



# Guemes Island SDAT

Creating a Sustainable Guemes

A Report by the Sustainable  
Design Assessment Team

**Guemes Island, Washington**  
**June 20–22, 2006**



**AIA** Center for Communities by Design

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## EXECUTIVE SUMMARY

This report is the result of the Sustainable Design Assessment Team (SDAT) visit to Guemes Island in Skagit County, Wash., in June 2006. While development pressures on the water supply are not the sole threat to sustainability on Guemes Island, they are the overriding issue and were a large part of the reason the SDAT was asked to come to the island.

As part of the charrette process, which included concerned members of the community, a vision for the future was formulated by each of the five focus groups listed below. Each section of the report that follows includes specific recommendations based on relevant background information such as strengths, weaknesses, opportunities, and threats faced by the island today as it tries to shape its vision for the future.

**Wildlife, shoreline protection, and ecology**

**Aquifer protection and water resources**

**Transportation**

**Energy**

**Rural community character**

### Welcome

As you walk here step gently  
enjoy the young raven in the ancient  
fir tree that shades the cattail marsh  
just up from the beach

Sense the harmony of the islanders  
as they go about with an  
unhurried pace, a kind wave of the  
hand for all passersby  
admire the quiet. Breathe the peace  
we all try to preserve for each other  
and do no harm here  
to our place... to our home.

—Gary Davis, Guemes Island, Wash.

### Overall Analysis

Guemes Island is faced with two trends: natural systems are deteriorating as the population grows and pressures to accommodate additional growth are steadily increasing. In order for the future of Guemes Island to be more securely protected, a multifaceted approach is required. To effectively preserve the island from the pressures of current residential development trends, Guemes Island residents need to find partnerships with various entities to achieve broad-based support for zoning changes, island-specific building performance targets, and more stringent water and septic regulations. In size, Guemes Island represents an insignificant portion of the county's inventory of rural land. But, as a "rural island," it is one of the few remaining relatively undeveloped, readily accessible islands in the Puget Sound region. The value of preserving this unique place will be an uphill battle for a county economy that relies heavily on the tax revenue generated by a booming island real estate market.

## **Vision Statements**

Each focus group developed its vision for a sustainable future and an overall vision for Guemes Island emerged that goes beyond our initial baseline notions of sustainability. The vision is clearly reflective of the independent, creative, entrepreneurial, and ecologically minded character of the island's residents. Through example, accrued collective knowledge, education, and outreach, the islanders envision a community that maintains its rural character and protects, renews, and restores the island ecology, its sole source aquifer, agricultural lands, wildlife, and tranquil rural character while

"Vision is not seeing things as they are  
but as they will be."

Anonymous

continuing to position itself as a thoughtful leader and innovator in alternative energy use, building design, construction, and natural resource management. An ideal future includes the partnership of Anacortes, Skagit County, and the Puget Sound region as they too embrace and support a holistic sustainable vision and the preservation of this unique rural island. Future residents of Guemes Island will continue to celebrate the creative diversity of views and lifestyles present on the island. This shared vision of sustainability includes an appreciation for the island's beauty, the value of restorative stewardship of the land, and an appreciation for all of the island's inhabitants—be they plant life, animals, or people.

## **Key Recommendations**

The following recommendations apply to all areas of focus:

- As a community, embrace sustainability as your core value; set your goals and use your core values as an ongoing measure of success
- Using a “grassroots, bottom-up approach,” partner with other public, tribal, and private organizations in the region for land trust strategies, alternative energy options, innovations in low-impact design, construction, and shoreline protection
- Using a “Yankee planning approach,” coordinate strategies and efforts between and around issues by taking the lead for a sustainable Skagit County
- Where possible, implement nonregulatory and incentive programs before imposing new regulations

## **Brief Excerpt of Some Issue-Based Recommendations**

### *Wildlife and Shoreline*

- Formalize an umbrella organization to continue the process of subarea planning, sustainability oversight, and education
- Identify opportunities for partnered protection of shorelines with Washington's Department of Natural Resources' program of repurchasing tidal lands
- Create a funding vehicle for education research and land protection
- Undertake a wildlife, wildflower, and native plant survey

### *Aquifer*

- Obtain significant scientific information on the overall island water budget for "best available science" based regulation
- Immediately implement an education and awareness program on overall island water budget and the fragile nature of sole source aquifer
- Consider applying conservation-based development strategies to guide any further land development

### *Transportation*

- Conduct another more detailed survey of ferry users with specific detailed questions targeting ridership needs and hours of operation; use your sustainability values to resolve scheduling conflicts
- Implement capital improvements on both ferry landings
- Work with Skagit County on right-of-way acquisitions in critical areas around the island to address ongoing problems with erosion
- Study and innovate alternative modes of transportation and alternative fuels for island use



### *Energy*

- Pilot project for grid-tied photovoltaic and wind generator for emergency preparedness facilities
- Provide education for residents on existing programs, conservation, and new technologies on the island
- Develop islandwide assistance program for energy audits and retrofits
- Study feasibility of cooperative power generation on the island
- Work with the county and state to define and promote energy efficient living and renewable energy standards
- Explore and develop incentives for future energy and recycling options

### *Rural Community Character*

- Map and prioritize lands of conservation interest and protect linked open spaces
- Embrace directed growth bylaws
- Ensure context-sensitive building
- Reduce consumption and waste when building on Guemes Island
- Ensure economic diversity; buffer increasing tax impact of general large home real estate market

## INTRODUCTION

In January 2006, Guemes Island in Skagit County, Wash., submitted a proposal to the American Institute of Architects (AIA) for a Sustainable Design Assessment Team (SDAT) to assist the island's residents in addressing key issues facing the community. Included were several special resource issues such as the sole source aquifer, shorelines, wildlife areas, protected species, general resource and energy conservation, and transportation alternatives for a sustainable future. The AIA accepted the proposal and, after a preliminary visit by a subset of the SDAT on April 13–14, the SDAT members arrived in Guemes Island on June 19. For three days, the team members, working closely with local officials, community leaders, technical experts, and citizens, studied the community and its concerns. During those three days, the team came to understand the issues and used its expertise to frame a wide range of recommendations, which were presented to the community in a public meeting on June 22.

This report is a more detailed version of the findings and recommendations that were presented to the community on June 22. After a brief overview of the SDAT program and process, and a short discussion of Guemes Island and the issues it is facing, the report covers

- Wildlife, shoreline protection, and ecology
- Aquifer protection and water resources
- Transportation
- Energy
- Rural community character

A closing section offers some thoughts on how the community can best move forward to address the range of issues and recommendations covered in the report.

### **What is the SDAT Program?**

The SDAT program is an interdisciplinary community assistance program that focuses on principles of sustainability. Launched in 2005, the program represents an exciting new chapter in the AIA's history of supporting communities with volunteer design expertise.

The SDAT program is modeled on the AIA's R/UDAT (Regional and Urban Design Assistance Team) program. While the R/UDAT program provides communities with specific design solutions, the SDAT program provides broad assessments to help

frame future policies or design solutions in the context of sustainability and helps communities plan the first steps of implementation. The SDAT program is based on an understanding of design as a process that

- Is integrative, holistic, and visual
- Is central to achieving a sustainable relationship between humans, the natural environment, and the place
- Gives three-dimensional form to a culture and a place
- Achieves balance between culture, environment, and economic systems

The SDAT program is grounded in the AIA design assistance team values, which call for a multidisciplinary approach, objectivity of the participating team members, and broad public participation.

### **Why is the SDAT Program Valuable?**

Many communities are immobilized by conflicting agendas, politics, personalities, or even the overabundance of opportunity. Many communities have not yet taken stock of their current practices and policies within a sustainability framework, while others have identified issues of concern but desire assistance in developing a plan of action to increase sustainability. The SDAT process ensures that alternative solutions are given a fair hearing and that options are weighed impartially. The SDAT process

- Informs the community of opportunities and encourages them to take action to protect local and regional resources
- Helps the community understand the structure of the place at various scales and contexts—from regional resources to the neighborhood scale
- Explores and articulates the larger contexts and interactions of ecological, sociological, cultural, economic, and physical systems
- Visualizes potential futures
- Recognizes and describes the qualities of a place by preserving the best elements of the past, addressing the needs of the present, and planning for the needs of future generations
- Identifies and describes choices and consequences
- Connects plans and actions

- Advances the principles of quality sustainable communities
- Helps the community define the roles of various stakeholders
- Develops a roadmap for the implementation of more sustainable policies and practices

The key to SDAT success is diversity and participation; the process involves multiple disciplines and multiple stakeholders. The SDAT process includes not only the expert team but also government agencies and officials, private businesses, schools and students, community members, and other parties as appropriate.

### **Who are the Key Participants in the SDAT Process?**

SDATs bring a team of respected professionals, selected on the basis of their experience with the specific issues facing the community, to work with community decision-makers to help them develop a vision and framework for a sustainable future. Team members volunteer their time to be a member of the SDAT. To ensure their objectivity, they agree to refrain from taking paid work for three years from the date of completion of the SDAT project. A distinct team is assembled for each project based on the project's unique features. The team consists of a leader, five to seven members, and a staff person from the AIA Center for Communities by Design.

The professional stature of the SDAT members, their independence, and the pro bono nature of their work generate community respect and enthusiasm for the SDAT process which, in turn, encourages the participation of community stakeholders. The passion and creativity that are unleashed by a top-notch multidisciplinary team of professionals working collaboratively can produce extraordinary results.

