1.0 Background

Bainbridge Island is located in the Central Basin of Puget Sound, east of the Kitsap Peninsula, west of the City of Seattle and north of Vashon Island. It is one of the largest islands within Puget Sound, encompassing approximately 28 square miles and 53 miles of irregular shoreline. "It is comprised of both open and sheltered shores and has a significant diversity of shore forms (bluffs, spits, cuspate forelands, estuaries and lagoons, tidal flats, islands and rocky outcrops)" (Williams et al. 2003; MacLennan et al. 2010).

Nearly every habitat common to central Puget Sound including eelgrass meadows, kelp forest, mud/sand flats, tidal marshes, sub-estuaries (pocket estuaries), sand spits, beaches and backshore, banks and bluffs, and marine riparian vegetation can be found on Bainbridge Island (Williams et al. 2003). Similarly, the shoreline consists of almost all of the geomorphic classifications found in the Puget Sound including low bank, high bluff, marsh/lagoon, rocky shoreline and spit/barrier backshore; the only classification missing is large river deltas (Williams et al. 2004). The shorelines of Bainbridge Island are recognized as shorelines of the state as such are subject to state regulated development provisions.

In 1971, Washington State passed the Shoreline Management Act (Act) to protect the unique shoreline habitats of Puget Sound. The SMA recognizes that shoreline ecosystems are fragile and subject to adverse impacts from development. In addition, the SMA acknowledges that continued unmanaged development further impairs these resources. The SMA specifies local jurisdictions to develop regulations using a three-prong approach: allow development to occur consistent with the SMA, protect shoreline resources, and plan for public access to shorelines of the State (Ecology 2004). The SMA requires the Department of Ecology to periodically update state guidelines for approving or amending shoreline master programs. In 2003 the state released the current guidelines stating each jurisdiction shall conduct an inventory of structures, uses, restoration potential, public access and critical areas. Using the inventory perform a characterization of the shoreline ecosystems and asses the current condition of the relationship between ecosystem-wide processes and ecological functions.

In preparation for the updated DOE requirements the City completed the original structure inventory in 2001 and the shoreline characterization was completed in 2004. The data and

interpretation are found in the Nearshore Habitat Characterization and Assessment, Management Strategy Prioritization, and Monitoring Recommendations produce by Battelle Laboratories for the City of Bainbridge Island in 2004. A GIS model was created by Battelle to quantify existing anthropogenic impacts. The model divided the shoreline into 201 reaches which were then grouped into nine (9) management units. To allow comparison from Washington State Department of Natural Resources' ShoreZone Inventory, each reach represented a shorezone unit. A simple controlling factor (stressor) scoring system classified the various impacts, such as armoring, fill, water quality, loss of riparian vegetation, and structures by reach. The model used ecological information collected by the Washington Department of Natural Resources (WDNR) for a regional level coastal atlas. Controlling factor scores are best used as indicators for identifying the probability for successful restoration projects. The shoreline characterization completed by the City also includes a restoration potential component. This is a valuable to identify potential restoration opportunities and gives insight to the appropriate type of restorative project (conservation, enhancement, or restoration) and the likelihood of the projects success. A matrix of most appropriate management action (strategy) can be produced from the relationship between reach and management unit impact (Williams et al. 2004).

This document addresses the requirements of WAC 173-26-201(3) and discusses the amendments to the 2004 Shoreline Characterization. A brief discussion on the updated shoreline structure inventory, changes to controlling factor scores, and management of sediment source bluffs is given for each management area. The intent of this document is to augment the previous detailed shoreline assessment and document changes to controlling factor scores.

2.0 Shoreline Inventory and Characterization

The shoreline inventory and characterization is a tool for developing or updating scientifically based development regulations, in addition the baseline is the reference point for future adaptive management strategies. The conclusions from the shoreline characterization inform citizens, decision makers, and natural resources planner on the current conditions of ecosystem functions and ecosystem-wide which provides the background information for discussions on the local jurisdiction policy direction. To provide the most current information for the Shoreline Master Program update process the City commissioned two additional analyses. The first analysis provided an Island wide inventory of current geomorphic features and an

accompanying analysis of historic conditions was completed in 2010 by Coastal Geological Services. The CGS report prioritized coastal bluffs and drift cells for conservation and restoration. The report informed the restoration plan and will be used as a current planning tool.

The second analysis amended the existing shoreline characterization with an updated 2010 shoreline structure inventory. Staff reviewed all shoreline substantial development permits (SSDP), shoreline substantial development exemptions (SSDE), Shoreline Conditional Use permits (SCUP) and Shoreline Variances (SVAR) to determine if they would change the controlling factor score (CFS) for the reach. The description of the activity was reviewed and a determination of whether the permit would have an impact on the scoring. Authorizations for repair and replace of existing structure where not considered to have an effect since these structure were included in the 2001-2002 inventory. Beach nutrition would not have an impact on CFS. A change from a wood or concrete bulkhead may affect the score there is a minus one score if smooth bulkhead are greater than rock bulkheads.

