



STUDY SESSION

TUESDAY, NOVEMBER 1, 2016

**LOCATION: BAINBRIDGE ISLAND CITY HALL
280 MADISON AVENUE N., BAINBRIDGE ISLAND, WASHINGTON**

AGENDA (TIMES LISTED ON THE AGENDA ARE APPROXIMATE)

1. CALL TO ORDER / ROLL CALL

7:00 PM

Mayor: Val Tollefson

Deputy Mayor: Kol Medina

Councilmembers: Sarah Blossom Michael Scott
Ron Peltier Roger Townsend
Wayne Roth

**2. ACCEPTANCE OR MODIFICATION OF AGENDA/ CONFLICT
OF INTEREST DISCLOSURE**

3. PUBLIC COMMENT ON AGENDA ITEMS

7:05 PM

4. UNFINISHED BUSINESS

- A.** 7:15 PM Approve Scope of Work and Professional Services Agreement with ESA for Suzuki Ecological Assessment, AB 14-118 - Executive (Pg. 3)
- B.** 7:25 PM Ordinance No. 2016-29, Comprehensive Plan Update, AB 15-018 - Planning (Pg. 21)
- C.** 8:55 PM Islandwide Transportation Plan Update, AB 16-148 - Public Works (Pg. 146)
- D.** 9:25 PM 2017-2018 Proposed Budget Discussion, AB 16-109 - Finance (Pg. 269)

5. FOR THE GOOD OF THE ORDER

10:25 PM

6. ADJOURNMENT

10:30 PM



Americans with Disabilities Act (ADA) accommodations provided upon request. Those requiring special accommodations, please contact the City Clerk at 206-842-2545 (cityclerk@bainbridgewa.gov) by noon on the day preceding the Meeting.

City of Bainbridge Island

City Council Agenda Bill



PROCESS INFORMATION

Subject: 7:15 PM Approve Scope of Work and Professional Services Agreement with ESA for Suzuki Ecological Assessment, AB 14-118 - Executive (Pg. 3)	Date: 11/1/2016
Agenda Item: UNFINISHED BUSINESS	Bill No.: 14-118
Proposed By: Doug Schulze, Executive	Referrals(s):

BUDGET INFORMATION

Department: Executive	Fund: General Fund
Expenditure Req: TBD	Budgeted? Budget Amend. Req?

REFERRALS/REVIEW

: 10/11/2016	Recommendation: Forward to October 25, 2016, unfinished business.
City Manager:	Legal: Yes Finance:

DESCRIPTION/BACKGROUND

Previously, the City Council directed staff to prepare a Request for Proposal (RFP) for an ecological assessment of the Suzuki Property. During the process of developing the RFP, it was determined that a more effective process would be to develop a Request for Qualifications (RFQ), which would allow the City to select a consultant and develop the Scope of Work in conjunction with the consultant.

The Environmental Technical Advisory Committee has reviewed and ranked the Statements of Qualifications received in response to the RFQ. Based on the ETAC's review and ranking, ESA is the recommended consultant for completion of the Suzuki Ecological Assessment. During the October 18, 2016, meeting, the City Council authorized the City Manager to initiate work with ESA to develop a scope of work and professional services agreement for Council consideration at the October 25 meeting.

At the October 25, 2016, meeting, a motion was made to revise the proposed scope of work to specify more clearly the assessment generally on the Suzuki property, to ask ESA to articulate their proposed methodology for hydrologic aquifer recharge analysis, and to return at the next meeting with a revised form of scope of work. The revised Scope of Work is attached.

RECOMMENDED ACTION/MOTION

I move that the City Council authorize the City Manager to execute the Professional Services Agreement with ESA for the Suzuki Property Ecological Assessment.

ATTACHMENTS:

Description	Type
▣ Professional Services Agreement	Backup Material
▣ Scope of Work (Clean)	Backup Material
▣ Scope of Work (Track Changes)	Backup Material

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT FOR PROFESSIONAL SERVICES (this "Agreement") is entered into as of the date written below between the City of Bainbridge Island, a Washington state municipal corporation (the "City") and Environmental Science Associates (ESA) DBA Environmental Science Associates Corp. (the "Consultant").

WHEREAS, the City desires to obtain services for an ecological assessment of the Suzuki Property; and

WHEREAS, the Consultant has the expertise and experience to provide said services and is willing to do so in accordance with the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants, conditions, promises, and agreements set forth herein, it is agreed by and between the City and the Consultant as follows:

1. SERVICES BY CONSULTANT

The Consultant shall provide the professional services as defined in this Agreement and as necessary to accomplish the scope of work attached hereto as Attachment A and incorporated herein by this reference as if set forth in full. The Consultant shall furnish all services, labor and related equipment to conduct and complete the work, except as specifically noted otherwise in this Agreement.

2. PAYMENT

A. The City shall pay the Consultant for such services: (check one)

[X] Hourly, plus actual expenses, in accordance with Attachment A, but not more than a total of \$[_____];

[] Fixed Sum: a total amount of \$ _____;

[] Other: _____, for all services performed and incurred under this Agreement, to be billed monthly in equal amounts.

B. The Consultant shall submit monthly invoices for services performed in a previous calendar month in a format acceptable to the City. Each project and each task within a project shall be the subject of a separate invoice. The Consultant shall maintain time and expense records and provide them to the City upon request.

C. All invoices shall be paid by mailing a city check within sixty (60) days of receipt of a proper invoice.

D. If the services rendered do not meet the requirements of this Agreement, the Consultant shall correct or modify the work to comply with this Agreement. The City may withhold payment for such work until it meets the requirements of this Agreement.

3. INSPECTION AND AUDIT

The Consultant shall maintain all books, records, documents and other evidence pertaining to the costs and expenses allowable under this Agreement in accordance with generally accepted accounting practices. All such books and records required to be maintained by this Agreement shall be subject to inspection and audit by representatives of the City and/or the Washington State Auditor at all reasonable times, and the Consultant shall afford the proper facilities for such inspection and audit. Representatives of the City and/or the Washington State Auditor may copy such books, accounts and records where necessary to conduct or document an audit. The Consultant shall preserve and make available all such books of account and records for a period of three (3) years after final payment under this Agreement. In the event that any audit or inspection identifies any discrepancy in such financial records, the Consultant shall provide the City with appropriate clarification and/or financial adjustments within thirty (30) calendar days of notification of the discrepancy.

4. INDEPENDENT CONTRACTOR

A. The Consultant and the City understand and expressly agree that the Consultant is an independent contractor in the performance of each and every part of this Agreement. The Consultant expressly represents, warrants and agrees that the Consultant's status as an independent contractor in the performance of the work and services required under this Agreement is consistent with and meets the six-part independent contractor test set forth in RCW 51.08.195. The Consultant, as an independent contractor, assumes the entire responsibility for carrying out and accomplishing the services required under this Agreement. The Consultant shall make no claim of City employment nor shall claim any related employment benefits, social security, and/or retirement benefits.

B. The Consultant shall be solely responsible for paying all taxes, deductions, and assessments, including but not limited to federal income tax, FICA, social security tax, assessments for unemployment and industrial injury, and other deductions from income which may be required by law or assessed against either party as a result of this Agreement. In the event the City is assessed a tax or assessment as a result of this Agreement, the Consultant shall pay the same before it becomes due.

C. The City may, during the term of this Agreement, engage other independent contractors to perform the same or similar work that the Consultant performs hereunder.

D. The Consultant shall obtain a business license and, if applicable, pay business and occupation taxes pursuant to Title 5 of the Bainbridge Island Municipal Code.

5. DISCRIMINATION AND COMPLIANCE WITH LAWS

A. The Consultant agrees not to discriminate against any employee or applicant for employment or any other person in the performance of this Agreement because of race, creed, color, national origin, marital status, sex, sexual orientation, age, disability, or other circumstance prohibited by federal, state or local law or ordinance, except for a bona fide occupational qualification.

B. The Consultant shall comply with all federal, state and local laws and ordinances applicable to the work to be done under this Agreement.

C. Violation of this Section 5 shall be a material breach of this Agreement and grounds for cancellation, termination or suspension by the City, in whole or in part, and may result in ineligibility for further work for the City.

6. TERM AND TERMINATION OF AGREEMENT

A. This Agreement shall become effective upon execution by both parties and shall continue in full force and effect until [_____], unless sooner terminated by either party as provided below.

B. This Agreement may be terminated by either party without cause upon thirty (30) days' written notice to the other party. In the event of termination, all finished or unfinished documents, reports, or other material or work of the Consultant pursuant to this Agreement shall be submitted to the City, and the Consultant shall be entitled to just and equitable compensation at the rate set forth in Section 2 for any satisfactory work completed prior to the date of termination.

7. OWNERSHIP OF WORK PRODUCT

All data, materials, reports, memoranda and other documents developed under this Agreement whether finished or not shall become the property of the City, shall be forwarded to the City in hard copy and in digital format that is compatible with the City's computer software programs.

8. GENERAL ADMINISTRATION AND MANAGEMENT

The City Manager of the City, or designee, shall be the City's representative, and shall oversee and approve all services to be performed, coordinate all communications, and review and approve all invoices, under this Agreement.

9. HOLD HARMLESS AND INDEMNIFICATION

A. The Consultant agrees to protect, defend, indemnify, and hold harmless the City, its elected officials, officers, employees and agents from any and all claims, demands, losses, liens, liabilities, penalties, fines, lawsuits, and other proceedings and all judgments, awards, costs and expenses (including reasonable attorneys' fees and disbursements) caused by or occurring by reason of any negligent act, error and/or omission of the Consultant, its officers, employees, and/or agents, arising

out of or in connection with the performance or non-performance of the services, duties, and obligations required of the Consultant under this Agreement.

B. In the event that the Consultant and the City are both negligent, then the Consultant's liability for indemnification of the City shall be limited to the contributory negligence for any resulting suits, actions, claims, liability, damages, judgments, costs and expenses (including reasonable attorneys' fees and disbursements) that can be apportioned to the Consultant, its officers, employees and agents.

C. The foregoing indemnity is specifically and expressly intended to constitute a waiver of the immunity of the Consultant under Washington's Industrial Insurance Act, RCW Title 51, as respects the other parties only, and only to the extent necessary to provide the indemnified party with a full and complete indemnity of claims made by the employees of the Consultant. The parties acknowledge that these provisions were specifically negotiated and agreed upon by them.

D. The City's inspection or acceptance of any of the Consultant's work when completed shall not be grounds to void, nullify and/or invalidate any of these covenants of indemnification.

E. Nothing contained in this section of this Agreement shall be construed to create a liability or a right of indemnification in any third party.

F. The provisions of this section shall survive the expiration or termination of this Agreement with respect to any event occurring prior to such expiration or termination.

10. INSURANCE

Consultant shall maintain insurance as follows:

- ☒ Commercial General Liability as described in Attachment B.
- ☒ Professional Liability as described in Attachment B.
- ☒ Automobile Liability as described in Attachment B.
- ☐ None.

11. SUBLETTING OR ASSIGNING CONTRACT

This Agreement, or any interest herein or claim hereunder, shall not be assigned or transferred in whole or in part by the Consultant to any other person or entity without the prior written consent of the City. In the event that such prior written consent to an assignment is granted, then the assignee shall assume all duties, obligations, and liabilities of the Consultant as stated herein.

12. EXTENT OF AGREEMENT/MODIFICATION

This Agreement, together with attachments or addenda, represents the entire and integrated Agreement between the parties and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may be amended, modified or added to only by written instrument properly signed by both parties.

13. SEVERABILITY

A. If a court of competent jurisdiction holds any part, term or provision of this Agreement to be illegal or invalid, in whole or in part, the validity of the remaining provisions shall not be affected, and the parties' rights and obligations shall be construed and enforced as if the Agreement did not contain the particular provision held to be invalid.

B. If any provision of this Agreement is in direct conflict with any statutory provision of the State of Washington, that provision which may conflict shall be deemed inoperative and null and void insofar as it may conflict, and shall be deemed modified to conform to such statutory provision.

14. FAIR MEANING

The terms of this Agreement shall be given their fair meaning and shall not be construed in favor of or against either party hereto because of authorship. This Agreement shall be deemed to have been drafted by both of the parties.

15. NON-WAIVER

A waiver by either party hereto of a breach by the other party hereto of any covenant or condition of this Agreement shall not impair the right of the party not in default to avail itself of any subsequent breach thereof. Leniency, delay or failure of either party to insist upon strict performance of any agreement, covenant or condition of this Agreement, or to exercise any right herein given in any one or more instances, shall not be construed as a waiver or relinquishment of any such agreement, covenant, condition or right.

16. NOTICES

Unless stated otherwise herein, all notices and demands shall be in writing and sent or hand-delivered to the parties at their addresses as follows:

To the City: City of Bainbridge Island
 280 Madison Avenue North
 Bainbridge Island, WA 98110
 Attention: City Manager

To the Consultant: Environmental Science Associates (ESA)
 5309 Shilshole Avenue NW, Suite 200
 Seattle, WA 98107
 Attention: Adam Merrill

or to such addresses as the parties may hereafter designate in writing. Notices and/or demands shall be sent by registered or certified mail, postage prepaid, or hand-delivered. Such notices shall be deemed effective when mailed or hand-delivered at the addresses specified above.

17. SURVIVAL

Any provision of this Agreement which imposes an obligation after termination or expiration of this

Agreement shall survive the term or expiration of this Agreement and shall be binding on the parties to this Agreement.

18. GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the State of Washington.

19. VENUE

The venue for any action to enforce or interpret this Agreement shall lie in the Superior Court of Washington for Kitsap County, Washington.

20. COUNTERPARTS

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of October _____, 2016.

ENVIRONMENTAL SCIENCE ASSOCIATES CITY OF BAINBRIDGE ISLAND
DBA ENVIRONMENTAL SCIENCE
ASSOCIATES CORP.

By _____

Name _____

Title _____

Tax I.D. # _____

City Bus. Lic. # _____

By _____

Douglas Schulze, City Manager

ATTACHMENT A

SCOPE OF SERVICES

ATTACHMENT B

Insurance against claims for injuries to persons or damage to property arising out of or in connection with the performance of this Agreement by the Consultant, its officers, employees and agents:

A. Automobile Liability Insurance with limits no less than \$1,000,000.00 combined single limit per accident for bodily injury and property damage.

B. Commercial General Liability Insurance written on an occurrence basis with limits no less than \$1,000,000.00 combined single limit per occurrence and \$2,000,000.00 aggregate for personal injury, bodily injury and property damage. Coverage shall include, but not be limited to blanket contractual; products/completed operations; broad form property damage; explosion, collapse and underground (XCU) if applicable; and employer's liability.

C. Professional Liability Insurance with limits no less than \$1,000,000.00 limit per occurrence.

Before commencing work and services, the Consultant shall provide to the person identified in Section 16 of the Agreement a Certificate of Insurance evidencing the required insurance. City reserves the right to request and receive a certified copy of all required insurance policies.

Any payment of deductible or self-insured retention shall be the sole responsibility of the Consultant. City shall be named as an additional insured on the Commercial General Liability Insurance Policy, with regard to work and services performed by or on behalf of the Consultant, and a copy of the endorsement naming City as an additional insured shall be attached to the Certificate of Insurance.

The insurance policies (1) shall state that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability; (2) shall be primary insurance with regard to City; and (3) shall state that City will be given at least 30 days' prior written notice of any cancellation, suspension or material change in coverage.



Attachment A ***DRAFT* SCOPE OF WORK**

Suzuki Property Ecological Assessment **Prepared By: ESA** **Prepared For: City of Bainbridge Island** **November 1, 2016**

On behalf of the City of Bainbridge Island (City), Environmental Science Associates (ESA) has prepared a scope of work (SOW) and cost estimate to conduct an ecological assessment of the Suzuki Property, a 13.83 acre City-owned property. The work will be completed within four (4) tasks as described in this SOW.

Task 1. Kickoff and Data Collection

A kickoff meeting will be held with City staff to introduce the ESA team, review the basic goals of the project, and for the City to provide the context for the project and provide relevant data sources. The kickoff meeting will be scheduled to coincide with the field review of the site.

ESA will conduct a review of existing ecological data relevant to the Suzuki Property, including Washington Department of Fish and Wildlife (WDFW) habitat and species data, United States Geological Survey (USGS) groundwater data, and wildlife observation data from local experts. ESA will coordinate with City staff and the Environmental Technical Advisory Committee (ETAC) members to identify the relevant local data sources for the property.

A one day field investigation of the site will be conducted by the Project Manager and two biologists. The field investigation will focus on collecting data needed to characterize the significant ecological features on the property, including the identified stream, pond, and wildlife corridor. The locations of significant ecological features will be surveyed with GPS. Additionally, wildlife observations will be collected during the field investigation.

Prior to development of the Ecological Assessment Report (Task 4), ESA will prepare a list of relevant data sources to be included in the habitat assessment.

Deliverables:

- Kickoff meeting summary notes
- Draft list of data sources, to be reviewed by City staff and/or ETAC.

Assumptions:

- The kickoff meeting and field data collection visit will be attended by the Project Manager and two biologists over one day.

Task 2. Forest Survey

ESA's arborist subconsultant (Tree Solutions, Inc.) will conduct a field survey and prepare a technical report that characterizes the forest community types found on the Suzuki Property. The report will discuss the approximate age, extent, health, and tree and understory species composition of the forest communities within the parcel, with an emphasis on the identified grove of "old trees" located in the southeastern portion of the property. The boundaries of the different forest community types on the property and individual old (e.g. 100+ years old) trees will be surveyed. The results of the forest survey, as well as applicable management recommendations for protecting the grove of old trees, will be documented in a forest survey report. This report will be summarized and included as an appendix to the ecological assessment report (Task 4).

Deliverables:

- Draft Forest Survey Report (electronic format).
- Revised Forest Survey Report, revised per one round of review and consolidated comments by City staff (electronic format).
- Final Forest Survey Reported, revised per one round of review and consolidated comments by ETAC and/or the City Council (electronic format and up to 3 hard copies if required).

Assumptions:

- The tree survey will be conducted by a team of two arborists over one day.
- Up to five trees will be cored to determine the approximate age of the forest communities on the property.
- A full survey of every individual tree on the property is not included in this SOW.

Task 3. Aquifer Recharge and Soil Infiltration Investigation

ESA will conduct an investigation to classify the aquifer recharge potential of the Suzuki Property. The assessment will use existing studies (e.g. Natural Resource Conservation Service [NRCS] soil mapping, USGS surficial geology mapping, and USGS groundwater reports and data for Bainbridge Island) and soil infiltration tests. Infiltration will be tested at a minimum of 5 locations throughout the property, using the methodology described in *Soil Quality Test Kit Guide* (NRCS, August 1999).

The results of the aquifer recharge and soil infiltration investigation will be documented in a technical memorandum, to be summarized and included as an appendix to the

ecological assessment report (Task 4). The memo will contain supporting figures(s) that show the generalized aquifer recharge potential of the site classified into 3 categories (high, medium and low). The memo will also describe broad management recommendations for protecting the aquifer recharge functions of the property, and summarize the potential opportunities and limitations for the use of Low Impact Development (LID) stormwater management facilities.

Task 4. Ecological Assessment Report

ESA will prepare an ecological assessment report that describes, characterizes, and maps the ecological baseline of the property, with a focus on the habitat features specified by the City. These habitat features include a stream, pond, wildlife corridor, and a grove of “old trees.” The report will also discuss the aquifer recharge potential and other relevant hydrologic functions of the property. The relative ecological value of the habitats present on the site will be described in a qualitative manner considering contributing factors such as level of disturbance, presence of non-native species, potential for aquifer recharge, interspersions of habitat types, habitat diversity, position in the landscape, and connections to adjacent habitat parcels.

The report will include a summary of the potential ecological and aquifer recharge effects to the property if development occurs. Based upon current scientific literature and agency guidance, the report will include management recommendations for protecting and minimizing effects to ecological features and functions, as well as groundwater resources.

Prior to commencing work on the report, ESA will prepare a draft outline of its contents and organization for City review.

Deliverables:

- Draft report outline (electronic format).
- Draft Habitat Assessment Report (electronic format).
- Revised Habitat Assessment Report, revised per one round of review and consolidated comments by City staff (electronic format).
- Final Habitat Assessment Report, revised per one round of review and consolidated comments by ETAC and/or the City Council (electronic format and up to 3 hard copies if required).

Assumptions:

- This SOW is limited to two rounds of revisions of the Habitat Assessment Report

Task 5. Coordination and Meetings

ESA and Tree Solutions, Inc. will coordinate with the City and ETAC in support of this ecological assessment. This task includes one in-person meeting with City staff and/or

ETAC to discuss the ecological assessment and methods. ESA will also provide supporting materials and attend one City Council meeting, if requested. This task also includes time for project management (contracting, scope-budget control, invoicing, internal meetings, and team coordination).

Deliverables:

- Monthly progress reports with schedule updates.

Assumptions:

- With the exception of the in-person meetings listed above, team meetings will be conducted by phone.

Cost Estimate

Task	Description	Hours	Cost
1	Kickoff and Data Collection	42	\$6,480
2	Forest Survey	46	\$5,780
3	Aquifer Recharge and Soil Infiltration Investigation	64	\$9,860
4	Ecological Assessment Report	116	\$16,240
5	Coordination and Meetings	62	\$8,600
Expenses			
	Trimble GPS unit (\$75 per day)		\$225
	Mileage (\$0.54/mile)		\$75
	Ferry fare		\$130
	Subconsultant markup (15%)		\$993
	Subtotal		\$1,423
Total Project Price			\$48,383



Attachment A ***DRAFT* SCOPE OF WORK**

Suzuki Property Ecological Assessment
Prepared By: ESA
Prepared For: City of Bainbridge Island
~~October 24~~ November 1, 2016

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Prior to development of the Ecological Assessment Report (Task ~~4~~3), ESA will prepare a list of relevant data sources to be included in the habitat assessment.

Deliverable:

- Kickoff meeting summary notes
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The report will include a summary of the potential ecological and aquifer recharge effects to the property ~~from the proposed development~~ if development occurs. Based upon current scientific literature and agency guidance, the report will include management recommendations for protecting and minimizing effects ~~from the proposed project~~ to ecological features and functions, as well as groundwater resources.

Prior to commencing work on the report, ESA will prepare a draft outline of its contents and organization for City review.

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	Ferry fare		\$100 130
	Subconsultant markup (15%)		\$993
	Subtotal		\$1,293 1,423
Total Project Price			\$38,393 48,383

City of Bainbridge Island

City Council Agenda Bill



PROCESS INFORMATION

Subject: 7:25 PM Ordinance No. 2016-29, Comprehensive Plan Update, AB 15-018 - Planning (Pg. 21)	Date: 11/1/2016
Agenda Item: UNFINISHED BUSINESS	Bill No.: AB 15-018
Proposed By: Department of Planning and Community Development	Referrals(s): Planning Commission

BUDGET INFORMATION

Department: Planning	Fund:
Expenditure Req:	Budgeted? Budget Amend. Req?

REFERRALS/REVIEW

:	Recommendation:
City Manager:	Legal: Yes Finance:

DESCRIPTION/BACKGROUND

The Planning Commission completed their review and recommendation of the DRAFT 2016 Comprehensive Plan (Plan) on October 13, 2016, and has hereby forwarded their recommended DRAFT Plan on to the City Council to begin its review. At the October 18, 2016, meeting, the City Council reviewed and amended the DRAFT Introduction chapter of the DRAFT 2016 Plan. The Council agreed on a review process to review and discuss changes to the first 4 Elements of the Plan as a starting point. Councilmembers agreed to forward any comments/questions or suggestions about the Elements to City staff early enough to include the questions/suggestions in the Council meeting packet to allow the public, other Councilmembers, and staff time to digest suggestions.

RECOMMENDED ACTION/MOTION

Discuss and possibly amend the Planning Commission's recommended DRAFT Land Use, and Water Resources Elements.

ATTACHMENTS:

Description	Type
City Council Additional Comments (EC & EN Elements) Following 102516 Meeting	Backup Material
City Council Comprehensive Plan Suggestions (WR & LU Elements) - November 1, 2016	Backup Material

▣	Water Resources Element	Backup Material
▣	Land Use Element	Backup Material
▣	Glossary	Backup Material
▣	App B Water Rec Existing Conditions & Future Needs	Backup Material

CITY COUNCIL COMPREHENSIVE PLAN
ADDITIONAL COMMENTS FOLLOWING OCTOBER 25, 2016 MEETING

ECONOMIC ELEMENT

Peltier

1-EC. Proposed revision and inclusion of the Framework Section on page EC-1.

FRAMEWORK (from the 2016 deleted Framework section)

The community seeks to retain and enhance an economy that reinforces Bainbridge Island's diverse character and capitalizes on its assets, including: history and heritage, high educational attainment, diverse skills, artistic creativity, rural quality, agricultural base, natural resources, preserved *open spaces*, beaches and shorelines, maritime orientation, and proximity to the Seattle metropolitan area and the Kitsap Peninsula.

Discussion: ~~Because the economy is intertwined with all aspects of community life, the Economic element is meant to be integrated with other parts of the Comprehensive Plan because the economy is intertwined with all aspects of community life.~~ The Economic Element recommends goals and policies which recognize the following considerations:

(#1 is from 2004 Framework section with proposed revisions shown.)

1. When weighing choices regarding our future economy, the fundamental considerations should be the quality of the Island's natural environment and the community's desire to maintain the visual character.

Bainbridge Island's quality of life is associated with forests and fields, waters and harbors, natural resources such as quality drinking water, ~~small~~ **well-defined** population settlements centers and limited urban/suburban services. The Island's character incorporates economic activities that are tied to the land as a source of livelihood and resource such as agriculture, horticulture, silviculture, **construction, woodworking,** ~~fishing aquaculture,~~ and **value-added food,** and **artisan lumber and** wood production.

Many kinds of activities, both residential and commercial, can locate in such an environment, but their growth and success, if not carefully stewarded, may have unintended consequences that alter the character that Bainbridge Islanders value so highly.

(#2 taken from the current draft where it is shown as #1)

2. The Island's economic future should include diverse enterprises by type and scale, under local ownership and control; that offer a variety of employment and housing options; and that support a broad **an appropriate range of income and skill levels.**

Bainbridge Island residents have high incomes relative to the rest of the state and region. However, the prospect of functioning solely as an exclusive high-income bedroom community is not desirable. The Comprehensive Plan aims to foster diverse residential and business opportunities, as does the Economic Element. ~~Creating~~ **Encouraging** a diversity of jobs and ~~affordable~~ housing, coupled with provisions for responding to market conditions, ~~and~~ **along with** encouraging innovative business activity, are important economic policy steps for the City's future.

(#3 taken from the current draft where it is shown as #2)

3. Bainbridge Islanders are enterprising and are establishing small scale businesses which create jobs and grow bigger businesses.

Over half of the Island's licensed businesses are home-based. National studies indicate that small businesses are a spawning ground for new business development and job creation. Existing land use codes and business license structure are supportive of home-based and start-up businesses. This should be continued in a manner that is compatible with the overall community vision and expanded into a more complete continuum of opportunities for locating and capturing Island-grown business.

(from the current draft)

The Economic Element incorporates fifteen goals and related policies as enumerated below. The order of the goals and policies does not in any way indicate preference or priority.

2-EC. Proposed revisions to the economic Vision for 2036, 3rd paragraph, page EC-2

Agriculture is a thriving part of the Island's economy: all City-owned agricultural lands is now under cultivation are being sustainably cultivated and producing seasonal foods for local consumption. The number of farms on private acreage has increased and is supplementing the local food supply. To enhance the viability of local farms, affordable housing for farmworkers has been appropriately built on City owned farmland.

3-EC. Proposed revisions to EC 6.4 on page EC-7

Policy EC 6.4

Ensure When planning infrastructure investments, consider the benefits to Island businesses that may result from the efficient flow of people, goods, services, and information in and throughout the Island, with infrastructure investments, particularly within and connecting to designated centers, to anticipate the needs of the Island's businesses.

Note: Island businesses are just one sector of the overall community. Infrastructure investments need to serve the entire community to make sense.

4-EC. Proposed revision to EC 7.10 on page EC-8

Policy EC 7.10

Provide an efficient a professional, timely and predictable regulatory environment within the framework of a strong customer service approach that respects and promotes the overall community vision.

5-EC. Proposed Revisions to EC-10 on page EC-9

BUILDING DESIGN AND CONSTRUCTION SECTOR

GOAL EC-10

Support Encourage the building design and construction industries to increase employment opportunities, enhance local revenues, and help ensure a built environment that responds to and reflects adapt to the community's desire for sustainable development consistent with the Island's Vision and Guiding Principles.

The professions and trades involved in design, construction, furnishing, renovation and marketing of commercial and residential real estate have benefited considerably over the years by locating and doing business on Bainbridge Island. constitute a large and very important sector of the Island's economy. Productivity and profits within The willingness and ability of that sector are to adapt to a sustainable development approach is a are crucial factors in for the stability and well-being of the entire community. The built environment is no less important than our natural resources in defining Bainbridge Island as a unique and attractive place. Good development, in a community such as ours, must work within limits and be compatible with the goals of environmental conservation.

Clean version of revised EC-10:

Encourage the building design and construction industries to adapt to the community's desire for sustainable development consistent with the Island's Vision and Guiding Principles.

The professions and trades involved in design, construction, furnishing, renovation and marketing of commercial and residential real estate have benefited considerably over the years by locating and doing business on Bainbridge Island. The willingness and ability of that sector to adapt to a more sustainable development approach is a crucial factor in the stability and well-being of the entire community. Good development, in a community such as ours, must work within limits and be compatible with the goals of environmental conservation.

ENVIRONMENTAL ELEMENT

Medina

1. EN 5.1. Add the word “habitat” so that it reads “wildlife habitat networks”.

Peltier

1-EN. Proposed revision to EN 1.1 on page EN-2

Policy EN 1.1 (as it appears in the draft)

A primary goal of the *Comprehensive* Plan is protecting the Island’s natural environment; When making land use decisions implement this goal. ~~seriously consider the overall goal of the Comprehensive Plan in protecting the Island’s natural environment.~~

Policy EN 1.1 (showing proposed revisions)

~~A primary goal of the Comprehensive Plan is protecting~~ Protection of the Island’s natural environment is a primary goal of the *Comprehensive Plan*; When making land use decisions, ~~implement this goal.~~ City Staff and Administrators shall seriously consider the overall goal of the Comprehensive Plan in protecting the Island’s natural environment.

Policy EN 1.1 (clean version)

Protection of the Island’s natural environment is a primary goal of the *Comprehensive* Plan. When making land use decisions, City Staff and Administrators shall seriously consider the overall goal of the Comprehensive Plan in protecting the Island’s natural environment.

Note: As drafted, EN 1.1 assumes that land use decisions implement the goal of protecting the Island’s natural environment. They may or may not. In truth, land use decisions might implement the Comprehensive Plan in protecting the Island’s natural environment IF those making the decisions seriously consider the overall goal of the Comprehensive Plan in protecting the Island’s natural environment.

2-EN. Proposed Revisions to Policy EN 1.4

Policy EN 1.4

Maintain and enhance natural systems and protect wildlife, fish resources and open spaces through land use plans and development patterns ~~including~~ that include tree retention and planting.

3-EN. Proposed revision of GOAL EN-2

GOAL EN-2 (showing proposed revisions)

Encourage sustainability in City Government ~~operations~~ operations including the siting of capital facilities.

4-EN. Proposed revision to Policy EN 8.5

Policy EN 8.5 (as it appears in the draft)

Allow clearing, grading or filling on sloped areas containing *landslide hazard areas* and *erosion hazard areas* ~~shall only be allowed only~~ when other alternatives are not feasible. Such activity ~~should be~~ is limited to the dry period of the year.

Policy EN 8.5 (showing proposed revisions)

Allow clearing, grading or filling on sloped areas containing *landslide hazard* and *erosion hazard areas* only when other alternatives are not feasible and when it will not destabilize those areas. Such Activity ~~should be~~ is limited to the dry period of the year.

5-EN. Proposed revision to Policy EN 10.4

Policy EN 10.3

~~Encourage~~ Create a more robust and transparent review process that promotes the retention of existing trees and vegetation and the planting of new trees and vegetation that provides natural filtration of suspended particulate matter, removes carbon dioxide and improves air quality.

6-EN. Proposed revision of Policy EN 10.4

Policy EN 10.4 (showing proposed revisions)

~~Address~~ Evaluate and address the impacts of new development on air quality as a part of the environmental review process and require mitigation when appropriate. Include consideration of tree and vegetation loss, the generation of additional motor vehicle trips, and impacts to air quality during construction.

7-EN. Proposed new Policy under AIR QUALITY, GOAL EN-10: Regulate leaf blowers and other landscape maintenance gas operated equipment to eliminate air quality impacts to neighboring properties.

8-EN. Consider new Policy under AIR QUALITY, GOAL EN-10 pertaining to emissions by heavy equipment on construction sites

Policy EN ??

Consider measures to reduce the impacts of emissions from heavy equipment on neighboring properties during construction projects.

9-EN. Highlighted Policy EN 10.2. (include in Transportation Element)

Policy EN 10.2

Promote *land use* patterns and transportation policies that ensure that the Island's contribution to regional air quality is consistent with or better than State and Federal standards.

10-EN. Revisions to Policy EN 10.9

Policy EN 10.9

~~Encourage the retrofit or~~ Require the replacement of non-certified wood stoves with certified appliances.

11-EN. Proposed revision of GOAL EN-11

GOAL EN-11 (as it appears in the draft)

Promote the reduction of ~~cumulative~~ ~~invasive~~ noise impacts.

GOAL EN-11 (showing proposed revisions)

Promote the reduction of ~~cumulative and~~ ~~invasive~~ noise impacts.

12-EN. Proposed new Policy under Noise, GOAL EN-11

Consider regulations to reduce or eliminate the invasive noise impacts from leaf blowers and other gas operated landscape maintenance equipment.

WATER RESOURCES ELEMENT**Medina**

1. ~~Amend the first sentence of the first paragraph in the “Water Resources Introduction” as follows: “Bainbridge Island is designed as a sole source aquifer community and requires a holistic perspective to understand the”~~ Motion made 10/25/16
2. ~~Goal WR 2. Amend as follows: “Protect the quality and quantity of groundwater on the Island to ensure clean and sufficient groundwater for future generations.”~~ Motion made 10/25/16
3. Policy WR 3.4 Amend as follows: “. . . drainage systems are maintained and water quality and **quantity are** protected.”
4. Policy WR 4.7. Add a missing word: “. . . ordinance to require any and all **LID** methods and practices for new”
5. Water Resources Implementation. Add a new high priority Action Item. **“Complete a more comprehensive groundwater study using a consultant that does not do any substantial work for private parties on Bainbridge Island.”**
6. Add a new Water Resources Action Item: **“Take the actions necessary – capital improvements, code changes, etc. – to capture, clean, and re-infiltrate as much storm water as reasonably possible.”** Probably a medium priority or other priority item.
7. Comp Plan Appendix B: Water Resources Existing Conditions and Future Needs. This Appendix needs a bit of work before we call it final. It contains some incorrect information. I’d like to know what process we should follow for amending it.
8. WR 2.9. Add additional words so that it reads as follows (the additional words are the words in bold): “Recognizing that the Island aquifer system is a Sole Source Aquifer as designated by the EPA, **consider creation and application of an aquifer conservation zone to appropriate areas of the Island** and institute an added level of development and re-development permit review to”

9. WR 2.10. Add additional words so that it reads as follows (the additional words are the words in bold): “Retard seawater intrusion ~~through well location~~ **into our groundwater through the development and application of a comprehensive seawater intrusion prevention program.**”

Peltier

1-WR. Proposed Revisions to Water Resources Vision, page WR-4

Water Resources Vision (as it appears in the draft)

Bainbridge Island’s water resources (precipitation on the surface and in the ground) are climate resilient and demand and quantity are adequate for all forms of life on the Island. *Aquifers* are continuously monitored and maintained above the early warning level. The water quality for most of the consumed water is monitored to ensure quality fully meets the standards for drinking water.

Education on water conservation ~~has resulted~~ results in a significant reduction in the average water consumption per *household*. The Bainbridge Island *groundwater* model is regularly updated with new data and results from model runs are used to maintain long-term *sustainability* of the Island’s water resources. *Low impact development* techniques are applied to all *land uses* and redevelopment.

Water Resources Vision (showing proposed revisions)

Bainbridge Island’s water resources have been conserved for future generations, in part, by the creation of critical aquifer conservation zones, appropriate regulation of development, and protection of the natural landscape. ~~(precipitation on the surface and in the ground)~~ are climate resilient and demand and quantity are adequate for all forms of life to thrive on the Island. Applying the *precautionary principle* to land uses, the quality and quantity of the Island’s water resources are remains adequate for all forms of life to thrive on the Island.

Bainbridge Island’s *Aquifers* are continuously monitored for quality and quantity and maintained well above the early warning levels. The water quality for most of the Island’s consumed water is monitored to ensure quality that it exceeds fully meets the standards set for drinking water.

Education regarding water conservation results has resulted in a significant reduction in the average water consumption per *household*. The Bainbridge Island *groundwater* model is regularly updated with new data and results from model runs are used to maintain long-term *sustainability* of the Island’s water resources. *Low impact development* techniques are applied to all *land uses* and redevelopment.

2-WR. Proposed Revision of GOAL WR-1 under Goals and Policies, page WR-4

GOAL WR-1 (as it appears in the draft)

Manage the water resources of the Island in ways that preserve, protect, maintain, and where necessary, restore and enhance ~~and preserve~~ their ecological and hydrologic function.

- Degradation of water resources is not allowed.
- The long-term *sustainability* of the Island's water resources is maintained, taking into account future climatic conditions and their effects on the water cycle.
- New development and population growth are managed so that water resources remain adequate for the indefinite future.
- *Groundwater*, surface water and *stormwater* monitoring, data assessment and reporting are current and available including future projections of availability, quality and need.
- Use current and future technology to maintain and protect water resources.

GOAL WR-1 (showing proposed revisions)

Manage the water resources of the Island in ways that **preserve, protect, maintain, and ~~where necessary~~ restore and enhance** their ecological and hydrologic function.

- Degradation of water resources ~~is~~ **will** not ~~be~~ allowed.
- **Maintain** ~~the~~ long-term *sustainability* of the Island's water resources ~~is maintained~~, taking into account future climatic conditions and their effects on the water cycle.
- Manage ~~new~~ development and population growth ~~are managed~~ so that water resources remain adequate for the indefinite future.
- *Groundwater*, surface water and *stormwater* monitoring, data assessment and reporting ~~are~~ **should be** current and available, including future projections of availability, quality and need.
- Use current and future technology to maintain and protect water resources.

3-WR. Proposed revision to Policy WR 2.1, page WR-4

Policy WR 2.1

Recognize that the entire Island functions as an *aquifer recharge area*. *Low impact development* techniques are essential for maintaining *aquifer recharge*.

Low impact uses and less intense development are appropriate for areas with high *aquifer recharge*. Low impact uses include **certain types of** development for buildings, roads or parking, **typically at lower densities**, that ~~has~~ **have** a reduced area of impact on the land, **and incorporate Low Impact Development practices and design**. Low impact uses do not depend on regular applications of fertilizers or pesticides, **or the use of other toxic chemicals and materials that potentially contaminate groundwater**.

Low impact development is an environmentally-friendly approach to site development and *stormwater* management emphasizing the integration of site design and planning techniques that conserve and protect the natural systems and hydrologic functions of a site.

4-WR. Proposed revision to Policy WR 2.14 on page WR-7

Policy WR 2.14 (as it appears in draft)

Maintain a comprehensive program of groundwater data gathering and analysis, ~~The program shall~~ including modeling, hydro geologic and geologic studies, and monitoring of static water levels, water use, water quality, surface water flows and acquisition of other data as necessary.

Policy WR 2.14 (showing proposed revisions)

Maintain a comprehensive program of groundwater data gathering and analysis, including modeling, hydro geologic and geologic studies, and monitoring of static water levels, water use, water quality, surface water flows and acquisition of other data as necessary. Create policies and practices to address potential conflicts of interest that could compromise the quality of this work.

5-WR. Proposed revision of Policy WR 3.1

Policy WR 3.1 (as it appears in draft)

Approve development ~~should not be approved~~ in regulated aquatic critical areas or their associated water quality buffer ~~unless~~ only if the subject property is encumbered to such extent that application of development regulation would deny all reasonable use of property.

Policy WR 3.1 (showing proposed revisions)

Approve development in regulated aquatic critical areas or their associated water quality buffer only if the subject property is encumbered to such extent that application of development regulation would deny all reasonable use of property. In such cases, minimize the allowed use, and associated impacts, to maximize environmental protections.

6-WR. Proposed revision to Policy WR 3.4 Policy WR 3.4

Ensure that development activities are conducted so that *aquatic resources* and natural drainage systems are maintained and water quality is protected. Require restoration when such areas are adversely impacted.

7-WR. Proposed revision of WR Action #1

WR Action #1 (showing proposed revisions)

~~Adopt~~ Identify a ~~an~~ aquifer conservation zones ~~being~~ consistent with RCW 36.70A.550, and adopt regulations and innovative permit review processes designed to protect the Island's surface and ground waters.

WR Action #1 (clean version)

Identify Aquifer conservation zones consistent with RCW 36.70A.550, and adopt regulations and innovative permit review processes designed to protect the Island's surface and ground waters.

8-WR. Proposed revision of WR Action #2:

WR Action #2 (as it appears in draft)

Adopt an Island-wide Groundwater Management Plan.

WR Action #2 (showing proposed revisions)

Adopt Take initial steps towards a leadership role in the creation of an Island-wide Groundwater Management Plan.

9-WR. Proposed revision of WR Action #3:

WR Action #3 (as it appears)

Apply *adaptive management* to assure that land use on the Island will continue to be adequately served by the available water resources.

WR Action #3 (showing proposed revisions)

Apply *adaptive management* to assure that land use, including zoning, on the Island will continue to be adequately served by the available is consistent with the long-term stewardship of our groundwater resources.

Roth

1. Will the Education/Outreach policies be implemented under Community Relations? The following include educational activities: LU 2.2, LU 23.1, EN 14.2, EN 19.4, **WR 7.1** (and implied if not stated in other policies in the first 4 elements).
2. Perhaps a new policy under Guiding Principal #8 may be appropriate.
3. "Utilize" appears frequently in the plan. "Use" could be substituted in most cases to improve readability. Both words have the same meaning.

Scott

I have no changes to the existing draft to suggest.

Tollefson

1. Goal WR-1: change “necessary” to “possible”
2. Policy WR 1.4 – change “in tandem” to “together”
3. Policy WR 2.3 – should we strike “and private”?
4. Policy WR 2.5 – rewrite: “Advocate to the appropriate regulatory agencies for improved wellhead protection procedures.”
5. Policy WR 2.6 – Reduce the use of pesticides....
6. Policy WR 3.16 – change “Maintain” to “Ensure”. This shouldn’t mean that B.I. necessary has to do this work.

LAND USE ELEMENT

Medina

1. “Conservation area” is used throughout and is italicized as if it is a defined term, but it is not in the glossary.
2. Policy LU 1.1. “. . . With an allocation of 28,660, **contingent upon a clear determination of sufficient and sustainable groundwater resources for such population increases**, the Island must plan for an increase in population of 5,635”
3. Policy LU 2.1., First Paragraph. “Recognizing that the carrying capacity of the Island is not known, the citizens of Bainbridge Island should **employ the precautionary principle and otherwise** strive to conserve and protect its natural systems within the parameters of existing data.”
4. Policy LU 2.1, Third Paragraph. Remove the first sentence. It is misleading and unnecessary.
5. Policy LU 2.5. This states a clear action item, but it is not in the list of action items at the end of the chapter.
6. Goal LU-3. This goal is stated in the past tense. Not sure why. Should probably be present tense.
7. Future Land Use Map on page LU-7. Residential zones 0.4, 1, and 2 are labeled as “open space residential – 0.4” etc. I move that we remove the term “open space” from these zoning designations. Many people’s understand “open space” to be synonymous with “public space” or “open to the public.” It is misleading and sets the basis for takings argument. The other residential zones use the terms “semi-urban” and “urban.” I suggested we change “open space” to “rural”, such as “rural residential – 0.4”, on this map and throughout the comp plan.
8. Policy LU 13.7. I have concerns about this Policy.
9. Policy LU 14.2. In light of discussions the Tree/LID Committee is having regarding LID, this Policy needs discussion.

10. Policy LU 15.5. This Policy is numbered incorrectly (should be 15.4) and doesn't seem to be an appropriate Policy for Goal LU-15.
11. Land Use Implementation: I propose a new action item that is labeled as #1 (with the current action items renumbered accordingly): **LU Action #1: Complete a thorough review of all Bainbridge Island codes to ensure that the revised comprehensive plan is fully implemented through those codes and there are no inconsistencies between the codes and the plan.**
12. LU Action #4. There is something missing in the wording of this action item. The identification of discrete sections will not eliminate any confusion. It needs to say something like "identify and amend discrete sections".

Peltier

1-LU. Proposed revision of Land Use Element Introduction, 4th paragraph, on page LU-0:

Future growth on Bainbridge will be accommodated in a manner that is consistent **with the responsible stewardship of its finite natural resources**. ~~requirements of the GMA, yet in several ways~~ **With that overall goal in mind,** this *Comprehensive Plan* goes beyond the GMA's minimum requirements. For example, it exceeds the GMA's minimal requirement to address water resources as a component of the Land Use Element by instead devoting an entire additional Element to Water Resources. The GMA requires plans to be based on a twenty-year horizon, but this plan uses a fifty-year/one hundred-year horizon to better account for the implications of Climate Change and the much longer-term cycles of natural systems and public infrastructure investments.

2-LU. Proposed revision of LU 1 on page LU-2:

Plan for growth based on the ~~growth~~ targets established by the Kitsap Regional Coordinating Council: 5,635 additional residents and 2,808 additional jobs from 2010-2035 and at the same time promote and sustain high standards that will **not diminish** ~~enhance~~ the quality of life ~~and improve~~ **or degrade** the environment of the Island.

Note: There is no historical basis for suggesting that population growth will enhance the quality of life or improve the environment of the Island.

3-LU. Proposed revision of LU 1.1, Land Use Goals and Policies, page LU-2

Policy LU 1.1

The City accepts the *Kitsap Regional Coordinating Council* (KRPC) population allocation and will continue to analyze the impacts of these allocations as the Comprehensive Plan is implemented **to ensure consistency with the responsible stewardship our Island's finite natural resources**. With an allocation of 28,660, the Island ~~must~~ **will** plan for an increase in population of 5,635 persons and 2,808 jobs by the year 2036.

4-LU. Proposed revision to first paragraph of LU 1.2, pages LU-2/LU-3

Outside of Winslow and the *Neighborhood Centers*, the Island has a rural appearance with forested areas, meadows, *farms* and winding, narrow, heavily vegetated roadways. These characteristics represent **an important part of** the Island's **special** character that is so highly valued by its residents.

Note: To make clear that the Island's special character is not limited to the area outside of the designated centers.

Proposed Revision 5-LU thru 10-LU to read as goals rather than statements of fact:

5-LU. Proposed revision of LU 2 on page LU-3

GOAL LU-2

This *Comprehensive Plan* recognizes and affirms that as an Island, the City has natural constraints based on the *carrying capacity* of its natural systems. The plan **strives to establish** ~~establishes~~ a development pattern that is consistent with the *Goals* of the community and compatible with the Island's natural systems.

6-LU. Proposed Revision of LU-3 on page LU-4

GOAL LU-3 (as it appears in draft)

~~Develop~~ **A meaningful process for citizen participation that includes** ~~has resulted in~~ participation from all segments of the Island community.

GOAL LU-3 (Showing proposed revisions)

Develop A and maintain a meaningful process for citizen participation ~~has resulted in~~ **that includes** ~~participation from~~ all segments of the Island community.

7-LU. Proposed Revision of LU 5.4 on page LU-8

Policy LU 5.4 (as it appears in the draft)

Sustainable development and redevelopment ~~will be~~ **is** focused in the *designated centers* through a combination of intergovernmental and public-private partnerships, *affordable housing* programs, "green" capital projects and *low impact development* standards.

Policy LU 5.4 (showing proposed revisions)

Sustainable development and redevelopment ~~is~~ **will be** focused in the *designated centers* through a combination of intergovernmental and public-private partnerships, *affordable housing* programs, "green" capital projects and *low impact development* standards.

8-LU. Proposed Revision of LU 6.1 on page LU-9, to read as a policy rather than statement of

fact

Policy LU 6.1 (as it appears in draft)

Land use designations ~~should~~ reflect the priority of Bainbridge Island to remain primarily residential with nonresidential development concentrated in the *designated centers*.

Policy LU 6.1 (showing proposed revisions)

Land use designations ~~should~~ reflect the priority of Bainbridge Island to remain primarily residential with nonresidential development concentrated in the *designated centers*.

9-LU. Proposed revision of LU 9.8 on page LU-16

Policy LU 9.8 (as it appears in the draft)

The *Neighborhood Centers* ~~should~~ achieve a mix of neighborhood-scale businesses, public uses and housing which are compatible with the scale and intensity of the surrounding *residential neighborhood* and which minimize the impact of noise, odor, lighting, fire safety and transportation on the *neighborhood*.

Policy LU 9.8 (showing proposed revision)

The *Neighborhood Centers* ~~should~~ achieve a mix of neighborhood-scale businesses, public uses and housing which are compatible with the scale and intensity of the surrounding *residential neighborhood* and which minimize the impact of noise, odor, lighting, fire safety and transportation on the *neighborhood*.

10-LU. Proposed revision of Goal LU-25 on page LU-29, to read as a goal rather than statement of fact

GOAL LU-25 (regarding essential public facilities) – (as it appears in draft)

The needs of the community ~~should be~~ are met by providing *essential public facilities* and services that are equitably distributed throughout the community; that are located and designed to be safe and convenient to the people they serve; that provide flexibility of use and maximum efficiency; and that are compatible with adjacent uses, the environment, and preservation of public health and safety.

GOAL LU-25 (showing proposed revisions)

The needs of the community ~~should be~~ are met by providing *essential public facilities* and services that are equitably distributed throughout the community; that are located and designed to be safe and convenient to the people they serve; that provide flexibility of use and maximum efficiency; and that are compatible with adjacent uses, the environment, and preservation of public health and safety.

11-LU. Proposed revision of LU 2.1 on page LU-3

Policy LU 2.1 (as it appears in the draft)

Recognizing that the *carrying capacity* of the Island is not known, the citizens of Bainbridge Island should strive to conserve and protect its natural systems within the parameters of existing data. Revisions to the Plan *should* be made as new information becomes available.

The *carrying capacity* of Bainbridge Island is determined by many factors including the supply of limited resources (particularly water), changes in patterns of consumption and technological advances. This Plan acknowledges that with current information, the carrying capacity of the Island is unknown. During the timeframe of this Plan, additional information on the *carrying capacity* of the Island should be developed.

The plan ~~seeks to take~~ a balanced and responsible approach to future development. As our understanding of the Island's capacity changes, the recommendations of this Plan should be reconsidered to ensure they continue to represent a responsible path for the long-range future of the Island.

Policy LU 2.1 (showing proposed revisions)

Recognizing that the *carrying capacity* of the Island is not known, the City and citizens of Bainbridge Island should strive to conserve and protect its natural systems for future generations ~~within the parameters of existing data. Revisions~~ With that *Guiding Principle*, revisions to the Plan *should* be made considered as new information becomes available.

The *carrying capacity* of Bainbridge Island is determined by many factors including the supply of limited resources (particularly water), cumulative impacts to ecological function, the capacity of its transportation system, and the community's level of commitment to sustainable development. ~~changes in patterns of consumption and technological advances. This Plan acknowledges that with current information, the carrying capacity of the Island is unknown.~~ During the timeframe of this Plan, additional information on the Island's *carrying capacity* of the Island should be developed.

The plan ~~takes~~ seeks to take a balanced and responsible approach to future development using the *precautionary principle*. As our understanding of the Island's capacity changes, the recommendations of this Plan should be reconsidered to ensure they continue to represent a responsible path for the long-range future of the Island.

Policy LU 2.1 (clean version)

Recognizing that the *carrying capacity* of the Island is not known, the City and citizens of Bainbridge Island should strive to conserve and protect its natural systems for future generations. With that *Guiding Principle*, revisions to the Plan *should* be considered as new information becomes available.

The *carrying capacity* of Bainbridge Island is determined by many factors including the supply of limited resources (particularly water), cumulative impacts to ecological function, the capacity of its transportation system, and the community's level of commitment to sustainable development. During the timeframe of this Plan, additional information on the Island's *carrying capacity* should be developed.

The plan seeks to take a balanced and responsible approach to future development using the *precautionary principle*. As our understanding of the Island's capacity changes, the recommendations of this Plan should be reconsidered to ensure they continue to represent a responsible path for the long-range future of the Island.

12-LU. Proposed revision to LU 4.1 on page LU-4

Policy LU 4.1 (draft version)

Focus development and redevelopment on the Island over the next fifty years in *designated centers* that have or will have urban levels of services and *infrastructure*.

Policy LU 4.1 (with proposed revisions)

Focus development and redevelopment on the Island over the next fifty years in **already established** *designated centers* that have ~~or will have~~ urban levels of services and *infrastructure*.

Note: Growth should only be directed to areas that have the necessary infrastructure to support it.

"Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum

standards." (RCW 36.70A.020)

13-LU. Proposed Revision of Goal LU-5, first paragraph, on page LU-7

GOAL LU-5 (showing proposed revisions)

Focus Urban Development in Designated Centers

The Plan focuses residential, commercial, and industrial growth in Winslow and other ~~current and future~~ **established designated** centers with urban services such the Neighborhood centers, and the industrial centers at Day Road and Sportsman triangle. Collectively, Winslow, the Neighborhood Centers, and the two industrial centers constitute Bainbridge Island's *designated centers*.

14-LU. Proposed revision of LU 6.3 on page LU-9

Policy LU 6.3 (as it appears in the draft)

Island Center, Rolling Bay, and Lynwood Center and Fort Ward offer housing and small-scale, commercial and service activity outside of Winslow. These ~~designated Neighborhood Centers~~ ~~should be~~ are allowed to develop at higher *densities* to reinforce their roles as centers.

Policy LU 6.3 (showing proposed revisions)

Island center, Rolling Bay, and Lynwood center offer housing and small-scale, commercial and service activity outside of Winslow. These Neighborhood Centers ~~are~~ may be allowed to develop at higher *densities* to reinforce their roles as centers.

Note: future growth of the Neighborhood Centers is somewhat dependent upon infrastructure.

15-LU. Proposed revision of LU 6.9 on page LU-10

Policy LU 6.9 (as it appears in the draft)

The Planning Commission has a role in reviewing long subdivisions to ensure the integrity of the Comprehensive Plan is maintained.

Policy LU 6.9 (showing proposed revisions)

~~The~~ Provide a role for the Planning Commission to review ~~has a role in reviewing~~ long subdivisions to ~~ensure~~ promote the integrity consistency with the goals and policies of the Comprehensive Plan during the land use review process ~~is maintained.~~

16-LU. Proposed Additional Policy under GOAL LU-6 on page LU-9/10

To encourage higher quality development on Bainbridge Island, create an expanded role for the Design Review Board that includes, but is not limited to, review of subdivisions and all city projects.

17-LU. Proposed revision of opening statement regarding Neighborhood Centers on page LU-14 NEIGHBORHOOD CENTERS (as drafted)

The Neighborhood Centers provide Island-wide commercial and service activity outside Winslow. These areas ~~should be~~ are to be developed at higher *densities* to reinforce their roles as ~~community-service~~ community centers. The ~~service-neighborhood~~ community centers will ~~also~~ help reduce traffic congestion by providing an alternative to shopping in Winslow.

NEIGHBORHOOD CENTERS (showing proposed revisions)

The Neighborhood Centers provide Island-wide commercial and service activity outside of Winslow. These areas ~~are to~~ may be allowed to develop at higher densities to reinforce their roles as community centers. The Well conceived subarea plans for the neighborhood centers ~~will~~ may help reduce traffic congestion by providing convenient alternatives ~~an alternative to shopping in~~ to obtaining goods, services, and other amenities in Winslow.

Note: densities depend upon available infrastructure.

NEIGHBORHOOD CENTERS (clean)

The Neighborhood Centers provide Island-wide commercial and service activity outside of Winslow. These areas may be allowed to develop at higher densities to reinforce their roles as

community centers. Well-conceived subarea plans for the neighborhood centers may help reduce traffic congestion by providing convenient alternatives to obtaining goods, services, and other amenities in Winslow

18-LU. Proposed revision of *Standards for all Neighborhood Centers* on page LU-16.

Standards for all *Neighborhood Centers*

The following standards ensure that development will be designed to fit into the scale and character of the existing centers and the adjacent residential *neighborhoods*. The City, with citizen participation, will develop developed design prototypes or illustrated design guidelines for each of the three *neighborhood centers* to serve as a visual reference for the future development of the community. These design guidelines can be crafted to recognize the distinct qualities of each designated center.

19-LU. Proposed revision of LU 13.6 from *Island-wide Conservation Area Section* on page LU-21

Work with Kitsap Public Health District to allow innovative solutions for on-site sewage treatment including community septic, composting toilets, biodigesters, and grey water systems.

20-LU. Proposed revision of Goal LU 14 on page LU-21 to correct error in grammar

GOAL LU-14

Adopt landscape design standards and identify and protect public vantage points, view corridors and scenic vistas to support the Island's sense of place, and identity and orientation.

21-LU. Proposed revision of LU 14.2 on page LU-21 to read better

Policy LU 14.2 (showing proposed revisions)

Design and site new development so as to have create the least visual and environmental impact on the Island landscape. Encourage the retention of features that enhance the Island's character such as barns, fences, fruit or vegetable stands.

22-LU. Proposed revision of LU 20.4 on page LU-25 to read better

Policy LU 20.4 (as it appears in the draft)

~~The City and HPC shall Coordinate with Tribes and other interested stakeholders to promote awareness, respect for and celebration of the who have an interest in historic resources of on the Island.~~

Policy LU 20.4 (showing proposed revisions)

Coordinate with Tribes and other interested stakeholders to promote awareness, respect for, and celebration of the historic resource of the Island Island's historic resources.

23-LU. Proposed revision of LU Action #3 on page LU-32

LU Action #3 (as it appears in draft)

Prepare a new *Conservation Village* land use regulation to incentivize creation of a new housing pattern that consolidates and dedicates open space.

LU Action #3 (showing proposed revisions)

~~Prepare~~ **Consider development of** a new *Conservation Village* land use regulation to incentivize creation of a new housing pattern that consolidates and dedicates open space.

Note: *Conservation Villages* is still a general concept that needs considerably more refinement and discussion before deciding to incorporate it into the development regulations.

24-LU. Proposed revision of LU Action #4 on page LU-32

LU Action #4 (as it appears in draft)

Identify discrete sections of the Land Use Code to eliminate confusion, redundancy and delay in the permit process.

LU Action #4 (showing proposed revisions)

Identify discrete sections of the Land Use Code, **and land use approval process, that can be enhanced to improve the quality of development, increase transparency and public process, eliminate confusion, and reduce unnecessary redundancy and delays** in the permitting process.

25-LU. Proposed revision of LU Action #5 on page LU-32

LU Action #5 (as it appears in draft)

Create more efficient and effective review processes, including the roles and best practices and procedures for the Planning Commission, Design Review Board and Hearing Examiner.