#### *Local Steering Committee*

The steering committee is the key organizing group for an SDAT project. It is responsible for assembling local and regional information, organizing the preliminary meeting and SDAT visit, and generating local media coverage during the entire project. After the SDAT visits, the steering committee typically evolves into a group that is dedicated to implementing the SDAT recommendations.



#### *Local Technical Committee*

The local technical committee is the technical support group for the SDAT project, including local design professionals, environmental professionals, economists, and others whose skills and experience parallel those of the SDAT members and who bring with them detailed knowledge of local conditions, issues, and information resources. Their presence magnifies the effectiveness of the team.

#### *Citizens*

In the end, the citizens of the community are the critical players, both for their insights and observations during the team visit and for their support for the new directions that emerge from the SDAT process.

On behalf of the Guemes Island SDAT and the American Institute of Architects, it is hoped this report will be a useful guide to the Guemes Island community as it charts its future for the coming years and for coming generations.

## GUEMES ISLAND TODAY

### History

Guemes Island is at the southeastern part of the San Juan Islands and can be reached by a seven-minute ferry ride from Anacortes, Wash. First sighted by the Spaniards in 1792 and named after Don Juan Vicente de Guemes, this 8.2-square-mile island was one of two islands permanently inhabited by the Samish Indian Nation. South Beach, between the marsh and the current ferry dock, was the site of Old Guemes Village abandoned in the 1830s. New Guemes Village was on the west shore facing Cypress Island and the Bellingham Channel until it was finally abandoned and the land was sold between 1904 and 1906. Called “Dog Island” by the Samish people, New Guemes Village was for many years the site of the regional Potlatch. Sacred burial grounds are nearby on the higher elevations. After decades of legal battles the Samish Indian Nation was finally recognized by the federal and state governments in 1991; they are now working to build relationships with the current residents and reinitiate tribal activities on the island.

Early white settlers on the island were mostly trappers, hunters, prospectors, and soldiers. A small gravel pit on the island supplies island construction sites and at different points in time the 120-acre Department of Natural Resources (DNR) parcel has also been logged. Some form of agriculture and grazing has always occurred on a small portion of the island where top soils are deepest but 21–28 inches of rainfall annually requires proper planning for any successful agricultural endeavor. In 1990 a major storm caused significant damage to the island’s forests. Some of those areas have been restored through forest stewardship and the stronger trees left behind in the wake of the storm are now considered some of the most beautiful trees on the island.

### Demographics

In 1962 Guemes Island became known as a center for artisans and writers when Anacortes hosted its first arts and crafts festival. Since then the island has continued to attract artisans who run independent home-based businesses. Guemes Island has a year-round population of close to 800 people, but during the summer months it may at times be as high as 3,000, taxing the island’s roadways, ferry service, and water supply. The island’s natural beauty, spectacular views, and quiet rural lifestyle continue to attract people who often begin as part-time residents and later make Guemes their full-time home at retirement.

## **Trends**

Current growth trends in Skagit County have been the highest in the state; 80 percent of that growth is urban spillover from Everett and Seattle. Situated midway between Vancouver and Seattle, the county has proved very attractive to a retiring population. This growth trend is also evident on Guemes Island. Pressures to subdivide existing larger parcels along with increased development of disproportionately large homes on smaller shoreline parcels is placing an unprecedented burden on the sole source aquifer. Many wells in proximity to shorelines have begun to fail and the impact of the island's older septic systems on the groundwater supply is still uncharted. All these issues place Guemes Island in a particularly precarious situation for the future.

## **Why Help is Needed**

County location, topography, and climate make balancing economic and environmental objectives more challenging than elsewhere in the state. This “big picture” on a county level has affected Guemes Island. Opportunities for personal capital gain as well as increased tax revenue generated by the island’s burgeoning high-end real estate increases the pressure to develop more high-end residences, displacing older fixed-income residents off their island when they are unable to meet increasing tax burdens.

In 1997 the U.S. Environmental Protection Agency granted Guemes Island “sole source aquifer” designation. Eighty percent of the shorelines have “critical area” designation for a sensitive marine ecology that includes spawning areas, eel grass beds, nesting bird habitat, and the continuing threat of erosion, not to mention the critical role shore-

line zones play in the protection of the sole source aquifer. Most of the awareness of the island’s fragile ecology is the result of the high level of community activism, perseverance, and local initiative taken by residents to quantify and protect the natural ecology and the rural landscape of their island in a truly sustainable fashion.

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

—The Brundtland Commission, 1983

As part of the 1991 Washington Growth Management Act, in 2002 the Skagit County Comprehensive Plan designated Guemes Island as one of the rural areas in need of more detailed planning through the subarea plan and the community development planning (CDP) process. The SDAT process proved to be a perfect match for this community and complements the goals of the CDP to “enhance community values and identify and assure sensible growth and development.”

The SDAT began to address these issues and, most important, looked at them in an interconnected way. It is the hope of the SDAT that this process will contribute sustainable solutions that can be endorsed by all the islanders while simultaneously encouraging and promoting support for sustainability on a county and regional level.

As a means to that end, four sustainability objectives based on the Natural Step can be used as a baseline target of “upstream” issues in evaluation, solution, and implementation; the first three conditions focus on use of natural resources and are critical prerequisites to ensuring the ability to achieve the fourth objective:

- Reduce or eliminate wasteful dependence on fossil fuels, scarce metals, and minerals that accumulate in nature
- Reduce or eliminate wasteful dependence upon chemicals and synthetic substances that accumulate in nature
- Reduce or eliminate encroachment upon nature when considering any part of the island
- Meet human needs for housing, nourishment, and social contact fairly and efficiently

# WILDLIFE, SHORELINE PROTECTION, AND ECOLOGY

## **Strengths**

- The residents of Guemes Island are exceptionally connected to this place, the land, and the integration to their well-being and sustainability
- The natural landscape of the island provides beauty, wildlife diversity/habitat, aquifer protection, and opportunities for recreation
- The diversity of the open space, shoreline, and agricultural landscape holds historic and cultural significance for residents
- The diversity and individuality within the community is especially important to all residents (including the Samish Indian Nation of Washington)
- There is a significant beginning of sustainable lifestyles and building practices that will contribute much to this island becoming resource efficient

## **Weaknesses or Challenges**

- Guemes Island has definite limits to its wildlife, open space, and shoreline through water resources (aquifer and shoreline)
- The growth pressure through a strong real estate demand and the age of many property owners pose imminent and significant challenges to the future of the island landscape
- There is limited public access to the shoreline
- The shoreline ecosystem continues to experience decline, risking the health of salmonids, forage species, and shellfish due to growth pressures in the island archipelago
- The removal of existing native vegetation and growth of noxious species is becoming a problem
- Since Guemes Island is unincorporated, it is dependent upon the mainland for cooperation, resources, and political cooperation; however, recent and past history of the island's relationship to Skagit County officials is sometimes tense, causing current difficulties in relationships
- Some aspects of the island's resource condition and the functions they perform are not well-understood by all of the residents

## **Vision of the Future**

The intrinsic value of the wildlife, open space, and shorelines represents vital historic, cultural, recreational, and economic resources important to Guemes Island. Currently, the island's variety of land covers and ecosystems supports adequate wildlife diversity and populations (in general), although there are signs of population imbalances in certain native and nonnative species.

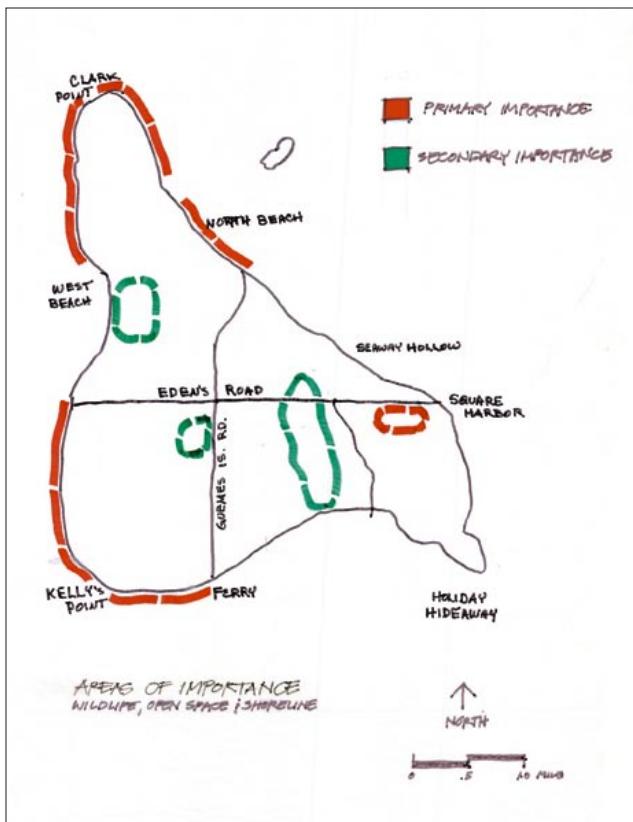
The residents shared their vision of the protection, restoration, and enhancement of these resources with the SDAT in numerous group and individual conversations. They see Guemes Island as being a community in which

- The quality of life and resources of the island can be preserved for future generations
- Individual rights and expression are respected
- Sustainability is seen as a vehicle that meets the above

## **Recommendations**

### *Formalize an Organization to Continue the Process*

- Form or adapt an existing organization to continue the work of Guemes Island Planning Advisory Committee (GIPAC) and the AIA SDAT recommendations and to finalize the subarea plan. This organization may be an umbrella organization that assists in coordinating the numerous existing organizations on Guemes Island.
- Reach out to Anacortes, Fidalgo Island, and Skagit County to form partnerships and/or maintain an open dialogue on subjects that are of common interest.
- Identify and contact all available funding sources that could enable Guemes Island to find assistance in its endeavors or acquisitions (e.g., private contributions, private foundations, Skagit County Real Estate Excise Tax, Conservation Futures Property Tax, Interagency Committee for Outdoor Recreation, property transfer tax).
- Create a map of areas and properties of importance for preservation and/or acquisition by the community. Establish a hierarchy of importance using these criteria: the mountain, shoreline (water) access, availability, contiguous to protected lands, high wildlife value, high visual value, access to recreation, forest land, and farmland.
- Reach out to all residents of Guemes Island, especially those not traditionally represented such as part-time residents.