2.1 Agate Pass Management Area (MA-1)

Agate Pass Management area starts north of Manzanita Bay and extends to the Ne North Street road end. The length of the management area is 19,495 feet, encompassing a total shoreline jurisdiction shoreland area of 89.5 acres. There are 12 reaches within the management area. The management area is largely represented by High Bluffs with 15,840 linear feet or 79% of the length. The low bank section is 3655 linear feet in length or 21% located between the southern High Bluffs and the High Bluffs to the east. Relative to wave exposure the shorelines area is considered “semi-protected” along Agate Passage changing to protected along Port Madison (Figure X).

Ecology

Four non fish bearing streams have been identified within the management unit. One of the three herring hold areas adjacent to Bainbridge Island is located north of the management area in Port Madison. Similar to other management areas on the north end of the island herring spawning is present. Other forage fish spawning present include sand lance and surf smelt. Sandlance spawning occurs mostly around Agate Pass Point and south to Agate Pass Bridge with surf smelt spawning sites occurring throughout the management area. Shellfish is abundant within the management area with a known recreational shellfish bed north of Hidden Cove Rd.

The recreational shell fish bed is currently part of Kitsap Health District Pollution Identification and Correction project. The species of shellfish present are geoduck, hardshell clam and subtidal clams.

Development

Shoreline development in MA-1 is primarily residential in nature. There are approximately 117 developed single family parcels in this management area distributed between two different residential zones; R-1 and R-2. There are 22 parcels which are likely to develop as a single family use with a potential for an additional 29 dwelling units this is an increasing of 18% single family residences.

(Insert Build out Table)

The CGS report determined that 8912 linear feet or 46% of the unit was historically feeder bluffs. An additional 7% had the potential to be a feeder bluff. The two drift cells in the unit are KS-13-3 and KS-14-5. KS-13-3 is a left to right drift cell terminating at Agate Pass Point, this cell has been ranked moderate priority for conservation with 42% of the drift cell sediment source intact (CGS 2010). KS-14-5 is ranked as highest priority for restoration with 14% intact, this is a relatively small right to left drift cell of 2,789 linear feet terminating Agate Pass Point. Improvement in the type of shoreline armoring has occurred over the last 6 years with 219 linear feet of vertical flat face armoring replaced with rip-rap material. In addition 120 linear feet of soft shore treatment has been employed. This did not significantly alter the 2004 nearshore assessment scoring.

A total of 235 point modifications were recorded along MA-1 shorelines, at an average of 12.1 modifications per 1000 ft, among the highest densities on Bainbridge Island (Battelle 2004 Table X Figure B-20) the most common structures were stairs (64) (Battelle 2004). Since the structure inventory was completed one additional point modification occurred as a new upland structure at water line. This did significantly change the controlling factor score.

2.2 Port Madison (MA -2)

Port Madison management area begins at the Ne North Road end and continues to the point on the eastern shore of Port Madison Bay. MA-2 comprises 32,037 ft of shoreline that is adjacent to much of Port Madison and the entirety of Port Madison Bay, and includes 24 reaches.

Four of the five geomorphic classifications have been assigned to this management unit. The two most abundant classifications were High Bluff and Marsh/Lagoon. Within the management area Marsh/Lagoon represents 34.5% or 11,649.81 linear feet and High Bluff represents 32.9% or 11095.93 linear feet. Spit/barrier/backshore represents 19.5% or 6586.52 linear feet and Low bank is nearly less than half of the dominate classification representing 13.1% or 4410 linear feet. Relative to wave exposure, shorelines are considered "semi-protected" changing to "protected" along Port Madison, and "very protected" within Port Madison Bay (Figure X).

Ecology

Shoreline jurisdictional wetlands span approximately 13.81 acres, there are small wetlands doting the landscape through the management area with the largest associated wetlands located adjacent to Coho Creek, the Bainbridge Island Metropolitan Park District properties on hidden cove road and the Port Madison Water Company open space area. Estuarine wetlands coverage is 2.34 acres which is the second largest of all management areas. The estuarine wetland near the Port Madison Water Company pier is the largest area with contiguous narrow patches found throughout the harbor.

