AquaTechnex

"Advancing the Science of Lake Management"

Integrated Aquatic Vegetation Management Plan for the Town of Hunts Point

adopted by

Town of Hunts Point Council
December, 2002

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Hunts Point
Integrated Aquatic Vegetation Management Plan

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Executive Summary

This integrated aquatic vegetation management plan (IAVMP) has been developed by the Town of Hunts Point for the adjacent waters of Lake Washington. Prior to focusing on these waters, some background information about Lake Washington is provided to give context to the Hunts Point IAVMP.

Lake Washington is one of the most important and heavily used water resources in Washington State. At 21,500 acres and 13 miles long, Lake Washington is the largest lake in King County. It is the second largest natural lake in the State of Washington. The average depth of the lake is 108 feet; it is 214 feet at its deepest point.

Lake Washington is surrounded by the major population centers in the state. Seattle is situated on the western shoreline and the east side suburban cities Bellevue, Kirkland, Medina, Renton and Hunts Point located on the eastern shoreline. The entire lake shoreline with little exception is developed as residential, marine commercial or park and open space. The residential areas on the lake are among the most expensive in the nation and these property owners are significant contributors to City and County property tax rolls. Lake Washington has a direct connection to the salt waters of the Puget Sound through the Ship Canal and Ballard Locks. As such, it is home to an extensive fleet of both small and large recreational watercraft.

The lake is also a very important component of several aquatic ecosystems in the region. There are two major rivers (Sammamish River and the Cedar River) and a number of smaller tributaries that flow into the lake, many of which support populations of migrating salmon. These fish enter the lake through a fish ladder at the Ballard Locks and migrate through the lake to their home tributaries. Many of these salmon species also utilize the lake as rearing habitat prior to transitioning to salt water, and some species may spawn in portions of the lake. Some of these fish runs are listed by the National Marine Fisheries Service as threatened or endangered under the Endangered Species Act (ESA).

Lake Washington has an important limnological history. This lake was severely

polluted by the discharge of waste from the developing communities in the early and mid 1900's. Phosphorus levels in the lake contributed to major algae blooms that were objectionable to the public. The human health threat posed, along with the degraded appearance of the water, led to the formation of regional water pollution control efforts in the 1970's. As a result the sewage was treated or diverted and the lake recovered. The data collected over this period of recovery are included in the more famous cases that limnology students study today. The lake is a textbook case in lake management and restoration. With improved water clarity, aquatic plant life returned to the lake and the aquatic habitat in the system recovered dramatically.

Just as the benefits of this major investment the citizens of the region made were starting to become reality, the invasive aquatic weed *Myriophyllum spicatum*, commonly known as Eurasian watermilfoil, was discovered in the lake. The US Congress Office of Technology Assessment has recognized Eurasian watermilfoil as a "harmful non-indigenous species". The plant may have spread by boat trailer from British Columbia where it was discovered a few years earlier, or it may have come from Lake Meridian. A herbarium specimen of Eurasian watermilfoil was collected from that lake in the 1960s, making it the earliest known occurrence in the state of Washington.

When this invasive weed was discovered in the lake in 1975, the state of Washington had no formal permitting program for the regulation of aquatic plant management. In addition, there was a public reluctance to use key tools like aquatic herbicides because of the publicity surrounding recent events such as the use of "Agent Orange" in Southeast Asia and the DDT problems discovered in the late 1960's. While aquatic herbicides are subject to approval by the US EPA after extensive environmental review, they tend to get lumped in with these other pesticides by the general public and those groups that advocate for the reduction in pesticide use.

As Eurasian watermilfoil populations started to expand beyond pioneering levels, Lake front property owners became alarmed. The dense weed beds that the plant forms are a menace to swimmers, and there are a number of documented drowning deaths nationally each year attributed to thick Eurasian watermilfoil beds tangling the limbs of swimmers. Recreational users of the lake started to notice the impact the expanding weed beds posed to boating and fishing. Many of these residents started to purchase and apply US EPA registered aquatic herbicides (and in some cases herbicides not approved for

aquatic use) to protect their waterfront. At that point there was no permitting system in the state.

Environmental groups and local and state agencies became concerned by the potential problems unregulated herbicide use might pose to the environment when applied by untrained homeowners. Environmental groups like Greenpeace protested treatment programs and filed suits to halt control efforts. The City of Seattle banned the use of aquatic herbicides within the city limits. Agencies such as the Department of Ecology developed permitting programs and started to regulate the use of this tool in the management of these plants. The result of this uncoordinated approach to management is that the weed expanded rapidly throughout the lake. By the mid 1980's the vast majority of the once species-rich littoral zone of Lake Washington was a monoculture of this harmful invasive submerged weed. In the 1980's the Municipality of Metropolitan Seattle (METRO) initiated a harvesting program on Lake Washington to help manage the problems caused by Eurasian watermilfoil. Bottom screens were installed and maintained in public swimming beaches and rotovation was tried on an experimental basis. In the early 1990's Metro decided to discontinue their milfoil control activities. Seattle continues to harvest Eurasian watermilfoil in limited areas before the annual hydroplane races, and other jurisdictions maintain bottom screens in the public swimming areas.

In addition to the problems this weed poses to human use of water resources like Lake Washington, it is now well understood that extensive Eurasian watermilfoil beds significantly degrade water quality and aquatic habitat where they are present. Research performed by the US Army Corps of Engineers Aquatic Plant Control Research Program at various sites around the United States and studies by the University of Washington in Lake Washington have documented severe reductions of water quality in dense milfoil beds. Water temperatures are elevated well above levels that are safe for trout and salmon species as sunlight is absorbed by the milfoil and converted to heat energy. Dissolved oxygen levels are also severely depressed under these mats. Research has also shown that many other species of fish suffer from aquatic plant levels of this density due to a disruption of predator/prey relationships. We can speculate that dense milfoil beds concentrate migrating young salmon at the outside edges of the plant bed where they are more susceptible to predation. Species diversity within a given area has been documented to decline when a monoculture of an exotic like Eurasian Milfoil replaces beneficial native aquatic plants.

Eurasian watermilfoil is now on the State of Washington's Noxious Weed List.

This list is made up of the species of plants that are exotic and invasive and are known to cause detrimental impacts on the environment. Eurasian watermilfoil is classified by the Federal Government as an invasive aquatic species. Many states including Oregon and California list lakes contaminated with this biological pollutant on the 303d list of impaired waters. It is clear that Eurasian watermilfoil has significantly altered the biological integrity of Lake Washington. As the lake is heavily utilized by boaters and this plant spreads from lake to lake on boat trailers, the Lake Washington infestations have probably facilitated the spread of this weed to many other lakes in the region, degrading them as well.

In addition to Eurasian watermilfoil, another invasive non-indigenous plant, Brazilian elodea (*Egeria densa*) has invaded Lake Washington. This weed causes many of the same problems to recreation and aquatic habitat as Eurasian watermilfoil. In addition, Brazilian elodea has proven to be more difficult to control. The survey performed in 2001 for this plan did not detect any Brazilian elodea growing in the vicinity of Hunts Point.

One of the problems complicating Eurasian Milfoil control efforts is the multiple jurisdictions that overlap the lake. There are many cities and towns that are responsible for the regulation and management of the shorelines, and there has not been a coordinated approach to managing Eurasian watermilfoil or other invasive plants. The Town of Hunts Point is one of the jurisdictions that has been controlling Eurasian watermilfoil for many years. They participated in the METRO harvesting program in the 1980's. When that program discontinued, they relied on EPA registered aquatic herbicides to manage Eurasian Milfoil. Each year since 1983, the town has funded the treatment of the waters adjacent to Hunts Point with contact herbicides to provide short-term relief from the impacts of this weed.

In 2001, their program was impacted by the Talent decision and the requirement for a National Pollutant Discharge Elimination System (NPDES) permit. The Town decided to use 2001 to evaluate their program and develop a more integrated approach to the control of this invasive species. The logical approach to this evaluation was to use the Washington Department of Ecology's Integrated Aquatic Vegetation Management Planning process. The results of this evaluation are presented here as the Integrated Aquatic Vegetation Management Plan (IAVMP) for the waters of Lake Washington adjacent to Hunts Point, Washington.

The Integrated Aquatic Vegetation Management Plan

Integrated aquatic plant management planning is a process that helps citizens develop a comprehensive control program that meets the needs of all interested parties and the aquatic resource. The Department of Ecology's planning process has a number of steps that the lake group should complete to develop a meaningful plan. Over the past two years, the Town of Hunts Point and its Milfoil Contol Committee have completed the steps necessary to develop a plan.

Recommended Course of Action

The Steering Committee has settled on a short-term objective of suppressing the Eurasian Milfoil in waters adjacent to the town using systemic aquatic herbicides that are target specific for this weed. The long term objective will be to use continuing monitoring to detect this weed moving back into these waters and targeting those finds with a combination of diver removal, diver dredging, bottom barriers or spot treatments with the appropriate aquatic herbicide. If other species of aquatic weeds become problematic, the Town will update this plan to address those concerns.

Problem Statement

Understanding the problem is the first step in any planning process. The Town of Hunts Point benefits in this regard because there has been an ongoing aquatic plant management program for a number of years. Based on this long history of managing noxious aquatic weeds in these waters, the following Problem Statement has been developed for the purposes of this plan.

It is clear that Eurasian Milfoil, a harmful, nonindigenous species, poses a significant threat to water users and the aquatic environment where it occurs. The waters of Lake Washington surrounding the Town of Hunts Point are heavily infested with this noxious invasive species. The majority of the residents of Hunts Point own lake front property. The presence of this weed degrades our enjoyment of our property. The presence of this weed poses a threat to us and our children as we attempt to use our beaches for swimming. The presence of this weed hinders recreational uses of the water including boating and water skiing. We are concerned that the presence of this weed also severely degrades the biological integrity of the surrounding waters, a problem that impacts both us (the residents of Hunts Point) and regional interests charged with maintaining water quality and aquatic habitat in the lake.

This problem statement was developed by the Milfoil Steering Committee and presented to the public at two separate public hearings conducted by the Town Council. It has been adopted by a vote of the Town Council representing the people of Hunts Point.

Aquatic Plant Management Goals

There are four basic strategies that an aquatic plant manager can select when dealing with an invasive aquatic species. It is critical that the manager determines which of these options are most appropriate for the situation they face. The various tools that managers have to combat invasive aquatic weeds fall into cultural, physical, biological, mechanical and chemical treatments. Managers cannot effectively select and deploy these various tools until they understand what their management goals are. The four basic strategies are as follows.

Prevention is a strategy that attempts to identify a threat to a water body like Lake Washington and stop the pest before it arrives in the lake. This work involves public education, constant monitoring and rapid action if pioneering colonies are detected when introduced. Lake Washington has a well documented, widespread infestation of Eurasian milfoil and it is well past the time to deploy this strategy.

Eradication is another strategy that can be used to protect the environment from an invasive aquatic weed like Eurasian Milfoil. Eradication strategies have been developed for Eurasian milfoil. However, long-term eradication of milfoil within any water body is problematic since the plant can be reintroduced from nearby infested lakes. Follow-up surveys and physical removal are critical to maintain low levels of the plant within the water body. There have been a number of successful short-term eradication projects that have been funded and performed under the Department of Ecology's Freshwater Aquatic Weed Program and the Corps of Engineers Aquatic Plant Management Program. However, the size of the lake and the level of infestation have a great bearing on the economics of this approach. Lakes that are up to 500 acres in size have been treated in this fashion with excellent results. The size of Lake Washington (21,500 acres) and multiple jurisdictions makes this goal politically and economically unfeasible at this point. Complete eradication of Eurasian watermilfoil within Lake Washington is well beyond the capabilities of the Town of Hunts Point and its residents. This plan presents strategies that can be implemented in the area around the Town.

Suppression is a weed control strategy that considers the area to be managed and selects the correct mix of tools to reduce and maintain the population of the invasive weed at the lowest level possible. Suppression strategies are also well developed. Aquatic herbicides and grass carp are both examples of suppression

control techniques. The Washington Department of Ecology collected data from Loon Lake in eastern Washington and Kress Lake in western Washington where aquatic herbicides have been used to treat areas impacted by Eurasian watermilfoil (Hamel, personal communication). In the Loon Lake study, Ecology found that the use of AquaKleen aquatic herbicide significantly reduced the Eurasian watermilfoil in the treatment plots and had no significant impact on native aquatic plants. Kress Lake was treated with Aquathol and there was an increase in species diversity after treatment and a decrease in milfoil. There have also been examples of biocontrol agents like triploid grass carp providing suppression of milfoil. However, generally grass carp will consume native aquatic plants before they start feeding on Eurasian watermilfoil. Ecology does not recommend grass carp for milfoil control except under special circumstances. Suppression is a weed control strategy that has potential for the waters around Hunts Point.

Maintenance control of aquatic weeds is another option managers have. This technique involves the use of control tools (herbicides, harvesters, other mechanical techniques, and biocontrol if appropriate) to maintain weed-free conditions in high-use areas. This technique is currently used throughout Lake Washington to manage Eurasian watermilfoil. The City of Seattle Parks Department has a program of aquatic plant harvesting and diver hand removal to clear beaches each year. Many marinas and community associations around the lake use harvesting or aquatic herbicides to reduce the impact of this weed in the areas they consider to be high-use. The Town of Hunts Point has historically been involved in this type of effort. While this activity has no long lasting impact on the Eurasian watermilfoil populations in the lake, it does maintain open water in these high-use areas during the summer months. Maintenance control also has potential for the waters around Hunts Point.

No weed management is the last option that managers have. The residents of Hunts Point have determined that no weed management is an unacceptable alternative.

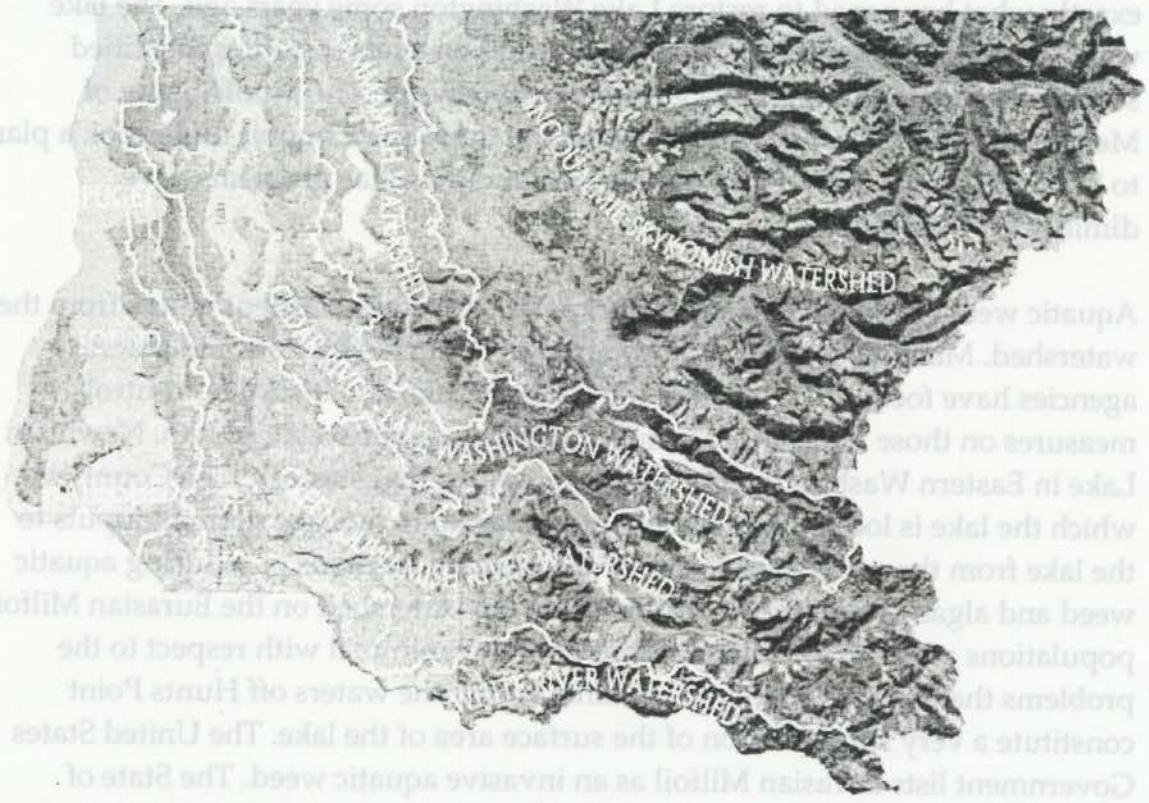
The Town of Hunts Point is interested in moving past maintenance control of Eurasian watermilfoil in the waters surrounding its political jurisdiction. Eurasian watermilfoil has significantly degraded recreational opportunities and the biological integrity of the waters throughout Lake Washington over the past 20 years. The Town feels that it is time to start looking at methods and options that would allow for the recovery of the lake, or at least this portion of the lake to pre-invasion conditions. Thus, the Town identifies Suppression and if possible

local eradication of this invasive aquatic weed in the surrounding waters as it's preferred management goal.