#### *Organize Meetings with the Skagit Land Trust and San Juan Preservation Trust*

- Meet with the two trusts to fully understand the options for preservation and stewardship that exist as well as the interest and potential they have in Guemes Island
- Organize meetings for property owners to better understand the opportunities that exist with these trusts

#### *Identify the Opportunities for Partnered Protection of Shoreline with the DNR Program of Repurchasing of Tidal Lands*

- Meet with the DNR to review the department's potential program for repurchasing of tidal lands at Guemes Island. These funds are derived from DNR leases and provide an excellent opportunity to aid in shoreline access.
- Meet with the Samish Indian Nation of Washington to discuss the potential acquisition of former tribal lands.

#### *Establish Education Programs*

- Undertake regular educational programs for residents in the areas of open space land classifications, forest stewardship, low-impact development techniques for the home, backyard wildlife habitat, master gardeners, and native plant society
- Establish a center of education and research to assist in resident education as well as to gather data from island projects in sustainability

*Create a Funding Vehicle for Undertaking the Above*

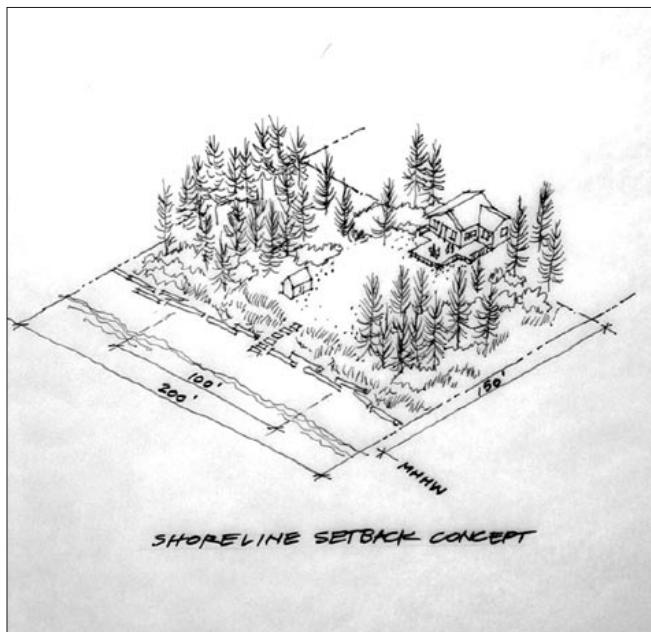
- After the organization is created, and at the earliest opportunity, create a funding vehicle to raise funds for programs and land acquisition

*Undertake a Wildlife Survey and a Wildflower/Native Plant Survey*

- Undertake a wildlife survey to establish a baseline of population, habitat, and range for species of concern
- Undertake a wildflower and native plant survey to establish a baseline of population and range
- Consider noxious plant removal when their presence threatens native species and health

**Connections to Other Issue Areas**

- Any effort to protect shorelines, wetlands, and aquifer recharge areas will greatly enhance the future salubrity of the sole source aquifer
- Coordination of zoning, open space plans, and wildlife corridors are critical to maintaining the island's rural character



## AQUIFER PROTECTION AND WATER RESOURCES

Guemes Island is designated as having a “sole source aquifer” (SSA) which, according the U.S. Environmental Protection Agency (EPA), is appropriate when more than 50 percent of the population obtains its drinking water from the underlying (groundwater) aquifer system and this aquifer system is bounded and limited. Groundwater is the only natural source of drinking water on Guemes Island for 98 percent of its residents and, with 21–28 inches of precipitation annually, the overall recharge rate is quite slow.

SSA designations help increase public awareness of the nature and value of local groundwater resources by demonstrating the link between an aquifer and a community’s drinking water supply. Protection of groundwater resources can best be achieved through an integrated and coordinated combination of federal, state, and local efforts. For example, local wellhead protection programs designed to protect the recharge areas of public water supply wells should work in concert with contaminant source control and pollution prevention efforts being managed at various levels of government. This coordination ensures that all groundwater activities meet the same protection goal without duplication of time, effort, and resources.

On Guemes Island, the Washington State Department of Ecology oversees issues of water rights: who owns the water and what their rights are to use of that water. The Washington State Department of Health has responsibilities for group A water system regulations (15 or more connections) with regards to construction, siting, and quality of the water supply. The Skagit County Health Department has responsibilities for group B water system regulations (15 connections or fewer) with regards to construction, siting, and quality of water supply. Individual wells on Guemes Island are only regulated at the time of building permit or land division application. This permitting process requires information on the well drilling proposal and strategy for monitoring the well. The applicant must show that the minimum production of well will exceed 400 gallons per day. Likewise, land developers have to demonstrate they can provide water to all subdivision lots.

As of this report it is not clear that there is much cooperation among these different agencies to the specific area of Guemes Island. In addition, it appears the various regulatory agencies are exclusively focused upon meeting demand for water as well as violation of standards and other kinds of regulatory matters, not at all considering the overall sustainability of the water resource in their policy designs or regulatory procedures.

## **Community Concerns**

The Aquifer Protection and Water Resource Roundtable for the Guemes Island SDAT identified the following concerns for protecting the aquifer and using resources on the island:

- Level of public awareness and understanding about the limitations of water resources on Guemes Island
- Holistic protection of the aquifer in terms of quantity and quality
- The arbitrary and inconsistent use of groundwater on the island as a common property resource (tragedy of the commons!)
- Need for scientific verification of the current state of freshwater groundwater resources on Guemes Island and location of recharge areas
- Possibility that groundwater demand may exceed supply and then those legally granted access to groundwater may not have their “true” supply as granted
- Codification of sufficient protection of groundwater resources in laws and policies for Guemes Island (e.g., seawater intrusion policy that has been interim for years)
- Worries about excessive groundwater resource usage
- Decisions on water resources being highly influenced by developers and lack of a relationship between planning decisions and “real” data that are available
- Quality of water resources with regard to risks to human health
- Metered wells
- Adequate monitoring of septic systems
- Use of the basic “water balance” model for Guemes Island employed for decision-making
- Meaning of the designation of sole source aquifer
- Total cost for construction of a central water supply system for all of Guemes Island
- Vegetative consequences from saltwater intrusion around the island
- Fire hazard planning that does not adequately consider the sole source aquifer situation
- Possible regulation of private reverse osmosis systems

### **Potential Future Threats to Water Supply by Order of Severity of Impact**

- Status quo; no more development on Guemes Island; moratorium at present build-out number of homes and other buildings—This scenario could happen for a number of reasons, including perceived lack of adequate freshwater supply from sole source aquifer, public health concerns, change in regional economy, climate change affecting island shoreline water levels, a desire by some people on the island to see no more development, or reaching the Growth Management Act rural population allocation for Guemes Island. Existing regulatory loopholes that could cause this scenario to occur would include law suits and public health concerns.
- Construction of a partial-island central water supply system, supplemented with individual wells already in place—Reasons that could potentially cause this set of circumstances to occur might include providing a more dependable, centralized supply of water from the aquifer; catastrophic event causing a loss of access to groundwater from traditional, individual wells; building a pipeline from Anacortes; widely applying reverse osmosis technology; or saltwater intruding to the groundwater supply. The primary jurisdictional process that could allow this scenario to occur would be eminent domain.
- Creation of an islandwide central water system—Reasons similar to the above construction of a partial central water supply system scenario could also lead to this circumstance happening. These include providing a more dependable, centralized supply of water from the aquifer; a catastrophic event causing loss of access to groundwater from traditional, individual wells; building a pipeline from Anacortes to supply the island's water; widely applying reverse osmosis technology; or wide incidence of saltwater intrusion into the groundwater supply occurring. The primary jurisdictional process that could allow this scenario to occur would be eminent domain.
- Significant subdivision of properties from granted variances and lack of holistic, islandwide planning—The reasons this set of circumstances could potentially happen on Guemes Island might include wanting to develop an expanded tax base, individual profit-making desires on the part of residents, or regional buyer demand. Loopholes that might allow this to occur would include the use of LAMIRD or CaRD zoning variances or the establishment of accessory dwelling units on properties.
- High-density, multifamily residential complexes—Reasons this scenario may play itself out include the potential for individual profit-taking on the part of property owners, excessive tourism promotion of the island, or significantly increased public demand for access to wild lands and recreational opportunities. Existing situations

that might allow this set of circumstances to happen could include variance applications, amendments to the county comprehensive plan, or rezoning applications. It should also be noted that under certain circumstances, this future scenario has the potential to increase density on allocated land parcels through clustering that could provide a tool for additional aquifer protection.