LU Action #5 (showing proposed revisions)

Create **a more efficient and effective land use review processes, including the roles and best practices and procedures for the Planning Commission, Design Review Board and Hearing Examiner that will enhance the professional performance of city staff and result in higher quality development that is more in keeping with the community vision.**

Roth

1. LU 1.1 “KRPC” should be “KRCC”
2. “Utilize” appears frequently in the plan. “Use” could be substituted in most cases to improve readability. Both words have the same meaning.

Scott

1. *Fig LU-2*: Typo. Should read Typical Island Conservation Area
2. *Goal LU-4*: I prefer the original wording here: “maximize public access to and protect the shoreline...”
3. *Policy LU 4.9*: This is not a policy, but rather a statement of jurisdiction. I suggest deletion, or combine with 4.10.
4. *Policy LU 6.2*: This policy should be revised to reflect that the existing *infrastructure* within Winslow does not currently include adequate downtown parking. While I agree we need to reduce reliance on the automobile, the fact is that if Winslow is to remain and grow as the vibrant “heart of Bainbridge,” people need to be able to drive to and park in the downtown core, and we already have a parking capacity problem. This issue should be recognized in the Plan, and we should have a Policy in this element (and other elements, such as the Economic Element) to develop adequate downtown parking. I propose we add: “Develop adequate parking in Winslow to accommodate residents and visitors who drive downtown for shopping, participation in local government, attendance at cultural events and centers, and to use other resources in Winslow.”
5. *Policy LU 6.9*: I would delete this. Although we may create a role for the Planning Commission, and perhaps also the Design Review Board, I don’t think these should be policies of the Comp Plan.
6. *Policy LU 7.3*: The use of “and/or” is often vague and confusing, and should be avoided. Here I would use “and.”
7. *Neighborhood Centers (p. LU-15)*: This term is not defined in the glossary. Should we use “Designated Center” (a defined term)? The “Standards for all Neighborhood Centers” should apply to Winslow, too, so I favor using Designated Center (which includes Winslow) for clarity.

8. *Policy LU 9.16:* Change to: “To minimize visual and environmental impacts, encourage parking in the rear or side yards, or underground...”
9. *Policy LU 12.5:* Change “and/or” to “or.”
10. *Policy LU 12.7:* Change to read: “Require new or expanded industrial development to provide physical access to shorelines when such public access does not cause significant interference with operations or hazards to life and property. Require as much visual access to the shoreline as possible.”
11. *Policy LU 24.3:* Change “and/or” to “and.”
12. *LU Action #2:* Add “Develop adequate parking to support Winslow facilities and services.” And then add Policy LU 6.2 to the list under this action item.

Tollefson

1. Make capitalization uniform on “Neighborhood Centers” and “Designated Centers”
2. LU 1.2 – “Neighborhood Centers” should be “Designated Centers”
3. Goal LU-2, strike “as an Island”
4. Policy LU 2.5- Prepare a Bainbridge Island Climate Change Strategy and a Water Conservation Plan.
5. Goal LU-3 – delete. No meaningful role here.
6. Various references to “Island-Wide Conservation and Development Strategy” and variations thereof: Edit to remove the idea that these are documents yet to be created. The Comp. Plan IS the “Island-Wide Conservation and Development Strategy”
7. Goal LU-4 – Start section at “Focus residential and commercial development....”
8. LU 4.2 – delete, redundant
9. LU 4.4 – “...many of the Cities development priorities”
10. Goal LU-5 – “Collectively, Winslow, the *neighborhood centers* and the two *industrial centers* constitute Bainbridge Island’s *designated centers*. The Plan focuses residential,

commercial and industrial growth in Winslow and the other *designated centers*”

11. Policy LU 5.5 – what is “green factor”?
12. Policy LU 5.6 – Change “Address” to “Create”
13. Goal LU-6 – Strike “inappropriate”. Is there a better was to say “sprawling development”
14. LU 6.1 – “...to remain primarily residential and agricultural, with other development concentrated....”
15. Policy LU 6.7 – Strike “considered”
16. Policy LU 6.9 – Strike. Whether it has a role and what that role is has to be the result of City Council deliberation, put on next year’s work plan.
17. Page LU 17 – Standards. Are these “design prototypes” existing or planned. Paragraph not clear.
18. Policy LU 9.15 – Last sentence needs rework.
19. Goal LU-11 – delete, and renumber policies to follow LU-10.
20. Policy LU 13.4 – delete “all of which is an aquifer recharge area”?
21. Policy LU 14.2 – “.... barns, fences and fruit or vegetable stands....”
22. Policy LU 15.5 – delete. See Goal LU-9, Pol LU 9.12
23. Goal LU-16 – rewrite: Promote food security and public health through support for local food production and awareness of farming practices. Encourage locally-based food production....”
24. Goal LU-17 – rewrite: “Establish and maintain a purchase and transfer...”
25. Policy LU 17.3 – delete. See Goal LU-4. This Plan is the strategy.
26. Goal LU-19 – Strike second paragraph. Add Policy LU-19.1: It is the policy of the City to cooperate and coordinate with all other governmental entities which serve the people

of Bainbridge Island.

27. Policy 20.4 – “Coordinate with all interested stakeholders....”
28. Policy 21.2 – “.... updated inventory of historic resources”
29. Page LU 28 – strike blue “Fort Ward”
30. Policy LU 23.5 – strike “Planning Area”
31. Policy 23.6 – strike “within the Fort Ward Study Area”
32. Policy 26.1 – “....and appropriate technical experts. The Committee should consider....”
33. LU Action #6 – delete. The Plan is the Strategy.

WATER RESOURCES ELEMENT

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WATER RESOURCES INTRODUCTION

Bainbridge Island is a quasi-enclosed environment that requires a holistic perspective to understand the interdependence among the Island's three primary water resources: *groundwater*, surface water and *stormwater*. Although these waters are typically regulated and managed independently, they are in nature, intimately connected. In fact, it is all the same water simply given a different name and managed according to where it resides in the hydrologic cycle at any given time (see Fig.WR-1).

When rain falls, rainwater that is not evaporated or taken up by plants will follow one of three paths. It may infiltrate into the ground where it is called *groundwater*. It may drain directly into *streams* and harbors where it is called surface water or it may be captured by manmade *infrastructure* such as street drains, ditches or detention/retention ponds where it is called *stormwater*.

Rainwater that infiltrates into the ground (*groundwater*) may be pumped from wells to provide drinking water or irrigation or seep out of the ground into *streams*, springs and harbors where it is again called surface water. Likewise, *stormwater* may discharge into a nearby stream or harbor and become surface water or infiltrate into the ground and become *groundwater*. (see Fig.WR-1)

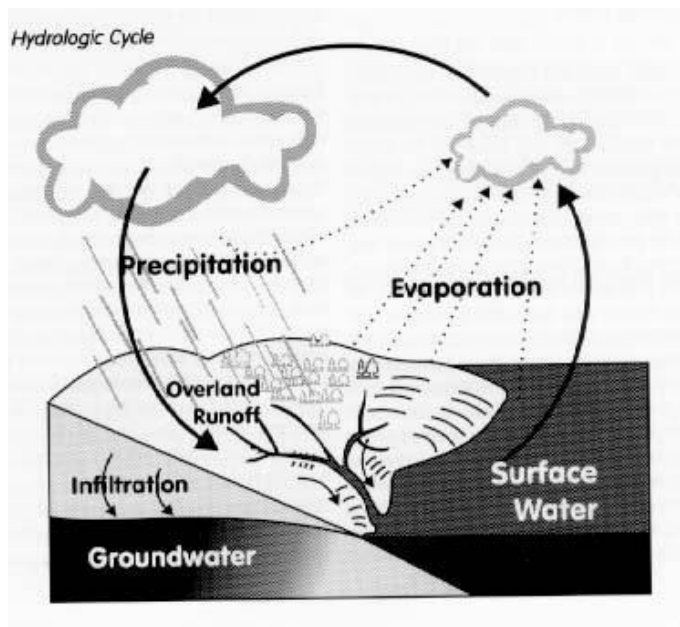


Fig. WR-1 The Hydrologic Cycle

In order to successfully protect and manage any one of these waters one must protect and manage all three. To address these interrelationships, a separate Water Resources Element has been developed as follows:

- General water resources management policies
- *Groundwater* protection and management policies
- Surface water protection and management policies
- *Stormwater* protection and management policies
- Residential on-site sewage system policies
- Contaminated sites policies
- Public education and outreach policies

Land Use Connection

In the development of policies related to the management of our Island water resources, it is important to understand the links between water resources quality and quantity and *land use*. Most water quality and habitat integrity impacts are caused by the way land was or is used. Developed land allows for rapid *runoff* and inundation of natural conveyance systems such as *wetlands* and *streams*. Rapid *runoff* can cause damage through flooding, erosion and water-borne contamination.

In addition, *households* create sewage that needs disposal either by a wastewater treatment plant or by residential on-site sewage systems. Wastewater treatment plants are reasonably effective at cleaning wastewater but do not at present provide complete removal of nitrogen nor treat for contaminants of emerging concerns that include but are not limited to, byproducts of medications, recreational drugs, health and beauty products and caffeine.

Residential on-site sewage systems can fail and cause contaminants to enter the surface water and/or *groundwater*. Even functioning systems, depending upon *density* and proximity to surface water and *groundwater*, can contribute to accumulations of nitrogen and contaminants of emerging concern in these waters.

Use of fertilizers, pesticides and other chemicals for cropland, lawns and gardens, and vehicle and *household* cleaning and maintenance as well as improper pet and livestock waste management can add significant contamination to surface water, *stormwater* and *groundwater*.

Commercial and industrial uses, past and present, leave behind pollutants in our soils. In particular, historic *land uses* such as large row crop agriculture, lumber, petroleum and others have left behind legacy pollutants in sediments both on upland properties and in the sediments along the bottoms of our *streams*, harbors and nearshore areas.

Without proper coordination of the regulations that will implement policy statements, conflicting signals may be given when dealing with water resources issues. For example, a surface water problem may be resolved by efficiently collecting and removing all water from the area whereas a *groundwater recharge* issue may require that the water be kept on-site to allow for infiltration.

Another conflict arises when infiltration of *stormwater* competes for space with on-site sewage system drain fields. There are physical limitations to the rates of infiltration and absorption based on soil types which may make it impossible to have both of those facilities on the same site. Where development occurs in important *aquifer recharge areas*, special consideration is needed to preserve the volume of *recharge* available to the *aquifer* and to protect the *groundwater* from contamination. A key component of water resources protection and adaptive management is adequate monitoring in order to assess impacts of current land use and the effectiveness of applied management actions.

The overriding theme that runs through all of the policies and *goals* in this element is the preservation and protection of water quality, water quantity, and ecological and hydrologic function.

Climate change

Climate change projections indicate that over the coming decades sea level may rise up to four feet in the Puget Sound region, the ocean will become more acidic and climatic conditions are likely to become warmer. This will result in more intense rain events during the wet season with longer, drier summers, though overall annual volume of rainfall will under current models is expected to remain approximately the same.

Ocean acidification will likely impact aquatic species survival and assemblages in our marine areas and sea level rise will likely impact habitat and built *infrastructure* in our nearshore areas including homes, businesses and public facilities such as roads and sewer facilities.

Wetter conditions during the wintertime will increase water availability but may cause flooding or diminish water quality. More intense and frequent storms or heavier rainfall events can cause *stormwater* inundation and localized flooding, chronic flooding, non-infiltrated run-off, erosion and landslides. Increased intensity of rainfall may also diminish *aquifer recharge* rates as saturated soils are less able to absorb large amounts of water falling over short periods of time.

Warmer, drier conditions in the summertime will increase evaporation rates and water demand by plants, wildlife and people, and may diminish water quality. Dry conditions decrease water availability resulting in reduced stream flow and diminished *aquifer recharge*. Warmer and drier conditions can also reduce water quality, both by increasing in-stream temperatures and by concentrating contaminants in smaller volumes of water.

WATER RESOURCES VISION 2036



Bainbridge Island's water resources (precipitation on the surface and in the ground) are climate resilient and demand and quantity are adequate for all forms of life on the Island. *Aquifers* are continuously monitored and maintained above the early warning level. The water quality for most of the consumed water is monitored to ensure quality fully meets the standards for drinking water.

Education on water conservation ~~has resulted~~ results in a significant reduction in the average water consumption per *household*. The Bainbridge Island *groundwater* model is regularly updated with new data and results from model runs are used to maintain long-term *sustainability* of the Island's water resources. *Low impact development* techniques are applied to all *land* uses and redevelopment.

GOALS & POLICIES

GENERAL WATER RESOURCES

GOAL WR-1

Manage the water resources of the Island in ways that preserve, protect, maintain, and where necessary restore ~~and enhance and preserve~~ their ecological and hydrologic function.

- Degradation of water resources is not allowed.
- The long-term *sustainability* of the Island's water resources is maintained, taking into account future climatic conditions and their effects on the water cycle.
- New development and population growth are managed so that water resources remain adequate for the indefinite future.
- *Groundwater*, surface water and *stormwater* monitoring, data assessment and reporting are current and available including future projections of availability, quality and need.
- Use current and future technology to maintain and protect water resources.

Policy WR 1.1

Study future climate and demand scenarios to accurately ~~understand~~ plan for future water resource conditions.

Policy WR 1.2

Groundwater, surface water and *stormwater* are resources that *shall* be protected and managed to preserve water quality and quantity, and to retain natural ecological and hydrologic function ~~to the maximum extent practicable~~.

Policy WR 1.3

~~To foster sustainable water resources, The City will provide sustainable water resource planning, protection, management and monitoring and on-going education and outreach should be provided by the City in coordination with government agencies at all levels, drinking water purveyors, watershed management groups, Tribes, non-profit organizations, local integrating organizations for regional recovery and protection and other stakeholders.~~

Policy WR 1.4

Apply the policies in this element in tandem with the protective measures set by the City's Shoreline Management Master Program, *Critical Areas Ordinance* and any other environmental or water resources management ordinance established by the City.

Policy WR 1.5

Identify the areas of the Island that are the most vulnerable to pollution from concentrations of fecal coliforms and nitrates (for example, septic fields, agricultural activities, or fertilizers), and monitor those areas to determine if and when preventative or restorative measures are warranted.

GROUNDWATER PROTECTION AND MANAGEMENT

GOAL WR-2

Protect the quality and quantity of groundwater on the Island.

Policy WR 2.1

Recognize that the entire Island functions as an *aquifer recharge area*. *Low impact development* techniques are essential for maintaining *aquifer recharge*.

Low impact uses and less intense development are appropriate for areas with high *aquifer recharge*. Low impact uses include development for buildings, roads or parking that has a reduced area of impact on the land. Low impact uses do not depend on regular applications of fertilizers or pesticides.

Low impact development is an environmentally-friendly approach to site development and *stormwater* management emphasizing the integration of site design and planning techniques that conserve and protect the natural systems and hydrologic functions of a site.

Policy WR 2.2

~~Identify and assess areas of high *aquifer recharge* should be identified and assessed as part of a *land use* application. Care should be taken to~~ Minimize the effect of development on these areas.

Policy WR 2.3

To promote efficient use of *groundwater* resources, encourage the expansion of public and private water systems rather than encouraging *shallow* or individual residential wells.

Policy WR 2.4

Assess the impacts of proposed activities and development on the flow of springs and *streams* and levels of *wetlands* that are either sustained by *groundwater* discharge or contribute

recharge to groundwater, and require an assessment of anticipated hydrologic impacts. Activities or development may be restricted if the report indicates any adverse impacts.

Policy WR 2.5

In cooperation with the appropriate regulatory agencies (e.g., Washington State Department of Health and the Kitsap Public Health District) institute new wellhead protection procedures.

Policy WR 2.6

~~Encourage~~ Reduce the use of pesticides and herbicides by encouraging use of integrated pest management techniques and less toxic alternatives and the reduction of pesticide and herbicide use within the City boundaries.

Policy WR 2.7

Establish a stakeholder group to develop an Island-wide *groundwater* management plan and work with Kitsap Public Utility District to update the Kitsap County Coordinated Water System Plan.

Policy WR 2.8

Develop an incentive based program to strongly encourage exempt well owners to regularly monitor and report the quality of their well water and identify leaks using tools such as flow meters. ~~Results should be self-reported to the Kitsap Public Health District.~~

Policy WR 2.9

Recognizing that the Island *aquifer* system is a Sole Source *Aquifer* as designated by EPA, institute an added level of development and re-development permit review to prevent or mitigate potential pollutant-generating activities or activities that could affect stormwater runoff and aquifer recharge associated with a proposed *land use*. The Island's aquifers are protected through critical area regulations and Washington Administrative Code (WAC) Chapter 362-190.

Policy WR 2.10

Develop ~~Retard~~ seawater intrusion through well-location prevention regulations.

Policy WR 2.11

Develop a water conservation program for all water uses on the Island.

Policy WR 2.12

Encourage water re-use and reclamation to serve as a supplementary source for high-water users such as industry, parks, schools and golf courses as approved by the Washington State Department of Health.

Policy WR 2.13

Develop a program that incentivizes and facilitates innovative methods for ~~encourages homeowners and business owners to explore innovative methods for to use stormwater recapturing and reusing surface water runoff~~ and grey water as approved by the Washington State Department of Health and the Kitsap Public Health District.

Policy WR 2.14

Maintain a comprehensive program of *groundwater* data gathering and analysis. ~~The program shall including~~ modeling, hydro geologic and geologic studies, and monitoring of static water levels, water use, water quality, surface water flows and acquisition of other data as necessary.

SURFACE WATER PROTECTION AND MANAGEMENT**GOAL WR-3**

Achieve no net loss of ecological functions and processes necessary to sustain *aquatic resources* including loss that may result from cumulative impacts over time.

Over recent decades awareness has grown of the importance of preserving and protecting *aquatic resources*. *Aquatic resources* have a number of important ecological functions, processes and values. These functions vary but include providing water quality protection, flood plain control, shoreline stabilization, contributions to *groundwater* and stream flows, and wildlife and fisheries habitat. *Aquatic resources* also have values as natural areas providing aesthetic, recreational and educational opportunities that *should* be preserved for future generations.

Policy WR 3.1

Approve development ~~should not be approved~~ in regulated aquatic *critical areas* or their associated water quality buffer ~~unless only if~~ the subject property is encumbered to such an extent that application of *development regulations* would deny all reasonable use of property.

Policy WR 3.2

Require that vegetated buffers be maintained between proposed development and the aquatic resource in order to protect the functions and values of such systems. Restore degraded buffers ~~should be restored~~ to enhance their function. Allow reductions in vegetated buffers only in areas where such reductions, if consistently applied, would not result in significant cumulative impacts to *aquatic resources* and *fish and wildlife habitat*.

Policy WR 3.3

Require that buffers be retained in their natural condition wherever possible while allowing for appropriate maintenance. Where buffer disturbance has occurred, require re-vegetation with appropriate species, with a preference for native species, to restore the buffers' protective values.

Vegetated buffers facilitate infiltration and maintenance of stable water temperatures, provide the biological functions of flood storage, water quality protection and *groundwater recharge*, reduce amount and velocity of run-off, and provide for wildlife habitat.

Policy WR 3.4

Ensure that development activities are conducted so that *aquatic resources* and natural drainage systems are maintained and water quality is protected.

Policy WR 3.5

Prior to any clearing, grading or construction on a site, all *wetlands*, *streams* and buffer areas ~~should are to~~ be specifically identified and accurately located in the field in order to protect these areas during development.

Policy WR 3.6

Herbicides and pesticides approved for use near aquatic resources ~~shall not~~ may only be used in aquatic resource areas and buffers when applied by licensed applicators. ~~and should be discouraged in the areas that drain into them.~~

Policy WR 3.7

Prohibit access to aquatic *critical areas* by farm animals. Require farm management plan for agricultural activities within proximity of *aquatic resources* ~~should complete a farm management plan~~ addressing water quality and other natural resource protection.

Policy WR 3.8

Require mitigation to compensate for unavoidable impacts to aquatic *critical areas*. Mitigation ~~should~~ be designed to achieve no net loss in functions and processes of *aquatic resources*.

Policy WR 3.9

Promote *watershed*-based mitigation to meet federal regulations, improve mitigation success and better ~~preserve~~ address the ecological function demands of the island's *watersheds*.

Policy WR 3.10

Work with state and local health departments to evaluate the merits of new technologies such as grey water capture, package treatment plants and composting toilets as alternatives to septic and sewer systems. ~~Determine which of those systems should be allowed and/or encouraged to better protect the quality and capacity of the Island's surface water and nearshore environment.~~

Policy WR 3.11

Consider the impacts of *climate change* and ocean acidification when developing regulations or approving capital projects related to *aquatic resources* including marine nearshore, *wetlands*, *streams*, lakes, creeks, associated vegetated areas and *frequently flooded areas*.

Policy WR 3.12

~~Allow~~ Stream relocation will only be allowed where relocation would result in improved stream ecosystem function ~~habitat or when a property owner would otherwise be denied all reasonable use of the property.~~

Policy WR 3.13

Degraded channels and banks ~~should~~ be rehabilitated by various methods (e.g., culvert replacement, volunteer efforts, public programs or as offsetting mitigation for new development) to restore the natural function of the riparian habitat for fish and wildlife.

Policy WR 3.14

Protect, preserve and enhance fish and wildlife habitate and adjacent riparian areas to ensure sustainable populations of resident aquatic life. ~~and migratory fish streams and adjacent land should be preserved and enhanced to ensure a sustainable fishery.~~

Policy WR 3.15

Require the construction of public facilities to avoid encroachment into and disturbances of *aquatic resources*.

Policy WR 3.16

Maintain a comprehensive program of surface water inventory, data gathering and analysis. The program *shall* include monitoring and assessment of physical, chemical and biological health of surface water ecosystems to include *streams*, ephemeral *streams*, lakes, *wetlands* and marine waters. This may include water, flow, sediment, habitat, *pollutants*, submerged aquatic vegetation, fish and shellfish tissue, aquatic species diversity and other ecosystem health indicators.

Policy WR 3.17

Support a community-wide program to educate Island residents about alternatives to using and disposing of herbicides, pesticides, and other household chemicals, to reduce impacts to marine shoreline areas, wetlands, streams, and other environmentally sensitive areas.

Policy WR 3.18

Promote and support volunteer or community-driven restoration projects.

STORMWATER PROTECTION AND MANAGEMENT**GOAL WR-4**

Rather than capture and carry stormwater away as a waste stream, protect it from pollutants and retain it on site to replenish *aquifers* and maintain *wetlands* and *natural summer* stream flows, preserving or mimicking the natural water cycle to the maximum extent practicable.

Policy WR 4.1

Comply with all requirements of the City's National Pollutant Discharge Elimination System Phase II Municipal *Stormwater* Permit (NPDES Permit).

Policy WR 4.2

~~Continue to~~ **Provide** ongoing opportunities for the public to participate in the decision-making process involving the development, implementation and update of the City's *Stormwater* Management Program through advisory councils, public hearings, and *watershed* committees.

Policy WR 4.3

~~Continue to~~ **Improve** and maintain an education and outreach program designed to reduce or eliminate behaviors and practices that cause or contribute to adverse *stormwater* impacts and encourage the public to participate in stewardship activities.

Policy WR 4.4

~~Continue to~~ **Identify** and eliminate sources of pollutants to the City's *stormwater* drainage system through proactive field screening techniques such as effluent monitoring, system inspections and cleaning, and commercial and industrial business inspection, and through the enforcement of the City's Illicit Discharge Detection and Elimination ordinance.

Policy WR 4.5

Ensure development of and adherence to required public and private *stormwater* pollution prevention plans for public facilities, construction sites and commercial and industrial *land use*. Encourage the use of such plans where not specifically required.

Policy WR 4.6

Ensure development of and adherence to erosion and sediment control plans on all construction and development sites of any size.

Policy WR 4.7

Develop and actively enforce a strong *low impact development (LID)* ordinance to require any and all methods and practices for new development and redevelopment to the maximum extent practicable and reasonable. ~~LID is a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning and distributed stormwater management practices that are integrated into a project design.~~

Policy WR 4.8

Prioritize *LID*-based retrofit of public and private *stormwater* drainage systems and built assets through the inventory, management and fiscal planning process.

Policy WR 4.9

Incentivize *LID* retrofit of current built environment.

Policy WR 4.10

Use *watershed* and basin plans to reduce *stormwater* impacts and *non-point source pollution*.

Policy WR 4.11

Comply with all requirements specifically identified by the City's permit for any Total Maximum Daily Load (TMDL) in which the City is a stakeholder.

Policy WR 4.12

Conduct effectiveness monitoring and assessments to continue to adaptively manage *stormwater* to ensure optimal protection.

RESIDENTIAL ON-SITE SEWAGE SYSTEMS

GOAL WR-5

Ensure that sewage is collected, treated and disposed of properly to prevent public health hazards and pollution of *groundwater*, Island surface water and the waters of Puget Sound.

Policy WR 5.1

Regulations and procedures of the Washington State Department of Health and the Kitsap Public Health District apply to all on-site disposal systems. ~~The City shall work~~ Coordinate with these agencies to assure regular inspection, maintenance and repair of all *sanitary sewer* and on-site systems located on the Island.

Policy WR 5.2

Request notification of all waivers or variances of Kitsap Public Health District requirements such as modification of setbacks, vertical separation, minimum lot size, reserve drainfield, etc., prior to issuance and subsequent modifications by the Kitsap Public Health District of an approved Building Site Application.

Policy WR 5.3

Allow alternative systems such as sand filters, aerobic treatment, composting toilets and living-systems when approved by the Kitsap Public Health District.

Policy WR 5.4

~~Development regulations shall~~ Require coordination between the on-site septic and storm drainage disposal systems designs to ensure the proper functioning of both systems.

Policy WR 5.5

Assist the Kitsap Public Health District in developing a program to require proper maintenance of all on-site waste disposal systems in order to reduce public health hazards and pollution. This program *shall* include periodic system inspection and pumping when necessary.

Policy WR 5.6

Work with the Kitsap Public Health District on a collaborative program to fund and pursue grants or low-cost loans for low and moderate-income *households* to repair failed septic systems. Incentivize maintenance, repair and replacement of systems for any income level.

Policy WR 5.7

~~Allow~~ on-site waste disposal systems serving more than one *household* ~~should be allowed~~ only with assurance of proper design, operation, management and approval from the Kitsap Public Health District.

Policy WR 5.8

~~The City may~~ Provide the service of operation and maintenance management for approved large on-site *sanitary sewer* systems or community *sanitary sewer* systems in coordination with the Kitsap Public Health District.

Policy WR 5.9

~~The City should~~ Support the Kitsap Public Health District in maintaining and improving a public education program to foster proper construction, operation and maintenance of on-site septic systems.

Policy WR 5.10

Support the Kitsap Public Health District in developing and maintaining an ongoing inventory of existing on-site disposal systems to provide needed information for future studies.

PUBLIC EDUCATION AND OUTREACH

GOAL WR-7

The City, in concert with federal, state and local governments, public water purveyors, watershed councils, non-profits, citizens and other appropriate entities will continue to improve and implement comprehensive public education and outreach program to promote protection and management of all water resources.

Policy WR 7.1

Educate and inform the public about:

- The purpose and importance of aquatic environments, their vulnerabilities and observed status and trends in ecological health and function;
- Expected *climate change* impacts and how these will affect the Island's water resources and their beneficial uses;
- The characteristics of the *aquifer* system, the Island's dependency upon it and its vulnerability to contamination (including seawater intrusion) and depletion;
- The Environmental Protection Agency's Sole Source Aquifer Designation Program and what this designation means for the Island's *aquifer* system;
- Wellhead protection and the critical importance of restricted chemical use or storage within the protection area around wells;
- Critical *aquifer recharge areas* (or other special conservation areas) and the purpose they serve to the *aquifer* system;
- How to report spills or illicit dumping of hazardous waste or other pollutants and how to access information about location and status of contaminated sites;
- How to find information about their well and how to properly maintain it;
- Methods to identify wastewater indoors and outdoors and practices to conserve water such as native landscaping, xeriscaping and water use reduction or reuse;
- Resources for streamside and shoreline landowners;
- Water resources protection best management practices for commercial, industrial, residential, agricultural and other *land uses* to prevent or reduce pollution. These practices include but are not limited to, septic system maintenance, pet and livestock waste management, landscaping and gardening, *farm* plans, appropriate methods for use, storage and disposal of hazardous materials and other chemicals, on-site drainage system maintenance and automotive care.

Policy WR 7.2

~~Educate and inform the public about expected *climate change* impacts and how these will affect the Island's water resources and their beneficial uses.~~

Policy WR 7.3

~~Educate the public about the characteristics of the *aquifer* system, the Island's dependency upon it and its vulnerability to contamination (including seawater intrusion) and depletion.~~

Policy WR 7.4

~~Educate the public about Environmental Protection Agency's Sole Source Aquifer Designation Program and what this designation means for the Island's *aquifer* system.~~

Policy WR 7.5

Educate the public about wellhead protection and the critical importance of restricted chemical use or storage within the protection area around wells.

Policy WR 7.6

Educate the public about critical *aquifer recharge areas* (or other special conservation areas) and the purpose they serve to the *aquifer system*.

Policy WR 7.7

Inform the public about how to report spills or illicit dumping of hazardous waste or other pollutants and how to access information about location and status of contaminated sites.

Policy WR 7.8

Inform the public about how to find information about their well and how to properly maintain it.

Policy WR 7.9

Educate and provide technical assistance to the public on methods to identify wastewater indoors and outdoors and practices to conserve water such as native landscaping, xeriscaping and water use reduction or reuse.

Policy WR 7.10

Provide “how to” or “dos and don’ts” resources for streamside and shoreline landowners.

Policy WR 7.11

Provide information and guidance on water resources protection best management practices for commercial, industrial, residential, agricultural and other *land uses* to prevent or reduce pollution. These practices include but are not limited to, septic system maintenance, pet and livestock waste management, landscaping and gardening, *farm plans*, appropriate methods for use, storage and disposal of hazardous materials and other chemicals, on-site drainage system maintenance and automotive care.

Policy WR 7.2 7.12

~~Provide and~~ Promote opportunities for citizen stewardship and involvement.

Policy WR 7.3 7.13

Provide *LID* technical guidance and workshops to businesses and contractors working on the Island.

WATER RESOURCES IMPLEMENTATION

To implement the goals and policies in this Element, the City must take a number of actions, including adopting or amending regulations, creating outreach and educational programs, and staffing or other budgetary decisions. Listed following each action are several of the comprehensive plans policies that support that action.

HIGH PRIORITY ACTIONS

WR Action #1 Adopt aquifer conservation zoning regulations and innovative permit review processes designed to protect the Island's surface and ground waters.

Policy WR 1.4

Apply the policies in this Element in tandem with the protection measures set by the City's Shoreline Master Program, *Critical Areas Ordinance* and any other environmental or water resources management ordinance adopted by the City.

Policy WR 2.1

Recognize that the entire Island functions as an *aquifer recharge area*. *Low impact development techniques* are essential for maintaining aquifer recharge.

Policy WR 2.9

Recognizing that the Island *aquifer* system is a *Sole Source Aquifer* as designated by EPA, institute an added level of development and re-development permit review to prevent or mitigate potential pollutant-generating activities or activities that could affect stormwater runoff and aquifer recharge associated with a proposed *land use*. The Island's aquifers are protected through critical area regulations and Washington Administrative Code (WAC) Chapter 362-190.

Policy WR 4.7

Develop and actively enforce a strong Low Impact Development (LID) ordinance to require any and all methods and practices for new development and redevelopment to the maximum extent practicable and reasonable.

Policy LU 13.4

Protect aquifer recharge functions throughout the Island, all of which is an *aquifer recharge area*, through the application of *critical areas regulations*, Shoreline Master Program use regulations, *low impact development regulations*, and the *wellhead protection regulations* administered by the Kitsap Health District.

WR Action #2 Adopt an Island-wide Groundwater Management Plan.

Policy WR 2.7

Establish a stakeholder group to develop an Island-wide groundwater management plan and work with Kitsap Public Utility District to update the Kitsap County Coordinated Water System Plan.

WR Action #3 Apply *adaptive management* to assure that land use on the Island will continue to be adequately served by the available water resources.

Policy WR 3.16

Maintain a comprehensive program of surface water inventory, data gathering and analysis. The program *shall* include monitoring and assessment of physical, chemical and biological health of surface water ecosystems to include *streams*, ephemeral *streams*, lakes, *wetlands* and marine waters. This may include water, flow, sediment, habitat, pollutants, submerged aquatic vegetation, fish and shellfish tissue, aquatic species diversity and other ecosystem health indicators.

Policy WR 4.12

Conduct effectiveness monitoring and assessments to continue to adaptively manage *stormwater* to ensure optimal protection.

Policy WR 6.1

Assemble and maintain an inventory of contaminated sites on the Island to track site location, contaminant(s) of concern, cleanup status, and potential to impact nearby surface or *groundwater*.

MEDIUM PRIORITY ACTIONS

WR Action #4 Launch a program of public education about how individual actions can help protect the quality and quantity of the Island's surface and groundwaters.

Policy WR 2.11

Develop a water conservation program for all water uses on the Island.

Policy WR 2.13

Develop a program that incentivizes and facilitates innovative methods for ~~encourages homeowners and business owners to explore innovative methods for~~ to use stormwater ~~recapturing and reusing surface water runoff~~ and grey water as approved by the Washington State Department of Health and the Kitsap Public Health District.

Policy WR 3.17

Support a community-wide program to educate Island residents about alternatives to using and disposing of herbicides, pesticides, and other household chemicals, to reduce impacts to marine shoreline areas, wetlands, streams, and other environmentally sensitive areas.

Policy WR 3.18

Promote and support volunteer or community-driven restoration projects.

Policy WR 7.2

~~Provide and~~ Promote opportunities for citizen stewardship and involvement.

OTHER PRIORITY ACTIONS

WR Action #5 Work with other jurisdictions and the environmental and development communities to promote programs and projects to protect the Island's surface and ground waters.

Policy WR 2.5

The City, in cooperation with the appropriate regulatory agencies (e.g., Washington State Department of Health and the Kitsap Public Health District) will institute new wellhead protection measures.

Policy WR 3.10

Work with state and local health departments to evaluate the merits of new technologies such as greywater capture, package treatment plants and composting toilets, as alternatives to septic and sewer systems. ~~Determine which of those systems should be allowed and/or encouraged to better protect the quality and capacity of the Island's surface water and near-shore environment.~~

LAND USE ELEMENT

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LAND USE INTRODUCTION

The Land Use Element is one of the mandatory elements of the *Comprehensive Plan* under the Growth Management Act (GMA). It addresses the general location and distribution of land uses within the City and, in combination with other Plan Elements, guides the use of land on Bainbridge Island. These other Elements include:

- The Environment and Water Resources Elements that address the protection and conservation of natural systems including the Island's sole source aquifer, the quality and quantity of water, habitat, vegetation and air.
- The Housing Element that identifies strategies to increase the diversity of *housing types* and the supply of *affordable housing* on the Island.
- The Economic Element that encourages programs and policies to support economic vitality and opportunity for Island residents.
- The Transportation Element to provide mobility and safety for all users while respecting neighborhood character and climate resilience.
- The Capital Facilities and Utilities Elements to address the infrastructure needed to serve the planned land uses.

Taken together, these Elements balance the Island's highly held values of environmental stewardship with the needs of its people for housing, health, safety, economic opportunity and access to goods, services, recreation and cultural amenities.

All of these Elements are guided by the eight *Guiding Principles* set forth in the Introduction Chapter of this *Comprehensive Plan*. These Principles emphasize the importance of shaping future growth and redevelopment in a way that retains the Island's character and quality of life that its residents so highly value.

Future growth on Bainbridge will be accommodated in a manner that is consistent with the requirements of the GMA, yet in several ways this *Comprehensive Plan* goes beyond the GMA's minimum requirements. For example, it exceeds the GMA's minimal requirement to address water resources as a component of the Land Use Element by instead devoting an entire additional Element to Water Resources. The GMA requires plans to be based on a twenty-year horizon, but this plan uses a fifty-year/one hundred-year horizon to better account for the implications of Climate Change and the much longer-term cycles of natural systems and public infrastructure investments.

The Island has sufficiently zoned land in 2016 to accommodate the anticipated growth through the year 2036. Therefore, any localized increase in *density* over current *zoning* should further one or more of these public purposes:

1. Shift *density* from *critical areas* or farmland to Winslow or other *designated centers*.
2. Increase the range and supply of *housing types* and *affordable housing*.
3. Contribute to public *infrastructure* or public amenities in excess of what is needed to mitigate the impacts of an individual project's development.
4. Reduce *greenhouse gas* emissions, while planning for the effects of *climate change*.
5. Plan for the effects of *climate change* to avoid or ameliorate the impacts.

Another important component of the Plan's implementation are benchmarks and targets against which to assess progress. For example, the Housing Element sets aspirational targets to increase the diversity of *housing types* and supply of *affordable housing* and establish benchmarks, a monitoring program and a schedule for progress reports. A monitoring program must be created to track progress in achieving other aspects of the Plan's *vision* and *goals*.

LAND USE VISION 2036

The environment, values and culture of our Island community have been protected, conserved and enhanced by managing growth according to the *Comprehensive Plan's Guiding Principles, Goals and Policies*.



Fig. LU-1 Typical Island Designated Center



Fig. LU-2 Typical Island Conservation Ar

Most of the preceding two decades of growth have been attracted to the high quality of life in the Island's thriving ***designated centers*** where cultural amenities, employment and housing opportunities abound and public services, utilities and infrastructure are efficiently provided.

These *designated centers* are compact, human-scaled and pedestrian-oriented, promoting a healthy lifestyle and are linked to each other and the region by a network of trails and transit. (See Fig. LU-1.)

Outside of the *designated centers*, almost 90% of the Island is a green and open landscape. The **residential** land use pattern in this ***conservation area*** minimizes the footprint of the built environment and embodies design principles that protect the Island's aquifers, surface waters and fish and wildlife habitat.

This broad landscape of canopied woodlots, parks and saltwater shorelines is dotted with working farms, historic structures, freestanding residences and *conservation villages*. (See Fig. LU-2.)

The evolving *designated centers* and *conservation areas* on Bainbridge Island embody the successful implementation of the Island Land Use Concept. (See Fig. LU-3.)

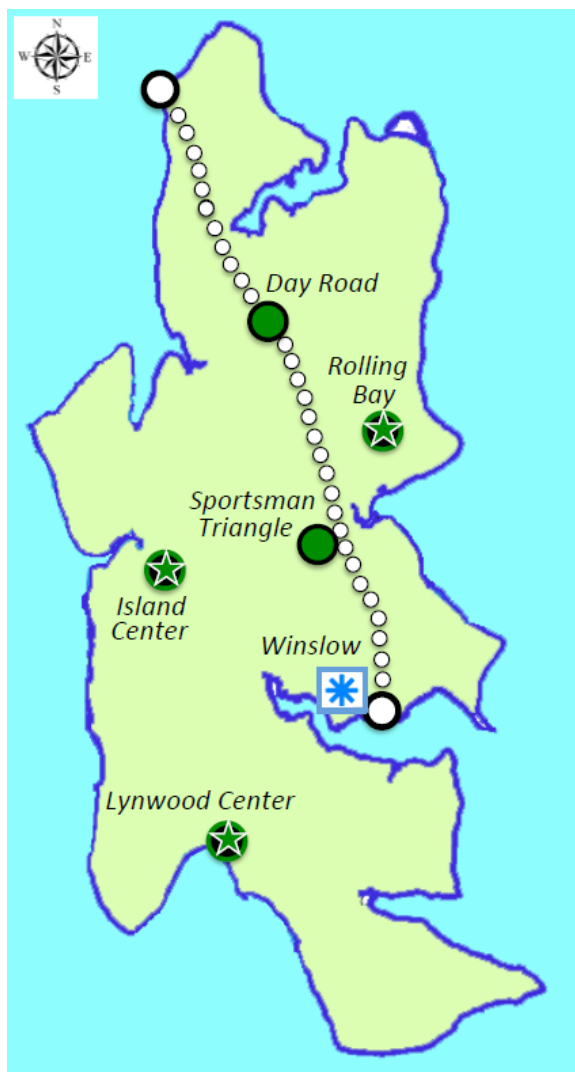
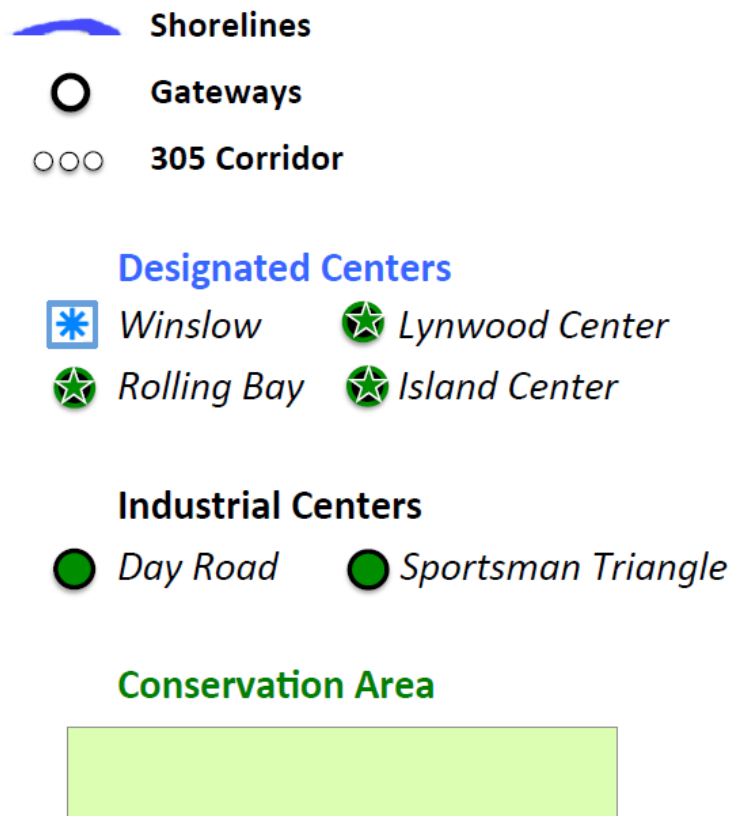


Fig. LU-3. Island-wide Land Use Concept



GOALS & POLICIES

GOAL LU-1

Plan for growth based on the growth targets established by the *Kitsap Regional Coordinating Council*: 5,635 additional residents and 2,808 additional jobs from 2010-2036 and at the same time promote and sustain high standards that will not diminish enhance the quality of life and/or degrade improve the environment of the Island.

Policy LU 1.1

The City accepts the *Kitsap Regional Coordinating Council* (KRPC) population allocation and will continue to analyze the impacts of these allocations as the Comprehensive Plan is implemented. With an allocation of 28,660, the Island must plan for an increase in population of 5,635 persons and 2,808 jobs by the year 2036.

Policy LU 1.2

Outside of Winslow and the *Neighborhood Centers*, the Island has a rural appearance with forested areas, meadows, *farms* and winding, narrow, heavily vegetated roadways. These characteristics represent the Island character that is so highly valued by its residents.

As important as preserving Island character is to its residents, of equal importance is the protection of the Island's *environmentally sensitive areas*. These outlying areas contain much of the Island's sensitive areas – the major *recharge* areas for the Island's *aquifers*, *wetlands* and *streams* that serve a variety of important functions. Much of the area serves as *fish and wildlife habitat*. There is strong public support to encourage a pattern of development that preserves and protects this portion of the Island.

GOAL LU-2

This *Comprehensive Plan* recognizes and affirms that as an Island, the City has natural constraints based on the *carrying capacity* of its natural systems. The ~~plan strives to establish~~ a development pattern that is consistent with the *Goals* of the community and compatible with the Island's natural systems.

Policy LU 2.1

Recognizing that the *carrying capacity* of the Island is not known, the citizens of Bainbridge Island should strive to conserve and protect its natural systems within the parameters of existing data. Revisions to the Plan *should* be made as new information becomes available.

The *carrying capacity* of Bainbridge Island is determined by many factors including the supply of limited resources (particularly water), changes in patterns of consumption and technological advances. This Plan acknowledges that with current information, the carrying capacity of the Island is unknown. During the timeframe of this Plan, additional information on the *carrying capacity* of the Island should be developed.

The ~~plan seeks to take~~ a balanced and responsible approach to future development. As our understanding of the Island's capacity changes, the recommendations of this Plan should be reconsidered to ensure they continue to represent a responsible path for the long-range future of the Island.

Policy LU 2.2

~~Establish a~~ A public education program ~~should be established~~ to foster the community's understanding of the natural systems on the Island and their *carrying capacity*.

Policy LU 2.3

This Plan recognizes that stewardship of the land is a responsibility of individual citizens and the community as a whole. Through its status as an employer and landowner, the City ~~should take advantage of its opportunities to be~~ sets an example of environmental stewardship so that others will be encouraged to do so.

Policy LU 2.4

~~The Develop a~~ City ~~should develop a~~ program that recognizes and rewards stewardship so that others will be encouraged to follow suit.

Policy LU 2.5

Work with EcoAdapt and others to prepare a Bainbridge Island Climate Change and Water Conservation Plan Strategy.

GOAL LU-3

~~Develop~~ A meaningful process for citizen participation that includes has resulted in participation from all segments of the Island community.



Fig. LU-4 Listening sessions with citizens helped kick off the 2016 *Comprehensive Plan* update.

ISLAND-WIDE CONSERVATION AND DEVELOPMENT STRATEGY**GOAL LU-4**

As part of a long-term Island-wide Conservation and Development Strategy, focus residential and commercial urban development in designated centers, increase a network of conservation lands, maximize public access to and while protecting the shoreline, minimize impacts from the SR 305 corridor and conserve the Island's ecosystems and the green and open character of its landscape.

Policy LU 4.1

Focus development and redevelopment on the Island over the next fifty years in *designated centers* that have or will have urban levels of services and *infrastructure*.

Policy LU 4.2

Focus conservation, protection and restoration on the Island over the next fifty years as identified in an Island-wide Conservation Strategy, and have that strategy include shorelines, especially where there is interaction between the fresh and saltwater environments.

Policy LU 4.3

Adopt a multi-year work program to undertake the “*Special Planning Area*” process for the *designated centers* of Winslow, Island Center, Rolling Bay, Sportsman Triangle, Fort Ward and Day Road.

The product of the “*Special Planning Area*” process will be *Subarea Plans* for each of the *designated centers* that will be adopted as part of the *Comprehensive Plan*.

Policy LU 4.4

Updating the Winslow Master Plan ~~is the City's a highest~~ work program priority because the greatest potential for achieving many of the City's priorities is focused there including increasing the diversity of *housing types* and the supply of *affordable housing* while helping to reduce the development pressures in the Island's conservation areas.

Policy LU 4.5

The "*Special Planning Area*" process for each *designated center* shall be informed by surface water and aquifer data in the respective watershed and appropriate provision made to limit permitted uses or require specific measures to protect the water resource.

Policy LU 4.6

The "*Special Planning Area*" process for each designated center shall engage residents, landowners, businesses and other stakeholders in envisioning the appropriate extent, scale, use mix and the desired and required services and *infrastructure* to serve the selected use mix and intensity.

Policy LU 4.7

The Future Land Use Map in Fig. LU-5 establishes the future distribution, extent and location of generalized *land uses* on the Island.

Policy LU 4.8

Continue to utilize the goals, policies and use regulations of the Shoreline Master Program to protect the environmental quality of and public access to the Island's saltwater shoreline.

Policy LU 4.9

The SR 305 corridor with its gateways at the Washington State Ferry landing in Winslow and the Agate Pass Bridge, is a major regional facility managed by the Washington State Department of Transportation.

Policy LU 4.10

Actively work with the State and others to minimize the traffic impacts of SR 305 on mobility, safety, air quality, noise and the visual character of Bainbridge Island while also serving both the motorized and non-motorized needs of Island residents and businesses.

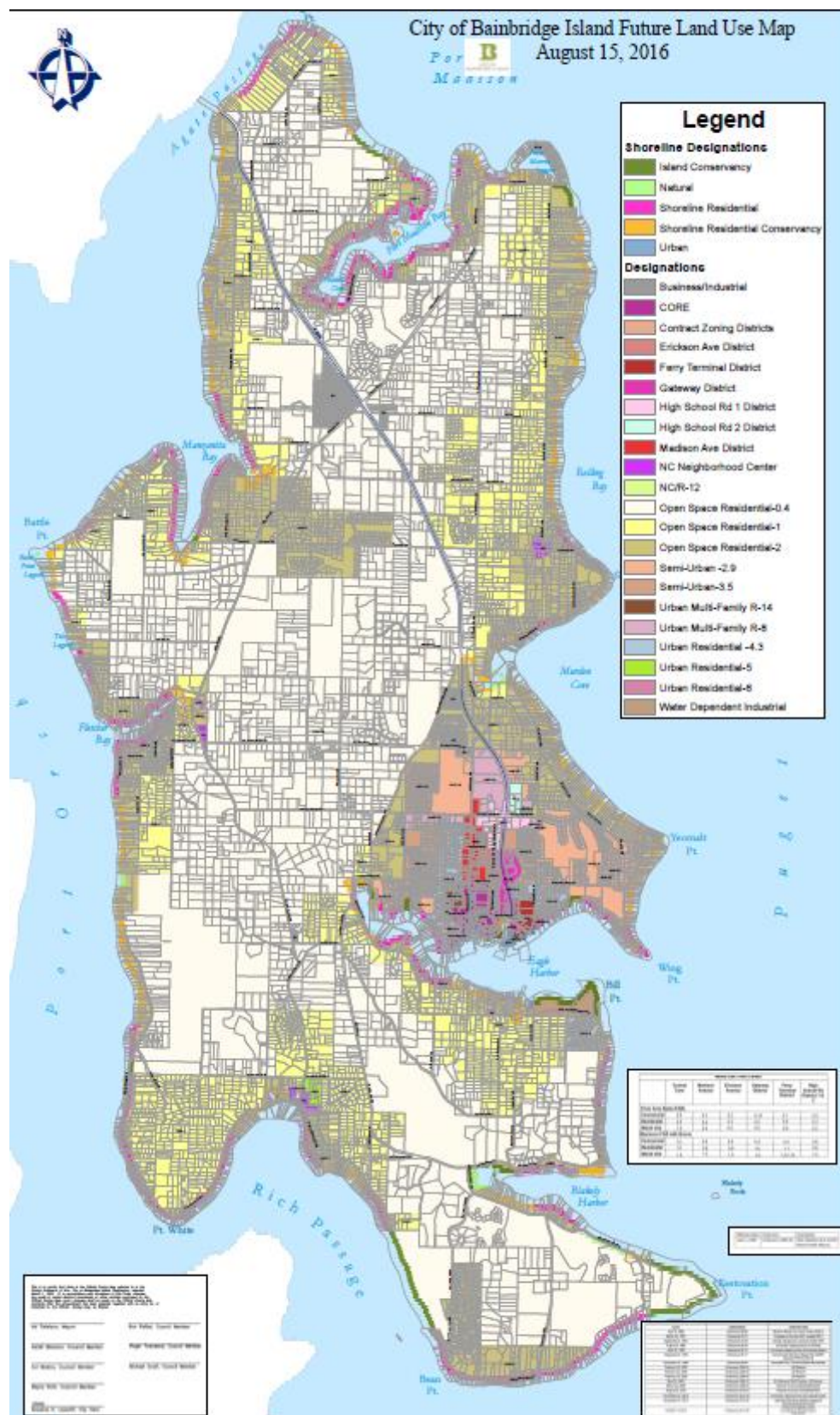


Fig. LU-5 Future Land Use Map



Fig. LU-6 The scenic highway SR 305 corridor is a major part of the Island's functional mobility and visual character

Policy LU 4.11

Lands shown on Fig. LU-3 as "Conservation Areas" are appropriate for residential, recreational, agricultural, habitat and open space uses. The City will use a variety of conservation tools, including public acquisition of certain properties, regulatory protection of environmentally *critical areas* and innovative *tools* such as aquifer conservation zoning and conservation villages to minimize the development footprint within these Conservation Areas.

DESIGNATED CENTERS

GOAL LU-5

Focus Urban Development in *Designated Centers*

The Plan focuses residential, commercial, and industrial growth in Winslow and other current and future centers with urban services such as the Neighborhood Centers, and the industrial centers at Day Road and Sportsman Triangle. Collectively, Winslow, ~~and the Neighborhood Centers, and the two industrial centers~~ constitute Bainbridge Island's *designated centers*.

This is a change from the 1994 and 2004 Plans both of which specified a numeric growth strategy as follows: accommodate 50% of the population growth in Winslow through the year 2012 and accommodate 5% of population growth in the Neighborhood Centers. The balance of the growth was to be absorbed throughout the remainder of the Island.

Policy LU 5.1

Winslow is the urban core of the Island while the Neighborhood Centers are smaller-scale mixed-use centers. In order to achieve the *goals* of the GMA this Plan:

- Encourages development in areas where *public facilities* and services exist or can be provided in an efficient and effective manner.
- Provides a vibrant, pedestrian-oriented core.
- Reduces sprawl.
- Provides choice of housing location and lifestyle.
- Maintains and protects environmentally sensitive and resource lands.

- Encourages the retention of open space.
- Maintains and enhances fish and wildlife habitat.

Policy LU 5.2

Increased density over and above the existing zoning in the Neighborhood Centers *should* only occur through a shift in *density* from areas identified in the Island-wide Conservation Strategy critical areas and farms through PDRs, TDRs or other mechanisms and through the use of *density bonuses for affordable housing*.

Policy LU 5.3

Encourage *residential uses* in a variety of forms and *densities* as part of the use mix in Winslow and neighborhood centers designated centers.

Policy LU 5.4

Sustainable development and redevelopment will be is focused in the *designated centers* through a combination of intergovernmental and public-private partnerships, *affordable housing* programs, “green” capital projects and *low impact development* standards.

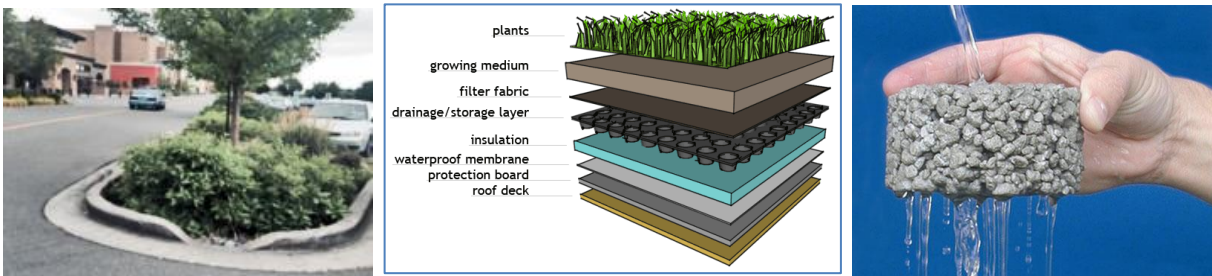


Fig. LU-7 Low Impact Development methods mimic natural drainage processes

Policy LU 5.5

Implement an optional *green building* code or “green factor” for both commercial and *multifamily* residential projects.

Policy LU 5.6

Address mechanisms for retaining and preserving *open space* near *designated centers*.

Policy LU 5.7

Encourage the design of buildings in *designated centers* for a long life and adaptability to successive uses over time.

Policy LU 5.8

Adopt *development standards* and program public improvements to encourage walkability within each *designated center* and to the surrounding areas.

Policy LU 5.9

Design and locate dDevelopment *should be designed and located so as* to avoid or minimize potential conflicts with agricultural activities and recognize right-to-farm regulations ordinances must be recognized by any in developments located adjacent to agricultural uses.

Policy LU 5.10

~~Amend the Island-wide Transportation Plan (IWTP) to improve transportation facilities between link designated centers thereby to reducing vehicle miles traveled and greenhouse gas emissions.~~

GOAL LU-6

Ensure a development pattern that is true to the *Vision* for Bainbridge Island by reducing the inappropriate conversion of undeveloped land into sprawling development.

Policy LU 6.1

Land use designations ~~should~~ reflect the priority of Bainbridge Island to remain primarily residential with nonresidential development concentrated in the *designated centers*.

Policy LU 6.2

~~Higher intensity~~ Promote dense residential and commercial development and encourage human activity ~~is encouraged~~ within Winslow, the heart of Bainbridge Island. In order to create a vibrant city center direct growth where *infrastructure* exists, reduce reliance on the automobile, provide opportunities for *affordable housing* and absorb growth that would otherwise be scattered in outlying areas.

Policy LU 6.3

Island Center, Rolling Bay, and Lynwood Center ~~and Fort Ward~~ offer housing and small-scale, commercial and service activity outside of Winslow. These ~~designated Neighborhood Centers~~ should be ~~are~~ allowed to develop at higher *densities* to reinforce their roles as centers.

Policy LU 6.4

~~Designation of new centers should be~~ Considered designation of new centers only after detailed analysis of the economic impact of the new development shows there will be no significant adverse impact on the existing commercial centers including Winslow.

Policy LU 6.5

The industrial designated centers at Day Road and Sportsman Club are intended to augment the Winslow, Lynwood, Island Center and Rolling Bay *designated centers* and allow a diverse economy with business retention, growth and innovation on the Island.

Policy LU 6.6

Process a ~~Applications~~ for development approval on Bainbridge Island ~~should be processed~~ within the timelines established in the City's *land development regulations* in order to ensure affordability, fairness, citizen notification and predictability in the land development process.

Policy LU 6.7

Accessory dwelling units are considered allowed uses in all residential zoning districts except R-6 ~~To reflect the policies in the Housing Element to provide for a variety of housing options in areas designated for residential development including residential open space, accessory dwelling units shall be considered allowed uses in all residential zoning districts except R-6.~~

Policy LU 6.8

Water or wastewater *infrastructure* which may contribute to system capacity exceeding local need, *shall* not be used to justify development counter to the City-wide *land use* policies.

Policy LU 6.9

The Planning Commission has a role in reviewing long subdivisions to ensure the integrity of the Comprehensive Plan is maintained.

Winslow Town Center

The Winslow Master Plan (Appendix E) encourages development of a *neighborhood* that contains a strong, vital downtown where people want to live, shop and work. Outside the mixed use, higher *density* center, there would be a variety of housing choices, from higher *density multifamily* areas immediately adjacent to the downtown to single-family residential *neighborhoods*.



Fig. LU-8 Winslow Way buildings and uses create human scale, pedestrian orientation and character

GOAL LU-7

The Winslow mixed use and commercial districts are designed to strengthen the vitality of downtown Winslow as a place for people to live, shop and work. The Winslow Mixed Use Town Center (MUTC) is intended to have a strong residential component to encourage a lively community during the day and at night. The high residential density of Winslow requires the Central Core Overlay District to provide services and products that meet the needs of residents as well as visitors.

Policy LU 7.1

The Island's major center for new commercial development is the Mixed Use Town Center (MUTC) and the other commercial districts in Winslow.

Development within the MUTC and High School Road Districts shall be consistent with the Winslow Master Plan. The level of development is determined using Floor Area Ratio (FAR) rather than *dwelling units* per acre. The use of FAR may result in an increase in the base level of development (*density*) over the existing zoning, but will provide greater flexibility in type and size of housing units that will further the *goals* of this Plan.

Policy LU 7.2

A base level of commercial and residential *density* within the *overlay districts* of the MUTC and the High School Road districts is described in the Winslow Master Plan, with an increase in the FAR allowed through the use of:

- *Affordable housing.*
- *TDRs (transferable development rights).*
- Contributions to public *infrastructure* and public amenities in excess of what is required to mitigate the impacts of development.
- Transfer of *density* within the MUTC and within the High School Road Districts.
- Preservation on-site of historic structures eligible for inclusion on a local, state or federal register of historic places.
- Locating ferry-related parking under building.