These control options were developed by the Milfoil Steering Committee and presented to the public at two separate public hearings conducted by the Town Council. They have been adopted by a vote of the Town Council representing the people of Hunts Point.

Watershed and Lake Characteristics

Lake Washington is one of the largest lakes in the State of Washington. The lake was created by glaciers near the end of the last ice age in North America. The Lake has a surface area of 21,500 acres. The lake has an extensive watershed that includes the Cedar River and Sammamish River drainage. The outlets of the lake have been substantially modified over time. In the early 1900's, the construction of the Montlake Cut and the Ship Canal Cut to the Ballard Locks created a new point of discharge of the lake into the Puget Sound. The Cedar River flow was also modified in this time period to enter the lake at the southeast corner. King County data shows that approximately 67% of the sub basin is currently developed as residential and that future land use will increase this to 72%.



(From King County Web Site)

The focus of this plan is a very small subsection of Lake Washington. The area of concern here is the water and the littoral area adjacent to the Town of Hunts Point. The littoral zone in this vicinity is approximately 115 acres in size. While this is a small portion of the total littoral zone of the lake, it is one of the few

sheltered areas where there are expanses of shallow water. The vast majority of the littoral zone of the lake is on the open shorelines of the lake, areas that are narrow because of the depth contours of the lake. The shorelines in the project area are completely developed as single-family residential homes. The vast majority of the shoreline provides recreational access to the water for the individual homeowners. There are numerous pier and dock assemblies along the shoreline.

Watershed and waterbody features can play an important role in the management of problem aquatic plants and algae. If a lake is experiencing significant algal blooms, the likely cause of those blooms is an abundance of nutrients available to the algae in the water column. The watershed would be the source for these nutrients and any long term control strategy should attempt to document the source of these nutrients and stem their flow to the lake. This is exactly what happened to restore Lake Washington some years ago. The lake was experiencing significant algae blooms and watershed studies identified sewage discharge to the lake as a primary contributor. The Municipality of Metropolitan Seattle (METRO) (later merged into King County) undertook a plan to limit this discharge to Lake Washington and the algae problems have diminished over time.

Aquatic weed problems can also be primarily driven by nutrient inputs from the watershed. Many lake restoration programs conducted by state and federal agencies have focused on nutrient inputs to the lake and instituted control measures on those nutrients to reduce problem aquatic weed growth. Newman Lake in Eastern Washington is a good example of that strategy. The County in which the lake is located has an ongoing program to manage nutrient inputs to the lake from the watershed as one of the primary methods of reducing aquatic weed and algae problems. The influence of the watershed on the Eurasian Milfoil populations adjacent to Hunts Point is probably minimal with respect to the problems that face the residents of Hunts Point. The waters off Hunts Point constitute a very small portion of the surface area of the lake. The United States Government lists Eurasian Milfoil as an invasive aquatic weed. The State of Washington recognizes the threat this weed poses to the water resources of the state as well.
The plant is listed on the state noxious weed list and the Department of Ecology has a program that is dedicated to the management of this and other aquatic invasive weeds.

Eurasian Milfoil can develop to problematic levels in very pristine water bodies.

Lake Tahoe (on the California/Nevada Border) is considered to be one of the pristine lakes in the United States. That lake is currently experiencing an invasion of Eurasian Milfoil and is actively looking at control options for this weed.

The Town of Hunts Point recognizes the importance of water quality and uses the community newsletter to communicate the need to reduce nutrient inputs to the lake. While watershed management activities benefits Lake Washington, it is likely they will have little or no effect on the levels of Eurasian Milfoil present in the waters off Hunts Point anytime in the near future. In addition, the management of nutrients in this vast watershed is beyond the capability or regulatory oversight of the Town of Hunts Point.

In the development of this plan, the Milfoil Control Committee did look at watershed issues and problems. In addition to reviewing the US EPA Watershed pages, King County sites at http://dnr.metrokc.gov/wlr/watersheds/cedar-lkwa.htm were also consulted. The users of this plan can go to that location and obtain information on water quality and other watershed issues related to Lake Washington. The Committee did look at information related to the watershed in the areas near Hunts Point.

King County maintains water quality data for public viewing at http://dnr.metrokc.gov/wlr/waterres/lakes/Wash.HTM. The sampling station closest to and most representative of Hunts Point waters was identified as station 0814 located in Yarrow Bay. While this station is not located exactly in the waters considered under this plan, it is located in close proximity (compared to other stations) and is in a similar aquatic environment, Yarrow Bay. A review of this data indicates that dissolved oxygen levels have historically been in the 9 to 11 mg/l range in the winter months and in the 7 to 9 mg/l in the summer months. These levels of dissolved oxygen are within an acceptable range for many cold water fish species such as trout and salmon. It should be noted that dissolved oxygen levels in heavy Eurasian Milfoil beds can be considerable lower (0.0-2 mg/l) than those present is the open water (McNabb, personal observation; Frodge, Personal Communication). Phosphorus levels have also remained fairly constant at this location. The data presented here for the last ten years shows a trend in the range of 0.03 mg/l of total phosphorus. This range is considered to be on the low side of mesotrophic. There were abnormal spikes noted during the winter and summer of 1997 and the summer of 1993. These spikes provided readings that would be associated with highly eutrophic waters, but they appear to be abnormalities as the trend remains around the lower levels outlined above.

The temperature trend over the past ten years shows a very consistent pattern. From July through September of each year the water temperatures range from 20 to 25 degrees C. The Department of Ecology has published water quality standards to protect salmon and other cold water species. The water temperatures at this sampling station are above those Ecology feels are required to protect fish (http://www.ecy.wa.gov/biblio/0010066.htm). It should also be noted that water temperatures can be much higher (80-90 degrees F) in aquatic plant beds (McNabb, personal observation; Frodge, personal communication).

There are a number of stormwater drains that discharge into the waters under consideration here. We were unable to find any data on the water quality from these specific inputs, however it can be assumed that they contribute nutrients to the lake and may have some limited impact on aquatic plant growth locally. There is also Fairweather Creek that enters Fairweather Bay and Cozy Cove Creek that enters Cozy Cove. These creeks drain urban areas upstream from the lake. Fairweather Creek is approximately 1.4 miles in length and is Stream Number 0257 in the Washington Department of Fisheries Inventory of Salmon Usage. The Department of Fisheries indicates that salmon use in this creek is unknown. Cozy Cove Creek is somewhat smaller but has a Coho salmon incubator located about one quarter mile upstream from the lake.

Salmon are one of the more important components of the aquatic ecosystem of this watershed. Development of the watershed has probably had an impact on salmon populations that pass through or use Lake Washington. A few of these species have been considered for listing under the Endangered Species Act (ESA). This federal law is designed to protect species from extinction by regulating impacts on habitat critical to the species. In March of 1999, the Puget Sound Chinook Evolutionary Significant Unit (ESU) was listed by the Marine Fisheries Service as "threatened" under the ESA. The Puget Sound Coho Salmon ESU has been a "candidate" for listing since 1995, but has not been elevated to a listed species. The Puget Sound Chum Salmon ESU is considered by NMF as "not warranted" for listing under the ESA. The Puget Sound Steelhead ESU is considered by NMR as "not warranted" for listing under the ESA.
The timing of salmon freshwater life phases in Lake Washington-Cedar River Basis WRIA 08 are described in the Washington Department of Fisheries Inventory of Salmon
Usage as follows.

"Summer and Fall Chinook spawn in the tributaries of Lake Washington from September through Mid December each year. Intragravel development can begin

in September and is completed by the end of March. Juvenile rearing occurs from mid December up to July in the streams and potentially in Lake Washington. Juvenile salmon out-migration occurs from March to late June".

"Coho salmon spawn in the tributaries of Lake Washington from mid October through February. Intragravel development takes place from mid October through mid May of each year. Juvenile Coho will rear in tributaries and Lake Washington for a year before juvenile salmon out-migration occurs between March and late June".

"Sockeye salmon spawn from August through December in the waters and tributaries of Lake Washington. Intragravel development occurs from August through April. Juvenile rearing takes pace in the lake year round and out migration occurs from March through late June".

Based on this data, it is probable that juvenile chinook salmon would exit the lake by late June. Juvenile Coho and Sockeye salmon may use these waters for rearing during the year they spend in that process. Eurasian Milfoil at the densities present in these waters would have the potential to impact water quality parameters critical to these fish. Elevated water temperatures and low dissolved oxygen levels in these weed beds would have an impact on the ability of the juvenile fish to utilize these areas (McNabb, personal observation; Froge, personal communication).

There have been a number of studies on the distribution of Chinook salmon in the Lake Washington watershed. A recent study completed by the WRIA 8 Technical Committee includes a map of all known freshwater distribution of Chinook Salmon in the watershed. This map and the Washington Department of Fisheries Inventory of Salmon Usage both indicate that the small streams that discharge directly into the area under consideration for this IAVMP are not used by Chinook Salmon.

It is well recognized that the watershed can have a significant impact on aquatic plant and algae problems that develop in lakes. In this case however, the primary problem identified by the steering committee is the presence of the invasive aquatic weed Eurasian Milfoil. This plant can thrive in waters that are not considered eutrophic. As this plan is considering control options for a very small portion of a large lake system, watershed management practices would probably not mitigate the problem posed by this noxious aquatic weed. This section of the Integrated Aquatic Vegetation Management Planning process plays a much more

important role when analyzing options for an entire lake and/or when the problem identified is controlled by managing nutrient inputs. In this case the planning process is focused on a small area of a large lake impacted by an invasive aquatic weed. Even if the Town of Hunts Point had the ability to manage the Lake Washington Watershed, managing nutrients will not provide control of this noxious aquatic weed.

State law recognizes that this plant is a noxious weed and impacts the environment where it is allowed to establish. The Washington State Legislature has also recognized the threat posed by noxious aquatic weeds. Senate Bill 5633 directed state and local agencies to streamline the process of controlling this noxious weed. An excellent source of additional information on the watershed can be obtained by going to www.aquatechnex.com, selecting the information page, selecting the link for EPA's Surf Your Watershed site and selecting the Lake Washington Watershed. This site has an excellent list of resources on the web regarding Lake Washington.

Beneficial Uses

The beneficial uses for this portion of the lake have both a regional and a local perspective. The regional perspective is well summarized in the King County's Lake Washington Basin Narrative.

"Lake Washington is a valuable resource to all residents of King County. The lake is the prime rearing habitat for juvenile salmon spawned in Cedar and Sammamish Rivers, provides multiple recreational opportunities, acts as a beautiful open space, and supports multiple resident fisheries. The hydrology, water quality, and habitat in and around the lake have been and continue to be severely impacted by intensive development in the basin. In recent years, natural runs of Lake Washington sockeye, coho, chinook salmon, and steelhead trout have declined precipitously. The reasons for these declines are not fully understood, but recent studies have focused on poor survival of sockeye in Lake Washington and predation of steelhead by sea lions. The water quality of the lake is largely dependent upon the high quality of water from the Cedar River and upon the control of pollutants that enter from direct drainages and Sammamish River. At this time, there is no unified fisheries and water quality management plan for Lake Washington. A number of jurisdictions surrounding the lake have implemented or are in the process of developing programs to reduce the amount of pollutants in stormwater runoff that enters the lake."

This narrative focuses on the recreational and habitat benefits that occur lake wide. The majority of the cities and towns around the lake operate parks that allow the public to access and recreate on the water. These activities include boating, swimming, and fishing. The lake is the focus of Seattle's premier festival each July and August. The Seattle Sea Fair has as its highlight a series of hydroplane races the first weekend in August that generally attract from 300,000 to 500,000 people to the lake for the event. There are large but unknown numbers of boats that utilize this lake for recreation and fishing.

There is a clear focus on the salmon issue here as well. A number of salmon runs have declined through the lake in the past few decades. Salmon move through the lake to their tributary spawning sites each year in the summer and fall. Depending on the species, the young salmon migrate back through the lake to the ocean in the winter and spring. Some species that utilize the lake spend up to a year in the waters of the lake before moving out to sea. The shoreline littoral regions of the lake are important rearing areas, providing both food and shelter from predators. Clearly this is a beneficial use of this natural resource.

The beneficial uses of the area around Hunts Point can also be characterized. The primary beneficial uses that are available to the residents of Hunts Point are as follows.

The lake shoreline (and of course the proximity to Bellevue and Seattle) presents an unparalleled opportunity for lakeside living and is reflected in the value of the real estate. This real estate value in turn is an important contributor to the funding of government at both the local and county levels through property tax assessments. The funds generated and provided to government from this tax source are directly related to the lake. If these properties did not front on Lake Washington, the monetary benefit to government would be lower. The size of the lake and the access to Puget Sound means that the residents can engage in a wide variety of boating, from small pleasure craft to ocean-going vessels. The waters adjacent to Hunts Point are used extensively for swimming and fishing as well.

On the following page, a map is presented that summarizes the beneficial human uses around Hunts Point. This map was created with input from the Milfoil Control Committee and the public input process. The map shows areas that are used for swimming by the lake residents. It also points out the areas that are generally used for boating by the residents of this area, including a water ski course in Fairweather Bay.

The presence of an invasive aquatic species like Eurasian watermilfoil has a detrimental effect on all of these beneficial uses. This weed has an obvious impact on the human uses of the water body. The King County narrative presented above indicates that the declines in salmon populations can be partially attributed to "poor survival" in Lake Washington and notes that this decline started in the 1980's. This trend toward poor survival in the Lake began at the same time as the introduction and expansion of Eurasian watermilfoil in the lake. It is clear that this weed alters habitat and water quality parameters critical to salmon survival in the nearshore littoral zone. An ecosystem that has evolved over the thousands of years was significantly altered with the introduction, spread and formation of monocultures of Eurasian watermilfoil, all in the past 20 years. Therefore, it is probable that the invasion of watermilfoil has had a negative impact on the salmonids that utilize the lake.

Eurasian Milfoil has a negative impact on all of the beneficial uses identified by the Committee and the public that participated in this effort.

Aquatic Plant Characterization

Mapping of the aquatic plant growth in this portion of Lake Washington was performed by AquaTechnex biologists in August of 2001. The mapping efforts were conducted through a combination of boat and diver surveys in the waters adjacent to Hunts Point. The results were recorded using a combination of mapping over contour maps and DGPS data point collection.

This information was assembled in ArcView GIS for analysis and presentation. There are a number of maps included in this report. These maps show the extent of the weed populations and various water uses in and around Hunts Point. There is also a map of effective harvesting distances from boat ramps that is presented and discussed in the investigation of methods section. The GIS files will be used in an ongoing fashion as described in the action plan below.

The aquatic plant communities in the waters adjacent to Hunts Point are shown visually on the following page. The aquatic plant communities in this vicinity extend from the shoreline out to the 19-foot contour of the lake. The dominant species present is Eurasian watermilfoil, which constitutes over 90 percent of the plant biomass. In water depths beyond 10 feet the milfoil beds reach to the surface, while tapering off in deeper water. In the shallow waters inside the 10-foot contour the Eurasian watermilfoil beds reach the surface and form dense mats. There were very small patches of native plants observed mixed within the milfoil beds in and around this shallow-water area. Common elodea is present as an understory in the milfoil beds generally throughout the area. A number of species of pondweeds were also observed in small patches including *Potamogeton richardsonii, Potamogeton americanus,* and *Potamogeton illinoensis.* These plants were distributed among the milfoil beds at a level too infrequent to map. They also occur as an understory to the Eurasian watermilfoil.

There were small patches of native and exotic water lilies present along the shoreline. Duckweed (*Lemna spp*) was also observed in the quiet waters in the back end canals of Fairweather Bay and Cozy Cove. In addition, there are scattered locations where the noxious wetland weed purple loosestrife (*Lythrum salicaria*) was present in the adjacent wetlands.

In summary, the map shows that Eurasian watermilfoil is the dominant component of the aquatic plant communities surrounding Hunts Point. The second map presented shows the impact of the weed on the human beneficial uses in the area. It also indicates the littoral areas of the lake in this vicinity that have been biologically degraded by the presence of Eurasian watermilfoil.

Public Involvement

The Town of Hunts Point has had an ongoing Eurasian milfoil control program since the early 1980's. This program is managed by the Milfoil Control Committee made up of town residents and reports to the Town Council. The Town Council, as the elected representatives of the residents, holds hearings during regularly scheduled council meetings each spring to obtain comments from the residents and to select and approve Eurasian watermilfoil control efforts. The Town Administrator then communicates the results of the meeting to all of the residents of the community and solicits additional comments from the residents for the annual Eurasian watermilfoil control program.