- Commercial and industrial development of island lands—Although very unlikely under the current rural zoning situation on Guemes Island, potential reasons why this change might occur could include wanting to increase the real estate tax base for the island, enhanced jurisdictional service demands, or to provide jobs. Loopholes that might allow this scenario to occur would include new comprehensive plan variance applications, rezoning applications, or rural business clauses in existing regulations.
- Catastrophic event, such as an earthquake, tsunami, major fire, refinery accident, meteorite, Mt. Baker eruption, or nuclear missile strike.

These different futures were then used to define potential problems to the choice of further development and growth patterns on the island that might affect the supply of freshwater and the sustainability of the SSA. Potential problems included

- Lack of understanding of water available for domestic use from sole source aquifer
- Inadequate knowledge on capacity of normal septic system operations when stressed by excessive water flow or organic load
- Lack of understanding with regard to sole source aquifer recharge capacity regarding actual physical locations and effects from impervious surfaces
- Inability to meet new (and traditional) septic system regulations
- Malfunctioning septic systems flow into natural surface waters
- Excessive water demand on limited, sole source aquifer
- Need to import water from off island
- Potential pollution of surface waters and water supply
- Decreased capacity of sole source aquifer recharge
- Lack of cost/benefit analysis for construction and operation of a centralized water supply system
- Easement acquisition
- Existence of “spaghetti” road design on Guemes Island

- Land acquisition for pumping stations and other infrastructure placement
- Need for three-phase power access
- A backup of “gravity feed” capacity for power outage periods required
- The potential for more development to gain income and tax revenue advantages
- Population dynamics that continue to change with more rich people wanting more lifestyle advantages
- Ambition and greed of developers
- Occurrence of subdivision actions because of inheritance issues
- Constitutional guarantees for individual property rights
- Initiatives that promote unrestricted development
- Objective to increase the tax base to support governmental services and initiatives
- Second home phenomenon, trophy home trend

### **Visions and Principles**

“Individuals have a responsibility for the condition of society as well as the tidiness of their personal behavior.”

—Huston Smith, philosopher, author, and filmmaker

“Future of any society is directly dependent upon the justice of its social order.”

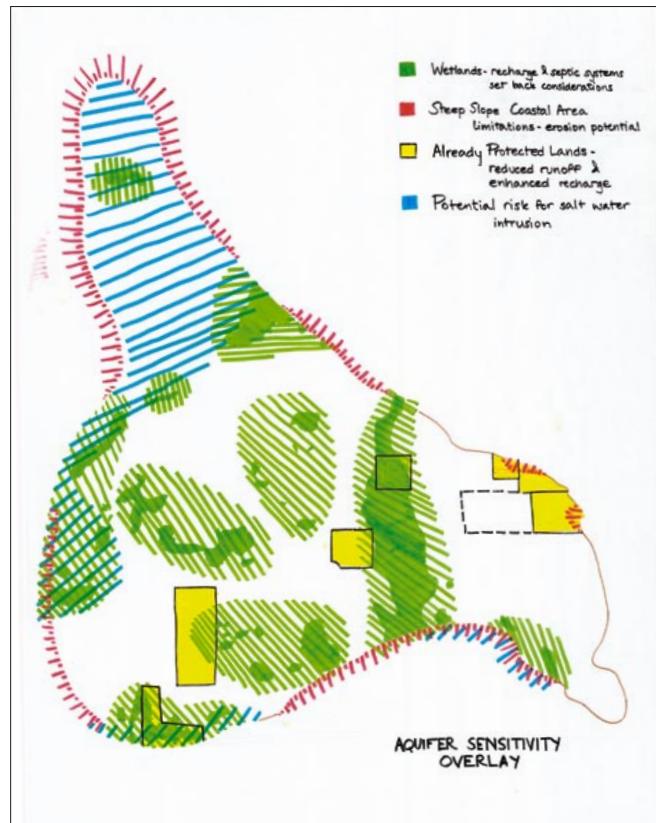
—Huston Smith

Based upon a better understanding for the comprehensive nature of concerns and problems the Guemes Island community can identify related to future potential trends regarding its freshwater supply from the SSA, the roundtable participants articulated their vision for the sustainability of water resource supply to the island as follows:

“The Aquifer Roundtable group embraces a vision for the sustainability of freshwater resources on Guemes Island that is achieved through continued and enhanced gathering of data regarding water supply and usage. This supports sound decision-making about future growth and development and the continuation and improvement of learning/awareness programs in conservative water use strategies that reach throughout the community via education activities and ‘lead-by-example’ demonstration projects. Research and development with regard to new technologies are used to encourage the employment of alternatives to conventional wells for water supply, including the active development of rainwater collection and management strategies. Community awareness and understanding of wastewater treatment are achieved through communitywide participation in septic system upgrade programs. Assessment of the various components of the island freshwater budget will establish a better estimate of the available groundwater. Alternative water saving

measures and technology adoption with assistance from Skagit County are pursued, removing all unnecessary barriers to implementation. Achieving these goals is a reason for celebrating the community's use of common sense."

The Aquifer Sensitivity Overlay illustrates wetland areas on the island, outlines steep slope critical areas of concern, indicates land areas that are presently preserved from further development through either zoning or placement in a land trust, and suggests potential areas of the island that might be a potential risk for saltwater intrusion from well pumping. The wetland areas, which are sensitive to septic system effluent, were delineated as land areas surrounding identified wetlands within an assumed 400-foot buffer region of the actual wetland area. For the steep slope critical areas shown on the adjacent map, critical area limitations include adequate setback from slope to prevent water-induced degradation of bedrock; availability of adequate space for proper septic system function; restrictions on off-site water flow; proof of protection against slope-side erosion potential; proof of no hazard risk to neighbors; and appropriate setback distance from unstable slopes. The regions of the island designated for potential risk of saltwater intrusion are based upon measures of chloride levels in existing wells that significantly exceed regulatory standards.



## Recommendations

Aquifer Roundtable participants generally acknowledged that much of their discussion of the aquifer and water resource issues was poorly informed because of the lack of scientific data on the major variables related to both the hydrologic cycle of the island as well as the different water uses of the community and its subsequent impact on both water quantity and quality. As a first priority, residents should obtain significant scientific information about the overall island water budget (i.e., yearly precipitation, well head levels, individual and community well usage from water meters, volume of water

existing septic systems, quality of septic system effluent, saltwater intrusion frequencies, well failures, and extent and effectiveness of recharge areas and aquifer). Along with the updated hydro-geological survey, surficial soils on the island should be inventoried by the design and conduct of a U.S. Department of Agriculture soil survey.

A second major recommendation made by the aquifer group that needs immediate implementation is in the area of education and awareness regarding island water resources. Significant attention is required for community education and awareness on water supply systems and wastewater treatment systems (i.e., septic). Public official dialogues on water supply concerns for Guemes Island should begin and be maintained so there can be agreement on appropriate conservation and sustainability issues. Dialogue should also be held with appropriate county and state regulatory agencies to guarantee water resource issues specific to Guemes Island development are fully referenced in the building permit process.

Further recommendations of the Aquifer Roundtable participants included the following solutions to observed problems:

- Work to develop a better estimate of the water budget for the Guemes Island system that is understandable by all stakeholders
- Encourage cooperation between the Washington State Department of Ecology and Skagit County planning and health departments with regard to the siting, drilling, and monitoring of island wells
- Promote full transparency to decision-making for Guemes Island land use by making sure there are no “blanket” variances (e.g., LAMIRDs) issued for already zoned areas of the island
- Develop a strategy to ensure that wells and homes are metered for water use
- Protect identified aquifer recharge areas of the island from development, such as the building of impervious surfaces
- Enhance recharge capacity and minimize freshwater runoff from the island
- Encourage the installation of cisterns in all new building and any remodeling of existing buildings to decrease freshwater land run-off and provide alternative sources of water for some domestic uses
- Mediate the existence of drain pipes that enter the seashore region if they present a public health hazard
- Encourage clustered domestic wastewater treatment facilities for failed septic systems on the island

- Conduct a cost/benefit analysis for the potential construction of an islandwide water system
- Encourage home water conservation (e.g., “water turn-off” when not in residence, use of low-flow fixtures, use of on-demand water heaters and recirculating water heaters, separate graywater plumbing and use for toilet flushing and clothes washing, use of rainwater sources for toilet flushing and clothes washing, and a home strategy of continuous monitoring and maintenance of domestic water system)
- Formulate a policy for ensuring maximum building footprint on all developed sites (all buildings) not to exceed 3,000 square feet
- Guarantee that no accessory buildings are constructed on properties whose wells exist in areas determined to be at risk for saltwater intrusion
- Codify the Interim Seawater Policy before the Skagit County commissioners into law to better govern saltwater intrusion policies into the freshwater aquifer supply for Guemes Island
- Regulate private reverse osmosis system locations and installation as part of the building permit process and monitor for impact on existing groundwater supply, usage rates, quality, and discharge of salts to either land or water
- Support the draft “Guemes Island Shoreline Master Program” consultant’s report which incorporates some of the Washington Shoreline Management Act policies for inclusion in the subarea plan; in particular, include as code minimum, a setback building requirement from ordinary high water of 150 feet for new development in rural conservancy zones and shoreline residential zones and a building size to lot size ratio as recommended in the Coastal Zone Management Act at footprint of 10 percent or 3,000 square feet, whichever is less