Fig. LU-9 Winslow Residential, Commercial and Civic Uses are inter-connected

Policy LU 7.3

Phasing mechanisms and/or incentives *should* be developed to promote the timely and logical progression of commercial and residential development.

Policy LU 7.4 Central Core Overlay District

The Central Core is the most densely developed district within the Mixed Use Town Center. Within this Overlay District, residential uses are encouraged, but exclusive office and/or retail uses are permitted. Mixed-use development within the Central Core Overlay District that includes a residential component may be exempt from requirements to provide off-street parking for the residential component of the project.

Policy LU 7.5 Ericksen Avenue Overlay District

The purpose of this Overlay District is to preserve the unique and historical features of the neighborhood and to provide for a mix of residential and small-scale non-residential development. Retail development is permitted only on the ground floor, while residential and office development is permitted on the upper floors. Historic (pre-1920) single-family residential

structures on Ericksen may be converted to non-residential use, provided that the structure is preserved. However, any additions to the structure must be added to the rear and must be compatible with the character of the original structure. New buildings shall employ traditional building forms, roof shapes, and relationship of building to street to be compatible with the historic structures on Ericksen Avenue.

LU 7.6 Madison Avenue Overlay District

The purpose of this Overlay District is to provide for a mix of residential and small-scale non-residential development. All retail and office development greater than one story above grade shall include a residential component. Retail development is permitted only on the ground floor.

LU 7.7 Gateway Overlay District

The corridor along SR 305 from Winslow Way to the parcel north of Vineyard Lane is the gateway to Bainbridge Island, and new uses should enhance its role as the gateway while also protecting the Winslow Ravine.

LU 7.8 Ferry Terminal Overlay District

This District is intended to provide an attractive setting for ferry and associated transportation-oriented uses, and to serve as the entry point for Winslow. This District is also a new mixed-use neighborhood that complements the character and vitality of the Core District, serving both neighborhood residents and commuters.

High School Road District

GOAL LU-8

The High School Road District is intended to provide mixed use and commercial development in a pedestrian-friendly retail area.

Policy LU 8.1

The High School Road District includes a diversity of types of shopping and employment. A variety of *commercial uses* are allowed which offer goods and services for the convenience of Island residents.

Policy LU 8.2

Promote Development in the High School Road District ~~should promote~~ pedestrian-oriented mixed use and residential development to offer a variety of housing types and sizes.



Fig. LU-10 High School Road Area

Policy LU 8.3

Auto-oriented uses and drive-through businesses that benefit from access to SR 305 shall be limited to the yellow dashed area shown in Fig. LU-10.

Policy LU 8.4

To visually screen development year-round, properties with frontages along SR 305 shall provide a vegetated buffer along the highway that includes the preservation and protection of existing vegetation. Access to these properties should not be directly from SR 305.

Policy LU 8.5

The properties designated on the Land Use Map as High School Road

District II are each limited to no more than 14,400 square feet of retail use. Retail use between 5,000 and 14,400 square feet requires a conditional use permit. This portion of High School Road is immediately adjacent to a semi-urban, residential area of 2.9 to 3.5 units per acre and *should* have less intense uses than the remainder of the High School Road district.

Since existing businesses are located in this area and infrastructure is in place, this Plan recommends the area for the High School Road designation, but with a limitation on the size of retail uses.



Fig. LU-11 High School Road Area Mid and Low Rise Buildings

Policy LU 8.6

To ensure visual appeal and pedestrian and bicycle safety, the land *development regulations* include design standards for:

- Building height, bulk and placement.
- Landscaping including screening of parking lots and development of *pedestrian-oriented* streetscape with building and landscaping (including trees) located at the street edge.

- Lot coverage.
- *Open space*.
- Road access and internal circulation including pedestrian connections, developing more pedestrian crossings and requiring parking in the rear wherever possible.
- Signage.
- Additional *transit* stops on both sides of SR 305.

NEIGHBORHOOD CENTERS

The Neighborhood Centers provide Island-wide commercial and service activity outside Winslow. These areas ~~should be~~ are to be developed at higher *densities* to reinforce their roles as community-service centers. The ~~service-neighborhood centers~~ will ~~also~~ help reduce traffic congestion by providing an alternative to shopping in Winslow.

GOAL LU-9

Encourage the development of the *Neighborhood Centers* at Rolling Bay, Lynwood Center, ~~Day Road, Fort Ward~~ and Island Center as areas with small-scale commercial, mixed use and residential development outside Winslow.

Policy LU 9.1

The *Neighborhood Centers* ~~should~~ provide Island-wide small-scale commercial and service activity and *mixed-use development* outside Winslow.

Policy LU 9.2

~~Orient development should be oriented~~ toward the pedestrian. Retail uses ~~shall be~~ are encouraged on the ground-floor to prevent blank walls with little visual interest for the pedestrian. Offices and/or residential uses ~~should be~~ are encouraged above ground floor retail.

Policy LU 9.3

Allow development of *Neighborhood Centers* in areas designated on the Future Land Use Map.

Lynwood Center

Policy LU 9.4

Any new development or expansion of existing development in Lynwood Center will be required to connect to *public sewer* when available or meet other Health District requirements when appropriate.

Lynwood Center is designated as a *Special Planning Area*. Appendix F is the “Lynwood Center Special Planning Area Report and Final Recommendations” adopted as a *subarea plan* in 1997.



Fig. LU-12 Lynwood Center is a thriving mixed-use pedestrian neighborhood center

Island Center

Policy LU 9.5

Island Center is designated as a *Special Planning Area*. The boundaries for Island Center are as shown on Fig. LU-5, the Future Land Use Map. Any changes to the boundaries may be considered during the special planning process.

Contract Zone: Miller Road/Battle Point Drive

Policy LU 9.6

The 16.7-acre site on Miller Road is designated a contract zone to recognize the activities currently occurring on-site under the provisions of an Unclassified Use Permit and to consider some expansion of those activities.

Rolling Bay

Policy LU 9.7

The Neighborhood Center boundaries are as shown on Fig. LU-5, the Future Land Use Map. Rolling Bay is designated as a *Special Planning Area*. Any changes to the boundaries may be determined during the special planning process.



Fig. LU-13 Rolling Bay Center is a cluster of primarily retail and civic uses

Standards for all *Neighborhood Centers*

The following standards ensure that development will be designed to fit into the scale and character of the existing centers and the adjacent residential *neighborhoods*. The City developed design prototypes or illustrated design guidelines for each of the three *neighborhood centers* to serve as a visual reference for the future development of the community. These design guidelines can be crafted to recognize the distinct qualities of each designated center.

Policy LU 9.8

The *Neighborhood Centers* ~~should~~ achieve a mix of neighborhood-scale businesses, public uses and housing which are compatible with the scale and intensity of the surrounding *residential neighborhood* and which minimize the impact of noise, odor, lighting, fire safety and transportation on the *neighborhood*.

Policy LU 9.9

Mixed use development is strongly encouraged.

Policy LU 9.10

Proposed uses must consider the impact on water quality, stormwater *runoff* and *environmentally sensitive areas* such as *wetlands*, *streams* and *aquifer recharge areas*.

Policy LU 9.11

The *development regulations* should include design standards for:

- Building height, bulk, massing and articulation to promote a pedestrian scale.
- Parking requirements including location of parking to the rear or side yards unless otherwise provided for in a *Special Planning Area* plan.
- Landscaping including parking lots and buffer areas between higher and lower intensity uses and consideration of trees that allow solar access.
- Lighting standards that prevent unnecessary glare and light trespass on neighboring residential properties.
- Noise level limits appropriate for *mixed use* development.
- Location and screening of service areas such as dumpsters.
- *Open space*.
- Pedestrian linkages.

Policy LU 9.12

Encourage *neighborhood* participation in defining the design standards for each *neighborhood center*.

Policy LU 9.13

Establish and implement a street tree plan and planting program for major roadways at the *Neighborhood Centers*.

Policy LU 9.14

Develop a parking plan for each service center if appropriate.

Policy LU 9.15

~~Consider opportunities for providing a neighborhood commons or meeting place should be considered~~ with any proposal for major redevelopment of an existing *Neighborhood Center* or as part of development of a new *Neighborhood Center* to encourage the use of the Neighborhood Center by surrounding residents.

Policy LU 9.16

To minimize visual and environmental impacts, encourage parking in the rear or side yards of *multifamily*, commercial and *mixed use developments*. Design parking lots should to be pedestrian-oriented and provide pedestrian and bicycle routes between the street, parking area and main entrance. ~~Consideration should be given to the use of~~ Integrate trees in a parking lot with respect to that allow solar access.

Policy LU 9.17

Infill within the boundaries of Neighborhood Centers through the *transfer of development rights* from the *Conservation Areas* of the Island (See Fig. LU-3) or through an *affordable housing density bonus*.

Policy LU 9.18

The base density of residential development in the Neighborhood Centers is 2 units per acre. A *density bonus* of ~~3~~ 1 additional units per acre may be obtained for a total of 3 units per acre in areas not served by public water and sewer systems and using *TDRs* or providing *affordable-housing*, provided state and local health district regulations can be met. Allow up to R-5 with public water and sewer.

BUSINESS/INDUSTRIAL**GOAL LU-10**

~~The~~ Provide appropriate Business/Industrial (B/I) zoned land provides to create opportunities for new businesses and expansion of existing Island businesses for diversity of jobs and for low-impact industrial activity that contributes to well-paying and new employment opportunities jobs, where traffic congestion, visual, and other impacts on the surrounding *neighborhood* can be minimized.

Policy LU 10.1

The Business/Industrial District is for light manufacturing development as well as other uses that add to the diversity of economic activity on the Island. New uses shall be compatible with established uses and the character of other development in the *neighborhood*.

Policy LU 10.2

New manufacturing businesses that plan to utilize toxic/hazardous substances must list these substances and quantities projected for annual usage and demonstrate compliance with all Federal, State and Kitsap Public Health District requirements for their handling. Development proposals are evaluated using performance standards for the B/I district. Uses of certain toxic/hazardous substances can disqualify the application from approval because of potential

environmental impact, however the City would consider factors such as quantity used, adequacy of storage, containment, spill management and waste disposal plans in reviewing such a proposal.

Policy 10.3

Coordinate with the Bainbridge Island Fire Department when reviewing development proposals concerning hazardous materials.

Policy LU 10.4

Applications for development approval within the B/I district must show that adequate water, wastewater, transportation, fire and storm drainage services are available to serve the development.

Policy LU 10.5

Ensure the adequate monitoring and enforcement of hazardous material regulations.

Policy LU 10.6

Performance standards for the B/I district address odor, lighting, noise, vibration, signage, traffic volumes, ingress and egress, parking, delivery and loading areas, and pedestrian and vehicle circulation, to create safe, efficient, compatible conditions among a variety of on-site uses and to protect adjacent residential *neighborhoods*.

Policy LU 10.7

B/I uses must be visually screened year-round from adjacent non-industrial properties and roadways, especially scenic highway SR 305. ~~This policy establishes a performance standard — B/I uses must be visually screened from the roadway and from adjacent non-Business/Industrial development.~~ The visual screening could be achieved through a combination of vegetation and building setback that would add depth to the buffer.

GOAL LU-11

Provide appropriate land for Business/Industrial in order to provide opportunities for small manufacturing businesses on the Island to expand, and to provide additional employment opportunities.

Policy LU 11.1

Discourage the inappropriate designation of isolated Business/Industrial Districts.

Policy LU 11.2

Isolated B/I activities are designated to reflect historical use and the designation ~~should~~ shall not be expanded.

WATER-DEPENDENT INDUSTRIAL DISTRICT

GOAL LU-12

Allow for the continuation of water-dependent, industrial uses on Bainbridge Island in order to preserve elements of a working waterfront within the urban shoreline area. Water-dependent uses require direct contact with the water and cannot exist at a non-water location due to the intrinsic nature of the operation.

Policy LU 12.1

The Water-dependent Industrial District is intended primarily to provide for ship and boat building and boat repair yards. Preference *should* be given to small, local, boat haul-out and repair facilities, and water-oriented industry which serves boating needs.

Policy LU 12.2

Water-dependent industrial development *shall* not be located on sensitive and ecologically valuable shorelines such as natural accretion shore forms, marshes, bogs, swamps, salt marshes and tidal flats, and wildlife habitat areas, nor on shores inherently hazardous to such development, such as flood and erosion prone areas and steep and unstable slopes.

Policy LU 12.3

Industrial uses *shall* employ best management practices (BMPs) and best available facilities practices and procedures concerning the various services and activities performed and their impacts on the surrounding water quality.

Policy LU 12.4

Carefully consider regional and statewide needs for industrial facilities ~~*should be carefully considered*~~ in reviewing new proposals, as well as in allocating shorelines for such development. Coordinate such reviews or allocations ~~*should be coordinated*~~ with port districts, adjacent counties and cities, and the State in order to minimize new industrial development that would duplicate under-utilized facilities elsewhere in the region, or result in unnecessary adverse impacts.

Policy LU 12.5

Encourage expansion or redevelopment of existing, legally established industrial areas, facilities, and services with the possibility of incorporating *mixed use development* ~~*should be encouraged*~~ over the addition and/or location of new or single-purpose industrial facilities. ~~Such development or redevelopment for mixed use *should* occur through a master planned development process in areas designated appropriate for such urban shoreline uses.~~

Policy LU 12.6

Encourage or require the joint use of piers, cargo handling, storage, parking, and other accessory facilities among private or public entities ~~*should be strongly encouraged or required*~~ in waterfront industrial areas.

Policy LU 12.7

Require new or expanded industrial development ~~should be required~~ to provide physical and/or visual access to shorelines and visual access to facilities whenever possible, and when such public access does not cause significant interference with operations or hazards to life and property.

ISLAND-WIDE CONSERVATION AREA**GOAL LU-13**

Conserve ecosystems and the Island's green, natural, open character.

Policy LU 13.1

Preserve the open space conservation area outside *designated centers* through a *land use* pattern which will enhance the character of the area – forested areas, meadows, *farms*, scenic and winding roads that support all forms of transportation – and the valuable functions the open space conservation area serves on the Island (i.e., *aquifer recharge, fish and wildlife habitat, recreation*).

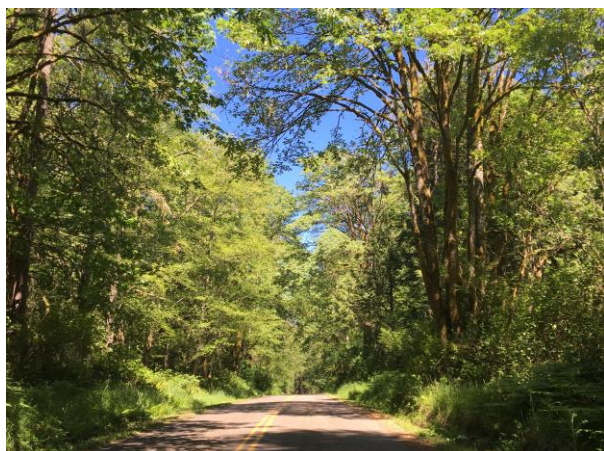


Fig. LU-14 Typical views from the road on much of the Island is of green, leafy countryside

Policy LU 13.2

Protect *open space, critical areas* and agricultural uses through public and private initiatives such as open space tax incentives, cluster development conservation villages, *PUDs, transfer and purchase of development rights*, public land acquisition, greenways, *conservation easements*, landowner compacts or limiting the amount of lot coverage.

Policy LU 13.3

Encourage the aggregation of nonconforming lots of record and undeveloped subdivisions and short plats in order to achieve a development pattern that is consistent with *goals* of the Plan to preserve *open space*, provide greenways through the Island, protect *environmentally sensitive areas* and protect water resources.

Policy LU 13.4

Protect aquifer recharge functions throughout the Island all of which is an *aquifer recharge area*, through the application of critical areas *development regulations*, Shoreline Master Program use, *low impact development* regulations and the wellhead protection regulations administered by the Kitsap Public Health District.

Policy LU 13.5

Establish appropriate procedures to monitor the effect of water drawdowns within and between *aquifers* and adopt programs and *development regulations* to preclude *groundwater* contamination and to encourage water conservation and enhanced *aquifer recharge*.

Policy LU 13.6

Work with Kitsap Public Health District to allow innovative solutions for on-site sewage treatment including community septic and grey water systems.

Policy LU 13.7

Allow a *density bonus* in exchange for dedicating a portion of property into conservation as *open space*, farmland or public access. Priority should be given to conserving these lands near more densely developed areas.

GOAL LU-14

Adopt landscape design standards and identify and protect public vantage points, view corridors and scenic vistas to support the Island's sense of place, identity and orientation.

Policy LU 14.1

Manage existing vegetated buffers ~~should be managed~~ to preserve the Island's character and the forested view from the road. Remove invasive species ~~should be removed~~ in order to keep the *native vegetation* healthy.

Policy LU 14.2

Design and site new development ~~should be designed to respond to the natural landscape and should be sited~~ so as to have the least visual and environmental impact on the Island landscape. Encourage the retention of features that enhance the Island's character such as barns, fences, fruit or vegetable stands ~~should be retained and encouraged~~.

Policy LU 14.3

Map tree-covered hillsides and hilltops, particularly the ridgelines so valued by the community, and Adopt *development regulations* and programs to protect them for their visual and aesthetic benefits as well as their functions as wildlife habitat and erosion and runoff retardation.

Policy LU 14.4

Properties with frontage along SR 305 will provide and maintain a vegetated buffer along the highway, preserving and augmenting existing vegetation, providing a year-round visual screen between development and the highway. Access to these properties shall not be directly from SR 305.

OPEN SPACE RESIDENTIAL DISTRICT

GOAL LU-15

~~Develop *context-sensitive* regulations for residential development in areas designated OSR-2, OSR-1 or OSR-0.4, in order to limit clearing, soil disturbance, promote *low impact development* and reconcile development and conservation. Preserve the character of the interior areas of Bainbridge Island through establishment of an Open Space Residential District.~~

Policy LU 15.1

~~The Open Space Residential District area is designated for less intensive residential development and a variety of agricultural and forestry uses.~~

~~Policy LU 15.2~~

~~Encourage residential development *should be* that is compatible with the preservation of *open space*, forestry, agricultural activities, and natural systems. Accessory *farm* buildings and uses are allowable.~~

Policy LU 15.2

~~Maintain the natural and scenic qualities of the Island by limiting residential *density*. The overall *density* for residential use is a maximum of one units per 2.5 acres, however the landscape *should* maintain the natural and scenic qualities of the Island.~~

Policy LU 15.3

~~Permit *home occupations* that provide employment opportunities and *should be* permitted where they are compatible with surrounding neighborhoods and the environment.~~

GOAL LU-16

~~The Residential-1 (R-1) and Residential-2 (R-2) Districts are intended to recognize an existing development pattern in the Island's Open Space areas.~~

~~Policy LU 16.1~~

~~The R-1 District recognizes an existing development pattern of one unit per acre.~~

~~Policy LU 16.2~~

~~The R-2 District recognizes an existing development pattern of two units per acre.~~

Policy LU ~~15.5~~ 16.3

Establish *land use policies* and *development standards* through the development of subarea plans tailored to the individual communities. *Neighborhood* participation in development of *subarea plans* should be encouraged.

LOCAL FOOD PRODUCTION

GOAL LU-16

Promote food security through support for local food production, awareness of farming practices and public health by encouraging locally-based food production, distribution and choice through commercial and urban agriculture, community gardens, farmers' markets, farm stands and food access initiatives. ~~Establish partnerships and share resources to promote food access and production.~~

Policy LU 16.1

Encourage ~~Allow~~ community gardening and/or agriculture on public land where appropriate.



Fig. LU-15 Farmland - Agriculture is part of Bainbridge Island's landscape, history, economy and culture

Policy LU 16.2

Encourage the development of neighborhood community gardens or small-scale commercial agriculture where appropriate.

Policy LU 16.3

Promote interagency and intergovernmental cooperation and resource-sharing to expand community gardening opportunities.

Policy LU 16.4

Promote the dedication of land for community gardens in new housing developments.

Policy LU 16.5

Support the local farmers market and the connection between consumers and farmers.

PURCHASE AND TRANSFER OF DEVELOPMENT RIGHTS PROGRAM

GOAL LU- 17

Prioritize program *goals* and establish and maintain planning tools including a *purchase and transfer of development rights* program, to allow transferring development rights from areas intended for conservation and promoting development in areas suitable for denser development.

Policy LU 17.1

Maintain and improve the City's *Purchase of Development Rights* (PDR) and *Transfer of Development Rights* (TDR) programs to enable transferring development rights from the Conservation Areas of the Island into *Designated Centers*. See Fig. LU-3.

Policy LU 18.2

~~Within the Conservation Area of the Island prioritize those parcels most appropriate as TDR sending sites.~~

~~The highest priority sending areas could contain sensitive lands that are not protected by the critical areas regulations, priority links in the Wildlife Corridor, priority open space lands or historic resources. Determination of priorities for sending areas should also be coordinated with the development of an Island-wide open space plan.~~

Policy LU 17.3

Adopt an Island-wide Conservation Strategy ~~open space plan~~.

Policy LU 17.4

The City recognizes the need to take a proactive role in the *purchase and transfer of development rights* and such a program should include:

1. Designating appropriate staff resources to promote the program;
2. Providing for the outright *purchase of development rights* by the City and establishing a fund for banking development rights;
3. Creating a process that coordinates the *purchase and transfer of development rights*; and
4. Initiating an outreach program to educate property owners and potential buyers about the use of the *Purchase and Transfer of Development Rights program*.
5. Engage and involve community partners such as the BI Land Trust, in the exploration and potential implementation of a density transfer program.

PROPERTY RIGHTS

GOAL LU-18

Strive to ensure that basic community values and aspirations are reflected in the City's planning program while recognizing the rights of individuals to use and develop private property in a manner that is consistent with City regulations. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners *shall* be protected from arbitrary and discriminatory actions.

INTERGOVERNMENTAL COOPERATION AND COORDINATION

GOAL LU-19

The citizens expect all government entities ~~should strive~~ to cooperate and serve their constituents in a fiscally sound manner.

In addition to the City government, there are three special purpose districts and the Kitsap Public Health District and Sewer District #7 which all serve the citizens of Bainbridge Island, as well as a number of state and county agencies. This *goal* addresses the need for cooperation and coordination in order to serve the Island's citizens in the most cost effective manner.

HISTORIC PRESERVATION

GOAL LU-20

Maintain and support an *Historic Preservation Program* – A successful *historic preservation* program requires on-going support of the community as well as the City government and its designated department.

Policy LU 20.1

Maintain the City's status as a Certified Local Government (CLG) thereby promoting collaboration among City departments, boards and commissions.

Policy LU 20.2

The City and its Historic Preservation Commission (HPC) ~~should will~~ regularly review the local *historic preservation* ordinance and update where necessary to assure that it achieves the *Comprehensive Plan's* goals and policies.

Policy LU 20.3

~~The City and HPC should~~ Develop the City's preferred method of project compliance review and reporting consistent with state laws and local ordinances.

Policy LU 20.4

~~The City and HPC shall~~ Coordinate with Tribes and other interested stakeholders to promote awareness, respect for and celebration of the who have an interest in historic resources of on the Island.

GOAL LU-21

Identification and Evaluation of Historic Resources – Historic property inventory and context statements inform planning efforts by identifying areas where resources worthy of preservation exist or are likely to occur.

Policy LU 21.1

~~The City and HPC shall~~ **Recognize** historic resources listed on or eligible for the local registry as significant historic properties.

Policy LU 21.2

~~The City and HPC shall continue to Maintain an updated inventory historic resources thereby maintaining an up-to-date site database~~ using the latest affordable technologies available.

Policy LU 21.3

~~The City and HPC should continue to~~ **Support** and expand the Local Historic Register program.

Policy LU 21.4

~~The City and HPC should~~ **Develop** protocols for the consistent evaluation of historic resources on the Island.

Policy LU 21.5

~~The City and HPC shall~~ **Define and identify its** “iconic” structures and sites (those intended for permanent preservation) which are deemed essential elements of the community’s character, history and identity.

GOAL LU-22

Preservation and Enhancement of Historic Resources – An effective *historic preservation* program provides meaningful practical incentives and policies for property owners and developers to preserve historic resources.

Policy LU 22.1

~~The City shall~~ **Encourage** preservation of existing historic structures and sites as an important tool in building a sustainable and unique community.

Policy LU 22.2

Encourage the preservation, rehabilitation and restoration of existing structures through the adoption and implementation of the International Existing Building Code (IEBC).

Policy LU 22.3

~~Collaborate with the HPC and Design Review Board to~~ **Develop** design guidelines for projects within or adjacent to significant historic properties and/or *neighborhoods* to ensure compatible development.

Policy LU 22.4

Develop guidelines to ensure review of potential direct and indirect impacts to significant historic properties when planning and/or permitting projects.

Policy LU 22.5

Identify and support practical owner/operator economic incentives and *policies* to encourage the rehabilitation and preservation of significant historic resources.

Policy LU 22.6

Engage in cooperative efforts with owners to encourage the preservation of historic resources.

GOAL LU-23

Public Participation – Establishing a broad base of support from citizens and their city government will strengthen the community's commitment to *historic preservation*.

Policy LU 23.1

Support on-going education programs to increase awareness of the Island's historic resources.

Policy LU 23.2

Support efforts to publicly recognize preservation efforts within the Island community.

Policy LU 23.3

Collaborate with interested stakeholders to promote historic preservation on the Island.

Policy LU 23.4

Identify and give public access to an appropriate repository for curating historic preservation records and documentation.

Fort Ward**Policy LU 23.5**

Maintain and enhance the unique character of Fort Ward Planning Area to recognize the history and natural landscape of the area and the sense of community that exists including an *open space* system made up of *wetlands*, a *neighborhood* park, the historic marching fields, unbuildable slopes and the State Park.

Policy LU 23.6

Where possible, create tax incentives and encourage private purchase and renovation of historic structures. Transfer *density* within the Fort Ward Study Area as incentives for the preservation of historic structures.



Fig. LU-16 Fort Ward history and structures help create unique local character and identity

CONTAMINATED SITES**MOVED FROM WR ELEMENT TO LU ELEMENT****GOAL LU-24 ~~WR-6~~**

Incorporate awareness of known contaminated sites such as former lumber treatment facilities, former fueling stations and other pollutant-generating *land uses* into all water resources management, *land use* planning and *capital facility* management in order to remediate or clean-up sites as effectively as possible while preventing further impacts to the environment ~~water resources~~.

Policy LU 24.1 ~~WR 6.1~~

Assemble and maintain an inventory of contaminated sites on the Island to track site location, contaminant(s) of concern, cleanup status and potential to impact nearby surface or *groundwater*.

Policy LU 24.2 ~~WR 6.2~~

Collaborate with the U.S. Environmental Protection Agency, Washington State Department of Ecology, Tribes and the Kitsap Public Health District to address contaminated site assessment and cleanup efforts within the purview of those agencies to achieve remediation/cleanup as quickly as reasonably possible.

Policy LU 24.3 ~~WR 6.4~~

~~Make every reasonable attempt to~~ Clean-up and/or remediate City-owned contaminated sites that are known to be or discovered to be contaminated.

Policy LU 24.4 ~~WR 6.3~~

Consult the contaminated site inventory:

- Prior to property acquisition and weigh the cost/benefit of acquiring such a property;
- As part of development or redevelopment site plan review and take potential impacts into consideration when making *land use* decisions;
- As part of capital *infrastructure* construction or maintenance;
- As part of emergency management preparedness and response.

Policy LU 24.5 ~~WR 6.5~~

~~Consult the contaminated site inventory as part of development or redevelopment site plan review and take potential impacts into consideration when making *land use* decisions.~~

Policy LU 24.6 ~~WR 6.6~~

~~Consult the contaminated site inventory as part of capital *infrastructure* construction or maintenance.~~

Policy LU 24.7 ~~WR 6.7~~

~~Consult the contaminated site inventory as part of emergency management preparedness and response.~~

ESSENTIAL PUBLIC FACILITIES

GOAL LU-25

The needs of the community ~~should be~~ **are** met by providing *essential public facilities* and services that are equitably distributed throughout the community; that are located and designed to be safe and convenient to the people they serve; that provide flexibility of use and maximum efficiency; and that are compatible with adjacent uses, the environment, and preservation of public health and safety.

The GMA requires that all jurisdictions planning under the Act must provide a process for siting *essential public facilities* such as airports, correctional facilities and sewage treatment plants. These *goals* and *policies* are intended to guide the siting process and therefore, in accordance with RCW 36.70A.200(2), they do not preclude the siting of *essential public facilities*. Site specific consideration of a proposed *essential public facility* would occur during the development application review process.

Policy LU 25.1

~~The City should~~ **Develop** a list of *essential public facilities* of a local nature that may potentially be sited on Bainbridge Island and coordinate with the *Kitsap Regional Coordinating Council* in the development of a list of state and countywide *public facilities*.

Policy LU 25.2

~~When an essential public facility of a statewide or countywide nature is proposed for Kitsap County, the City should appoint representatives as members of the Facility Analysis and Site Evaluation Advisory Committee or any other established siting committee to evaluate proposed public facility siting.~~

Policy LU 25.2

New *essential public facilities* shall not be located in designated resource lands and *critical areas*.

GOAL LU-26

The process for siting *essential public facilities* ~~should~~ **is designed to** create an environment of cooperation and include adequate and early public review to promote trust between government agencies and the community.

Policy LU 26.1

~~If an~~ **When an** *essential public facility* **as defined in RCW 36.70A.200 is proposed for Bainbridge Island, and is greater than 3,000 square feet,** ~~is proposed for Bainbridge Island that is an “essential public facility” as defined in RCW 36.70A.200,~~ the City ~~should~~ **will** create a Facility Analysis and Site Evaluation Committee composed of citizens, City Staff, elected officials and appropriate technical experts should consider, at a minimum, the following in determining a recommendation to City Council:

- Analysis of the need for such facility;
- The development of specific siting criteria for the proposed project;
- Identification, analysis and ranking of potential sites;

- Consistency with the *goals and policies* of the City's *Comprehensive Plan*;
- Identification of potential physical impacts including but not limited to those relating to land use, the environment, transportation, utilities, noise, odor and public safety;
- Identification of potential cumulative impacts including the likelihood of a related development locating in proximity to the proposed *essential public facility*;
- Identification of potential fiscal impacts to the local economy; and
- Measures to minimize and/or mitigate such impacts.

Policy LU 26.2

~~The City or other government agency, if responsible for construction of an essential public facility, shall~~ Develop a community notification and communications plan that will ensure ongoing contact with the community during the planning and construction phase of an essential public facility project.

~~The plan should include identification~~ Identify of all departments that will play a role in the planning or construction of an *essential public facility*. Identify other governmental regulatory requirements, identify strategies for coordinating interdepartmental and interagency activities and strategies for responding to emergency or problem situations and identify a conflict resolution process.

LAND USE IMPLEMENTATION

To implement the goals and policies in this Element, the City must take a number of actions including adopting or amending *development regulations*, creating partnerships and educational programs and staffing or other budgetary decisions. Listed following each action are several of the Comprehensive Plan's policies that support that action.

HIGH PRIORITY ACTIONS

LU Action #1 Adopt a multi-year planning work program for adopting the subarea plans for Island Center, Rolling Bay, ~~Fort Ward~~, Sportsman Triangle and Day Road.

GOAL LU-4 As part of a long-term Island-wide Conservation and Development Strategy, focus residential and commercial-urban development in *designated centers*, increase a network of conservation lands, maximize public access to and while protecting the shoreline, minimize impacts from the SR 305 corridor and conserve the Island's ecosystems and the green, natural and open character of its landscape.

Policy LU 4.3 Adopt a multi-year work program to undertake the "Special Planning Area Process" for the *designated centers* of ~~Winslow~~, Island Center, Rolling Bay, Sportsman Triangle, ~~Fort Ward~~ and Day Road. The product of the "Special Planning Area Process" will be *Subarea Plans* for each of the *designated centers* that will be adopted as part of the *Comprehensive Plan*.

Policy LU 4.6 The *special planning area process* for each designated center shall engage residents, landowners, businesses and other stakeholders in envisioning the appropriate extent, scale, use mix and the desired and required services and *infrastructure* to serve the selected use mix and intensity.

GOAL LU-6 Ensure a development pattern that is true to the *Vision* for Bainbridge Island by reducing the inappropriate conversion of undeveloped land into sprawling development.

Policy LU 6.3 Island Center, Rolling Bay, ~~and Lynwood Center and Fort Ward~~ offer housing, small-scale, commercial and service activity outside of Winslow. These ~~designated Neighborhood Centers~~ should be ~~are~~ allowed to develop at higher *densities* to reinforce their roles as centers.

GOAL LU-9 Encourage the development of the Neighborhood Centers at Rolling Bay, Lynwood Center, ~~Day Road, Fort Ward~~ and Island Center as designated on the Future Land Use Map, as areas with small-scale commercial, mixed use and residential development outside Winslow.

GOAL EC-6 As the city's *designated centers* evolve, balance their functions as places of commerce and employment with their roles helping to meet housing needs and provide focal points for civic engagement and cultural enrichment.

LU Action #2 Update the Winslow Mixed Use Town Center Master Plan in order to facilitate progress on the Housing Priorities that can best be accommodated in an area with an existing urban character, urban facilities, services and multi-modal transportation options.

GOAL LU-4 As part of a long-term Island-wide Conservation and Development Strategy, focus residential and commercial-urban development in *designated centers*, increase a network of conservation lands, maximize public access ~~to and~~ while protecting the shoreline, minimize impacts from the SR 305 corridor and conserve the Island's ecosystems and the green, natural and open character of its landscape.

Policy LU 4.4 Updating the Winslow Master Plan is the City's a highest work program priority because the greatest potential for achieving many of the City's priorities is focused there, including increasing the diversity of *housing types* and the supply of *affordable housing* while helping to reduce the development pressures in the Island's conservation areas

GOAL LU-5 Focus urban development in *designated centers*.

Policy LU 5.3 Encourage *residential uses* in a variety of forms and *densities* as part of the use mix in Winslow and neighborhood centers. designated centers.

GOAL LU-7 The Winslow mixed use and commercial districts are designed to strengthen the vitality of downtown Winslow as a place for people to live, shop and work. The MUTC is intended to have a strong residential component to encourage a lively community during the day and at night. The high residential density of Winslow requires the Central Core Overlay District to provide services and products that meet the needs of residents as well as visitors.

GOAL LU-8 The High School Road District is intended to provide mixed use and commercial development in a pedestrian-friendly retail area.

GOAL EC-5 Provide a variety of *affordable housing* choices so that more people who work on Bainbridge Island can live here.

LU Action #3 Prepare a new *Conservation Village* land use regulation to incentivize creation of a new housing pattern that consolidates and dedicates open space.

Policy LU 4.11 Lands shown on Fig. LU-3 as “Conservation Areas” are appropriate for residential, recreational, agricultural, habitat and open space uses. The City will use a variety of conservation tools including public acquisition of certain properties, regulatory protection of environmentally *critical areas* and innovative *tools* such as aquifer conservation zoning and *conservation villages* to minimize the development footprint within these Conservation Areas.

Policy HO 6.4 Create new *conservation villages* permit process to apply outside of *designated centers* to increase housing choices including *affordable housing* and requiring *green building* practices while better conserving *open space*.

Policy HO 3.1 Encourage innovative zoning regulations that increase the variety of *housing types* and choices suitable to a range of household sizes and incomes in a way that is compatible with character of existing neighborhoods.

LU Action #4 Identify discrete sections of the Land Use Code to eliminate confusion, redundancy and delay in the permit process.

Policy LU 6.6 Process applications for development approval on Bainbridge Island ~~should be processed~~ within the timelines established in the City’s land *development regulations* in order to ensure affordability, fairness, citizen notification and predictability in the land development process.

LU Action #5 Create more efficient and effective review processes, including the roles and best practices and procedures for the Planning Commission, Design Review Board and Hearing Examiner.

Policy LU 6.6 Process applications for development approval on Bainbridge Island ~~should be processed~~ within the timelines established in the City’s land *development regulations* in order to ensure affordability, fairness, citizen notification and predictability in the land development process.

LU Action #6 Prepare an Island-wide Conservation Strategy.

Policy LU 17.3. Adopt an Island-wide Conservation Strategy ~~open space plan~~.

OTHER PRIORITY ACTIONS

LU Action #7 Review and update design standards and guidelines for the *neighborhood centers*.

Policy LU 5.4 *Sustainable* development and redevelopment ~~will be~~ is focused in the *designated centers* through a combination of intergovernmental and public-private partnerships, *affordable housing* programs, “green” capital projects and *low impact development* standards.

Policy LU 5.7 Encourage the design of buildings in *designated centers* for a long life and adaptability over time to successive uses.

Policy LU 5.6 Address mechanisms for retaining and preserving *open space* in the vicinity of *designated centers*.

Policy LU 8.6 To ensure visual appeal and pedestrian and bicycle safety, the land *development regulations* include design standards for:

- Building height, bulk and placement.
- Landscaping, including screening of parking lots, and development of *pedestrian-oriented* streetscape with building and landscaping (including trees) located at the street edge.
- Lot coverage.
- *Open space*.
- Road access and internal circulation including pedestrian connections developing more pedestrian crossings and requiring parking in the rear wherever possible.
- Signage.
- Additional *transit* stops on both sides of SR 305.

Policy LU 9.2 Orient development ~~should be oriented~~ toward the pedestrian. Retail uses ~~shall be~~ are encouraged on the ground-floor to prevent blank walls with little visual interest for the pedestrian. Offices and/or residential uses ~~should be~~ are encouraged above ground floor retail.

Policy LU 9.16 To minimize visual and environmental impacts, encourage parking in the rear or side yards of *multifamily*, commercial and *mixed use developments*. Design parking lots ~~should~~ to be *pedestrian-oriented* and provide pedestrian and bicycle routes between the street, parking area and main entrance. ~~Consideration should be given to the use of~~ Integrate trees in a parking lot to ~~that~~ allow solar access.

Action #8 Evaluate the reasons why the City's PDR and TDR programs have not been successful and explore ways to make them functional to meet City objectives.

Policy LU 17.1 Maintain and improve the City's *Purchase of Development Rights* (PDR) and *Transfer of Development Rights* (TDR) programs to enable transferring development rights from the Conservation Areas of the Island into *designated centers*. See Fig. LU-3.

GLOSSARY

Accessory Dwelling Unit: Separate living quarters contained within or detached from a single-family residence on a single lot.

Adaptive management: A structured, iterative process of robust decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. In this way, decision making simultaneously meets one or more resource management objectives and accrues information needed to improve future management.

Affordable Housing: Housing where the occupant pays no more than 30% of gross monthly income for total housing costs, including the cost of taxes and insurance for homeowners and monthly utilities for owners and renters.

Affordable housing is defined according to the interpretation found in the Growth Management Act - Procedural Criteria [WAC 365-195-070(6)]. The term "applies to the adequacy of the housing stock to fulfill the housing needs of all economic segments of the population. The underlying assumption is that the market place will guarantee adequate housing for those in the upper economic brackets but that some appropriately zoned land, regulatory incentives, financial subsidies, and innovative planning techniques will be necessary to make adequate provisions for the needs of middle and lower income persons."

The Department of Housing and Urban Development (HUD) sets household income limits for five income categories based on the local median household income that is determined each year. They are as follows:

Extremely Low Income	30% or less of median household income
Very Low Income	31% - 50% of median household income
Low Income	51% - 80% of median household income
Moderate Income.....	81% - 95% of median household income
Middle Income	96% - 120% of median household income

Agricultural Land: Land primarily devoted to the commercial production of horticultural, viticultural, floricultural, dairy, apiary, vegetable, or animal products or of berries, grain, hay, straw, turf, seed, Christmas trees, or livestock, and that has long-term (6 years or longer) commercial significance for agricultural production or which has significance for Bainbridge Island.

Agricultural Operation: Any condition, facility, or activity for the production or intent of production for commercial or family use purposes of dairy, apiary, livestock, vegetable or animal products, and crop products including, but not limited to ornamental crops.

Aquatic Resources: Marine nearshore, wetlands, streams, lakes, creeks and associated vegetated areas.

Aquifer: A body of soil or rock that contains sufficient saturated material to conduct groundwater and yield usable quantities of groundwater to springs and wells.

Aquifer Conservation Zone Regulations: Land use controls designed to protect the functions and values of Bainbridge Island's aquifers. These regulations may include the City's critical area

regulations, the use regulations and standards of the City's Shoreline Master Program, the well-head protection requirements of Class A and B water systems, and the requirements or best management practices of future City enactments such as low impact development regulations or the standards and best management practices required by a Groundwater Management Plan.

Aquifer Recharge Area: The geological formations in which an aquifer is replenished by the downward percolation of water. Critical recharging areas have the potential to affect potable water where an essential source of drinking water is vulnerable to contamination.

Arterial: A major thoroughfare used mainly for through traffic rather than access to nearby property. Arterials generally have greater traffic carrying capacity than collector or local streets and are designed for continuously moving traffic.

Assisted Housing: Multifamily rental housing that receives governmental assistance and is subject to use restrictions

Average Daily Traffic (ADT): The average number of vehicles passing a point during a 24-hour period.

Base Density: The maximum number of units within an area that can be built under the existing zoning without the use of Transferable Development Rights (TDRs) or a density bonus.

Best Available Science: Current scientific information used in the process to designate, protect, or restore critical areas that is derived from a valid scientific process.

Bicycle Access: An improvement designed to facilitate the use of bicycles, including bicycle trails, bicycle lanes and pedestrian/bicycle trails or pathways.

Bicycle Lane: This facility provides a separate lane for bicycle use. It is a clearly marked lane of travel on the side of a street or roadway, separated from the automobile by painted strips, curbs or buttons.

Bond and Levy Financing: Local governments can raise revenues by selling tax-exempt municipal bonds or by increasing property taxes through property tax levies. Bonds require a 60 percent voter approval; levies require a simple majority. The City can issue a limited amount of debt without voter approval. This is called limited general obligation or councilmanic debt. Voter approved bonds are retired with property tax revenues.

Capital Facilities Plan: A collection of planning and budget policies and documents working in concert to ensure capital projects are identified and prioritized in a manner that meets the needs of a growing population and promotes a safe and healthy community.

Capital Facility: A structure, improvement, piece of equipment or other major asset, including land that has a useful life of at least 10 years. Capital facilities are provided by, and for public purposes and services. For the purposes of the *Capital Facilities Element*, capital facilities are government offices and facilities; fire and emergency medical services, parks, sewer, water, and storm water utilities, library, and schools.

Capital Improvement: A project to create, expand, or modify a capital facility. The project may include design, permitting, environmental analysis, land acquisition, construction, landscaping,

site improvements, initial furnishings and equipment. The project cost must exceed \$25,000 and have a useful life of at least 5 years.

Capital Improvement Program (CIP): A six-year plan for future capital expenditures that identifies capital projects packaging, timelines, and funding. The CIP is updated and adopted annually or biennially, along with the City's operating budget.

Carbon sequestration: A term used to describe both natural and deliberate processes by which CO₂ is either removed from the atmosphere or diverted from emission sources and stored in the ocean, terrestrial environments (vegetation, soils, and sediment), and geologic formations.

Carrying Capacity: The level of land use or human activity that can be permanently accommodated without an irreversible change in the quality of air, water, land, or plant and animal habitats. In human settlements, this term also refers to the upper limits beyond which the quality of life, community character, or human health, welfare, and safety will be impaired.

Climate resilience: The capacity for a socio-ecological system to absorb stresses and maintain function in the face of external stresses imposed upon it by climate change.

Climate Change: Changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as well as shifts in precipitation, changing risk of certain types of severe weather events, and changes to other features of the climate system. (See www.climate.gov)

Cluster Development: A development design technique that concentrates buildings in specific areas on a site to allow the remaining land to be used for recreation, common open space, and preservation of environmentally sensitive areas. Cluster development allows the reduction of lot sizes below the zoning ordinance's minimum requirements if the remaining land is preserved as permanent open space.

Co-housing: a type of residential community characterized by either attached or detached single-family dwelling units which may or may not be located on separate lots, and includes a common building, which may contain a large dining room, kitchen, lounges, meeting rooms, recreation and laundry facilities, storage, guest rooms, library, workshops, and/or childcare, to serve only the co-housing community.

Collector: Roads that collect traffic from local access streets and convey it onto the arterial system.

Commercial Use: An occupation, employment or other enterprise that provides goods or services for compensation.

Community Development Block Grant (CDBG) Program: A federal funding program which provides annual funding for eligible local governments for housing and community development programs targeted primarily to low-income persons and neighborhoods.

Community Land Trust (CLT): A model of homeownership where a developer (usually an affordable housing agency or nonprofit) sells a home to an income-qualified resident, but retains ownership of the land. The homeowner earns equity in the home, but not the land.

Commute Trip Reduction (CTR): Washington State legislation passed in 1992 requiring specified large employers in certain counties to reduce vehicle occupancy according to a specified time frame.

Comprehensive Plan: A generalized coordinated land use policy statement of the governing body of a county or city that is adopted pursuant to this chapter (RCW 36.70A).

Concurrency Requirement: A program to ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards. (Under the GMA, only transportation facilities and services must satisfy the concurrency requirement.)

Conservation Easement: A legal agreement that the property owner enters into to restrict uses of the land for purposes of natural resources conservation. The easement is recorded on a property deed, runs with the land, and is legally binding on all present and future owners of the property.

Conservation Villages: A development form that concentrates housing on a relatively small portion of the total site, with the larger portion of the site left untouched as dedicated conservation area. The housing may take the form of common wall structures and/or detached units placed close by one another, situated to minimize the cost of running roads and serving utilities and maximizing the retention of scenic views, open space, natural contours, and vegetation. The techniques used to concentrate buildings may include reduction in lot sizes, building setback and/or bulk requirements. An increase in density may be considered only if appropriate limitations are placed on building footprint, bulk, shape, location, orientation or other site or building design details. The conservation open space is secured in perpetuity by deed restriction.

Context Sensitive Design: Site, landscaping, architectural, or engineering design that is compatible with a development's setting, the contours of the land and natural systems on-site and immediately off-site, and that is compatible with the character, location and configuration of improvements and uses on adjacent properties.

Contract Rezone District: A Contract Zoning District is a distinct area for which a special zoning designation is developed which reflects uses and/or conditions that are unique to that area, and which would affect future development of the land.

Cottage Housing: A grouping of small, single family dwelling units clustered around a common area and developed with a coherent plan for the entire site. Cottage units typically have a shared common area and coordinated design and may allow densities that are somewhat higher than typical in single-family neighborhoods. Cottage housing offers a degree of privacy and some of the benefits of single-family housing combined with the lower cost and maintenance of attached housing. The clustered arrangement can contribute to a sense of community.

Cottage Industry: An activity undertaken for gain or profit and carried on in a dwelling or building accessory to the dwelling. See Home Occupation.

Countywide Planning Policies: A series of policies intended to guide the development of city and county comprehensive plans, including, but not limited to, the allocation of population and

employment targets to cities. The GMA gives counties the authority to adopt County-wide Planning Policies.

Craft Food and Beverage: Small-scale, locally-produced food and beverage products.

Critical Areas: Aquifer recharge areas, fish and wildlife habitats, frequently flooded areas, geologically hazardous areas, wetlands and streams.

Critical Habitat: Identified by Washington State Department of Wildlife, Ecology and Fisheries or other source recognized by the City as habitat necessary for survival of endangered, threatened, rare, sensitive, monitor species or identified by Bainbridge Island as species of local significance.

Density: The number of dwelling units allowed in a lot area.

Density Bonus: Additional density provided to a developer to achieve certain policy objectives, such as the construction of affordable housing units. (The developer is allowed to build a certain amount {a percentage} above the base density in exchange for the provision of a certain number of affordable units.)

Designated Centers: Those areas of the Island where the majority of the development and redevelopment should be located over the next fifty years. These include Winslow, Lynwood Center, Island Center, Fort Ward, Rolling Bay, Day Road and Sportsman Triangle. See Fig. LU-3 Land Use Concept.

Development Regulation: The controls placed on development or land use activities by a county or city, including, but not limited to, zoning ordinances, critical areas ordinances, shoreline master programs, official controls, planned unit development ordinances, subdivision ordinances, and binding site plan ordinances together with any amendments thereto.

Development Standards: Requirements or standards imposed on development by regulation or ordinance under land use and environmental planning legislation.

Dwelling Unit: A building or portion of a building that provides independent living facilities with provision for sleeping, eating and sanitation. The existence of a food preparation area within a room or rooms is evidence of the existence of a dwelling unit.

Economic capital:

Financial capital is any economic resource measured in terms of money used by entrepreneurs and businesses to buy what they need to make their products or to provide their services to the sector of the economy upon which their operation is based, i.e., retail, corporate, investment banking, etc.

Natural capital consists of indispensable resources and benefits, essential for human survival and economic activity, provided by the ecosystem. Natural capital is commonly divided into (1) renewable resources (agricultural crops, vegetation, wildlife) and (2) non-renewable resources (fossil fuels and mineral deposits.)

Social capital is a form of economic capital in which social networks are central, transactions are marked by reciprocity, trust and cooperation, and market agents produce goods and services not only for themselves, but for a common good. The term generally refers to (1)

resources, and the value of those resources, both tangible (public spaces, private property) and the intangible (people), (2) the relationships among these resources, and (3) the impact that these relationships have on the resources in each relationship, and on larger groups.

Endangered Species: A species or subspecies of bird, mammal, fish, amphibian, reptile or invertebrate for which the prospects of survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition or disease.

Environmentally Sensitive Areas or ESAs: Critical areas and their protective buffers and natural resource lands.

Erosion Hazard Area: A landform or soil type subject to being worn away by the action of water, wind, freeze-thaw or ice and classified in accordance with the U.S.D.A. Soil Conservation Service, U.S. Geological Survey or Department of Ecology Coastal Zone Atlas.

Essential Public Facility: Any facility meeting the definition of Essential Public Facility set forth in RCW 36.70A.200(1), now or as hereafter amended, any facility identified on the statewide list maintained by the Office of Financial Management.

Fair Share Housing: A quantification of each jurisdiction's "share" of middle and low-income housing needs in a region or county, and a plan for how each jurisdiction will satisfy its obligation to provide for its share of the need.

Farm: See Agricultural Land

Fish and Wildlife Habitat: A seasonal range or habitat element with which a given species has a primary association, and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long-term. These include areas of relative density or species richness, breeding habitat, winter range, and movement corridors. These also include habitats of limited availability or high vulnerability to alteration, such as cliffs, streams and wetlands.

Flexible Lot Design Subdivision Process: This process permits development flexibility that will encourage a more creative approach than lot-by-lot development, including lot design, placement of buildings, use of open spaces and circulation, and best addresses the site characteristics of geography, topography, size or shape. This method permits clustering of lots, with a variety of lot sizes, to provide open space and protect the Island's natural systems. The criteria for the layout and design of lots, including a minimum percentage of open space and a minimum lot size for each zone, are set out in the zoning ordinance.

Forest Land: Land used for growing trees, not including Christmas trees, for commercial purposes (as shown by record of income) that has long-term commercial significance; or unharvested forest land preserved in open space for the environmental benefits and maintenance of rural character.

Frequently Flooded Areas: Lands subject to a one percent or greater chance of flooding in any given year. These areas include, but are not limited to, floodplains adjacent to streams, lakes, coastal areas, and wetlands.

Functional Classification: A technique for assigning categories to transportation facilities based on a facility's role in the overall transportation system.

Functional Plan: Detailed assessments of existing conditions, current and future facility needs, service targets, and projected funding. Such plans adopted by City Council are incorporated by reference into the Comprehensive Plan's Capital Facilities Element. Other local jurisdictions, such as the Bainbridge Island School District, Bainbridge Island Fire District, and Bainbridge Park District also prepare functional plans.

General Obligation Debt: Local governments can raise revenues by selling tax-exempt municipal bonds and incurring debt. General obligation debt carries an unconditional promise by the local government to levy the taxes necessary to make the interest and principal payments required to retire the debt. General obligation debt is distinguished from limited obligation debt (also known as councilmanic bonds), which does not require a vote of the people and is paid from general operating revenues.

Geologically Hazardous Areas: Areas susceptible to erosion, sliding or other geological events which pose a threat to the health and safety of citizens when used as sites for incompatible commercial, residential or industrial development. Geologically hazardous areas include erosion hazard areas, landslide hazard areas, slopes and seismic hazard areas.

Goal: An expression of a general, ultimate ideal to be sought. It reflects basic community values and establishes the basis for formulating policies.

Green Building: A structure and use process that is environmentally responsible and resource efficient throughout a building's life cycle: from siting to design, construction, operation, maintenance, renovation, and demolition. Green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by efficiently using energy, water, and other resources; protecting occupant health and improving employee productivity; and reducing waste, pollution, and environmental degradation.

Greenhouse Gas (GHG): A gas in the atmosphere that absorbs and emits radiation within the thermal infrared range and affects the temperature of the earth. Primary greenhouse gases in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

Green infrastructure: Natural vegetation, landscape design, and engineered techniques that retain, absorb, and often cleanse stormwater runoff. By including such features throughout a community, stormwater and other runoff from wet weather or spring thaws is retained, absorbed, and often naturally filtered. Green infrastructure prevents or reduces the amount of runoff flowing directly into storm drains where it can overwhelm the sewer system and contaminate local waterways.

Groundwater: Subsurface or underground water resource.

Growth Management Act (GMA): A Washington State law requiring urban counties and their cities to adopt comprehensive plans and to adopt development regulations and capital budgets to implement comprehensive plans.

Guiding Principle: A high-rank order value guiding growth, development, and conservation of resources in the community. Guiding principles are derived from and provide extension of the aspirations and values described in the Vision Statement. Guiding Principles provide policy direction to the Goals and Policies of the Elements in the Comprehensive Plan.

High Occupancy Vehicle (HOV): Public transportation vehicles and private vehicles carrying no less than a specified number of passengers (usually set at 2 or 3).

High Occupancy Vehicle Improvement: Facilities or priority treatments, such as preferential signalization or queue bypasses, designed to encourage HOV usage.

High Occupancy Vehicle Lane (HOV Lane): A lane of traffic designated for use by public transit vehicles and high occupancy private vehicles.

Historic Preservation: Includes the protection, rehabilitation, restoration, identification, scientific excavation, and reconstruction of districts, sites, buildings, structures and objects significant in American and Washington state history, architecture, archaeology, or culture. (RCW 27.26.901)

Home Occupation: An activity for gainful employment involving the manufacture, provision, or sale of goods and/or services as an accessory use. The home occupation is carried on in the dwelling unit or building accessory to the dwelling unit.

Homeless: Persons whose primary nighttime residence is 1) a public or private place not designed for, or ordinarily used for, sleeping accommodations for human beings, or 2) a residence which is a publicly or privately operated shelter designed to provide temporary living accommodations.

Household: One or more related or unrelated persons occupying a housing unit.

Housing and Urban Development, Department of (HUD): The federal Department of Housing and Urban Development that administers most federally-sponsored housing and community development programs.

Housing Types: This term refers to the physical form, configuration or scale of housing, as opposed to an ownership pattern (i.e., rental vs. owned). The list below groups housing types into three categories: detached, common wall, or stacked.

- **Detached housing**, includes one and two-story houses, ramblers, split-levels, cottages, cabins, accessory dwelling units, mobile homes, and carriage houses (unit over a garage);
- **Common wall housing**, includes duplexes, zero lot line homes, row houses and townhouses; and
- **Stacked housing**, includes two or three story garden apartments and mid-rise, mixed-use structures with commercial ground floor uses and two or more stories of residences above.

Humanities: The term humanities encompasses those modes of inquiry, which are also academic disciplines, “including but not limited to the study of languages, literature, history, philosophy, comparative religion, and ethics.” Source: National Endowment for the Humanities.

Impact Fees: Charges levied by the City against a new development for its pro-rata share of the capital costs of facilities necessitated by the development. The Growth Management Act authorizes the imposition of impact fees on new development and sets the conditions under which they may be imposed.

Impervious Surface: Any material that substantially reduces or prevents the infiltration of water into previously undeveloped land. It includes surfaces such as compacted sand, limerock, or clay, as well as most conventionally surfaced streets, roofs, sidewalks, parking lots, and other similar surfaces or structures.

Income-qualified: A description for a renter or owner of designated affordable housing unit, meaning that the entity managing the affordability has verified the potential resident's income to fall within the income ranges defined under "Affordable housing".

Infill Development: Development usually consisting of either 1) construction on one or more lots in an area already developed or 2) new construction between two existing structures.

Infrastructure: A term connoting the physical underpinnings of the built environment including, but not limited to, roads, bridges, transit, waste system, public buildings, and communications networks.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA): Legislative initiative by the U.S. Congress restructuring funding for highway and transit programs. ISTEA authorized increased levels of highway and transportation funding and an enlarged role for regional planning commissions/MPOs in funding decisions. The Act also requires comprehensive regional long-range transportation plans extending to the horizon year of 2015.

Island Character: For purposes of the Bainbridge Island Comprehensive Plan the term is used to describe the special character of the Island - winding, narrow and vegetated roadways and forested areas, meadows, farms, and which contain much of the Island's wetlands and streams, aquifer recharge areas and fish and wildlife habitat.

Kitsap Regional Coordinating Council (KRCC), formerly known as Kitsap Regional Planning Council (KRPC): A Council formed in 1990 by agreement between Kitsap County and the cities of Bainbridge Island, Bremerton, Port Orchard and Poulsbo. The purposes of the council are 1) to provide a forum for cooperative decision making by the region's elected officials in order to bring about a continuous and comprehensive planning process, 2) to foster cooperation and mediate differences among governments throughout the region and 3) to maintain an ongoing planning program and coordinate actions to make the best use of the region's resources and overcome problems of waste and pollution. In 1991, the Port Gamble S'Klallam Tribe and the Suquamish Tribe became members.

Land Use: A term used to indicate the utilization of any piece of land. It is the way in which land is being used or may be used.

Land Owner Compacts: Adjacent property owners collectively, aggregate and develop their properties under a unified development plan.

Landslide Hazard Areas: Areas that are potentially subject to risk of mass movement due to a combination of factors, including historic failures, geologic, topographic and hydrologic features as identified in the Department of Ecology Coastal Zone Atlas.

Latecomer Agreement: Also referred to as recovery contracts or reimbursement agreements, a latecomer agreement allows a property owner who has installed street or utility improvements to recover a portion of the costs of those improvements from other property owners who later develop property in the vicinity and use the improvements.

Level of Service (LOS): A rating of how well some unit of transportation supply or other facility (e.g., street, intersection, sidewalk, bikeway, transit route, water and sewer, park facilities) serves its current or projected demand.

LIHPRHA: The Low-Income Housing Preservation and Resident Home Ownership Act of 1990, or LIHPRHA, is designed to preserve existing assisted housing for permanent low-income use. It provides incentives for current owners of assisted-housing projects to retain ownership for low-income use or to sell them to new owners who will agree to maintain the housing for low-income occupants for the remainder of its useful life.

Local Extirpation: The elimination of self-sustaining residential populations from the entire Island and its waters, or elimination of habitat sufficient to sustain use of the Island's lands and waters by transitory or migratory populations.

Low Impact Development (LID): A stormwater management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. Practices that adhere to these LID principles include bio-retention facilities, rain gardens, vegetated rooftops, rainwater harvesting (rain barrels and cisterns) and permeable pavements.

Manufactured Housing: A broad term including mobile homes, modular homes and other "factory built" housing. The main distinction is that manufactured housing is created in one or more parts in a factory and is designed and constructed for transportation to a site for installation on a permanent foundation and occupancy when connected to required utilities.