MA-2 receives upland flows Coho Creek, as well as from several other small coastal streams. The majority of 11 streams in the management area are non-fish bearing, except Coho Creek which is documented for Cutthroat, Chum, and Coho and the coastal stream which drains Bloedel Reserve. Herring spawning is documented through the management area including Port Madison Harbor. Washington Department of Fish & Wildlife (WDFW) has reported the chronic mortality of herring embryos in Hidden Cove, though the cause is still under investigation. Other forage fish is document to occur are surf smelt and sand lance. The areas are mostly associated with the spit/barrier/backshores outside of Point Madison Harbor.

Development

Shoreline development in MA-2 is primarily residential in nature. Single Family residential is the dominate land use type with 159 parcels; there are 2 commercial marinas and five park or preserves two public and three private. The management area has three residential zoning designations R-0.4, R-1, and R-2.

MA-2 is defined by two drift cells KS-14-4 and KS-14-3 both have a southerly alongshore drift that terminate into Port Madison Bay, an area that lacks appreciable alongshore drift). KS-14-4 is a left to right drift cell beginning at the divergence zone near agate pass terminating at the head of Port Madison, encompassing a short stretch of shoreline with eroding feeder bluffs. The drift cell is ranked as a moderate high priority for restoration with 74% of the source sediment impounded by shoreline stabilization. Much of this stabilization is characterized as fill or land-building, as opposed to erosion protection that might be observed in a more exposed section of shoreline. Currently 1426 linear feet of feeder bluffs supply sediment to the drift cell which is 15.6% of the historic sediment sources. KS-14-3 is a right to left moving drift cell beginning at a divergence zone located on the eastern shore of Port Madison terminating in at the head of Port Madison and is ranked as a moderately high priority of restoration with 80.6% of the source sediment lost.

A total of 445 point modifications were recorded along MA-2 shorelines, at an average of 14 modifications per 1000 ft. As previously noted, most of these structures are for accessing boats, with the most common structure being mooring buoys (96), followed by overwater structures such as boat houses (31), docks (88), and piers (69). At least eight marinas, defined as a pier/float with more than five mooring slips, were present within MA-2. A total of 22 outfalls were also recorded in MA-2. Since the last inventory 5 permits have been issued for new point modifications. The total count of docks and piers increased by 1 and 3 respectively, bringing the total number of docks to 89 and piers to 72. One permit was issued for a new ramp. The new point modifications did not significantly alter the controlling factor score.

2.3 Rolling Bay – Point Monroe (MA-3)

Rolling Bay-Point Monroe (MA-3) comprises 29,707 ft of shoreline that encompasses Point Monroe, Point Monroe Lagoon, as well as Rolling Bay to Skiff Point. Rolling Bay-Point Monroe (MA-3) comprises 18 reaches broken into the following categories: high bluff (11), spit/backshore (5), low bank (1), and a large marsh/lagoon (1). Much of MA-3 contains extensive tideflats. MA-3 is defined by two drift cells that converge at Point Monroe. The smaller drift cell begins at a divergence zone located on the eastern shore of Port Madison and moves southeast into Point Monroe Lagoon; high bluffs on the landward margin of the lagoon have exhibited some recent instability. The larger second cell begins to the south at a divergence zone located near Skiff Point, with northerly alongshore drift that terminates at the end of Point

Monroe. Relative to wave exposure, shorelines along the eastern shore facing Puget Sound are considered "semi-protected," with "very protected" shorelines within Point Monroe Lagoon.

Development

Shoreline development in MA-3 is primarily residential in nature. Many of the homes built along the spit at Point Monroe are built on fill that directly abuts the shoreline, where encroachment is likely underestimated. However, MA-3 shorelines also include Fay Bainbridge State park, which is a stretch of relatively undeveloped sandy beach with shoreline access for recreation.

Approximately 38% of shoreline is modified by armoring and 27% of the shoreline has armoring that encroaches into the intertidal zone. A total of 291 point modifications were recorded along MA-3 shorelines, at an average of 10 modifications per 1000 ft. Most of these modifications are structures at the waterline (112), as well as docks (33) and overwater structures (28). A total of 8 outfalls were also recorded in MA-3

(Insert Build out Table)

Ecology

MA-3 receives most upland flows from Dripping Water Creek (WRIA 15.0320) and unnumbered 28, which drain upland areas with low levels of land use (1% TIA).