Because of residents’ concern for property rights, roundtable participants had some hesitation about promoting the quickly growing idea across the nation of conservation-based development as an extremely effective tool for achieving sustainable development, especially on rural landscapes. But regional land development activities done in isolation or segregated from one another, not thinking equally about natural resource conservation, economic security, and social well-being for all, can cause a number of major problems, including

- destroying the economic and environmental value of resource lands
- creating an inefficient land-use pattern that is very expensive to serve
- threatening economic viability by diffusing public infrastructure investments
- destroying the intrinsic visual and functional character of the rural landscape
- eroding a sense of community

Therefore as a separate, SDAT-generated recommendation it is suggested the Guemes Island community seriously consider applying conservation-based development strategies to guide any further land development that occurs. Conservation-based development is the practice of integrating environmental and social issues into the meeting of economically viable mixed-use development of both urban and rural landscapes. The concept of conservation-based development covers many different issues, from the environmentally sound use of rural lands to the protection of natural, ecological, and agricultural resources to the maintenance of small town and village integrity. Conservation-based development practices will help a developer to

- make thoughtful choices about where new development should or should not go to improve water quality and natural habitat protection
- understand how good environments (open space preservation, coastal bay ecosystem health, forested and agricultural land protection) will in turn support healthy economies (value-added agriculture, ecotourism, enhanced commercial fisheries)
- formulate rational strategies for using already developed land and resources more efficiently to enhance a sense of community
- link land-use development with conservation and protection of economically valuable watersheds
- set up regulatory mechanisms that are fair, clear, consistent, and far-sighted
- offer a better quality of life in an equitable way for all citizens of the region

The application of conservation-based development strategies to future residential development on the island will minimize the footprint impact of buildings and other impervious surfaces on the important aquifer recharge areas of the island, enhance opportunities for multiple residential hook-ups from a single well, and create a more efficient and effective means of residential wastewater treatment through new technology treatment systems. By using these tools, more natural vegetated areas of the island can be maintained that not only enhance water resource status but also increase natural habitat protection opportunities.

#### **Connections to Other Issue Areas**

Many of the strategies recommended for action regarding the sustainability of water resources for the future are also effective strategies for addressing wildlife protection and conservation concerns on the island as well as protection of the seashore from pollution and disruptive development.

# TRANSPORTATION

## Vision

Our vision for the future of transportation on Guemes Island includes a comprehensive public transport system seamlessly integrated to the countywide transit system. It will be affordable, sustainable, and fueled by alternative energy sources. An education and outreach program will encourage involvement by the people, influence walk-on ridership, encourage the use of alternative modes of transportation, and promote the island's rural character.

"Infuse all design with a detailed understanding of ecology."

—David Holmgren, co-originator of the permaculture concept



## Background

The policy framework for the Transportation Roundtable which served to guide the discussion included several elements:

- Goals of the state's Growth Management Act (GMA) which defines transportation service in rural areas
- Transportation policies in the Skagit County Comprehensive Plan (CCP)
- Skagit County Capital Facilities Plan, 2003–2008
- Revenue Sources for Capital Facilities, 2000–2005
- Work of the Friends of Guemes Island and other groups

- Ferry surveys
- Skagit Ferry Capital Facilities Plan/Program
- Preliminary transportation and land use elements of the Guemes Island subarea plan via GIPAC
- Guemes Island Ferry Operations Management Analysis or *Berk Report*
- Countywide facilities capital plan
- City of Anacortes Year 2000 Transportation Plan
- Experience of users and city and county officials

There are many unique challenges in rural communities and specific needs and issues of island residents. Some general areas of concern on transportation matters raised in the roundtable were current and projected growth on the island—mostly related to housing development and possibly some commercial development funds—financing of a transportation system, safety, outreach and education, identification and use of incentives, and development and use of alternative fuels and availability of alternatively fueled vehicles.



The most pressing concern related to movement back and forth from the island to the mainland is the ferry. Two additional areas of major concern relate to the island's infrastructure of roads and the use of various modes of transportation. Therefore, the following three areas of interest were defined for discussion in the roundtable:

- Ferry
- Roads
- Modes of transportation

### *Ferry*

One ferry provides daily service across the Guemes Channel between the county ferry dock in Anacortes and the south end of Guemes Island Road. Several issues were identified related to the ferry in a nonprioritized fashion but through discussion generally ranked as:

- Hours of operation
- Communication (between operations and citizens)
- Involvement and weight of islanders in county decisions; an understanding of the county's obligation for ferry operation
- Dependability
- Cost (to the fareholder)
- Growth and capacity management
- Increased walk-on friendliness
- Waiting areas
- Bicycle area; parking and on the ferry
- Commercial and private vehicles; numbers and preference

### *Roads*

With regard to the approximately 21 miles of public roads (and approximately 7 miles of private roads) which provide access to the points on the island, there were several areas of interest:

- Erosion (primarily South Shore Road and Holiday Blvd.)
- Staging area at ferry terminals; bottlenecks created at the end of the designated ferry line and traffic control for passengers embarking and disembarking
- Inconsistent road width
- Excessive speeding
- Use of road area for parking, particularly at various public and private gatherings
- School bus stops on the Anacortes side

### *Modes of Transportation*

The types of transportation in addition to personal and commercial vehicles being used or that could be used to travel around the island focused on

- More efficient use of private vehicles
- Public shuttle service
- Bicycles and other alternatives to cars
- Reduction of energy use and introduction of alternative fuels
- Coordination of the county SKAT bus system and the air porter shuttle service and the ferry schedule

### **Strengths and Weaknesses and Challenges of the Island's Transportation System**

The abovementioned three issue areas mirrored the issues that had been raised in the draft transportation element of the GIPAC subarea plan. And the more specific concerns within each of the three areas became the focus of discussion of the roundtable.



#### *Ferry*

Having a ferry to get back and forth on the island is generally viewed as a positive and critical response to the needs of citizens. Although other options such as a bridge and maybe even a causeway might have been considered in the past, these alternatives are not being pursued. However, having only one ferry as opposed to perhaps a ferry for passengers and a ferry for vehicles does present some challenges and has fostered some consideration for adding another ferry.

An example of the weakness in having only one ferry can be seen in the hot issue of operating hours. The operating time also becomes connected to the broader concerns of the citizens as discussed in the Rural Community Character section of this report. Generally the citizens want to preserve and protect the island from development that would erode the rural environment. Some citizens believe that maintaining a policy of limiting continuous access through short hours of ferry operation will keep the island from being overrun by visitors and

discourage more development. Others have seen a need for increasing the nighttime hours so that they can participate in weeknight programs and activities off the island and attend late evening gatherings with friends and families. Having only one ferry service requires trying to balance these diverse needs of the citizens and has resulted in creating more problems for all—including the citizens and the operator, which has led to legal action. Having only one ferry becomes a reflection of the complexity of citizens' need to reach the mainland and challenges the citizens to look at alternatives that might address their diverse needs.

The communication and involvement (or lack thereof) between citizens and the county government in addressing ferry needs of the island is a challenge.

### *Roads*

As the paved public road and connecting private access road network developed on the island, it has allowed for mobility to all points of the island. A weakness of the road network, however, is reflected in the many issues as identified earlier due to more people using the roadway in a variety of ways and nature's impact. Generally, congestion and safety on the roads have become the challenges that require immediate attention.

An example with regard to congestion is the back-ups during ferry peak operating hours, and this then connects back to the above ferry issue of extending operating hours. An additional weakness tied to the limitations of the existing road is that as more people build and move on the island, the likelihood of more cars parking along the road is almost certain. Then the inconsistent width of the existing roads becomes more apparent, particularly as folks are hurrying back and forth to the ferry. The safety of everyone traveling by whatever means then plays into the limitations of the existing road system. The challenge becomes how to address one issue without creating or expanding more problems.

### *Modes of Transportation*

Having a vehicle on the island allows citizens to easily and quickly get from one point to another. However, the increasing use of and number of private vehicles (most often operated with a single occupant) has a tendency to overtax the existing roadways and create various other problems such as pollution. This leads to the challenge of finding ways to make better use of the vehicles and reduce the number of vehicles on the roads at any one time. It became the intention of the working group to investigate options.

