Open Space Commission requires that public access be granted to any properties on which public funds are expended. This limitation restricts which types of open space should be purchased, as certain habitats are not compatible with public access.

### Land Trusts

The Bainbridge Island Land Trust (BILT) is a nongovernmental organization that has been successful in working with landowners to preserve important open space areas. BILT accepts donated conservation easements and also owns four properties. Karen Molinari, former Executive Director of the BILT, noted that both installment purchase/bargain sale and optioning strategies have been used by BILT for purchases. One of the long-term issues regarding land purchased by the City or BILT is developing and implementing long-term land management practices, which require additional resources (Karen Molinari, ROC, 2008).

The Trust for Working Landscapes is a local nonprofit that supports community agriculture. The Trust currently manages several of the City-owned farmland properties and hopes to negotiate long-term leases on

farmland acquired by the City (Ryan Vancil, ROC, 2008). How the City will manage long-term lease agreements of City-owned farmland has not yet been decided. Later this year, the City Council will be considering recommendations from the Council Land Use Committee. As envisioned, managers of the City-owned farmland would sublease to farmers. This approach would shift maintenance responsibilities away from the City to a farmland manager as well as provide the City with a source of income that could potentially recoup the land management costs.

The City has noted one concern with this approach—bond money cannot be used to maintain open space parcels. A method for fully funding required maintenance has not yet been identified. The City could seek approval from the voters, as it did in 2001, to issue unlimited tax general obligation bonds under its open space and parks bonding issuing authority that includes provisions for maintenance. Sixty percent of voters must approve unlimited tax general obligation bonds, and voter turnout must be at least 40 percent of those who voted in the last general election.

### Recommendations

To maximize value of limited public funds (or other sources), it is recommended that the City utilize the purchase option only when it is critical to achieve public ownership of a particular property, as other

protection options may be more cost effective and leave land in private hands, saving the City management costs and keeping land on the tax rolls. Whenever purchase is necessary, the City should strive to purchase on a bargain sale basis. Typically, a 15 to 20 percent savings is possible using this approach, and in most instances, the net return to landowners is the same as an outright sale. This is because landowners can often use the gift portion of the bargain sale to offset capital gains taxes that they would otherwise be required to pay on the sale of the property. These funds could be used to purchase any type of open space property, from those with high biodiversity values to working landscapes.

A mechanism for estimating land maintenance costs should be put in place and the cost of maintenance considered as part of the purchase evaluation process. Because funding of property maintenance cannot be provided from bond funds, identifying a source of funding to maintain purchased open space lands should be a high priority. The City should also look for private and nonprofit partners that could lease City-owned lands and manage them responsibly. Such an approach is utilized by many county and municipal open space programs throughout the country. Many funding sources are potentially available to fund property management, including property taxes, real estate excise taxes, and impact fees. One possibility is to use some funds generated by Purchase of Development Rights (PDR) programs or sale-and-lease-back programs to support maintenance.





It is recommended that public funds be used for public benefits, including but not limited to preserving open space with public access. As part of its work, the Open Space Commission promoted protecting properties that could provide some type of public access as deserving of expending public funds. However, many public benefits, besides access, accrue from public ownership of open space, and the Open Space Commission recognized that in some cases, limited access to sensitive areas may be useful. Limited public access can potentially help promote open space protection, such as in the form of educational wetland tours, or may provide the necessary protection for a sensitive area by limiting the area available to the public or by limiting the number of people accessing and potentially impacting an ecologically sensitive area. It is recommended that some monies be set aside to provide a source of immediately available funds for purchase (or leasing) of highly desirable lands that become available suddenly.



While land acquisition is expensive and will not solve all of the island's open space conservation issues, it is an essential tool in attaining the City's open space goals. The \$8 million bond measure successfully purchased a number of open space parcels, but these funds have been exhausted. Currently, the City has few options for raising funds to acquire open space. During a workshop on open space for this evaluation, a limited number of participants indicated that they would prefer a bond measure to raise funds rather than any tax increase or hike in impact fees. The City should work with the Open Space Committee to evaluate the timing, extent, and scope of another open space bond measure when economic conditions are more favorable and when the public is more likely to support such a measure. In addition, the City should work closely with the BILT in identifying lands to acquire using the priority open space map as funds become available.

A primary issue for any jurisdiction is the long-term management of purchased open space. Currently, the City has no funds dedicated to long-term management of these parcels, and the Parks and Recreation District cannot accept donations of land from the City because of this lack of funds. Thus, the City needs to investigate mechanisms for funding long-term management of these parcels. Long-term habitat goals, noxious weed control, and monitoring are some issues that need to be clearly defined. It appears that the best avenue for developing and achieving long-term management goals is to raise funds for both the purchase and maintenance of open space. The future bond measure, as discussed above, should include provisions for both purchase and capital improvements for the long-term maintenance of purchased lands. Other options for raising revenue were explored in a 2007 Trust for Public Land report prepared for Bainbridge Island. The other options explored are summarized below.

- **Property Tax** – The City could ask voters to increase the regular property tax via a levy lid, which requires a majority approval by voters in a general or special election. An increase in the tax rate of 0.10 percent would raise approximately \$5.6 million over 10 years and cost homeowners an average of \$50 per year (Trust for Public Land 2007).
- **Utility Taxes** – An increase in the utility tax from its current 6 to 7 percent would generate \$381,000 annually, or about \$1.9 million over 5 years. The City is currently at the allowable maximum, and any increase would require voter approval (Trust for Public Land 2007).
- **Real Estate Excise Tax** – The City is currently levying the maximum real estate excise tax of 0.5 percent and has no additional capacity. While counties are allowed to levy a real estate excise tax for conservation, cities are not permitted the authority to do so (Trust for Public Land 2007).



It appears that a bond measure, modeled after the successful 2001 program, would offer the most opportunity for funding open space projects. But in addition, the City should consider a long-term tax mechanism that provides a base level of annual funding for long-term management of City-owned open space. Of course, the City will need to take into account the overall health of the economy when deciding the appropriate time to offer such a bond measure to the voters. Several regulatory and market approaches are necessary to implement a comprehensive open space program, and sufficient funding is a necessary element of such an approach.

## LEASEHOLD

Leasing a property or entering into a lease-to-own (or installment purchase) agreement are options that provide medium to long-term control over a parcel at less expense than outright purchase of the land (South Jersey Land and Water Trust 2008). Another benefit of this strategy is that it allows the landowner to continue to receive income from the property.

### Example Programs

#### *Westminster, Colorado: Woman Creek Lease*

The City of Westminster has a 20-year lease on 360 acres of land, lying adjacent to 600 acres of open space owned by the city, who manages the land as one contiguous property. This arrangement allows the city to institute maintenance and enhancement activities, including bald eagle habitat protection.

### Bainbridge Island

It does not appear that leasing open space is a strategy currently being used within the City.

### Recommendation

Leasing open space is not a tool that is applicable in many cases. However, it should be considered as a method to protect particularly desirable parcels when immediate purchase is not an option, but where eventual purchase will be possible. It is recommended that some monies be set aside to provide a source of immediately available funds for leasing (or purchase) of highly desirable lands (such as those identified as priority open space areas in this study) that become available suddenly.