Master Plan: A tool to implement the Comprehensive Plan that details land use and circulation plans for a particular area or particular site using the goals and policies contained in the adopted Comprehensive Plan.

Micro Unit: A small studio apartment; micro unit could include a fully functioning and accessibility compliant kitchen and bathroom or rely upon communal kitchen or bathroom facilities.

Mineral Resource Lands: Land which is primarily devoted to the extraction of gravel, sand, or valuable metallic substances.

Mixed Use Development: The presence of more than one category of use in a structure, for example, a mixture of residential units and office or retail uses in the same building.

Mode Split: The statistical breakdown of travel by alternate modes, usually expressed as a percentage of travel by auto, transit, etc. Mode split is frequently used to describe the percentage of people using private automobiles versus bus transit or other modes.

Multifamily: A structure or portion of a structure containing two or more dwelling units.

Multi-modal Transportation System: A system in which there is accessibility by a variety of travel modes, typically: pedestrian, bicycle, transit and automobile (Single Occupancy Vehicle and High Occupancy Vehicle - carpool/vanpool) and may include water and air transport as well.

Native Vegetation: Plant species that are indigenous to the Puget Sound region.

Natural Resource Lands: Agricultural, forest and mineral resource lands as defined in this Plan.

Neighborhood: A small, predominantly residential area of the Island in which the residents share a common identity which may focus around an elementary school, park, community business center or similar feature.

Neonicotinoid: a class of neuro-active insecticides chemically similar to nicotine. Studies have linked Neonicotinoid use to adverse ecological effects, including honey-bee colony collapse and loss of birds due to a reduction in insect populations.

Non-point Source Pollution: Pollution that enters water from dispersed and uncontrolled sources (such as surface runoff) rather than through pipes.

Open Space: Any area of land that provides physical or visual relief from the developed environment. Open space may be essentially unimproved and set aside, designated or reserved for public use or enjoyment, or for the private use and enjoyment of adjacent property owners. Open space may also consist of undeveloped areas, such as pastures, woodlands, greenbelts, wetlands, pedestrian corridors and other natural areas that provide visual relief from developed areas.

Preservation of open space would 1) conserve and enhance natural or scenic resources, 2) protect streams or water supply, 3) promote conservation of soils, wetlands, beaches or tidal marshes, 4) enhance the value to the public of abutting or neighboring parks, forests, wild preserves, nature reservations or sanctuaries or other open space, 5) enhance recreation opportunities, 6) preserve historic sites, or 7) preserve visual quality along highway, road and street corridors or scenic vistas.

Open Space Plan: an adopted map that identifies those portions of Bainbridge Island which have the attributes and values of open space and which are candidate areas for protection and/or acquisition through nonprofit organization, city programs or regulations.

Overlay District: A set of zoning requirements that are described in the ordinance text, are mapped, and subsequently imposed in addition to those of the underlying zone. Development within an overlay zone must conform to the requirements of both zones.

Park-and-Ride: A system in which commuters drive to a common location, park their vehicles, and continue travel to their final destination via public transit or carpooling/vanpooling.

Peak Hour: The hour during which the maximum amount of travel takes place.

Peak Period: The period during which the maximum amount of travel occurs. Usually about 7 to 9 a.m. and 4 to 6 p.m.

Pedestrian-orientation: An area where the location and access to buildings, types of uses permitted on the street level and storefront design are based on the needs of the walking customers and residents. Reduces auto dependence and encourages the use of public transportation.

Peninsula Regional Transportation Planning Organization (PRTPO): The Regional Transportation Planning Organization for Kitsap, Mason, Clallam, and Jefferson Counties. The PRTPO serves as a mechanism for coordinating transportation planning in and among those counties and as a conduit for federal and state transportation funds.

Performance Standards: Regulations that establish standards of performance that are required of any use permitted in a given zoning district. For example, control over the type of a particular development in a particular zone may be accomplished by the establishment of standards which impose maximum levels of smoke, dust, noise, glare, traffic generation or other development impacts which must not be exceeded.

Permeability: The rate at which water moves through undisturbed soil. It depends largely on the texture, structure, porosity and density of the soil.

Placemaking: With community-based participation at its center, placemaking is a design process that capitalizes on a local community's assets, inspiration, and potential, and results in the creation of quality public spaces that contribute to people's health, happiness, and well being. Source: the Center for Public Spaces.

Policy: An agreed course of action adopted and pursued by decision makers for achieving one or several goals and objectives and which are used to guide the formulation of regulations and programs.

Precautionary principle: An approach to risk management, stating that if an activity carries a threat of causing serious harm to the public or to the environment, the burden of proof that it should not be limited or prohibited falls on proponents of the activity.

Primary Treatment: A wastewater treatment method that uses settling, skimming and usually chlorination to remove solids, floating materials and pathogens from wastewater.

Public Facilities: Use of land that includes streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks and recreational facilities, and schools.

Public Sewer System: Any system which is owned or operated by the City, political subdivision of the state, or other approved ownership consistent of a collection system and necessary trunks, pumping facilities and a means of final treatment and disposal and under permit from the Department of Ecology.

Public Services: Include fire protection and suppression, law enforcement, public health, education, recreation, environmental protection, and other governmental services.

Public Water System: Any system or water supply intended or used for human consumption or other domestic uses where water is furnished to two or more hookups.

Puget Sound Council of Governments (PSCOG): Predecessor to the Puget Sound Regional Council. PSCOG is the former area-wide metropolitan planning organization (MPO) responsible for regional planning in the Puget Sound area. (See Puget Sound Regional Council.)

Puget Sound Regional Council (PSRC): Current metropolitan planning organization (MPO) for the Puget Sound region, including Snohomish, King, Pierce, and Kitsap Counties. The PSRC coordinates transportation planning in those four counties and allocates federal and state transportation funds. The PSRC is also responsible for coordinating transportation planning with air quality emissions requirements.

Pump Station: A facility housing the equipment to pump water from or to a destination to counter gravitational forces. Pumping facilities are also employed to increase the pressure of the water as it travels through the system.

Pumping Station: Used to convey sanitary, wastewater to locations that cannot be reached in a normal downhill gravity collection system.

Purchase of Development Rights (PDRs): A program which would permit an owner of property designated as a TDR "sending area" to sell the right to develop all or the unused zoned capacity of the property to a public entity or non-commercial entity, such as a land trust. In exchange, the seller of the PDR would extinguish the development right on the "sending area" by means of an easement.

Queue Bypass: Route designed to provide a path for transit around traffic queues (or waiting lines), allowing transit to move to the head of traffic flow.

Recharge: The process involved in the absorption and addition of water from the unsaturated zone to groundwater.

Residential Use: Any land use that provides for living space. Examples include single family residence, multi-family residence, special residence mobile home park, boarding house, caretaker's quarters, accessory dwelling.

Right-of-way: Land in which the state, county, city or other governmental entity owns the fee simple title or has an easement dedicated or required for a transportation or utility use. The right-of-way is the right to pass over the property of another. It refers to a strip of land legally established for the use of pedestrians, vehicles or utilities.

Runoff: That portion of precipitation that flows over land surface and enters the storm drainage system during and immediately following a storm. The rapidity of runoff and the amount of water removed are affected by slope, texture (that is the structure and porosity of the soil surface) vegetation and prevailing climate.

Sanitary Sewer: A facility that carries waterborne wastes of household, industrial and commercial users from the point of origin to treatment plant(s) for treatment and disposal.

Secondary Arterial: Roads that link activity centers and convey traffic onto major arterials. Secondary arterials provide both mobility and access.

Secondary Treatment: A wastewater treatment method that usually involves the addition of biological treatment to the settling, skimming and disinfection provided by primary treatment.

Seismic Hazard Areas: Includes areas subject to severe risk of damage as a result of seismic induced ground shaking, slope failure, settlement, slope failure, soil liquefaction or surface faulting. Ground shaking is a primary risk, followed by some unstable slopes causing damage below them. The muck soils of the Island pose a specific risk of settlement and soil liquefaction. These conditions occur in areas where muck soils and other organic deposits are unsuitable for foundations, generally underlain by cohesion-less soils or poorly consolidated sediments usually in association with a shallow groundwater table.

Senior Housing: Housing specifically designed and operated to assist elderly persons (as defined in the State or Federal program); or intended for, and solely occupied by persons 62 years of age or older.

Sense of place: A geographic location with a strong identity, historical meaning or visual character that is deeply felt by local inhabitants and by many visitors. It may apply across any scales, from a small, intimate space (e.g., an historic building or a small park), to a unique neighborhood (e.g., Seattle's Pioneer Square or Portland's Pearl District) or to an entire city (e.g., New Orleans or San Francisco).

Shoreline Management Act: The Shoreline Management Act of 1971, Chapter 90.58 RCW, as amended.

Shoreline Master Program: Bainbridge Island's policy and use regulations adopted under the authority of and subject to the requirements of the Shoreline Management Act and its implementing administrative guidelines.

Shall: The use of the terms "shall" and "should," determines the level of discretion the City can exercise in making future land use policy, budget, and development regulation decisions. "Shall" means that it is mandatory for the City to carry out the policy, even if a timeframe is not included. The use of "shall" in a policy statement does not convert it into a regulation.

Should: Signifies a slightly less rigid directive than "shall" to be honored in the absence of compelling considerations that require another course of action.

Single Occupant Vehicle (SOV): A vehicle carrying only the driver and no passengers.

Slope: An inclined ground surface, the inclination of which is expressed as a ratio (percentage) of vertical distance to horizontal distance.

Special Needs Populations: Individuals or families who require supportive social services in order to live independently or semi-independently.

Special Planning Area: A Special Planning Area is an area that reflects uses and/or conditions which are unique to that area and would benefit from a local and/or neighborhood planning process. The Special Planning Area Process would address such issues as current use, future mix and location of uses and densities, transportation, public facilities, and services and amenities and protection of natural systems.

Storm Drain: A system of gutters, pipes or ditches used to carry storm water from surrounding lands to streams, lakes or Puget Sound.

Storm Water: Water that is generated by rainfall and is often routed into drainage systems in order to prevent flooding.

Stream: Surface waters, which flow into or become connected with other surface waters generally at least once per year. Streams are classified in accordance with classification system established by the Washington State Department of Natural Resources, as modified by Bainbridge Island.

Subarea Plan: An optional comprehensive plan feature authorized by the Growth Management Act. Subarea plans provide detailed land use policies for a geographic subset of a city.

Subdivision: The division or redivision of land into five or more lots, tracts, parcels, sites or divisions for the purpose of sale, lease or transfer of ownership.

Substandard Housing: A dwelling unit that does not meet the criteria for an acceptable standard of living, through lack of maintenance, age of unit, neglect, lack of plumbing facilities, kitchen facilities, or crowded conditions.

Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Tiny House or Home: A small dwelling, with a kitchen and bathroom, possibly mounted on wheels.

Transfer of Development Rights Program (TDRs): A program which would permit an owner of property designated as a TDR "sending area" to sell the right to develop all or the unused zoned capacity of the property to the developer of a TDR "receiving area" who is allowed to add the capacity to the zoned capacity of the site. In exchange, the seller of the TDR would extinguish the development right on the "sending area" by means of an easement.

Transit: Refers to a multiple-occupant vehicle operated on a for-hire, shared-ride basis, including bus, ferry, taxi, shuttle bus, carpool, or vanpool.

Transportation Demand Management (TDM): Policies and programs to motivate people to use public transportation, such as bus pass subsidies, flex-time programs, and limiting free parking.

Transportation System Management (TSM): An array of strategies intended to lead to a reduction in the number of vehicles using the road system while simultaneously serving the same number of travelers.

Threatened Species: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Trip: A one-way movement of a person or vehicle between two points for a specific purpose, sometimes called a one-way trip to distinguish it from a round trip.

Trip Assignment: The process of determining route or routes of travel and allocating the zone-to-zone trips to these routes.

Trip Distribution: The process by which the movement of trips between zones is estimated. The data for each distribution may be measured or be estimated by a growth factor process or by synthetic model.

Undeveloped Rights-Of-Way: Any undeveloped portion of a right-of-way legally established for the use of pedestrians, vehicles or utilities.

Universal Design: The designing of products and environments to be usable by all people, to the greatest extent possible, regardless of age, size, or abilities.

Upzoning: A change in the zoning classification of land to a classification allowing more intensive development, such as a change from single-family to multifamily or from residential to commercial.

Vehicle Miles Traveled (VMT): A measurement of forecasting travel demand; equivalent to one car, bus or truck traveling one mile. VMT is the sum of an individual's vehicle trip lengths - in miles - made over a set period, divided by the number of affected individuals driving that period within the household, study area, zone or facility.

Vision: A Vision is a narrative description of a preferred future, describing desired long-term qualities and characteristics of the community 20 or more years in the future.

Vision 2040: Vision 2040 constitutes the multi-county planning policies for the region consisting of King, Pierce, Snohomish and Kitsap counties and the cities within those counties.

Watercourse: The areas to which surface and subsurface waters naturally flow and which form a continuous channel through which water descends to natural outlets. A watercourse includes: a permanent stream; intermittent stream; river, brook, creek, channel or ditch for water, whether natural or man-made.

Water Re-use: Using treated wastewater in place of drinking water for commercial irrigation and industrial processes. Also called wastewater reclamation.

Watershed: The geographic region within which water drains into a particular river, stream or body of water. A watershed includes hills, lowlands and the body of water into which the land drains.

Wetland: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

WATER RESOURCES

EXISTING CONDITIONS & FUTURE NEEDS

The following outlines the present conditions and understanding of the water resources of the Island and the future needs for restoration, enhancement, and protection of these resources.

Groundwater

Groundwater is the sole source of drinking water for Island residents, *farms* and industry on Bainbridge Island. It is found in underground reservoirs called *aquifers*. An *aquifer* is defined as a *permeable* sand and/or gravel formation that is capable of yielding a significant amount of water to a well. Wells on Bainbridge Island penetrate several distinct *aquifers* to allow withdrawal of drinking water by individual homeowners and municipal water purveyors. Most individual *household* wells penetrate to depths of less than 300 feet.

Some residents are still using hand-dug wells less than 40 feet deep, completed in the *permeable* sediments known as the Vashon Recessional Outwash. *Groundwater* found at this level also feeds the base flow (summer flow) for Island *streams*. High capacity wells have been drilled as deep as 1,200 feet to find adequate marketable quantities of water for public and private water purveyors. While few in number, these wells produce a large portion of the Island's potable water. The Blakely Formation, a sedimentary bedrock formation, dominates the geology on the southern end of the Island and limits *groundwater* production in this area.

Our understanding of the Island's water resources has been enhanced through historical studies such as the *City of Bainbridge Island Level II Assessment*⁴ prepared by Kato & Warren and Robinson Noble in 2000 and monitoring and assessments completed in the last ten years by the City's *Groundwater* Management Program. This work includes the development, improvement, and utilization of a *groundwater* model; the development of a well monitoring network; and the implementation of long-term monitoring.

Bainbridge Island has six principal *aquifers* (Kato & Warren and Robinson & Noble, 2000), the extents of which were refined in the *Conceptual Model and Numerical Simulation of the Groundwater-Flow System of Bainbridge Island, Washington* (USGS, 2011). The six *aquifers* delineated below reflect updated understanding based on the United States Geological Survey (USGS) model. Additional details about the *aquifers*, including detailed maps and discussion regarding the extent, thickness, and other characteristics, can be found in the USGS report.

Perched Aquifer (PA)—This *aquifer* is comprised predominantly of Vashon Advance glacial outwash (Qva). The top of the *aquifer* ranges from sea level to more than 300 feet above mean sea level [ft MSL], with a thickness of 20 to 200 feet, and is utilized predominantly by domestic wells. About 4 percent of wells are reported to be completed in this unit.

Semi-Perched Aquifer (SPA)—This semi-perched *aquifer* exists within *permeable* interbeds (QCipi) of the upper confining unit (QC1). The top of the *aquifer* ranges from sea level to more than 200 ft MSL, with a thickness of 10 to 50 feet. About 25 percent of wells are reported to be completed in this unit.

Sea Level Aquifer (SLA)—The Sea Level *aquifer* (QA1) is extensive, widely used, and mostly confined by QC1. The top of the *aquifer* ranges from -200 to 200 ft MSL, with a typical thickness of 25 to 200 feet. Fifty-three percent (53%) of wells are completed in the SLA.

Glaciomarine Aquifer (GMA)—This *aquifer* consists of water-bearing units within a thick sequence of fine-grained glaciomarine drift (QA2). The top of the *aquifer* ranges between more than -500 to -300 ft MSL, with a typical thickness of 20 to 300 feet. Several of the Bainbridge Island's production wells and at least 4 domestic wells are completed in this *aquifer*, representing about 2 percent of wells.

Fletcher Bay Aquifer (FBA)—The FBA (QA3) is the deepest identified *aquifer* on Bainbridge Island. Several large production wells are completed in this *aquifer* including the Fletcher Bay Well. The top of the *aquifer* ranges between more than -900 to slightly less than 600 ft MSL, with a typical thickness of 50 to 300 feet. While representing only about 1 percent of wells on Bainbridge Island, the metered KPUD and COBI FBA wells provide approximately 30 percent of the estimated total Island *groundwater* production.

Bedrock Aquifer—Less than 1 percent of the wells are completed in the sedimentary Blakely Harbor and Blakeley formations on the south end of Bainbridge Island.

Other wells on Bainbridge Island are either completed in water bearing zones within confining units or have an indeterminate *aquifer* completion zone.

COBI's monitoring well network is distributed across the six Bainbridge Island *aquifers* as follows: 16 in the Perched *Aquifer*, 7 in the Semi-Perched *Aquifer*, 32 in the Sea Level *Aquifer*, 5 in the Glaciomarine *Aquifer*, 9 in the Fletcher Bay *Aquifer*, and 1 in the Bedrock *Aquifer*. Aspect has updated the USGS *groundwater* model to include one new public supply well (KPUD North Bainbridge Well #10), for a total of 1,470 Group A and B public wells and exempt wells estimated to be active on Bainbridge Island.

Aquifer Concerns and Observed Conditions

There are two primary concerns in protecting an *aquifer* system. These are quality and quantity.

Water Quality

Seawater Intrusion

One of the most common *groundwater* quality concerns for Islands or other saltwater shorelines is saltwater intrusion, which is the movement of saltwater into a freshwater

aquifer. Where the source of saltwater is marine water such as Puget Sound, this process is known as seawater intrusion. Seawater intrusion occurs when the saltwater/freshwater interface moves inland from offshore. Freshwater is less dense than saltwater and so freshwater will float above saltwater. It is the pressure of the overlying freshwater that keeps the interface offshore. Excessive pumping or overuse of the overlying freshwater will pull the interface toward the shoreline and possibly inland.

Some of our *aquifers* such as the *shallow* Perched and Semi-Perched *aquifers* are, generally, not in contact with saltwater and, therefore, generally not susceptible to seawater intrusion (an exception being where these *aquifers* are present near the shoreline).

The Sea Level *Aquifer* and our deeper *aquifers* can be susceptible. How susceptible can vary from *aquifer* to *aquifer* and, even within the same *aquifer*, depending upon local conditions. In order to monitor for potential seawater intrusion, the most common practice is to measure chloride concentration and specific conductivity in *groundwater*. The City's *Groundwater* Management Program conducts annual chloride sampling in *aquifers* or wells susceptible to seawater intrusion. The established Early Warning Level, or EWL, is a chloride concentration >100 mg/L or any 4 consecutive samples showing an increasing trend. To date, no wells in the City's monitoring network (including Kitsap Public Utility District and the City's Water Utility wells) exceeded the EWL, and no trends in chloride results were noted.

Chloride concentrations typically varied between 2 mg/L and 15 mg/L. Results in 2013 and 2014 in the Fletcher Bay *Aquifer* indicate slightly elevated chloride above historic baseline concentration, but not upward trending results. However, these *should* be monitored for continued changes.

Additionally, the City's *groundwater* model was run by USGS in 2010 and updated, recalibrated and run again by Aspect Consulting in 2016 to examine the potential for seawater intrusion under different water production (e.g., growth) scenarios. Model projections indicated no seawater intrusion. It *should* be noted that the model is designed to observe regional scale conditions, but the scale is not fine enough to assess very localized conditions such as one or two wells along the shoreline. Therefore, it is important to continue to monitor in vulnerable areas to catch potentially developing local conditions.

One example is an elevated chloride level measured in one well in the Seabold area in 2006 prior to the development of the City's *Groundwater* Management Program. As there was no established program in place at the time, there was no immediate follow up sampling/study to confirm seawater intrusion rather than a source other than seawater intrusion. Other common sources of chloride in *groundwater* include connate, or very-old, *groundwater*, septic system effluent, very hard *groundwater*, windblown sea spray, and *recharge* from irrigation, agricultural practices, and well disinfection.

Chloride from any of these sources can result in elevated levels of chloride in an *aquifer*

or well. Erroneously interpreting chloride concentration data without more detailed study may result in what is called a “false positive,” where a test identifies a problem that does not, in fact, exist. That is why follow up investigation using site-specific assessments, is necessary before seawater intrusion can be confirmed. The City, the Kitsap Public Health District, and the Kitsap Public Utility District have teamed up to scope a localized, focused study in the Seabold area for potential funding in 2017.

Nitrates

According to USGS research, nitrate is the most commonly found pollutant in *groundwater* nationwide, particularly in rural areas. Nitrate levels in drinking water above EPA’s Maximum Contaminant Level (or MCL) of 10 mg/L can have serious health effects primarily for infants, but also pregnant women and individuals undergoing treatment with antioxidant medications. Nitrate converts to nitrite in the digestive tract which causes a condition called methemoglobinemia which lowers the oxygen in the blood stream. In infants this is called “Blue Baby Syndrome.” Brain damage, even death, can occur.

High nitrate levels in *groundwater* can also indicate the possibility that other contaminants may be present in the water such as bacteria or pesticides.

The typical sources of nitrate in *groundwater* include the application of fertilizers and pesticides, mostly from agricultural row crop farming, but commercial and *residential use* can be significant sources as well (such as lawns, parks, golf courses, ballfields, nurseries, and extensive gardens). Other sources include industrial processes and wastewaters, the land application of wastewater treatment plant sludge or biosolids, and on-site septic system returns.

Although the *Groundwater* Management Program does not, at present, routinely monitor nitrate in *groundwater*, the City’s consultant examined nitrate data from the Kitsap Public Health District (KPHD) as part of the 2015-2016 assessment. Nitrate data were not found to exceed EPA’s MCL of 10 mg/L. Nitrate data for Group A and B public wells and exempt wells did not indicate any trends. Data submitted to KPHD for exempt wells are typically single results and are insufficient to calculate any trends. However, the maximum result during the last 15 years (2000–2014) was 5.17 mg/L in 2007. There are no apparent trends over time or geographically across the island.

Other Water Quality Concerns

Generally, *groundwater* quality on the Island is very good. However, moderate levels of iron and manganese are naturally-occurring and common. Although neither of these minerals normally exceed EPA’s standards for drinking water, they can influence odor and taste and stain fixtures. Many *public water systems* and some private systems use filtration devices to remove or reduce these minerals.

Sole Source Aquifer Designation

In 2013, the Bainbridge Island *Aquifer* System was designated a Sole Source *Aquifer*. Sole Source *Aquifer* Designation can apply to one *aquifer* or a system of multiple *aquifers* as is the case with Bainbridge Island.

The Sole Source *Aquifer* Designation Program is an EPA program authorized under the Safe Drinking Water Act of 1974. Section 1424(e) defines a sole source *aquifer* as “the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health.”

The EPA more specifically defines a sole or principal source *aquifer* as one which supplies at least 50 percent of the drinking water consumed in the area overlying the *aquifer*, and that these areas have no alternative drinking water source(s) which could physically, legally, and economically supply all those who depend upon the *aquifer* for drinking water.

The program and designation are specifically designed to protect the quality of drinking water by helping to prevent contamination of the *aquifer* system. It provides this protection by raising the level of awareness of the vulnerability of the *aquifer* system to contamination and our dependence on the system for drinking water supply.

Further, it requires additional EPA scrutiny of federally-funded projects. EPA inspects proposed projects for potential to contaminate the underlying *aquifer*, and, where appropriate, requires modifications and mitigations to prevent contamination.

However, this additional scrutiny applies to federally-funded projects only, and some projects such as highways and agriculture may be exempt if they meet criteria laid out in pre-established memorandums of understanding between the EPA, the Department of Transportation, the Department of Agriculture, or other agencies.

Water Quantity **Water Levels**

The City's *Groundwater* Management Program currently monitors water levels in public and domestic wells Island-wide and in all six *aquifers*. Water level is an indicator for water quantity, and water level data are assessed against the program's early warning level, or EWL, for safe yield. The EWL for safe yield is a declining water level equal to or greater than ½ foot or more per year over a 10-year period that cannot be attributed to below average rainfall.

Individual well levels were reviewed for trends and compared against the EWL for safe yield. All wells were found to be below the EWL. Water levels in the *aquifers* did not indicate any *aquifer*-wide trends, and only two individual wells were noted for further review.

An exempt well (25N/02E-21P03) in the Sea Level *Aquifer* showed an apparent average decline of approximately 0.56 feet/year over the 8-year period of record.

However, further review of the water level measurement method history showed that it changed twice over the period of record from a steel tape to a sonic water level meter and, then, back to steel tape. The results collected via sonic water level meter appeared

to be inconsistent compared to the results before and after using the steel tape, a more rudimentary, but more reliable, measurement method. Therefore, the sonic level readings were removed from the analysis. Once removed, the remaining data were below the EWL. Water-use data were not available for the well. However, the well owner indicated to COBI that no known change in water use occurred over the period of record. Continued long-term monitoring of this well using the steel tape method, as planned by COBI, will determine if there is a significant trend in water level decline over time.

Group A system well 'Island Utility Well #1' (25N/02E-34F07) in the Fletcher Bay *Aquifer* has shown an average decline of approximately 0.49 feet/year from 2004-2014. Although this does not yet exceed the EWL, it is very close to approaching it. Therefore, further monitoring and assessment are warranted. The well is situated next to two other Fletcher Bay *Aquifer* production wells (Island Utility Well #2, Island Utility Well #4) within the same water system. Production data have not been available for these wells, which makes it unclear if declines are related to changes in water use over the period. This system has just transitioned to operation by KPUD in mid-2015, which is now reviewing available information to understand the current conditions within that water system.

Additional data review will continue as the system *infrastructure* is updated to see if additional water use, system loss, or some other factor contributed to the historical decline. No other Fletcher Bay *Aquifer* wells monitored exhibited a similar declining trend, so it appears that this issue is specific to this well and not an *aquifer*-wide concern.

Aquifer System Carrying Capacity

The City, as a community, has yet to fully-define or characterize a sustainable *aquifer* system. Some initial characteristics are keeping the saltwater/freshwater interface offshore and saltwater out of the freshwater supply, and maintaining a balanced water budget for the *aquifer* system in order to prevent depletion.

To help provide some baseline information about these initial characteristics and expected impacts to the system due to *climate change*, Aspect Consulting conducted a system *carrying capacity* model assessment. The *aquifer* system *carrying capacity* assessment was based on those safe-yield indicators with EWLs described above using *aquifer* water levels and chloride concentration. The on-Island *groundwater* balance for the entire *aquifer* system (water budget) was also evaluated. The *groundwater* balance components do not have EWLs, but were evaluated to provide additional context on the predicted changes in *groundwater* conditions.

Water Level Changes: The following rates of *groundwater* level change were based on comparing current and predicted *groundwater* levels in 100 years:

- The Perched *Aquifer* system showed an average 0.10 foot per year of water level decrease at 25 locations simulated across the Island;

- The Semi-Perched *Aquifer* system showed an average 0.13 foot per year of water level decrease at 12 locations simulated across the Island;
- The Sea Level *Aquifer* system showed an average 0.09 foot per year of water level decrease at 49 locations simulated across the Island;
- The Glaciomarine *Aquifer* showed an average 0.02 foot per year of water level decrease at 6 locations simulated across the Island; and
- The Fletcher Bay *Aquifer* showed an average 0.15 foot per year of water level decrease at 9 locations simulated across the Island.

The predicted *groundwater* level changes over a 100-year timeframe were less than the COBI EWLs.

Saltwater/freshwater Interface: The predictive model results indicated that, despite these slow declines, *groundwater* from the Bainbridge Island *aquifer* system flows to Puget Sound and keeps the freshwater/seawater interface at a distance from the Bainbridge Island shoreline. All wells within the Bainbridge Island shoreline maintained chloride concentrations less than 100 mg/L, and no trend in concentrations was observed based on predictive model results.

Water Budget: Though the predicted *groundwater* level declines did not appear to induce seawater intrusion, they can have impacts on other components in the system such as discharge to *streams* to help maintain summertime flows. Therefore, it is important to examine the components of the system's water budget.

Similar to a financial budget, a water budget represents a balance of inputs and outputs. If one component goes up or down, some other component(s) must go up or down to compensate. *Groundwater* balance components are typically difficult to measure directly (such as *recharge* and *groundwater* underflow). Thus, this *groundwater* balance assessment relies on modeling results without actual field measurements.

Based on the 2011 USGS Report, the relationship between *groundwater* balance inputs and outputs for the Bainbridge Island *aquifer* system is shown in the following equation:

$$R_{ppt} = W_{ppg} + D_{sw} + (GW_{ps} - GW_{kp})$$

Where:

Inputs include:

R_{ppt} is precipitation *recharge*.

Outputs include:

W_{ppg} is *groundwater* withdrawals;

D_{sw} is *groundwater* drainage to surface water (such as seeps to bluffs, creeks, *streams*, etc.); and

$(GW_{ps} - GW_{kp})$ is the net lateral *groundwater* underflow (*groundwater* flow toward Puget Sound submarine seeps (GW_{ps}) and *groundwater* flowing from the Kitsap peninsula in deeper *aquifers* (GW_{kp})).

To balance the modelled 50-percent increase in *groundwater* withdrawals and the 20-percent decrease in *recharge* due to *climate change*, the model showed projected changes in *groundwater* drainage to surface water (approximately 40-percent decrease) and lateral *groundwater* flow (approximately 24-percent decrease). Figure 6, excerpted from Aspect's technical memorandum (*Bainbridge Island Groundwater Model: Aquifer System Carrying capacity Assessment (Task 3 Scenario)*, 2016) compares the water balance components under current and projected conditions, based on model results.

The Bainbridge Island *groundwater* model results showed *aquifer* storage will be reduced by approximately 11,000 million gallons between current and projected conditions, reflecting the water level decreases described above. These *groundwater* balance results *should* be carefully interpreted, considering that the limited grid resolution may not be sufficient to accurately simulate *groundwater* discharge to surface water, and that the model has not been calibrated to observed flows.

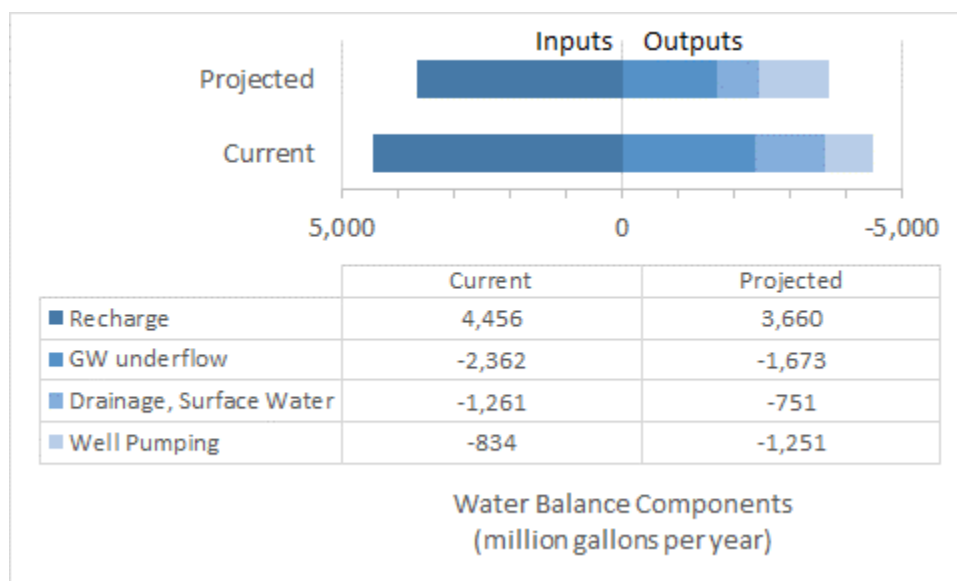


Figure 2. Current and Projected *Groundwater* Balance Components.

As shown in Fig. 2, well pumping (also called production) is the amount of water taken out of the system through wells (water use). The 50% increase in this component represents the expected increase in water use due to population growth.

Drainage to surface water is *groundwater* contribution to surface water features such as *wetlands*, lakes, and *streams*. The 40% reduction shown here may have an impact on maintaining summer baseflows and water temperatures. It is cautioned that the model as it is currently constructed is not specifically designed to provide an estimate as to how much stream flow will be impacted, but it could be modified to answer specific questions around this topic in future model runs.

Groundwater underflow is the amount of *groundwater* that seeps or discharges into Puget

Sound at the shoreline. This value is influenced by the water levels in the *aquifers*, and the reduction shown here represents the impact from project water level decreases. The key importance to this component is that there has to be enough underflow to provide the pressure to keep the saltwater/freshwater interface offshore and prevent seawater intrusion.

Recharge is the portion of precipitation or rainfall that infiltrates the ground and reaches the *aquifer*. The estimated 20% reduction shown in the water balance accounts for *climate change* impacts.

The amount of *groundwater* underflow and discharge to *streams* is driven by the geological makeup of the *aquifer* system. Therefore, we have no direct ability to control these budget components. Rather it is the components of well pumping and *recharge* that we have more ability to directly control. We can reduce well pumping by reducing our water use through aggressive water conservation measures.

Though we cannot control precipitation patterns, we can take measures to enhance *recharge* through creative water capture and return measures (from the rain barrel scale to large scale *infrastructure*) and through protective *land use* measures such as *low impact development* and protection of *aquifer recharge areas* and other *aquifer* conservation areas.

Aquifer Recharge Areas

Understanding the Island's *aquifer recharge* system is important for both *groundwater* quantity and quality. The identification and protection of high *aquifer recharge areas* is important both from the standpoint of *groundwater* quantity and quality. *Aquifer recharge areas* have geologic and soil conditions which allow high rates of surface water infiltration, which also means they are particularly susceptible to contamination. Increasing *impervious surfaces* through development reduces the amount of *recharge* available to the Island's *aquifers*. At the same time, *runoff* from *impervious surfaces* in developed areas contains increased contaminants. Efforts to protect and preserve the Island's natural water supply are warranted, as the resources that would be required to clean up after contamination or to secure a new source would be prohibitive.

Where development overlays *aquifer recharge areas*, special considerations need to be made to preserve the volume of *recharge* available to the *aquifer* and to protect the *groundwater* from contaminants such as nitrates, biocides and heavy metals found in septic systems and *stormwater runoff*. The most extensively used *aquifer* underlies 85% of the Island and occurs under all zoning classifications.

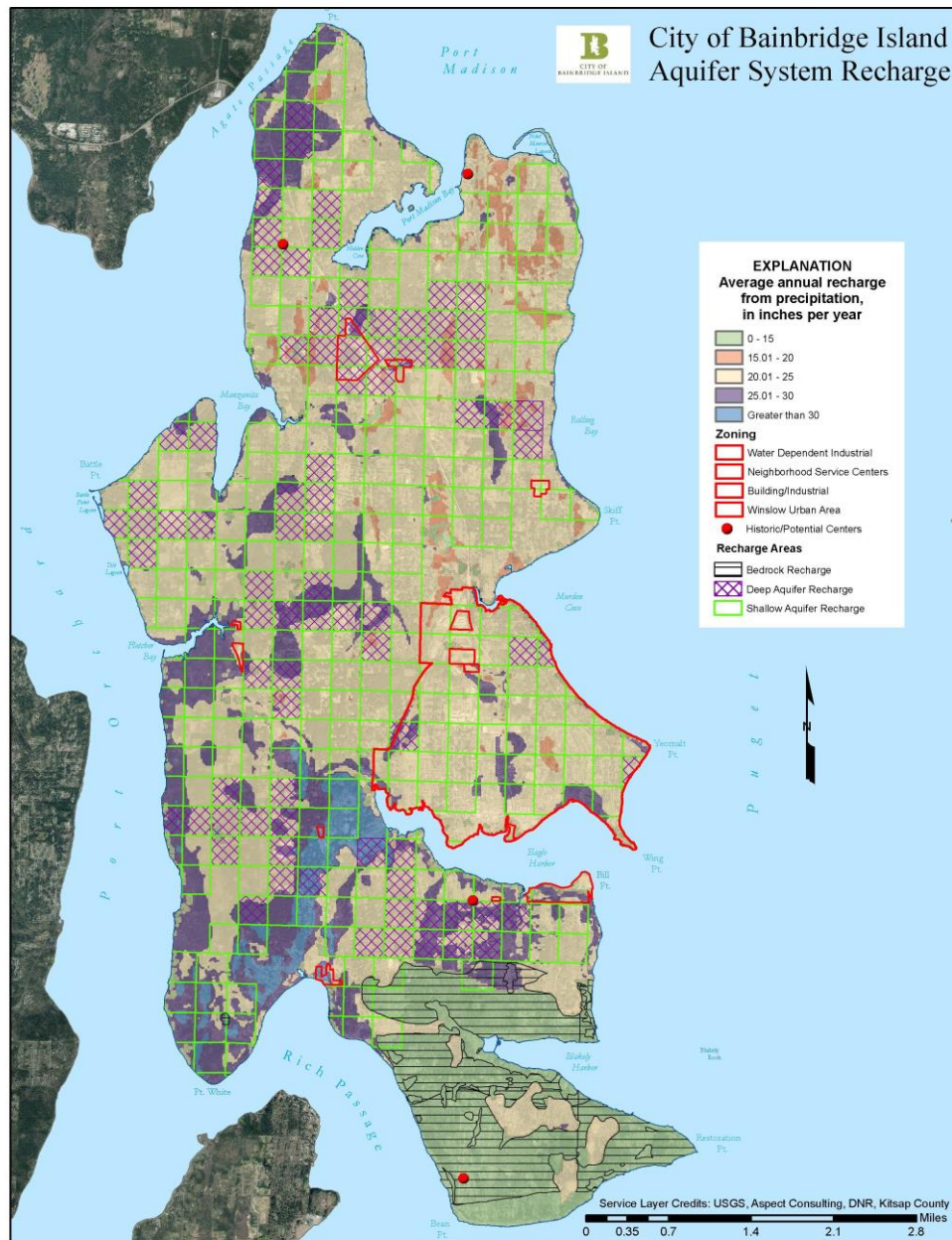
To help the City assess *recharge* areas for special protection or designation, the model was run to determine *recharge* areas on the Island.

The Bainbridge Island model results indicate that areas across much of the Bainbridge Island area may have a critical recharging effect on *aquifers* that are sources of drinking

water. Primary findings include:

Wells in *shallow aquifers* (including the Sea Level Aquifer and above) may withdraw water that originates as *recharge* relatively close to the well head and is younger than 100 years old. See figure below which shows the *recharge* areas for *shallow aquifers* (green squares).

Fig. 3 – Aquifer System Recharge



Not all *groundwater* on Bainbridge Island comes from *recharge* on Bainbridge Island. Model results indicate several wells tapping the deeper *aquifers* withdraw water that

originates as *recharge* from areas on the Kitsap Peninsula and is greater than 1,000 years old. Wells in deep *aquifers* (including the Glacio-Marine *Aquifer* and the Fletcher Bay *Aquifer*) may withdraw water that originates as *recharge* relatively distant from the wellhead and is greater than 100 years old. See Figure 3 above that shows the *recharge* areas for deep *aquifers* (cross-hatched area).

Wells in bedrock were not simulated in the Bainbridge Island model as the method of water particle tracking was not appropriate for fractured bedrock. However, the bedrock is also considered a critical aquifer recharge area (CARA), because water supply wells have been installed at various depths in bedrock, and potable water supply is from *recharge*. Bedrock *recharge* area is shown as hatched area.

Surface Water **MOVED UP TO BE BEFORE WATERSHED SECTION**

The surface waters of Bainbridge Island provide aesthetic, recreational, economic, and ecological benefits to Island citizens. Boating, fishing, and shellfish harvest are important recreational and economic activities, and the Island's *streams*, lake, harbors, shorelines, and *wetlands* provide habitat for a diversity of fish and wildlife species.

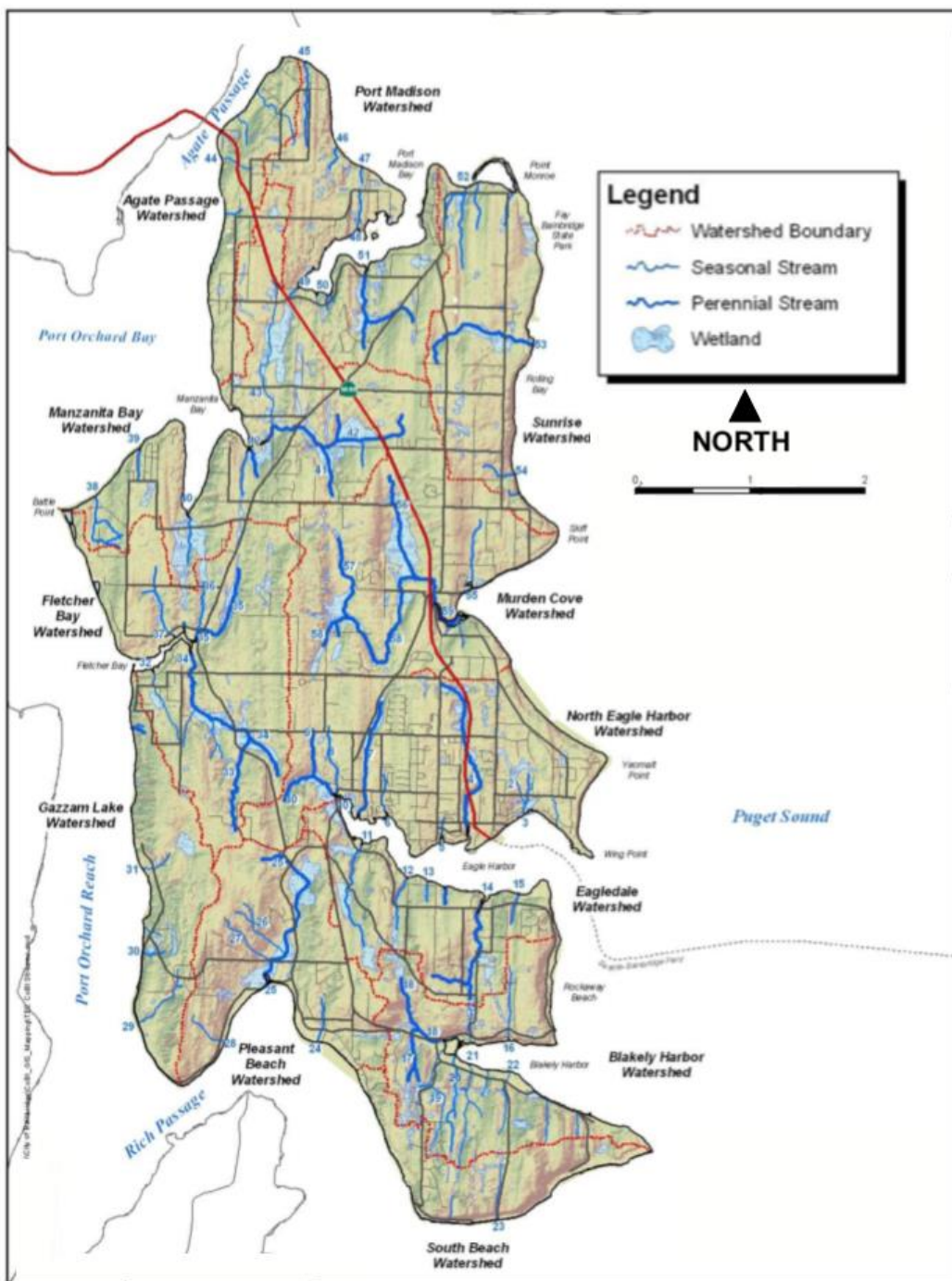
The harbors and numerous coves around the Island host anchorage, moorage, marinas, boat launches, waterfront access, and swimming beaches. Eagle Harbor, specifically, hosts marinas which provide permanent moorage for live-aboards and an open water mooring and anchoring area for the Island's live-aboard community.

In addition to providing forage and habitat for salmon, otter, sea lions, and waterfowl and swimming, boating, and fishing areas for people, the majority of the Island's shorelines and adjacent nearshore areas are designated commercial shellfish growing and harvest areas. Many shoreline residents recreationally harvest shellfish such as clam and geoduck as well. The Shoreline Master Plan also regulates aquaculture activities.

Watersheds

Surface water flows from high geographic points to lower elevations, collecting in *streams* and *wetland* systems within the *watersheds* of the Island. *Watershed* boundaries are determined by Island topography where ridgelines define the boundaries.

Fig. 4 – Watershed and Stream names



Bainbridge Island contains twelve distinct *watersheds* with 59 seasonal and perennial *streams* that contribute fresh water to Puget Sound (see Figure 4 excerpted from the Water Quality and Flow Monitoring Program Final Monitoring Plan, 2008). Five harbors, twelve estuarine *wetlands*, one lake, 1,242 acres of *wetland*, 965 acres of tidelands (between mean high and mean low tide), and 53 miles of shoreline comprise the remainder of the surface water system.

Each surface water feature serves a critical function in preserving hydrologic connectivity within the *watershed*. Recent research is finding that even those features that are seasonal such as ephemeral or intermittent *streams* and seasonally-flooded *wetlands* are critical faunal and floral habitat providers, biogeochemical processors, and connectivity corridors.

Stormwater

Stormwater is generated when the ground becomes saturated and rainwater drains overland to the nearest surface water body or rainfall encounters hard or *impervious surfaces* and drains into manmade drainage ditches, catch basins, and pipes.

There is no question that *stormwater runoff* is the leading transport pathway of pollution into Puget Sound and its associated *wetlands*, creeks, *streams* and rivers. Not only does it carry pollutants such as trash, gas, oil, and metal-laden sediment from road surfaces and parking lots; pesticides, fertilizers, and other chemicals used in lawn care, pet waste, and animal waste in agricultural areas, but the volume of *stormwater* generated by *impervious surfaces* has tremendous force and can cause erosion and damage to in-stream and *wetland* habitat.

Peak flows that follow immediately after a storm can be much greater than existed when the land was in a natural state with vegetative cover, causing *streams* to expand and overflow and creating flooding conditions on adjacent lands.

Therefore, *stormwater* has long been considered, at best, a nuisance and flooding hazard to be collected and delivered downstream as quickly and efficiently as possible and, at worst, a waste stream to be collected and removed from the *watershed*. Existing land development methods and *stormwater* drainage system *infrastructure* are designed to do just that.

However, as early as the year 2000, water-starved areas of the country started to view *stormwater* as a vital resource rather than a waste stream, first by limiting its generation by reducing *impervious surface*; then, retaining and infiltrating it on site where feasible; and, lastly, protecting it from pollution, capturing it, and reusing it to the maximum extent possible. On June 16, 2015, the California State Water Resources Control Board adopted an order that provides a framework to promote integrated *stormwater* capture and reuse to improve water quality, protect local beaches, and supplement water supplies. The new [*stormwater* discharge] permit focuses on using *stormwater* as a resource and encourages

green infrastructure and groundwater recharge (Stormwater Report, Water Environment Federation, June 2015).

The Pacific Northwest is not considered water-starved and local conditions are not nearly so dire as in California. However, *climate change* predictions suggest that local water supplies likely will see some reduction in *recharge*. Rainfall patterns will further tax existing ailing, and undersized drainage *infrastructure* and possibly diminish summertime stream flows and water quality, and warming temperatures will increase summertime stream temperatures. Therefore, local municipalities are, also, rethinking their view of *stormwater* and many have already started evaluating and planning for *climate change*, especially in *stormwater* drainage system maintenance and retrofit. In 2009, Kitsap County adopted resolution 109-2009, *Creating Kitsap County “Water as a Resource” Policy*, in which the county resolved to treat all of its waters, including *stormwater*, as a vital resource, incorporating *low impact development* and water capture and reuse into all of its *land use* and utility management planning.

Observed Surface and Stormwater Conditions

Department of Ecology Surface Water Quality Assessment

Every two years the State Department of Ecology (Ecology) identifies polluted water bodies and submits a list of impaired water bodies, called a 303(d) list, to the Environmental Protection Agency (EPA) for approval in accordance with the federal Clean Water Act. This assessment is based on the assumption that each water body *should* support certain designated uses. Some of these uses are swimming and boating, fish and shellfish rearing and harvest, and wildlife habitat.

Ecology designates water bodies that frequently or consistently fail to meet standards or criteria as *Impaired*. Water bodies that only infrequently fail to meet standards are classified as *Waters of Concern* or *Sediments of Concern* if the sampled matrix was sediment. These assessments use water, fish/shellfish tissue, habitat, and sediment data.

Ecology’s [2012 Water Quality Assessment](#) determined that one stream, one harbor, two coves, one lagoon, and three Island-adjacent nearshore marine areas on Bainbridge Island were *Impaired* by one or more pollutants and were not able to provide the full recreational, habitat, and aesthetic benefits they once offered. An additional one bay, one harbor, and 28 other Island-adjacent nearshore marine areas were identified as *Waters of Concern* and/or *Sediments of Concern* for periodic excursions beyond the allowable standard or criteria for one or more pollutants.

Ecology’s proposed [2014 Water Quality Assessment](#) (under review by the EPA at the time of this printing), designated an additional two *streams* as *Impaired* by at least one pollutant. Tables 2-5 on the following pages detail those water bodies classified as

Impaired or of Concern according to the analyzed matrix (water, tissue, habitat, and sediment, respectively).

It *should* be noted that much of the sediment data were collected prior to 2003, some as early as the 1990's. These may not be representative of current conditions. Further, many of the identified pollutants are legacy pollutants resulting from historic *land use* such as large-scale, row-crop *farming* and the active lumber industry at the turn of twentieth century. The City's sediment sampling data collected in 2008 and 2013 may be more representative of current inputs to these water bodies. These data are summarized in the next section, *City Surface Water Quality Assessment*.

One example of legacy pollution is the former [Wyckoff Creosote Facility](#) located at the mouth of Eagle Harbor. Sites where sediments are contaminated by hazardous waste are regulated and managed through the Model Toxics Control Act (MTCA). Sites such as the former Wyckoff Creosote Facility, due to the complexity and size, are normally addressed through [EPA's Superfund program](#).

However, water bodies listed on the 303(d) list require TMDLs (Total Maximum Daily Loads) where identified sources of the pollutant of concern are allocated a pollutant load reduction in order for that water body to meet criteria. Currently, the City is a stakeholder in the [Sinclair and Dyes Inlets Fecal Coliform Bacteria Total Maximum Daily Load \(TMDL\)](#). Four of the Island's *watersheds* are captured within the TMDL drainage basin boundaries (Fletcher Bay, Gazzam Lake, Pleasant Beach, and South Beach *Watersheds*).

Fig. 5 – Four tables from the Ecology Approved 2012 Water Quality Assessment

Table 2. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Water

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Middle)	Bacteria	Impaired	Impaired
	Copper	Waters of Concern	Waters of Concern
Eagle Harbor (Inner)	Dissolved Oxygen	Waters of Concern	Waters of Concern
	Temperature		
Agate Passage - Bridge	Dissolved Oxygen	Waters of Concern	Waters of Concern
Agate Passage - Agate Point	Dissolved Oxygen	Waters of Concern	Waters of Concern
	Temperature		
Rich Passage - Pleasant Beach Cove/Pleasant Beach	Bacteria	Impaired	Impaired
	Dissolved Oxygen		
	pH	Waters of Concern	Waters of Concern
Rich Passage - Point White	Dissolved Oxygen	Waters of Concern	Waters of Concern
Rich Passage - Fort Ward	Bacteria	Waters of Concern	Waters of Concern
	Dissolved Oxygen		
	pH		
Port Orchard Passage - Lower Crystal Springs	Dissolved Oxygen	Impaired	Impaired
	Bacteria		
	Temperature		
Port Orchard Passage - Upper Crystal Springs	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - Fletcher Bay	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - Battle Point	Bacteria	Waters of Concern	Waters of Concern
Port Orchard Passage - South of Rolston	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Mouth)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Middle)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Blakely Harbor (Inner)	Bacteria	Waters of Concern	Waters of Concern
Puget Sound (Central) - Murden Cove	Bacteria	Impaired	Impaired
Puget Sound (Central) - Rolling Bay	Bacteria	Waters of Concern	Waters of Concern
Port Madison Bay - Point Monroe	Bacteria	Waters of Concern	Waters of Concern
Port Madison Bay - Mouth	Bacteria	Waters of Concern	Waters of Concern
Springbrook Creek	Bacteria	Impaired	Impaired
Ravine Creek	Bacteria	---	Impaired
Murden Creek	Bacteria	---	Impaired

Table 3. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Tissue

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Outer)	Benzo(a)pyrene	Impaired	Impaired
	Benzo(a)anthracene		
	Benzo[b]fluoranthene		
	Benzo[k]fluoranthene		
	Chrysene		
	Dibenzo[a,h]anthracene		
	Indeno(1,2,3-cd)pyrene		
	PCB		
Puget Sound (Central) - Rockaway	Chrysene	Impaired	Impaired

Table 4. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Habitat

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Puget Sound (Central) - Murden Cove	Habitat	Impaired	Impaired
Port Madison - Point Monroe Lagoon	Habitat	Impaired	Impaired

Table 5. Ecology Approved 2012 and Proposed 2014 Water Quality Assessment - Sediment

Waterbody	Parameter or Pollutant	2012	2014 (Proposed)
Eagle Harbor (Outer)	1,2,4-Trichlorobenzene	Impaired	Impaired
	1,2-Dichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	2-Methylnaphthalene		
	2-Methylphenol		
	4-Methylphenol		
	Acenaphthene		
	Acenaphthylene		
	Anthracene		
	Arsenic		
	Benzo(a)anthracene		
	Benzo(a)pyrene		
	Benzo(g,h,i)perylene		
	Benzo(a,b)fluoranthene (b+k+j), Total		
	Benzoic Acid		
	Benzyl Alcohol		
	Bis (2-Ethylhexyl) Phthalate		
	Bioassay		
	Butyl Benzl Phthalate		
	Cadmium		
	Chromium		
	Chrysene		
	Copper		
	Dibenzo(a,h)anthracene		
	Dibenzofuran		
	Diethyl Phthalate		
	Dimethyl Phthalate		
	Di-n-butyl Phthalate		
	Di-n-octyl Phthalate		
	Fluoranthene		
	Fluorene		
	Hexachlorobenzene		
	Hexachlorobutadiene		
	HPAH		
	Indeno(1,2,3-c,d) Pyrene		
	Lead		
	LPAH		
	Mercury		
	Naphthalene		
	N-Nitrosodiphenylamine		
	PCB		
	Pentachlorophenol		
	Phenanthrene		
	Phenol		
	Pyrene		
	Silver		
	Zinc		
Rich Passage - Pleasant Beach	Benzoic Acid	Sediments of Concern	Sediments of Concern
Rich Passage - Pleasant Beach Cove	Benzoic Acid	Sediments of Concern	Sediments of Concern
Port Orchard Passage - Upper Crystal Springs	Benzoic Acid	Sediments of Concern	Sediments of Concern
Port Orchard Passage - South of Rolston	1,2,4-Trichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2-Dichlorobenzene		
	Benzyl Alcohol		
Port Orchard Passage - Manzanita Bay	1,2,4-Trichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2-Dichlorobenzene		
Puget Sound (Central) - Wing Point	1,2-Dichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	Hexachlorobenzene		
	Pentachlorophenol		
Puget Sound (Central) - Rockaway	1,2-Dichlorobenzene	Sediments of Concern	Sediments of Concern
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	Hexachlorobenzene		
	Hexachlorobutadiene		
	Naphthalene		
Puget Sound (Central) - Blakely Harbor (Middle)	N-Nitrosodiphenylamine	Sediments of Concern	Sediments of Concern
	1,2-Dichlorobenzene		
	1,2,4-Trichlorobenzene		
	1,4-Dichlorobenzene		
	2,4-Dimethylphenol		
	Dibenzo(a,h) anthracene		
	Hexachlorobenzene		
	Hexachlorobutadiene		
	N-Nitrosodiphenylamine		
	Pentachlorophenol		

Commercial Shellfish Growing Area and Recreational Harvest Area Assessment

Department of Health (DOH) [routine bacterial and biotoxin assessments](#) of recreational shellfish harvest areas and commercial shellfish growing and harvest areas demonstrate a significant loss of designated uses. The entire east, north, and west shorelines are closed to recreational butter and varnish clam harvest, and the southern shoreline is closed to recreational varnish clam harvest. Only one small area around Point White is open to recreational harvest.

Most commercial shellfish growing area around the Island is open to harvest. However, two segments of commercial shellfish growing areas along Agate Passage and Crystal Springs are currently closed due to bacterial contamination in shoreline drainages to include private drains, *stormwater* outfalls, and *streams*. Point Monroe Lagoon is restricted for commercial harvest, requiring that shellfish be transplanted to approved growing area waters for a specified amount of time in order to naturally cleanse themselves of contaminants before they are harvested for market. Commercial Geoduck Tract 07850 at Restoration Point was closed four times in 2012-2013 for biotoxin. Commercial Geoduck Tract 07000 at the mouth of Manzanita Bay has been closed 14 times in the last five years for biotoxin, and is currently closed at the time of this printing.

In addition to annual commercial growing area reports, DOH publishes an annual threatened areas report to bring attention to monitoring sites where bacteria concentrations are close to exceeding the criteria. The [2015 report](#) (based upon 2014 data) identified one monitoring site (#457) immediate outside of the north side of the mouth of Fletcher Bay as a threatened site and one site (#418) along the southern shore of Blakely Harbor as a site of concern.

Swimming Beach Assessment

The Departments of Ecology and Health's BEACH Program conducts [swimming beach monitoring](#) for bacteria during the swimming season (Memorial Day through Labor Day). Typically, bacteria levels in marine waters tend to be fairly low in the summertime. In fact, most beach closures on the Island have been associated with *sanitary sewer* spills such as the Kitsap Sewer District #7 Fort Ward spill in 2012, and the City's sewer main breaks along the north side of Eagle Harbor in 2014.

In 2015, three of the Island's swimming beaches (Fay Bainbridge Park, Joel Pritchard Park, and Eagle Harbor Waterfront Park) were monitored. Bacterial concentrations in 2015 were acceptable, and there were no beach closures in 2015.

City Surface Water Quality Assessment

In 2007, the City received a Centennial Clean Water Fund Grant from Ecology to design and implement a long-term monitoring program to assess the ecological

health of the Island's freshwater (*streams* and lakes), marine water (harbors, bays, and nearshore areas), and *stormwater* discharge.

The Water Quality and Flow Monitoring Program (WQFMP) was pilot-tested in 2007-2008 and expanded to Island wide long-term status and trends monitoring in 2010. The program currently conducts routine monitoring for stream and *stormwater* chemistry, stream and nearshore sediment chemistry, rainfall, stream and *stormwater* flow, and stream biodiversity (benthic macroinvertebrates). Every five years, the program also conducts targeted storm event monitoring to assess *stormwater runoff* impacts in *streams* and nearshore marine waters.