2.4 Murden Cove (MA-4)

Murden Cove (MA-4) comprises 28,843 ft of shoreline that encompasses all of Murden Cove, as well as Yeomalt Point and part of Wing Point. Murden Cove comprises 20 reaches broken into the following categories: high bluff (11), spit/backshore (6), marsh/lagoon (2), and low bank (1). Most of MA-4 also contains extensive tideflats. MA-4 is defined by two drift cells that converge at the head of Murden Cove, forming the Murden Cove Creek subestuary (a spit and marsh/lagoon area) that lacks appreciable alongshore drift. The northern end of the first drift cell begins at a divergence zone located at Skiff Point and moves south into Murden Cove, encompassing high feeder bluffs south of Skiff Point. The second cell begins to the south at a divergence zone located near Wing Point and moves in a northerly direction, encompassing a number of feeder bluff areas below Yeomalt Point and southern Murden Cove. Relative to wave exposure, almost all shorelines along the eastern shore facing Puget Sound are considered "semi-

protected," with a small stretch of "protected" and "very protected" shorelines within Murden Cove. Murden Cove receives upland flows from Murden Cove Creek (WRIA 15.0321), which drains upland areas with low-tomoderate levels of land use (6% TIA), as well as a number of small coastal streams.

Development

Shoreline development in MA-4 is primarily residential in nature, with some shoreline backed by public roads. Most of the homes along this stretch of shoreline are built on the high bluffs, which generally make the shoreline inaccessible; armoring is generally composed of rip rap at the toe of bluffs.

A total of 86 point modifications were recorded along MA-4 shorelines (unpublished data, COBI 2002), at an average of three modifications per 1000 ft, by far the lowest density of all MAs on the Island. Most of these modifications are stairs (29) and structures at the waterline (14). A total of 10 outfalls were also recorded along MA-4 shorelines.

(Insert Build out Table)

Ecology

Overhanging riparian vegetation covers approximately 36% of the MA-4 shoreline, tying it with MA-1 for the highest value observed of any MA (Table X, Figure x). Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose 58% of land cover (Figure x). Impervious surfaces (e.g., roads, roofs) represent 18% of the riparian zone land cover. Shoreline jurisdictional wetlands span approximately 2.4 acres; the associated wetlands are located on parcels near the Agate Pass Bridge. This is the only management area where estuarine wetlands do not occur.

Eagle Harbor (MA 5)

Eagle Harbor (MA-5) comprises 46,054 ft of shoreline that encompasses all of Rockaway Beach and Eagle Harbor, including all of Bill Point and part of Wing Point. This diverse MA comprises 35 reaches broken into the following categories: marsh/lagoon (10), spit/backshore (8), low bank (8), and high bluff (4). MA-5 is defined by three major drift cells (Figure x). Two of them begin at the outer margins of Eagle Harbor (Wing Point and Bill Point) and move westward, terminating in the middle of Eagle Harbor, an area that lacks appreciable alongshore

drift. The third drift cell begins at a divergence zone located just to the north of Blakely Harbor and moves north along Rockaway beach to Bill Point. Relative to wave exposure, all shorelines along the eastern shore, facing Puget Sound, are considered "semi-protected," whereas the inner portion of Eagle Harbor is considered "very protected".

Development

Eagle Harbor (MA-5) is the commercial and industrial heart of Bainbridge Island, and includes the City's downtown, a Washington State Ferry terminal and repair facility, multiple commercial marinas, and a Superfund site at Bill Point, throughout portions of the outer harbor, and at the mouth of the Ravine Creek. There is also the City's Waterfront Park in Eagle Harbor that provides shoreline access, boat launch facilities, and visitor moorage. The remainder of MA-5 shoreline has typical single-family residential development, with some shoreline backed by public roads. Almost 53% of the shoreline is modified by armoring and 30% of the shoreline has armoring that encroaches into the intertidal zone, high values when compared with all other MAs on Bainbridge Island.

A total of 506 point modifications were recorded along MA-5 shorelines, at an average of 11 modifications per 1000 ft. Most of these modifications are associated with boat facilities, including pilings (89), moored boats (78); mooring buoys (66), and docks (60). At least 17 marinas, defined as a dock with more than five mooring slips, were present along the shoreline of MA-5. A total of 38 outfalls were also recorded along MA-5 shorelines.

(Insert Build out Table)

Ecology

Overhanging riparian vegetation covers approximately 23% of the MA-5 shoreline, among the lowest values for this characteristic among MAs on Bainbridge Island. Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose only 36% of land cover, whereas impervious surfaces (e.g., roads, roofs) represent 45% of land cover. Eagle Harbor was the only MA on Bainbridge Island where the %TIA exceeded the percentage of natural vegetation in the marine riparian zone. Eagle Harbor receives upland flows from six watersheds with moderate to-high levels of land use: WRIA 15.0330 (TIA 3%), WRIA 15.0329 (TIA 4%), Sportsman's Club Pond Creek (WRIA 15.0325;

TIA 10%), and WRIA unnumbered 48 (TIA 60%), Ravine Creek (WRIA 15.0324; TIA 40%), and WRIA unnumbered 22 (TIA 18%).