## CONSERVATION EASEMENTS

A conservation easement is a voluntary and permanent restriction limiting development of a property to protect conservation values. The easement can either be donated to a land trust or purchased by a land trust or governmental entity. The easement is a recorded restriction in the property deed and therefore applies to all subsequent owners. The conservation easement is a flexible instrument that can limit development as much as the landowner desires. A conservation easement is usually granted to a qualified nonprofit land trust or government entity that has the responsibility of monitoring and enforcing the terms of the easement in perpetuity. Except for the fact that the development rights have been limited by the terms of the easement, the landowner continues to own, use, and manage the property. With the conservation easement, the landowner retains full control over public access and management of the property.

## DONATION OF CONSERVATION EASEMENTS

Conservation easements may be donated, generally to a land trust or other eligible nonprofit organization or to a governmental entity. In exchange, easements that meet federal Internal Revenue Service guidelines may allow the property owner to receive income and estate tax benefits as determined by the value of the donated rights. Since the donation of a conservation easement is treated as a charitable gift, the landowner is entitled to the charitable deduction on their income tax equal to the difference between the fair market value and the restricted value of the property. Since the easement reduces the value of the property, it can be an important tool in reducing estate tax liability for properties that have appreciated rapidly.

### Example Programs

Acceptance of donated conservation easements is a primary strategy employed by most if not all land trusts in Washington State.

### Bainbridge Island

The Open Space Commission has purchased a number of parcels to protect open space, but does not hold any conservation easements on these properties. However, it has created an access easement on one parcel that was later resold to a private party (City of Bainbridge Island OSC 2007).

BILT currently holds 43 donated easements (Bainbridge Island Land Trust 2007). This includes four easements on public properties; these

properties were turned over to the Bainbridge Island Metropolitan Parks and Recreation District for maintenance; easements were retained to guarantee future protection of the land (Karen Molinari, ROC, 2008).

### Recommendations

Although the City could technically accept conservation easements, it is not recommended that they do so. This is because the City does not have the capacity to monitor and enforce conservation easements, and most landowners would prefer to work with nongovernmental entities. Moreover, BILT has proven to be an effective nonprofit land trust with



a proven track record, experienced staff, and knowledge and expertise necessary to negotiate and manage conservation easements. The City can encourage landowners to work with BILT to accomplish landowner objectives to protect their properties. In addition, since the City and BILT objectives overlap in many ways, they should consider a more formal collaboration. The City and the Trust for Working Landscapes collaborate in the management of working lands owned by the City. This system could work for other collaborations. Many counties and cities have arrangements with land trusts that range from informal to formal.

A number have established Memoranda of Understanding that identify ways in which they will collaborate. Many jurisdictions with active open space protection programs have partnered with land trusts, who provide funds to acquire easements. As part of the partnership, the land trust negotiates and manages the interaction with the landowner to acquire the conservation easement. The City and BILT should explore whether a more active partnership would be to their mutual benefit, including BILT using City natural resource information to help with targeted outreach. Because the conservation strategy of each area is dependent on the land owner, the use of conservation easements and partnership with BILT should be explored on a case-by-case basis.

## PURCHASE OF DEVELOPMENT RIGHTS (PDR)

The PDR approach is utilized in many states, counties, and municipalities throughout the country. Typically, a governmental entity purchases the development rights through the purchase of a conservation easement on open, natural, or agricultural land to keep it in agriculture, forestry, or open space. Development rights are sold on a voluntary, funds-available basis, since public funds are often limited. In most PDR programs, the



governmental entity defines a set of criteria that establish the types of lands that it wants to protect. Landowners are encouraged to apply for limited funds and are ranked according to the criteria and the value that can be obtained for each public dollar expended. The value of the development rights is determined by appraisal and usually varies from 30 to 80 percent of the fair market value of the property. The landowner is able to obtain the equity or development value from the property, keep the land open and productive, keep it in the family and pass it on to the next generation, and make needed capital investments with the proceeds. When development rights are purchased, the land is permanently restricted through the conservation easement.

PDR programs are often funded by a variety of taxes, including property, sales, real estate transfer, and special purpose taxes, as well as through general obligation bonds. A variety of federal and state funding programs are available to fund portions of PDR transactions, and many jurisdictions leverage local funds three, four, or more times by bundling these additional sources of funds. Many jurisdictions have found that PDR is a cost effective way to keep open lands productive, on the tax rolls, and under private management. Many jurisdictions with PDR programs have cooperative relationships with land trusts working in the area. In these instances, the land trust works with the jurisdiction to define desirable projects that are then negotiated by the land trust and brought to the jurisdiction for funding. Such partnerships build on and leverage the strengths and capabilities of both parties. In virtually all instances where local governments have established successful PDR programs, their initial success has led to reauthorization of the program, usually at higher levels of funding.

### Example Programs

#### *Berthoud, Colorado: Density Transfer Fee*

This strategy combines an impact fee with a PDR program. In this approach, a per-dwelling fee is collected and funds are used to finance a PDR program. According to Pelletier (2008), this strategy was selected because a TDR program would be too resource intensive to create and maintain.

#### *Farm and Ranch Lands Protection Program*

This Natural Resources Conservation Service (NRCS) program is intended to maintain the viability of working farm and ranch lands. The program can provide government agencies or nonprofit organizations with up to 50 percent of the cost to manage permanent conservation easements on working farms or ranches. Some of the limits on eligibility include that the proposed parcel be large enough to sustain agricultural production and that surrounding parcels also be able to support long-term agricultural production.



#### *Wetlands Reserve Program*

This program, administered by NRCS, is intended to restore and protect wetlands, providing financial incentives in exchange for retiring agricultural land. Applicants can enroll using one of three program options: a permanent conservation easement purchased by NRCS, a 30-year easement, or a restoration cost-share agreement. Under the cost-share agreement, which runs for a minimum of 10 years, up to 75 percent of restoration costs are paid for by NRCS. The program also provides landowners with technical assistance.

#### *Farmland Preservation Grants Program*

This Washington State Recreation and Conservation Funding Board program provides grants to acquire agricultural easements, or acquire other easements combined with restoration or enhancement activities. Funds, which are only available to government agencies or nonprofits, can also be used to purchase property outright if an easement is then created and the property resold for agricultural use. Grants are awarded biennially through a competitive process. Grant recipients must provide at least 50 percent matching funds.

#### *Conservation Futures*

This state-authorized program allows counties to levy an additional property tax (\$0.0625 per \$1,000 of assessed valuation); these funds are available for use in acquiring conservation easements on or purchasing open space lands. For city properties to be included in the program, the properties must first be nominated. Nominees are then screened and potential purchases prioritized before final selections are made. Each county is responsible for administering its own program and any easements or properties purchased. San Juan County has instituted a successful Conservation Futures Program and issues quarterly reports on revenue, parcels purchased, and effects of conservation on the county's tax base. The City has partnered with Kitsap County in the past to receive funds from this program; the City cannot levy its own tax for these purposes.