Although the program's [Final Monitoring Plan](#) is comprehensive, staffing and funding are limited. Current monitoring gaps are *stormwater* best management practice effectiveness monitoring, lake monitoring, marine biological assessments (fish, aquatic macrophytes, phytoplankton, and benthic invertebrates), routine marine water chemistry, and freshwater and marine habitat assessments.

The program released its first edition [State of the Island's Waters](#) report in 2012 which summarized findings from data collected through Water Year 2011 (September 2011). Program staff are currently assessing data collected through Water Year 2015 (September 2015) and working on a second edition of the report. The following summary reflects assessments completed at the time of this printing.

Bacteria

All of the seven nearshore marine waters monitored during WY2014 targeted storm event monitoring failed to meet the state criteria for fecal coliform bacteria, while 13 (86%) of the 15 *streams* monitored on a monthly basis failed to meet the state criteria in WY2015. Given these results and the number of state listings for bacterial impairment (see Figure 5, Table 2 above), bacteria has proven to be the most prevalent pollutant in freshwater and marine water resources Island wide.

As described above in *Commercial Shellfish Growing Area and Recreational Shellfish Harvest Area Assessment*, commercial shellfish harvest areas along approximately twelve miles of shoreline are currently closed due to elevated bacteria in shoreline drainages, and nearly the entire Island is closed to recreational harvest of varnish and butter clams due to the biotoxins usually associated with bacteria.

Bacterial contamination is common to every season and every *watershed*, urban or rural, and its sources are as varied as the landscape itself. In rural *watersheds*, the most common sources of bacteria are failing septic systems, improperly-managed pet and livestock wastes, and wildlife. In urban *watersheds*, the most common sources are improperly-managed pet waste, improper food handling, poorly-maintained food waste receptacles, failing septic systems, poorly-maintained or failing *stormwater* drainage

infrastructure (private and public), failing *sanitary sewer infrastructure*, and illicit cross-connections between the *sanitary sewer* and the *stormwater* drainage systems.

In marine environments, common sources of bacteria aside from discharges from upland sources are improper boat waste disposal, failing *sanitary sewer infrastructure*, and wildlife.

Nutrients

Although they are essential to all plant, human, and aquatic life, phosphorus and nitrogen concentrations, if excessive, can overstimulate growth of aquatic vegetation and algal blooms. Applying Ecology's Water Quality Index using the ratio of total nitrogen to total phosphorus, Island *streams* generally rate of low to moderate concern during the wet season and moderate to high concern during the dry season relative to other Puget Lowland *streams*. In 2013, a year of below average rainfall, most *streams* rated of moderate concern even in the wet season, and 3 *streams* reached a high level of concern. During the extreme dry period in the summer of 2015, 7 *streams* climbed to a level of high concern.

Nuisance algal blooms have increased along eastern shorelines and harbors (see Ecology's [Eyes Over Puget Sound](#)). These blooms are not only aesthetically unpleasant, but dying and decomposing algae use up aquatic life-sustaining oxygen and render aquatic habitat unusable such as in Murden Cove and Point Monroe Lagoon which are covered year-round with ulvoid macroalgae (see Figure 5, Table 4 above).

Though more study is needed to establish natural background levels for Island *streams* and it is well-understood that a significant amount of nitrogen-loading in Puget Sound comes from the ocean through the Strait of Juan de Fuca via tidal action, ecosystems with naturally high background levels are particularly sensitive to any additional loading from human sources.

Aside from the natural sources of nutrients from forests and *wetlands*, human inputs include agricultural and residential fertilizers, phosphate-based laundry detergents and commercial washing agents, yard waste such as grass clippings and other vegetation dumped along shorelines and *streams*, failing residential septic systems (in some cases even functioning systems), failing municipal sewer *infrastructure*, and improperly handled pet and livestock waste.

Ammonia

Ammonia is considered a priority pollutant by the EPA, since it is toxic to both humans and aquatic life. Therefore, there are established acute and chronic criteria for ammonia in surface waters. Acute criterion is the concentration of a substance at which injury or death to an organism can occur as a result of short-term exposure. Chronic criterion is

the concentration of a substance at which injury or death to an organism can occur as a result of repeated or constant exposure.

Out of the 11 fish-bearing *streams* monitored on a routine basis, 8 (73%) consistently exceeded the chronic criteria, while the remaining 3 had seasonal exceedances only. During WY2014 targeted storm event monitoring, all 7 *streams* and corresponding nearshore areas monitored exceeded the chronic criteria. Murden Cove frequently exceeded the acute criteria. The cove exceeded acute criteria 14 times during the 3-year Murden Cove *Watershed* Nutrient and Bacteria Reduction Project (2013-2015).

Sediment and Metals NOTE: THIS SECTION EXPANDED

During rain events, sediment-laden *stormwater runoff* is a prominent pollutant on the Island. Not only does sediment cause excessive scouring and erosion, de-stabilizing *slopes* and stream banks and threatening property, but subsequent downstream deposition clogs stream bottoms, smothers fish eggs, and increases siltation rates in the Island's harbors and bays. Sediment also reduces fish's ability to find food and damages their gills as well.

Though ambient or background levels of suspended sediment in *streams* and nearshore areas are generally quite low, monitoring results show significant increases in suspended sediment in *streams*, nearshore marine waters, and *stormwater* outfall discharge during intense rain events.

Sediment-intolerant macroinvertebrate species (an important food source for fish) have diminished, some entirely, from half of the Island *streams* monitored, especially Ravine and Murden Creeks. In a recent King County assessment of the City's stream macroinvertebrate sampling data, it was observed that all of the City's sites typically had lower Fine Sediment Sensitivity Index scores than unimpacted reference sites, indicating that fine sediment may be a source of impairment to stream biological health.

Grain size analysis of stream substrate sampled in 2008 and 2013 demonstrates a significant shift in grain size in three streams. Ravine Creek's stream bottom shifted from 41.53% gravel, 56.79% sand, and 1.66% silt and clay in 2008 to 9.62% gravel, 85.34% sand, and 6.42% silt and clay in 2013. Schel Chelb Creek's stream bottom shifted from 82.66% gravel, 16.6% sand, and 0.29% silt and clay to 11.59% gravel, 82.94% sand, and 5.47% silt and clay. Only Springbrook Creek substrate showed a "coarsening" shift from 30.26% gravel, 65.66% sand, and 4.08% silt and clay to 40.7% gravel, 57.09% sand, and 2.21% silt and clay.

Equally concerning are the pollutants that sediment carries with it such as heavy metals. In King County's stream macroinvertebrate assessment, it was observed that Ravine Creek had the highest Metals Tolerance Index score, indicating that metal pollution may be a source of impairment to stream biological health in that stream.

Ambient heavy metal concentrations generally meet criteria. However, targeted storm event sampling in 2014 and 2015 revealed elevated metals concentrations in stormwater runoff and exceedances in some streams and nearshore areas during heavy rain events. Stormwater, Springbrook Creek, and Issei Creek all exceeded acute aluminum criteria. Stormwater also exceeded acute criteria for zinc and chronic criteria for copper. Ravine Creek, Manzanita Creek, Springbrook Creek, and Issei Creek exceeded the chronic criteria for copper, and Springbrook Creek, Ravine Creek and Schel Chelb Creek exceeded chronic criteria for lead. More concerning, Schel Chelb Creek exceeded acute criteria for zinc and cadmium.

Out of the seven harbors and bays sampled, only Eagle Harbor nearshore areas near the mouth of Ravine Creek/WSDOT Ferry Maintenance Facility and stormwater exceeded the chronic criteria, and for copper only.

Anywhere soil is exposed to rain there is a risk of sediment-laden *runoff*. Construction sites, croplands, sand and gravel pits or accumulations, and any other cleared or grubbed land surfaces are all potential sources of sediment. Likewise, poorly-maintained parking lots, *stormwater* drainage systems, and roadways become significant sources of sediment, particularly sediment laden with heavy metals. Metals are also carried to *streams* from uncontrolled discharges from auto washing washwater and industrial discharges.

Climate change may lead to an increase in landslide risk, erosion and sediment transport in the fall, winter, and spring seasons, while reducing the rates of these processes in the summer. Quantitative projections are limited, because of the challenge in distinguishing *climate change* impacts from factors such as development patterns and forest management.

Sediments that line the bottoms of water bodies are considered the long-term “record-keepers” of pollutants that move through the water body as many of the pollutants settle to the bottom and remain in the sediment for some time. Stream and marine nearshore bottom sediments collected in 2008 and 2013 were analyzed for contaminant chemistry to include gasoline, diesel, semivolatiles, polyaromatic hydrocarbons (PAHs), and metals. None of the detected contaminants that have state or federally-established criteria exceeded marine or freshwater sediment criteria.

Relatively few contaminants were detected in stream sediments. The most common were diesel range organics (specifically motor oil or lube oil) and Butyl Benzyl Phthalate. Motor oil or lube oil was detected in all 6 streams monitored in 2008 and 6 of the 9 streams monitored in 2013. Sediments from one stream (Murden Creek) contained gasoline range organics as well, though at very low levels.

Butyl Benzyl Phthalate (BBzP) is mostly used as a plasticizer for polyvinylchloride (PVC). However, it is commonly used as a plasticizer for vinyl foams, which are often used as floor tiles, and other uses such as traffic cones, food conveyor belts, and artificial leather. BBzP was not detected in any of the stream sediments analyzed in 2008, but appeared as new detections in 8 of the 9 streams monitored in 2013 though at very low levels.

Additional contaminants were detected in two streams. In 2008 4-Methylphenol (antimicrobial agent) was detected in Schel Chelb Creek sediments, but at a level barely above detection limits. It was not detected in the 2013 sample. Dibutyl Phthalate was detected in the 2013 sample, but, again, barely above the detection limit.

Though not detected in the 2008 sample, Ravine Creek's 2013 sediment sample contained low levels of PAHs (Benzo(a)anthracene, Chrysene, Fluoranthene, Phenanthrene, and Pyrene) and Bis (2-Ethylhexyl) Phthalate. PAH's come from burning carbon-containing compounds. PAHs in air are produced by burning wood and fuel for homes. They are also contained in gasoline and diesel exhaust, soot, coke, and cigar and cigarette smoke. Foods that contain small amounts of PAHs include smoked, barbecued, or charcoal-broiled foods, roasted coffees, and sausages.

Due to its suitable properties and the low cost, Bis (2-Ethylhexyl) Phthalate (DEHP) is widely used as a plasticizer in manufacturing of articles made of PVC, particularly in medical supplies. Plastics may contain 1% to 40% DEHP. It is also used as a hydraulic fluid and as a dielectric fluid in capacitors. DEHP is also used as a solvent in glowsticks.

Significantly more contaminants were detected in marine nearshore sediments, especially PAH's. Eagle Harbor, Blakely Harbor, and Murden Cove had the highest number of detections, while Manzanita Bay, Fletcher Bay, Hidden Cove, and Pleasant Beach Cove had fewer detections. However, nearly all of the detected PAH's decreased in concentration or fell below detection limits between 2008 and 2013 in all of the nearshore areas sampled.

Similar to stream sediments, motor oil or lube oil was detected in all of the nearshore areas sampled. Additionally, gasoline range hydrocarbons were detected in the nearshore area adjacent to the monitored stormwater outfall (OFL169), though barely above the detection limit.

Also similar to stream sediments, plasticizers DEHP and/or BBzP were newly detected or detected at increasing concentrations in all 9 nearshore areas sampled in 2013.

Although none of the contaminants exceeded sediment criteria where such criteria exists, it is prudent to continue to monitor over time for either new occurrences of a contaminant or an increase in a contaminant level, indicating potential developing or ongoing contaminant input.

In-situ Physical Chemistry

Several Island *streams* and nearshore areas experience periodic excursions in pH, temperature, and dissolved oxygen. Excursions in pH are fairly rare. However, Hawley (East and West Forks), Murden, Schel Chelb, Manzanita, Springbrook, Issei, and Mac's Dam Creeks and Murden Cove suffer chronically low levels of dissolved oxygen. While most only exceed standards in the summertime, Murden and Schel Chelb Creeks exceed standards year-round.

Several *streams* that had historically maintained acceptable water temperatures year-round, have started to exceed temperature criteria during the summertime since 2012 with excursions occurring more frequently over time. These *streams* are Hawley (East and West Forks) Springbrook, Schel Chelb, Linquist, Gazzam Lake, and Mac's Dam Creeks. Two nearshore areas (Eagle Harbor at Ravine Creek and Murden Cove) frequently exceed temperature criteria as well.

Continuous temperature and dissolved oxygen sensors were deployed in three separate reaches of Murden Creek as part of the 2013-2015 Murden Cove *Watershed* Nutrient and Bacteria Reduction Project. Summertime daily maximum temperatures at all three locations exceeded the criteria with temperatures increasing and exceeding criteria more often in the downstream reach. Similarly, summertime daily minimum dissolved oxygen levels exceeded criteria at all three sites. However, upstream reaches only infrequently exceeded criteria during the summertime, while oxygen levels were significantly lower in the downstream reach and exceeded criteria year-round.

Despite observed improvements in some water quality parameters such as phosphorus and bacteria over the project period, in-stream chemistry stayed the same or worsened. This indicates that the impact is most likely habitat driven (lack of canopy cover, reduced or absent buffers, lower summertime stream flows) rather than an illicit discharge of polluted water.

These excursions in physical chemistry, especially temperature and dissolved oxygen, significantly impair these waters' ability to support aquatic life.

Flow and Land Use Impacts on the Biological Community

Hydrology is perhaps the most fundamental driver of physical, chemical, and biological processes in streams and is often considered a "master variable" controlling geomorphology, substrate stability, faunal and floral habitat suitability, thermal regulation, metabolism, biogeochemical cycling, and the downstream flux of energy, matter, and biota [Power et al. 1988; Resh et al. 1988; Poff and Ward 1989; Poff 1996; Poff et al. 1997; Dodds et al. 2004] (McDonough, Hosen and Palmer, 2011).

In 2015, the City contracted with King County Department of Natural Resources and Parks, Water and Land Resources Division to conduct a stream benthos and hydrologic

evaluation of the City's stream benthic macroinvertebrate data and continuous flow gauging data.

Flow data analysis showed that stream flows increase more quickly following rain events and generally have higher peaks than would be expected under forested conditions. These results were generally consistent with increasing levels of urbanization upstream of each gauge and consistent with other data collected in other Puget Sound *watersheds*.

The average Benthic Index of Biotic Integrity (B-IBI) scores spanning all years of data were very poor for Ravine Creek; poor for Issei, Murden, and Whiskey Creeks; and fair for Cooper, Manzanita, Springbrook, and Woodward Creeks. None of the eight sites investigated had average scores that showed good or excellent stream benthic communities, although two sites (Cooper and Springbrook) did have individual sampling years that had good scores. Again, these data were generally consistent with the level of development in the study *watersheds* and with data collected in other Puget Sound *watersheds*.

Five statistically significant upward or downward B-IBI component metric trends were identified at four creek sites. Two Murden Creek site metrics showed a worsening trend in species diversity and percentage of pollution tolerant species versus intolerant species. Manzanita Creek showed an improving trend in species richness and both Cooper and Issei Creek showed an improving trend in percentage of pollution intolerant species versus tolerant species.

King County also examined three additional benthic macroinvertebrate diagnostic metrics for organic pollution (i.e., animal waste including human waste), fine sediment, and metals. The Fine Sediment Sensitivity Index was generally lower at all Bainbridge sites relative to reference sites, suggesting that fine sediment inputs may be a factor in benthic impairment in these *streams*. If confirmed through evaluation of sediment conditions at these sites, the cause is unlikely related exclusively to development as some of the stream basins are relatively undeveloped. It is possible that at least in some instances, past *land use* (e.g., historical logging and *farming* activities) is a factor in causing excess sediment to be (or to have been) delivered to these *streams*. Any development within these basins may also be a contributing factor as well; potentially delivering fine sediment through construction and land clearing activities and through stream bank erosion resulting from increased peak flows.

All three diagnostic metrics and the flashiness hydrologic metrics indicate that Ravine Creek is suffering from multiple stressors that potentially include organic and metal pollution, geomorphic alteration, and flashier flows, all typical of an urban stream. There was only one statistically significant upward or downward trend in these three additional metrics – an improving trend in metals-intolerant species in Issei Creek.

Habitat

As stated above in *City Surface Water Quality Assessment*, limited resources prevent the City's monitoring program from actively monitoring for freshwater and marine water habitat assessment aside from limited sediment sampling in select stream and adjacent nearshore areas (addressed above in Sediment and Metals section). Most of what we know about our nearshore marine and freshwater habitat is based upon work by non-profit entities such as the Bainbridge Island Land Trust, the Puget Sound Restoration Fund and the Bainbridge Island *Watershed* Council and outside agencies such as Washington State Department of Fish and Wildlife (WDFW), Washington State Department of Natural Resources (DNR), Ecology, Wild Fish Conservancy, and the Suquamish Tribe. Limited *land use*/land cover information is available through aerial photography and light detection and radar (*LIDAR*) technology, as well.

Land cover

Bainbridge Island encompasses an area of 17,471 acres, or approximately 28 square miles. The primary land cover is tree-cover at 73%, or 12,760 acres. Grass/scrub lands, developed areas with *impervious surfaces* and other coverages comprise 15%, 11% and 1%, respectively, with combined coverage of 4,712 acres (Table 1 next page).

Land use type does not vary widely by any great degree across the island due to a low percentage of industrial or commercial land development and the lack of available or developed *farm/range* land. The island's *land use* is consequently dominated by *residential uses* (75%). Other *land uses* such as recreation land (7%), agricultural (6%), transportation corridors (6%), commercial/light manufacturing (2%), *forest land-use* (2%) and public facilities (2%), make up the remainder of the *land use* as a percentage of the total acreage on the island. With a total overall population of 23,630 the greatest population *density* occurs at Winslow, Island Center, Lynwood Center and around the coastline of the island. Outside of urbanized areas, the Island is generally characterized by scattered, small communities, homes on acreage, and large parcels of undeveloped land.

Stream type

In 2014, the Wild Fish Conservancy (WFC) completed stream typing for Bainbridge Island as part of the [West Sound Watersheds, Kitsap Peninsula \(WRIA 15\) Stream Typing Project](#).

WFC's website states, "Water typing is the state-sanctioned process of mapping the distribution of fish and fish habitat. Regulatory water type maps are used to regulate *land use* decisions adjacent to *streams*, ponds, and *wetlands*. Because existing (modeled) regulatory maps often significantly misrepresent the presence, location, and extent of fish habitat, the effectiveness of state and local government fish habitat protection regulations is compromised. More information about the water typing process and its significance is available at: <http://wildfishconservancy.org/resources/maps/what-is-water-typing>."

WFC classified fish and fish habitat in Island *streams* and ground-truthed regulatory maps of stream presence and location, identifying an additional 25 previously unknown/unmapped miles of stream with 698 acres of previously unprotected habitat buffer on Bainbridge Island. The City is currently using WFC's updated stream data.

Figure 6. City of Bainbridge Island Watershed Land Cover Statistics

<u>Watershed Name /Code</u>	<u>Watershed Area (Acres)</u>	<u>Watershed Size Ranking</u>	<u>Breakdown of Total Watershed Landcover (% of Total Area)</u>								
			<u>Forest</u>	<u>Wetlands</u>	<u>Natural</u>	<u>Grass & Turf</u>	<u>Bare Ground</u>	<u>% Total Impervious Area</u>	<u>Developed</u>	<u>Surface Water</u>	<u>Other</u>
<u>Agate Passage / AGPS</u>	<u>599.96</u>	<u>12</u>	<u>79.52</u>	<u>2.75</u>	<u>82.28</u>	<u>4.25</u>	<u>3.08</u>	<u>9.17</u>	<u>16.51</u>	<u>0.17</u>	<u>1.04</u>
<u>Blakely Harbor / BLKH</u>	<u>1,369.73</u>	<u>7</u>	<u>87.04</u>	<u>1.08</u>	<u>88.13</u>	<u>2.25</u>	<u>3.62</u>	<u>5.75</u>	<u>11.62</u>	<u>0.22</u>	<u>0.04</u>
<u>Eagledale / EGD</u>	<u>1,094.12</u>	<u>9</u>	<u>65.10</u>	<u>2.95</u>	<u>68.04</u>	<u>8.83</u>	<u>4.36</u>	<u>18.45</u>	<u>31.63</u>	<u>0.33</u>	<u>0.00</u>
<u>Fletcher Bay / FLBY</u>	<u>2,114.01</u>	<u>3</u>	<u>75.83</u>	<u>1.09</u>	<u>76.92</u>	<u>8.60</u>	<u>6.04</u>	<u>7.89</u>	<u>22.52</u>	<u>0.56</u>	<u>0.00</u>
<u>Gazzam Lake / GZLK</u>	<u>886.45</u>	<u>10</u>	<u>83.96</u>	<u>0.79</u>	<u>84.74</u>	<u>3.96</u>	<u>1.86</u>	<u>7.82</u>	<u>13.64</u>	<u>1.62</u>	<u>0.00</u>
<u>Manzanita Bay / MZBY</u>	<u>2,296.34</u>	<u>1</u>	<u>72.25</u>	<u>1.92</u>	<u>74.18</u>	<u>9.76</u>	<u>6.76</u>	<u>8.85</u>	<u>25.37</u>	<u>0.46</u>	<u>0.00</u>
<u>Murden Cove / MDCV</u>	<u>2,046.36</u>	<u>4</u>	<u>73.65</u>	<u>2.34</u>	<u>75.99</u>	<u>7.65</u>	<u>6.46</u>	<u>9.48</u>	<u>23.58</u>	<u>0.43</u>	<u>0.00</u>
<u>North Eagle Harbor / NEGH</u>	<u>2,184.91</u>	<u>2</u>	<u>50.64</u>	<u>2.46</u>	<u>53.11</u>	<u>8.30</u>	<u>10.57</u>	<u>26.95</u>	<u>45.82</u>	<u>0.44</u>	<u>0.63</u>
<u>Pleasant Beach / PLBH</u>	<u>1,437.63</u>	<u>5</u>	<u>70.66</u>	<u>3.00</u>	<u>73.66</u>	<u>6.01</u>	<u>6.64</u>	<u>13.56</u>	<u>26.21</u>	<u>0.13</u>	<u>0.00</u>
<u>Port Madison / PTMD</u>	<u>1,388.31</u>	<u>6</u>	<u>81.85</u>	<u>1.18</u>	<u>83.03</u>	<u>6.26</u>	<u>3.75</u>	<u>6.36</u>	<u>16.37</u>	<u>0.30</u>	<u>0.31</u>
<u>South Beach / SHBH</u>	<u>711.89</u>	<u>11</u>	<u>76.59</u>	<u>1.20</u>	<u>77.79</u>	<u>4.16</u>	<u>10.88</u>	<u>6.54</u>	<u>21.58</u>	<u>0.63</u>	<u>0.00</u>
<u>Sunrise / SNRS</u>	<u>1,342.24</u>	<u>8</u>	<u>79.08</u>	<u>1.92</u>	<u>81.00</u>	<u>4.49</u>	<u>6.41</u>	<u>7.97</u>	<u>18.87</u>	<u>0.13</u>	<u>0.00</u>
<u>TOTAL ACREAGE</u>	<u>17,471.95</u>	<u>-</u>	<u>12,760.44</u>	<u>333.49</u>	<u>13,093.92</u>	<u>1,194.76</u>	<u>1,089.27</u>	<u>1,994.28</u>	<u>4,278.31</u>	<u>74.84</u>	<u>24.88</u>

Notes:

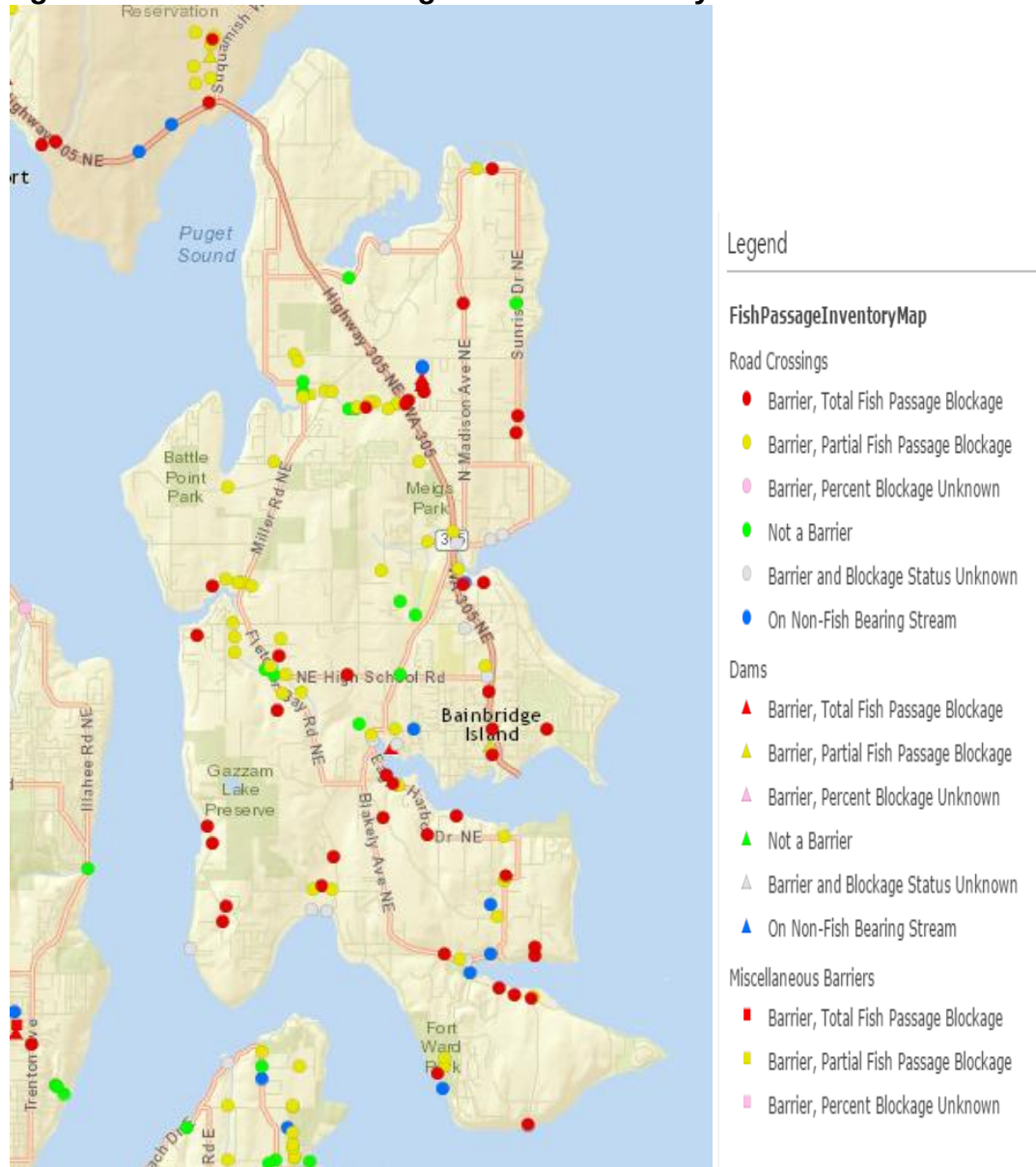
** Statistical sources include: Battelle GIS database, CoBI GIS data, and CoBI Level II Assessment (Kato & Warren, 2000)

(Water Quality and Flow Monitoring Program – Final Monitoring Plan, COBI, 2008)

Fish Passage Barrier Inventory

In 2014 the Washington Department of Fish and Wildlife (WDFW) completed fish passage assessments on Bainbridge Island *streams*. As part of this assessment, WDFW identified 43 total passage barriers (40 road crossings and 3 dams) and 45 partial passage barriers (43 road crossings, 1 dam, and 1 miscellaneous) (see Figure 7).

Figure 7. WDFW Fish Passage Barrier Inventory



<http://wdfw.maps.arcgis.com/home/webmap/viewer.html>

City of Bainbridge Island City Council Agenda Bill



PROCESS INFORMATION

Subject: 8:55 PM Islandwide Transportation Plan Update, AB 16-148 - Public Works (Pg. 146)	Date: 11/1/2016
Agenda Item: UNFINISHED BUSINESS	Bill No.: 16-148
Proposed By: Public Works Director Barry Loveless	Referrals(s):

BUDGET INFORMATION

Department: Public Works	Fund:
Expenditure Req: N/A	Budgeted? Budget Amend. Req?

REFERRALS/REVIEW

:	Recommendation:
City Manager: Yes	Legal: Yes Finance: Yes

DESCRIPTION/BACKGROUND

Action Item:

City Council to consider scheduling a public hearing for Tuesday, November 15, 2016, on the Islandwide Transportation Plan update.

Background:

City staff have been working on updating the Islandwide Transportation Plan (IDP) concurrently with the Transportation Element of the Comprehensive Plan. The IWTP was previously presented to the City Council at the October 18, 2016, Study Session.

To date, reviews from the public and the Planning Commission have been taken into consideration and incorporated into the Plan, as necessary. To view the current Plan, please visit: www.bainbridgewa.gov/708.

The next step is to schedule a public hearing.

RECOMMENDED ACTION/MOTION

Motion:

I move that the City Council schedule a public hearing for Tuesday, November 15, 2016, regarding the updated Islandwide Transportation Plan.

ATTACHMENTS:

Description	Type
▣ Table of Contents	Backup Material
▣ Chapter 1	Backup Material
▣ Chapter 2	Backup Material
▣ Chapter 3	Backup Material
▣ Chapter 4	Backup Material
▣ Chapter 5	Backup Material
▣ Chapter 6	Backup Material
▣ Chapter 7	Backup Material
▣ Chapter 8	Backup Material
▣ IWTP Appendix Link	Backup Material

ISLAND WIDE TRANSPORTATION PLAN

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CHAPTER 1 INTRODUCTION



The City of Bainbridge Island is a unique community with a unique set of transportation needs. The City, which encompasses the entire island, is primarily residential and includes a variety of land uses and intensities of development from the urban Winslow area to farmlands and suburban communities. Each of these land uses has different transportation needs that ideally would be addressed separately; however, the entire roadway system operates as a system.

The backbone of the transportation system is the SR-305 corridor that runs from the Bainbridge Island ferry terminal north to the Agate Pass Bridge. This State facility not only provides regional travel to and from the Island, but also is an important connection for local traffic needs. The Island's transportation system is truly multimodal, with commute, school, recreation, and shopping trips being commonly taken by, foot, bicycle, bus, auto, and ferry. While Winslow and other more urban areas have sidewalks, bicycle lanes, and widened shoulders, which facilitate non-motorized movement, there are many areas of the City where pedestrians and bicyclists must share the vehicle travel lanes or walk on narrow, unimproved shoulders. Non-motorized issues have been discussed as part of the City of Bainbridge Island's Non-Motorized Transportation Plan, which is a sub-element to this Plan.

Traffic has increasingly become an issue for the community. Traffic from growth has resulted in increased roadway volumes, often coupled with high vehicle speeds and congestion at intersections. This traffic increases conflicts with non-motorized users. In addition, the release of the ferry and other commuter traffic creates surges of vehicles onto the highway and the entire roadway system. During peak commute hours and tourist season, the highway can be overwhelmed, resulting in congestion and delays.

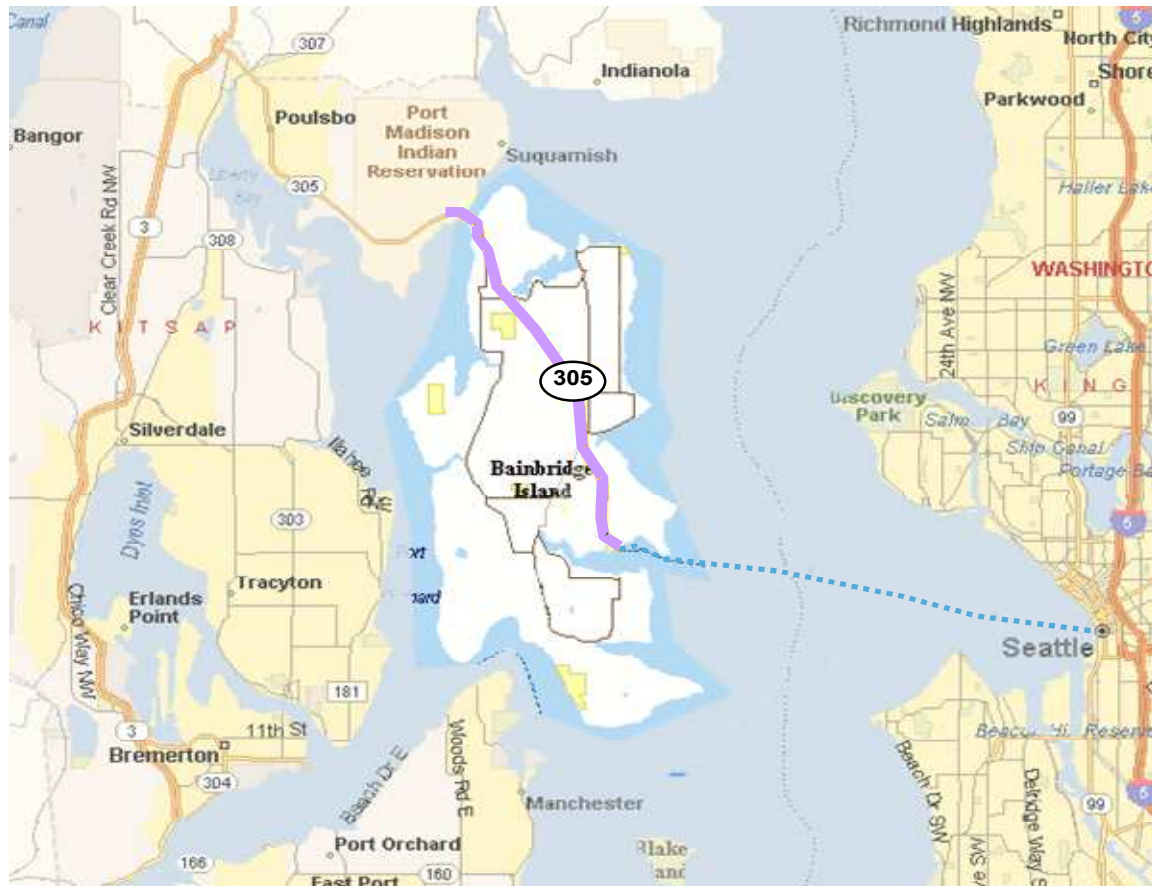
Plan Purpose

The Island Wide Transportation Plan (IWTP) represents an update and expansion of the 2004 Island-wide Transportation Study (IWTS) and the Transportation Element of the Comprehensive Plan. The IWTP focuses on the issues and desires of the Bainbridge Island community to develop a transportation system that will accommodate vehicle traffic patterns within a multimodal environment. Figure 1-1 shows the study area and primary transportation features in relationship to the surrounding region.

The purpose of this effort is to provide an in-depth analysis of the existing and future traffic patterns to determine future transportation needs and solutions. The effort will include the development of a transportation model based on recent traffic counts, land use data, and roadway information that has allowed the analysis of existing and future travel needs. The emphasis in the model is to identify congested areas and the improvements needed to accommodate existing future vehicle traffic in light of the needs of all of the Island's transportation modes of travel.



Figure 1-1
Island Transportation Cotext



Credit: Microsoft Expedia

Island Wide Transportation Study
City of Bainbridge Island





The IWTP incorporates information from other transportation planning efforts to provide a consistent approach to transportation issues. The IWTP uses information from the Winslow Master Plan and Comprehensive Plan to provide a document that directs transportation planning efforts throughout the community.

Planning History

In 1994, the City's Transportation Plan provided discussion and analysis of the transportation needs of the Island, with the exception of the Winslow subarea that was studied separately. The final study was adopted and incorporated in the Transportation Element of the City's 1994 Comprehensive Plan. Since that time, a number of Comprehensive Plan updates have occurred to clarify, modify, or revise various sections of the study, including those in the Transportation Element.



In 1995, the Winslow Master Plan, as a sub-element of the Comprehensive Plan, provided focus of the transportation needs in the Winslow and ferry terminal areas. In 2002, a Non-Motorized Transportation Plan was adopted to propose a transportation system to meet the needs of pedestrians, bicyclists, and other non-motorized transportation users.

The City's Non-Motorized Transportation Advisory Committee (NMTAC) and Staff have worked together to evolve the City's level of thinking for non-motorized planning. This work has been reflected in Comprehensive Plan updates. Future updates will provide an opportunity to formalize these on-going efforts and build upon the original 2003 effort.

The NMTAC and Staff recognize the huge effort that was involved with creating the original Island-wide Transportation Study. This study is comprehensive and is still largely relevant today. Those involved also recognize that to repeat an endeavor of that scale will take considerable volunteer and staff time as well as financial resources. At this time, the City has been very successful in procuring grant funding to provide for the delivery of a number of significant capital improvements including the Sound to Olympics (STO) Trail, the Wing Point Way Reconstruction, and the Wyatt Way Reconstruction projects. The priority for resources at this time is best spent in implementation as these improvements include grant funds with local match components.

Each of these efforts was developed with extensive effort and time by members of the community through steering committees, public participation, workshops, and surveys. Their influence is part of this plan and represents the values and thoughts of the community.

Relationship to Comprehensive Plan

The City of Bainbridge Island has developed its Comprehensive Plan under the requirements of the Growth Management Act (GMA). The GMA requires that jurisdictions identify existing transportation system characteristics, establish level of service ratings, identify existing and future deficiencies, develop improvement projects and strategies to mitigate deficiencies, and analyze projected revenues to ensure that necessary improvements will be constructed concurrent with demand.



The City is currently undergoing an update to its Comprehensive Plan, to be completed in 2016. The Island-wide Transportation Study (now IWTP) was last updated in 2004, and is being updated concurrently with the update of the Comprehensive Plan.

The IWTP addresses and provides a detailed analysis of a variety of transportation issues affecting the community. Elements of the IWTP were used to develop the Transportation Element included as part of the updated Comprehensive Plan. It is intended that the IWTP be adopted by Council as a reference document to the Transportation Element in the Comprehensive Plan.

The Transportation Element of the Comprehensive Plan provides for transportation policy. This includes identification of transportation issues, establishing a comprehensive vision for transportation, and setting overarching goals. The IWTP provides the technical data and analysis to facilitate transportation planning and provides for implementation of the vision, goals, and policies established in the Transportation Element.

Plan Update

Public involvement of the Plan was limited to comments taken at regular NMTAC meetings during the development of the update and at the time the draft plan is presented to the Planning Commission for comment.

This update will be accomplished by Staff working with the NMTAC to review and comment on a chapter by chapter basis. The City has engaged the services of Transportation Solutions Incorporated (TSI) to support the City Council in considering implementation of Transportation Impact Fees. This effort involves extensive traffic counts and the creation of a transportation model. TSI's scope of services includes updating information and exhibits in the update.

Plan Organization

The Island Wide Transportation Plan is organized in chapters. Each chapter addresses one or more of the Plan goals and discusses how the policies are to be implemented by the City. The chapters are as follows:

- Chapter 1: Introduction
- Chapter 2: Sustainability and Quality of Life
- Chapter 3: Operations and Mobility
- Chapter 4: SR305
- Chapter 5: Safety and Maintenance
- Chapter 6: Non-motorized Transportation
- Chapter 7: Other Transportation Systems
- Chapter 8: Financing



A matrix is provided below showing where in the IWTP the information is contained to address Growth Management Act requirements for transportation planning in accordance with RCW 36.70A.070(6).

<u>Table 1 -1, GMA requirements for Transportation Planning.</u>	
Land use assumptions used in estimating travel. (i)	Refer to Chapter 3.
Estimated traffic impacts to State owned transportation facilities. (ii)	Refer to Chapter 4.
Inventory of transportation facilities and services. (iii-A)	Refer to Figure 3-1, Roadway Classifications, Figure 7-1, Ferry Routes and Figure 7-5 Kitsap Transit Routes.
Level of service standards for locally owned arterials and transit routes. (iii-B)	Refer to Chapter 3 and Chapter 7.
Level of service standard for state highways. (iii-C)	Refer to Chapter 3.
Actions to correct current level of service deficiencies. (iii-D)	Refer to Chapters 3 and 4.
Traffic forecasts. (iii-E)	Refer to Chapters 3 and 4.
Identification of needs to meet future local and state system demands. (iii-F)	Refer to Chapters 3 and 4.
Probable funding capacity (iv-A)	Refer to Chapter 8.
Multi-year financing plan to meet road and transit level of service standards over the next 6 years. (iv-B)	Refer to Chapter 8.
Probable funding shortfalls and strategies to address funding needed to meet or reassess level of service standards. (iv-C)	Refer to Chapter 8.
Assessment of impacts of plan on neighboring jurisdictions. (v)	Refer to Chapters 3, 4, and 7.
Demand Management Strategies. (vi)	Refer to Chapter 7.
Non-Motorized element planned improvements. (vii)	Refer to Chapter 6 and 8.



CHAPTER 2

SUSTAINABILITY AND QUALITY OF LIFE



One of the most important concerns in the Bainbridge Island community is the relationship between the transportation system elements and the character of the community, livability, public health, and the environment. This chapter discusses each of these elements of the transportation system, identifies how this Plan responds to these issues, and provides examples of transportation system features that illustrate these concepts. This chapter provides additional context to support the transportation issues, policies, and goals in the Transportation Element of the Comprehensive Plan.

Transportation plays a large role in the quality of life of Bainbridge Island residents. The ferry terminal to Seattle and the Agate Pass Bridge are the only two options for traveling off the island. Bainbridge is largely a bedroom community of Seattle and Kitsap County and many Islanders commute off-island by ferry or by bridge. Lengthy commute times by ferry or being stuck in traffic on SR305 mean spending hours away from family, friends, and activities. Speeding and cut-through traffic makes neighborhood streets feel unsafe. Reliable and efficient transportation on and off island is important to balance jobs and housing and maintain the quality of life for Island residents.

Poor quality or non-existent bicycle and pedestrian facilities can be a deterrent to residents walking or bicycling for transportation, connecting to transit, traveling to schools and parks, as well as for recreational purposes. Non-motorized facility networks provide options for active modes of transportation allowing residents to make healthy lifestyle choices. Walkability and bikeability are desirable characteristics of neighborhoods. An increasing number of Island residents are choosing to walk and bike to work and to obtain goods and services in the more densely developed areas of the Island...

How people choose to travel is a key element of both environmental sustainability and quality of life. Transportation is a significant contributor to climate change, as it accounts for a high percentage of greenhouse gas emissions. Emissions from transportation, especially diesel particulates, are a significant health hazard. The City's Comprehensive Plan focuses growth in areas such as Winslow and the Neighborhood Centers. With good planning and implementation of mixed use and higher densities within these areas, development can lead to a more sustainable growth pattern and preserve community character. Investments in infrastructure for active transportation modes and access to transit allow for reduced dependence on the automobile and present opportunities for the Island to develop more sustainably, and improving the quality of life for Island residents.

Active transportation facilities improve accessibility for people of all ages and abilities. For example, barriers to travel by wheelchair or walker (such as curbs lacking curb cuts) and lack of resting places for people with limited stamina, greatly reduce people's ability to participate in community life. Many youth and seniors do not drive.

Infrastructure for active transportation also reduces the need for parking, which in turn improves walkability and bikeability, and access to transit by encouraging more compact development. Costs of owning cars are a major expense for families, and good non-motorized infrastructure



with compact development can make living on Bainbridge more affordable, allowing a more economically diverse community.

Transportation infrastructure and associated drainage have direct impacts on the environment. Stormwater run-off from roads can contribute to water pollution, flooding, and water temperature elevation in riparian stream habitat corridors and Puget Sound. The road network right-of-way presents many opportunities to incorporate sustainable practices providing positive contributions to environmental sustainability.

Community Character

Community character is a term used to identify the elements that define Bainbridge Island. The City of Bainbridge Island's Comprehensive Plan discusses the Island's character as "...forested areas, meadows, farms, marine views and access, and scenic and winding roads supporting all forms of transportation. [Comprehensive Plan]

Relationship to Transportation

In the transportation elements related to community character include the highway, major streets, neighborhood roadways, and pedestrian and bicycle facilities. Community character includes natural and manmade features within the roadway right-of-way, such as trees with native understory and landscaping, drainage ditches, and street lighting. Each of these elements define the existing character of the City of Bainbridge Island. Some of these elements may be highly desired such as trees and plantings.

Much of the character of the transportation system stem from the roadway development. Roadways throughout the Island were originally constructed as logging, mill, or farm-to-market roads, connecting the rural areas of the Island with areas of urban development such as Winslow and to transportation connections such as "mosquito fleet" foot ferry docks. As the Island became more developed, major transportation features were added, including the Agate Pass Bridge, SR 305, and the Washington State Ferry's Bainbridge Island terminal. Island roadways were also improved over time -- pavement was added, roadways were widened, drainage was improved, and traffic controls were added to improve vehicle mobility and safety. Designated centers, mainly Winslow, saw a higher level of development including sidewalks and pedestrian paths, on-street parking spaces, street trees and landscaping, and street lighting. Recent improvements to the Winslow area include bicycle lanes and sidewalks, pedestrian crosswalks and refuge areas, bicycle and pedestrian paths, vehicle turn lanes, roundabouts, and other transportation features. New property developments are required to include transportation improvements along the property's frontage in accordance with the City's roadway design standards.

The City has followed the community's desires by defining and implementing an appropriate look and feel for its roadway and off-roadway transportation systems. Emphasis throughout the City's planning activities has responded to the community's concerns about preserving the elements that define the character of the community.

- The adopted Winslow Master Plan emphasizes the use of traffic calming to slow traffic speeds and promotes the development of pedestrian and sidewalk facilities within the Winslow Core.
- The City roadway standards use 10-foot wide travel lanes instead of the standard 12 feet, creating a narrower feel and less paved width. This helps to slow traffic and reduce stormwater impacts of roads.



- The City developed a Non-Motorized Transportation Plan and created a Non-Motorized Transportation Advisory Committee to provide better facilities for pedestrians and bicyclists throughout the Island.
- The City continues to explore and implement innovative traffic control options such as the roundabout at Madison Avenue and High School Road as an alternative to the installation of traffic signals.
- The City continues to evolve its transportation vision to include complete streets, shoulder networks for cyclists, sidewalk improvements for better accommodation of a wide range of users, and trails including regional, intra-island, and local connecting pathways.
- The City with Kitsap County has developed the concept of the Sound to Olympics Trail (STO) – a regional trail crossing Kitsap between both Winslow and Kingston to the Hood Canal Bridge – which will link the Burke-Gilman Trail in Seattle and the Olympic Discovery Trail.

Community character transportation features

The IWTP is focused on identifying the infrastructure needed to improve mobility and safety of the transportation system. The Plan's alternatives and recommendations meet the Plan's goals for maintaining community character including:

- ***Road development guidelines*** – Providing consistency with the adopted roadway standards that promote the retention of appropriate roadside vegetation and trees and follow the natural topography.
- ***Street design guidelines*** – Providing for and protecting the development of more urban features, such as parking, sidewalks, and bicycle facilities within designated centers, widened shoulders and separated paths in less urban areas. Providing Context appropriate street designs that promote the use of all modes of transportation for all ages and abilities of people.
- ***Street lighting guidelines*** – Concentrating street lighting within Winslow and Neighborhood Centers and areas identified by safety or community planning needs.
- ***Scenic resource and habitat protection*** – Focusing the development of the transportation system within existing and carefully chosen new travel corridors, while retaining trees with understory and standing or fallen deadwood.
- ***SR 305 Scenic Byway*** – Retaining the scenic character of SR 305 by discouraging new access points, and maintaining or enhancing vegetative buffers. SR305 is a WSDOT designated Scenic Byway, and the community wishes to preserve, enhance, and restore healthy forested habitat along the corridor. Trees, understory, standing and fallen deadwood all contribute to the desired view-shed and wildlife corridor. Vegetative buffer screening adjacent development is important, both within WSDOT right-of-way, and within adjacent land bordering the highway. Development of the Sound to Olympics Trail in and along the SR 305 right-of-way is planned to reduce the need for more motor vehicle lanes, enhance vegetative buffer, and improve connections with transit. Reversible bus rapid transit lanes are being studied to move people more efficiently, and with minimum impervious surface.



Desired features of Community Character

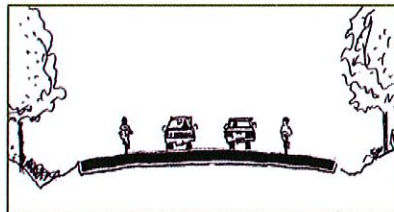
The photographs and sketches identify some of the key features that define the transportation character of Bainbridge Island.



Following natural topography, roadside trees and vegetation, with minimized paved surfaces are desired in conservation areas



Crosswalks, parking, street lighting, and non-motorized facilities are desired features in urban areas



Integration of bicycles, pedestrians, and non-motorized facilities are important features for the community

Livability and Health

The public is becoming more conscious of the environment in which they live and an increasing percentage of the population desires to live in places that are walkable and bikeable. The federal Centers for Disease Control (CDC) and the Kitsap Public Health District strongly encourage developing active transportation facilities to support moderate exercise for basic public health. Today prospective home buyers are presented with statistics such as walkability scores. A growing number of residents desire active transportation alternatives for daily trips including access to goods and services. More and more commuters choose active modes of transportation to commute to work. On Bainbridge Island, many residents commute by walking and bicycling to the Seattle ferry. Other commuters use Kitsap Transit or carpool and often walk to stops within their neighborhood.

Relationship to Transportation

In order to achieve livability and promote public health, frequent updating of standards and incremental investments in transportation infrastructure, including non-motorized elements, are essential.

- **Roadway Standards** – Pedestrian and bicycle facilities provide for active modes of transportation and recreation. Street lighting is to be appropriate for routes where residents are walking or cycling to school, work, or transit in the dark during fall and winter months. This is particularly important for people with low vision, including seniors. Recognizing that investments take time, provide interim measures for additional non-motorized safety through means such as reducing speed limits, providing wider shoulders, and installation of signage.



- **Complete Streets** – Investments over time in pedestrian and bicycle facilities within both designated center areas will provide for greater connectivity. Many streets lack sufficient sidewalks and bike lanes. Many secondary arterial roadways lack shoulders and separated facilities.
- **Multi use pathways** – Investments in separated pathways with regional, intra-island and local connectivity.
- **ADA Transition Plan** – The City is continuing a process of identifying ADA accessible routes for people with reduced mobility, many using assistive devices such as wheelchairs (motorized and manual) and walkers.

Neighborhoods

Bainbridge Island is a residential community, and the protection of neighborhood areas and promotion of neighborhood transportation facilities, is an important concern for Island residents. Designated centers such as Winslow need a high level of development with pedestrian and bicycle facilities, transit access, and a development of residential street character. In conservation areas, residents are concerned about the impacts of traffic flow, the development of non-motorized facilities and improving future connections and circulation.

Relationship to Transportation

Provide a safe roadway system in residential areas for adults and children walking, bicycling, playing, and driving. The City of Bainbridge Island has a limited transportation network and vehicle movements often depend on a single street. Because of this, as traffic levels increase on the arterial street system, adjacent and parallel streets will begin to experience factors such as “cut through” traffic, inappropriate vehicle speeds, and intersection congestion.

- **Neighborhood traffic calming**– The City’s Public Works Department, in conjunction with the Police Department, reviews complaints about inappropriate speeding or cut-through traffic on neighborhood streets.
- **Traffic enforcement** – The City of Bainbridge Island Police Department responds to neighborhood requests about high traffic speeds through residential areas.
- **Roadway standards** – The City of Bainbridge Island has developed its roadway design standards to act as traffic calming features through the use of narrow travel lanes and non-motorized facilities.

Neighborhood Transportation Features

The IWTP is focused on identifying the improvements needed for the mobility and safety of people using the transportation system. The alternatives and recommendations meet the Plan’s goals for maintaining the neighborhoods including:

- **Reducing Neighborhood cut-through traffic** – Focus the development of transportation system within primary travel corridors.
- **Neighborhood circulation** – Develop the transportation network to provide secondary roadway access, improve emergency access, increase neighborhood circulation, and improve pedestrian and bicycle mobility. Pedestrian and bicycle path short-cut connections through neighborhoods offer important connectivity to link neighborhoods and discourage unnecessary vehicle trips. Provide non-motorized connectivity between neighborhoods through City review of new development projects
- **Winslow street visualization plan** – Promoting the design and unique character of each street within the Winslow area.



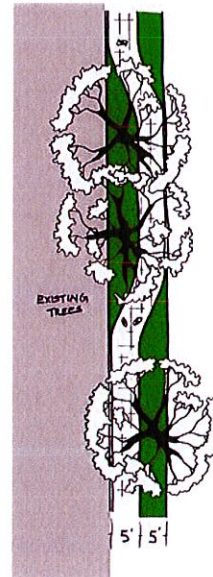
Desired features for Neighborhoods

The photographs and sketches identify some of the key features that define the neighborhood goals for transportation.



Neighborhoods are enhanced by providing appropriate street width, sidewalks, and other facilities

The character and needs of Winslow streets are part of a visual street plan



Streets reflect the special needs of pedestrians, bicyclists and traffic flow



Environment

Maintaining a natural quality environment is very important to the Bainbridge Island community. Protection of the environment is a key consideration for all development projects, with the city, state, and federal government agencies, and Tribes, all playing roles.

Bainbridge Island residents voted to fund a \$ 10 million dollar bond to purchase open space, and that money was heavily leveraged through the City's Open Space Commission to vastly increase open space on the Island. Bainbridge voters approved a Levy Lid Lift for the Bainbridge Island Metropolitan Parks and Recreation District to purchase land to strategically increase open space with recreational usage. The City completed an Open Space Study, which provides guidance for land use planning on where the more and less environmentally sensitive areas are to help inform decision-making.

Relationship to Transportation

Bainbridge Island has a variety of environmental characteristics that affect the development of the transportation system. As an island, traffic is concentrated near the ferry terminal in Winslow, and at the two-lane Agate Pass Bridge at the north end of the Island. The Island's topography, soils and steep slopes have limited the development of roadways in many areas. The Island has many sensitive resources such as ravines, parklands, open spaces, and shoreline and wetland areas that require creative and environmentally sensitive approaches to roadway and non-motorized facility development.



Possible impacts to the environment are a key consideration in the development of transportation projects. These include full consideration of impacts on the environment in the planning and design of a project. Steps in the project development and environmental review process include:

- Transportation corridor studies that include public review
- Environmental Assessments that include public scoping and testimony
- Environmental considerations in the engineering and design process
- Departmental Plan review
- Interagency review (where applicable)

Environmental Transportation Features

The following environmental aspects should be considered in addition to improving mobility and safety for all modes of transportation:

- ***Environmental sensitivity*** – Minimizing road construction within environmentally sensitive areas and encouraging the planting of low-maintenance, native groundcover and trees along roadways. The Plan focuses the development of the transportation system within existing travel corridors.
- ***Utilities*** – Promoting the undergrounding of overhead utilities to reduce the need for removal and maintenance of roadside vegetation.
- ***Stormwater management***. – Providing for environmentally-sensitive design of stormwater collection and detention facilities. Combining traffic calming and stormwater management goals through green infrastructure provisions within traffic calming features such as curb bulbs.
- ***Air Quality*** – Developing transportation plans and programs that improve traffic flow, encourage non-motorized and transit transportation alternatives to driving, thus lessening the impact on regional air quality.
- ***Wildlife corridors*** – Recognizing and promoting the maintenance of wildlife corridors.

Desired features of Environment

Bainbridge Island has a variety of environmental characteristics that affect the development of the transportation system.

The photographs and sketches below identify some of the key features that define the environmental goals.



Stormwater Management and Green Infrastructure



*Special
stormwater
containment
features can
control water
runoff roadwav*



- Storm water planters to control run off and improve water quality

Protection of environmental resources such as the Ravine

- Rain gardens to control stormwater run-off and improve water quality





Developed landscapes including roadways are covered with impervious surfaces which can increase pollutant levels and increase stream flows, degrading water quality. The Washington State Department of Ecology (DOE) establishes the stormwater flow control and water quality requirements for roadway projects. As a municipality, the City of Bainbridge is required to meet the National Pollutant Discharge Elimination System (NPDES) permit obligations to discharge stormwater to waters of the State of Washington and meet the NPDES permit requirements. With the implementation of the 2012 NPDES Permit, the City is implementing Low Impact Development (LID) requirements for both public and private development.

LID is an innovative stormwater management approach that attempts to mimic the natural stormwater hydrology of pre-development conditions. LID uses techniques that infiltrate, filter, detain, evaporate, and attenuate stormwater run-off close to the source. Examples of “green” natural processes include swales, bio-retention, filter media, permeable pavement, and street trees. Streets that implement natural processes are commonly referred to as green streets. Green streets can serve multiple community goals by combining stormwater infrastructure within traffic calming features such as curb, bulbs or by adding planting strip rain gardens that provide additional buffer between the street and the sidewalk.

Balancing Community Needs

With thoughtful planning, new transportation infrastructure can often protect environmental functions, as when LID facilities replace more traditional stormwater piping, or when pedestrian, bicycle, and/or transit facilities reduce the need for impervious and expensive parking facilities.

One of the more challenging aspects of improving a transportation system is finding the right balance between competing community needs and desires. For example, it may be best to construct a sidewalk/ separated pathway on one side of the roadway rather than on both sides to reduce impacts to vegetation. Balancing needs of non-motorized users and goals of vegetation protection will require analysis and public engagement to design improvements that best meet competing interests.

Creating designs that improve transportation systems and evaluating the trade-offs where they exist (weighing the importance between community goals and design guidelines) is an important function of the City of Bainbridge Island Public Works Department. Table 2-1 illustrates the issues that can arise for a variety of transportation improvements.



Table 2-1: Competing Community Needs

Project Type	Community Character concerns	Environmental concerns	Neighborhood concerns
Widen roadway to include bicycle lanes	Increased paved width of roadways changing the road's look and feel	Promotes use of non-polluting vehicles, but also can increase water runoff	May slightly increase vehicle travel speeds on widened road corridor
Installation of roundabout at an intersection	Roundabouts highly desired over traffic signals	May result in removal of trees near intersection	May reduce cut-through traffic in residential areas
Rebuilding roadway impacted by shoreline erosion	May result in a more structured and modern roadway facility	May impacts shoreline areas, loss of trees and foliage	Needed improvement for access to property
Installing pedestrian path or sidewalk	May affect the feel of a traditional neighborhood	Promotes use of non-polluting vehicles	Provides safe access for pedestrians

As illustrated in the table above, each of these examples could have competing concerns and sometimes, even within a single category. In other words, a highly desired project for one sector of the community may be opposed by another. In the end, these checks-and-balances can improve the planning and design of roadway projects by reflecting the needs and desires of the larger community.

Public Works uses the community values in the Comprehensive Plan when developing project objectives. The City of Bainbridge is committed to the principals of context sensitive solutions. Public Works staff strives to facilitate public engagement when developing capital projects to evolve and refine the community's values as they relate to each project.

CHAPTER 3 OPERATIONS AND MOBILITY



This chapter describes the traffic operations and current and future vehicle mobility for the City's roadway system. Mobility is the measure of how well vehicles can get around on the roadway system – the opposite of congestion. Island residents expect a high level of mobility that maintain the character of their community. The high levels of congestion experienced during peak periods, especially on and around SR 305, area common source of frustration for drivers.

While the focus of this chapter is on motorized level of service, it is recognized that providing for level of service for all modes is important for a viable transportation system. In some locations where constraints limit options, some modes may be favored over other modes. Transportation networks should provide for all modes of transportation as a system. For vehicular traffic transportation demand strategies may be an optimal approach.