The Town Administrator is Mr. Jack McKenzie. Jack has worked on aquatic plant management and water quality programs for a number of years as an employee of Ocean Shores prior to taking the position at Hunts Point. With no treatments implemented in the waters around Hunts Point during 2001, the residents have regularly complained to the Town office. The residents have presented visual evidence of the impacts on the beneficial uses of the lake due to lack of effective control of Eurasian watermilfoil during the 2001 season.

The Town of Hunts Point has had an active Eurasian Milfoil control program for over 15 years. The residents of Hunts Point requested a control program in the 1980's when this problem weed began to expand rapidly in their waters. Since that time, the Council had settled on a yearly treatment program using contact herbicides to mitigate the impact of the weed on beneficial uses.

In June of 2001, the Town elected to terminate treatment of the Eurasian Milfoil in the waters surrounding the Town because of the Headwaters vs. Talent Irrigation District Decision. The Town Council directed the Town Administrator to research control options and it was decided by a vote of the Council to move forward and develop an Integrated Aquatic Vegetation Management Plan for the waters adjacent to the community. The Milfoil Control Committee was created to act as the steering committee and help formulate the IAVMP. Council members Ted Frantz and Jan Brekke were appointed to this committee along with other members of the community that had been instrumental in working on this issue in the past.

Through the summer of 2001, the Committee worked with Aquatechnex to develop a draft IAVMP. The draft was reviewed a number of times by the

Committee and refined. The Committee settled on the plan of action outlined in this document and submitted it to the community for comment at a Special Council Meeting and Public Hearing on October 16th, 2001.

The meeting was called to order by Mayor Fred McConkey at 7:00 pm. A concise presentation of the Committee's work was presented to the Council and the Public. All aspects of the plan were presented during this meeting. The Problem Statement that the Committee had developed was presented for comment. The options for control, levels of control and recommended options were also presented for the Council and the public to consider.

A number of members of the public asked questions about the different control strategies and provided input to the plan. The consensus of those in attendance was that the strategies outlined should be pursued and that problem statement captured the needs of the community.

The Town Council on Council member Brekke's motion voted to adopt the IAVMP as prepared and authorized the Town administrator to prepare a grant application to Ecology to help fund the implementation of this plan. The Town Administrator prepared the grant application and forwarded it to Ecology for consideration along with the adopted IAVMP.

The Department of Ecology accepted the grant application in late October of 2001. During the next few months Ecology considered all grant applications received and approved funding support for the Hunts Point plan contingent on providing more concise information on the public involvement process and additional information on watershed issues. The Town Council directed the Administrator to follow through and complete this process with the Milfoil Control Committee.

Over the winter, the plan was reviewed and the additional information and edits Ecology requested were made to the IAVMP. On May 3rd, 2002 the Town Administrator sent a letter with a copy of the plan to a distribution list of interested parties and government agencies asking them to review the plan and provide their comments. Each of these groups was also invited to a second public hearing on the Plan scheduled for May 22, 2002 at 7:00 pm.

On May 22, the Milfoil Control Committee, chaired by Council member Frantz, held a working session on the draft plan. Each step of the process and the concerns expressed by the Department of Ecology were presented to the

Committee and discussed. The Committee voted to move forward and present the amended plan to the Community and other interested parties at the public hearing scheduled for 7:00 pm that evening.

The public hearing was well advertised. Letters of invitation were sent to representatives of the Department of Ecology, Department of Fish and Wildlife, US Army Corps of Engineers, Muckleshoot Tribe Planning Office, Suquamish Tribe Planning Office, Town of Yarrow Point, City of Kirkland Planning Department, City of Clyde Hill, City of Medina, City of Bellevue Planning Department, the Hunts Point Council Members, Mayor of Hunts Point, Hunts Point Planning Commission and the Hunts Point Milfoil Committee members. In addition, a notice of public hearing was posted on each mailbox pagoda within the Town of Hunts Point and the May 9th Town of Hunts Point Newsletter contained an invitation to the Public Meeting.

The meeting was held as scheduled. Council member Frantz provided those in attendance with an update on the planning process and the work of the Milfoil Control Committee. Terry McNabb with Aquatechnex described the plan in detail, provided background on Ecology's concerns and comments on the original plan, presented the Problem Statement the Committee had developed, the reasoning the Committee has utilized in the development of recommended control options and answered questions. Other members of the Milfoil Control Committee also presented their thoughts and reasoning with respect to the content of the plan.

Comments were then solicited from the public. Members of the public spoke to the impact of Eurasian Milfoil on the beneficial uses of their property and the surrounding waters. There was a particular concern expressed about the safety of children swimming in infested waters from parents in the audience. The members of the Milfoil Control Committee asked the Council for a motion to accept the plan and proceed with treatment options. The motion was accepted.

By this point, the Town felt that there was not sufficient time to complete the plan and obtain funding from the Ecology Grant prior to the 2002 treatment season. There was also some concern on the part of Ecology that key agencies had not commented on the plan despite extensive efforts to involve them . It was determined by the Steering Committee that maintenance operations on the lake be funded by the community for the 2002 season. It was also determined that one additional attempt would be made to contact key agencies and solicit their comments. In September of 2002, the Town sent a summary of the plan to the

agencies listed above along with an invitation to attend a workshop on October 30th.

On October 30th, the third public meeting was held by the Committee for interested parties and invited agency staff. Attendance from the community was fairly low because of the repetitive nature of the information presented. Attendance from invited agency staff was also low. The Committee did receive some email correspondence from a few of the invited agency staff indicating an interest in being kept abreast of developments. At this point the members of the Committee felt that extensive efforts have been made (and documented) to involve all potentially interested state and local agencies in this plan development.

As this plan is implemented, the public will continue to be informed and involved. There will be opportunities for the public to comment on any permit applications that are made to implement portions of this plan. There will be opportunities for the public to comment at pre and post-season informational meetings that will be used to update them on the progress of this undertaking.

Examination of Aquatic Plant Management Alternatives

CONTROL ALTERNATIVES

General Considerations and Permitting

This section of the Integrated Aquatic Vegetation Management Plan presents information on available techniques which can be used in the management of aquatic plant growth. Much of this information is excerpted from A Citizen's Manual for Developing Integrated Aquatic Plant Management Plans (**WDOE 1994**) and the Supplemental Environmental Impact Statement for the Department of Ecology's Aquatic Plant Management Program (**WDOE 2001c**).

Additional information on new and developing control technologies is also presented where it appears to be appropriate in the near future (two to five years). While all possible techniques are addressed here, only those which are specifically applicable to Lake Washington, the developed Problem Statement and the Management Goals are discussed in detail. Following from the review of appropriate techniques, an "Action Plan" has been developed which is presented in the next main section of this Management Plan.

•• Note: essentially all aquatic plant control activities require a permit from one or more State agencies. All manual, mechanical, and physical techniques described herein require issuance of a WDFW Hydraulic Project Approval. Application of chemicals to State waters to control algae or aquatic plants must be covered under a National Pollutant Discharge Elimination System (NPDES) permit. An NPDES permit has been issued to the Washington Department of Agriculture for control of State-listed noxious weeds and individual treatments must request coverage under this permit and certain monitoring must be performed. Dredging may require a permit from the US Army Corps of Engineers. Permit guidance in the "Aquatic Plants and Fish" pamphlet (**WDFW 1998**) was developed in recognition of the importance of controlling aquatic noxious and nuisance weeds, the need to protect the aquatic resource and to facilitate the approval process for HPA projects. This guidance does not include efforts related to the NPDES permit.

Submersed Plant Controls

The No-Action Alternative. The focus of this IAVMP is on the plant species which has been shown to negatively affect the beneficial uses in Lake Washington. Based on the public opinion that there is a problem caused by aquatic plants, this Plan has investigated options for controlling or eliminating this problem. In order to maintain a perspective on the costs and benefits of various plant and algae control options, the costs and benefits of the "no-action" alternative also must be kept in mind.

Absent management, the waters of Lake Washington off Hunts Point are choked with Eurasian milfoil. These mats interfere with all beneficial uses that have been identified. Therefore, the "no-action" alternative is not acceptable due to the potential reduction of beneficial uses of the lake and potential negative environmental impacts (ie. fish habitat degradation). The impact of continued, excessive submersed plant growth on fish habitat could include effects on water quality, on fish themselves and on fish food organisms. Impacts on water quality include pronounced stratification of temperature due to interception of solar radiation and reduction in circulation, as well as changes in chemical factors such as dissolved oxygen, pH and alkalinity due to daily cycles of photosynthesis and respiration. Perhaps a more significant impact to water quality can result from the rapid dieoff of dense plant beds which can happen on a seasonal basis. Excessive aquatic plant growth in a shallow lake system can directly contribute to elevated water temperatures. The reduction in oxygen levels can have direct negative effects on fish and fish food organisms. Low oxygen also causes the production of hydrogen sulfide and ammonia, both of which can also have toxic effects on fish and fish food. Maintenance of dense beds of submersed plants can also foster the growth of mosquitoes and possibly other nuisance organisms.

Advantages of No-Action alternative:

- no treatment cost

Disadvantages of No-Action alternative:

- lake quality will decline,
- recreational opportunities will decline,
- fish and wildlife habitat will be reduced or impaired,
- property values will decline.

Appropriateness for Lake Washington/Hunts Point Waters:

- The No-action alternative is not appropriate for Hunts Point waters

due to the degradation that uncontrolled Milfoil growth will cause and the desire of the lake residents to protect the identified beneficial uses describedherein.

Currently Available Techniques - Preventive. The preventative techniques which may have utility in Lake Washington's submersed plant control efforts focus on control of inputs of the growth nutrient phosphorus. This element has the greatest potential to be controlled and thus control (limit) algal growth. These techniques include both structural and non-structural (Best Management Practice) options.

• **Watershed Controls**: There are groups such as King County actively working on nutrient reduction within this large watershed. Watershed controls are well beyond the capability of the Town of Hunts Point however.

Advantages of Watershed controls (in general):
- reduce nutrient loading at their sources,
- provides shade and lowers stream temperatures
- reduces streambank erosion and sedimentation in lake,
- provide benefits over wider area than the lake.

Disadvantages of Watershed controls (in general):
- may require changes in land use
- may require construction or modification of facilities, purchasing of property and hiring of maintenance personnel,
- may require regulatory support and personnel

Costs of Watershed Controls:
- vary greatly (not determined)

Appropriateness for Lake Washington:
- Watershed controls are appropriate for water quality protection at Lake Washington but would not be expected to effect the growth of Milfoil in the short or long term. Therefore watershed controls are not recommended for inclusion in the Integrated Treatment Action Plan.

• **In-Lake Nutrient Controls**: The primary focus of many of the lake management alternatives is the reduction in nutrients (primarily phosphorus) as a means of limiting algae and aquatic plant growth. This is a valid approach and the information presented should be considered, especially for long term

reduction in productivity. It is, however, beyond the scope of this IAVMP to re-evaluate the technical merit or costs of these nutrient-focused alternatives. Several of the recommended techniques will be discussed herein because they also control or remove the actual aquatic plant growth.

• **Public Awareness and Involvement Program**: The understanding and involvement of lake and watershed residents will be necessary if the process of nutrient, algae and aquatic plant growth controls is to succeed. Therefore a public education and awareness program is strongly recommended. Such a program would focus on and promote lake stewardship but would also keep the lake "community" informed about measures that are to be, and have been, performed in and around the lake. Especially important will be evaluation of control program effectiveness and program "adjustments" over time. Through newsletters, public meetings, exhibits and local media coverage (to name a few) information on the lake should be disseminated and opportunities given for reply from the community.

Some subjects which can interest lake residents and users are: simplified algae and aquatic weed information, sources of, and solutions to, nutrient enrichment, shoreline stabilization and revegetation, options for lawn fertilizer use, pet waste management, non-phosphate detergent use, and discouraging bird and waterfowl feeding. Training to teach plant identification can be very pertinent as well. Whenever possible, the lake community should be directly included in information collection and synthesis as part of the public involvement program. This can include the presence of citizen representatives on monitoring (data collection) trips performed by consultant technicians.

Advantages of a Public Awareness and Involvement Program:
- provides education and public awareness,
- provides opportunity to gather consensus and public support,
- provides opportunity to involve the lake residents and users in the process.

Disadvantages of a Public Awareness and Involvement Program:
- requires committed organization to implement and provide continuity.

Costs of a Public Education and Awareness Program:
- $2,000 to $8,000 per year.

Appropriateness for Lake Washington:
- An ongoing Public Awareness and Involvement Program is very appropriate for Lake Washington and is recommended to be included in the Integrated Treatment Action Plan described below.

Currently Available Techniques - Physical Control. These techniques include manual or mechanical efforts that can remove, cover, shade or dry out all or part of problem plant growth.

• **Hand Removal**: Removal of submerged vegetation by hand digging or pulling is an intensive but generally small scale management option. This method involves removing the entire plant (leaves, stems and roots) by hand or with a hand-held gardening tool, collecting the plant materials in a storage bag for transport and disposal on shore. In water depth greater than about three feet, the use of SCUBA divers is typically needed in order to effectively manage a location. The effectiveness of plant removal depends on sediment type, visibility (water clarity), plant type, and thoroughness in removing the entire plant. Based upon these variables, the level of plant control may vary from one month to multi-year management.

Advantages of Hand Removal:
- immediate clearing of the water column,
- highly selective technique, in that individual plants are removed,
- can be implemented in sensitive area where disruption must be kept to a minimum,
- effective in aggressive control of sparse or small infestations in the lake, around docks or in swim areas.

Disadvantages of Hand Removal:
- technique is time consuming and labor intensive,
- visibility may become obscured by the disturbance of sediments during harvesting thus delaying plant removal,
- management can be costly in deeper water, especially when divers are used
- control may only be short-term or seasonal; based on location and surrounding infestations.

Costs of Hand Removal:
- no cost if performed by volunteers,
- $800 - $1,600 per day for two divers and a support boat & operator,
- typical coverage from 400 to 2,000 square feet per day.

Appropriateness for Lake Washington:

- Hand removal of Milfoil is appropriate for Lake Washington considering the current level (and distribution) of the infestation and the stated lake management goals. Therefore, hand removal is included in the Integrated Treatment Action Plan described below.

Bottom Barrier Installation: Bottom barriers are highly effective in the small to moderate scale control of aquatic vegetation. The barriers are typically synthetic (geo-textile) fabrics, or burlap, but a variety of other materials have been used including sand-gravel, polyethylene, polypropylene, synthetic rubber, fiberglass screens and nylon film. These materials cover the lake sediments and existing plants and prevent further growth. By covering the lake bottom from which the plants emerge, all plants are effectively prevented from growing in those areas. Washington State typically allows the use of burlap when covering native plant areas and burlap or synthetic material when covering noxious weed areas. These barriers are typically 100% effective in the installed areas initially and installation can be conducted at any depth with the assistance of divers and a support vessel. Bottom conditions do not typically impede most barrier installations, but logs and debris are typically cleared from the area. Duration of control is dependent upon type of material used, application techniques, sediment deposition and permit (WDFW Hydraulic Project approval) requirements.

Since gases are produced in the sediments under the barrier, the barrier must be attached or weighted to the bottom and allow these gasses to pass through it. Over time, these barriers can lose effectiveness if sediment builds up on them, providing a substrate for plants to root. Yearly maintenance by a dive team can prolong the effectiveness of this technique indefinitely (except with burlap which will decompose and must be replaced to maintain effectiveness). Bottom barriers are expensive when used on a large scale. In addition, there can be environmental impacts if large areas of a lake bottom are covered with these materials. Bottom barriers are most applicable for individual properties and are recommended for around docks. Bottom barriers may not work well in swimming areas when placed over soft sediments, however. If swimmers walk on them, they tend to push the mats into the sediment.

Advantages of Bottom Barriers:

- no toxic chemicals are placed in the water,
- provides immediate removal of nuisance plant conditions upon placement,
- easily applied to small, confined areas around docks, moorages or beaches,

- they are hidden from view (in deeper waters),
- effective in isolated management practices, especially in Milfoil control
- some materials are reusable.

Disadvantages of Bottom Barriers:
- potentially high material cost for synthetic products,
- labor intensive and high costs for utilizing divers,
- limited durability of certain materials,
- not species specific,
- potential permit restrictions on location of barrier (spawning areas), type of material, type of plants attempting to control and length of time barrier will be allowed in place,
- gas accumulation under barrier can cause barrier to be lifted hindering boat passage or swimmers,
- periodic maintenance needed to remove sediment build up and secure placement,
- may need to be removed after two years to allow native vegetation to re-establish.

Costs of Bottom Barriers:
- $0.35 to $0.85 per square foot for materials (burlap or geo-textile),
- $0.35 to $0.60 per square foot for labor to place barriers,
- $0.30 to $0.50 per square foot for labor to remove barrier.