#### **Bainbridge Island**

Section 18.40.040 of the BIMC permits developers to receive additional development density in the Mixed Use Town Center and High School Road Commercial Zones, in the form of increased floor area ratio (FAR). Additional FAR is available by purchasing development rights as well as in exchange for providing affordable housing; by transferring FAR from the Islander Mobile Home Park; in exchange for providing public amenities or infrastructure; by providing community open space in the ferry terminal district; by transferring FAR from other properties within the Mixed Use Town Center and the High School Road districts; in



exchange for preservation of historic structures; or for providing covered or below-grade ferry parking. The City establishes the fee for purchasing development rights, with approximately 60 percent of the proceeds from the sale of development rights used to purchase development rights from other properties (City of Bainbridge Island 2008).

The City's recent TDR program evaluation report notes that this PDR option provides a number of benefits over the TDR program. Because the City determines from which properties development rights will be purchased, protection can be more systematic. Developers are permitted to purchase only the additional development rights that they need, rather than requiring that they purchase all of the rights from a given property, as is required under the TDR program. The need for the developer to negotiate a price for development rights with the sending landowner is also eliminated. On the downside, the report notes that the program requires City administration. In addition, only slightly more than half of the funds generated by purchases go back into open space protection.

### Recommendations

A carefully implemented PDR program could be one of the most effective tools the City could use to protect important open space lands. Important open space lands, such as those identified in Chapter 2, could be conserved with a PDR program. PDR keeps land in private hands, often permitting long-time families to retain their home properties, provides landowners with a new option to tap the equity in their properties, and keeps land productive and on the tax rolls. Experience in other jurisdictions demonstrates that for every \$1 raised locally, \$3 to \$5 can be leveraged from other sources. Moreover, the criteria for determining where funds are spent can mirror public attitudes toward the types of lands that are important for the community to protect. Federal NRCS Farm and Ranchland protection funds have been an important source of funding for these kinds of projects, often funding up to 50 percent of protection costs. The key is to designate a dedicated source of funding, either through a tax allocation or a new bond. Many programs start out at modest levels to determine the attractiveness of such a program.

Because the City's FAR purchase program has been relatively successful, expansion of the program into a full-fledged PDR program should be considered. Such a program could allow increased development rights in certain areas, such as Neighborhood Service Centers (NSCs) through purchase of development rights, rather than through rezoning. It may be useful to consider directing funds generated by such a program expansion to the purchase of open space adjacent to NSCs. Adjacency to open space has been shown to increase property values and improve public perceptions of livability, which could promote further NSC development.



### TRANSFER OF DEVELOPMENT RIGHTS (TDR)

A transfer of development rights program is similar to a PDR program in that the landowner receives compensation for the development value of the land. However, once the TDR program is established by governmental action, the system relies on the free market transfer of development rights from the open land to development areas as opposed to governmental acquisition with PDR. For TDR to work effectively, both "sending" and "receiving" areas need to be identified. The "sending" areas are the lands that are to be protected, and the development rights from those areas

can be sold to developers in identified "receiving" areas. The developers would need to acquire development rights if they wanted to develop at greater densities than currently permitted. The transaction would take place between a willing buyer and seller so that the price for the development rights would be negotiated. Once the system is established, it can work effectively to redistribute development rights from open land to more urban areas. Establishing this system is extremely complex and may require a number of years for the community to work out all the bugs so that transfers work effectively. In addition, a TDR system requires continuous adjustment and updating over time to ensure that market rates are used. TDR is working in a number of counties and states around the country. This is a great concept, but it requires significant effort to implement effectively and tailor the program to local circumstances. In addition, significant staff resources are required to continue the effectiveness of the program.

Because TDR programs rely on private demand for development rights, they are most effective in areas facing development pressure and with suitable land from which rights may be transferred. Where development rights are not constrained by zoning or other factors, or where development rights can be expanded using other programs, demand may not be sufficient to make a TDR program successful.

In some programs, rights are transferred directly from the sending to the receiving property. In other programs, the municipality maintains a development rights bank. The municipality may then purchase rights and hold them until a buyer is located, improving the efficiency of the program, but requiring capital for initial rights purchases. Use of this banking approach necessarily requires a source of funds to make initial purchases; subsequent purchases can be made using funds from the sale of rights.

Participation in a TDR program is typically voluntary. However, Messer (2007) suggests that requiring large developers to purchase a minimum number of rights to undertake development can increase familiarity with the TDR program and create demand for rights sales. Messer also notes that TDR programs with some mandatory participation, including programs in New Jersey and Maryland, are among the most effective.

### Example Programs

#### *King County TDR Program*

Sending zones are not specifically predefined by the county under this program. Instead, property owners may volunteer their properties as sending areas, submitting an application for county reviews and certification of the property as eligible. Lands that are eligible as sending zones may consist of farmland; forestland; open space; regional trails and



designated urban separator lands zoned as R-1; or habitat for threatened or endangered species. The number of development rights available for a given parcel is based on its zoning, but certain types of land, such as agricultural or forestlands, are eligible for bonus density credits.

Most transactions take place between private parties, who either contact one another directly or are put in contact with one another by the county. A TDR bank also exists and makes rights available under certain circumstances. The county has limited funds to purchase rights for the TDR bank, and it purchases rights from lands to maximize the public benefit provided by the purchase.



#### *Snohomish County TDR Program*

This program, authorized under Chapter 30.35A of the Snohomish County Code, emphasizes agricultural protection and has designated 3,296 acres of sending areas, predominately located in river valleys. Both the sending and receiving areas are delineated using overlay zones.

The county purposely limits other alternatives for converting farmland through larger minimum lot sizes and other strategies, which provides an incentive for property owners to transfer development rather than develop their own properties. Purchase of some development rights is also a requirement for single-family and multifamily residential development.

This program is available but has not been used by developers. This may be due to the relatively high cost for development rights paid by the county for one particular farm, which created landowner expectations for land values that do not align with those held by developers.

#### *Pierce County TDR/PDR Program*

Pierce County has very recently adopted a combination TDR/PDR program developed with the assistance of the Cascade Land Conservancy. Eligible sending sites include farmland and forestland; land in the Rural Sensitive Resource zone; land identified as habitat for federally listed endangered or threatened species; publicly owned land that enhances public trail systems; recreational conservation lands; and tribal and DNR-managed trust land that meets these criteria. Receiving sites are widespread and include any unincorporated county land as well as land in cities that have an agreement with Pierce County. Transfers of rights may be directly from buyer to seller or through the county's Development Rights Bank.

#### *Cambria, California: TDR Program*

San Luis Obispo County and the California Coastal Commission created a TDR program in 1984 to move development rights out of the Cambria Pines forest. In addition to buying and selling development rights, the program buys and sells property through a nonprofit organization. The program also requires that new subdivisions purchase and retire development rights as a condition for development approval (Solimar Research Group 2003).

#### **Bainbridge Island**

The City initiated a TDR program in 1996 but to date has not completed any transactions through this program. The recent evaluation of the City's TDR program (City of Bainbridge Island 2008) summarizes the program's weaknesses. Among these are the following:

- The parameters of the program, particularly sending area locations, are not well defined, and there is no centralized program management, creating confusion and additional work for potential participants.
- An owner of property in a sending area can currently make significantly more money selling their land for development than they can by selling their development rights. Developers can obtain additional development rights more cheaply using other City-created mechanisms.
- Both restrictive development regulations and lack of community support limit high-density development in the primary receiving zone (Winslow) and decrease overall demand for development rights.