Blakely Harbor (MA-6)

MA-6 comprises 20,345 ft of shoreline that encompasses all of Blakely Harbor, including part of Restoration Point. Blakely Harbor is an embayment comprising 16 reaches broken into the following categories: spit/backshore (7), low bank (6), rocky shore (2), and marsh/lagoon (1). MA-6 is defined by two drift cells with westerly alongshore drift that terminate at the head of Blakely Harbor, with the log pond area lacking appreciable alongshore drift. The first drift cell begins at a divergence zone located at a point on the northern margin of Blakely Harbor and moves west into the harbor; this short stretch of shoreline has scarce sediment abundance and encompasses a small reach with rocky shore. The second drift cell begins at Restoration Point, a rocky headland with scarce sediment abundance and no appreciable alongshore drift, and moves northwest into Blakely Harbor. Relative to wave exposure, shorelines along the southern stretch of MA-6 are considered "semi-protected," whereas the interior of Blakely Harbor is considered "protected" to "very protected".

Development

Historically, Blakely Harbor was the home of a large commercial sawmill, which included a log rafting pond in the upper reaches of the bay that was constructed with a large stone jetty that constricted tidal flows. This area is now parkland with public shoreline access, recreational trails, and plans for an interpretive center. The remainder of MA-6 shoreline has single-family residential development. Only 22% of the shoreline is modified by armoring and 17% of the shoreline has armoring that encroaches into the intertidal zone, the lowest values for any MA on Bainbridge Island.

Ecology

Overhanging riparian vegetation covers approximately 29% of the MA-6 shoreline. Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose 59% of land cover, whereas impervious surfaces (e.g., roads, roofs) represent 19% of land cover.

Blakely Harbor receives upland flows from five watersheds with low levels of land use and high forest cover: WRIA unnumbered 56 (TIA 1%), WRIA unnumbered 77 (TIA 2%), WRIA 15.0332 (TIA <1%), Macs Dam Creek (WRIA 15.0331; TIA <1%), and unnumbered 65 (TIA <1%).

Rich Passage (MA-7)

Rich Passage (MA-7) comprises 34,565 ft of shoreline that encompasses most of Rich Passage, from Restoration Point to Point White, including Pleasant Beach and South Beach. Rich Passage (MA-7) encompasses a long stretch of shoreline made up of 28 reaches composed primarily of spit/backshore (21) and low bank (3) geomorphic classes; it also includes rocky shores (3) near Restoration Point and one marsh/lagoon reach at the restored Schel-Chelb estuary. MA-7 is defined by two drift cells that converge in the embayment near the outlet of Schel-Chelb estuary (Figure x). The first drift cell begins at Restoration Point, a rocky headland with scarce sediment abundance and no appreciable alongshore drift, and moves westward. The second drift cell begins at a divergence zone located at Point White and moves eastward. Relative to wave exposure, shorelines along the eastern stretch of MA-7 near Restoration Point are considered "semi-protected," whereas the interior of Rich Passage is considered "protected". Rich Passage receives upland runoff from direct coastal sheet flow, as well as several small watersheds with moderate-to-low levels of land use and high forest cover: WRIA 15.0337 (TIA 2%), WRIA 15.0335 (TIA 2%), WRIA 15.0334 (TIA 3%), WRIA 15.0333 (TIA <1%), and Schel-Chelb Creek (WRIA 15.0325).

Development

Most of the MA-7 shoreline is backed by single-family residential development, with highly accessible beaches afforded by the typical regional geomorphology (i.e., low bank to spit/backshore). Shorelines within the Rich Passage MA include road frontage, a state park, restored estuary, commercial fish farm, and a sewage treatment outfall. Fort Ward State Park is a waterfront park with a boat launch, shoreline access, and trails (Figure x). Schel-Chelb estuary, near Lynwood Center, is a 2-acre wetland that was constructed to restore tidal flushing and fish access to the Pleasant Beach Watershed1. A commercial aquaculture facility for Atlantic salmon exists in the waters off of South Beach. As well, the Kitsap County Sewer District #7 treatment facility discharges into Rich Passage, just east of Fort Ward State Park.

A total of 402 point modifications were recorded along MA-7 shorelines (unpublished data, COBI 2002), at an average of 11.6 modifications per 1000 ft. Most of the modifications along this residentially developed shoreline are represented by stairs (110), mooring buoys (94), groins (43), structures at the waterline (42), and overwater structures such as docks (10) and piers (2).

(Insert Build out Table)

Ecology

Overhanging riparian vegetation covers approximately 8% of the MA-7 shoreline, by far the lowest such value over Bainbridge Island. However, low overhanging riparian cover is expected because of the relatively high percentage of reaches classified as spit/backshore that typically do not have this type of vegetation. Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose 42% of land cover, whereas impervious surfaces (e.g., roads, roofs) represent 26% of land cover. Besides Eagle Harbor (MA-5), riparian zone land-cover class values in Rich Passage represent the worst ratios of percentage of natural vegetation to %TIA on Bainbridge Island.