Level of service standards are used to provide a basis for the mobility analysis. This Plan used planning and operational models developed by Transportation Solutions, Inc. in TransCAD and Synchro software, respectively, to analyze current conditions (based on traffic counts and existing roadway network information) and to forecast future levels of service (based on traffic generated by forecasted land use and roadway network changes). The structure of the roadway network was analyzed by reviewing the roadway classification system, connectivity, access, and road standards.

Existing Roadway System

The section on existing conditions provides an analysis of the current operating conditions and provides a baseline for future comparisons. The City of Bainbridge Island's transportation system is made up of a network of roadways, pedestrian facilities, bikeways, the ferry terminal, and formal and informal trails. Each of these elements is important to the mobility or movement of people and goods within and to destinations beyond the Island. This chapter focuses on the roadway system only; the non-motorized, bus transit, and ferry systems are described in Chapters 6 & 7.



The roadway system is designed for the movement of people and goods throughout the community. Major regional transportation features of the Island include the Washington State Ferry Terminal, which connects Bainbridge Island to downtown Seattle; and State Route 305, which connects the Island to the Kitsap and Olympic Peninsula. State Route 305 is the Island's principal transportation corridor, providing an important north-south connection.



The State system is supported by a City roadway system that connects residential areas to the highway and retail and employment areas. The City's arterial, collector, and residential street system provides roadway connections and access to properties within the City.

Travel Corridors

The following important commuter, shopping, business, school, and freight/commercial corridors are identified for the Island:

- *Commute Corridors* – SR 305, Winslow Way, Wyatt Way, Ferncliff Avenue, High School Road, Day Road, Blakely Avenue, Eagle Harbor Drive, Baker Hill Road, Miller Road, and North Madison Avenue.
- *Retail Corridors* – SR 305, Winslow Way, High School Road, Madison Avenue, Hildebrand , Wyatt Way, Lynwood Center Road, and Valley Road.
- *School Corridors* – High School Road, New Brooklyn Road, Sportsman's Club Road, Madison Avenue, Day Road, North Madison Avenue, and Blakely Avenue
- *Freight Corridors* – SR 305, Day Road, Miller Road, Fletcher Bay Road, Sportsman's Club Road, High School Road, Madison Avenue, and Winslow Way.

Roadway Inventory

The City's roadway system consists of approximately 140 miles of paved roads, and another 20 miles of unpaved roads. The City maintains a Geographic Information System (GIS) that includes the roadway system. The GIS database includes characteristics for each roadway segment, including length, pavement width, functional classification, posted speed, sidewalks, and transit and bicycle facilities. A spreadsheet is maintained that includes sign inventory information. The City periodically conducts an island-wide traffic count and develops volume and traffic speed information for its major roadways. This Plan was updated in 2014 with TSI traffic counts.

Roadway Classifications

Roadway functional classification is defined as the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide. The City divides Island roadways into four functional classifications:



principal arterial, secondary arterial, collector, and local access roads. These classifications are described in Table 3-1.

Table 3-1. Functional Classifications

Classification	Definition
Principal Arterial	Carry the highest levels of traffic in the system at the greatest speed for the longest uninterrupted distance, often with some degree of access control. Used for through trips, and provide connections within the system.
Secondary Arterial	Carry high level of traffic at a moderate speed, sometimes for through trips. Often serve as access to high-intensity land uses such as major employers or larger commercial centers; provide connections within the system.
Collector	Connect traffic from residential roads to arterials at a lower speed, carrying lower levels of traffic than arterials. Serve neighborhood centers.
Local Access	Carry low levels of traffic at low speeds. Serve as access to residential and commercial areas and are not used for through trips.

Streets and highways are assigned one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow. Typically, a trip will use a combination of different road classes, with each classification having a specific function with regard to access and travel speed. Arterials provide a high degree of mobility and less access, while local access roads provide a high level of access and less mobility. Collectors provide a balance between access and mobility and connect the system.

The following changes to roadway classifications since 2004 are included in this update to the IWTP: Halls Hill Road from Blakely Hill to Rockaway Bluff from Local Access to Collector, Wallace Way from Madison Avenue to Ericksen Avenue from Local Access to Collector, and Upper Farms Road from Collector to Local Access.

Road Standards

The City of Bainbridge Island has established its roadway street and design standards as part of its *Engineering Design and Construction Standards and Specifications*. These standards set the minimum requirements for constructing roadways and are applicable to all new roadway construction and modifications to existing roadways within the City of Bainbridge Island. The road and street design standards follow the functional classification system described above and establish separate standards for designated centers and the conservation area of the Island.

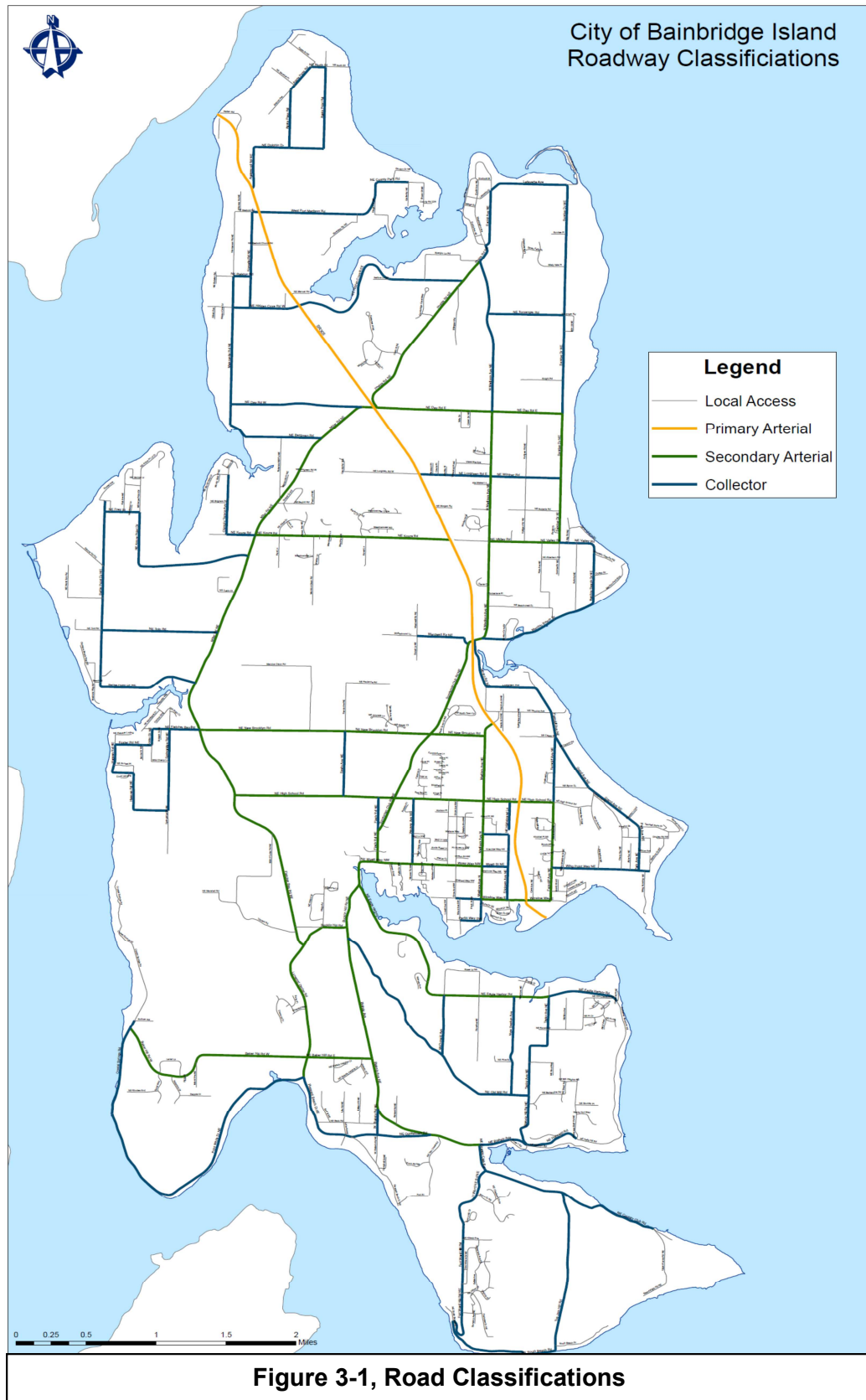
The City has both urban and suburban standards. Urban standards are intended to apply within the designated center of Winslow, the neighborhood centers including Lynwood, Island Center, and Rolling Bay, and the Day Road industrial Center. Urban standards apply in all locations with R2.9 and greater zoning and/or effective density. The City may require urban standards to be applied in other areas in close proximity for system continuity.



The roadway standards were created in 1997 and an update is needed to better address non-motorized elements and low impact development. The roadway standards should be updated within two years of the adoption of the IWTP.

Level of Service

This section describes the Level of Service (LOS) standards used in this document. LOS provides a method for measuring the performance of the transportation system. The City uses a standard for LOS that determines if adequate mobility is being provided on the roadway system. LOS standards and method of measurement have been coordinated with Washington State Department of Transportation, Washington State Ferries, Kitsap County, and Kitsap Transit to ensure that standards used in this document are consistent, with these other entities.





LOS Defined

LOS is a measurement used in transportation planning to assess the operating performance of the transportation system. For roadways, LOS measures the degree of traffic congestion along a roadway varying from LOS A (free-flow traffic with minimal delays) to LOS F (highly-constrained traffic with long delays).

The Highway Capacity Manual (HCM) (Transportation Research Board, Special Report 209) establishes quantitative methodologies for determining level of service for differing types of facilities. The methodologies vary for intersections, roadways, freeway, and highway, but all follow the LOS A - F classification and provide a consistent method of measuring the performance of the transportation system. Table 3-2 describes the operation of the transportation system at each LOS ranking.

Table 3-2: Level of Service Descriptions

Level of Service	Description
LOS A	Free flow traffic conditions with very low delay at intersections.
LOS B	Reasonably unimpeded traffic operations with only short traffic delays at intersections.
LOS C	Stable operating conditions with average traffic delays at intersections
LOS D	Operating conditions result in lower travel speeds and higher delays at intersections.
LOS E	Travel speeds are substantially restricted with problems likely to occur at intersections.
LOS F	Roadway operations are over capacity with extreme delays likely at intersections.

LOS is measured differently for roadways and intersections. For roadways, LOS is measured as a function of traffic volume and roadway capacity. For intersections, LOS is measured as a function of vehicle delay in clearing the intersection.

Roadway LOS Measurement

Roadway LOS is measured by the relationship between traffic volume (V) and capacity (C) of the roadway. As the volume of traffic using the roadway approaches, the capacity of the roadway (V/C approaching 1.0), the level of service deteriorates. Table 3-3 relates volume/capacity to LOS measurements for roadways.



Table 3-3. Roadway Level of Service and Volume/Capacity Ratio

<i>LOS</i>	<i>Volume/Capacity (V/C) Ratio</i>
<i>A</i>	<i>Less than 0.6</i>
<i>B</i>	<i>0.60 to less than 0.70</i>
<i>C</i>	<i>0.70 to less than 0.80</i>
<i>D</i>	<i>0.80 to less than 0.90</i>
<i>E</i>	<i>0.90 to less than 1.00</i>
<i>F</i>	<i>More than 1.00</i>

Traffic volumes can be counted or they can be calculated using the traffic model by analyzing land uses that are served by the roadway. Bainbridge Island’s roadway capacity policy is defined in the City Design and Construction Standards; see Table 3-4. No policy is currently defined for arterial roadway capacity. There is some inconsistency between the City’s current capacity policy and an engineering-based approach to roadway capacity calculation which would typically consider the physical structure of the roadway, including the number of lanes, type of intersection controls, widths of lanes and shoulders, and design speed. The City’s capacity standards will be reviewed and updated during the roadway design standard update process.

The roadway levels of service described in this Plan are based upon current capacity policy. In lieu of an arterial capacity policy, this Plan calculated arterial segment LOS based on an approach which is currently used by the City of Sammamish and which is consistent with the state of engineering practice.

Table 3-4. Existing Roadway Capacity Policy

<i>Functional Classification</i>	<i>Area Type</i>	<i>Capacity (*)</i>
<i>Secondary Arterial</i>	<i>Urban</i>	<i>> 3,000</i>
<i>Secondary Arterial</i>	<i>Suburban</i>	<i>>2,000</i>
<i>Collector</i>	<i>Urban</i>	<i>2,000 to 3,000</i>
<i>Collector</i>	<i>Suburban</i>	<i>1,000 to 2,000</i>
<i>Residential</i>	<i>Urban</i>	<i>< 2,000</i>
<i>Residential</i>	<i>Suburban</i>	<i>< 1,000</i>

* Capacity is measured using the Average Daily Traffic (ADT)

To improve the LOS for a roadway, either the capacity must be increased or the volume of traffic using the road must be decreased. To increase the capacity, the City can look at several options such as roadway improvements ranging from adding signals or separated turn lanes to an intersection to roadway widening. To reduce traffic volumes, the City can explore options such as changing allowable land uses or modifying individual travel behavior. This section focuses on capacity improvements. Chapter 7 discusses other travel modes and methods of transportation demand management.



Intersection LOS measurement

Intersection LOS is measured by the amount of delay experienced by a vehicle waiting to clear an intersection. Delay at a signalized intersection can be caused by waiting for the signal or waiting for the queue ahead to clear the signal. Delay at un-signalized intersections is caused by waiting for a break in traffic or waiting for a queue to clear the intersection. Table 3-6 shows the amount of delay used to determine LOS for signalized and un-signalized intersections. Roundabout-controlled intersections use the same LOS thresholds as signalized intersections.

Table 3-6. Intersection LOS and Delay

LOS	Signalized Delay per Vehicle (sec/veh)	Unsignalized Delay per Vehicle (sec/veh)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

Generally, speaking...

Roadways that are LOS E or F fail the standard.

LOS D is okay for certain arterials and collectors in urban areas

LOS A, B or C are within the standard for all arterials and collectors

Different delay standards are used for signalized (stop light controlled) and unsignalized (stop sign controlled) intersections. For signalized and all-way stop controlled intersections, the LOS is the amount of delay per vehicle caused by control and is reported for the intersection as a whole. For un-signalized intersections, where there are controls only on the minor approaches, the LOS is estimated by the average delay per vehicle and is reported for only minor approaches to the intersection.

City LOS Standard

The City of Bainbridge Island's LOS standard designates the minimum operational performance of the roadway system that must be maintained. If traffic volumes cause a roadway to fall below the minimum LOS standard, improvements or other mitigation must be made to bring the facility back to the designated LOS standard. Level of service standards are normally prescribed for the afternoon or p.m. peak hour (most congested hour) of the traffic system, which typically occurs between 4:45 and 5:45 in the evening on Bainbridge Island.

The recommended minimum LOS standard uses the City's roadway classification system, and four zones that reflect the differences in the Island's character: designated centers including Winslow and Neighborhood Centers, Conservation Area, and the SR 305 Corridor. Within each of these categories, individual minimum LOS standards were established for secondary arterials, collectors, and residential roadways. These are shown in Figure 3-2 and described below.



Winslow – (applies to roadways and intersections in the greater Winslow area)

- Secondary Arterial – LOS D
- Collector – LOS D
- Local Access – LOS C

Neighborhood Centers – (applies to roadways and intersections within the City-defined Centers of Rolling Bay, Island Center, and Lynwood Center)

- Secondary Arterial – LOS D
- Collector – LOS C
- Local Access – LOS C

Conservation Area – (applies to roadways and intersections in areas outside of the Winslow core and the Designated Centers – the remainder of the Island)

- Secondary Arterial – LOS C
- Collector – LOS C
- Local Access – LOS B

SR 305 Corridor – (applies to state highways and is established by the State)

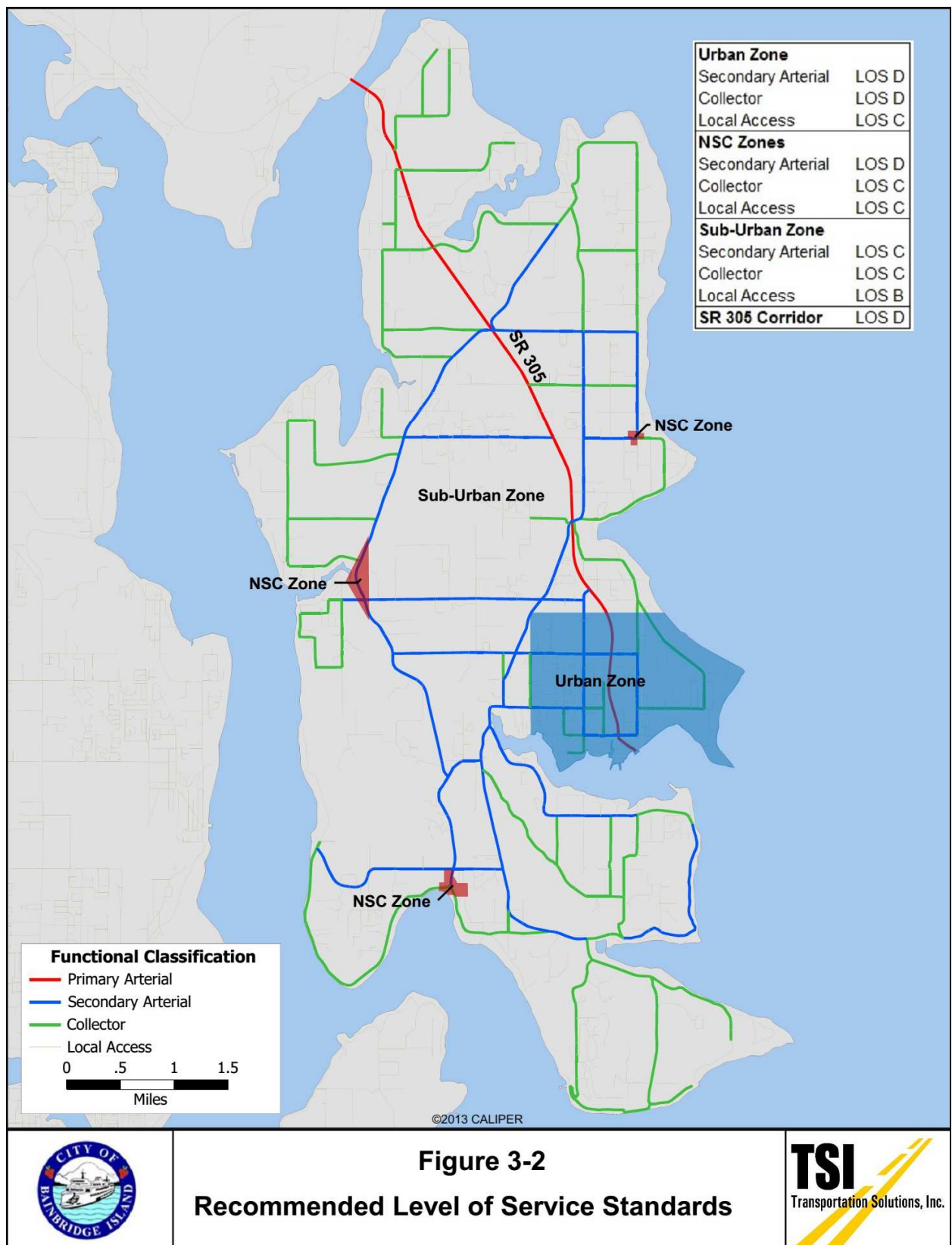
- All Roadways– LOS D

SR-305 LOS Standard

The LOS standard for state facilities is set by the Washington State Department of Transportation as a Highway of Statewide Significance (HSS) under RCW 47.06.140. The HSS designation requires that SR-305 be evaluated using a LOS Standard designated by WSDOT. While WSDOT internally evaluates roadways using its own methodology, WSDOT has assigned a level of service standard for SR-305 as LOS D-mitigate for City planning purposes. This standard requires that congestion be mitigated when the peak period operation of the state facility falls below LOS D.

Non-Motorized LOS Standard

The facility types and associated level of service for non-motorized transportation elements for secondary arterial and high volume collector (ADT 1500 or greater) roadways are established in Chapter 6, “Non-Motorized Systems” of this plan. The minimum Bicycle Level of Service (BLOS) and Pedestrian Level of Service (PLOS) for development in urban areas is level of service C. The minimum BLOS and PLOS for development in suburban areas is level of service D. PLOS and BLOS is calculated using the methodology in the latest edition of the Highway Capacity Manual. The 2010 Highway Capacity Manual (HCM 2010) provides a detailed methodology for calculating level of service for pedestrians and cyclists. The level of service is based on quality of facilities as well as traffic volume and speeds. LOS measures are graded A through F based on a numerical score with the letter A representing the highest grade facility.





Existing Traffic Conditions

This section describes the traffic conditions for the 2014 Plan year. The Plan is based on traffic data collected for roadway segments in 2012 and intersection counts in 2014.

Transportation Model

A consultant, Transportation Solutions, Inc. (TSI) developed a citywide transportation model to estimate existing travel demand and to provide a tool for forecasting future travel demand on City roadways. Current and future travel demand were used as inputs to a citywide operational model, developed using Synchro software, to evaluate current and forecasted PM peak hour levels of service throughout the city's roadway network. The demand model is based upon the concept of vehicle trips; pedestrians and cyclist demand is not forecasted. Similarly, carpool, vanpool, or transit users are represented by single vehicles in the model.

For analysis of existing conditions, the TransCAD-based model used existing land use data from Kitsap County and Puget Sound Regional Council (PSRC), roadway information from the City, and TSI traffic counts to reproduce existing trips and their paths, from origin to destination, through the citywide roadway network.

Land use was collected from Kitsap County at the individual parcel level and aggregated to create 241 transportation analysis zones (TAZs) which covered the entirety of the City. Two external zones were created to represent travel demand at the ferry terminal and at the north end of the Island.

Trip generation was based upon existing land use and trip generation rates established by the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition* and calibrated based on knowledge of local conditions and travel patterns. It was observed during calibration, for example, that single-family trip generation rates on Bainbridge Island were lower than the nationally-calibrated averages published by ITE. This reduced single family trip rate may be associated with a growing percentage of retirees living on the Island. Peak hour ferry trip generation rates were estimated from the WSDOT Ferries Division *2013 Origin-Destination Travel Survey Report*.

For operational analysis, a citywide traffic model was developed in Synchro software, using roadway information obtained from the City, satellite and street-level imagery collected from Google Earth, and traffic counts collected in 2014 by TSI. Relevant roadway information for operational analysis included number of lanes, intersection channelization, traffic control devices, speed limits, and lane width. Observed PM peak hour traffic volumes were applied to the roadway network to calculate intersection levels of service.

Peak Hour Traffic Volumes

The City of Bainbridge Island collects traffic count data on a periodic basis to assess changes in traffic patterns, to collect information for its concurrency program, and to track the operational characteristics of the Island. In 2012, the City contracted an update of Island-wide traffic counts and travel speeds. In 2014, the City contracted intersection counts. This information was utilized in the traffic model developed by TSI. The data are included in Appendix E of this report.

WSDOT Ferry Travel Survey

Washington State Department of Transportation (WSDOT) conducts origin-destination (OD) surveys every six to seven years as a way to accurately capture and measure the travel



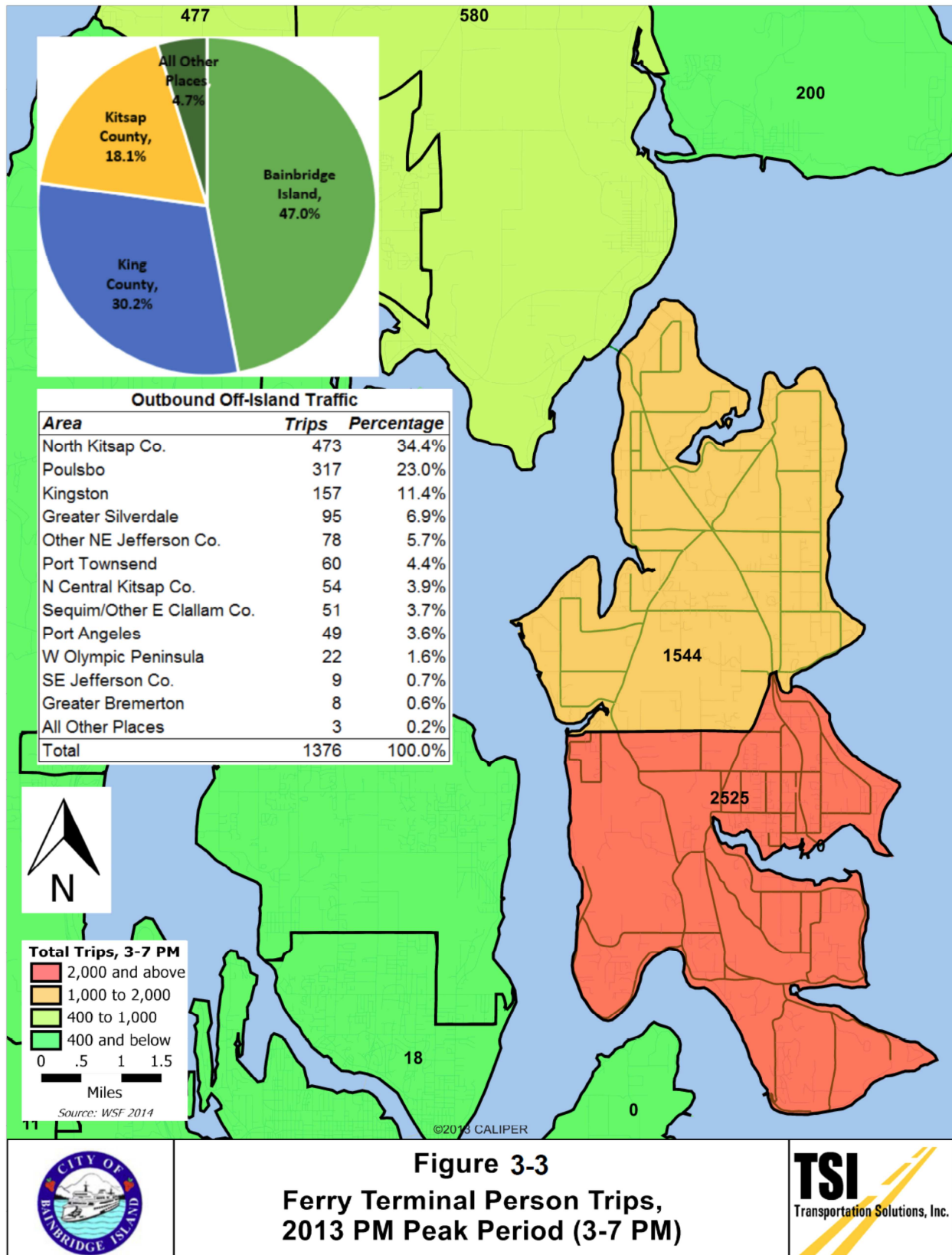
patterns of ferry passengers. Passengers were asked about their typical routes, how they get to and from ferry terminals, and the purpose of their trips.

Surveys were administered to ferry riders during weekdays and Saturdays in October 2013. Over 17,000 survey questionnaires were collected system-wide, with 92 percent of collected surveys sufficiently complete for analysis. Survey responses were used to develop a database of ferry user characteristics, including trip origin and destination patterns. TSI reviewed and processed survey results for the Seattle-Bainbridge route and used them as inputs to the citywide travel demand and traffic operations models.

Figure 4-3 summarizes survey findings for the Seattle-Bainbridge Island ferry.

Highlights of the survey results published in August 2014 are summarized below:

- Ferry ridership has declined slightly since 2006, with approximately 17,000 riders per day in 2013 compared to 18,000 riders per day in 2006. Vehicle boardings decreased by 7 percent during that period.
- The Seattle-Bainbridge route has shown an aging ridership, with the number of passengers over age 64 increasing from 8 percent in 2006 to 17 percent in 2013. System-wide, average passenger age increased from 42 in 1993 to 48 in 2006 and 49 in 2013. Currently 18 percent of riders are retired and another 14 percent are planning to retire in the next five years.
- Approximately 25 percent of weekday riders telecommute at least one day per week, up from 20 percent in 2006.
- The proportion of work- and school-related trips decreased and the proportion of recreation and shopping trips increased between 2006 and 2013.
- Of the 6,070 total (eastbound and westbound) ferry trips during the 3:00 to 7:00 PM weekday peak period, 67 percent had an origin or destination on Bainbridge Island, while the remaining 33 percent had off-Island trip ends. This indicates the WSF terminal's regional nature, with one in three travelers originating or destined for off-Island locations.
- The City of Poulsbo and other North Kitsap County locations accounted for 57% of the off-Island destinations. Other primary destinations included the cities of Kingston, Silverdale, Port Townsend, and Sequim. The results indicate that while much of off-Island traffic is coming from areas adjacent to Bainbridge Island, as many as 40% of off-Island drivers could take advantage of new or improved service to downtown Seattle from Kingston or Bremerton.
- Nearly 70 percent of total weekday PM peak period ferry trips are destined westbound, with the other 30 percent of trips destined primarily for locations within Seattle.





Existing LOS

The travel demand model was calibrated using a process that compares the counted roadway volumes to modeled flows which are based on land use and roadway network data. The calibrated TransCAD model and Synchro intersection analysis software were used to determine the 2014 LOS for the intersections in the study area.

Figures 3-3 shows the 2014 LOS for the Island as a whole and for the Winslow area. The LOS for each intersection is shown by approach in Table 3-6. All intersections modeled on SR305 north of High School Road currently do not meet minimum LOS standards with the exception of the signal at Day Road. Day Road however is close to exceeding the standard. In urban areas, the Madison/Wyatt intersection currently fails the minimum LOS standard but will be improved to LOS A upon completion of a planned roundabout.

There are currently no roadway level of service failures.

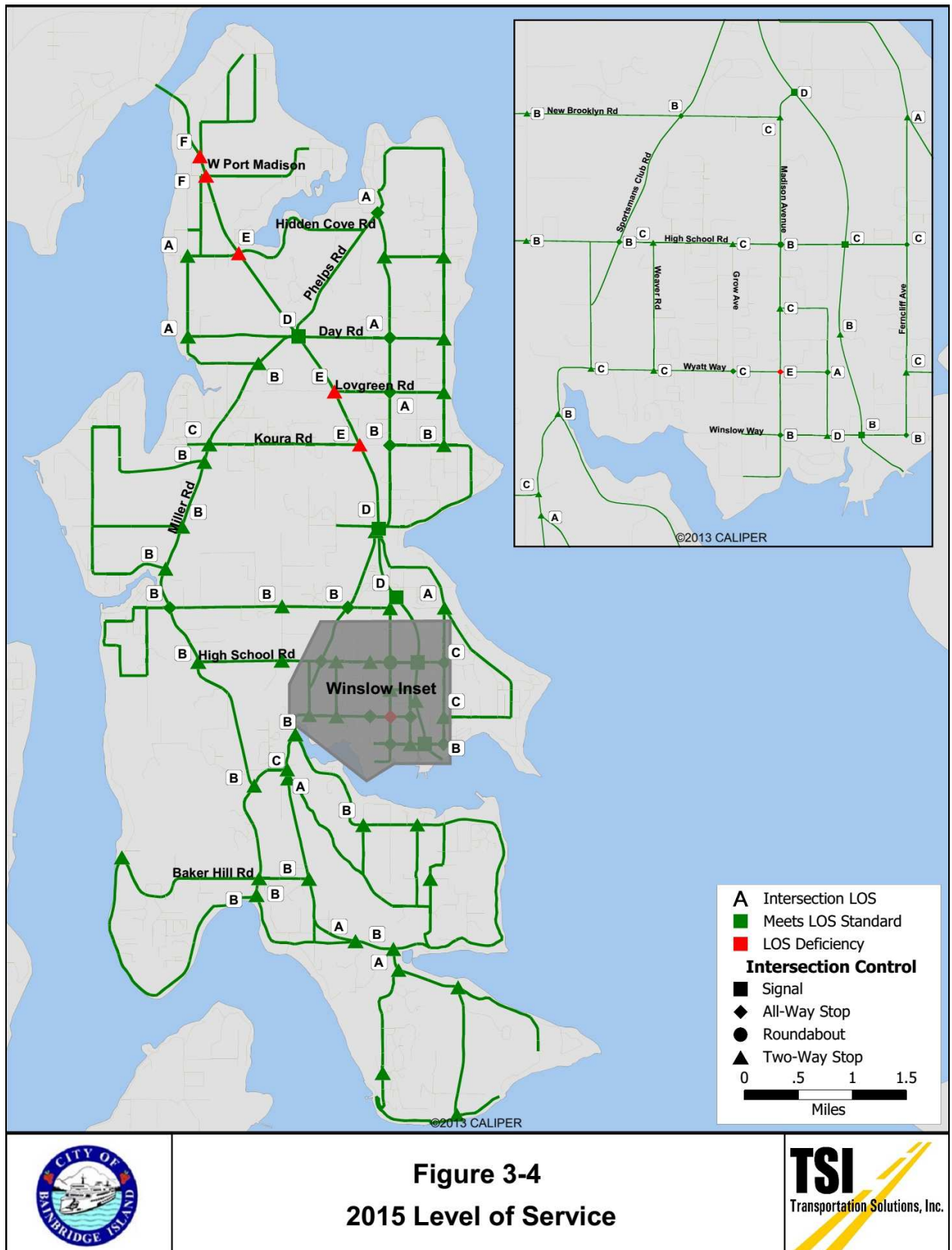




Table 3-6. Intersections PM Peak Hour LOS Deficiencies – 2014 Baseline

Intersection	Control Type ¹	Delay ² (s/veh)	LOS
Madison Ave N / Wyatt	AWSC	38.5	E
SR 305 / Koura Rd	TWSC	37.3	E
SR 305 / Lovgreen Rd	TWSC	38.9	E
SR 305 / NE Hidden Cove Rd	TWSC	48.3	E
SR 305 / Port Madison	TWSC	>180	F
SR 305 / Agatewood Rd	TWSC	>180	F

¹TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized

²Average control delay for all movements. For TWSC, delay is reported for the movement with the highest delay.

Future Traffic Conditions

This section identifies the land use forecast methodology and results used to identify the future needs and deficiencies of the transportation system. Two time periods were studied: 2021, representing the six-year short-term planning period, and 2035, representing the 20 year long-term planning period. 2035 matches the long term planning horizon of Puget Sound Regional Council (PSRC), the region's major planning entity.

Land Use Forecast

The transportation model used PSRC and Kitsap County land use forecasts to determine future PM peak hour trip growth by transportation analysis zone (TAZ). Trip growth forecasts were distributed and assigned to the future roadway network to generate expected future traffic growth citywide.

Determination of Base Year Land Use

Base year land use was provided by Kitsap County in the form of GIS-based tax parcel data. These data were cleaned and refined based on recent satellite and street-level photography, then categorized according to the following modeled land use types:

- Single-Family Housing
- Multi-Family Housing
- Senior/Assisted/Retirement Housing
- Retail
- General Office
- Industrial and Manufacturing
- Warehouse/Utility/Storage
- Hotel
- Hospital/Nursing Home
- Park and Ride
- School
- Recreation/Entertainment
- Church

Land use data were subsequently aggregated to create 241 transportation analysis zones (TAZs), with each TAZ representing a distinct geographical trip generating unit in the travel



demand model. Table 3-7 describes the modeled 2014 land use quantities. The base year travel demand model was calibrated using 2014 traffic counts to establish a tool that reflects vehicle traffic and travel patterns for each of the TAZs.

Table 3-7. 2014 Land Use

Land Use Category	Quantity	Units
Single-Family Housing	8,517	Dwelling Units
Multi-Family Housing	1,311	Dwelling Units
Senior/Assisted/Retirement Housing	212	Dwelling Units
Retail	589	KSF*
General Office	316	KSF
Industrial and Manufacturing	163	KSF
Warehouse/Utility/Storage	226	KSF
Hotel	96	Rooms
Hospital/Nursing Home	69	KSF
Park and Ride	841	Stalls
School	3,355	Students
Recreation/Entertainment	207	KSF
Church	121	KSF

* KSF equals one thousand square feet.

Land Use Forecasts (2021 and 2035)

The next step in the transportation modeling process was to incorporate land use forecasts to the calibrated base year travel demand model in order to establish 2021 and 2035 traffic forecasts.

In order to convert regional 2035 land use forecasts to the level of detail required by the citywide transportation model, housing and employment growth forecasts were geographically distributed to the TAZ level according to zoning and estimated land capacity. Employment growth forecasts were converted to gross floor area or equivalent modeled units using relationships established by the Institute of Transportation Engineers, U.S. Department of Energy, and San Diego Association of Governments.

Table 3-8 shows the citywide residential and employment forecasts used in this Plan.



Table 3-8. 2021 and 2035 Forecasts

	Households	% Change from Base	Employees	% Change from Base
2014 Base Year	10,152	--	8,600	--
2021 Forecast	11,346	12%	9,321	8%
2035 Forecast	13,248	30%	10,587	23%

Growth in households is assumed to occur at an annual rate of approximately 1.3 percent per year during the planning period. Employment growth is expected at 1.7 percent per year. The 2035 forecasts assigned a moderate rate of growth throughout the Island with the greatest commercial growth in the designated Neighborhood Centers, industrial growth focused in areas currently zoned business/industrial, and residential housing growth occurring in areas where the greatest potential for new housing under the existing zoning could occur. The 2021 forecasts were based on a straight-line interpolation of growth for each TAZ, with the assumption that the distribution of employment and housing would be proportionate to the 2035 scenario.

Future Traffic Operations

This section describes the future traffic conditions on the City's roadway system for 2021 and 2035. Future traffic conditions were estimated for 2021 and 2035 using the results of the land use and employment forecasts, roadway network information, and the calibrated travel demand model (including calibrated trip generation, distribution, and traffic assignment sub-models).

2021 Traffic Forecast

The 2021 traffic forecast was developed by applying a linear interpolation of forecasted 2035 land use growth to the calibrated base year planning model. Forecasted traffic growth was then applied to the Synchro traffic operations model to analyze 2021 levels of service. Where LOS was shown to fall below the minimum LOS threshold by 2021, mitigating improvements were added to the road network. This section describes the results of the 2021 analysis.

2021 LOS

The traffic model produces a forecast of 2021 traffic conditions, which are shown in Figure 3-5. Results of the 2021 forecast show continued heavy congestion and poor level of service along SR305. At locations other than SR305, there are only a few minor LOS deficiencies.

Roadway LOS

Roadway Segment LOS at sections of Eagle Harbor Drive and Miller Road are expected to decline. Shoulder widening project are included in the City's short term (6 year) capital improvement plan for these locations.

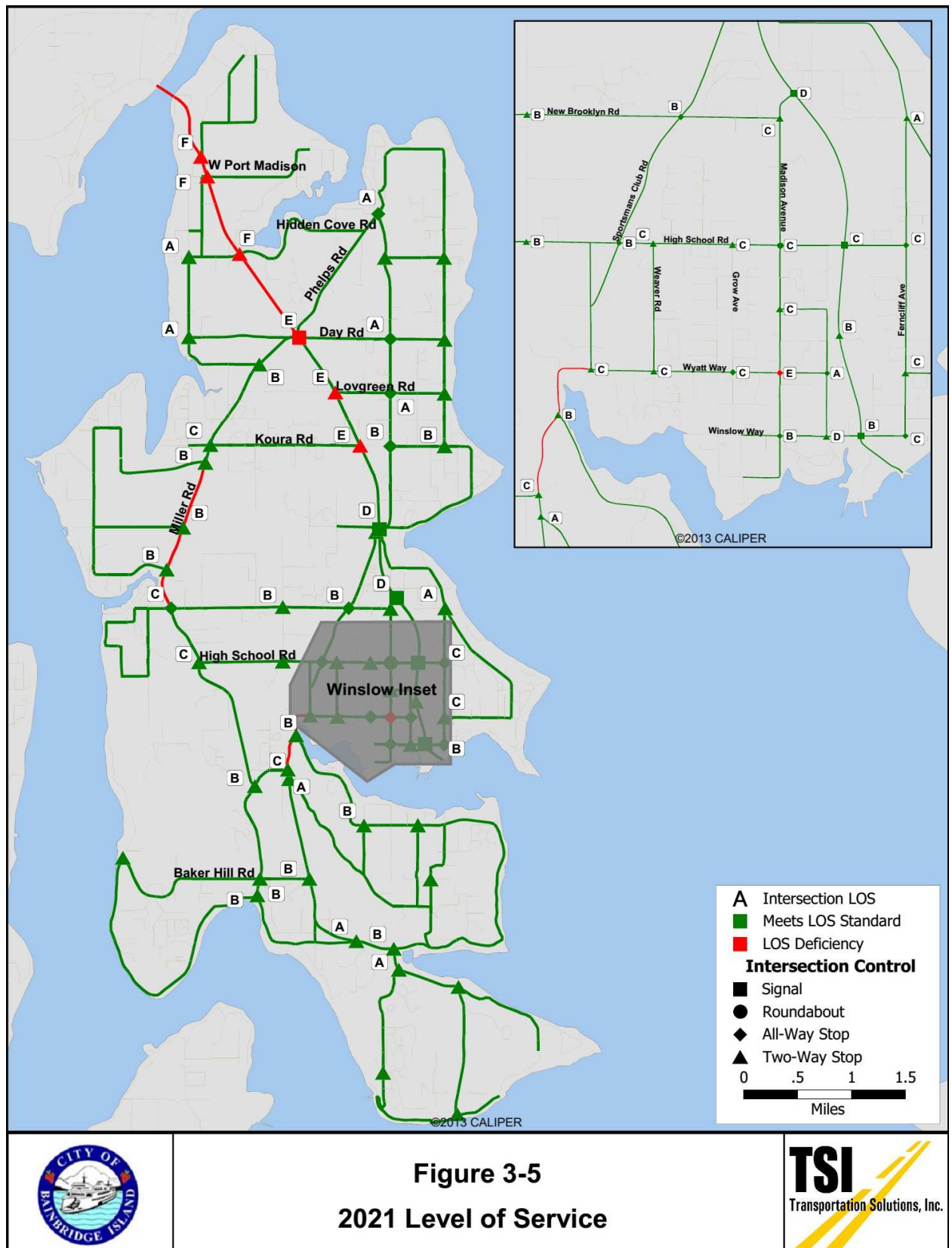
Along the SR305 corridor, north of Sportsman's Club Rd., roadway capacity, in addition to poor intersection operation, is predicted to become an impediment to traffic flow and contribute to congestion.



Intersection LOS

The traffic model was used to identify locations where intersections may be the cause of poor operations. Table 3-9 shows the results of the 2021 Plan year intersection LOS analysis. Without mitigation, one intersection at Madison Avenue N / Wyatt Way NE fails to meet the minimum LOS standards. The intersection of Winslow Way/ Ericksen Ave. is forecasted to decline to LOS D.

On SR 305, the intersections at Agatewood Road, Seabold Road, Hidden Cove Road, Lovegreen Road, and Koura Road all fail to meet the minimum standard. By the 2021 forecast year, SR 305 corridor congestion continues to deteriorate with the intersection at Hidden Cove Rd falling from LOS E to LOS F. The intersection at Day Road is anticipated fail. The poor operation of the highway intersections, if not addressed, will increasingly be a barrier to cross-Island traffic, impacting operations of the City's roadway system as a whole.





2016-2021 Mitigation

Each intersection and roadway segment identified as below the minimum LOS standard in 2021 was studied to see if mitigation actions could improve the intersection LOS to the minimum standard. Targeted roadway improvements can correct an intersection or roadway that fails to meet the minimum LOS standard.

City Mitigation

For intersections in the City's roadway system where the expected LOS is below the minimum standard, the following mitigation is proposed:

- *Madison Avenue/ Wyatt Way* – An intersection control improvement such as a signal or a roundabout would improve the intersection to LOS B. The intersection will be studied to determine what specific improvement should be constructed. A round-about may be one alternative. An improvement project is currently programed in the City's CIP for Wyatt Way, including the intersection.
- *Eagle Harbor Drive from Wyatt to Blakely* - Shoulder improvements for non-motorized users are recommended. An improvement project is currently programed in the City's CIP.
- *Miller Road from New Brooklyn to Arrow Point* – Shoulder improvements for non-motorized users are recommended. An improvement project is currently programed in the City's CIP for this segment.

WSDOT Mitigation

Six SR 305 intersections and roadway segments north of Day Road currently fail to meet LOS and will continue to deteriorate. Refer to chapter 4 of this Plan for recommendations.

Table 3-9 Intersections PM Peak Hour LOS Deficiencies – 2021 Forecast

Intersection	Control Type ¹	2021 Delay ² (s/veh)	2021 LOS	Possible Mitigation
Madison Ave N / Wyatt	AWSC	44.2	E	Roundabout or signal
SR 305 / Koura Rd	TWSC	43.5	E	SR 305 Corridor Improvements
SR 305 / Lovgreen Rd	TWSC	39.4	E	
SR 305 / Day Rd	Signal	60.1	E	
SR 305 / Hidden Cove Rd	TWSC	>180	F	
SR 305 / Port Madison	TWSC	>180	F	
SR 305 / Agatewood Rd	TWSC	>180	F	

¹TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized

²Average control delay for all movements. For TWSC, delay is reported for the movement with the highest delay.



Table 3-10. Street Segment PM Peak Hour LOS Deficiencies – 2021 Forecast

Segment	From	To	V/C	LOS
SR305	Day Rd	Hidden Cove Rd	0.94	E
SR305	Hidden Cove Rd	Seabold Church Rd	0.96	E
SR305	Seabold Church Rd	Seabold/W Port Madison	0.93	E
SR305	Seabold/W Port Madison	Agatewood Rd	0.99	E
SR305	Agatewood Rd	Reitan Rd	0.98	E
Bucklin Hill Rd	Blakely Ave	Eagle Harbor Dr	0.84	D
Miller Rd	New Brooklyn Rd	Battle Point Dr	0.99	E
Miller Rd	Battle Point Dr	Tolo Rd	0.84	D
Miller Rd	Tolo Rd	Arrow Point Dr	0.85	D
Eagle Harbor Dr	Bucklin Hill Rd	Finch Rd	0.84	D

2035 Traffic Forecast

The analysis of 2035 traffic conditions provides a long-range view of how the roadway system will operate on the Island. The 2035 traffic forecast considers housing and employment growth forecasted by PSRC and by Kitsap County, as well as any roadway network changes that would impact traffic operations. This section describes the results of the 2035 analysis.

2021-2035 Model Forecast Improvements

Few projects have been programmed into the traffic model to be constructed between 2021 and 2035. The City's traffic plan has not been updated since 2004 and was not formally adopted. The State has recently begun longer term planning for the SR305 and other corridors.

2035 LOS

The traffic model produces a forecast of 2035 traffic conditions, which are shown in Figure 3-6. Results of the 2035 forecast show continued heavy congestion and poor level of service along SR305 and some minor intersection problems in the Winslow area.

Roadway LOS

Analysis of the expected traffic in 2035 shows that most of the City's roadway system would continue to meet the minimum LOS standards with the roadway system in Winslow, including SR 305 intersections, generally operating acceptably. Based on the City's existing capacity policy, some roadway LOS failures would still exist on Eagle Harbor Drive and Miller Road.

For the 2035 forecast year, LOS on SR305 from Day Road to the north end of the Island is expected to continue to decline, if roadway segment capacity improvements, in addition to intersection operation improvements, are not addressed.

Intersection LOS

The intersection analysis results from the 2035 Plan year are shown in Tables 3-11 and 3-12. Assuming the identified short term planning horizon improvements are provided in the Winslow



Area, further intersection improvements are needed or anticipated. At the intersection of Winslow Way and Erickson restricted turning movements are advised to maintain LOS.

By 2035, the increase in traffic on SR 305 is expected to result in continued deterioration of intersection operations. Excessive delay would occur at nearly all of the intersections north of Day Road. The intersections at SR 305 and Koura Road would further deteriorate from LOS E to LOS F.

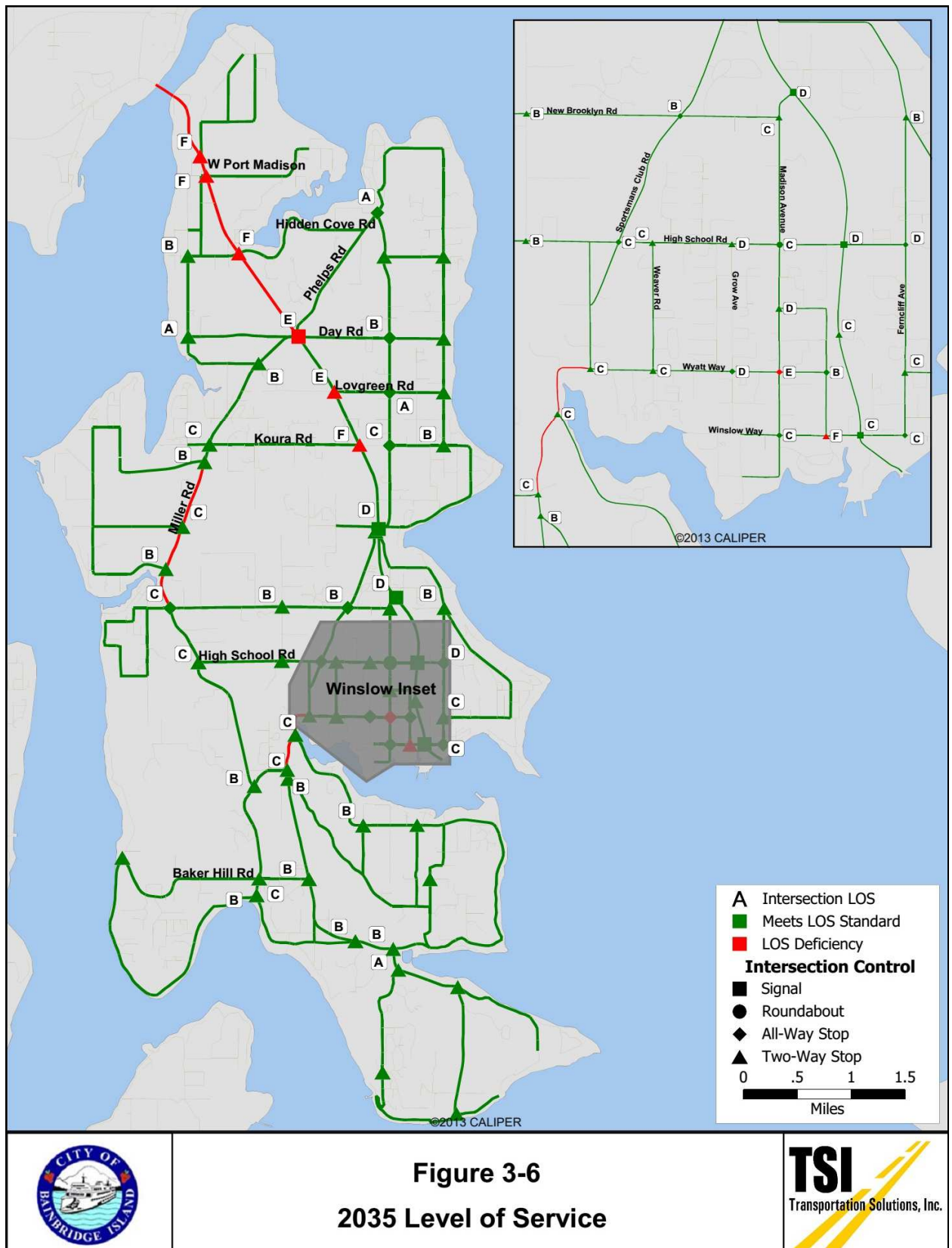




Table 3-11. Intersections PM Peak Hour LOS Analysis – 2035 Forecast

Intersection	Control Type ¹	2035 Delay ² (s/veh)	2035 LOS	Possible Mitigation
Madison Ave N / Wyatt	AWSC	42.9	E	Roundabout or signal
Winslow Way / Erickson Ave	TWSC	64.4	F	Access restrictions / RIRO
SR 305 / Koura Rd*	TWSC	51.2	F	SR 305 Corridor Improvements ³
SR 305 / Lovgreen Rd ⁴	TWSC	45.1	E	
SR 305 / Day Rd	Signal	78.7	E	
SR 305 / Hidden Cove Rd ⁴	TWSC	>180	F	
SR 305 / Port Madison	TWSC	>180	F	
SR 305 / Agatewood Rd	TWSC	>180	F	

¹TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control; RAB = Roundabout; Signal = Signalized

²Average control delay for all movements. For TWSC, delay is reported for the movement with the highest delay.

³Specific corridor improvements identified below

⁴Alternative access to SR 305 is provided for locations w/ right in and right out (RIRO) access during PM peak hour:

- Koura Rd access via Miller Rd
- Lovgreen Rd access via N Madison Ave or Miller Rd
- Hidden Cove access via Phelps Rd, Seabold Rd or Day Rd

Table 3-12. Street Segment PM Peak Hour LOS Analysis – 2035 Forecast

Segment	From	To	V/C	LOS
SR305	Day Rd	Hidden Cove Rd	0.95	E
SR305	Hidden Cove Rd	Seabold Church Rd	1.03	F
SR305	Seabold Church Rd	Seabold/W Port Madison	1.01	F
SR305	Seabold/W Port Madison	Agatewood Rd	1.05	F
SR305	Agatewood Rd	Reitan Rd	1.04	F
Bucklin Hill Rd	Blakely Ave	Eagle Harbor Dr	0.86	D
Miller Rd	New Brooklyn Rd	Battle Point Dr	0.97	E
Miller Rd	Battle Point Dr	Tolo Rd	0.81	D
Miller Rd	Tolo Rd	Arrow Point Dr	0.82	D
Eagle Harbor Dr	Bucklin Hill Rd	Finch Rd	0.85	D

2021-2035 Mitigation

Mitigating the LOS for the City intersections would require minor improvements which can be programmed into the City's future transportation improvements program. The increased traffic volume expected to use SR 305 in 2035 would overwhelm the existing facility, resulting in a situation that cannot easily be mitigated.



City Mitigation

Improvement to intersection channelization and/or intersection control can mitigate the substandard LOS at all of the City intersections. The following project are proposed to improve LOS at the identified substandard intersection:

- *Ericksen Avenue at Winslow Way* – An intersection control improvement such as prohibiting left turns during peak traffic hours is recommended.

WSDOT Mitigation

Roadway segments along the seven-mile SR 305 corridor within the study area will operate at LOS F. This problem is based on lack of roadway capacity that affects the intersection operation as well, making it extremely difficult to mitigate individual locations. Any mitigation that is proposed would need to be examined on a corridor basis, and would need to be consistent with WSDOT operational objectives, as well as City's goals and objectives with regard to traffic operations, environmental and community character concerns. An individual solution for each problem location would not provide an adequate assessment of the corridor-wide issues that are present on the highway.

There are a number of possible solutions that could be proposed to mitigate the corridor. In order to adequately explore possible solutions, a special study was performed for this corridor. The results of the study are explained in Chapter 4.

Other Mobility Issues

There other issues that affect the mobility of traffic on the roadway network. These issues include factors that influence how traffic operates and connects to the City's roadway system. The three areas discussed in this section include the connectivity of the roadway system, access management, and special study areas identified by the Steering Committee.

Connectivity

Connectivity is defined as the level of connections between roadways in a transportation system. In concept, connectivity describes the efficiency of travel between any two points on the roadway system. A high level of connectivity is characterized by a well-developed street network, available alternative routes, quick response times for emergency vehicles, good mobility for pedestrians and bicyclists, and an efficient use of the roadway system. A low level of connectivity is characterized by numerous dead-end streets, cul-de-sacs, and roadways that do not connect, resulting in poor response times for emergency vehicles, circuitous routing of pedestrian and bicycle travel, and inefficiencies in traffic flow. Low connectivity can also result in interrupted access to areas in the event of a road closure such as a traffic accident or landslide, and can cause a high level of congestion and bypass traffic on the available streets.

On Bainbridge Island, an example of an area with relatively high connectivity is the Winslow area, where the street network is more developed and few streets end in dead-ends or cul-de-sacs. However; there are areas in Winslow where there are "super blocks" which inhibit connectivity. Many parts of the conservation area have low connectivity.



Connectivity improvements are usually undertaken to solve potential safety problems or to improve traffic flow. New connections can be constructed to provide alternative access in areas where there is only one roadway serving many homes or businesses, where the existing road is unstable due to steep slopes or erosion, or where an alternative route is needed to provide relief to an overly congested route.

Seventeen connectivity projects have been identified across the Island to be developed as traffic and other needs dictate. These are shown in Figure 3-10 (general area of connection shown with star) and described in Figure 3-11. The potential connections shown are recommended for development by the Steering Committee. The recommendations were developed by looking at the needs of schools, fire and emergency medical response, and other public facilities, as well as access to landlocked properties. Each potential connection will be considered separately as traffic patterns and emergency response times warrant, will be studied to identify potential impacts, and will include discussions with affected property owners. Connections will be included with other nearby projects if possible. Connectivity improvements are not included in this Plan's 2035 traffic model.

Access Management

Access management is the control of the number and location of access points along a roadway, in order to provide access to property, maximize safety for all roadway users, and optimize roadway operations. Access management is especially important on arterial roadways and highways.

Access management is generally implemented on roadways for three reasons: to improve roadway operations, to improve safety, and to improve access to properties. Roadways operate best when all vehicles travel in a straight line. Conflict points occur when the path of one vehicle crosses the path of another. These can be at intersections, driveways, or at other locations where vehicles turn. Vehicles that slow to make turning movements, accommodate merging traffic, or allow crossing traffic flows all contribute to the reduction in the number of cars that can travel through a corridor. Reducing conflict points increases capacity and traffic speeds.

Multiple conflict points not only slow traffic and reduce roadway capacity, but also increase the potential for crashes. Rear-end and turning vehicle collisions can be minimized through the use of access management strategies that reduce conflict points. Too many conflict points can also interfere with access to properties by making it difficult for vehicles to turn across traffic, or by restricting turning movements. Access management can also improve access to individual properties by organizing driveways at locations where turning movements are safer and easier.

On Bainbridge Island, access is a major issue along SR 305 corridor, particularly north of Hidden Cove Road. Along this stretch of the highway there are multiple driveways and streets where the only access to properties is via the State SR 305.

Techniques that can be applied to increase the mobility and safety of a travel corridor vary from development of shared access points to the installation of medians or other turning restrictions.

Control techniques fall into two categories: driveway access and roadway operation. Driveway access controls prescribe the number and location of driveways for properties along a roadway



segment. Roadway operation controls provide for access to properties and cross streets. The following list identifies the techniques included in each category:

Driveway Access Controls / internal circulation between parcels

- shared driveways
- limits on number, spacing, and size of driveways
- consolidation of access for adjacent parcels
- use of one-way driveways
- right-in/right-out (RIRO) access
- development of access driveways on minor streets

Roadway Operation Controls:

- refuge lanes or two-way continuous left turn lanes
- turning movement limitations through signage and channelization
- construction of deceleration lanes
- raised medians that limit left turns
- traffic signals at high volume locations
- provisions for U-turns

The State of Washington supports the use of access management strategies to protect its key roadways and travel corridors. RCW 47.50.010 requires that access be managed along all state facilities:

“Regulation of access to the state highway system is necessary in order to protect the public health, safety, and welfare, to preserve the functional integrity of the state highway system, and to promote the safe and efficient movement of people and goods within the state.”

While access management may not solve the corridor’s congestion problems, adoption of access management strategies and practices will increase the efficiency and safety of the corridor.

The City of Bainbridge Island does not currently have a formal access management program. Some aspects of access management, such as number and location of driveways and internal parcel circulation, are monitored by the Public Works Department during the site plan review process.