The City has not yet proposed any actions based on the results of this evaluation, and will be using the results of the Open Space Study to further inform the revisions to the City's TDR program (Libby Hudson, ROC, 2008b). One option that could be considered for inclusion in future comprehensive plan updates is to identify receiving zones located outside of the Winslow Town Center. These areas would be eligible to receive development rights from surrounding lands or from other parts of the island, as appropriate. This may facilitate use of the TDR program because land values in sending and receiving zones would be more similar than under the current TDR program.

#### **Recommendations**

As discussed in the TDR evaluation report (City of Bainbridge Island 2008), the current system is not achieving its intended goals. The City should use the priority open space map and infrastructure considerations to determine locations for density nodes, as noted in the 2025 report (City of Bainbridge Island 2007b). Once these areas are identified, the City will need to discuss options with landowners to determine where and how a TDR program could be developed. The goal would be to identify several receiving zones throughout the island with adjacent sending zones that have similar land values. Development rights could then be



transferred from the adjacent areas to the density nodes. Possible sending zones could include the priority open space areas identified in Chapter 2 of this study. The City is currently reviewing its Comprehensive Plan and codes, providing an opportunity to structure a functional TDR program. In conjunction with other tools, TDR provides an excellent opportunity for long-term preservation of open space on the island. The program will need to have clear advantages for developers or they will have no incentive to enter into the program. Likewise, the selling of development rights must be an attractive alternative for landowners. Crafting a successful program will require a comprehensive effort and a period of experimentation to understand the dynamics of creating the TDR market. One approach might be to establish a TDR pilot program in one of the island land areas where landowners are open to working with the community to refine the system. A program of experimentation over several years could well define the elements of a successful program that might be applied more widely.

## INCENTIVE ZONING

Incentive zoning includes a range of regulations that permit expanded development rights in exchange for providing public benefits such as affordable housing or parks and open space. Washington State law permits incentive zoning, but it does not specifically describe incentives available in exchange for providing open space.

### Example Programs

#### *James City County, Virginia – Cluster Development Density Bonus*

Within the Residential Cluster Development Overlay District, a bonus of 0.5 dwelling units per acre is available “for superior layout and quality design that incorporates environmentally sensitive natural design features such as preservation of scenic vistas, preservation of natural areas as suggested by the Natural Areas Inventory, protection of wildlife habitat corridors, and the creation of buffer areas around wetlands...” (James City County 2007).

#### *King County Rural Stewardship Planning Program*

This program allows owners of land zoned Rural Area Residential to develop a Rural Stewardship Plan in lieu of following the standard permitting process. The plan describes how the property owner will meet critical areas and clearing/grading requirements of the King County Code in relation to site-specific conditions and their goals for the property. This allows the landowners some flexibility in how their land is used. However, protection must be at least equal to that provided



under the regulations. A completed plan may also make the land owner eligible for reduced stream and wetland buffers and increased clearing allowances; enrollment in King County’s Current Use Taxation program; and a simplified permitting process (King County Department of Natural Resources 2008).

### Bainbridge Island

Under Section 18.40.040 of the BIMC, development within the Mixed Use Town Center Zone can be granted an optional residential and commercial FAR bonus for providing certain public amenities. In addition to purchasing development rights from agricultural land and critical areas (through the TDR program), these amenities consist of

providing affordable housing, providing or funding public amenities and/or infrastructure, providing community open space, historic structure preservation, and replacing surface ferry parking with under-building or below-grade ferry parking. As noted in the recent TDR program review report, the TDR program has yet to be used, as a range of public amenities can be more easily and less expensively provided in exchange for FAR bonuses (City of Bainbridge Island 2008). The Islander Mobile Home Park is allowed private sales of FAR as an incentive to retain the park, showing that this system can be used to provide affordable housing.

### Recommendations

Developers will use the most accessible program to develop a property. The City needs to determine in a comprehensive analysis which of the multiple incentive programs should be removed to reduce overlap and redundancies, as well as improve efficiency and incentives available for developers. It may be that a limited FAR program for Winslow can be successful in conjunction with a TDR program with receiving and sending zones in several places throughout the island. Removal of Winslow as a sending zone for the TDR program appears to be applicable.

## DEVELOPMENT AGREEMENTS

A development agreement is a voluntary, binding legal contract between a property owner and a municipality. One common use is to formalize requirements for complex developments, such as those developed in phases, prior to any permitting or other activity, to remove uncertainty regarding regulation changes over time. According to MRSC (2008), these voluntary agreements are not subject to the limitation in RCW 82.02.020 that required payments (such as fees in lieu of dedication) to be expended within 5 years of collection. While development agreements are not permitted to violate applicable codes (such as by permitting land uses not normally permitted), they are able to augment applicable codes. Development agreements are also often used to define conditions for annexation. Development agreements are generally not used for open space protection since they are subject to change over time and do not offer permanent protection of open space land.

### Example Programs

#### *King County Four-to-One Program*

Under this program, owners of land outside of urban growth areas (UGAs) can have their land added to a UGA in exchange for dedicating rural land as permanent open space. For every 4 acres of dedicated land,



1 acre could be added to the UGA. For land to be considered, it must be located adjacent to a UGA. Development agreements are employed for this program because they are a standard tool for setting annexation conditions.

### Bainbridge Island

The City does not regularly use development agreements to protect open space.

### Recommendations

Although all of Bainbridge Island is currently incorporated, the City may be able to use a strategy similar to King County's Four-to-One program for protecting open space. Such a program would require that open space be set aside as a precondition for inclusion of parcels in NSCs or sewer districts, for up zoning, or for otherwise being granted the opportunity to develop at higher density. Such an approach could use a development agreement as its implementation mechanism, but could also use one of many other land regulation tools, such as open space dedication being a standard requirement of an NSC overlay zone.

## FINANCIAL INCENTIVES

Direct financial benefits offered for providing temporary protection of open space constitute a large class of incentives for protecting open space.

### Tax Relief

Providing incentives to protect open space is a popular method used to decrease property taxes on parcels that are protected. Such programs generally require land to be enrolled for a minimum number of years and require taxes be repaid and penalties be paid if land is withdrawn from the program before the end of the period. These safeguards provide a moderate level of stability. However, if demand for land is high enough, the tax benefits do not outweigh the profit for selling even taking into account the penalties for early withdrawal from the program. Another downside is that tax relief necessarily decreases the municipality's income from taxes.

Tax relief has also served as an incentive for other open-space related purposes such as tree conservation. Duerksen and Richman (1993) describe a tax credit based on the lot area covered by tree canopy, available under the Fairfax County, Virginia, zoning code. However, this provision was deleted by amendment in 2002 (Fairfax County 2008).