Appropriateness for Lake Washington:
- Bottom barriers are not considered appropriate of use at Lake Washington at this time due to the extent of the infestation and stated management goals.

Water Column Dyes: This technique involves the addition of dark colored dyes to the lake to suppress aquatic growth by shading plants or algae from sunlight. These can be blue or a blend of blue and yellow to absorb key portions of the visible light spectrum needed by submersed plant and algae growth. Dyes are most effective at depths of two feet and greater. Use of this technique is limited to lakes or ponds which have minimal dilution with clear water and no outflow.

Advantages of Water Column Dyes:
- treatment could control both algae and aquatic plants,
- no water use restrictions; treated water will not harm fish, waterfowl, pets or wildlife,
- no special equipment or applicator certification required.

Disadvantages of Water Column Dyes:
- not species specific (can effect all plants and algae),
- not effective when plants or algae are near surface,
- dilution from inflowing creeks would necessitate frequent reapplication,
- dyes may not be allowed due to outflow and domestic water rights.

Costs for Water Column Dyes:
- $12.00 to $15.00 per acre foot for materials.

Appropriateness for Lake Washington:
- Water column dyes are not appropriate for use at Lake Washington due to their lack of target specificity and their limited expected efficacy because of dilution from this portion of the lake.

Sediment Removal: Removal of lake sediments can provide a nutrient and plant control option in lakes and ponds. Stormwater drainage, surface runoff, stream inputs and erosion can all contribute to the build up of sediments in lakes. These sediments represent a pool of nutrients which can stimulate the growth of aquatic plants and algae. In shallow lakes the establishment of significant aquatic plant populations can result in accelerated accumulation of sediments and filling of the lake. The purposes of sediment removal, therefore, are to remove nutrients and aquatic plants and to deepen shallow areas so that future plant growth is reduced (both by reducing nutrient availability and by increasing the water depth and thus shading).

Sediment removal operations can be conducted using a variety of mechanical equipment from backhoes and drag lines which dig the sediment from the shore to floating barge hydraulic systems that remove a slurry of sediment and water and pump it to a settling pond on-shore. A significant consideration with sediment removal is the disposal of removed sediments and water. Lakes act as sinks for not only nutrients but also potentially toxic materials. Sediment testing is often required prior to establishing an appropriate sediment disposal plan. The water contained in the removed sediment is often substantial as well, which adds to the challenge.

Advantages of Sediment Removal:
- effective in removing existing plants and nutrient rich sediments,
- increases the depth of the system and reduces the areas available for plant growth,
- site specific management.

Disadvantages of Sediment Removal:
- operation costs are typically expensive and labor intensive,
- problems with equipment access and location for disposal,
- potential for increased turbidity and short-term impacts to water quality,
- not species specific
- may remove beneficial habitat.

Costs for Sediment Removal:
- $200,000 to $400,000 for design, inspection, environmental monitoring,
- $0.15 to $0.80 per cubic foot for hydraulic dredge,
- disposal costs not possible to estimate; would be significant.

Appropriateness for Lake Washington:
- Sediment removal is not considered appropriate for Milfoil control in Lake Washington due to the lack of target specificity, the need for sediment disposal areas and its high cost.

Water Level Drawdown: Drawdown (or pump down) of the lake water levels, especially during the winter months, can have a dramatic impact on some aquatic weed problems. This methodology is possible where there is a water control structure which will allow lakes or reservoirs to be drained. Alternatively, high capacity pumps must be used to draw water levels down.

Drawdowns will expose the lake sediments to loss of water and, depending on location, on freezing. Freezing in particular can have a dramatic impact on aquatic plants that have no over-wintering structure like seeds, turions, tubers or winter buds. The impact on the root crowns of prolonged exposure to sub-zero temperatures is often fatal. As the lake is refilled regrowth from these crowns either does not occur or is severely stunted. There can also be a reduction in some other types of problematic vegetation using this technology if the drawdown is prolonged. The loss of water, and concurrent compaction that can result from drawdown can also be a benefit as it can slow the colonization and growth of some rooted plants.

This technique is not one that can claim eradication normally, and plants will survive in portions of the lake where water remains over the sediments. If the drawdown can extend to the deep edge of the plant communities it is obviously more effective than shallower drawdown that only expose nearshore areas.

Drawdown can have minimal cost if an outlet control structure of sufficient height is in place. This is not the case in the Lake Washington. Given the lake bottom topography and expected continued inflows, it is unlikely that the lake could be
drawn down more than six to eight feet. Finally, this technique can negatively effect the fish and wildlife habitat in the lake and would have obvious implications for water rights users. For these reasons, drawdown is not recommended in this
lake system.

Advantages of Drawdown:
- no addition of toxic chemicals to the water,
- useful for repair and maintenance of shoreline features.

Disadvantages of Drawdown:
- likely adverse environmental impacts,
- temporary loss of recreation,
- low probability of success given lake morphology and levels of inflows.

Costs of Drawdown:
- (not determined).

Appropriateness for Lake Washington:
- Drawdown is not considered appropriate for Lake Washington due to the lack of target specificity, the significant impacts this would have on the lake biota (and potential water quality), the potential difficulty in refilling the lake to ensure recreation uses will be available, and the cost.

Currently Available Techniques - Mechanical Control.

• **Hand Cutting**: This technique involves cutting of plants below the water surface, but roots are not generally removed. Tools used in cutting include scythes, thin cables, rakes or other specialized devices that can be pulled through the weed beds by boat or from shore. One popular device consists of two single-sided stainless steel blades forming a "V" shape which are connected to a four foot handle and tied to a rope.

Advantages of Hand Cutting:
- immediate removal of nuisance submerged plant growth,
- costs are minimal,

- can be performed throughout the season as needed.

Disadvantages of Hand Cutting:
- labor intensive and time consuming,
- generally not species specific
- visibility may become impaired by turbidity generated by cutting,
- short-term plant control as the root system is not removed; cutting is typically needed multiple times each season,
- may be difficult to contain and remove plant fragments.

Costs of Hand Cutting:
- cutting devices range from $50 to $800
- no labor cost if performed by volunteers,

Appropriateness for Lake Washington:
- Hand cutting is not considered appropriate for Lake Washington due to the likelihood that plant fragments would be released, thus spreading the infestation and the difficulty in cutting Milfoil in the many rocky areas of the of the lake shoreline.

Mechanical Harvesting: An extension of the hand cutting discussed above involves the use of larger equipment that can cut or mow aquatic plants below the water surface. Barge mounted weed cutters, for instance, will cut the stems of submerged vegetation over large areas, with that vegetation typically floating off or being collected by the operator with some other equipment. Aquatic weed harvesters are an improved version of a large weed cutter. These systems cut, collect and transport the vegetation for disposal on shore. A typical weed harvesting system will consist of the harvester and a shore station for unloading the harvested vegetation into a transport system for disposal.

Aquatic harvesters have a number of cutting blades located on the harvesting head and a conveyor system behind the knives that collects the plants and deposits them on a barge. There is typically a storage conveyor system that the plants fall onto when cut that facilitates unloading the machine at the shore station. The shore station equipment is usually either a shore conveyor that mates to the harvester and lifts the cut plants into a dump truck or other transport system, or a trailer conveyor that performs the same function as well as transports the harvester from lake to lake. Harvesting systems normally cut the plants from five to seven feet below the surface and can harvest up to two acres per day depending on the distances to off-loading sites.

Aquatic plant harvesters work well at cutting the plants and removing the bulk of the plant material from the lake. They do allow some plant fragments to escape, however, and they do not necessarily inhibit the continued growth of the cut plants. Harvesting is also not species specific (unless used in single species dominated areas) aquatic plant harvesters remove significant amounts of young fish and invertebrates during harvesting operations. Harvesters should not be used on lakes that are infested with Milfoil in the pioneering or early colonization stages since additional fragments will accelerate the spread of the plant.

There has been a history of mechanical harvesting in the waters around Hunts Point. The Town of Hunts Point participated in the harvesting operations conducted by the Municipality of Metropolitan Seattle (METRO) in the 1980's for a time. At that time, there was a shoreline access ramp in Yarrow Bay that facilitated the unloading and disposal of milfoil. Even with this site in relatively close proximity to Hunts Point waters, harvesting operations were slow and costly. Since that time, a home has been constructed on this site and it is no longer possible to operate from this location. The US Army Corps of Engineers HARVEST model was used to evaluate the effectiveness of harvesting operation in Hunts Point Waters. Given the only two access sites for shore side operations are a considerable distance away, this option is probably not appropriate for this location on the lake. A map of the effective harvesting operations radius for each of these sites is attached.

Advantages of Mechanical Harvesting:
- no toxic chemicals added to lake,
- immediate removal of plants and contained nutrients,
- limited interference with use of the water body,
- minimal bottom disturbance,
- reduction in sediment accumulation by removing organic matter which normally decays and adds to the bottom sediments,
- harvested plants can be used as compost.

Disadvantages of Mechanical Harvesting:
- slow process (two acres per day under ideal operating conditions), dependent on availability of off-loading sites,
- labor and equipment intensive; must involve cutting and collection of plant material,
- typically requires repeat cutting for full season control,

- creates plant fragments which have potential to spread and establish in other portions of the lake (especially a concern with exotic species),
- non-selective and can be detrimental to non-target plants and animals
- high capital costs for machine purchase or use by management consultant

Costs of Mechanical Harvesting:
- $600 to $900 per acre for contract commercial aquatic plant harvesters,
- $100,000 to $180,000 for harvester/off-loader purchase,
- cost of disposal not determined.

Appropriateness for Lake Washington:
- Mechanical harvesting is not considered appropriate for Lake Washington/Hunts Point waters because of the logistical problems posed by the distance to unloading sites, the cost and the goals of the Committee and public.

Rotovation: Rotovation, or underwater cultivation, is a newer concept in mechanical aquatic plant management. It can provide for longer term control of some aquatic plants (than with harvesting) and it can remove plants to greater depths than conventional harvesters (approximately 12 feet versus five to seven feet). Rotovators are basically underwater rototillers which churn the bottom sediments to a depth of up to 12 inches. This action dislodges plants and root crowns. Typical rotovation will provide one to three years of acceptable weed control.

Dislodged plants must be collected as they float to the surface. As with plant cutting or harvesting, rotovation should not be considered in lake or river systems where plants are in the pioneering stages of an infestation and/or spread by fragmentation. Rotovation would not be expected to control non-rooted plants such as Coontail (*Ceratophyllum demersum*).

Advantages of Rotovation:
- removes entire plant including roots,
- longer effectiveness than with harvesting,
- plant density becomes reduced after successive treatments.

Disadvantages of Rotovation:
- does not collect plants or fragments which are uprooted
- temporarily destroys bottom habitat and potentially fish spawning areas,
- causes turbidity and potential release of nutrients,

Costs of Rotovation:
- $1,000 to $2,000 per acre.

Appropriateness for Lake Washington:
- Rotovation is not considered appropriate for Lake Washington due to the lack of target specificity, the potential that this will significantly spread the problem through fragment generation and the difficulty in using this technique in rocky shoreline areas.

Diver directed suction removal: Diver suction removal has been used since the 1970's as an improvement to hand removal of sparse colonies of Eurasian watermilfoil. The technique utilizes a small barge or boat carrying portable pumps with suction hoses that are directed by SCUBA divers. Divers dislodge the plant tissue and root system from the sediments and basically vacuum up the plant material which is carried back to the barge. On the barge, plant parts are sieved out and retained for land disposal while water and sediment materials are allowed to drop back into the lake.

Diver suction removal can be highly effective under the appropriate conditions. Efficiency of removal is dependent on sediment condition, plant size and density, and underwater visibility. It is best used for localized infestations of low plant density where fragmentation must be minimized. This technique is also selective in that divers can target a single species in a mixed population area.

An environmental concern with diver suction removal is that of turbidity and nutrient release from disturbed sediments. This is primarily applicable with light, organic sediments that often accumulate in heavy weed bed areas. However, the divers typically do not let the suction intake come near the sediments, rather they pull the target plants up out of the sediment and direct the plant into the suction intake. While sediment curtains can be used to minimize the drift of re-suspended sediment materials and also escaped plant fragments, there is no practical way of controlling nutrient release. Placement of sediment curtains is also time consuming and, thus, costly.

Advantages of Diver Suction Removal:
- species selective and site-specific control,
- minimal disruption of sediments and surrounding habitat with non-rooted plants,
- minimal release of plant fragments,

- no depth constraints, effective near obstacles,
- effective in covering large areas with light plant growth.

Disadvantages of Diver Suction Removal:
- labor intensive and expensive,
- may not be appropriate control method in dense plant beds,
- potential release of nutrients and sediments, potential short-term increased turbidity.
- may not work well in gravelly or rocky areas due to the difficulty in pulling up all root fragments.

Costs of Diver Dredging:
- $1,000 to $2,000 a day for two divers and support boat,
- typical coverage from 0.25 to 1.0 acres per day.

Appropriateness for Lake Washington:
- Diver operated suction removal has some applicability in Lake Washington and this is therefore included in the Integrated Treatment Action Plan described below. However, due to the expected cost of this type of treatment it is considered only as a backup technique.

Currently Available Techniques - Biological Control. The biological control of aquatic plant problems focuses on the selection of organisms that have an impact on the growth of a target plant. By stocking a lake with these organisms, or "agents", the population of the target plant can be reduced. Biological control is not an exact science at this time. There have been a number of dramatic success stories with the control of aquatic weeds using some organisms. There have also been some undesirable effects from their use. The majority of the tools in this field are in the experimental or review stage at this time.

Biological control agents are generally of two types. There are general agents like grass carp that will consume most aquatic vegetation. As such, they are of limited use when trying to target specific plants. The second type of "biocontrol" agent are those that are target-specific for problematic species. Many of these agents focus on exotic plants that have been introduced to this country. Research typically starts in the region of the world where these plants are from, and focuses on the organisms that keep it in check there. Once identified, these organisms are brought through a quarantine protocol into this country where further research is conducted to determine if there is operational potential for

control. At this time there are no biological control agents available in Washington State which are effective against *M. spicatum* other than grass carp.

• **Grass Carp**: Grass carp (or White Amur) are plant consuming fish native to China and Siberia. There are a wide range of aquatic plants that these fish will eat, but they have definite feeding preferences and will generally eat the plants they prefer first. Stocking rates are dependent on climate, water temperature, type and extent of plant species and other site-specific conditions. The recommended maximum stocking rate in Washington is 25 fish per acre (**Bonar et al. 1996**) and the typical stocking rate is nine fish per acre (Hamel 2002). A study of grass carp usage in Washington has indicated that in most cases grass carp either have little effect or will eat all submersed plants.

Periodic restocking is generally necessary to replace fish lost to predation or disease and to maintain the number of young, actively growing (and thus actively eating) fish. Only triploid (sterile) fish can be planted in Washington and by permit only. Grass carp must be imported by approved suppliers and be certified to be disease and Zebra mussel free and sterile. Inlets and outlet screens must be installed in the lake and be approved by WDFW biologists prior to stocking. Water Quality is seen to generally improve after introduction of grass carp; with the elimination of large mats of vegetation, bottom dissolved oxygen levels generally increase from levels lethal to fish and pH generally decreases with decreases in photosynthesis (**WDFW 1990**). However, water turbidity increases have also been documented due to grass carp stirring up bottom sediments. Effectiveness of grass carp in controlling aquatic weeds depends on feeding preferences and metabolism which vary from region to region. Some plant species which appear to be preferred include pondweed species, Coontail and Elodea. Plant control effectiveness is site specific and significant control of vegetation may not be apparent until two to four years following introduction. While grass carp have been reported to also consume filamentous algae, their effect on planktonic algal forms is unknown.

Advantages of Grass Carp:
- non-toxic
- long-term effectiveness

Disadvantages of Grass Carp:
- may not control the Milfoil that is problematic in Lake Washington,
- may alter composition of plant community without decreasing overall biomass,
- may decimate submersed aquatic plants and result in worst algae problems,

- and disruption of native fish habitat,
- inlet and outlet screens must be constructed and must allow passage of native salmonid fishes,
- carp foraging may cause turbidity and foster algal growth through
- re-suspension of sediment materials.

Costs of Grass Carp:
- $10.00 to $15.00 per fish (plus delivery),
- typical stocking rates are 9 to 15 fish per acre,
- inlet / outlet screen costs not determined.

Appropriateness for Lake Washington:
- Grass carp are not considered appropriate for use in Lake Washington due to their uncontrollable nature, lack of target specificity and, thus, potential adverse effects on the native plant populations and fish habitat in the lake.