WSDOT manages access on state highways, including SR 305 as it crosses the Island. This highway is classified as *Partial Access Control*, which has the following definition: “Access approaches are permitted for selected public streets, roads, some crossings, and existing private driveways. No commercial approaches are permitted and no direct access if Public Street or road access is available.”







Figure 3-7 Guide To Potential Connectivity Improvements

This figure identifies potential connectivity opportunities. As part of the 2004 Island-wide Transportation Study, a special study was undertaken to identify motorized connectivity opportunities. Most of the identified locations have their origins in this study. Refer to the write up in the former study for commentary.

The guide to potential connectivity is focused on vehicular connectivity. Where this plan has identified locations for non-motorized connectivity in the Planned Facilities Maps (Maps C and D) in Chapter 6, commentary is provided.

Many of the potential connections are at locations where there is existing unopened or under-utilized City Rights-of-Way, or where existing rights-of-ways is in close proximity.

#15 was removed due to its distance from existing rights-of-way and location being within a Park. #19 and #20 were added as possibilities to improve access to SR305.

If and when there is further interest in developing connectivity, further study and public involvement is needed.

1. **Agate Pass Road** – The extension of Agate Pass Road between Dolphin Road and W. Port Madison Road would provide a secondary access to the area and lessen traffic impacts and delay at the intersection of Agatewood Road/SR 305. This location could also be improved to serve as a non-motorized route connecting two walkable areas of the Island.
2. **Phelps Road** – The realignment of Phelps Road, east of current intersection with Day Road would improve the intersection's geometrics and intersection spacing from Day Road/SR 305.
3. **Not used.**
4. **Not used.**
5. **Not used.**
6. **Not used.**
7. **Not used.**
8. **Not used.**
9. **Ericksen Avenue** – The connection between Ericksen Avenue and Hildebrand Lane would eliminate the existing connection through the bank parking lot and improve the mobility of the transportation system. There is an existing non-motorized route at this location.



10. **Not used.**
11. **Not used.**
12. **Not used.**
13. **Not used.** A non-motorized route is designated in this plan at this location.
14. **Not used.** A greenway is planned for this location to enhance the exiting non-motorized route.
15. **Not used–**
16. **Country Club Road** – The connection between Country Club Road and Toe Jam Hill Road would provide an access around a potential shoreline erosion area.
17. **Not used.**
18. **Reitan Road** - Providing an access on both sides of the highway is recommended to maintain reliable access to the neighborhood as the only access is from SR305. This improvement would allow limited access for a section of SR305.
19. **Agate Beach Lane** - Providing a frontage road to link this and other properties fronting SR305 is recommended to maintain reliable access. This improvement would allow limited access for a section of SR305. This improvement would also provide an alternative route to SR305 for non-motorized users. The existing Rotary welcoming park is located in the State's ROW and may need to be altered to provide for this improvement.
20. **Lovgreen Road** – A connection to Miller Road would provide alternative access to SR305, maintaining reliable access to the neighborhood and to SR305 via Miller Road. A non-motorized trail currently exists in this location.

CHAPTER 4 SR 305



State Route 305 is the State Highway System's primary connection via the Washington State Ferry (WSF) between Seattle and the Kitsap Peninsula. Traffic during the morning and evening peak travel hours is congested resulting in long delays. This chapter reviews the issues associated with SR 305 and its impact to the City's roadway system. The chapter also describes a special study that was performed, and recommendations for future actions.

Summary of SR 305 Issues

SR 305 is significant to the City's roadway system as the major north-south travel corridor on the Island, not only for through traffic traveling to and from the ferry dock, but also for Island residents and employees. The Comprehensive Plan goals and policies address the LOS standard, access to the Island via the Agate Pass Bridge, improvements to the highway, impacts to the highway from the City's Comprehensive Plan elements, and off-Island improvements that affect on-Island traffic.

As a state highway, WSDOT is the agency responsible for the operation and maintenance of SR 305. This means that WSDOT sets the minimum LOS standard and is responsible for the funding and implementation of any improvements to the highway. According to WSDOT policy, control of the highway within a City's corporate limits can be transferred to the City if its population is greater than 22,500. Bainbridge Island exceeded this population threshold in 2010 with a population of 23,025, according to US Census data. As a result, some of the responsibility for highway improvements could shift to the City, however because SR 305 is a regional facility and is listed as a Highway of Statewide Significance, some responsibility could also remain with the WSDOT.

SR 305 LOS Impacts

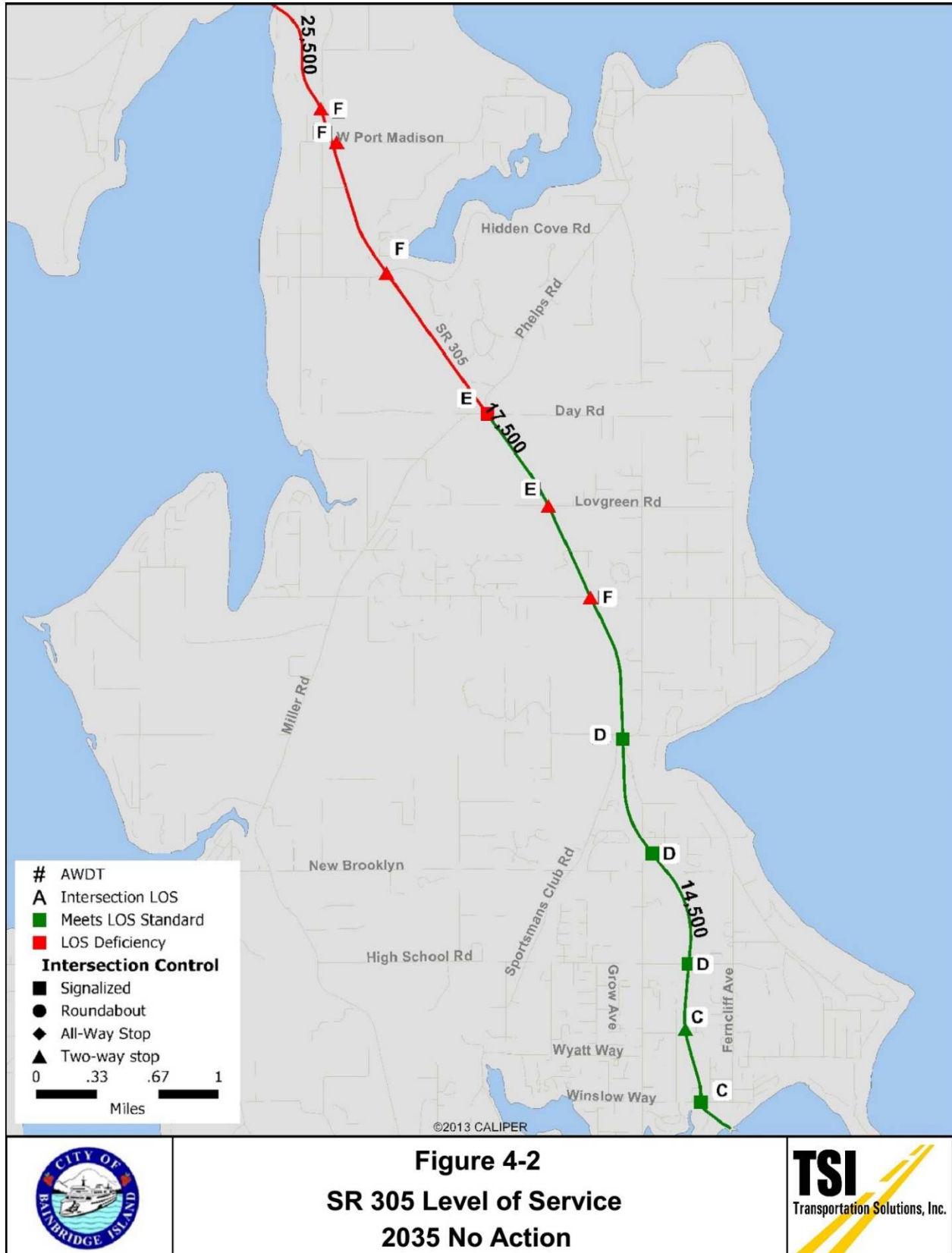
The traffic analysis (described in Chapter 3) shows that current conditions on SR 305 do not meet the WSDOT minimum LOS standards, and future traffic will be even worse. Currently, along the SR305 Corridor all collector street intersections fail and one secondary arterial intersection (Koura Rd.) does not meet level of service standards. The PM peak hour average speed along the seven-mile corridor is currently 16 miles per hour, with several roadway segments operating below the average speed. The problem is most severe at the north end of the Island, where there are large back-ups beginning at the Suquamish Way intersection and Agate Pass Bridge. By 2021, all of these locations will have failed LOS. Additionally, by 2035 the Day Road intersection will be LOS D and approaching falling below standard. The corridor is forecasted to operate with an average speed of 14 mph by 2035, which is less than one-third the posted 45 mph speed limit at the north end of the Island. The expected level of service for the highway without improvement – described as the No Action alternative as shown for the 2015 and 2035 years in Figures 4-1 and 4-2.





Figure 4-1
SR 305 Level of Service
Existing Conditions







What Makes SR 305 Different?

The traffic issues on SR 305 are different than the issues associated with the rest of the Island's roadway system for several reasons. First, the highway facility is owned and operated by the WSDOT. This is significant because WSDOT is the lead agency and would have primary decision-making and financial responsibility for improvements to the highway. Second, even though the highway functions as a main north-south corridor for Island travel, it is also heavily used by regional traffic, especially by vehicles traveling to and from the ferry terminal in Winslow. Because the WSF controls the ferry schedule, they have a great deal of influence on when and how much ferry traffic is using the highway. Third, the highway experiences substandard levels of service over most of the seven-mile length of the highway on the Island and the Agate Pass Bridge. Improvements to the highway would require several large projects that could be expected to require significant time to complete the planning, design, and construction of each, as well as a significant financial outlay.

SR 305 Special Study

Because of the major issues associated with SR 305 improvements, a preliminary study was undertaken to determine what kind of possible improvements could resolve the traffic issues without looking into the environmental, financial, or other issues associated with the improvements. The goal of the study was to identify possible improvements along SR305 to compare their effectiveness to improve mobility along the corridor, improve permeability across the corridor, and provide reliable access to neighborhoods whose only access is from SR305. Based on this information, the NMTAC and City Staff, included recommendations in the IWTP to better position the City to advocate for improvements.



Because SR 305 is a state facility, all improvements would require a commitment by WSDOT to be constructed. The City could participate in the improvements in order to improve mobility and level of service for the City roadway system.

Special Study Alternatives

Three preliminary alternatives were developed to examine different future scenarios to see if there is a way to overcome the SR 305 operational deficiencies. Alternatives for at grade signalized intersections, at grade roundabouts, and separated grade intersection improvements. Refer to Figures 4-3, 4-4, and 4-5.

Special Study Results and recommendations for further study

The three improvement alternatives were analyzed and compared to see how well they were able to meet LOS minimum standards. The special study compares at-grade and separated grade alternatives. Both at grade and separated grade alternatives maintain an acceptable LOS at intersections. However, in some locations alternative longer routes would need to be taken to access intersections meeting LOS standards. Additional intersection improvements could be evaluated in a more comprehensive plan. Roadway level of service failures are not



mitigated in either of the two alternatives but would require additional roadway capacity along the SR305 corridor (e.g. in the form of added travel lanes) or decreased volume. **Note that it is assumed in the analysis that the SR305 intersection at Suquamish Way will continue to be improved so as not to have a ripple effect on Island intersection locations.**

Further study is needed to design alignments and develop reliable cost estimates to plan for maintaining adequate level of service both currently and in the next 20 years along SR 305. Grade separated alternatives would be significantly more costly to implement than at grade alternatives. Both alternatives achieve acceptable LOS. Therefore, it may be difficult to justify the additional cost of grade-separated alternatives, especially larger interchanges. Some combination of intersection improvements and limited access is needed to reduce congestion and provide for reliable access. It may be practical to incorporate less extensive grade separation options for both motorized and/or non- motorized modes to maintain permeability along the corridor.

The SR305 corridor as it exists today and with any future improvements has a significant impact on many aspects of transportation on Bainbridge Island. Further study should be inclusive of and comprehensive to address all aspects. The following issues have been identified for inclusion in further study of the corridor:

- Operations of adjoining roadway networks and connectivity – The study should consider the effectiveness of the adjacent roadway networks along the corridor. There may be opportunities to mitigate cut-through-traffic and improve connectivity. There may be impacts to circulation and neighborhoods.
- Corridor Permeability – The 2004 IWTS included a special study that looked at two improvement scenarios. Permeability for all modes remains a key consideration for any scenario.
- Maintaining reliable access for neighborhoods – For many neighborhoods, such as in the Agate Pass and West Port Madison areas, the only access is from roadways that connect to SR305. Maintaining reliable access is an important aspect of any scenario.
- Sound to Olympics Trail and Intra-Island Trails – The City envisions a network of regional and sub-regional separated pathways along and crossing the SR305 corridor. The existing and potentially wider highway presents a barrier to many users. Permeability for active modes of transportation is a key consideration for intersection and other improvements.
- Bus Transit – Improving efficiency of and access to transit along the corridor is an important aspect that should be studied and integrated into all scenarios. Collaboration with Kitsap Transit is needed to explore possibilities.

Other SR 305 Issues

The deficient level of service is the most significant issue currently affecting the City's transportation system. The bridge, park and ride, and off-Island improvement issues will be addressed in future studies in conjunction with an overall plan for SR 305 improvements. The City should take a leadership role in initiating studies to develop improvement projects and not defer to WSDOT's timeline and priorities. The City should partner with Kitsap Transit and others to reduce vehicular demand on the Highway.



Past Improvements to SR 305

Since the 2004 IWTS, WSDOT has implemented a number of intersection projects including the following:

- Signal improvements at N. Madison.
- Signal timing optimization for peak hour ferry offloading at the Winslow Way intersection
- Signal timing optimization for the Day road intersection to improve access from Day and Miller.
- Bike through lane on right improvements to the north and south legs of the intersections at Madison, Sportsman's Club/ N. Madison, and Day Roads.
- Right hand turn lane improvement to the south leg of the Suquamish Intersection, including bicycle lane, sidewalk, and crossing improvements.









SR305 Recommendations:

A number of interim and long term recommendations are as follows based on the special Study.

Interim Improvements:

The following interim improvements are recommended at the time of this Report for the next 6 years:

- Advocate for WSDOT to include “do not block” intersection signage at intersections north of Day Road, Hidden Cove, West Port Madison, and Agate Point in the above WSDOT project.
- Intersection improvements at West Port Madison eliminating access to Seabold and providing a receiving lane (similar to Agate Pass) for south bound traffic. The intent of this proposal is to reduce cut through traffic in the Seabold neighborhood and improve access to SR305 from West Port Madison Road.
- Advocate for consistent 8 foot or wider paved shoulders along the full length of the corridor to accommodate cyclists and pedestrians.
- Advocate for the Sound to Olympics Trail and its branch trails.
- Advocate for improved non-vehicular access to ferry and bus transit including park and ride and bike parking opportunities both on and off island.

Long Term Recommendations:

The following long term improvement projects are recommended:

- Advocate for continued improvements at the intersection to Suquamish to address north-south mobility/capacity.
- Advocate for capacity improvements to roadway segments north of the Miller Road intersection. Alternatives may include HOV lanes, a reversible HOV lane, or shoulder use by HOV's. Consider accommodation for bus rapid transit.
- Advocate for Agate Pass Bridge replacement.
- Advocate for a separated pathway for non-motorized users in conjunction with other improvements.
- Advocate for limited access improvements at Reitan in conjunction with the bridge replacement. This would include access for Reitan and possibly connection frontage roads from both sides of the highway in conjunction with the bridge replacement.
- Advocate for intersection improvements at Agate Point & West Port Madison to restore access to these “highway locked” areas. A joint signal may be the most economical solution, if spaced evenly with adjacent signals allowing for signal synchronization. This could interrupt the continuous traffic at peak hours should the WSDOT proposed round-about be constructed at Suquamish Way. Note that this signal could be programed to flash yellow/ red during non-peak hours.
- Advocate for intersection improvements at Day Road. Improvements to accommodate additional (4 lanes) in the north-south direction at the signalized intersection would help with queuing for operational efficiency. The Phelps Road intersection with Day Road is in close proximity to SR305. If funding can be secured for a two lane round-about it may be a preferred solution to address this complexity. With either a wider signalized intersection or two lane round-about, additional facility investments would also be needed to accommodate pedestrians and cyclists.



The above recommendations are based on information from the special study that was included in the update of this Plan. The special study was limited to the LOS data developed using the updated traffic data and traffic model. Further study and preliminary design and engaging the community in a process for decision making is recommended prior to developing and prioritizing specific improvement projects. The priorities for funding are based on reducing traffic congestion on SR305 and maintaining access at intersection locations with no alternative access.

At the time of the writing of this Plan a gas tax increase had been passed by the State Legislature. The City of Bainbridge, along with Kitsap County, the Suquamish Tribe, and the City of Poulsbo are organizing a multi-agency effort to plan improvements for the corridor. WSDOT is undertaking a State-wide effort for planning corridors including SR305, called “Corridor Sketches”.

New State funding may provide for intersection improvement at Suquamish Way and as much as 6 million dollars of improvements on Bainbridge Island. The level of funding for Bainbridge could address intersection improvement and other related work at the Day Road intersection, the Agatewood/ W. Port Madison intersections, and possibly some limited access roadway improvements. At other intersections along SR305 where there are alternative routes to access SR305 access restrictions would be employed for peak hours until additional funding can be secured.

Chapter 5 Safety and Maintenance

Safety and the related issue of maintenance are primary community concerns to ensure the roadway system's safety and longevity. This chapter provides an overview of the safety and maintenance issues for the City of Bainbridge Island. The core of the safety section is a discussion about crash history and high crash locations. The maintenance section describes maintenance issues, activities, and programs that occur on the Island.



Many of the Island's two-lane roads were constructed before current safety guidelines were developed. As traffic levels increase, the potential for safety concerns rises. There is a combination of factors that can lead to crashing on roadways, including demographic changes to the Island's population, preferences for larger or more powerful vehicles, increased motor vehicle volumes, and greater use of roadways by pedestrians and bicyclists. Crashes on these roads can have more serious consequences because of narrower lanes and shoulders, hazardous roadsides, steeper grades, and sharper curves, which also impedes the ability for emergency vehicles to respond.

Speed and inattention are factors in the risks and severity of traffic crashes. Both the likelihood of crashes and the severity of injuries are greater with higher speeds. Communities are embracing initiatives for lowering speed limits such as the Vision Zero initiative that has been adopted by the City of Seattle and WSDOT's target zero initiative. Vision Zero initiatives make the goal of zero deaths and serious injuries the highest priority and emphasize government taking the lead to implement improvements to further that goal. An emphasis is placed on lowering speed limits, through engineering solutions such as narrowing traffic lanes, and employing traffic calming.

The City of Bainbridge embraces the principle of putting people first when it comes to safety over efficiency for vehicular traffic and even bicycle traffic. The City's standard roadway lane width is 10 feet, providing narrow lanes for traffic calming. The following areas are emphasized for safe street design:

- Consider neighborhood context and existing and future non-motorized use when establishing speed limits.
- In developing capital projects, consider elements that manage speed, improve safety and traffic calming. Examples include non-motorized improvements, roundabouts, traffic islands, and curb bulb outs, and radar feedback signs.
- Include bicycle climbing lanes at locations where differential speeds are higher between cyclists and motorists.
- Provide Pathways separated from the roadway for pedestrians, wheel chair users, and cyclists.
- Provide and maintain street lighting in areas used by pedestrians and cyclists in designated centers of the Island and near schools. Locations for lighting include intersections and mid-block crosswalks.



- Maintaining or providing vegetation close to the roadway for traffic calming..

The number of crashes provides an indication of the safety of an intersection. Types of safety concerns that may contribute to accident data include:

- *Road Surface Conditions* – Poor roadway surface conditions such as pavement edge drop-offs, potholes, worn lane striping, and reductions in surface friction due to age and wear affect vehicle stopping and maneuvering capabilities. Road conditions may present hazards to cyclists and pedestrians.
- *Intersection Configuration* – Crashes related to high turning volumes, lack of channelization, and improper phasing.
- *Non-Motorized Conditions* – High accident data between vehicles with pedestrians or bicycles may emphasize the need for the construction of non-motorized facilities.
- *Geometric Conditions* – Crashes related to undesirable physical characteristics of the roadway's design, such as sight distance, curve radii, paved width and shoulder, and roadway slope.
- *Enforcement Issues* – Crashes related to vehicle speeding, intersection traffic violations, driving under the influence of alcohol or illegal drugs.



Crash History

Crashes can indicate where safety issues exist within a transportation system. The number of accidents at a specific location is a function of a number of factors including the quality of reporting data, traffic volumes, roadway design and geometrics, vehicle speed, and speed limit. For the analysis, the total number of annual accidents at intersections over a ten year period is used. Unsignalized intersections with an average annual number of crashes of 5 or more is considered to be a high crash location. For signalized intersections 7 or more crashes is considered to be a high crash location.

City Intersections

Table 5-1 indicates intersection locations with 10 or more crashes over the ten year period ending in 2014 per the City's accident data base at locations other than along the SR305 corridor. Current data is compared with data from the previous study which was reported over a 9.5 year period ending in 2000.



Table 5-1. Bainbridge Island Crash Locations

			Average Annual			
Intersection		Type	Accidents 2005 - 2014	Crashes	Accidents 1991 - 2000	Average Annual Crashes
High School Rd	@ Madison Ave.	RA	22	2.2	45	4.7
High School Rd	@ Hildebrand Lane	SC1	20	2.0	19	1.9
Winslow Way	@ Ericksen Ave.	SC2	14	1.4	18	1.8
Wyatt Way	@ Madison Ave.	SC4	13	1.3	23	2.4
Miller Rd.	@ Koura Rd.	SC2	12	1.2	---	---
High School Rd.	@ Grow Ave.	SC2	10	1.0	24	2.5
Eagle Harbor Dr.	@ Bucklin Hill Rd.	SC1	10	1.0	---	---

RA - Round About, SC – Stop Controlled

All of the top ten intersections fall below the high accident crash criteria threshold. The highest number of accidents crashes is reported for the two intersections along High School Road west of and in closest proximity to SR305.



SR 305 Intersections

Table 5-2 indicates the accident rates at primary intersections along the SR 305 corridor from data available from Washington State for the ten year period ending in 2014.

Table 5-2. SR 305 Crash Locations**

Intersection		Signalized/ Unsignalized	Accidents 2005 - 2014	Average Annual Accidents	Accidents 1997 - 2000	Average Annual Accidents
SR 305	@ Madison Ave.	S	82	8.2	22	6.8
SR 305	@ Sportsman's Club Rd.	S	71	7.1	21	6.5
SR 305	@ Day Rd.	S	52	5.2	34	10.5
SR 305	@ High School Rd.	S	47	4.7	25	7.7
SR 305	@ Winslow Way	S	31	3.1	9	2.8

*Under 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data

As indicated by the table, the intersections at SR 305/Madison and SR 305/Sportsman's Club exceed 7 accidents per year which is considered higher than what is normally expected for signalized intersections. There are no scheduled improvements identified by WSDOT for these intersections.

Accidents involving pedestrian and cyclists

From review of the State accident report there were 19 injury accidents reported involving pedestrians (6) and cyclists (13) along the SR305 corridor for the ten year period. The highest concentration of accidents was near the ferry terminal. The vast majority of these crashes outside of the Winslow area involved cyclists. Capital non-motorized improvements on SR305/ Olympic Drive near the ferry terminal are in progress.

Apart from SR305, there were 121 injury accidents reported involving pedestrians (27) and cyclists (94) for the ten year period. There was at least one fatality involving a pedestrian struck crossing New Brooklyn in December of 2010. The highest concentration of accidents occurred on Madison Avenue (17), Winslow Way (16), High School Road (14), and Wyatt Way (10). In 2012 Winslow Way was reconstructed including pedestrian and bike facility improvements. Non-motorized improvements are planned for Wyatt Way and Madison Avenue.



Addressing Safety Problems

Addressing safety problems requires a combination of approaches ranging from educating the driver, enforcement, to improving the roadway. Roadway improvements fall into two major categories — improvements designed to prevent crashes from occurring, and improvements that minimize the severity of crashes that occur. Types of improvements include:

- *Clear Zones*—Areas of open space with gentle slopes adjacent to the road giving motorists room to safely regain control of their vehicles if they run off the road. These areas should include features such as signs and utility poles which break away on impact, barrier walls or guardrails that redirect vehicles away from hazards, and crash cushions that absorb energy and lessen the severity of crashes.
- *Guardrails* – The Island along its perimeter has many medium and high bluffs. In the interior the island's topography is hilly in many areas. Guardrails are employed at many locations. Many of these guardrails are older and do not meet current design standards and some are in disrepair. There are some locations where new guardrails may be warranted due to roadway configuration, topography, travel speed, and traffic volumes.
- *Signing, Pavement Marking, and Delineation* — Traffic signs, pavement markings, rumble strips, and reflective devices improve driver perception of important roadway features and alert them to changes in roadway geometry or other conditions.
- *Pavement Improvements and Preventive Maintenance* — Greater smoothness and friction of the road surface are provided by pothole repair, resurfacing, rehabilitation, and reconstruction.
- *Intersection Controls* – Stop signs, round-about, and traffic signals can better control traffic flow and reduce intersection conflict points.
- *Adding or Widening Shoulders* – Shoulders provide drivers, pedestrians, and cyclists additional room to maneuver on narrow roads or to pull out of travel lanes.
- *Channelization* – Separate lanes for left or right-turning traffic avoid impediments to traffic flow can reduce rear end crashes.
- *Pedestrian/Cyclist Facilities*—A variety of techniques can be used to separate pedestrians and cyclists from motor vehicle traffic to improve safety.





How study addresses safety

The IWTP proposes improvements that will improve the safety of the roadway system through targeted improvements at intersections and roadways. Safety-related elements of this study include:

- Reviewing roadway geometrics and promoting safety enhancements,
- Identifying and mitigating high crash locations,
- Identifying and mitigating intersections with poor LOS operations, and
- Including safety as a factor in the evaluation of the roadway system.

Safety Programs

Current Safety Programs provided by Public Works include:

- Roadside Safety Program – This program provides for the inventorying and inspection of roadside elements of the Island's secondary arterial streets and higher volume collector streets. The program also provides for contracting work that is beyond the capacity of Operations and Maintenance. Roadside elements include items such as guardrails, shoulders, and clear zones. This program provides for the prioritization of guardrail repairs, replacements, and installations.
- Focused Traffic Studies Program – This program provides for the study of traffic control measures implemented on the Island's roadways. As conditions change with factors such as population growth and development, it is necessary to evaluate the effectiveness of roadway signage and other traffic control devices. Many residents are concerned about vehicular speeds and this program provides for the evaluation of speed limits.

Maintenance

An important function of the City of Bainbridge Island is preservation and maintenance of the existing roadway system. Careful maintenance allows existing travel corridors to maintain their function, prevents damage from water and vehicle loads, and maximizes the use of City resources.

Maintenance Issues

The City of Bainbridge Island's Public Works Department is in charge of roadway maintenance activities for the Island.

Key maintenance issues for the City include:

- *Vegetation growth* – Overgrown vegetation requires the trimming of foliage to retain roadway safety and sight distance.
- *Pavement maintenance* – As roadways age, the pavement surface and underlayment can be damaged by traffic, heavy vehicles, weather, and water



seepage if not properly maintained. Poor pavement condition can affect the safety of the road for drivers and bicyclists.

- *Gravel road grading* – The surface of gravel roadways can deteriorate fairly quickly, producing potholes in the roads. These roads need regular re-grading to maintain the surface.
- *Dirt and gravel on shoulders and roadways* – Regular sweeping of roadways is necessary to provide a clean, smooth surface for travel. Bicyclists are particularly concerned about gravel, dirt and debris accumulating on shoulder areas.
- *Stormwater* – Maintaining good roadway stormwater drainage is important to protect the roadway and to prevent flooding hazard.
- *Roadway erosion* – Roadway erosion on shoreline and steep slope areas is an issue for the City. Repair of these roadways often is expensive and may require special permits and consistency with shoreline management goals and objectives.

Maintenance Programs

The roadway system has a number of on-going needs to keep the current roadway system functioning, and to prevent major roadway failures that would require extensive roadway reconstruction. The City Public Works Department's operation and maintenance program has the primary responsibility for these programs.

- *Street sweeping program* – Street sweepers collect debris and litter before they enter the stormwater collection systems or roadside ditches. This function is important to protect stormwater run-off from the roadways and to provide a safe surface for automobiles and bicyclists.
- *Brush cutting program* – Island-wide mowing of vegetation to maintain roadway clearance and sight lines.
- *Roadway ditches and shoulders* – These components of the roadway system are periodically maintained, cleaned, and reshaped to ensure they function as designed.
- *Roads preservation program* – The City of Bainbridge Island has an annual road program focused on preserving, maintaining, and repairing the existing roadway infrastructure. Each street is evaluated for 1) reconstruction, 2) overlay, 3) seal coat and/or 4) patching. Where the roadway does not require complete reconstruction, the City can repair damaged sections (patch with asphalt), apply chip seal layer (an oil emulsion and crushed rock layer), or overlay new asphalt over the existing pavement.
- *Gravel grading program* – The City fills and regrades the surface of the gravel roads annually.
- *Trail and Pathway Maintenance program* – The City cuts brush and restores trail surfaces to maintain its separated pathway and trail network.
- *Special Maintenance* – The City also performs maintenance activities not addressed in the above programs such as the removal of large trees that may present hazards to the traveling public.



- *Sign Inventory* – The City maintains a data base of signage and routinely maintains or replaces signs to meet reflectivity and other requirements.

CHAPTER 6 NON-MOTORIZED SYSTEMS



Non-motorized Users – people walking, cycling, horseback riding, and using wheelchairs – have an important place in Bainbridge Island's transportation system. Many peak hour commuting trips as well as other trips are made walking or riding. Having non-motorized choices available is important to many Island residents. Facilities that accommodate non-motorized users provide for safety, mobility, support development density, encourage healthy lifestyles, reduce impact to the environment, and ultimately provide for improved quality of life for Island residents, workers, and visitors.

Background / History

Non-motorized modes of transportation have been and continue to be an integral part of Island life. From the late 1800's to the early 1900's, the main transportation to the Island was provided by a small fleet of steam ships referred to as the "mosquito fleet". Roads originated at or near the "mosquito fleet" docks. Early residents walked, rode horses, and biked before the proliferation of automotive transportation. Auto ferry service was brought to the Island in the 1920's at Agate Passage. The Agate Pass Bridge was constructed in 1950. Auto ferry service to Seattle followed in 1951. With the onset of the golden age of the automobile, reliance on non-motorized transportation declined in most places. However, walkability, biking, and horse-friendly neighborhoods remained an attractive part of the Bainbridge lifestyle. Walking and biking continued to be an important aspect of mobility within and nearby the Town of Winslow and other outlying Island town centers. With reliable transportation to Seattle, a commuter culture developed and Bainbridge evolved to be more a more conservation area. With increasing population, bus transit linking residential areas to the ferry terminal became an important element of the transportation system. In more recent times, greater awareness of health and environment, have made walking and biking more attractive modes of transportation.

The entire Island incorporated as the City of Bainbridge Island in 1991. Since incorporation, there has been a greater emphasis on non-motorized transportation planning. Following the development of the 2003 Island-Wide Transportation Plan, non-motorized transportation became a significant driver of the City's Capital Improvement Program. The City has invested heavily in non-motorized improvements over the past decade. The following is a summary of major milestones in the City's non-motorized planning and implementation:

- Inclusion of bicycle system planning and maps in the Transportation Element of the 1992 Comprehensive Plan.
- Development of a Trail System Master Plan in 1994.
- Recommendations for sidewalk and bicycle improvements in the 1995 Winslow Master Plan.



- Formation of a Non-Motorized Transportation Advisory Committee (NMTAC) to advise Council and support staff in December of 2002.
- Drafting of an island-wide Non-Motorized Transportation Plan in 2003. This plan included a comprehensive set of policies and goals that were later adopted in the City's Comprehensive Plan. Extensive Island-wide non-motorized existing and planned facilities maps were developed. These maps were subsequently adopted in the City's Comprehensive Plan and have evolved through several comprehensive plan updates.
- Inclusion of extensive non-motorized planning in the transportation element of the City's 2006 Comprehensive Plan following the 2003 Non-Motorized Plan.
- Formation of the Core 40 Program to provide a 40-mile integrated shoulder network for bicycles island-wide in 2007. The delivery of several Core 40 projects, including Bucklin Hill and North Madison.
- Delivery of capital improvement projects (mostly grant funded) in the Winslow area providing pedestrian and/or bicycle facilities including; Bjune, Ericksen, Ferncliff, High School, Madison, and Winslow Way.

In the 2004 Island-Wide Transportation Study, the 2003 Non-Motorized Plan was included as a separate volume. In this update, the Island-Wide Transportation Plan, includes the Non-Motorized Plan.



System Overview, Inventory, and Attractions

The City's existing non-motorized transportation system consists of sidewalks, bike lanes, and trails. The City's existing non-motorized facilities are shown in Maps A and B.

Sidewalks are prevalent in Winslow and Lynwood. The city's network of shoulders on arterial streets is largely built out in Winslow. Outside of Winslow only a few roadways have paved shoulders for cyclists.

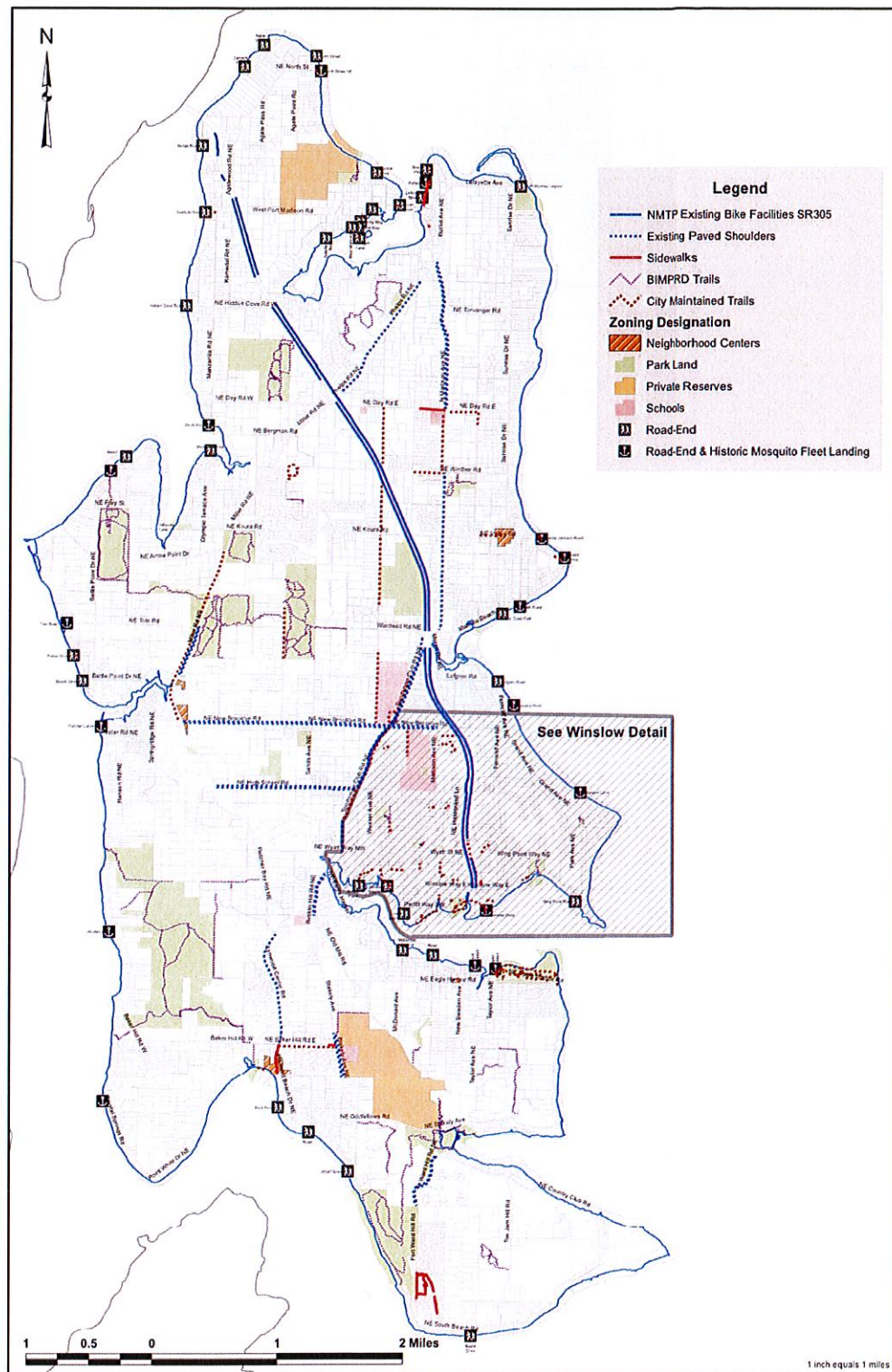
Most City trails of significant length are located within the City's rights-of-way. Other City trails connect to or through neighborhoods in formalized easements. City trails are mostly gravel surfaced and constructed to 6 feet in width although many neighborhood trails are smaller in width. The Bainbridge Island Metropolitan Parks and Recreation District (Parks District) owns and operates a network of trails within, between, and connecting to Parks that comprises most of the length of trails on the island.

There is a huge potential to improve non-motorized access to transit, goods and services, to provide recreational opportunities on Bainbridge Island and to improve the quality of life for citizens. The following nodes are identified for consideration:

- ~ Ferry Terminal
- ~ Agate Pass Bridge
- ~ Winslow
- ~ Designated centers of Day Road, Island, Lynwood, and Rolling Bay
- ~ Residential neighborhoods
- ~ Schools
- ~ Churches
- ~ Parks
- ~ Road ends and shorelines
- ~ Equestrian facilities

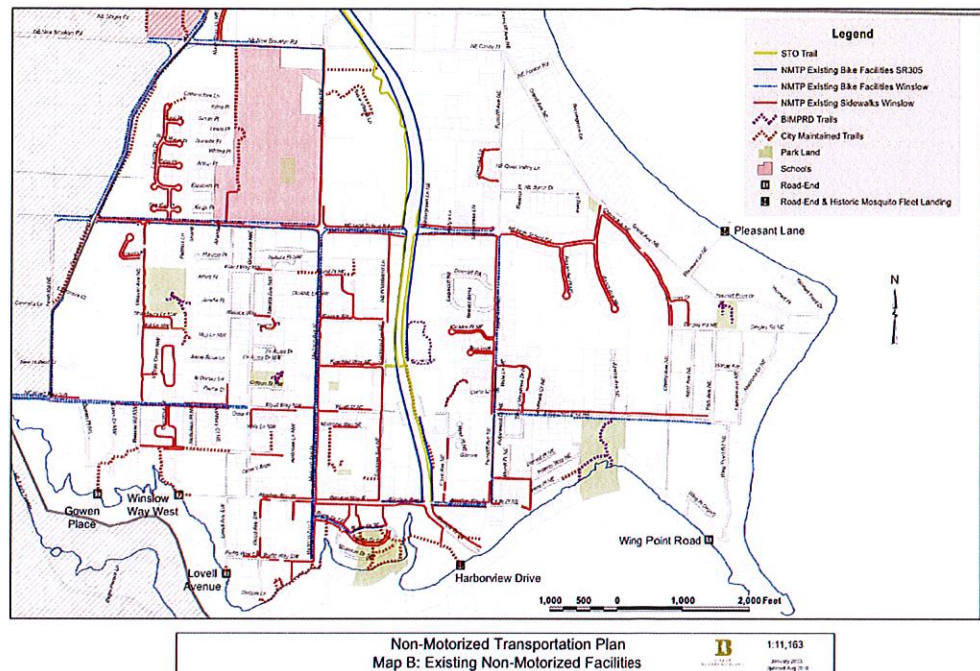


City of Bainbridge Island – Island Wide Transportation Plan
Chapter 6 Non-Motorized System



Non-Motorized System Plan
January 2003 Updated May 2016 Map A: Existing Non-Motorized Facilities





Barriers to use and Connectivity Improvements

Barriers are physical characteristics of a transportation system that limit or restrict mobility for non-motorized users. Some common barriers on the Island are as follows:

- Inadequate maintenance including lack of shoulder sweeping for cyclists, joints at settled sidewalk panels, and poor trail surfaces in need of re-grading and compaction;
- Deficiencies in design such as lack of ADA compliant ramps, facilities that are not of adequate width to be comfortable for many users, and facilities with materials that are not ADA compliant;
- Discontinuities in system networks such as gaps in sidewalks or roadway shoulders, or bike lanes;
- Inadequate facilities at roadway intersections;
- Lack of facilities when systems do not exist or do not extend far enough to meet needs;
- Physical barriers such as naturally occurring ravines or existing developed properties that do not provide for access.



To address barriers and other limitations on non-motorized connectivity across the Island, connectivity improvements are identified in a set of figures and tables which are intended to be living documents updated as new areas are identified and considered warranted by the Public Works Department / Director.

Table 6-1 Identified barriers on SR305 and on City roadways.

Table 6-1, Roadway Network Barriers		
1	SR305 at Vineyard Lane	A separated grade crossing is needed to unite the two sides of Winslow that are divided by the SR305 superblock between Winslow Way and High School Road.
2	SR305 Signalized Crossings	Wide crossings can be a barrier to some users; As capacity improvements are made to SR305, medians, islands, and other pedestrian related improvements should be provided.
3	SR305 Shoulders	Shoulder widening is needed to address gaps between Hidden Cove Rd and the Agate Pass Bridge.
4	City Secondary arterial and collector roadways	Where pedestrians and cyclists do not exist, shoulders and/or separated pathways are needed. Many of these areas are identified for improvements shown in Map E.

Non-Motorized Travel Routes and Network

The vision and goals for non-motorized transportation are established in the Transportation Element of the City's Comprehensive Plan. To meet the vision and mobility and connectivity goals in the Transportation Element of the Comprehensive Plan, a comprehensive network is defined in this section.

Providing facilities for accommodation of non-motorized modes of transportation has consistently ranked high on past City surveys. The City Council appointed the NMTAC to work with staff to plan and assist with the implementation of non-motorized improvements and other work related to furthering non-motorized transportation.



This section provides describes the current needs as understood at this time by the NMTAC and what the best opportunities are given geographical, existing development, and other constraints in providing for those needs.

The over-arching goal embodied in the non-motorized vision and the first non-motorized goal is to provide a network of transportation facilities that provide non-motorized modes of travel for the greatest number and widest range of the traveling public.

The NMTAC considers the following mobility challenges to be high priorities:

- A. Accommodating a wide range of non-motorized users of all ages and abilities.
- B. Providing connectivity to the ferry terminal and the Winslow.
- C. Providing safe routes to schools.
- D. Providing connectivity to designated centers and neighborhoods across the island for all modes.
- E. Improving safety for cyclists and walkers on the Island's secondary arterial roadways.
- F. Improving usability and accessibility of sidewalks in Winslow.
- G. Removing barriers and closing gaps in networks addressing the above priorities. This includes but is not limited to SR305 and other higher volume streets.

Context sensitive solutions for non-motorized modes will depend upon site specific conditions such as existing and planned land uses, the location of origins and destinations such as schools and parks, motor vehicle speeds and volume, and the overall network connectivity.

The non-motorized transportation system is seeks to create a network of facilities that makes it safe for all ages and abilities of people to get around their neighborhoods and the island without a car. This will require facilities that will be evaluated for the particular context but may also include:

- A. Sidewalks and bicycle lanes along streets in the Island's town centers.
- B. Separated non-motorized facilities that provide a non-motorized transportation option for a wide range of people walking, riding bikes, riding horses, or using wheelchairs. This pathway network is envisioned to connect to the City's sidewalk and bike lane infrastructure and connect to main destinations like the ferry terminal, Agate Pass Bridge, Winslow, designated centers, schools, parks, shoreline street ends, equestrian facilities, and other amenities. These facilities will vary depending on purpose but include:



1. The Sound to Olympics (STO) trail, which serves as a centralized spine for non-motorized users and a 12-foot wide separated multi-use path connecting the Bainbridge Island Ferry Terminal to the Agate Pass Bridge and linking to other regional locations,

2. Intra-island trails, which are 10-foot wide separated multi-use pathways to link designated centers, schools, and parks.

3. Connecting pathways, which are 6-foot wide trails built to City standards that provide local connectivity and link to the regional and inter-island trails. Additionally the system will integrate with Bainbridge Island Metropolitan Parks District Trails that provide both intra-island and local connectivity.

C. Road shoulders can provide connectivity for commuter and more experienced cyclists, as envisioned in the City's Core 40 Program. The Core 40 goal is to provide an integrated network of shoulders for cyclists that when combined with multi-use trails and lower volume roadways provides 40 miles of bicycle routes on the Island.

D. On low-volume neighborhood streets, specific non-motorized infrastructure may not be necessary if vehicular speeds are low (20-25 mph).

This combination of facilities is envisioned to make up a functional network that provides connectivity to the attractions previously identified and mobility for the greatest number and widest range of users.

Sidewalks, Shoulders, Multi-use Trails, and Connecting Pathway planned facilities are identified and located in attached Maps C and D. These facilities are integrated to optimize connectivity for alternative modes of transportation for users of all ages and abilities.

In 2007 the City developed a vision for a network of shoulders to provide connectivity for cyclists across the Island. This network was named the Core 40 Network. The intent is to provide shoulder improvements on the Island's aerial roadways to achieve connectivity to 40 or more miles of roadways for cyclists; refer to Map G. Refer to Map D for identified equestrian routes.

Refer to Maps C and D for trail connection zones. Trail connection zones are identified as opposed to specificity of routes to allow flexibility. The City's past practice has been to acquire easements for trails from private property owners on a voluntary basis or when there is significant development.

Table 6-2 identifies potential connectivity for trails. The focus of this table is for regional and intra-island multi-use pathways and roadway shoulder improvements. These maps depict one set of possibilities for intra-island trails for the purposes of demonstrating connectivity that may be achieved by an integrated trail network. Some connectivity is identified for connecting pathways that are branches of regional and intra-island trails. Local connectivity is beyond the scope of what is listed.



Table 6-2, Trail Connection Zones

1	Sound to Olympics Trail Separated Grade Crossing at Vineyard Lane	A non-motorized bridge to connect the center of Winslow which is divided by SR305, requiring easements for accommodating a non-motorized bridge and its approaches.
2	Sound to Olympics Trail at Hildebrand Shopping Area	A 12-foot wide paved pathway to serve as a cross-connecting route at the north end of the designated center Winslow area.
3	Sound to Olympics Trail north of High School Rd	A 12-foot wide paved pathway is envisioned to serve as non-motorized transportation corridor a connecting the Winslow Area north to the Agate Pass Bridge and Kitsap County. This route would connect to Transit, Schools, and Parks facilities.
4	Waterfront Trail connector at Harbor Drive	A 10-foot separated pathway to connect the Waterfront Trail to the ferry terminal. Permission is needed from WSF to use the area west of the roadway for a separated pathway.
5	Cave Avenue Trail connector	A 6-foot wide connecting pathway to connect local neighborhoods to the STO trail and the center of Winslow. Easements may be needed in the vicinity of the ravine for access from the STO trail to Ferncliff Avenue near Wing Point Way.
6	Knechtel Trail connectors	A network of 6-foot wide connecting pathways and low volume local access roadways to connect local neighborhoods to the center of Winslow and the STO trail. Easements are needed from private property owners to link local access to the roadway for east – west connection from STO trail to Weaver.
7	Schools Intra-Island Trail	A 10-foot wide paved pathway is envisioned to serve as an east to west cross connecting route at the north end of the designated area Winslow area. This route would connect to schools and parks facilities and also serve as a transportation corridor. Formalized routes and easements are needed from the Parks District at the “Central Park” and the School



		District at the High School campus and the City's Suzuki property.
8	Wardwell Intra-Island Trail	A 10-foot wide paved pathway is envisioned to serve as a route connecting points north to the Winslow area school and parks facilities. Formalized route and easement are needed from the School District at the Middle School campus.
9.	Shepard Intra-island Trail	A network of 10-foot wide paved pathways and low volume streets along this corridor to better accommodate non-motorized use. Easements will be needed from private property owners to link local access roadway for east – west connection from Weaver to Finch.
10.	Head of the Bay shoulders and trail	6-foot wide paved shoulders are needed along this corridor. Additional right-of-way may be needed from fronting property owners to widen the roadway and mitigate for wetland impacts.
11	Bucklin Hill Road	6-foot wide paved shoulders are envisioned along this corridor. Additional right-of-way is needed to widen the roadway and drainage for shoulder improvements.
12	Lost Valley Intra-island Trail	A 10-foot wide paved pathway through the Lost Valley. The trail would provide a more direct route to the west from the Winslow area at lesser grades than surrounding road networks. Easements are needed at the east end of the proposed trail to connect through to Fletcher Bay Road.
13	Lynwood Center Intra-Island Trail	A 10-foot wide paved pathway separated from the roadway on the east side of Fletcher Bay Rd and Lynwood Center Rd. This pathway would provide non-motorized connectivity south to Lynwood Center. Easements are needed along the east side of Fletcher Bay Road.
14	North Island Expeditionary	A continuous trail network is envisioned connecting Wardwell road on the south end to Lovgreen Rd at the north along mostly unopened rights of way.



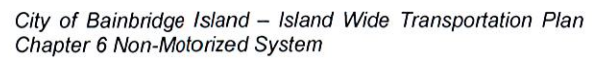
	Intra-Island Trail	This system would connect with Megs Farm Park Land trails.
15	Mandus Olson Corridor Intra-Island Trail	A continuous network of trails and low volume roadways is envisioned to link to the Lost Valley at the south and the STO Expeditionary Trail / Lovgreen Rd at the north.

Table 6-3 identifies gaps and deficiencies in sidewalks in Winslow. This information is used to facilitate the planning of the City's sidewalk infill program and pedestrian elements for capital improvement projects.

Table 6-3, Winslow Area sidewalk gaps and deficiencies		
1	Madison Avenue from Wyatt Way to High School Rd	The existing 4-foot plus wide sidewalk is not adequate to accommodate a range of users.
2	Madison Avenue from Winslow Way to Wyatt Way	Sidewalk ramps not to current standards
3	Madison Avenue from Winslow Way to Parfitt Way	Sidewalk ramps not to current standards
4	Wyatt Way from Ericksen to Madison Ave	Sidewalk needed both sides
5	Wyatt Way from Madison Ave to Lovell	Sidewalks and bike lanes needed
6	Wyatt Way from Lovell to Weaver	Sidewalk is needed on north side to fill in the current gap.



7	Winslow Way from Madison Ave to Grow Ave	Existing sidewalks are incomplete for roadway segment. Complete sidewalks are needed on both sides.
8	Grow Ave from Winslow Way to Wyatt Way	Sidewalk needed. Possible greenway (bike & ped prioritized roadway).
9	Grow Ave from Wyatt Way to High School Rd	Sidewalk needed. Possible greenway (bike & ped prioritized roadway)
10	Wood Ave from Grow Ave to Parfitt Way	Sidewalks are incomplete on both sides.
11.	Cave Avenue	Gap in sidewalk on east side.
12.	Waterfront Park Trail at Harbor Drive	The sidewalk is narrow along a steep street grade. A separated pathway on the ferry property to the east with switchbacks would improve accessibility for persons with disabilities and cyclists.
13.	Waterfront Park Bridge and approaches	The bridge needs to be widened to accommodate cyclists and resurfaced for all users.
14.	Trail from Parfitt Way to Finch Place	The existing gravel trail serves an area that is used by many senior citizens and is inconsistent in width and surfaced with gravel





Facility Types

The systemmaps identify facility types for roadway shoulders and trails. Refer to Recommended Capital Improvement Plan Maps for Regional and Intra-island trail designations.

Sidewalks are not depicted on sytemmaps. Sidewalks are required per City Design and Construction standards in designatedcenters.

Shoulders are required at locations shown in systemmaps. Minimum shoulder widths are designated as 3-foot aphalt paved plus a one foot or greater gravel ballasted edge / curb offset distance (Type C) or 5-foot asphalt paved plus a one foot or greater gravel ballasted edge / curb offset distance (Type B).

Type B shoulders are intended to ballast the paved roadway,while not a non-motorized facility, they provide limited space for non-motorized users when vehicles are traveling in each direction. This facility type is best suited for roadways with low traffic vollumes when the frequency of conflict is low and where drivers can most often manuver to provide additional room for non-motorized users.

Type C shoudlers are intended to provide space that is adequate to accomodate cyclists riding with traffic and pedestrians walking facing traffic.

Trails: Regional Trails, Intra-island Trails, and some Connecting Pathways are shown in system plan maps. Connecting Pathways may be required in locations not depicted in the system plan maps to preserve existing connectivity or provide connectivity to facilities. The City's minimum trail width is 6-feet wide. Where Type A facilities (Regional Trails, Inter-island Trails) are designated 10-foot-wide trails minimum plus 1 foot or greater ballasted shoulders. All trail facilities are to be hard surfaced. Trails along roadways should be separated from the vehicular traveled way.

Levels of Service

Bicycle Level of Service (BLOS) and Pedestrian Level of Service (PLOS) are established for each of the facility types for Secondary Arterial Streets and high Volume Collector Streets over 1500ADT with posted speeds up to 35mph..

Table 6-4, Non-motorized LOS Guideline

LOS	Description
A	Seperation from vehicular modes that is comfortable for the majority of users. Minimum 7 feet of seperation or curb with 3 feet of seperation..



B	Seperation from vehicle modes that may not be cofortable for some users. Minium curb or two feet of seperation.
C	Space provided for non motorized mode. Meets AASHTO minimums.
D	Space provided for non-motorized mode but may be sub standard and not considered a non-motorized facility.

Table 6-5, Non-Motorized Level of Service for Designated Centers

Facility Description	BLOS	PLOS
10-foot wide multi-use pathway separated 7 or more feet from the roadway or separated by physical barrier	A	A
6-foot wide trail separated 7 or more feet from the roadway	C	A
5-foot wide sidewalk or trail with curb and gutter and planter strip 3 or more feet wide	N/A	A
5-foot wide sidewalk	N/A	B
5-foot wide paved shouder w/ 2 foot buffer	B	C
5-foot wide paved shoulder (6 foot total width)	C	C

Table 6-6, Non-motorized Levels of Service for Conservation Areas

Facility Description	BLOS	PLOS
10-foot wide multi-use pathway separated 7 or more feet from the roadway or separated by physical barrier	A	A
6-foot wide trail separated 7 for more feet from the roadway	C	A
5-foot wide paved shouder w/ 2 foot buffer	B	C



5-foot wide paved shoulder (6 foot total width)	C	C
3-foot wide shoulder *	N/A	D
6-foot wide shoulder	N/A	C
8-foot wide shoulder	N/A	B

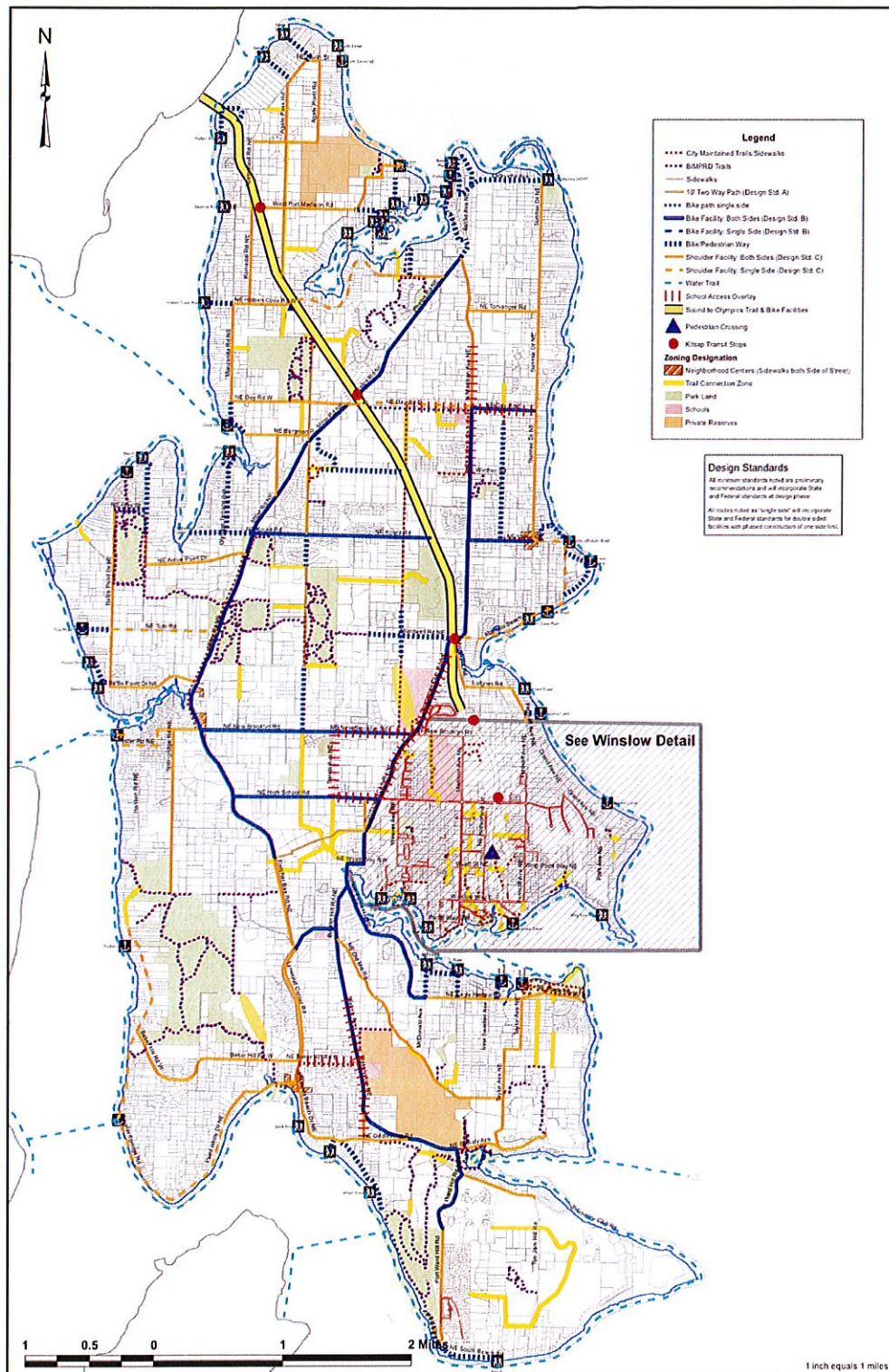
* 3 foot shoulders are not intended as a non-motorized facility but may provide space to avoid run out into a ditch or vegetation for non-motorized users, as well as recovery for vehicular traffic.