Within Washington State, the Open Space Taxation Act permits open space, agricultural land, and timberland to be assessed according to their current use rather than at the fair market value of the property, which may be substantially higher due to development pressure. This is known as Current Use Taxation (CUT). To determine the value of open space, counties may establish a Public Benefit Ratings System. The Public Benefit Ratings System is used to determine valuation based on criteria such as the number of environmentally sensitive features on the property. Because this strategy only decreases the assessed value of land within a taxing district, the mill rate within the district will increase proportionally so that the total amount of taxes collected will not be affected by the program.

### Example Programs

#### *King County Public Benefit Ratings System*

The Public Benefit Ratings System used in King County includes 20 categories of open space resources, including wildlife habitat, buffer to public land, watershed protection area, and forest stewardship land. The Public Benefit Ratings System also includes six bonus categories, including conservation easements, resource restoration, and public access. Based on the score for these 26 categories, properties can have their assessed valuation reduced from 50 to 90 percent.

#### *Kitsap County Current Use Taxation (CUT) Program*

Under the system employed by Kitsap County, a property must contain at least two prerequisite features to be eligible for a decrease in assessed valuation under the Open Space portion of the program. Features include ponds, streams, wetland or wildlife habitat, scenic resources, historic sites, or traditional farmland (Kitsap County 2007). Decreases in assessed valuation range from a 50 percent reduction if two priority features exist to a 90 percent reduction if three priority features exist, if public access to the property (for educational/scientific purposes only) is permitted, and if a conservation easement is placed on the property.

Agricultural, Timber, and Forest Land portions of the CUT program have different qualification requirements, including property size, active use of the land, and/or a history of income generation. Decreases in assessed valuation are calculated based on soil type and other factors.

Enrollment in the program is for a minimum of 10 years. If, during enrollment, property use changes (such that it no longer qualifies for inclusion) or if the property is sold and the new owner does not want the property to remain in the program, the property must be removed from the program and compensating taxes paid.

### Bainbridge Island

Land within the City is eligible to be included in Kitsap County's CUT program, if the land meets the program's requirements. The program is very popular, with 127 open space, timber, or farm contracts and 27 forestland contracts on land within the City, as of March 2008 (Tammera Beverage, ROC, 2008). Most property included under the Open Space portion of the program is only granted a 50 percent reduction in assessed valuation; most property owners are not interested in providing public access or granting a conservation easement (Tammera Beverage, ROC, 2008). In addition, many properties have been withdrawn from the program early. In some cases, this is because the property value has increased and the property owners decide when to sell based on personal goals.





## Recommendations

In some cases (particularly forestland but also farmland), taxes are already low, decreasing the incentive to use this program. Purchase of easements may be a better option in these cases. The City should continue to contact interested parties to join the CUT program.

## DIRECT GRANTS AND SUBSIDIES

A second class of incentives are those that help finance the creation, improvement, or maintenance of open space by providing grants or loans or by supplying materials, labor, or training. As with tax relief programs, these subsidies may be conditioned on enrolling land in a program for a set period of time.

## Example Programs

### *Washington Salmon Recovery Funding Board Grant Program*

This grant, administered by Washington State's Salmon Recovery Funding Board (SRFB), is intended to protect and restore salmon habitat. Eligible projects can include acquisition of property or development rights and work in riparian, freshwater, estuarine, nearshore, saltwater, and upland projects areas (Washington State Salmon Recovery Funding Board 2007).

### *Conservation Reserve Program (CRP)*

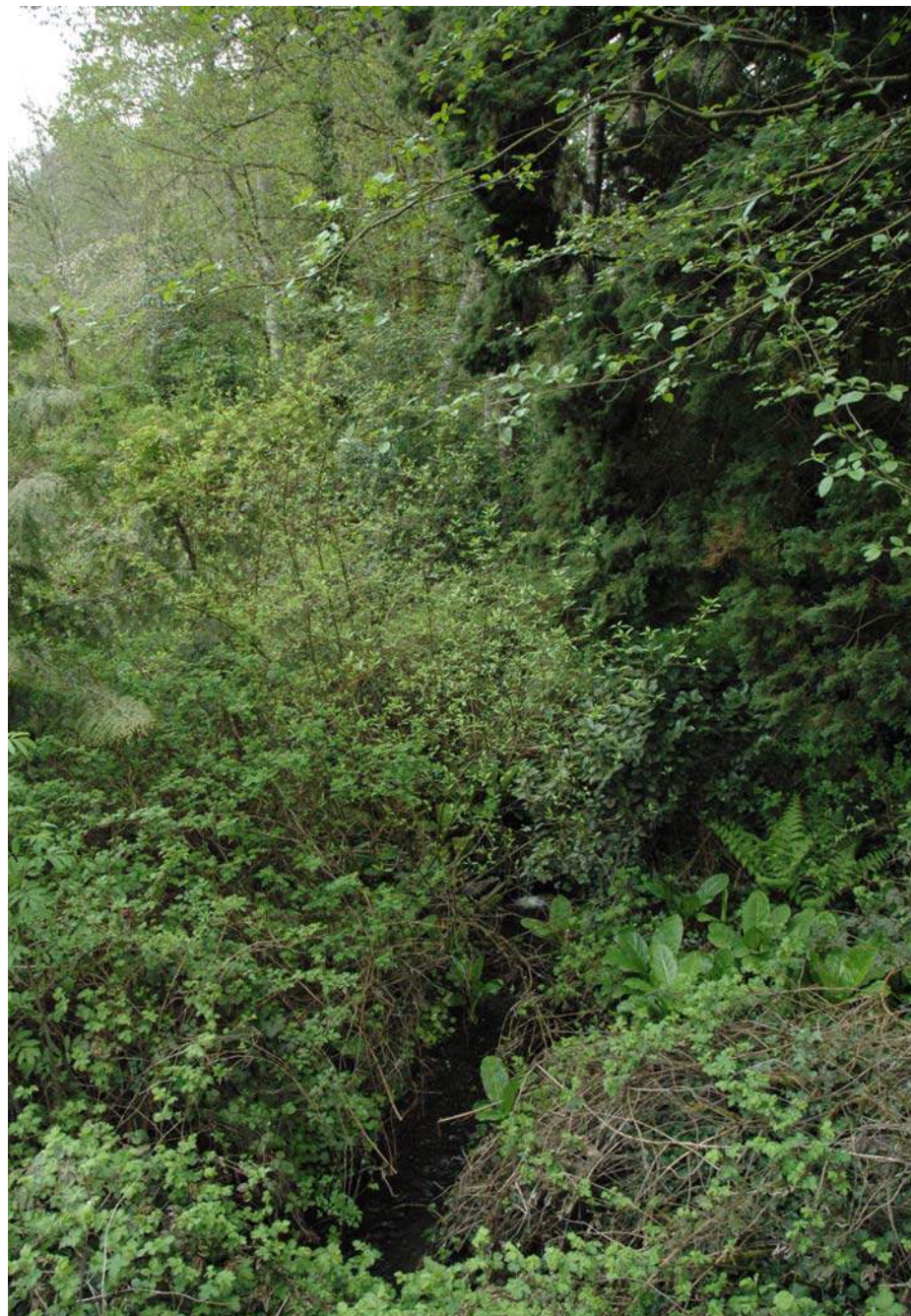
The USDA Farm Service Agency's (USDA-FSA) primary farmland conservation program runs a CRP. Under this program, farmers and ranchers can receive both annual rental payments and cost-share assistance, covering up to 50 percent of the costs of implementing conservation measures in exchange for establishing cover vegetation on eligible agricultural land. Eligible farmland consists of highly erodible cropland or other environmentally sensitive acreage. Enrollment is for periods of 10 to 15 years, but the contract can be terminated early.