Currently Available Techniques - Chemical Control. Chemical herbicides are one of the leading methods of controlling, and in some cases, eliminating, noxious aquatic plant growth. The herbicides which are approved for aquatic use by the US EPA are well reviewed and considered compatible with the aquatic environment when used according to label directions. In addition to the review and regulation provided by the EPA, the Washington Department of Ecology completed an Environmental Impact Statement (EIS) in 1992 for the aquatic plant management program which allows for the introduction of a number of compounds into state waters. This EIS was recently updated by WDOE and information contained in the Supplemental EIS (**WDOE 2001c**) as been used in the preparation of this IAVMP. The WDOE also evaluates the use of herbicides on a lake-by-lake basis through required short-term water quality modification permits. Note that the application of chemicals for aquatic pest control can only be performed by a licensed pesticide applicator with an aquatics endorsement. There are two general types of aquatic herbicides in use; referred to as "contact" and "systemic" products. Contact herbicides kill susceptible plant stems and leaves generally leaving roots and some reproductive structures alive and capable of regrowth. As such, a contact herbicide is generally considered a maintenance tool, one that can provide relief from aquatic plant problems, but not something that can eliminate the problem from the lake system. Systemic herbicides are absorbed and carried throughout the plants thereby making them capable of killing the entire plant.

The contact herbicides approved for use in Washington State are Endothall and

certain copper-containing products. The three systemic herbicides which are registered and approved for use in Washington are Fluridone, 2,4-D and Glyphosate. Glyphosate is not appropriate for control of submersed plants and will not be discussed in this IAVMP.

The WDOE is currently reviewing two additional herbicides for future use in state waters. Diquat is a contact herbicide which has been successfully used to control a broad spectrum of aquatic plants. This product is approved by the US EPA and is registered for use in most states. Triclopyr is a systemic herbicide which is effective in selectively controlling some emergent and submersed aquatic plants. These two products are described below in the Developing Techniques section.

• **Fluridone**: Fluridone is available in the SePRO Corporation products Sonar AS® (a liquid formulation), Sonar SRP® (a slow release pellet formulation) and Sonar PR® (a "precision release" pellet formulation). A product label for Sonar AS® is included in Appendix C as an example of a fluridone product. Fluridone can show good control of submersed and emergent plants, including Milfoil, where there is little water movement and an extended time for the treatment. It is most applicable to whole-lake or isolated bay treatments where dilution can be minimized. Because of the eight- to ten-week recommended treatment period, treatments should take place in early spring or fall. Fluridone interferes with the synthesis of RNA, proteins and carotenoid pigments and thereby affects photosynthesis (**WDOE 2001c**). Use of fluridone does not pose a threat to human health or to fish and wildlife when used according to the label (**SePRO 2000**). While there is a short term (seven to 30 days) precaution when using treated waters for irrigation, there are no other water use restrictions when using the liquid formulation of fluridone.

Advantages of Fluridone:
- systemic herbicide, will kill entire target plants,
- variety of plants are susceptible, based on treatment rates and program design,
- species specificity with correct application rates,
- non-toxic to humans, pets, fish and wildlife
- no water use restrictions for fishing, swimming or livestock/pet consumption.

Disadvantages of Fluridone:

- Long exposure period required in order to effectively control plants (many times requiring multiple applications or minimized flow conditions)

- Potential for drift from application area, requires whole lake or enclosed area treatments,

Appropriateness for Lake Washington:
- Fluridone products are not considered appropriate for use in Lake Washington at this time due to the possible dilution from the treatment area into the lake and the resulting lack of efficacy. There are two new formulations of Sonar pellets that could.

• **Endothall**: Endothall is a contact herbicide available in the **Cerexagri, Inc.** products Aquathol K® (a liquid formulation), Aquathol Super K® (a granular formulation), and Hydrothol 191® (both liquid and granular formulations). A product label for Aquathol K® is included in Appendix C as an example of an endothall containing product.

Endothall compounds are used primarily for short term (one season) control of a variety of aquatic plants (and algae in the case of Hydrothol 191®). The mode of action of Endothall is not fully understood although the hypotheses indicate that this chemical disrupts biochemical processes at the cellular level (**WDOE 2001c**). Target plants for Aquathol K® and Aquathol Super K® include Milfoil (**Cerexagri 2000**). Neither Coontail or Elodea is listed as a target for Hydrothol 191® (liquid or granular). Duration of control with Endothall products is dependent upon target species, contact efficiency, lake conditions and regrowth form unaffected root masses.

Use of Endothall involves several water use restrictions and it can be toxic to fish although there is a wide margin of safety between allowed application rates and rates that are toxic. At application rates needed to control Milfoil (2.0 to 4.0 ppm) the water use restrictions are: do not use fish from treated areas for food for three days and do not use water from treated areas for watering livestock, preparing agricultural sprays for food crops, for irrigation or for domestic purposes for seven to 14 days after application. There is no swimming restriction for Endothall products. Fish toxicity is not a factor, according to the product labels, at doses below 100 ppm (**Cerexagri 2000**).

Advantages of Endothall:
- fast acting injury to plant tissue which is typically apparent in one to two weeks,
- little or no off-target drift impacts,
- spot treatments possible,

Disadvantages of Endothall:
- only provides temporary reductions in plant growth,
- non-target plant impacts are difficult to mitigate as this is a fairly broad spectrum herbicide (Elodea is not listed as susceptible),
- water use restrictions in place,
- rapid action may cause oxygen depletion and rapid release of nutrients into water.

Costs of Endothall:
-$650.00 per treated acre

Appropriateness for Lake Washington:
- Endothall products are considered appropriate for use at Lake Washington, but their role is somewhat limited by the lack of systemic activity. They could be used in Hunts Point Waters to provide short term relief from problem aquatic weed growth.

• **Diquat**: Diquat dibromide is a fast acting, broad spectrum contact herbicide and algaecide found in the product Reward® which is manufactured by **Syngenta** (formerly Zeneca Ag Products, Inc). A Reward® label is included in Appendix C. Diquat is effective on a variety of submersed plants, including Milfoil, and also some types of filamentous algae. Diquat's mode of action is to generate "reactive oxygen radicals" which disrupt photosynthesis. Diquat kills plants rapidly so depletion of oxygen and release of nutrients from plant decay is a potential problem. As with all contact herbicides, plant roots are not effected and repeated applications may be needed for complete season control.

Contrary to this general efficacy, Diquat has been used in Hayden Lake, ID with some apparent systemic effect. In this case, Reward was applied by a diver or a "drop hose" to the lower third of plants in dense Milfoil beds. The diver used a wand and nozzle connected to a pressure tank onboard a nearby support boat to treat one acre while the boat treatment involved holding the wand and nozzle down into the water while traveling across a two-acre bed. Follow up diver inspection of these treatment areas one year later found only occasional Milfoil sprigs (new plants) in the diver-treated area and approximately one-half acre of live plants in the boat treatment area (Daniel 2002)

Diquat has slight toxicity to most animals and freshwater fish. It is slightly to highly toxic to aquatic invertebrates. It is for this reason that diquat has not been

permitted by WDOE for use in Washington State waters since 1992. Diquat is currently being reviewed for possible re-approval for future aquatic uses. The effectiveness of diquat on target plants such as Eurasian watermilfoil is found to be heightened through the use of tank mixes with copper containing products such as Nautique.

Water use restrictions which would be in force with diquat applications for Milfoil control (two gallons Reward per surface acre) are three days for drinking, one day for livestock drinking, three days for irrigation to turf and ornamental and five days for irrigation to food crops. There is no restriction for fishing or swimming in treated water (**Zeneca 2000**).

Advantages of Diquat:
- effective against many plant species,
- rapid action,
- no bioaccumulation,
- no fishing or swimming restriction.

Disadvantages of Diquat:
- persistent, especially in sediments,
- water use restrictions in place,
- potentially toxic to aquatic organisms,
- repeat applications needed to maintain control
- rapid action may cause oxygen depletion and rapid release of nutrients into water.

Costs of Diquat:
- $282.00 per acre for Reward®

Appropriateness for Lake Washington:
- Reward (diquat) is not considered appropriate for use at Lake Washington due to the lack of systemic action and the lack of target specificity.

• **2,4-D**: 2,4-D is a fast-acting systemic herbicide with two formulations approved for freshwater applications in Washington State. The two formulations are the butoxyethyl ester (BEE) formulation found in the granular products AquaKleen® (produced by Rhone Poulenc and marketed by CerexAgri) and Navigate® (marketed by Applied Biochemists); and the dimethylamine (DMA) formulation found in the liquid product DMA4® IVM, produced by Dow AgroSciences LLC. Product labels for AquaKleen®, Navigate® and DMA4® are included in

The mode of action of this chemical is primarily as a stimulant of plant elongation and cell division (**WDOE 2001c**). 2,4-D is a post-emergent herbicide that is primarily used to control watermilfoil and water stargrass. Typical submersed monocot plants (ie. the pondweeds) are not susceptible to 2,4-D so this product can be used for selective plant control.

2,4-D can be effectively used in spot-treatment programs in lakes or ponds. Effectiveness of the treatment is dependent upon the timing of the application and density of the target plant community. Two treatments may be required when targeting dense communities. Susceptible plants will begin to show signs of injury one to two weeks after treatment, followed by plant breakdown and death. There is no fishing or swimming restriction associated with the use of 2,4-D although the WDOE recommends "that due to risk of dermal contact, a swimming advisory shall be posted advising swimmers to wait 24 hours before reentering directly treated areas to allow time for granules to disperse" (**WDOE 2001c**). 2,4-D treated water can not be used for domestic water supply or irrigation until levels drop below standards presented on the product label. The recent risk assessment prepared for WDOE as part of the 2001 Final Supplemental Environmental Impact Statement for the aquatic plant management program (**WDOE 2001c**) indicated that "no significant adverse impacts on fish, free swimming invertebrates or benthic invertebrates" should be expected from 2,4-D (either formulation) applications at appropriate label rates. Additional toxicity information from this risk assessment is included in Appendix C following the Navigate and DMA4 labels.

Advantages of 2,4-D:
- fast-acting systemic herbicide which is effective in removing selected plants with little or no impact on certain non-targeted plants at labeled rates,
- applications conducted easily with granular or liquid material in a large or small scale applications,
- treated waters can be used for swimming within 24 hrs (WDOE restriction),
- no fish consumption restrictions.

Disadvantages of 2,4-D:
- application must be conducted 0.5 miles or greater from active drinking/domestic water withdrawals (unless approved by WDOE),
- 24 hour swimming restriction imposed by WDOE,
- treatment windows may apply to areas were Endangered Species Act (ESA)

listedsalmonids occupy (according to WDFW specifications).

Costs of 2.4-D:
- $600 per acre applied, target dose 1 ppm.

Appropriateness for Lake Washington:
- 2,4-D (either of the listed formulations) is appropriate for use in Lake Washington due to the specificity for the target species (Milfoil), the rapid systemic action and dissipation of the herbicide, the demonstrated efficacy in Lake Washington and the general acceptance of this chemical based on past uses. This is the preferred treatment method as described in the Integrated Treatment Action Plan, below.

• **Copper Compounds**: There are currently two products containing copper that may be used for control of aquatic weeds although copper compounds are not currently allowed in Washington state. They are: Nautique®, manufactured by SePRO Corporation, and Komeen®, manufactured by Griffen. These are both "chelated" or complexed compounds. A product label for Nautique is included in Appendix C as an example of a copper herbicide.

Although copper is an essential element for plant growth, high concentrations of copper will inhibit photosynthesis and result in death of plants and algae. Chelated copper complexes where developed to maintain concentrations of the copper ion in water column over a longer period of time. The extended exposure of the copper ion in solution provided improved control plants and algae. Copper products for aquatic weed control are applied by subsurface injection. Effectiveness of applications is enhanced by warm temperatures and sunlight. These conditions stimulate copper uptake by plant cells and increase the rate at which the plants will be controlled.

Given the known toxicity of copper compounds to aquatic life, primarily fish, and given the recent Endangered Species Act listings of several salmonid species in
Washington State waters, the WDOE made a policy decision in March 2000 to disallow the use of copper in salmon-bearing waters.

Advantages of Copper:
- relatively low cost treatments,
- no water use restrictions,
- provide effective and rapid control of algae blooms.

Disadvantages of Copper:
- acts as contact herbicide therefore does not kill plant roots,
- not allowed for use in waters discharging to or occupied by salmonid species (requirement of WDOE, not part of EPA label),
- remains bound to sediments and organic over a long period of time
- limited to treatments in hard water lakes and ponds
- may require extensive water testing and monitoring in systems with outflow

Costs of Copper:
- $730 per acre for Nautique, applied (water depth of 8 feet and target dose of 0.8 ppm).

Appropriateness for Lake Washington:
- Copper compounds are not considered to be appropriate for use in Lake Washington due to their lack of systemic actions and the WDOE restriction on their use in salmonid bearing waters.

Developing Techniques. There are a number of techniques which are under investigation as possible plant and algae control agents; these being primarily biological agents. These include plant pathogens, herbivorous insects, competitive plants and plant growth regulators. The research with these agents has focused primarily on their effect on noxious submersed plants such as Eurasian watermilfoil and Hydrilla

• **Triclopyr**: This is a systemic herbicide produced by SePRO Corporation that is now fully registered for aquatic uses. EPA registration was granted for the product Renovate® which is a water soluble triethylamine salt formulation containing three pounds of triclopyr acid equivalent per gallon.

Triclopyr is a product that has been tested extensively and found to be effective on broad-leafed (dicotyledonous) plants such as Milfoil. This product is specific for this type of plant and can be used in habitat recovery programs focusing on selective removal of these plant pests. It will not affect plant species in the monocot family, which is the majority of native aquatic and wetland plant types. Renovate® is a liquid product with a contact time requirement of 24 to 48 hours so it has applicability in spot treatments. Susceptible submersed plants exhibit epanasty (bending and twisting of plant tissue) in 6 - 12 hours after treatment. Treated plants begin to sink slowly three to five days after treatment and one to three weeks later plants should be well below the surface, often near the bottom.

Photodegradation is the major route of triclopyr degradation in aquatic environments. The first order half-life for Renovate® is 0.5 - 3.0 days. No accumulation occurs on sediment and no bioconcentration is believed to occur in sport fish or bottom feeding species. Toxicity testing on fish and other non-target organisms performed by or for the manufacturer has indicated that Renovate® has a low toxicity potential (SePRO Corporation 2002).

Renovate has been used locally under an Experimental Use Permit, particularly in Diamond Lake and in the Pend Oreille River. The observed efficacy of this product was very good in a 1.5 acre bay in Diamond Lake but was poor in a six acre bay above Albeni Falls Dam (this latter most likely due to dilution from the flow in the river). Water use restrictions may be a factor in the use of Renovate®; information on this will be listed on the product label.

Advantages of Triclopyr:
- selective for broad leafed plants,
- short contact time needed,
- systemic action so entire plant is killed.

Disadvantages of Triclopyr:
- not currently registered for aquatic use,

Costs of Triclopyr:
- $400-800.00 per acre, applied.

Appropriateness for Lake Washington:
- Renovate® (triclopyr) would be appropriate for use in Lake Washington.
- The herbicide was registered by the US Environmental Protection Agency in November of 2002.

• **Milfoil Weevils**: A potential biological control agent that has received considerable research attention in several northwest, northeast and mid-western States, including Washington, is the aquatic weevil *Euhrychiopsis lecontei*. This organism has been associated with declines of *M. spicatum* in the United States (e.g. Illinois, Minnesota, Vermont, and Wisconsin). Researchers in Vermont found that this weevil can negatively impact Milfoil by suppressing the plants growth and reducing its buoyancy (Creed and Sheldon 1995).

The following description is excerpted from University of Minnesota, Department of Fish and Wildlife website

(http://www.fw.umn.edu/research/milfoil/milfoilbc.html): The milfoil weevil is native to North America and is a specialist herbivore of watermilfoils. Adult weevils live submersed and lay eggs on milfoil meristems. The larvae eat the meristem and bore down through the stem, consuming the cortex, and then pupate (metamorphose) lower on the stem. Development from egg to adult occurs in 18-30 days at summer temperatures. The consumption of meristem and stem mining by larvae are the two main effects of weevils on the plant and this damage can suppress plant growth, reduce root biomass and carbohydrate stores and cause the plant to sink from the water column. Although the weevil has been quite effective at some sites, it has not been effective at other sites. Currently, we cannot predict when, where and how the weevils will or will not be effective. The aim of our work is to improve our understanding so we can predict effects and appropriate circumstances for use of biocontrol.

In Washington State, the Milfoil weevil is present primarily in eastern Washington and occurs on both *M. spicatum* and northern watermilfoil (*M. sibiricum*), which is native to the State (Tamayo et. al. 1999). During the summer of 1999, researchers from the University of Washington determined the abundance of the Milfoil weevil in 11 lakes in Washington. They found that weevil abundance ranged from undetectable levels to 0.3 weevils (adults and larvae) per stem. Fan Lake, Pend Oreille County had the greatest density per stem or 0.6 weevils (adults, larvae and eggs per stem) although the weevils there were present on northern watermilfoil not *M. spicatum*. These abundance results are well below the recommendations made by other researchers in Minnesota, Ohio, Vermont, and Wisconsin of having at least 1.5 - 2.0 weevils per stem in order to control Eurasian watermilfoil.