## **Long- and Short-Term Action Items and Strategies**

### *Ferry Hours of Operation*

- Conduct another survey of residents possibly via focus group meetings and other means with the help of a professional to clarify the needs and concerns of citizens
- Continue to learn more about the county's responsibility and open more communication lines with department staff and commissioners
- Solidify the citizen's voice
- As appropriate, identify and contact state officials and have them become directly involved
- Explore options for partnership with other county ferries in the region

### *Capital Improvements on Both Landings (growth/capacity management, increased walk-on friendliness, waiting areas, bicycle areas)*

- Present recommendations to county officials regarding suggested changes on the draft Guemes Island Ferry Terminal and Parking Plan (walkways, lighting, vegetation, ADA accessibility, signage, pedestrian and vehicle flow on and off the ferry, bicycle area on and off the ferry, improved waiting areas, priority loading)
- Formalize liaison with Anacortes (via Don Mesemer, city planner)
- Follow up with operator on getting baggage carts
- Follow up with operator on suggested improvements for bicycle racks
- Follow up with operator on possible removal of the fire hydrant
- Follow up with operator on suggestions to eliminate Sixth Street light problem
- Follow up with operator to switch employee and ADA parking
- Work with city on temporary curbs on the city side
- Work in partnership with the city of Anacortes to develop and maintain a working relationship with the operator and county engineers to prepare final plan

### *Costs*

- Broaden fare committee's base of support and have it become a formal liaison with the county
- Explore walk-ons being free
- Explore discount passbooks
- Develop additional packages of incentives for walk-ons

### *Dependability*

- Work with operator on scheduling maintenance
- Explore options for a substitute ferry
- Explore options for substitutes to the ferry

## **Roads**

### *Erosion*

- Encourage enforcement of weight limit with signage
- Inform builders and owners of problems and weight limit restrictions
- Explore temporary barriers
- Recycle building materials and develop alternatives to current materials
- Work with the county to fast forward the date to move the two critical sections of the road
- Work with the county about need for their buying more right-of-way in the critical sections of the road

### *Excessive Speeding*

- Paint speed limit on the road and/or place more signage in more places
- Encourage calling of offenders
- Place four-way stop in the center of the island
- Explore placing visuals related to accidents
- Explore periodical use of speed measurement sign
- Explore use of rumble strips near the ferry and dangerous corners
- Add landscaping to mitigate storm water runoff or collection as a traffic slowing device

#### *Inconsistent Road Width and Signage*

- Review the county's right-of-way
- Identify and correct signage

#### *Use of Road Area for Parking*

- Create outreach and education programs for citizens
- Identify repeat offenders and educate them on danger and explore alternatives
- Create scenic landscaped turn-outs around island at strategic points to foster island culture, collect and filter storm water run-off for informal stopping or overflow event parking

### **Modes of Transportation**

#### *Efficient Use of Existing Vehicles*

- Survey residents to determine how they are using their vehicles
- Encourage car pooling via a phone bank and through media
- Develop alternative modes
- Have the Guemes Island Energy Efficiency Club (GEEC) develop a "Guemes Car"

#### *Public Shuttle Service*

- Work with the county to implement a trial SKAT service to the ferry
- Designate certain transit runs such as shopping for items from the store
- Build in analysis of trial SKAT service

*Bicycles and Other Alternatives to Cars*

- Make the island more friendly to bicyclists and pedestrians via signage of right away
- Explore the free “green” bike program
- Explore the purchase of golf carts and photovoltaic powering stations stationed around the island
- Explore developing hybrid “Guemes Car” on island

*Use of Alternative Fuels*

- Expand biodiesel production on the island to fuel the ferry and other diesel vehicles
- Develop photovoltaic charging stations for electric vehicles
- Explore production of ethanol

## ENERGY

Guemes Island has a history of being an innovator in energy issues. It has been home to several firsts in Skagit County, including a code-approved straw bale home, composting toilet, and graywater system. Despite the small population of the island, there are several people who have implemented wind, solar thermal, and photovoltaic systems.

Besides use of advanced technology, Guemes Island has a history of resource conservation, including the widespread consumption of locally grown fresh food as well as encouragement of gardens and edible landscaping. This is part of the local culture which promotes conservation as a part of being independent. The culture of Guemes Island has developed from its independent and unplanned nature. Low-tech and ingenious solutions are encouraged and considered to be more important than aesthetics. Energy conservation not just in buildings but through the use of a food co-op, recycling, composting, and living simply is seen as part of sustainable living.

Despite this, covenants remain in some subdivisions that prevent owners from keeping chickens and other small livestock. Also, some residents maintain the “just dump it in the woods” mindset regarding waste management. Additionally, the county controls the permitting process and oftentimes when implementing new building technology it can be difficult and time consuming to obtain approval.

### **Energy Sources**

Many different energy sources are available to the island, some of which come from off island and some of which can be or are already produced on the island. Because of issues related to getting the outside sources to the island, energy independence is of concern for the islanders. An analysis of the various energy sources that follows is broken down into off-island and on-island production.

#### *Off-Island Production*

- Combustibles such as propane (heating fuel) and gasoline/diesel fuel (transportation). In addition to being produced off island, these fuels are petroleum based. Use of these fuels contributes to the production of carbon dioxide and causes the poor air quality that occurs on Guemes Island three months per year due to the winds coming from the refinery.

- Electricity. Most electricity is produced off island, 40 percent of which is generated from hydroelectric plants. The remainder comes from natural gas and coal burning power plants. Apart from the substantial transmission losses that come from transporting electricity over long distances, the natural gas and coal plants also generate carbon dioxide, a greenhouse gas and one of the primary contributors to global warming. Specific to the island, the electricity network is somewhat unreliable due to tree limbs falling on overhead lines. While burying the lines for the entire island would eliminate that problem, after discussions with a Puget Sound Electric representative, it appears to be a very costly process and with inherent complications from the simultaneous use of the poles for cable and telephone lines as well.

#### *On-Island Production*

- Combustibles such as wood. Monetary cost varies, ranging from free if you own land and cut it to costly if it is purchased presplit.
- Biodiesel fuel. This fuel can be from waste oil oftentimes obtained from restaurants. A small supply of waste oil comes from the Andersons' store but to produce enough fuel for the island waste oil from restaurants in Anacortes would have to be hauled in. However the production of the fuel can take place on the island, a member of the committee is currently producing biodiesel in a facility in Anacortes with a capacity of 45 gallons per batch using equipment that fits a 4-foot by 6-foot trailer.
- Alcohol fuels. Some agricultural land could be used to grow plants which could be converted to alcohol fuel, but whether small-scale processing equipment exists is unknown.
- Electricity. Generation currently occurs in small scale on the island via solar photovoltaic and wind turbines. These devices are put up and maintained by individuals at their homes. Potential exists for a larger scale wind and solar installation at a high point of the island. Until recently financial incentives from Puget Sound Energy (PSE) had been stalled due to the lack of universal interconnect for grid-tied wind and solar systems. It has now been implemented so monetary incentives are accessible.
- Water/tidal. This process is technically achievable; however, extensive paperwork is required to install anything in the waterway and the best space is used for the ferry dock. Furthermore power output is relatively low when compared to the cost.

## **Energy Efficiency**

Regardless of how power is generated, the less that is required the smaller and more economical the generation system can be. Increases in energy efficiency for the buildings in Guemes Island will make it more feasible for the island to become energy independent.

- New construction. Codes exist for energy efficiency but these are just a starting point. These codes can easily be exceeded and should be. Because new construction starts with a clean sheet design, there are many opportunities to increase the energy efficiency of the building.



- Existing structures. Many opportunities exist to increase the efficiency of existing buildings, ranging from small steps like sealing drafty windows to large projects that involve replacing windows, super-insulating walls, and making every attempt to eliminate “thermal bridges.” Oftentimes changing old buildings is difficult because they contain historic elements that need to be preserved. Fortunately there are few historic buildings on the island so there are no procedural barriers to improving the performance of the vast majority of the island’s buildings. One of the challenges with changing a building is in its initial cost, and there is concern that if change was mandatory, some islanders might be pushed out. Additionally it is the consensus of the group that it is not possible to forcefully change the attitudes of people who do not care about efficiency and that mandating a type of construction would discourage the innovation that is a critical part of the character of the island.

## **Visions and Principles**

Guemes Island is already an advanced community with regard to renewable energy and conservation. It is looking to continue to increase and strengthen that achievement through education and action.

## **Recommendations**

Based on what has occurred on the island in recent history, there is much potential for the island to set an example for the county and even the country in developing sustainable energy systems. The recommendations for the future of energy “policy” in Guemes Island are broken down into short- (one year), medium- (one to three years), and long-term (more than three years) goals.

### *Short-term Goals (one year)*

- Research other county governments, such as neighboring Snohomish, regarding their policies on energy and incentives.
- Research further into the applicability of PSE incentives. PSE does not currently offer grants for innovation in energy; however, many other utilities across the country do and efforts should be made to encourage this as innovation is so prevalent on Guemes Island.
- Research into biodiesel production feasibility on the island.
- Research funding options for all potential projects.
- Pilot a project to create a grid-tied photovoltaic and wind generator grid tied retrofit for the fire station, church, and community center. This is important as the Community Emergency Response Team program uses these areas as a base during emergency operations. Available emergency preparedness funding should facilitate the installation.
- Offer low-income weatherization for PSE customers via the Skagit County Housing Authority.
- Provide education through newspaper and Web site as well as incorporating projects with the already planned solar energy international tour to allow members of local banks, insurers, real estate agents, and government officials to participate.
- Offer a central drop-off recycling container near the ferry, allowing convenience for islanders while also being economical for the service provider. The existing recycling program requires payment for curbside pick up or to haul the recyclables directly to the facility, thereby discouraging use.

*Medium-term Goals (one to three years)*

- Begin development within the island of an assistance program for existing houses to bring them far beyond existing energy building standards, beginning with training for energy audits. The island already contains most of the resources necessary, such as builders and design professionals who are capable of donating their services and this would be another example of islanders helping islanders.
- Research if development of Guemes Island cooperative power generation and distribution system is possible.
- Assuming it is feasible, implement biodiesel production facility or other renewable energy production such as wood pellets.