### *Conservation Reserve Enhancement Program (CREP)*

An offshoot of the CRP program, CREP focuses on high-priority conservation issues such as soil erosion, water quality, and fish and wildlife habitat (USDA-FSA 2008). As in the case of CRP, the CREP takes land out of production and enhances it in exchange for rental and cost-share payments. In addition, a sign-up incentive for participants to install specific practices is also generally offered. The program is coordinated through local governmental agencies, with whom the program costs are divided. In the past, enhancement of land in Washington has focused on creating forested riparian buffers to protect salmon spawning habitat (USDA-FSA 1998). The Kitsap Conservation District manages the local CREP program.

### *Environmental Quality Incentives Program (EQIP)*

Unlike CRP and CREP, this NRCS program provides funding to ranchers and farmers who undertake conservation activities on active agricultural lands. The program is intended to provide incentives for undertaking management activities that would otherwise not occur. Participant contract terms are from as few as 1 year to 10 years. The program provides incentive payments, and land owners may also be eligible for cost sharing.



### *Landowner Incentive Program (LIP)*

LIP is a competitive grant program funded through the U.S. Fish and Wildlife Service (USFWS) and administered by WDFW. The intent of the program is to protect, enhance, or restore habitat located on private land and used by species at risk. Activities eligible for funding include planting native vegetation, installing fencing to exclude livestock, removing fish migration barriers, restoring wetlands, removing invasive or non-native species, and conserving easement purchase. Applicant proposals are prioritized based on the number of species at risk that will benefit, agreement duration, portion of funding that is from non-federal sources, and other factors. The landowner and local agencies are expected to provide at least 25 percent of the project cost.

### *Wildlife Habitat Incentives Program (WHIP)*

NRCS's WHIP program provides cost-share payments for projects that improve fish and wildlife habitat affected by agricultural practices, urban development, or invasive species. Among the other program objectives, WHIP provides participants with technical service and assistance. In Washington State, WHIP priorities are restoring native vegetation and improving habitat used by targeted wildlife species. Eligible habitat includes riparian habitat, agricultural lands, upland woodlands, instream areas, and wetlands.

### *Washington Wildlife and Recreation Program (WWRP)*

The Washington State Recreation and Conservation Office (RCO) manages this grant program, which is intended to fund habitat protection, working farm preservation, and local and state park creation. This program is open to state and local agencies only.

### *Aquatic Lands Enhancement Account (ALEA)*

The ALEA Grant Program, managed by the RCO, provides funds for purchasing, improving, or protecting aquatic lands. These lands are intended to be available for public purposes, and program funds are to be used to provide and improve public access to these lands and associated waters. Applications are evaluated every 2 years. Only local and state governmental entities are eligible to apply, but nonprofits and private entities may partner with an eligible entity.

For the purposes of the ALEA program, aquatic lands are defined as "lands directly or physically adjoining navigable water bodies, and marine tidelands and/or adjoining uplands, freshwater shorelands and/or adjoining uplands, bedlands of navigable water bodies, and wetlands or riparian areas of publicly controlled uplands adjoining navigable water bodies" (Washington State Recreation and Conservation Funding Board 2008).



### *North American Wetlands Conservation Act (NAWCA) Grant Programs*

NAWCA provides funds for two grant programs: the Standard Grants Program and Small Grants Program. These programs differ only in the size of their grants, with the Small Grants Program having a limit of \$75,000. These grants provide matching funds for wetland and associated upland habitat conservation projects that will benefit wetland-associated migratory birds and wildlife. Funds are provided to public-private partnerships, which must match grant funds. Projects may be located on public or private lands. The grant program is administered by the USFWS, and grant selection policies are established by the North American Wetlands Conservation Council.

### **Bainbridge Island**

The City has secured funds from a number of programs, including the WWRP, SRFB, Land and Water Conservation Fund, and the National Wildlife Federation (Libby Hudson, ROC, 2008a).

### **Recommendations**

It is strongly recommended that the potential for leveraging be included as one of the criteria considered when analyzing whether a property should be purchased. Matching funds are generally available, but time to identify and secure them needs to be included in the purchase schedule. Investigating opportunities and preparing grant applications is a time-consuming process. The City should work with the existing structure of citizen committees to help investigate these opportunities as applicable for different eligible programs such as habitat, working lands, etc. The City should consider using their own money as the “last dollar in” when purchasing land, relying on grants and negotiated reductions to fund the bulk of such purchases.

## **NON-FINANCIAL INCENTIVES**

Programs that publicly recognize environmental stewardship can offer a tangible and/or intangible benefit for developers, farmers, or other businesses. In some cases, such as the Forest Stewardship Council (FSC) Small and Low Intensity Managed Forests certification program, recognition is the primary benefit of the program. In other cases, such as King County’s Green Globe Awards program, recognition is a secondary benefit of enrollment in another program.



### **Example Programs**

#### *King County Green Globe Awards*

The Green Globe Awards are presented biennially by the King County Department of Natural Resources. Eligible nominees are companies, organizations, and individuals who are participating in county programs. The program has included awards for Leader in Habitat Protection, Leader in Resource Management, Leader in Open Space Conservation, and Leader in Forest and Wildlife Protection.

#### *Forest Stewardship Council (FSC) Small and Low Intensity Managed Forests (SLIMF) Program*

This FSC program provides standards for sustainable forestry certification for small forestry operations (less than 247 acres). FSC’s standards for responsible forestry practices include conserving biological diversity and maintaining ecological functions, both of which complement open space protection goals.

#### *DNR Backyard Forest Stewardship Program*

This DNR program provides small forested parcel owners, including homeowners, with information on forest stewardship practices. Official recognition as a “Backyard Forest Steward” is available for land owners who complete at least six of the stewardship practices identified by the program.

#### *Salmon-Safe Certification*

The City of Portland and Salmon-Safe Inc. developed this set of standards for evaluating and certifying park management activities impacts on

water quality and fish habitat, particularly features that affect salmonid survival (Salmon-Safe 2004). Factors considered include water quality and quantity, instream and riparian habitat, and fish passage. Separate standards have been established for campuses and institutions, vineyards, and farms. Certification standards for residential development are currently in preparation (Salmon-Safe 2008).

### **Bainbridge Island**

The Bainbridge Island Land Trust recognizes donors of conservation easements and properties in its annual reports and on its website. The Trust for Working Landscapes is currently involved in the promotion of local agriculture with the intention of acting as a farmland broker in the future, connecting prospective farmers with Bainbridge Island landowners (Ryan Vancil, ROC, 2008).

The Bainbridge Island Land Trust recognizes donors of conservation easements and properties in its annual reports and on its website.