To date, there have not been any documented declines of Eurasian watermilfoil in Washington State that can be attributed to the Milfoil weevil, although Creed speculated that declines of Eurasian watermilfoil in Lake Osoyoos and the Okanogan River may have been caused by the Milfoil weevil. In Minnesota, Cenaiko Lake is the only lake in that state that has had a Eurasian watermilfoil crash due to the weevil; other weevil lakes are yet to show declines in Eurasian watermilfoil.

The WDOE and the Pend Oreille County Noxious Weed Control Board are currently involved in culturing Milfoil weevils for use in experimental treatments on *M. spicatum* control. At the time of this writing there were still a number of factors related to the growth and survival of the weevil and their

efficacy in causing declines in Milfoil growth that need to be better understood before this organism can be seen to be an effective option.

Advantages of weevils:
- non-toxic
- potential long-term effectiveness

Disadvantages of weevils:
- Weevils may not control M. spicatum in lakes with populations of native watermilfoils,
- Weevil densities may be reduced below effective levels due to predation by sunfish and other environmental factors.

Costs of Milfoil weevils:
- Milfoil weevils currently cost $1 each from commercial producers.

Appropriateness for Lake Washington:
- Milfoil weevils are not currently appropriate for use in Lake Washington. This technique should be re-evaluated when more is known about their growth and effect on Milfoil.

Integrated Treatment Action Plan

As the control intensity has been defined as suppression of Eurasian watermilfoil and recovery of native aquatic plant communities in the mapped areas of Lake Washington. Tools that will accomplish these objectives are then the ones that should be deployed until this objective is met. First, there are tools that can be ruled out here because they will not help to meet the goal of the IAVMP.

Biological controls are not appropriate here. The only operational tool that is allowed for use at any level in Washington State is the Triploid Grass Carp. This biocontrol agent is not appropriate for the reasons outlined in the section above for use in Lake Washington. Other biocontrol agents have not yet reached a point where the technology can be operationally deployed. As this program evolves and if science provides other operational biocontrol agents specific for Eurasian watermilfoil, they should be incorporated in this ongoing program as appropriate.

Mechanical control technologies could provide for suppression levels under certain circumstances. The performance of aquatic plant harvesting operations is directly related to the distance the harvester has to transport the cut vegetation. An analysis of the application of harvesting technologies to the Hunts Point area shows minimal promise for cost effective results.

The attached map shows the location of the two closest shore unloading sites to the Hunts Point area. There is a Seattle Parks Department boat ramp located at Magnuson Park and a Kirkland Parks Department boat ramp located in the downtown area as mapped. The Corps of Engineers HARVEST model was used to predict the effectiveness of various harvesting treatment scenarios. Given the typical equipment mix that contractors have available in Washington State, the optimum operating distance from the shore unloading site is under 1,500 feet. This results in a per acre performance rate of up to 1.5 acres harvested per day. The maximum effective radius for operations was predicted to be about 5,000 feet with a production rate of under 0.25 acres per day. That radius is displayed on this map. As there are no sites to operate in the proximity of Hunts Point, this option would be prohibitive. In addition, aquatic plant harvesting operations generally select for Eurasian watermilfoil as this weed can recover from harvesting at a much faster rate than native aquatic weeds.

As the goal of this project is to suppress the Eurasian watermilfoil to very low

levels or to completely eradicate it locally such that the native aquatic plants in this area will recover, tools that provide selective control of this weed should be chosen. This means that a selective systemic herbicide should be used in the first years of the implementation of this plan.

Granular Navigate or AquaKleen, and Sonar are the tools that can provide these results. Sonar would be the preferred option in a smaller lake system, but the water exchange in this area may preclude that option without the use of a barrier curtain. Barrier curtain technology was very effective in isolating treatment areas in Shoecraft Lake in 2000. Treatments with the herbicide were made inside this barrier, and the Eurasian watermilfoil was eradicated, with no herbicide levels of significance found outside the barrier. As there are a large number of vessels in this area and Sonar requires a 6-8 week contact time required for treatment, it would mean isolating those vessels from the main lake for this period of time. The community would have to agree to this prior to the deployment of this barrier. There will be a new formulation of Sonar Granular that has entered the market in late 2001 called Sonar Precision Release. This technology is designed to allow this herbicide to remain in contact with target weeds in large lake systems that have some flowing water. This granular may allow for the use of this product in the backwaters of the bays and should be considered when more is known about the performance of that product.

Navigate or AquaKleen may be a better fit here. These products are granular materials with a short contact exposure time requirement. They are systemic herbicides that are target specific for Eurasian watermilfoil. They have already demonstrated to Ecology that they can reduce Eurasian watermilfoil to almost non-detectable levels in large lake systems while having no impact on native aquatic plants. This technique has also been documented to allow for the recovery of native plants and cause an increase in species diversity.

These produces should be applied to the infested areas of the littoral zone under a carefully thought out treatment program with this goal in mind. The first year of this effort would target all infested acres as mapped here. There would be complete pre and post-treatment aquatic plant community assessments made as part of this treatment protocol. The sampling protocol would involve overall mapping of the plant communities to document the reduction in Eurasian watermilfoil and the recovery of the native plant communities. This would include specific sampling sites where species diversity, density and biomass would be

collected, calculated and analyzed. Water quality parameters critical to fish such as temperature and dissolved oxygen would be monitored both in the Eurasian watermilfoil beds and in open water sites. This information would be used to track any increase in water quality that resulted from removal of the Eurasian watermilfoil.

After the first year's treatment results were known, the second year treatment efforts would be developed. There should be a significant reduction in the populations of Eurasian watermilfoil in the treatment area. A second year's application of this product would be made to target that remaining growth. Monitoring and sampling would be repeated using the same protocols and sampling stations and additional maps would be developed. Water quality parameters critical to fish such as temperature and dissolved oxygen would be monitored both in the Eurasian watermilfoil beds and in open water sites. This information would be used to track any increase in water quality that resulted from removal of the Eurasian watermilfoil.

By the third year of this effort, the Eurasian watermilfoil populations in the treatment area will be dramatically reduced. Monitoring of the zone would be performed to locate and treat (spot treat with herbicides or diver removal) remaining or new Eurasian watermilfoil plants. It is possible that native aquatic plants may begin to pose a weed problem along the shorelines in this time frame. Selective removal of plants in shallow water could be performed using chemical, mechanical or physical methods. Again, water quality parameters critical to fish such as temperature and dissolved oxygen would be monitored both in the Eurasian watermilfoil beds and in open water sites. This information would be used to track any increase in water quality that resulted from removal of the Eurasian watermilfoil.

By the end of the third year, the Eurasian watermilfoil present in this portion of Lake Washington should be near eradication levels. The goal of suppression would be achieved. Due to the remaining Eurasian watermilfoil colonies elsewhere in the lake, fragments would move back into these recovered native aquatic plant communities. Over the next few years, continued monitoring and targeting of this invasive weed would result in maintaining the goal of suppression. An ongoing evaluation of any new tools target specific to Eurasian watermilfoil would also be a goal of this action plan. When new tools become available, they should be evaluated and adopted as appropriate.

The results of this effort would also demonstrate a potential technology to recover Lake Washington to pre Eurasian watermilfoil conditions. This project should be considered as a pilot project with that objective in mind.

From an environmental standpoint, there is valid concern about any aquatic plant management activities in Lake Washington because of potential salmon impacts. It is also clear that the Eurasian watermilfoil itself has had a major impact on these fish. The Governor's Salmon Recovery Program specifically acknowledged this. The approach of doing nothing to manage this weed has an environmental cost that is probably much higher than the approach proposed here. The Washington Department of Ecology has developed a programmatic Environmental Impact Statement that indicates this approach can be implemented with minimal to no impact on salmon. The water quality in the treatment areas is depressed to the point that salmonids cannot use them in many cases anyway. While there may be concerns expressed as this approach goes through the permit process, it is the best solution for this situation.

Summary of Action Steps for 2003 (first summer of implementation)

Date	Action	Cost
Spring 2003	Develop sampling protocols and locations to document pre and post treatment aquatic plant coverage. Collect pre treatment data in June	$3,000.00
Summer 2003	Treat up to 75 acres of Lake Washington in Fairweather Bay and Cozy Cove with AquaKleen or similar aquatic herbicide. Follow up with a second treatment of up to 25 acres later in the summer if necessary (spot treatment)	$50,000.00
Summer 2003	Perform NPDES required sampling	$1,000.00
Late Summer 2003	Perform post treatment water quality and aquatic plant sampling	$3,000.00
Fall 2003	Develop year end report summarizing operations and results, public meetings to present results, update IAVMP	$500.00

Summary of Action Steps for 2004 (second year of implementation)

Date	Action	Cost
Summer 2004	Collect pre treatment data in June. Develop treatment plant o target Eurasian Milfoil remaining in treatment area or re-introduced.	$3,000.00
Summer 2004	Treat up to 50 acres of Fairweather Bay and Cozy Cove with AquaKleen or equivalent aquatic herbicide in June	$25,000.00
Summer 2004	Perform NPDES requires sampling	$1,000.00
Late Summer 2004	Perform post treatment water quality and aquatic plant community analysis	$3,000.00
Fall 2004	Develop year end report summarizing operations and results, public meetings to present results, update IAVMP	500.00

Summary of Action Steps for 2005 (third year of implementation)

Date	Action	Cost
Summer 2005	Monitor the littoral zone for Eurasian Milfoil and spot treat where it occurs. Provide maintenance control in swimming areas as necessary for problem aquatic weed growth	$10,000.00
Summer 2005	Conduct early and late summer Eurasian Milfoil monitoring, spot treat invading plants, finalize report on the results of the suppression/eradication effort for Ecology and close pilot/demonstration project	$1,500.00
Fall 2005	Re-evaluate the aquatic plant problems present, the needs for management and update the Integrated Aquatic Vegetation Management Plan	

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Appendix A, Public Involvement

Appendix B, Salmon ESU Maps

Appendix C, Herbicide Labels

TOWN OF HUNTS POINT

COUNCIL MEETING

NOVEMBER 4, 2002

CALL TO ORDER

Mayor Fred McConkey called the meeting to order at 7:02 P.M. Councilmembers Jeri Boettcher, Jan Brekke and Jeff Wright were present. Councilmembers Ted Frantz and Laurie Oki were absent. Staff present were Town Attorney Mike Kenyon, Captain Jeff Chen of the Medina Police, Town Engineer Joe Willis, Town Administrator Jack McKenzie. Present in the audience were residents Morey Wetherald, Rod Olson and Janice Olson.

APPROVAL OF MINUTES OF OCTOBER 7, 2002

MOTION: Approve the minutes of the October 7, 2002 Council Meeting as written. Moved by Wright, seconded by Brekke. Passed 4-0. MOTION CARRIED

POLICE REPORT

Captain Chen reported that there was an accidental stabbing in Hunts Point. The call to 911 was made by the Overlake Hospital Emergency Room reporting it as an assault. Investigation showed that it was an accident resulting from horseplay by teenage boys.

COMMUNITY SECURITY OPTIONS

Capt. Chen described the facts that he had learned about surveillance cameras. He stated that a basic single camera system would cost about $15,000 with a $100 per month cable fee. Everett, Tukwila and Bellingham are already using surveillance cameras for crime control. The Council directed Capt. Chen and Mr. McKenzie to continue to gather information on surveillance equipment and report back at the December Council Meeting.

TREE ORDINANCE

Mayor McConkey described the changes that had been made to the Draft Tree Ordinance. He invited discussion of the idea of creating a fund to be used to pay for mitigation trees, kind of a "tree bank". The Council followed this with a discussion of the level of strictness in the code called out in the Draft Ordinance. Concern was expressed for the negative effect an overly strict code could have on development in Hunts Point.

Mr. Wetherald spoke to his concerns about thinning the growth on overgrown lots. He felt that an overly strict code might prevent people from buying in Hunts Point. He also addressed the severity of the root protection zone called out in the Draft Tree Code. He pointed out that for some of the larger trees on his lot the root protection zone would have a twenty-four foot or greater diameter. Overgrown lots, like his, could not be changed or developed.

Mr. Olson described, in some detail, the difficulties the current Tree Code caused them in the construction of their new home. In his case he and Mrs. Olson are planting one hundred and sixty–five trees and shrubs as mitigation for over twenty trees that needed to be removed so their home could be built.

The Mayor and Council agreed that another draft of the Tree Ordinance, with changes, was needed. Mr. Kenyon promised to deliver such a document.

SURPLUS EQUIPMENT

Mr. McKenzie explained that the data processing equipment listed as surplus is the result of the installation of new equipment paid for by a State grant.

MOTION: Declare the following equipment surplus to the needs of the Town:

- 1. CPU Tower, HP Pavilion 8160, s/n US74553070
- 1. 15" Monitor, HP Pavilion D5259A, s/n SM7270078
- 1. Printer, HP 649C, C4608A, s/n SG76Q1134KY
- 1. Keyboard, HP, SK- 2505, s/n M970875045
- 1. Keyboard, e-Machines, KB-2971, s/n 8L058-105824
- 1. Laser Printer, HP 4L, s/n USBB558995

Moved by Boettcher, seconded by Wright. Passed 3-0. MOTON CARRIED

HUNTS POINT ROAD IMPROVEMENT

Councilmember Brekke inquired why the residents along Hunts Point Road had not received a preliminary estimate of their cost for the proposed improvements to the Road. He stated they should know what this is so they can make a decision about paying a higher price for a concrete surfaced road. The Council and staff discussed the LID process and the time in that process when preliminary assessments would be provided to the residents.

Mr. Olson described his experiences with asphalt and concrete surfaces used on the parking lots he owns. He stated strongly that concrete was vastly superior in wearing and weathering ability. He ended by recommending that the Council follow the wishes of the residents and rebuild the Road using concrete.

Mr. Willis reported the findings of Nichols Engineering upon their design research project completed last week. They propose a concrete roadway built over the old road just as it is. The only time that that the old road would be pulverized is when asphalt paving was going to be used. Doweling would be inserted in the paving during construction to aid in expansion and contraction. This doweling would be placed between the lanes and at the joint where each day's pour ends. Then sections will be scored to allow for expansion and contraction.

The rebuilt road will be six to eight inches higher than the present road. This will bring the road above the shoulders and improve drainage. Driveways will have to be matched to the new road height as part of the project.

Councilmember Wright stated that he would like to see the cost figures for an asphalt road. Mayor McConkey wondered about preparing those numbers given the result of the vote. Councilmember Boettcher asked if this would mean another vote. Mr. Olson reminded the Council that another vote would delay the project by three months.

Council directed Mr. Willis to obtain a set of cost figures for an asphalt road in addition to those for a concrete one. They also asked for anticipated project construction schedules for the two surfaces.

PUBLIC HEARING FOR 2003 BUDGET

Mayor McConkey recessed the Council Meeting at 8:50 p.m. and called a Public Hearing on the 2003 Budget and the Property Tax Levy Ordinances to order.

Mayor McConkey explained that the revenues from building activities were expected to be lower than in 2002. An examination of the receipts for 2001, the year-to-date for 2002 and the estimate for 2003 show a decline in permit income from $168,000 in 2001 to $75,000 in 2003.

Mr. McKenzie pointed out that the Property Tax increase for 2003 was held to 1.07% of last year's levy. This means that, with new construction and utilities included the Town will see an increase of a little over $5,000 in 2003. Mayor McConkey said that expenses for police and fire services are increasing at 3% per year. This means that all of the property tax will only cover 85% of the cost of police and fire in 2003. Councilmembers expressed their concern and at this drop-off in permit income.

Mayor McConkey told the Council and staff that the success of this budget and the Town required a strict control of expenditures.

ORDINANCES FOR 2002 LEVY

Mayor McConkey adjourned the Public Hearing and resumed the Town Council Meeting at 9:17 p.m. Mr. McKenzie explained the purpose of the two ordinances upon which the Council needed to take action.

Ordinance No. 414, authorizing an increase in Property Tax to be levied for the Town of Hunts Point for the Year 2003.
MOTION: Adopt Ordinance No. 414. Moved by Wright, seconded by Brekke.
Passed 3-0. MOTION CARRIED

Ordinance No. 415, fixing the amount of taxes to be levied for the Town of Hunts Point for the Year 2003.
MOTION: Adopt Ordinance No. 415. Moved by Wright, seconded by Boettcher.
Passed 3-0. MOTION CARRIED

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN

In the absence of Councilmember Frantz, Chairman of the Milfoil Control Committee, Mr. McKenzie recapped the meeting of the Committee and work

session on October 30th. There were seven present at this meeting held to review the latest draft of the IAVMP. The seven attendees included Councilmembers Frantz and Brekke and Mr. McKenzie. The individuals at the meeting determined that the IAVMP was ready for Council approval and adoption before submittal to the Department of Ecology.