Point White –Battle Point (MA-8)

The Point White to Battle Point management area (MA-8) comprises 54,650 ft, the longest MA on Bainbridge Island. It fronts Port Orchard Bay and includes Battle Point, Battle Point Lagoon, Fletcher Bay, Tolo Lagoon, and part of Point White. MA-8 comprises 38 reaches composed of the following geomorphic classes: spit/backshore (16), high bluff (10), marsh/lagoon (7), and low bank (5). MA-8 is defined by two major drift cells that converge at Battle Point. The larger drift cell begins at a divergence zone located at Point White and moves north past Fletcher Bay and a nearby reach with eroding feeder bluffs The second drift cell begins at a divergence zone located just south of Arrow Point and moves south to Battle Point; most of this drift cell encompasses a large stretch of eroding feeder bluffs. Relative to wave exposure, all west-facing shorelines are considered “protected,” whereas the interior of small embayments and estuaries is considered “very protected”.

Development

Shoreline development in MA-1 is primarily residential in nature. Approximately 50% of the MA-7 shoreline is modified by armoring, and 22% of the shoreline has armoring that encroaches into the intertidal zone. A total of 616 point modifications were recorded along MA-8 shorelines (unpublished data, COBI 2002) at an average of 11.9 modifications per 1000 ft. Most of the modifications along this residentially developed shoreline were represented by stairs (132), mooring buoys (113), docks (73), upland structures at the waterline (61), overwater structures (57), groins (37), and piers (24). A total of 32 outfalls were also recorded along MA-8 shorelines. Shoreline development in MA-1 is primarily residential in nature. Approximately 50% of the MA-7 shoreline is modified by armoring, and 22% of the shoreline has armoring that encroaches into the intertidal zone. A total of 616 point modifications were recorded along MA-8 shorelines (unpublished data, COBI 2002) at an average of 11.9 modifications per 1000 ft. Most of the modifications along this residentially developed shoreline were represented by stairs (132), mooring buoys (113), docks (73), upland structures at the waterline (61), overwater structures (57), groins (37), and piers (24). A total of 32 outfalls were also recorded along MA-8 shorelines.

(Insert Build out Table)

Ecology

Overhanging riparian vegetation covers approximately 32% of the MA-8 shoreline. Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose 56% of land cover, whereas impervious surfaces (e.g., roads, roofs) represent 22% of land cover.

MA-8 receives upland flows from five watersheds with low levels of land use: WRIA unnumbered 73 (TIA 2%), Fletcher/Springbrook Creek (WRIA 15.0340; TIA 1%), WRIA unnumbered 72 (TIA 1%), WRIA 15.0339 (TIA 0%), WRIA 15.0338 (TIA 2%).

Manzanita Bay (MA-9)

Manzanita Bay (MA-9) is the smallest management area on Bainbridge Island, comprising 18,879 linear feet of shoreline that encompass all of Manzanita Bay and Arrow Point. MA-9 comprises only 10 reaches composed of the following geomorphic classes: marsh/lagoon (3), high bluff (3), spit/backshore (2), and low bluff (2). MA-9 is basically defined by four drift cells. The first drift cell begins at a divergence zone located outside the northern margin of Manzanita

Bay and moves south into Little Manzanita Bay. The second drift cell is quite small and moves eastward into Little Manzanita Bay along its south shore. The third and fourth drift cells move south from divergence zones near Arrow Point and south of Little Manzanita Bay and converge at the head of Big Manzanita Bay. Relative to wave exposure, shorelines of MA-9 are considered "very protected" in upper embayment reaches, or "protected". No feeder bluffs have been documented in MA-9. Manzanita Bay receives upland flows from two watersheds with low to moderate levels of land use: Manzanita Creek (WRIA 15.0344; TIA 5%) and WRIA unnumbered 29 (TIA <1%).

Development

Shoreline development in MA-9 is primarily residential. Among the highest rates for any Management Area on Bainbridge Island. A total of 218 point modifications were recorded along MA-9 shorelines, at an average of 11.5 modifications per 1000 ft. Most of the modifications along this protected embayment were represented by stairs (63), docks (42), overwater structures (12), groins (7), and piers (9). A total of 9 outfalls were also recorded along MA-9 shorelines.

(Insert Build out Table)

Ecology

Overhanging riparian vegetation covers approximately 35% of the MA-9 shoreline, ranking this MA among the best on Bainbridge Island in this category. Within the 200-ft riparian zone, naturally vegetated surfaces (coniferous and deciduous trees, shrubs, and wetlands) compose 70% of land cover, whereas impervious surfaces (e.g., roads, roofs) represent only 12% of land cover As such, riparian zone land-cover in Manzanita Bay is among the best of all Bainbridge Island MAs.