*Long-term Goals (more than three years)*

- Work with the county to define and promote energy efficient living and renewable energy standards and/or the creation of a “sustainable energy zone,” embodying such ideas as fast track permitting for green building standards; renewable power; increased recognition of alternative ideas for new construction; retrofitting, gray-water; composting toilets; and reduced property taxes for those who use energy appropriately
- Lobby at both the county and state levels as this may prove to be the only solution to issues that arise in the future

### **Implementation**

Because no agency currently exists to implement the above goals, one has been formed, the Guemes Island Energy Efficiency Club (GEEC), as a result of this SDAT. Further development of this energy resource group should occur. The group should advise and encourage innovation but not mandate or regulate. It will work to create a culture of energy efficiency through

- Sharing existing technology for retrofitting and new construction
- Conducting energy audits
- Researching and developing new and innovative technology
- Serving the community
- Educating the general public and target education to critical actors (such as insurers, bankers, community agents)
- Investigating and encouraging new energy efficiency/renewable energy projects

Examples of strategies to use in implementation include

- Articles in the *Linetime*, *Star*, and *Little Candle* papers
- Creation and distribution of educational materials
- Retrofit work groups (using a model like Habitat for Humanity)
- Co-ops for energy produced on the island (wind, biodiesel)
- Project funding from various sources such as universities

Speaking as a group is more powerful than speaking as individuals. On the committee, there were many individuals representing various different energy backgrounds. For example, members have installed solar photovoltaic and solar thermal collectors and wind turbines, produced biodiesel fuels, used innovative construction techniques, performed composting, planted edible landscaping, recycled, and developed a knowledge of possible incentives as well as experience in relating to county authorities regarding alternate technologies. The combined knowledge of the group is strong and has potential to cause great changes to better the energy situation on Guemes Island and help it serve as an example of sustainable energy use for the rest of the United States.

### **Connections to Other Issue Areas**

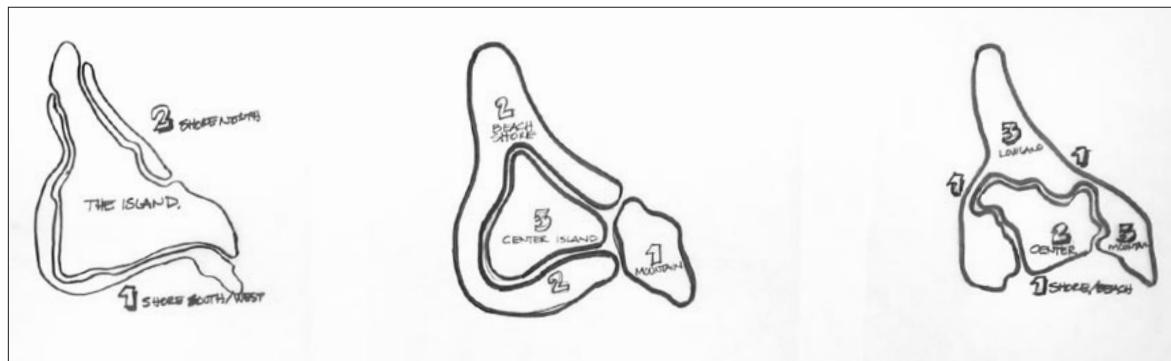
The energy issues on the island relate to most other issue areas. For example, the innovation in energy is part of the character in the community. Additionally, buildings with compact footprints and efficient surface-to-volume ratios positively affect wildlife and shoreline issues by reducing the land impact of the structure. Water conservation measures, particularly those of hot water, reduce the energy consumption of the island and strain on the aquifer. Of course, it goes without saying that transportation is a significant use of energy and using alternative transportation will assist in reducing energy consumption.

## RURAL COMMUNITY CHARACTER

### **What is Community Life Like on Guemes Island?**

In the words of several participants, the island actually selects its inhabitants. They think the island selected them. The current and historic residents are described in many ways: self-sufficient, strong-minded, intelligent, gregarious, and inclusive being among the descriptors. The forced familiarity of a modest-sized island with a small population is largely prized, despite the several easy-to-imagine downsides.

Aside from sharing the traits of independence and value-centered caring, there is an uncommon and celebrated diversity of people and views. Whether retired seniors, exuberant and intelligent young people, people who work the land and resources, or those who extract simple and lasting pleasure from casual observing, life on Guemes Island is enriched by the diversity of its citizens. Tolerance for independence and a complementary welcoming with open arms of anyone wishing to participate is evident. Unusual freedom of choice, relaxed, and safe are prevailing feelings. Guemes Island is and offers authentic, healthful, stress-reduced living.



The prevailing understanding of Guemes the island is physiographically based.  
Shore is distinguished from inland and mountain from lowland.

### **What Sacrifices, Large and Small, Do Guemes Island Citizens Make?**

Living on Guemes Island is a choice and living here includes a willing and knowing reduction of choices others in the county have. To explain what is willingly sacrificed to secure the slow-paced cherished Guemes way of life, the group brainstormed around the question.

<b>More Pervasive Reductions</b>	<b>Things Less Accessible</b>
Overall convenience	Fast emergency access
Spontaneity in choices	Ready deliveries, such as pizza
Broader social opportunities	Late night out
Opportunity to be inconspicuous	Night classes
	Professional organizations and affiliations
	Bar hopping
	Conventional, predictable, and sedentary retirement
	Access to cultural ethnic diversity
	Shopping
	Airport access
	Access to more, perhaps higher paying, employment
	Team sports

### **Surprises and Assets—An Outsider Looks at Guemes Island**

The study of SDAT materials provided, the island field trip and the discussions, the review of available mapping and data, and the numerous knowledgeable well-informed citizens have led to the following conclusions about the island's strengths and character. The most important one is that it is literally a "cultural national park" with several working parts. It is a precariously fragile way of life.

- Predominance of nature or the sense of same on the island
- Guemes' incredible beauty
- Increased access to the sound
- Proximity and support on Anacortes
- Perception that places are as important for what is not here as for what is here (e.g., commerce)
- Concern for the island's nature that is abundant, impressive, knowledgeable, and broad based
- Impressive and articulate young people
- A good deal of innocence

- Great link and communication between young and old
- Hidden homes and life that is not visible from the street
- Noticeable lack of pretension; casual comfortable ambiance
- Safe and secure relaxed atmosphere
- A balance and tolerance for community and privacy
- Broad and impressive passion, pride, strength, and involvement
- A human-scaled place
- Uncommon cultural diversity

### **Vision**

Today, Guemes Island is a rural neighborhood of mostly small-scale homes and businesses. Islanders embrace values reflecting a strong sense of community, neighborliness, an unhurried pace of life, respect for privacy, awareness of history, stewardship for land and shore, creativity, and an independent spirit.

The SDAT envisions a future wherein these community values will be promoted and nurtured:

- Uncrowded country roads where walking and horse and bicycle riding are safe
- A network of healthy accessible shorelines and wetlands, open fields, wild thickets, and forests support abundant wildlife
- A mix of rural densities that preserves maximum open space and maintains the scale and character of current island homes
- Growth that proceeds slowly, as permitted by sustainable use of the island's sole source aquifer and other natural resources

Most important, the SDAT sees a future where sustainable growth and change happen with active community and governmental involvement and direction focused upon the shared vision and direction of healthy living.

### **Large Homes on Guemes Island**

The recent arrival of large homes on small lots is a “hot button topic” for the majority of citizens living here most in more modest homes. An increasing “fear of loss” is associated with this recent and more regularly occurring fact. The following attempt is to get

a thoughtful handle on these fears, an attempt to confirm or refute their validity and reality and to brainstorm early actions to be taken for the four most pervasive of those fears.

On the top of the list are four related fears:

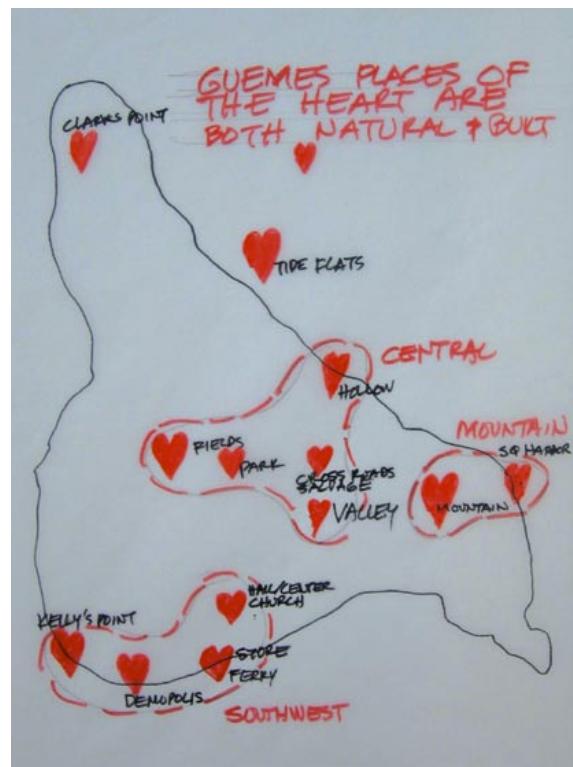
- A disregard of the context exists, both built and natural; nature is being disrupted and the scale of home and way of life of near neighbors is degraded
- It is seen as a consumptive perhaps pretentious and wasteful way of life out of kilter with the Guemes norm
- Social diversity is decreasing, particularly regarding the lower- and middle-income citizens of Guemes Island
- It is the beginning of a speculative surge that will greatly impact local taxes, driving some from their land