### **Recommendations**

The City should implement a variety of non-financial incentive programs. To create effective programs, the City needs to identify particular open space protection goals and define specific target audiences for programs that advance these goals. Given the City’s emphasis on tree and forest habitat protection, the City should investigate implementing a program similar to DNR’s Backyard Forest Stewardship Program, open to all



property owners, and include educational and recognition components. Recognition of locally produced agricultural products, through product labeling, point-of-sale displays, or other marketing strategies, benefits both producers and sellers and provides a public education component, highlighting the value of local agricultural lands. In addition, the public has expressed interest in expedited permitting and/or guaranteed permit schedules. The City could use these to provide incentives for open space protection. This, like many of the recommendations, will require staff time and effort. One overall recommendation is to add additional staff to provide oversight of the comprehensive open space planning effort. Furthermore, if this staff person were shared by the Parks and Recreation District and City, further collaboration will likely occur.

## SUMMARY

As the City continues to resolve the long-range planning issues of open space conservation and development pressures, the need to implement a more comprehensive planning/ecological approach increases. Understanding that the resources to draw upon are limited, we recommend that the City create a staff position to lead the effort to combine the short-term permitting issues with a long-term comprehensive open space conservation effort. This is not a task suitable as a consultant role. The City staff and many interested citizens who volunteer for various City committees possess a wealth of institutional knowledge of land resources, ownership, cultural history, working lands, and other subjects. Understanding the associated land issues and forming a coherent long-term strategy will take time. The City should take the long-term view and invest in a staff position to implement the Open Space planning effort.

## Recommendations

**No one program by itself will solve open space conservation issues on Bainbridge Island.** Rather, the City should develop a comprehensive program that includes acquisition of land and easements, and financial incentives that provide a framework for developers and landowners with an opportunity to coordinate in clustering development.

In local jurisdictions that have effective open land programs to protect important agricultural, natural, scenic and open land resources, a mix of public, private, and nonprofit tools is used. Experience has shown that where there is a choice of techniques that can be tailored to the specific circumstances of a family or landowner, their economic and conservation objectives, and the nature of development pressures, there is the greatest potential for success. The challenge is to define the appropriate package of tools to successfully protect special resource lands. These techniques

vary widely in terms of their cost to the local jurisdiction, voluntary or regulatory nature, effectiveness, and the ability to permanently protect land. Because of the variety of land types and the needs and goals of landowners, it is not appropriate to attempt to match open space criteria with a particular conservation strategy. Rather, a successful program will be built on a multi-pronged approach that includes flexibility to address the various needs of landowners.



In the past, Bainbridge Island has primarily relied on periodic bond votes and regulations to achieve its open space objectives. While these have achieved some notable successes, a broader and more effective array of options has the potential to attract and motivate more landowners. The challenge the City faces is to refine its existing tools to make them more attractive and effective and craft a broader and more comprehensive set of techniques that can appeal to a larger set of landowners. This effort should be initiated in the context of an overall open space conservation program. The primary recommendations are:

- **Broaden the Mandate for the Open Space Commission.** In the past, the City's Open Space Commission has served primarily as a screening body for determining which projects should be acquired with limited public funds. It should continue to play that role, and continue to also examine the full range of techniques available to protect land and assist the City Council in identifying those with the greatest potential for success and refine techniques that have so far been ineffective. Moreover, it needs to determine the best ways to leverage limited public funds to achieve conservation success and

partner with other entities such as the Bainbridge Island Land Trust to maximize its effort. If appropriate, the Commission might be expanded in membership to ensure that it represents a broad and respected cross-section of interests on the island. Part of this expanded mandate would be to provide education and outreach for landowners that may be interested in participation, and for general understanding by Bainbridge Island's populace. Such citizens' commissions operating in other jurisdictions have provided local decision-makers with valuable input for creating incentives, defining the criteria for reviewing projects and screening and recommending projects for approval. The Open Space Commission should continue to include a representative of the Parks and Recreation District and continue to improve coordination with this entity. A staff position paid jointly by the Parks and Recreation District and the City would aid in this partnership effort.

- **Increase Staff Capability to Support the Open Space Commission.** For the Open Space Commission to meet its increased mandate, it will need to have a dedicated staff person. Such staff capability need not be full time, but should have professional experience in land conservation so that the Commission can perform its expanded role. If the Commission is to perform its role in recommending and tailoring new approaches to protecting lands and reviewing applications for open space funding, it will need to have dedicated staff capability and expertise. This staff person can be shared by the Parks and Recreation District and the City to foster collaboration and maximize efficiencies.
- **Explore the Full Menu of Land Protection Techniques and Adopt or Modify Those that are Appropriate.** In the past, Bainbridge Island has relied on a few techniques to protect important open space lands. Each of the techniques, whether incentive or regulatory, should be critically evaluated in terms of its effectiveness. If a particular technique is not working well, ways to fine-tune the approach should be explored and recommended for adoption. At a minimum, the following additions or modifications to existing approaches should be explored:
  - a. **Refine the Cluster Subdivision Ordinance.** The existing Flexible Lots Subdivision ordinance does not appear to be effective in protecting open lands, changing development patterns, or creating interconnected open spaces. In general, cluster ordinances need



to provide some level of incentive for landowners to consider using them, which generally relate to a density bonus, expedited review, or relaxation of certain standards (e.g., road width, curb and gutter, etc.) for such projects. Often, the level of incentive needs to be experimented with to achieve a desired result. Most cluster ordinances require at least 50 percent or more of the parcel to remain undeveloped in exchange for incentives, and the incentive is increased proportionately (sliding scale).

- b. Encourage Donation of Conservation Easements.** Local governments can encourage local residents to work with a land trust and protect their land through the use of conservation easements. Currently, the federal tax incentives for donating conservation easements are at an historic high. Some jurisdictions have established specific provisions in their codes that provide incentives for landowners to consider. Developing a closer working relationship with the Bainbridge Island Land Trust, as is discussed later, could assist in this effort.
- c. Purchase Development Rights (PDR) or Conservation Easements on Priority Lands.** In the past, the City has not acquired conservation easements with its funds. The City may be able to achieve its conservation objectives for certain lands more efficiently by purchasing the development rights, through purchase of a conservation easement, instead of a full fee interest. The value of the development rights usually varies from 30 to 80 percent of the fair market value of the property. Through PDR, the landowner is able to obtain the equity or development value from the property, keep the land open or in productive agriculture or forestry, keep it in the family and pass it on to the next generation, and make needed capital investments with the proceeds. A number of new federal programs assist with the purchase of conservation easements for lands with specific values, and many jurisdictions have been able to leverage their limited funds, matching local dollars with \$3 to \$4 from other sources.
- d. Utilize Creative Purchase Options.** When the City purchases land, or partial interests in land, creative purchase approaches should be utilized that effectively lower the cost to the City. As a public entity, the City enjoys a number of advantages in the way that it can creatively interact with landowners to effectively reduce its cost of purchase. Techniques that the City should explore include: bargain sale, donation with life estate, charitable gift annuity, lease option, rolling option, tax free interest, and land exchange.
- e. Improve Critical Area Overlay District.** A number of improvements could be made that would improve the effectiveness of this tool. Performance criteria for permitting uses in the district could be developed to promote the protection and preservation of the natural functions of the areas. Landowners could be actively encouraged to donate conservation easements as a way of realizing economic value for the natural resource qualities of these lands. Maintaining connectivity of resources from one property to another should also be encouraged. Currently, the overlay zoning is connected to the TDR process that is not functional. The relationship of the two should be amended so that they work together.