3.0 Shoreline Use Analysis

Introduction

A key task of the SMP planning process is to provide shoreline space for future water-oriented uses. The first step is to inventory the current land use. The SMP applies to land in the shoreline jurisdiction which is typically 200 feet from the original high water line. However, in many case the parcels on the shoreline extent beyond the shoreline jurisdiction. In addition, the 200 foot jurisdiction touches some parcels that are not directly in the shore.

	Number of parcels
Parcels completely in Shoreline Jurisdiction	?
Parcels intersect the shoreline	1899
Parcels at least partially in the shoreline jurisdiction	2328

This analysis is based on parcels that directly touch the shoreline and includes the total acreage for the parcels, not just the acreage in the shoreline jurisdiction. An additional analysis was conducted to determine if additional housing units were likely in the shoreline jurisdiction but the number of parcels and acreages were not included since many of the parcel extended well beyond the shoreline jurisdiction.

3.1 Agate Passage Management Unit

Agate Pass Management is primarily residential development and many of the parcels extent well beyond the shoreline jurisdiction.

Land Use	Parcels	Acres
Single Family Residences	117	173
Vacant or Garden and Sheds	23	30
Parks	1	0.4
Others	4	9
Likely Additional Units	22 Parcels	29 Units

3.2 Port Madison Bay

This management unit is composed of two different areas. The first is the area from Agate Point to the western end of the Port Madison Bay. This section includes Bleodel Reserve and the rest in primarily large lot residential. Port Madison Bay is characterized by smaller residential lots and two private marinas.

Land Use	Parcels	Acres
Single Family Residences	159	160
Vacant or Garden and Sheds	24	37
Parks	3	15
Resource Protection (Bloedel)	2	35
Commercial (Marinas)	2	7
Tidelands	2	0
Likely Additional Units	34 Parcels	39 Units

3.3 Rolling Bay – Point Monroe

This management unit is made up of two very different sections. The Point Monroe section is made up of small lots on a sand spit. Much of the rest of the management units is characterized by high bluffs that result in deep lots. Development is primarily shoreline residential.

Land Use	Parcels	Acres
Single Family Residences	196	130
Vacant or Garden and Sheds	39	23
Parks	1	16
Open Space (Tax Status)	9	30
Others	26	15
Likely Additional Units	28 Parcels	31 Units

3.4 Murden Cove

Much of this management unit is made up of medium to high bluff properties. The area is primarily residential.

Land Use	Parcels	Acres
Single Family Residences	186	144
Vacant or Garden and Sheds	22	24
Parks	0	0
Others	16	8
Likely Additional Units	23 Parcels	25 Units

3.5 Eagle Harbor

This management unit included Eagle Harbor and Rockaway Beach. This is the commercial center of the Island but still most of the shoreline is occupied by residential development.

Land Use	Parcels	Acres
Single Family Residences	190	107
Multi-Family	15	21
Vacant or Garden and Sheds	21	30
Parks	13	66
Commercial	13	20
Marinas	3	2
Others	18	1
Likely Additional Units	22 Parcels	29 Units

3.6 Blakely Harbor

While this harbor was once highly industrialized, today it is primarily residential development.

Land Use	Parcels	Acres
Single Family Residences	45	38
Vacant or Garden and Sheds	9	8
Vacant – No shoreline units possible	2	105
Parks	1	39
Others	3	52
Likely Additional Units	5 Parcels	6 Units

Rich Passage

This management unit includes all of the parcels on Rich Passage and the parcel South Beach. South Beach and the Point White areas have smaller parcels limited by road location. Pleasant beach area has deeper lots. A commercial aquaculture operation is located in this management unit. Lynwood neighborhood service center is in this management unit.

Land Use	Parcels	Acres
Single Family Residences	209	116
Vacant or Garden and Sheds	22	13

Parks	2	136
Commercial	2	0.2
Others	12	5
Likely Additional Units	24 Parcels	27 Units

Point White – Battle Point

This large unit includes relatively undeveloped high bluff areas and small lot highly developed areas. It covers 2/3 of the western side of the Island.

Land Use	Parcels	Acres
Single Family Residences	310	287
Vacant or Garden and Sheds	33	30
Parks	3	15
Others	18	23
Likely Additional Units	46 Parcels	51 Units

Manzanita Bay

This management unit surrounded Manzanita Bay. This is a shoreline residential area.