MOTION: Approve and adopt the Integrated Aquatic Vegetation Management Plan 2002. Moved by Brekke, seconded by Boettcher. Passed 3-0.

MOTION CARRIED

MINUTES OF COUNCIL/PLANNING COMMISSION RETREAT OCTOBER 18

Mayor McConkey and the Council discussed the benefits of the Council/Planning Commission Retreat held on October 18th. The consensus was that it was a good and valuable experience setting the strategy for the Town for the next year or more.

MOTION: Approve the minutes of the Council/Planning Commission Retreat of October 18 as written. Moved by Brekke, seconded by Boettcher. Passed 3-0.

MOTION CARRIED

SR-520 PROJECT REPORT

Mayor McConkey announced that it appeared Referendum 51 was going to be defeated. The picture for the construction of the SR-520 project was rather gloomy. If R-51 fails the money to continue work on the EIS and design won't be there so the project will wind down. He stated that the rumors indicate the Legislature will not bring an new plan to the people until November 2003.

AUDIT OF ACCOUNTS

Vouchers no. 12068 through 12092 in the amount of $22,976.58 were presented for review, approval and signatures of the Council. Approval granted.

ADJOURNMENT

Mayor McConkey adjourned the Council Meeting at 9:42 PM.

Jack McK — Approved Tim McC

Jack McKenzie, Town Administrator

TOWN OF HUNTS POINT

MILFOIL COMMITTEE MEETING

OCTOBER 30, 2002

CALL TO ORDER

Councilman Ted Frantz, Chairman of the Milfoil Committee, called the meeting to order at 1:15 p.m. Present were Councilman Jan Brekke, residents Bill Boettcher, Jean Haehl, Penny O'Byrne, Bob Dent and Town Administrator Jack McKenzie.

OPENING STATEMENT

Chairman Frantz opened the meeting with an explanation of the reasons for the meeting. He then reported that expressions of regret had been received from the Department of Ecology, the Department of Natural Resources, the U.S. Army Corps of Engineers and the King County Department of Natural Resources. Thirty-five invitations were sent out (list attached).

A discussion followed centered on the possible reasons for lack of response from the Muckleshoot and Suquamish Indians. It was pointed out that those agencies had never responded to any communication from the Town. This lack of response included any for SEPA notices.

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN

The group reviewed the draft IAVMP. After that the material reviewed was discussed. The general plan drew interest as the group focused on gaining an understanding of the activities of the various agencies involved in the execution of the IAVMP. There was strong interest in the process followed to gain acceptance of the Town's IAVMP by the Department of Ecology.

A discussion of the chemicals to be used in the execution of the IAVMP followed. Members of the group expressed disappointment that the neighboring jurisdictions did not seem willing to join in efforts to eradicate the Eurasian milfoil in Cozy Cove and Fairweather Bay.

Finally, the future process was examined. The members of the group expressed unanimous agreement the project should be started in 2003. They also unanimously agreed that the draft IAVMP be presented to the Town Council for approval at the Council Meeting of November 4, 2002 and, having achieved that approval, forwarded to the Department of Ecology for acceptance.

Chairman Frantz adjourned the meeting at 2:35 p.m.

Jack V. McKenzie, Town Administrator

APPROVED Fred McConkey

Jack McKenzie

From: "Murray, Brian" <Brian.Murray@METROKC.GOV>
To: "'Jack McKenzie'" <jackm@ci.hunts-point.wa.us>
Sent: Wednesday, October 30, 2002 9:53 AM
Subject: RE: integrated aquatic vegetation management plan

Thanks very much Jack. Unfortunately I won't be able to make the meeting - please send a copy of the last draft to the address below at your convenience.

thanks again,
Brian

Brian Murray
Watershed Ecology and Assessment Team
Water and Land Resources Division
Department of Natural Resources and Parks
201 S. Jackson St, Suite 600
Seattle, WA 98104-3855

ph: 206-296-8347
fax: 206-296-0192

-----Original Message-----
From: Jack McKenzie [mailto:jackm@ci.hunts-point.wa.us]
Sent: Wednesday, October 30, 2002 7:01 AM
To: Murray, Brian
Subject: Re: integrated aquatic vegetation management plan

Hi Brian,
A draft plan was submitted to WRIA 8 last spring. The new draft won't be available until the meeting today. The meeting is from 1 to 4 p.m. and will consist of a walk-through of the most recent draft.

This is the final meeting and it closes the comment period, except for follow-through on items arising from the meeting.

We have been working on this for a year. It is essentially a step up of our annual single-shot chemical treatment. The biggest addition is the continuous monitoring of the effects of the application of milfoil specific aquatic herbicide. It is a three year program.

If you don't make it to the meeting we will send you a copy of the last draft and you can comment on it.

Jack McKenzie

> ----- Original Message -----
> **From:** Murray, Brian
> **To:** 'jackm@ci.hunts-point.wa.us'
> **Sent:** Tuesday, October 29, 2002 2:45 PM
> **Subject:** integrated aquatic vegetation management plan
>
> Hello,
> I'm trying to find out more information about a public meeting on the Town's aquatic vegetation mgmt plan, which I believe is scheduled for 1-4 tomorrow. Is there a draft plan available for review, and will

there be additional opportunities to comment?

thanks for your assistance!!
Brian

Brian Murray
Watershed Ecology and Assessment Team
Water and Land Resources Division
Department of Natural Resources and Parks
201 S. Jackson St, Suite 600
Seattle, WA 98104-3855

ph: 206-296-8347
fax: 206-296-0192

Jack McKenzie

From: "Rawson, Robert M NWS" <Robert.M.Rawson@NWS02.usace.army.mil>
To: <jackm@ci.hunts-point.wa.us>
Sent: Wednesday, October 23, 2002 12:25 PM
Subject: Integrated Aquatic Vegetation Management Plan

Mr. McKenzie:

I just received you letter of October 21, 2002, inviting participation in the meeting scheduled for October 30th.

The Corps is no longer involved with the milfoil control efforts on Lake Washington. In fact, we have received no funding for the state-wide cooperative program with the Washington State Department of Ecology since 1995. With the current budget situation, I don't foresee us obtaining funding any time soon.

I hope the meeting is productive but, for the reasons stated above, I will not be attending.

Bob Rawson

Robert M. Rawson
Chief, Project Support Section
Seattle District, US Army Corps of Engineers
(206) 764-3442
(206) 764-3308 FAX

Jack McKenzie

From: "Hamel, Kathy" <kham461@ECY.WA.GOV>
To: <jackm@ci.hunts-point.wa.us>
Sent: Tuesday, October 22, 2002 2:21 PM
Subject: Plan Meeting

Hi Jack, I got your letter today about your meeting. The timing is bad for me since I have to give a talk later that afternoon in the Bremerton area. I asked Tricia from our NWRO if she could make it, but she has training that day. So I am afraid that nobody from Ecology will be there.

On another note, we do have to final your grant agreement pretty soon. You have one year from the date of the offer list to get this done and the date is fast approaching.

Sorry that we can't make the meeting.

Kathy

TOWN OF HUNTS POINT
INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN
Mailing list for working group

Kathy Hamel
Department of Ecology
State of Washington
P.O. Box 47600
Olympia, WA 98504-7600

Trish Shoblom
Department of Ecology
Northwest Regional Office
3190 1600 Ave. SE
Bellevue, WA 980008-5452

Rich Johnson
Department of Fish & Wildlife
State of Washington
P.O. Box 1100
LaConner, WA 98257-1100

Bob Rawson
U.S. Army Corps of Engineers
Seattle District
P.O. Box 3755
Seattle, WA 98124-3755

Muckleshoot Tribe
Planning Office
39015 172nd Ave. SE
Auburn, WA 98002-9763

Suquamish Tribe
Planning Office
P.O. Box 498
Suquamish, WA 98392-0498

Rex Thompson
Department of Natural Resources
950 Farman Avenue North
Enumclaw, WA 98022

Jane Lamansdorf-Bucher
WRIA 8 MS: KCS-RNA-0600
201 So. Jackson St.
Seattle, WA 98104

Cities

Honorable Jeanne Berry, Mayor
Town of Yarrow Bay
4030 95th Ave. NE
Yarrow Bay, WA 98004

Doug Shulz, City Manager
City of Medina
P.O. Box 144
Medina, WA 98039

Richard Conrad, City Manager
City of Mercer Island
9611 SE 36th St.
Mercer Island, WA 98040-3732

David Ramsey, City Manager
City of Kirkland
123 5th Ave.
Kirkland, WA 98033-6189

Steven Sarkozy, City Manager
City of Bellevue
P.O. Box 90012
Bellevue, WA 98009-9012

Residents of Hunts Point

Jeri Boettcher
3201 Hunts Point Rd.
Hunts Point, WA 98004

Ted Frantz
3140 Hunts Point Rd.
Hunts Point, WA 98004

Laurie Oki
4315 Hunts Point Rd.
Hunts Point, WA 98004

Jeff Wright
4056 Hunts Point Rd.
Hunts Point, WA 98004

Jay Blassingame
3022 Hunts Point Rd.
Hunts Point, WA 98004

Penny O'Byrne
4224 Hunts Point Rd.
Hunts Point, WA 98004

Carole Pearl
4304 Hunts Point Rd.
Hunts Point, WA 98004

Donna & Dale Madden
3003 Fairweather Pl.
Hunts Point, WA 98004

Dan Temkin
3415 Hunts Point Rd.
Hunts Point, WA 98004

Dana Green
3236 Hunts Point Rd.
Hunts Point, WA 98004

Len Giannola
3268 Hunts Point Road
Hunts Point, WA 98004

Gary Eastes
4009 Hunts Point Rd.
Hunts Point, WA 98004

Bob Dent
3111 Hunts Point Circle
Hunts Point, WA 98004

Clay Loges
3131 Hunts Point Rd.
Hunts Point, WA 98004

Rick Tsang
3252 Hunts Point Rd.
Hunts Point, WA 98004

Glyn Nordstrom
4205 Hunts Point Rd.
Hunts Point, WA 98004

Kim Hardwick
4335 Hunts Point Rd.
Hunts Point, WA 98004

David Bocek
8429 Hunts Point Ln.
Hunts Point, WA 98004

Russ Haehl
3216 Hunts Point Rd.
Hunts Point, WA 98004

Jan Brekke
8592 Hunts Point Ln.
Hunts Point, WA 98004

Residents (cont.)

Morey Wetherald
3412 Hunts Point Rd.
Hunts Point, WA 98004

Fred McConkey
8521 Hunts Point Ln.
Hunts Point, WA 98004

TOWN OF HUNTS POINT
MINUTES OF PUBLIC MEETING
Milfoil Control and Integrated Aquatic Vegetation Management Plan
May 22, 2002

Councilman Ted Frantz, Chairman of the Milfoil Control Committee called the Public Meeting to order at 7:14 P.M. Present were Milfoil Control Committee Members Dale Madden, Donna Madden, Rick Tsang, Jan Brekke and Dana Green. Resident present were Stella Aubin, Stella Robertson, Jill Heijer and Michael Heijer. Also present were Councilmember Jeri Boettcher, Terry McNabb of AquaTechnex, Inc. and Town Administrator Jack McKenzie.

Chairman Frantz opened the meeting by describing the problem then asked Mr. McNabb to explain the draft Integrated Aquatic Vegetation Management Plan.

Mr. McNabb explained in detail the history of the IAVMP and its present status. He stated that the project called out in the draft IAVMP will best be accomplished by use of a product called AquaKleen. This product is systemic and attacks the root structure of the milfoil. It specie specific and kills only the milfoil. The U.S. EPA and the State DOE have approved AquaKleen. He also explained the permitting process for this year and in the future. He stated that permits will be available June 15th.

Mr. McNabb then outlined the requirements for public involvement. He solicited questions from the members of the audience. The questions dealt with the following:

- **The timing of the applications**
- **The size of the area to be treated**
- **All of the types of herbicides that are used to treat milfoil**
- **The sources of milfoil infestation**
- **The method of application**
- **General questions about all of the methods for dealing with milfoil**

Mr. Brekke spoke from the audience urging the Town to move forward with all possible efforts to eliminate the milfoil. Mr. Tsang joined in this

sentiment. Mr. Wetherald, a resident of Hunts Point for over thirty years, described his experience in watching the problem grow over the years. He also described the lack of lasting benefit from the various control efforts in the past. Mr. Madden expressed his continuous fear for the safety of children and pets should they become entrapped in the milfoil.

Mr. Frantz inquired whether the audience wished to make any recommendation to the Town Council concerning milfoil control efforts. Speaking for the audience Mr. Brekke moved that a recommendation be made to the Council for action to be taken this year regardless of the availability of grant funding. Mr. Tsang added that, if the grant was not received in time for action this year then the Town should undertake treatment on its own.

Mr. Wetherald seconded the motion.

Mr. Frantz called for a voice vote. It was unanimous in the affirmative.

Mr. Frantz adjourned the Meeting an 8:44 P.M.

TOWN OF HUNTS POINT
MINUTES OF MEETING
MILFOIL CONTROL COMMITTEE
MAY 22ND, 2002

Town Councilman Ted Frantz, Chairman of the Committee called the meeting to order at 4:07 P.M. Present were Committee Members Jan Brekke, Morey Wetherald, Dana Green, Donna & Dale Madden and Rick Tsang. Also present were Terry McNabb of AquaTechnex, Inc. and Town Administrator Jack McKenzie.

Chairman Frantz turned the meeting over to Mr. McNabb for a recap of the history of milfoil control in Hunts Point. He then continued by explaining the concerns of the State Department of Ecology about the first draft of the Integrated Aquatic Vegetation Management Plan that they received from Hunts Point late in 2001. Their biggest concern was a perceived lack of public input on the plan. The schedule for submittal of the new draft plan has provided sufficient time and notification to meet their objections.

The members then discussed the differences between the proposed three-year treatment plan and the previous one-year treatment cycles. Mr. McNabb explained that the one-year treatment cycles only provided a temporary killing of the milfoil, allowing it to return the next year. The proposed three-year plan will provide for the eradication of the milfoil followed by two years of spot treatment to maintain a clear area to allow native vegetation to reclaim it. After the three-year eradication period it should be possible to control the milfoil in Hunts Point Waters with further spot treatments.

The discussion turned to the deleterious effect milfoil had upon water quality including increased water temperatures, decreased oxygen availability and clogging of the waterways. The damaging effect upon migrating fish caused by the milfoil infestation was examined.

Mr. McNabb described the conditions leading to the decision by the Ninth District Court of Appeals in the Talent vs. Headwaters which resulted in the requirement for a National Pollution Discharge Elimination Permit being required to place aquatic herbicides in the waters of the United States. The State is obtaining the permit in master

form for the waters of the State of Washington. This should be issued by June 15th and the permitting process for Hunts Point be completed very shortly thereafter. This means that treatment for this year will take place regardless of whether the expected grant for treatment has been received in time for the treatment.

The Committee strongly suggested to Mr. McKenzie that it would be to the Town's benefit to expedite work on the grant request so that the money would be available to begin the three-year treatment schedule in 2002.

The Committee requested information on the safety of the various herbicides that might be used in treating the milfoil. Mr. McNabb described the most common of the aquatic herbicides that are specific for milfoil. These include the 2-4D products, Aquathol products and a product called Sonar.

After discussion of the issue the Committee reached unanimous consensus to support the completion and issuance of the Integrated Aquatic Vegetation Management Plan for the Town of Hunts Point.

Signed: _____ **Approved:** _____
Jack McKenzie **Ted Frantz, Chair**

TOWN OF HUNTS POINT

COUNCIL MEETING

SEPTEMBER 9, 2002

CALL TO ORDER

Mayor Fred McConkey called the meeting to order at 7:06 P.M. Councilmembers Jeri Boettcher, Trish Carpenter, Ted Frantz and Jeff Wright were present. Councilmember Laurie Oki arrived at 7:10 PM. Also present were Acting Town Attorney Steve King, Captain Jeff Chen of the Medina Police, Town Administrator Jack McKenzie and J.P. Carriveau. Present in the audience were residents Don McAusland, Colin Carpenter, Dawn Jasper, Joann and Clay Loges, Janice and Rod Olson and Mike Koss. Also in attendance were State Senator Jim Horn, Don Grant and Norm Berg of Servidian security sevices and Rick Scott of Pacnor Marketing.

APPROVAL OF MINUTES OF AUGUST 20, 2002

Mayor McConkey called for approval of the minutes of the Special Council Meeting of August 20,2002.