- f. Restructure the TDR Program.** By all accounts, the TDR program needs a thorough revision so that it can play an effective role in both protecting important lands and encouraging greater density where appropriate. TDR is not a panacea, but in combination with other tools it can play an important role. An extensive analysis of the City's TDR program was conducted by Makers (undated) that provided specific recommendations for restructuring the program. The City should implement these measures as soon as possible. Experimentation in developing the appropriate level of transfer incentive is essential. The City may well have to assist a number of transactions to "prime the pump" and get a market going. Crafting a successful TDR program will require significant effort and a period of experimentation to understand the dynamics of creating the TDR market. A pilot program could be used to explore the dynamics of making TDR work in a specific location, such as the Neighborhood Service Centers. A pilot program of modest experimentation could well define the elements of a successful program that could then be applied more widely. As recommended in the Makers report, a staff member will need to be dedicated to foster and implement this program.
  - g. Attract Conservation Buyers where Appropriate.** A conservation buyer is someone who is interested in purchasing a special open, productive, or scenic property because of its special natural qualities and who can take advantage of the tax benefits of granting a conservation easement. The City could work with the Bainbridge Island Land Trust and local real estate brokers to identify properties and owners that might be matched when special properties are placed on the market. Multiple benefits spring from matching properties up with conservation buyers who voluntarily protect their properties with conservation easements.
  - h. Establish a Technical Resource Team.** A strategy implemented by a number of jurisdictions and land trusts is the establishment of a Technical Resource Team that could be composed of a local attorney, land planner, estate planner, accountant, or others. The City's Open Space Commission has informally used this technique effectively. The team works on a confidential, no-cost basis with landowners to help them explore conservation, land planning, and limited development options, as well as analyze legal, tax, and land planning options to assist families in considering a range of alternatives for protecting open lands. Often the costs of exploring these options are daunting to landowners, and providing this service on a pro bono basis would help landowners understand options and be better informed and more confident in deciding what to do with their land.
- **Review Funding Options Based on the TPL Report.** A variety of open space funding options can be utilized to protect important lands that have been identified for protection. These include various taxes—sales, property, real estate transfer, special purpose—impact fees and other fees on development, and creating a dedicated pool of funds with a general obligation bond. The TPL report provides a detailed outline of the funding possibilities for the City. A bond measure would provide funding over a specific time period and



has been successful in the past. Experience in other jurisdictions has shown that even a relatively small amount of local funding can be effective if it is leveraged with other state and federal sources. Moreover, when limited local funds are used effectively, citizens are likely to reauthorize funding or increase the level of funding when given the opportunity. Funds for long-term management of lands acquired and for monitoring conservation easement agreements should also be accommodated in the funding strategy.

- **Use Priority Open Space Map for Reviewing Open Space Funding Requests.** For Bainbridge Island to effectively protect the important lands identified in this study, the map of priority open space areas should be used for evaluating potential projects as financial resources are available. This process will provide assurance that the projects targeted for funding are chosen on their merits. This process should include reviewing applications for open space funding on an annual or biannual basis, and could utilize the criteria and rating system established by the Open Space Commission.
- **Continue to Work Collaboratively with Land Trusts.** Currently, Bainbridge Island works informally with the Bainbridge Island Land Trust on land protection efforts. This relationship could be strengthened to the benefit of both entities. Jurisdictions that have strong land protection programs have established working relationships with land trusts and often coordinate their activities. In other jurisdictions with PDR programs, a local land trust often negotiates the conservation easement with the landowner, and the community assists with funding for the project. In some cases, the community is a joint holder of the conservation easement, although the land trust has the responsibility for monitoring and enforcing the agreement. In some communities, the agreements to cooperate in certain ways are defined in Memoranda of Understanding (MOU) and adopted by the governing boards of the two entities.
- **Enhance Existing Tools and Regulations for Open Space Protection or Enhancement.** Currently, as part of ongoing or near-term projects, the City has the opportunity to strengthen regulations and land use codes to protect open space or enhance the environment. First, the update of the land use code, and specifically titles 16, 17, and 18, can be strengthened in their language for the protection of critical natural resources. Second, consolidated tree regulations can be strengthened to provide more protection of existing tree resources. Third, City-owned farmland can be preserved and regulated.









The Open Space Study lays out a framework in which the City of Bainbridge Island can move forward to conserve vital open spaces using a variety of strategies. Areas of environmental interest were identified for conservation, and working strategies for open space preservation were enumerated. The task now is to bring together the science and policy to preserve, protect, and maintain a viable open space network on Bainbridge Island.

The landscape ecology-based scientific approach used to identify ecologically important lands on the island, along with public input on the portfolio of sites, resulted in a priority list of areas for open space preservation. The collection of priority areas encompasses the unique environs found on Bainbridge Island, including a range of lands—from forested tracts, to wetlands, to working farms. The protection of a variety of habitats will preserve the biodiversity and ecological integrity of the island. The environmental sensitivity model identified areas for multiple factors, capturing the range of habitats available on the island. In particular, the model identified areas with sensitive environments such as forested wetlands and streams, natural forested shorelines with sensitive species, natural areas where streams meet the shoreline, and steep slopes near wetlands or shorelines. By protecting these sensitive areas, the City will capture the biodiversity and the most ecologically important habitats on the island. Overlaying the environmental sensitivity and development vulnerability models brought the analysis one step further, by prioritizing

areas that are both ecologically important as well as under pressure from development. Privately owned lots that have no environmental protection and that can be developed were identified as priority areas for protecting vital open spaces and habitats. Public input refined the original model choices, adding local knowledge of working lands, human recreation connections, cultural and historic areas, and locally known environmentally sensitive areas to the portfolio of priority areas for open space preservation.

The final list of priority areas for open space preservation reflects the vast and diverse input that went into its creation and refinement. The areas encompass environmentally sensitive wetlands, streams and shorelines, large tracts of undeveloped forest land, working lands with ecological value, local wildlife hotspots, historic areas, locations for trail connections, and corridors and stepping stones linking existing open space habitat. The diverse lands proposed in the list of priority areas capture the breadth of habitats on the island, as well as human values for open space important to the citizens of Bainbridge Island.

To preserve these areas, the plan suggests a variety of conservation options using regulatory strategies and landowner incentives. Multiple strategies have been successfully employed to preserve open space on Bainbridge Island. These strategies are likely to be successful again, while new strategies may also be useful for future preservation. The

study suggests that the City should develop a comprehensive program that includes acquisition of land and easements, as well as financial incentives that provide a framework for developers and landowners with an opportunity to coordinate in clustering development. Each identified priority area will require a unique combination of preservation strategies to successfully protect it as part of the vital open space network.

Armed with a variety of tools and identified priorities, the City can successfully protect the valued open space areas that make Bainbridge Island a unique environment.







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