Land Use	Parcels	Acres
Single Family Residences	90	109
Vacant or Garden and Sheds	20	25
Parks	0	0
Others	13	17
Likely Additional Units	21 Parcels	22 Units

Future Land Use Demand

One of the goals of the shoreline analysis is to determine if there is need for additional land for water dependent uses. Since most of the Island is residential, the primary demand will be lots for single family residences. An increase in supply may run counter to goals for no net loss of ecological functions.

The Eagle Harbor management unit has the greatest potential demand for other uses. A location for a haul out facility for small boats is often mentioned. The urban part of Winslow may need to expand to allow additional multi-family development.

A Visioning Workshop was held on September 30, 2010. The following needs were identified:

1. Fuel Dock in Eagle Harbor
2. Haul out facility in Eagle Harbor
3. Identify and develop cultural and historic resources.
4. Provide for shellfish harvesting and growing.
5. Boat Launch with adequate parking.
6. Accommodation for sea planes in Eagle Harbor
7. Additional locations for rowing launching – Eagle Harbor is not enough

4.0 Public Access

Introduction

Public access includes the ability of the general public to reach, touch, and enjoy the water's edge, to travel on the waters of the state, and to view the water and the shoreline from adjacent locations.WAC 173‑26‑221(4)(c) states that:

> *"Local governments should plan for an integrated shoreline area public access system that identifies specific public needs and opportunities to provide public access... This planning should be integrated with other relevant comprehensive plan elements, especially transportation and recreation."*

To support this planning, WAC 173-26-201(3)(c) calls for local governments to inventory existing and potential shoreline public access sites, including public rights-of-way and utility

corridors. Because shoreline access includes visual access, important views of the water from shoreline areas were also identified.

Existing Public Access

Bainbridge Island has developed a Shoreline Access Guideline (Appendix XX) that inventories access opportunities. This guidebook includes public parks and road ends, viewing sites, shoreline trails and shore view roads.

Park Properties – There are thirteen parks that have direct water access. These range from 240 feet of shoreline at Fairy Dell Park to 4,400 feet of shoreline at Fort Ward Park. There are two parks that have shoreline but no shoreline access (T'Chookwap Park and Port Madison Nature Preserve).

Road Ends – The City's Road Ends committee has been active since 1993, looking for opportunities to identify, sign and appropriately develop rights-of-way that extend to the shoreline as public shoreline access points. The City has improved twenty-eight sites to facilitate access. The committee has also identified XXXX additional road ends as having potential for shoreline access improvements.

Shore View Roads – The Shoreline Access Guidebook identifies seven roads that provide significant views of the shoreline. Views along these roads are maintained through regulatory means by requiring that new development maintain open, non-developed areas along private property lines. In the current shoreline master plan, side yard setbacks equal to 30% of the width of the lot are required... The intent of this regulation is to prevent the development of a "wall" of building on the shoreline, and retain shore views from upland properties and shore view roads.

Shoreline Trails - The Winslow waterfront trail has been partial developed. This trail goes from the Eagle Harbor Condominiums through Waterfront Park and continues to Strawberry Plant Park. This trail should be maintained and protected.

Demand for Shoreline Access

The Comprehensive Plan for the Bainbridge Island Park District (2008-2014) examined demand for waterfront access. The plan indicates that there are no standards developed for beach access. The conclusion in the plan is that, "The present supply of sites and road-ends is adequate to

provide access for beachcombing, fishing and informal swimming activities but should be improved with hand-carry boat launch, picnicking and trail access facilities."

Kayak and Canoe Launches – No standards have been developed for these types of launches. However, the plan indicates that these types of facilities are regional in nature. The plan recognizes that there are four launch locations and recommends the addition of seven designated sites. This was recommended to provide reasonable access to a water trail system.

Boat Ramps – There are currently two boat ramps available on Bainbridge Island. Again, the plan indicates that these are regional facilities that are used for off-island residents as well as residents. No standards have been set for the number of boat ramps, but the plan indicates that "these saltwater launch facilities and transit moorage facilities are not adequate to meet population growth requirements and off-set off-island residents but existing BIPRD and COBI sites are not suitable to provide additional facilities." The plan suggests that privately owned commercial facilities can provide for the additional needs. This would require that the shoreline master plan provide sufficient developable lands.

The City conducted a visioning meeting on September 30, 2010 at the outset of the public process for the update to our shoreline master plan. During this interactive workshop, the City solicited citizen input on shoreline access needs. The following public access needs were identified during this meeting:

1. Improve access for people with mobility issues.
2. Make improved road ends welcoming to the public.
3. Improve parking at the road ends.
4. Develop a system of public docks.
5. Develop additional boat ramps and include significant parking for boat trailers.
6. Identify and develop cultural and recreational resources.
7. Increase access points where there are shoreline walks.
8. Provide signage for boats where they can access the uplands.