Frontage and Other Required Improvements

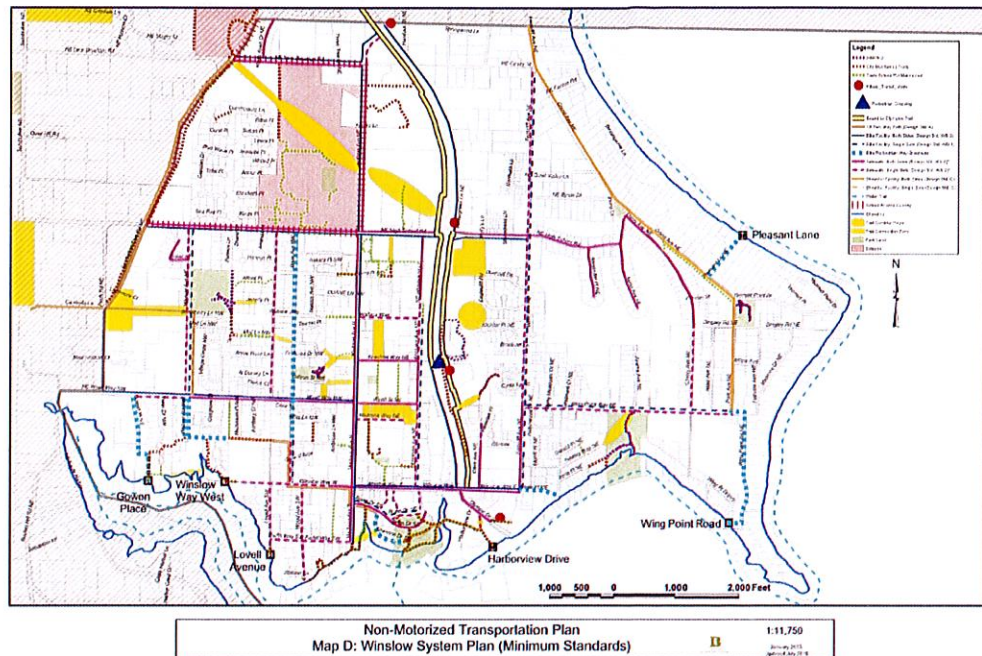
Non-motorized improvements are required along with other infrastructure improvements for all development. The following table identifies the level of improvements required that have been determined to be roughly proportional with the scale of development.

Table 6-7, Improvement Requirements	
Development Type	Required facilities:
Development or re-development of a residential lot.	ROW dedication and easements. Sidewalk and shoulder infill and reconstruction to meet current standards.
Short Plats 2 to 4 lots in size, multi-family development exceeding 4 units, and all other development / re-redevelopment.	In addition to the above, the construction of sidewalk and shoulder extensions, and construction or reconstruction of trails up to 6 feet in width.
Long Plats of 5 lots or more and development of all other properties greater than 20,000 gross building square feet in aggregate.	In addition to above, the construction or reconstruction for all facilities including multi-use trails.



Non-Motorized System Plan
 Map C: (Minimum Standards)
 January 2003 Updated July 2016





Implementation, Prioritization, and Funding

This section elaborates on specific measures to further the non-motorized Implementation goals in the Transportation Element of the Comprehensive Plan.

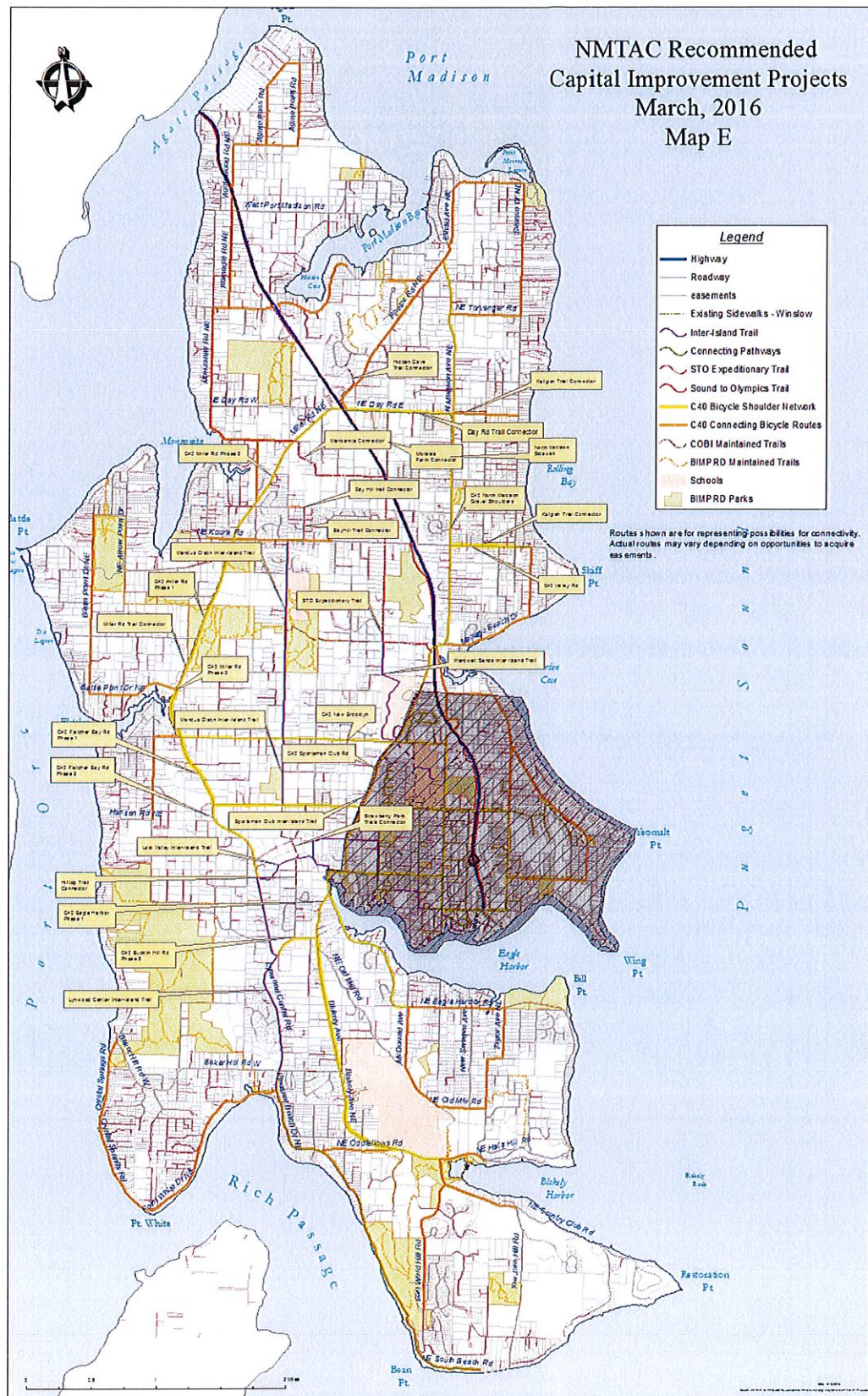
- A. As opportunities are identified, develop proposals to update the Municipal Code to increase the ability to obtain non-motorized facilities in accordance with the IWTP and consistent with the goals in the Transportation Element of the Comprehensive Plan with non-motorized projects.
- B. Support community efforts to develop new regulations requiring the construction of non-motorized facilities by development.
- C. All commercial and residential projects that reach the design and review thresholds set in the Municipal Code shall be reviewed for compliance with the goals, policies, and standards in the Transportation Element of the Comprehensive Plan, the Islandwide Transportation Plan and other adopted Plans.
- D. Facilitate the NMTAC review of development projects with potential for non-motorized elements and provide opportunity for early input in designs.
- E. As properties develop, secure right of way dedication for frontage improvements on City streets and easements for regional and intra-island multi-use trails (20 feet or more) and connecting pathways within and between neighborhoods (15 feet or more).

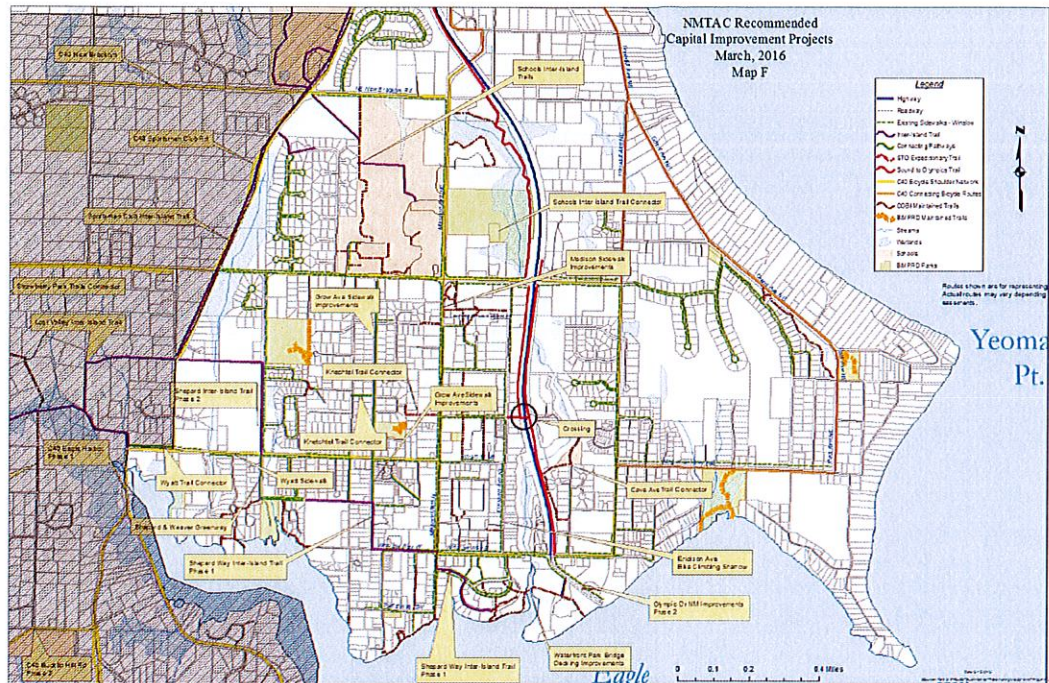


- F. Support opportunities to secure new easements or renegotiate existing easements (example: utility access agreements).
- G. Provide mechanisms for funding, prioritizing, and implementing projects to develop non-motorized facilities identified in this plan. Identify and prioritize specific non-motorized projects in the City's transportation planning including but not limited to the IWTP and the Capital Facilities Plan to assure their completion.
- H. Actively pursue various funding sources, such as available grant and bond initiatives for priority projects. Pursue joint funding opportunities with the School District, Parks District, and Department of Transportation. Provide flexibility in the program as needed to be competitive.
- I. Support the development of a non-motorized bond measure to fund regional and intra-island trails, Core 40 shoulder improvements, and other island-wide non-motorized improvements.
- J. Support involvement of the NMTAC in transportation planning and capital improvement planning. Important aspects of this work include developing and prioritizing projects, and collaborating to develop grant applications and secure funding.
- K. Support involvement of the NMTAC in public outreach and the development of transportation improvement projects.
- L. Incorporate non-motorized improvements into capital improvement projects. Consideration to be given to the context of each site in developing designs.
- M. Study maintenance needs and include budget recommendations in Operations and Maintenance to provide for new facilities and improved level of service of all facilities.

Non-Motorized Improvement Plan

Programs and projects to achieve the proposed Non-motorized Transportation System Plan are identified in Maps E and F.





Design Considerations

Consider the following aspects when developing designs for public and private projects to improve non-motorized safety. Note that these design considerations may be above (minimum established standards) and should be provided for all public and private projects.

- A. Incorporate accessibility requirements in accordance with the United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Rights-of-way (PROWAG) to the extent feasible and incorporate universal principles in design to the extent practical.
- B. Provide safe at-grade crossings at signalized intersections on SR305. Consider refuge areas at busy locations. Consider separated grade crossing for regional trails and other high volume locations.
- C. Provide marked crosswalks in high traffic areas, at safe and appropriate intervals, particularly in locations where pedestrian routes cross secondary arterials. Provide marked crosswalks at driveways on secondary arterial streets in busy locations.
- D. On designated bike routes, provide wider (8") fog lines adjacent to paved shoulder facilities for cyclists and bike lane markings and bicycle climbing lanes. The use of sharrow markings for raising awareness of cyclists is discouraged. Designs should incorporate the use of sharrow markings for directional purposes at high-bicycle-volume locations in designated centers when engineers consider the design to be a significant safety



enhancement. Examples include the use of sharrows adjacent to angle parking and at transition areas from bike lanes to shared lanes on Winslow Way.

- E. Provide separation for non-motorized from vehicular uses at higher speed (over 30mph) and higher volume (over 2000 ADT) motorized traffic locations. When separation is not practical, alternative routes should be provided to accommodate users of all ages and abilities. A particular emphasis for separated facilities is on roads connecting to schools and along SR305.
- F. Consider lowering speed limits of secondary and collector street with significant bicycle and or pedestrian traffic that lack non-motorized facilities.
- G. Postwalking and biking warning signs on roadways in high non-motorized use areas lacking adequate facilities.
- H. Incorporating traffic calming elements such as narrow lanes (9-10 feet depending on roadway classification), chicanes or winding roadways, and maintaining native vegetation or providing street trees in all designs. Consider speed humps, and / or raised crosswalks at local accessstreets with a desired speed limit of 20mph when there are large vehicular traffic generators or very high volumes of pedestrians.
- I. Provide street lighting of secondary arterials and collector streets in designated centers and marked crosswalks on arterial streets.
- J. Provide bicycle-activated sensors at signal locations.
- K. Avoid placement of utility facilities, such as manhole covers and utility poles, within non-motorized travelways.
- L. Design of new parking lots and garages to include covered bike storage / parking facilities. Where existing bicycle parking is sufficient and conveniently located, the City Engineer may omit this requirement.
- M. When bike racks are required for commercial development and public facilities, the racks shall be conveniently located to the building entrance, appropriately designed to be compatible with the design and development of the site, and sheltered from inclement weather.



Standards

The City's existing Design and Construction Standards were developed in 1997 and have not been updated to include all of the non-motorized elements identified in the 2003 Non-Motorized Transportation Plan. It is recommended that this document be updated following the update of the Island-Wide Transportation Plan and the City's Comprehensive Plan.

Refer to the table below showing a list of considerations for updating the Design and Construction Standards.

Table 6-8, Standards Recommendations	
Standards 1	Maintain narrow 10-foot lanes on major roadways.
Standards 2	Require pedestrian facilities to be maintained at grade at driveway entrances.
Standards 3	Require sidewalks to be built to the back of the right-of-way along arterial and collector streets.
Standards 4	Require planter strips for increased pedestrian separation from traffic
Standards 5	Minimum bike lane width on secondary arterial and major collectors is 5 feet. An additional one-foot clearance of the curb to be provided at curb and gutter locations. Consider buffered bike lanes.
Standards 6	Require paved driveway approaches at all driveways serving more than 3 households for all categories of projects.
Standards 7	Develop standards for shared use path, buffered separated multi-use path, intra-island trail, etc.
Standards 8	Utility structure covers are to be located out of the sidewalk and shoulders used by cyclists unless impractical and any deviation requires approval by the City Engineer. Covers to have flush, skid, and lock down characteristics suitable for cycle use.
Standards 9	Tenant improvements and remodels trigger frontage improvements to meet current ADA standards.



Preservation and Maintenance

Existing and future non-motorized facilities need to be preserved and maintained to ensure continued usefulness. As the system grows, so does the demand for resources to maintain it. Facilities deteriorate over time and the City needs to plan for expenditures to repair and / or reconstruct these assets.

Areas of emphasis for maintenance:

- o Annual raised sidewalk grinding or replacement of sidewalk panels to address deficient disability access.
- o Annual sidewalk and cross walk power washing where needed to maintain slip resistance and contrasting color.
- o Monthly sweeping of separated pathways.
- o Annual cleaning of separated pathways.
- o Seasonal brush cutting of trails.
- o Annual grading and graveling of unpaved trails where needed to address unevenness and traction issues.
- o Maintenance of roadway surfacing to consider serviceability of shoulders for cyclists when prioritizing repairs.
- o Trimming of roadside brush to maintain use of shoulders for cyclists and pedestrians.
- o Monthly shoulder / bike lane sweeping with higher frequency at problem areas.
- o Repair and adjustment of lids and grates to maintain even surfaces for cyclists and pedestrians.
- o Annual pavement marking maintenance of cross walks, bike lane symbols, and other surface markings.
- o Washing and replacement of signage such as no-parking signs, way finding signs, and others.



Education, Encouragement and Enforcement

The NMTAC, supported by City Public Works, Planning, and Police Staff, and in coordination with School District, Parks District, Fire District, Kitsap County Health District, and community groups, will work to further the education goals of this Plan. This includes developing programs, or adopting programs used successfully elsewhere, to encourage use of non-motorized modes and promote safety.

- Listen to the community to identify transportation system deficiencies and opportunities for improvement
- Coordinate and support programs and projects that encourage active modes of transportation
- Support community outreach and involvement for the development of transportation projects
- Support safe routes to school programs
- Support "Adopt-a-Trail" and "Adopt a Route" programs
- Develop and distribute guide maps and provide wayfinding signage. Public non-motorized facilities such as trails should be identified with signage in order to designate routes and access points. This is especially important where facilities are adjacent to or run through easements on private property.

The NMTAC and City routinely support the following efforts:

- 'Bainbridge Shares the Road' program and signage.
- League of American Bicyclists 'bicycle friendly community' designation.
- Walking, Cycling, and Paddling Map supported on the City's web site.
- Walking Map of Winslow, produced by Sustainable Bainbridge and supported on the City's website.
- Map of accessibility features in the Winslow area, produced in cooperation with the Kitsap County Accessible Communities Advisory Committee.
- Participating in 'Bike to School Day'.
- Community engagement for connectivity opportunities and easements.



- Participating in public outreach involvement opportunities for City transportation projects.
- Coordinating with the Police Department to identify areas with higher non-motorized use that may need education and enforcement emphasis for safety due to collision history, speeding, observed poor behaviors by either motorized and/or non-motorized users.
- Promoting police bicycle patrols for enforcing laws for cyclists and patrolling multi-use pathways.

CHAPTER 7 OTHER TRANSPORTATION SYSTEMS

On Bainbridge Island, non-city transportation systems have an extremely important role in the movement of people, vehicles, and goods. Ferry, and transit, systems are primary means of moving people to and from their destinations, from commuter trips to Seattle to tourists visiting Bainbridge Island. This chapter describes each of these systems and their relationship to the Bainbridge Island transportation system.

Ferry System



The Washington State Ferries (WSF) service has, for many years, been the primary provider of ferry transit services in western Washington. The Seattle-Bainbridge ferry run provides an integral connection between greater King County and locations east of Puget Sound to the Kitsap Peninsula and the Olympic Peninsula regions. System-wide, the WSF system carries more than 23 million passengers per year (*2014 Washington State Ferries Rider Statistics Report*).

Washington State Ferry Operations

The Seattle/Bainbridge Island ferry provides daily crossings between Bainbridge Island and downtown Seattle's Colman Dock. The 35-minute crossing covers 8.6 miles and connects Bainbridge Island and the SR 305 corridor with downtown Seattle and the Interstate 5 and 90 corridors. Two Jumbo Mark II Class auto/passenger ferries, the M/V Tacoma and M/V Wenatchee, serve the route. Each vessel has a travel speed of 18 knots, and maximum capacity for 2,500 passengers, 218 vehicles and 60 commercial vehicles.

Table 7-1 lists the ridership, schedules, crossing times, and service frequencies for the Seattle-Bainbridge Island route and alternative ferry routes that serve the central Kitsap County region. These alternative routes include the Seattle-Bremerton (passenger-vehicle and passenger only), and Kingston-Edmonds runs. The Seattle-Bainbridge run carries the largest share of ridership with more than 6.32 million passengers per year. The Kingston-Edmonds runs carries approximately 4 million annual passengers and the two Seattle-Bremerton ferries carry about 2.5 million riders.



Credit: WSF

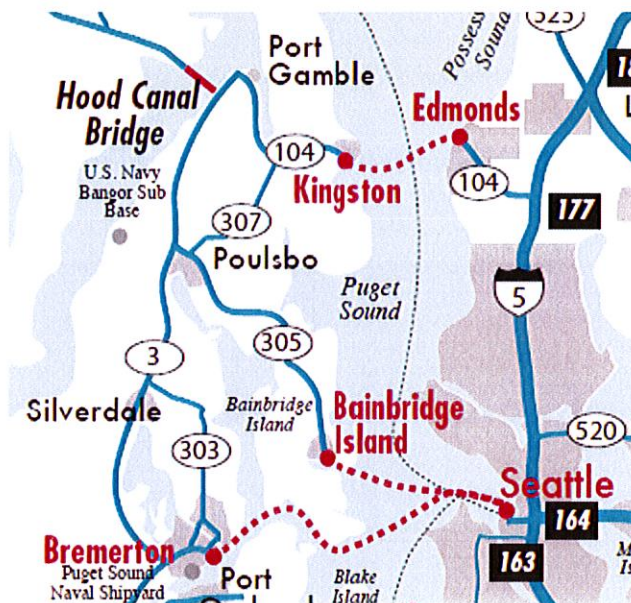


Table 7-1. WSF Schedules and Headways

<i>Route</i>	<i>2002 Ridership</i>	<i>Vehicles Carried</i>	<i>Hours of Operation (first-last sailing)</i>	<i>Crossing Time</i>	<i>Service Frequency</i>
Seattle/Bainbridge Island	6.72 million	2.19 million	5:30 am-2:10 am	35 min	40-50 min
Seattle/Bremerton	2.21 million	0.72 million	5:10 am-1:30 am	60 min	70-140 min
Seattle/Bremerton Passenger Only	0.68 million	--	5:00 am-1:30 am	30 min	40-270 min
Kingston/Edmonds Ferry	4.49 million	2.34 million	5:10 am-1:00 am	30 min	40-70 min

Source: Washington State Ferries

Figure 7.1 Ferry Routes



Ferry LOS

WSF uses daily percentage of vessels at vehicle capacity as the measure of the Level of Service for ferry services. The methodology places an emphasis on using existing capacity as opposed to an earlier method of measuring length of wait times at peak sailings which emphasized commute times for motorists.



Table 7-2 Ferry Operation LOS

Route	Level 1	Level 2
Seattle/Bremerton	25% to 30%	50% to 60%
Seattle/Bainbridge Island	25% to 30%	65% to 75%
Edmonds/Kingston	25% to 30%	65% to 75%

Source: WSF 2009 Long Range Plan

Level 1 LOS represents the percentage of sailings at peak vehicle capacity. At 25% capacity, peak sailings are filled to capacity but other sailings are not. Exceeding the LOS standard is an indicator that adaptive strategies should be employed to reduce peak demand.

Level 2 represents the percentage of sailings at peak vehicle capacity. Standards are set to 65% to 75% for routes reflect the ability to spread demand throughout the day due to more time flexibility amongst customers. Exceeding the LOS standard is an indicator that additional investment is needed to address capacity.

The WSF Long Range Plan forecast that percentage of vessels sailing at peak capacity will not exceed 67% through 2030, nor exceed the LOS threshold of 75% for the peak summer month of August. Thus capacity improvements in the planning period are not driven by the LOS standard.

Kitsap Transit Passenger Only Ferry Proposals

WSF discontinued passenger-only ferry service in 2003. Both a private company, Aqua Marine and the Port of Kingston have attempted to restore high speed passenger-only service from Kingston and Seattle. Both services have proven to be unsustainable financially due to limited ridership and high passenger fares. The Port of Kingston ended its service in 2012.

Kitsap Transit proposed to develop a passenger only ferry service supported by a sales tax increase in Kitsap County in 2003. This proposition was not supported by the voters at that time. In 2014 Kitsap Transit commissioned a study to evaluate the potential for passenger ferry service. Kitsap Transit is currently exploring alternatives to fund passenger-only ferry service.

In the past, passenger only ferry service has served only one port of call in Kitsap, limiting ridership. It is suggested that a return to a mosquito fleet model of service with multiple ports of call for each vessel in Kitsap be considered. Examples for this type of service would include Kingston, Indianola, Suquamish, Bremerton, and Port Orchard with shared service to these multiple ports and Seattle.

Ferry System Issues

The primary issue for ferry service is funding. With citizen initiatives to reduce car tab fees and the erosion of the gas tax with more fuel efficient vehicles transportation funding has been in decline. Since the taxpayer backed tax cuts in the early 2000's, WSF has been faced with raising fares, deferring maintenance of its fleet and terminals, and foregoing expanded operations. Challenges include:

- Maintain operating funding to provide 80% fare box recovery



- Fund vessel maintenance and replacement reserves
- Fund terminal reconstruction including the Seattle Ferry Terminal
- Develop long range plans and funding strategies for expanding services including investments in expanding existing service, additional routes, and multimodal transportation to meet more sustainably the region's growing transportation needs. Examples may include upgrading the Edmonds-Kingston ferry terminals to better serve bus and other multimodal transportation, introducing ferry service from Southworth to Seattle and upgrading walk-on capacity and level of service to Bainbridge Island using three smaller auto capacity ferries to reduce traffic congestion impacts to SR305.

Recommendations for Ferry Services

The City supports the retention and expansion of ferry systems to reduce the dependency on the Bainbridge Island terminal and SR 305, and to promote a more convenient and equitable ferry system. Elements of the recommendations include:

- *Parity of ferry services* – The City promotes services closer to home origins and to reduce demand at the Bainbridge Island ferry terminal and on SR 305. Examples include vehicle /passenger ferry service from Southworth to Seattle, and high speed passenger-only ferry service from Kingston to Seattle, and direct bus service from Kitsap County to King County via the Kingston-Edmonds Ferry.
- *Ferry Priority* – The City supports the WSDOT and Kitsap Transit's programs to encourage non-SOV use through priority boarding and through the development of facilities for bicycles and pedestrians.
- *Passenger Ferry Options* – The City supports passenger-only ferry services through public and private initiatives.
- *Walk on and bicycle capacity* - The City supports long range planning for capital improvement expenditures to enhance walk-on and bicycle capacity at peak sailings.
- *Motorized capacity* – The City supports long range planning for capital improvement expenditures to maintain a two-boat minimum wait-time for motor vehicle capacity at peak sailings.
- *Fare box recovery* – Maintain affordable fares for service to Bainbridge Island and Kitsap County. The City supports long range planning and investment for State funding to subsidize operation and maintenance for the Ferry system.

Kitsap Transit bus and other services

Kitsap Transit, as the public transit service provider in Kitsap County, serves the County including the City of Bainbridge Island. Bus service is provided for commuter hours to and from the ferry terminal. Kitsap Transit has an ACCESS program providing transportation for seniors and disabled persons who are unable to use regular-route buses. Starting in June 2014, BI-Ride-service was introduced providing day time intra-island bus service. Kitsap transit also provides park-and-ride lots, vanpool programs, and rideshare programs.



Existing Routes

Eleven bus routes serve Bainbridge Island providing service mainly to and from the Winslow ferry terminal. Figure 8-2 shows the routes as they relate to the roadway system and areas of the Island.

Table 8-3 provides details about the origins and destinations of the routes, the 2014 ridership levels, hours of operations, and service frequency. Most service is provided to meet peak morning and evening demand related to ferry terminal travel, with little or no mid-day service. Service also tends to be one-directional with transit vehicles “deadheading” back (not in service) to meet the demand from arriving ferry passengers.

A total of 534,226 annual passengers in 2014 used the KT routes that serve the ferry terminal (Routes 33, 90-106). WSF reports 3,087,786 walk-on passengers for 2014. If the assumption is made that all of the ridership also used the ferry system, approximately 1 out of every 6 ferry riders use Kitsap Transit service.



Figure 7-2 Kitsap Transit Routes

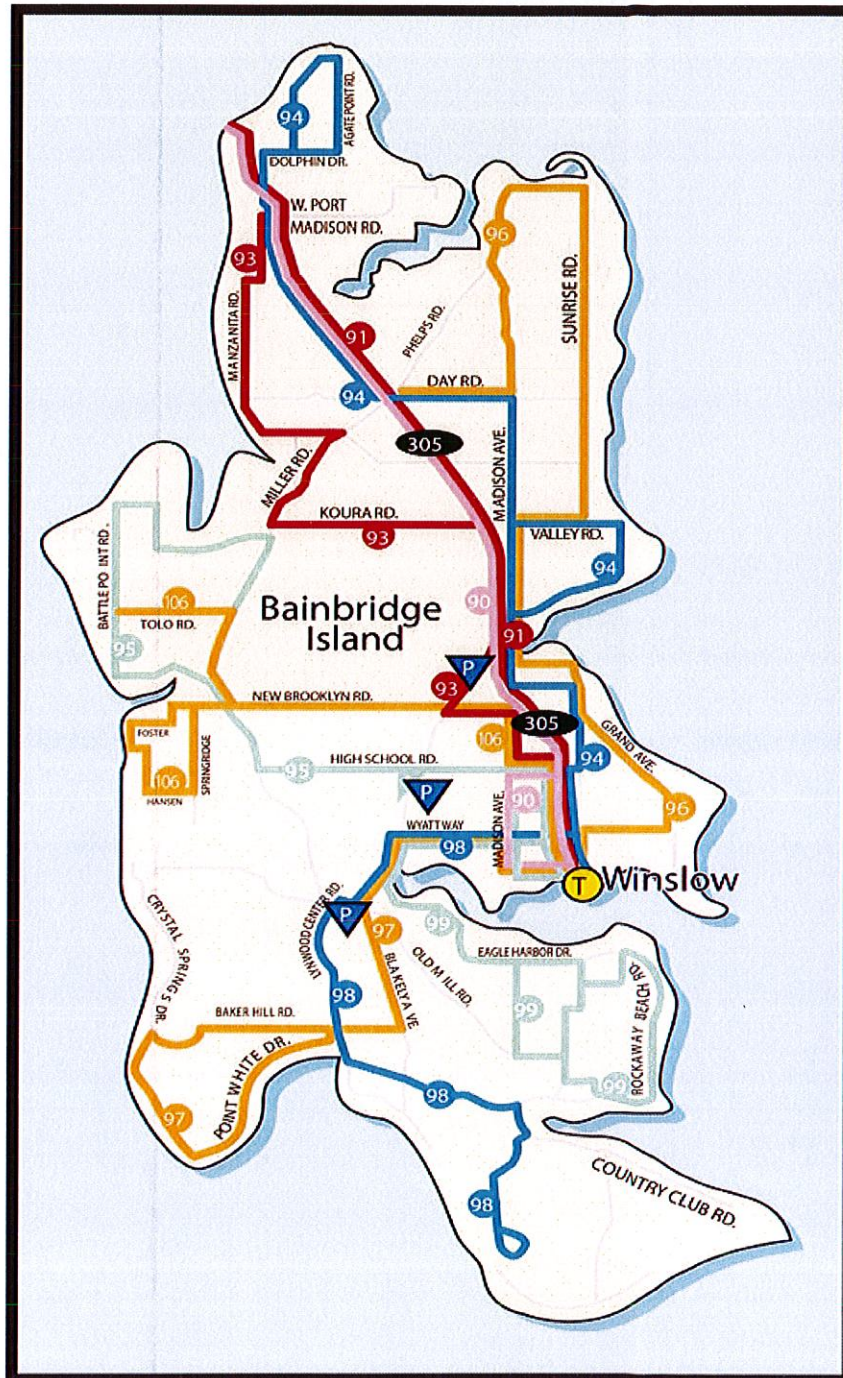




Table 7-3. Kitsap Transit Services

Route	2001 Ridership	Hours of Operation	Service Frequency
# 33 – Silverdale/Bainbridge	29,500	4:30-7:45 15:30-19:45	45-50 min
# 90 – Poulsbo/Bainbridge	254,200	4:50-8:05 15:50-20:05	45-50 min
# 91 – Kingston/Bainbridge	97,500	4:45-8:10 15:45-20:10	35-50 min
# 93 – Manzanita	35,600	4:55-7:40 15:55-19:40	40-55 min
# 94 - Agate Point	21,400	4:50-7:40 15:55-19:40	40-55 min
# 95 - Battle Point	38,000	4:50-7:40 15:50-19:40	45-55 min
# 96 – Sunrise	27,800	4:50-7:40 15:50-19:40	45-55 min
# 97 – Crystal Springs	36,500	4:50-7:40 15:50-19:40	45-55 min
# 98 - Fort Ward	26,200	5:00-7:40 16:00-19:40	45-55 min
# 99 - Bill Point	26,700	4:50-7:40 15:50-19:40	45-55 min
# 100 - Winslow Shuttle	28,300	5:30-7:40 16:30-19:40	45-50 min
# 101 – Ferncliff Shuttle	--	7:00-13:45	45-60 min

Source: Kitsap Transit (www.kitsaptransit.org)



Park & Ride Lots

Kitsap Transit has developed a number of Park & Ride facilities along SR-305 and in North Kitsap County at hubs where passengers can leave a vehicle prior to boarding a bus. Park & ride facilities are used by Kitsap Transit bus riders, and also serve as meeting locations for vanpools and carpools.

Table 7-4 describes the park & ride facilities located on transit routes that serve Bainbridge Island as identified by Kitsap Transit.

Table 7- 4. Park and Ride Facilities

Park & Ride Facility	Location	Spaces	Served by Bus Routes
Clearwater Casino	Suquamish	96	90, 91
Georges Corner	Kingston	225	91
Gateway Fellowship	Poulsbo	138	33, 90
Liberty Bay Presbyterian Church	Poulsbo	75	33, 90
No. Kitsap Baptist	Poulsbo	57	90
Poulsbo Junction	Poulsbo	35	33, 90
Poulsbo Church of Nazarene	Poulsbo	100	90
Suquamish United Church of Christ	Suquamish	65	91
American Legion Post	Bainbridge Island	5	98
Bethany Lutheran Church	Bainbridge Island	80	94
Island Church	Bainbridge Island	37	93
Day Road	Bainbridge Island	25	90, 91

Source: Kitsap Transit (www.kitsaptransit.org)

Kitsap Transit assessed use of Park & Ride facilities in 2014. Table 7-5 summarizes the park & ride lots' capacity, the number of observed vehicles, and parking utilization rates for park & ride lots on Bainbridge Island.



Table 7-5. Park and Ride Lot Utilization

Park & Ride Facility	Capacity	Observed 2014	Parking Utilization
American Legion	5	10	200%
Bethany Lutheran Church	80	65	81%
Island Church	37	18	49%
Overall	122	93	76%

Source: WSDOT Office of Urban Mobility

The study shows that area park & ride lots are well used and still have adequate capacity. It appears that additional capacity at the American Legion location would be a benefit if a lease can be secured.

Transit System Issues

Most transit agencies in the region, including Kitsap Transit, have not developed LOS measurements at this time. However, general assessments can be made about areas service frequency, capacity and access. Kitsap Transit has provided a morning and afternoon peak period transit service that meets the needs of many Island commuters. Mid-day (9:15am to 3:30pm) intra-island service is also provided. Review of the transit service reveals that the main issues are related to the expansion of transit services and improving the frequency of service. Issues related to transit include:

- With ferry passenger service expected to grow and increasing congestion on SR305, ridership capacity for commuter buses is a critical element for achieving a viable multimodal transportation system. Capacity is an important aspect of level of service.
- With more congestion on SR305 attributed to commuting to employment both on and off island, improving bus service within Kitsap County is an increasingly important element of a viable transportation system. Frequency of service and transfer efficiency are important aspects of level of service.
- Park and ride lots and bicycle parking at park and ride lots and bus stops are important to support commuters and encourage ridership.
- To better serve seniors, youth, and persons with disabilities, intra-island bus transit is an important element of an effective transportation system. Locations served and hours of service are important aspects for level of service.
- Improving access to the transit center near the ferry terminal is needed. Currently the pedestrian facilities are sub-standard and do not provide adequate accommodation for a wide range and number of users and there are no bike facilities, on Olympic Drive.
- Improving access to bus stops is needed with in Winslow and at the City's designated centers. Both the lack of infrastructure and deficient infrastructure are barriers to access in some areas.
- Improving King County Metro transit services at the Seattle ferry terminal to provide better connections to popular destinations including the airport.

Recommendations for Transit System

The City supports the development and improvement of transit services on Bainbridge Island and services that provide options for non-Island commuters.



- *Transit LOS* – Encourage Kitsap Transit to monitor system use to ensure that current and forecasted demand is met for the SR305 corridor. Monitor underserved Island locations for transit service expansion as Island development occurs.
- *Public Transit Ferry Access* – Support changes to transit services that promote ferry use, including service to Sea-Tac airport, popular destinations, and special events in the Seattle area.
- *Expansion of Island Transit* – Support the expansion of bus services on the Island to better serve commuters, non-commuters, disabled users, residential areas, and neighborhood centers. This includes the Access Bus and BI Ride services.
- *Ferry Commute* – Improve service with high capacity buses as needed to meet demand. This should include expanding accommodation for riders with bicycles.
- *Route 90 to Poulsbo* – Improve frequency of service between the Bainbridge Ferry Terminal to the Poulsbo Transit Center with transfers to Kingston at Suquamish and Bremerton and other locations from Poulsbo.
- *BI Ride* – Extend hours of service to include afternoon and evenings.

Non-Motorized System Connectivity to Transit

Active modes of transportation such as walking and bicycling are important to many island residents. The City has invested in planning and implementation for pedestrian and bicycle infrastructure to accommodate a wide range of users. Providing connectivity to transit is important for non-motorized improvements. Opportunities include development of a network of bike lanes that link commuters to the ferry terminal and regional and intra-island trail systems that link pedestrians and cyclists to transit stops along SR305 and throughout the island.



Multimodal – Transportation Demand Management

A key to the development of a multimodal system is through the use of Transportation Demand Management (TDM). TDM is a series of methods and strategies that discourage the use of single occupant vehicles and encourage non-motorized and transit travel. TDM includes measures that provide travel alternatives such as transit, carpools, park-and-ride facilities, or passenger ferry service. TDM strategies are focused on increasing the use of alternatives to single occupant automobile trips through a mix of incentives and disincentives. These programs tend to be lower in cost than roadway or other capital projects.

While TDM programs may increase the number of person trips through a corridor by increasing use of buses, carpools, and diverting trips to off-peak hours, traffic levels may not decrease due to unmet travel demand replacing any reductions from TDM programs (latent demand for travel).

There are many TDM programs currently in effect on Bainbridge Island. Agencies and major employers have implemented these programs to discourage single occupant vehicle (SOV) trips during commute periods.



The City of Bainbridge Island, Kitsap Transit, and Washington State Ferries have programs that encourage the use of transportation alternatives to the SOV.

Examples of TDM Programs promoted by these agencies include:

- *Ferry Terminal Parking Restrictions* – The City has limited amount of parking at the ferry terminal and charges an hourly or daily fee to reduce the number of persons who drive to access the ferry. As parking becomes more difficult or expensive, fewer drivers will desire to use the parking areas. On the other hand, restricted parking may increase the amount of drop-off/pick-up activity at the terminal or encourage parking in adjacent neighborhoods.
- *Commercial Parking Tax* – The City has charged a tax on commercial parking lots since 1999. The current rate is a 30% tax that provides funds for the City's general fund. This tax, if added to the parking fee, increases the out-of-pocket costs for automobile commuters, encouraging ridesharing, non-motorized travel, and transit use.
- *Carpool Parking Areas* – The City provides reserved parking areas for carpools at its ferry terminal lot. Providing reserved spaces or reduced parking rates encourages drivers to form carpools, increasing the occupancy of vehicles.
- *Rideshare Programs* – Programs that promote the formation of carpools and vanpools can increase the rate of vehicle occupancy by increasing the number of persons moved during peak times. Kitsap Transit has a program to match interested commuters with carpools and vanpools using the RideshareOnline.com database.
- *Vanpool Programs* – Kitsap Transit also administers a vanpool program that provides vans for commuters for a monthly fee. WSF provides additional incentives to registered carpools and vanpools through preferential boarding. Vanpools also receive a reduced ferry rate.
- *Land Use Policies* – The City's promotion of higher-density residential in the Winslow area promotes increased opportunities for residents to walk or use bus service rather than drive.
- *Parking Restrictions and Enforcement* – The development and enforcement of parking policies and rules may reduce undesired parking behaviors, such as in neighborhoods adjacent to the ferry terminal area. Types of parking restrictions include hourly parking limits and residential parking zones
- *Car sharing Program* – A car sharing program allows people to have access to a vehicle that they rent on an hourly and/or mileage basis. This type of program reduces vehicle ownership, encourages transit and non-motorized travel, and lowers overall driving behavior.

Employer-Based Programs

Major employers (100 or more employees) are required by the State's Commute Trip Reduction law to promote ridesharing and transit use by developing in-house incentive programs that encourage employees to use ridesharing, transit use, and non-motorized travel. Kitsap Transit administers the program within the county. According to Kitsap Transit data only two Island employers have formal CTR programs. Each major employer is required to designate an in-house coordinator and develop a Commute Trip Reduction Plan indicating how the employer will meet the required trip reduction targets. Some of the examples of employer-based programs in use include:



- *Transit subsidies* – Employers can fully or partially subsidize the cost of monthly transit passes for their employees
- *Flextime programs* – Employees are allowed to shift their work schedule to avoid travel during peak travel periods, or to meet transit schedules.
- *Telecommute programs* – Employees are allowed to work from home offices in order to reduce the amount of commute travel.
- *Guaranteed Ride Home Program* – This program provides employees who commute by transit, carpool, vanpool, bicycle, or foot a free taxi ride in the event they need to return home on an emergency basis during mid-day or after working late evening hours.
- *Commute Subsidies* – Employees are eligible for a monthly subsidy if they commute by transit, bicycle, foot or carpool to work.

Regional Coordination

The Growth Management Act requires that cities coordinate planning efforts with adjacent jurisdictions, the county and the region. This coordination is particularly important for transportation, where plans by one jurisdiction may have a significant effect on the traffic on another. Regional planning allows a long-range vision to be established for the region as a whole, allowing predictability and consistency between jurisdictions, while still maintaining flexibility to meet community goals.

There are a number of regional plans that affect the transportation system of Bainbridge Island. Implementation of many of the regional concepts depend on the availability of funds in the future.

WSDOT Plans

The Washington State Department of Transportation (WSDOT) identified a number of improvements to the state route system in its *Washington Transportation Plan* (WTP). In the Puget Sound Region, these projects are first identified in the Puget Sound Regional Council's *Metropolitan Transportation Plan "Transportation 2040"* (MTP) plan. This plan sets the transportation plans and policies over a 30-year period, with the emphasis on the first 20-year time frame. The MTP identifies improvements to the SR 305 corridor.

- *SR 305 Corridor Improvements (Winslow Ferry Terminal to Agate Pass Bridge)* - Access management, intersection improvements, and HOV queue jump lanes improvements.

Consistency with IWTP

These projects should improve the overall mobility of the SR 305 corridors. The improvements along SR 305 between the ferry terminal and Agate Pass Bridge are unlikely to affect overall traffic levels, but may shorten transit travel times and enhance safety for bicyclists. The off-Island improvements will complement the SR 305 alternatives considered on Bainbridge Island, but will not significantly affect the City's traffic situation.

Kitsap Transit Plans

Kitsap Transit has plans to develop future alternatives to expand transit throughout its service area. Kitsap transit has considered a variety of approaches including dedicated high-capacity bus service, passenger rail or monorail service, and passenger ferry services.



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High Capacity Transit Facilities– This “long-range” concept of the high-capacity transit service would improve transit travel times by developing dedicated transit lanes. A Bus Rapid Transit system has been identified as a priority.

Consistency with IWTP

Any of the transit proposals would be compatible with the IWTP SR305 Alternative A and Alternative B scenarios. Depending on the level of transit ridership and the success of Transportation Demand Management (TDM) programs to control single occupant vehicle use, this concept would likely improve SR 305 levels of service if constructed.

CHAPTER 8 FINANCING



The City of Bainbridge Island, uses a variety of funding resources for the design, right-of-way procurement, and construction of transportation facilities. Taxpayers, developers, and County, State and Federal programs all contribute to the development of the transportation system. The City prepares a biennial budget, a financial capacity analysis, and a 6-year Capital Improvement Plan (CIP) to provide an updated look at the projects to be completed for the year and in the years ahead, as well as financing plans for those projects. The State of

Washington's Growth Management Act requires that the transportation element of a comprehensive plan include:

- An analysis of funding capability
- A multi-year financing plan based on the needs identified
- A discussion of how the jurisdiction will address funding shortfalls through a reassessment strategy.

This chapter describes how the City plans to pay for the transportation improvements identified in the IWTP along with projects that appear in the current Capital Improvement Plan (CIP). Included in this section is a discussion of the City's funding capabilities, potential funding sources, the 6-year and 20-year transportation improvement plans, and reassessment strategy.

Funding Capabilities

The City of Bainbridge Island has implemented a variety of revenue sources and financing mechanisms to fund City services and capital improvements. One indication of the City's funding capability is the analysis of historic revenue sources.

Table 8-1 summarizes the revenue sources from 2011 to 2014 for the City's Streets Fund, Capital Project Grants, and for overall City revenues. The City has consistently allocated a large portion of its funding outside of the operating budget for transportation. Over the last few years, the City has aggressively pursued transportation grant funding from State and Federal sources. The City recently implemented a Transportation Benefit District and is currently evaluating Transportation Impact Fees providing for more revenue. The City supplements dedicated transportation revenues to pay for operating costs such as salaries, benefits, and other associated costs.





Table 8-1. Historical Transportation Funding Sources

	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>
<i>(All numbers are in 1000s)</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
Commercial Parking Lot Tax	\$552	\$588	\$715	\$753
Motor Vehicle Fuel Tax	484	471	477	478
Parking Fees (City lots)	337	4	0	0
Interest and Other	72	1,334	50	738
Total Street Fund Revenue	\$1,446	\$2,398	\$1,242	\$1,970
Transportation Grants (Federal)	1,987	200	809	1,502
Transportation Grants (WA State)	1,379	288	465	0
Total Capital Grants	\$3,366	\$488	\$1,273	\$1,502
Transportation Benefit Dist. funding	0	0	122	391
Total City Non-Utility Revenue Sources	\$22,901	\$19,629	\$20,781	\$22,048

Source: City of Bainbridge Island financial statements

Overall, the City has annual non-utility revenues of more than \$20 million. The City's 2015-2016 biennial budget projects relatively flat revenue trends for both years. In addition, the City has significant additional bonding capacity. As of the end of 2014, the City is at 28% of its general obligation bond limit (not requiring a vote of the taxpayers) and 7% of its limit for special levy bonds that could be used for transportation projects (requiring a 60% majority vote of the taxpayers).

Types of Funding Sources

The implementation of the 6-year CIP and 20-year CFP depends on the availability of transportation funds. This section describes the sources of transportation funds available to the City of Bainbridge Island.

General Funds

City general funds are made up of a variety of revenue sources and can be used to pay directly for transportation improvements or to meet the City's local funding requirement or "match", for other funding sources. Some revenues are specifically dedicated for transportation projects, such as the City's share of the State Motor Fuel Tax, and are dedicated to particular activities like roadway repair and construction. Other City revenues from the general fund can also be used for transportation according to City funding priorities or to pay for transportation improvements that also benefit other funds such as water, sewer and stormwater. For 2015, the City budgeted approximately \$1.5 million of dedicated operating revenues and \$6.1 million for capital expenditures.

Grants

There are numerous state and federal grant programs for improving the mobility or safety of the transportation system. Some sources of funds allow a local agency to apply directly, while other grant programs require submittals through a coordinated application process through the jurisdiction's Metropolitan Planning Organization. In addition, there are other sources of funding available to only counties or WSDOT, requiring the City to advocate for improvements through coordination with these eligible agencies. Most grants are issued on a competitive basis and require local jurisdictions to contribute between 10-25% of the cost. A higher local match percentage can make



a project more competitive for grant funds. In 2015, the City receiving \$4.4 million for transportation projects.

General Obligation Bonds

General Obligation Bonds are an important method for the building and construction of transportation facilities. The City can issue bonds up to 1.5% of the assessed property values within the City without a vote of the people and an additional 2.5% with a vote of the people. A bond can allow the rapid development of the transportation system within a short period of time. Bonds are used by cities to finance major improvements and are repaid either through general funds, special taxes or assessment, or roadway tolls. Between 2007 and 2011, the City used two general obligation bond issues for street, sidewalk and other non-motorized improvements throughout the island. General obligation bonds can be funded by revenues from growth and are an alternative to fund infrastructure to accommodate growth as it occurs.

Developer Contributions

Development provides an opportunity for the portions of the system to be built without the expenditure of public funds. Where roadway improvements are required (as indicated in the City's Comprehensive Plan), developers construct the facilities along the length of the property as part of their street frontage improvements. Typically, two to three projects are developer-funded during each year.

Impact Fees

An impact fee or transportation mitigation fee can be established by a city to collect fees for every new vehicle trip added to the roadway system. Developments are charged the fee based upon the number of new vehicle trips added to the road. These fees must be used to improve roadways that will be impacted by the new development.

Transportation Benefit District (TBD) Fees

Cities and Counties are provided a mechanism to raise revenues for transportation programs charging a fee for vehicles licensed in their jurisdictions in accordance with Washington Code (RCW 36.73.020). The City currently levies a fee of \$20 per year on qualifying licensed vehicles.

Local Improvement Districts

Another funding option is the development of Local Improvement Districts (LIDs). Generally, an LID requires a petition or survey with approval from a majority of property owners for the formation of the special assessment district and is repaid by members of that district. LIDs are most often used in places where the improvements also have an economic incentive, for example, a retail area may form an LID to widen sidewalks in order to create a more pedestrian-friendly area that could translate into higher sales. The City has used LIDs for transportation and utility improvements.

User Fees

This funding mechanism attempts to pay for all or part of the cost of an improvement by charging the users of the facility. Roadway and bridge tolls, and the WSF ferry service are all examples of transportation-related user fees. Tolls are usually tied to the repayment of General Obligation Bonds for a specific set of transportation improvements. Tolls are most common for the funding of bridges and other major improvements. The City is not currently using tolling at this time.



Proposed Projects and Funding Needs

The development of a transportation development plan identifies a schedule for planned expenditures over a six-year period. Table 8-2 is a list of recommended improvements to meet Level of Service (LOS) standards and accompanying proposed funding sources. Table 8-3 is a list of transportation projects that have been identified in the City's Capital Improvement Plan (CIP), including discretionary projects in addition to those needed to meet LOS standards.

Funding for the projects needed to meet LOS standards will come from a combination of local, State, and federal sources. The Wyatt Way Reconstruction project will be funded with significant support from a State grant. In the next six years, given the past history of Federal grant funding, it can be anticipated that grant funding can be secured for the Sportsman's Club/New Brooklyn Intersection Improvement project. In summary, the City is well positioned to address projects to maintain LOS standards over the next six years.

Many non-motorized improvement projects have been identified in the City's CIP. Over the coming six years, the number of discretionary transportation projects exceeds the City's ability to fund them. Establishing priorities for funding and securing new funding sources is needed if a sizable portion of these projects are to be delivered.

The most significant and expensive current needs to meet LOS standards are along SR305. At this time, WSDOT is responsible for planning and developing capacity projects to meet LOS standards on SR305, while the City performs much of the routine maintenance along the SR305 corridor. The City's population is approximately 23,000 and is expected to reach 25,000 in the next five to seven years. At that time the City may become responsible for improvements on some segments of SR305 depending on access requirements. The City should consider partnerships with WSDOT to address current needs. This Plan identifies needs for capacity improvements and includes a special study that proposes both at grade and separated grade solutions. The City has developed projects along the corridor such as the Olympic Drive project that was funded by a State Grant and could consider implementing additional projects. This could include funding elements of WSDOT projects or the City undertaking and funding its own projects along the corridor by obtaining development permits from the State.

Proposed Sources of Funding

To increase funding capacity both in the short term for non-motorized projects and in the long term for capacity projects, the city could consider increasing the TBD fees and/or issuing bonds. A bond issue could provide for investments in non-motorized transportation so that more complete networks of bicycle and pedestrian facilities could be realized in a shorter time frame. Alternatively, revenues from the current mix of resources could be directed to transportation rather than to other City programs and services.



Reassessment Strategy

At the time of this Plan, no funding shortfalls for capacity projects to meet LOS standards were anticipated for the CIP six year time horizon. However, if the City is unable to secure grant funding or suffers other financial setbacks, the City may need to reassess in future years.

The Growth Management Act requires that jurisdictions develop a reassessment strategy in the event that funding shortfalls occur that limit the City's ability to carry out the transportation improvement plan. In the event that the City cannot fund the transportation capital improvements needed to maintain the adopted roadway LOS standards (as identified in the Level of Service section), then the City shall take one or a combination of the three following actions as directed by the City Council:

1. Phase proposed land developments that are consistent with the City's land use plan until such time as resources can be identified to provide adequate transportation improvements.
2. Reassess the City's transportation financing strategy to identify additional funding opportunities with federal and regional grants and funding programs, and through the development of new partnerships with WSDOT, Kitsap County, and the private sector.
3. Reassess the City's adopted roadway LOS standards to reflect service levels that can be maintained under the known financial resources.



Table 8-2 Recommended Improvements to meet LOS standards			
Location	Description	Year (1)	Estimated (2)
Wyatt Way/ Madison Ave.	Intersection control - round about	2016	1200
New Brooklyn Road/ Sportsman's Club Road (3)	Intersection control - round about	2017	800
Madison Avenue/ New Brooklyn Road (3)	Intersection control - round about	2020	900
Madison Ave./ Wallace Way	Intersection control - left turn restriction	2021	20

Notes:

1. Project start date for design.
2. \$ in thousands, Transportation element only
3. Meets LOS requirement in model. Traffic impacts have been observed at peak hours for Schools.



Table 8 - 3
6 Year Transportation Funding Needs

6 year Transportation Improvement Program		Location	Description	(\$ in thousands)	
ID	Name			Probable Cost	Totals
Roadway Preservation Projects:					
PR-1	Annual Roads Preservation Program	Island-wide	Asphalt patching, chip Sealing, asphalt Overlay		
PR-2	Annual Roadside Safety Program	Island-wide	Replace or improve guardrails and shoulders	9468	
PR-3	Mountainview Road Reconstruction	Falk Rd. to end	Road reconstruction and drainage improvements	600	
PR-4	Wardwell Road Reconstruction	Sportman's Club to Triple Crown Dr.	Road reconstruction and drainage improvements	86	
PR-5	Country Club Road Reconstruction	Toe Jam Hill to Bulkhead	Road reconstruction and drainage improvements	100	
				175	10429
Intersection Improvement Projects:					
INT-1	See Wyatt Way Reconstruction		Round about		
INT-2	Sportsmans Club & New Brooklyn		Round about	993	993
Complete Streets Projects:					
CS-1	Wing Point Way Reconstruction	Fernclyff Ave. to Park Ave.	Water and sewer utility replacement, storm drainage, road reconstruction, shoulders, and sidewalks		
CS-2	Olympic Drive NM Impr., Phase 1	Winslow Way to Harbor Dr.	Bike and pedestrian facility improvements	1539	
CS-3	Olympic Drive NM Impr., Phase 2	Winslow Way to ferry terminal	Bike and pedestrian facility improvements	1521	
CS-4	Wyatt Way Reconstruction, Phase 1	Madison Ave to Lovell Way	Road reconstruction, intersection imp., bike lanes, and sidewalks	618	
CS-5	Winslow Way Reconstr., Phase 2	Madison Ave to Grow Ave	Water and sewer utility replacement, storm drainage, sidewalks, patching and overlay	3700	
				2300	9678
Sidewalk Improvement Projects:					
SW-1	Madison Ave. Sidewalk, Phase 1	Wyatt Way to High School Rd.	Reconstruct sidewalks and drainage	3188	
SW-2	Madison Ave. Sidewalk, Phase 2	Winslow Way to Wyatt Way	Reconstruct H/C ramps at driveways	158	3346



Table 8 - 3
6 Year Transportation Funding Needs

Core 40 Shoulder Program Projects:			
SH-1 C40 - Spot Projects	Islandwide	Shoulder Improvements	300
SH-2 C40 - Fletcher, Phase 1	Highs School Rd. to N. Brooklyn Rd.	5 foot paved shoulders both sides	470
SH-3 C40 - Bucklin, Phase 2	Blakely Ave. to Fletcher Bay Rd.	5 foot paved shoulders both sides	1136
SH-4 C40 - Miller, Phase 1	Torvanger Rd. to Peterson Hill Rd.	5 foot paved shoulders both sides	1010
SH-5 C40 - Eagle Harbor, Phase 1	Wyatt Way to Bucklin Hill Rd.	5 foot paved shoulders both sides	712
	Bucklin Hill Rd. to McDonald Rd.	5 foot paved shoulders both sides	700
			4328
Trails Projects:			
TR-1 Connecting Pathways	Islandwide	Trail easements and construction	150
TR-2 Sound to Olympics Trail, Phase 2/4	Winslow Way to High School Rd.	Separated pathway	2250
TR-3 Sound to Olympics Trail, Phase 3	Vineyard Lane to High School	Separated pathway and NM Bridge	2490
			4890
6 year program total			33664
Average annual			5611

Islandwide Transportation Plan draft October 2016

APPENDIX LINK:

<http://www.bainbridgewa.gov/800/IWTP-APPENDIX>

City of Bainbridge Island

City Council Agenda Bill



PROCESS INFORMATION

Subject: 9:25 PM 2017-2018 Proposed Budget Discussion, AB 16-109 - Finance (Pg. 269)	Date: 11/1/2016
Agenda Item: UNFINISHED BUSINESS	Bill No.: 16-109
Proposed By: Ellen Schroer, Finance Director	Referrals(s): September 20, September 30, October 4, October 11, October 18, October 25, 2016.

BUDGET INFORMATION

Department: Finance	Fund:	
Expenditure Req:	Budgeted?	Budget Amend. Req?

REFERRALS/REVIEW

:	Recommendation:	
City Manager: Yes	Legal: Yes	Finance:

DESCRIPTION/BACKGROUND

Action Item:

Continue budget discussions.

History:

The City Council and the administration are working on the 2017-2018 budget through a series of City Council meetings. At meetings in September and October, the Council received information from the administration and department directors.

At the October 25 meeting, the City Council provided some specific suggestions of possible changes to the Proposed Budget. Staff has prepared initial costing information, and will continue to work to develop additional information to provide prior to and at the City Council meeting on November 1, 2016.

The tables below show budget changes that have been discussed to date.

Table 1: Budget modifications proposed through October 25, 2016 (ongoing costs).

These costs will be included in future budgets, and will increase each year due to inflation. Numbers in (brackets) are negative and represent a reduction in expenditure or revenue.

Item	Amount	Comment
Add one police officer in 2017	\$135,000	
Add one police officer in 2018	\$140,000	
Add four police officers in 2017	\$540,000	
Eliminate Water Quality and Flow Monitoring Program	(\$154,000)	Ongoing reduction of professional services (\$52,000). Staff whose responsibilities include this program also have other responsibilities, so costs may shift to other funds.
Add funding to support cultural organizations	\$100,000 - \$150,000	
Eliminate proposed Planner (long-range planning)	(\$105,000)	This position is expected to focus on long-range planning functions, which are supported by the General Fund.
Eliminate proposed Planner (current planning)	(\$105,000)	This position is expected to focus on current planning functions, which are supported by both the Building and Development Services Fund and the General Fund.
Maintain current structure of utility tax	(\$60,000)	The budget as developed includes new revenue of \$60,000 for the anticipated change to the utility tax.

Table 2: Budget modifications proposed through October 25, 2016 (one-time costs).

These costs are expected to occur only in the budget year noted.

Item	Amount	Comment
Add one police vehicle and equipment in 2017	\$70,000	
Add one police vehicle and equipment in 2018	\$73,000	
Add four police vehicles and equipment in 2017	\$280,000	
Add funding for Groundwater Study in 2017	\$50,000 - \$75,000	
Add funding for Phase II of L.I.D. code development in 2017	Under development	

If all of the changes above were approved, the change to the 2017 proposed budget would be:

- Spending increase of \$1,045,000 if all 2017 modifications were approved, of which \$690,000 is ongoing spending.
- Spending reduction of \$210,000, which is all ongoing spending.
- Revenue reduction of \$60,000, which is ongoing revenue.

RECOMMENDED ACTION/MOTION

Consider motions.