Additional concerns of possibly less emotional impact include

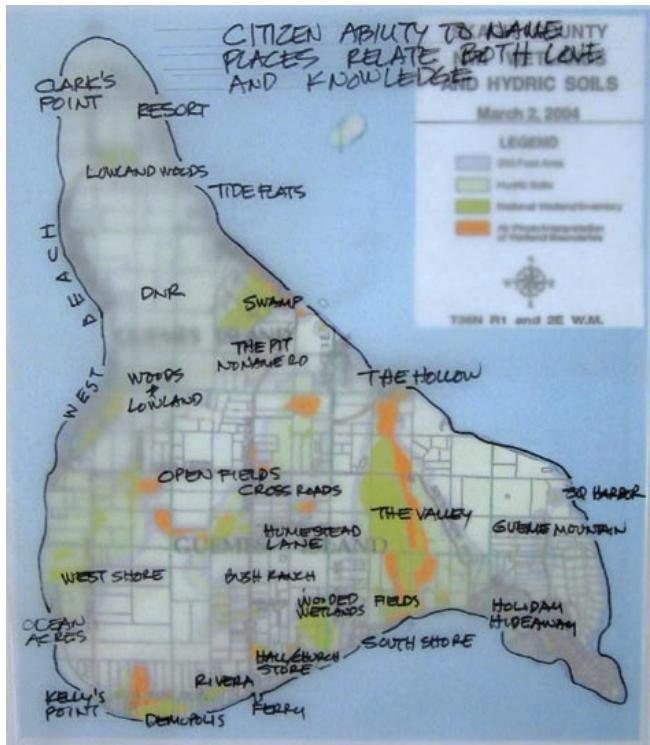
- Loss of views to the water and other view corridors
- Wasteful use of energy
- Excessive use of limited water supply
- Excessive impervious surface
- Reduced or constricted access to the beaches

Solutions for each of the major four concerns were brainstormed. How can Guemes Island ensure context sensitive building?

- Seek the 100-year, long-term view in all construction; build with quality
- “Walk the walk”; build sustainably
- Require an environmental impact statement for over certain sized homes
- Establish a critical areas ordinance with overlay zoning



The citizen-identified places are randomly distributed but in groups and both natural and built. They cover most of the island. These places of emotional emphasis are potential candidates for early and sustained actions.



By naming, we express love and knowledge. The fact that much of the island is named suggests the intimacy of knowledge and experience.

- Have personal contact with those planning to live and build on Guemes Island; have an organized and sustained welcome wagon; eliminate or at least play down the “them and us”
- Establish site plan review for all building
- Create a list of approved architects and builders
- Regulate or review color of homes
- Define guidelines and educational information as a handout for how to build on Guemes Island
- Establish a design review for all homes and construction on the island
- Hold a community roundtable regularly
- Limit building size without special review

- Celebrate and publicize the successful homes on the island
- Create a historic themes document to articulate the common architectural characteristics on the island

The top means to reduce consumption and possibly waste when building on Guemes are

- Limit building sizes
- Catch the water required
- Set maximum of two (or even one) flush toilet and use compost toilets
- Establish an annual power budget
- Recycle used building materials; salvage alder
- Hold educational events annually or semiannually
- Inform builders of desires and reasoning
- Use local materials and lumber from the property
- Have a community resource center focused on building

How does Guemes Island ensure economic diversity in the longer term, particularly among middle- and lower-income citizens? By

- Setting an accessory apartments bylaw
- Providing senior housing
- Adding clustered cottage neighborhood or neighborhoods
- Having a preschool
- Augmenting services for the elderly
- Establishing a program that will support rental homes
- Creating a community revolving fund to support the launch of worthy projects
- Starting a cooperative on the island

Some means to buffer the increasing tax impact of the general real estate market accelerated by local large homes include

- Tax program for seniors
- Reverse mortgage
- Reduced tax until time of sale
- Impact fees
- Open space program education

## MOVING FORWARD

The SDAT process has affirmed the existing consensus to proceed sustainably in regards to future development on Guemes Island. It is clear that as a group of independent individuals, each islander has, in a myriad of ways, contributed to the collective Guemes Island sustainability trust. Strength lies in a consensus to preserve the quality of life and the environment of the island for your children and future generations to come. As a whole, all have agreed to some laudable goals and visions. The community should use this vision as a benchmark from which to check every decision made in the future.

The recent polarizing effect of the ferry schedule has been fueled by the recent county decision to expand weekday ferry hours, changing the time of the final ferry from 6 p.m. to 10 p.m. Guemes Island has taken the lead in sustainability and it is hoped this report will help broaden support for a countywide sustainability plan that also includes transportation. The ferry schedule, as with many other as yet unforeseen contentious issues in the future, will find solutions within the consensus around the general framework of a sustainable vision. All sustainability goals should be set as a community from the upstream vantage point. Remember process is an important part of achieving solutions.

"The bumblebee according to our engineers' calculations cannot fly at all, but the bumblebee doesn't know this and flies."

–Igor Sikorsky, aeronautical engineer who pioneered the development of the helicopter

### Recommendations

- Using a bottom-up approach, focus on finding agreement not on resolving disagreement; the solutions will come with time
- Develop guiding local vision that can lead the process locally and regionally
- Continue to use a holistic systems view; continue taking a global perspective even on small-scale decisions
- Develop annual check-ins as a community to chart success and progress and collectively celebrate each success
- Become leaders within the county from “the side” and achieve political consensus within the region by being a good example
- Meet private and public interests by setting a common and higher ground or vision to which all subscribe

Environmental concerns due to global warming will not leave the Puget Sound region untouched. The Pacific Northwest has been in a warming trend that exceeds that of any region on the planet. With an average increase of 5° in the last 30 years, these changes are already being felt in the region with earlier summers and decreased snow fall. Anticipated effects of global warming for the region include sea-level rise as much as 3.3 feet, reduction of the “water warehouse,” and increased acidification of the ocean among others. This will have a great impact on Guemes Island. The community should not underestimate its capacity as the residents of a small island to increase awareness around these issues. Plan and regulate with forethought.

Although Guemes Island faces many challenges in the coming months in preparing the subarea plan, building consensus on the island and within the county for this plan will be the most critical task ahead. It is the hope of the SDAT and the AIA Center for Communities by Design that our visit allowed the seeds of a common meeting ground for all stakeholders to be sown. We look forward to following up with the people of Guemes Island to see the implementation of a sustainable subarea plan and its support and implementation by the Skagit County commissioners. The SDAT believes Guemes Island and the county can become the leaders in the region for a sustainable future where all residents on Guemes Island and in Skagit County and the region beyond will be the beneficiaries of that vision. The AIA SDAT looks forward to the subarea plan, its implementation, and the inspiration it will create throughout Skagit County.

### **Prayer for Sustainability**

We give thanks for those who have sustained us personally through the agonies and ecstasies of existence. Having been sustained, let us now pay attention to sustaining our wildlife, our shorelines, our aquifer, our energy, our (*rural*) character, and our methods of getting here and there. Now let us put wheels on our ideals so that we may seize the flaming swords from the angels who guard the gates of paradise and return to the garden from which we have been expelled and restore its beauty if not its innocence. And speaking of sustainability, may we be strengthened through these salads so we will have the energy to make the move once the gates are unguarded. Amen.

—Rev. Darrel Berg, Guemes Island SDAT Team Luncheon, June 20, 2006

“I don’t believe that the solutions in society will come from the left or the right or the north or the south. They will come from islands within those organizations; islands of people with integrity who want to do something....

This is what a network should do—identify the people who would like to do something good. And they are everywhere. This is how the change will appear—you won’t notice the difference. It won’t be anyone winning over anyone. It will just spread. One day you don’t need any more signs saying ‘Don’t spit on the floor,’ or ‘Don’t put substances in the lake which can’t be processed.’ It will be so natural.... It will just appear.”

—Robert Karl-Henrik, founder of Natural Step

## APPENDIX

### *List of Potential Toolkits and Content*

Although this list is not exhaustive and the objectives of the SDAT visit have been fulfilled elsewhere in the report, the team thought it appropriate to make a few suggestions for potential toolkits that were not addressed in the body of the report.

#### *Guemes Island Information Toolkits*

- Ferry terminal: welcome kiosk, native peoples garden and island ecology information center
- Welcome packs for new residents, daytime visitors, and resort guests
- Information posters in strategic places such as ferry terminal, library, and community center
- Venues for pamphlets: Web site, newspaper, utility bill inserts, ferry terminal
- Islandwide incentive programs with support from utility providers
- Annual county sustainability fair or similar event hosted by Guemes Island to celebrate milestones, successes, creativity, innovation and good design; celebrate community vision; and serve as a potential venue for island businesses

#### *Zoning Bylaw Toolkit for Subarea Plan*

- A Guemes Island “Design Review Advisory Board” for building envelope performance recommendations, building design recommendations, and site design recommendations
- Zoning bylaws for the island should include the following with adjustments specific to parcel location, i.e. shoreline, inland, fragile slope: maximum building coverage; maximum lot coverage; front, back, and side yard setbacks; recommendations for permeable surfaces; and enforced septic system and well monitoring
- Enforced septic system and well monitoring
- Agriculture, recreation, shoreline, wetlands, wildlife, and aquifer recharge overlay districts
- Strategies for land acquisition in overlay districts, including TDR and transfer tax for funding acquisition of aquifer recharge and shoreline protection areas and strategies for small parcel consolidation in critical areas

*Sustainable Guemes Toolkit*

- Create a Guemes Island energy/environment lab
- Become the leader for the region in alternative technologies
- Support a community farm on the island
- Set up an experimental building laboratory to allow for alternative code compliant innovations
- Develop innovative rainwater/graywater alternatives
- Develop alternative minimal impact septic system options
- Monitor and publish results of new technologies for everyone's benefit
- Continue to support locally designed and built systems



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