MOTION: Approve the minutes of the Special Town Council Meeting of August 20, 2002. Moved by Boettcher, seconded by Carpenter. Passed 5-0 MOTION CARRIED

REFERENDUM 51

Mayor McConkey introduced State Senator Jim Horn of the 41st District. He was in attendance to promote the passage of Referendum 51 which will provide funding for a list of transportation projects throughout the State of Washington. Senator Horn provided a thorough explanation of the desperate need for funding to improve transportation bottlenecks and high accident stretches of highway around the State. He stated that traffic delays and difficulties were having a very negative effect upon business and increasing costs for everyone.

Senator Horn described the actions of the Legislature as it worked to create solutions to the problem of gridlock and inadequate transportation facilities. He explained that the method for funding of transportation projects beyond the financial reach of Initiative 51 was the implementation of Regional Transportation Investment Districts (RTID). RTIDs provide a means for the voters of each region of the State to select and vote upon the individual transportation project they wish to fund.

Senator Horn stated that R-51 stresses accountability and that all taxes collected as a result of its passage will be expended on transportation projects.

RESOLUTION 02-202 SUPPORTING R-51

After discussion between the Members of the Council and Senator Horn, Mayor McConkey introduced Resolution 02-202 which expresses the Town of Hunts Points' support of Referendum 51.

MOTION: Adopt Resolution 02-202. Moved by Wright, seconded by Oki.
Passed 5-0 MOTION CARRIED

TRANSLAKE PROJECT REPORT

Mayor McConkey reported that the Translake Executive Committee voted for the six-lane option for replacement of SR 520. It was a close vote with the six-lane option wining by only nine-tenths of a vote. Mayor McConkey mentioned that he found the process used to reach this conclusion to be very interesting.

Members of the Council expressed their appreciation for the accomplishments of the Mayor in bringing these negotiations to a successful conclusion.

POLICE REPORT

Captain Chen reported on the home burglaries that occurred in Hunts Point on August 16th. These incidents occurred sometime between 7:30 PM and 11:30 PM on that day. The second burglary resulted in an alarm being sounded. This enabled a quick call and response on the part of the police and they were able to use dogs to track the intruder to the water's edge. The disturbing thing about these burglaries is their taking place while the residents are at home.

Capt. Chen explained the process for issuance of e-lerts that are a means of sending information about crimes in Hunts Point and Medina via e-mail to interested residents.

Councilmember Boettcher asked Capt. Chen to explain why it is better to use a landline telephone to dial 911 to contact police so it will reach the proper dispatch center. Capt. Chen provided details about the process that occurs when 911 is called on a cell phone. It goes to the nearest dispatch center and will have to be trunked to Kirkland dispatch.

In continuing the police report Capt. Chen described some of the incidents that they had recently handled in Medina. Capt. Chen reminded everyone to keep their doors locked and alarms set even when they are at home.

COMMUNITY SECURITY OPTIONS

Mayor McConkey asked Mr. McKenzie to introduce the three guests in the audience who were there to discuss the means and methods for the Town to improve security. He introduced Norm Berg and Don Grant of Servidian Innovative Security Services and Rick Scott of Pacnor Marketing. Servidian provides design and installation of electronic surveillance systems and Pacnor provides the equipment for such systems.

Mr. Berg explained the types of security systems that are available for use in the environment of Hunts Point. Mayor McConkey inquires about the options available for the Town to increase security for its residents. Mr. Grant provided a description of the uses of a camera system. Mr. Scott described similar systems that had been installed in suburban cities on the Eastside and their workings.

A thorough discussion ensued involving the guests, Councilmembers and residents covering the protective benefits of installing a camera system in Hunts Point.

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN

Mr. McKenzie gave a short report on this project explaining the need to create a working group to review the draft IAVMP. He stated that thirty individuals and groups had been identified as having a potential interest in the project. These will be invited to a working session on or about October 15th for a one-half day meeting to discuss the draft IAVMP. Members of the Council will be invited to join in this effort.

INITIATIVE 776 – LICENSE FEE ROLLBACK

Mayor McConkey explained that Initiative 776 has been offered by the Tim Eyeman camp. It would roll back all automobile license fees to a total of $15.00 per vehicle per year.

COUNCILMEMBER RESIGNATION

Mayor McConkey introduced a letter of resignation received from Councilmember Carpenter who is moving to Medina and can no longer serve on the Hunts Point Council. Expression of appreciation for her outstanding service on the Council came from the other Councilmembers, the Mayor and staff. Mayor McConkey explained the requirement for the Council to select a replacement to finish out the remaining fifteen months of Councilmember Carpenter's term.

Directing the Council's attention to the three letters of interest he had received from residents who wished to complete the term of Councilmember Carpenter. The residents are Mort Hardwick, Dan Temkin and Jan Brekke.

Councilmembers Oki, Carpenter, Frantz and Wright each spoke in support of Mr. Brekke's bid to rejoin the Council. Councilmember Boettcher spoke in support of Mr. Hardwick citing his active participation in Council meetings and his obvious interest in the community.

MOTION: Nominate Jan Brekke to serve out the remainder of the term of Councilmember Trish Carpenter. Moved by Oki, seconded by Carpenter.
Passed 4-1, Boettcher voting no. MOTION CARRIED

REVISIONS TO R-20 AND R20A ZONING

Mayor McConkey provided a list of homes for sale on Hunts Point Circle. He pointed out that they were not selling due to the square footage limitations caused by the zoning having a Gross Floor Area allowance of 25%. This limitation made it uneconomic for people to develop the properties. Mr. Loges, a Planning Commission member, described the steps that body has taken to revise the zoning code on these properties. This is to be a subject of discussion at the joint Council/Planning Commission Retreat in October.

COUNCIL/PLANNING COMMISSION RETREAT

Mayor McConkey described the need for the Town Council and Planning Commission to meet jointly to discuss zoning, the tree ordinance, Hunts Point Road and work out a definition of "the Spirit of Hunts Point".

AUDIT OF ACCOUNTS

Vouchers no. 12002 through 12031 in the amount of $39,956.20 were presented for review, approval and signatures of the Council. Approval granted.

ADJOURNMENT

Mayor McConkey adjourned the Council Meeting at 8:42 PM.

Approved

Jack McKenzie, Town Administrator

TOWN OF HUNTS POINT

COUNCIL MEETING

MAY 6, 2002

CALL TO ORDER

Mayor Fred McConkey called the meeting to order at 7:03 P.M. Councilmembers Jeri Boettcher, Ted Franz, Laurie Oki and Jeff Wright were present. Councilmember Trish Carpenter was absent. Also present were Acting Town Attorney David St. Pierre, Town Engineer Joe Willis, Chief Michael Knapp of the Medina Police, and Town Administrator Jack McKenzie. Present in the audience were Vicki Schmitz of King County Animal Control, John Owen of Makers Architects, Doug Thompson of Acorn Properties and residents Morey Wetherald, Janice Olson, Clay Loges and Dan Temkin.

APPROVAL OF MINUTES OF APRIL 1ST 2002

Mayor McConkey called for a motion of approval of the minutes of April 1. Councilmember Boettcher pointed out two places where the language in the minutes was confusing and/or obscure. After discussion the other members of the Council present agreed.

MOTION: Approve the minutes of the April 1 Meeting as corrected. Motion by Frantz, seconded by Boettcher. Passed 4-0. MOTION CARRIED

POLICE REPORT

Chief Knapp described the circumstances surrounding the two burglaries in Hunts Point and four burglaries in Medina. These burglaries were different in that the burglaries occurred around 9:00 P.M. and the residents were at home. Chief Knapp pointed out the danger to the residents and the negative results that could occur if there was a confrontation. He strongly suggested that residents keep their doors locked and their alarms turned on, even when they are at home.

ANIMAL CONTROL AGREEMENT

Mayor McConkey introduced Vicki Schmitz of King County Animal Control. He then invited comments and questions from everyone. Ms. Schmitz said that the County was pleased to be working with the staff of the Town on an on-call basis. Mayor McConkey called for a motion to approve the Agreement and authorizing him to sign it.

MOTION: Approve the Agreement with King County to utilize their animal control services on an on-call basis and authorizing the Mayor to sign it. Moved by Frantz, seconded by Wright. Passed 4-0. MOTION CARRIED

HUNTS POINT ROAD IMPROVEMENT

Mayor McConkey presented the final results of the balloting on the question of the improvement of Hunts Point Road. The decision to improve the Road passed with a 61% affirmative vote. The response to the question of the material to be used in construction of the Road resulted in the selection of concrete by a 55% affirmative vote. The question of building a pathway failed with a 51% negative vote.

Mayor McConkey stated that the closeness of the vote on the pathway created a situation that required further examination and discussion by the Council. Councilmember Wright opened the discussion with an expression of appreciation for those involved in moving the project along. He praised Dan Temkin and his Road Improvement Committee, Mayor McConkey, Town Engineer Willis, Design Consultant John Owen and Town Administrator McKenzie. He reminded everyone present that the project had been around for over twenty years and now seemed on its way to completion.

The meeting was turned over to John Owen for a presentation on the various ways in which a non-invasive pathway could be provided. Mr. Owen made available copies of illustrations of pathways developed using ¾" minus wood chips. He explained that a path using this material could be used for walking or pushing a stroller without getting wet feet. A discussion on the merits of a pathway followed.

Mr. McKenzie introduced the subject of impacts on the construction of the Road caused by the large amount of residential construction that will be going on at the same time. He explained that the resulting congestion was going to make it difficult for residents to access their homes.

Mayor McConkey asked the residents in the audience if they had comments on the road project. Mr. Temkin addressed the landscaping that will accompany the rebuilding of the road. Mr. Wetherald commented that he felt using a Local Improvement District to finance the rehabilitation of the road was inappropriate. It is his feeling that the damage to the road was caused by construction activities and that the residents shouldn't have to pay for it. Mr. Wetherald also called into question the advisability of building the road of concrete. He mentioned that he had a discussion with a resident who is an expert in road construction about the matter. The expert resident felt strongly that an asphalt road would be superior to a concrete one.

The Council directed the Town Engineer and Town Administrator to proceed with the planning and preliminary financing activities and report back at the next Council Meeting.

TREE PROTECTION

Mayor McConkey introduced the subject of tree protection by recapping the discussion on the subject at the April Meeting. He introduced the draft ordinance that is intended to tighten the requirements for the cutting of evergreen trees. He explained that the Planning Commission had reviewed and revised the draft with the help of the Town Arborist. Mr. Loges explained the thinking of the Planning Commission in the preparation of the draft. Mr. Temkin provided further detail concerning the deliberations undertaken by the Planning Commission. Resident Janice Olson described her reaction to the enforcement actions of the Town to protect trees as they attempted to design a home and build it on their lot.

The members of the Council described their impressions and feeling regarding the draft ordinance. This was followed by comments from members of the audience.

Mr. Loges addressed the subject of mitigation for the loss of trees. Mr. Wetherald described his regret at the loss of natural screening between the road and the homes on the water.

Councilmember Frantz noted that most of the urban forest in Hunts Point is located in a wide belt along both sides of Hunts Point Road. Councilmember Wright pondered the idea of establishing a standard for screen vegetation between the road and the houses on the water. Mr. Wetherald remarked that a screen would not provide the depth of forest needed to maintain the sylvan nature of Hunts Point.

Mayor McConkey described the two proposals to conduct a tree inventory received by the Town. Elizabeth G. Walker and OTAK Engineering submitted them. The Walker proposal was for $9800 and the OTAK proposal was for $20,000. After discussion the Council reached a consensus that they did not wish to pursue a tree inventory at this time.

Mayor McConkey asked for reactions to the proposed interim tree ordinance from the Councilmembers. Mayor McConkey explained that this was to be a temporary ordinance to strengthen the present code until the Planning Commission could complete their deliberations on a permanent tree protection code. A discussion of the strengths and weaknesses of the present code followed. Mr. Willis explained the way the present ordinance operated. The Council decided they wished more time to study the issues involved and tabled the motion to the June Council Meeting.

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN (IAVMP)

Mayor McConkey opened the discussion by determining that all members of the Council had received a copy of the draft IAVMP. Councilmember Frantz, who is serving as Chair of the Milfoil Control Committee listed the names of the members of the Committee. In addition to himself the committee members are Jan Brekke, Dana Green, Donna & Dale Madden, Rick Tsang and Morey Wetherald. Mr. Frantz announced that a work session of the committee was scheduled for May 20th at 4:00 P.M. He also announced that there would be a Public Meeting in Town Hall at 7:00 P.M. on the same day to gather comments on the draft IAVMP.

EMERGENCY MANAGEMENT PLAN

Mayor McConkey introduced the final draft of the Emergency Management Plan. Mr. McKenzie stated that the plan was complete and asked the Council to accept the plan.

MOTION: Accept the Emergency Management Plan and authorize final payment on the original agreement. Moved by Wright, seconded by Boettcher. Passed 4-0

MOTION CARRIED

Mr. McKenzie explained that he had requested the preparation of a Neighborhood Plan as part of the Emergency Management Plan. This was not included in the original agreement but was added when it became apparent that Town Staff would not be able to accomplish this work in a timely fashion. The cost of this additional work by the contractor was $1900. Mayor McConkey asked for a motion authorizing the payment of this additional $1900.

MOTION: Authorize payment of the $1900 cost overrun on the Emergency Services Management Plan contract. Moved by Wright, seconded by Oki. Passed 4-0
MOTION CARRIED

CONTRACT AMENDMENT FOR 3858 HUNTS POINT ROAD

Mayor McConkey explained the original agreement on this property was reached to obtain correction of Building and Zoning Code violations that occurred during the original construction. The current owner made these corrections in response to the original agreement. Mr. Doug Thompson, representing the owners, explained the need for this amendment. A discussion of the history of the project followed.
MOTION: Authorize the Mayor to sign the amendment to the agreement for the house at 3858 Hunts Point Road. Moved by Boettcher, seconded by Wright.
Passed 4-0. MOTION CARRIED

PLANNING COMMISSIONER REAPPOINTMENT

Mayor McConkey requested Council confirmation of his appointment of Rick Tsang to an additional six-year term on the Hunts Point Planning Commission.
MOTION: Confirm the appointment of Rick Tsang to and additional term on the Hunts Point Planning Commission. Moved by Oki, seconded by Frantz.
Passed 4-0. MOTION CARRIED

TRANSLAKE PROJECT PUBLIC MEETING OF APRIL 24, 2002

Mayor McConkey described the public meeting held in Medina on April 24th. In attendance were several concerned citizens of the area who were in favor of no change in the present configuration of SR 520 or a lid the full length of the project. The configuration displayed at this meeting showed the results of decisions made by the various committees associated with the project. Under this plan no homes would be taken for the project in Hunts Point.

Mayor McConkey outlined the funding available for SR 520 under the proposed financing plans that have been proposed. There will be at least three funding plans on the ballot in November. Even if the voters approve all of the proposed plans, SR 520 will receive only $1,500,000,000 for a project expected to cost a minimum of $5,000,000,000.

LETTER OF THANKS

Mayor McConkey referenced a letter from the Mayor of the City of Granite Falls thanking the Town of Hunts Point for the donation of a used OkiData Printer.

AUDIT OF ACCOUNTS

Vouchers No. 11854 through 11887 in the amount of $46,672.33 were presented for review, approval and signatures of the Council. Approval granted.

ADJOURNMENT

Mayor McConkey adjourned the Council Meeting at 9:35.M.

Approved

Jack McKenzie, Town Administrator

TOWN OF HUNTS POINT

COUNCIL MEETING

APRIL 1, 2002

CALL TO ORDER

Mayor Fred McConkey called the meeting to order at 7:01 P.M. Councilmembers Jeri Boettcher, Trish Carpenter and Ted Franz were present. Councilmembers Laurie Oki and Jeff Wright were absent. Also present were Town Attorney Michael Kenyon, Town Engineer Joe Willis, Town Planner Mona Green, Lieutenant Roger Skinner of the Medina Police, Town Administrator Jack McKenzie and J.P. Carriveau. Present in the audience were residents Jim Nordstrom, Dan Temkin, Morey Wetherald and Mort Hardwick.

APPROVAL OF MINUTES OF MARCH 4TH

MOTION: Approve the minutes of March 4th as written. Motion by Carpenter, seconded by Boettcher. Passed 3-0. MOTIONCARRIED

POLICE REPORT

Lt. Skinner announced that once again, Hunts Point was quiet in March. He also reported that the Medina Police Department was in the last step of receiving accreditation from the International Association of Chiefs of Police.

HUNTS POINT ROAD IMPROVEMENTS

Mayor McConkey announced the preliminary results of the advisory ballot returns. Seventy-four of a possible ninety-six have been returned. The results for the individual questions were:

#1.	**Should the road be rebuilt?**	**Yes 52 No 31**
#2.	**Which paving should be used?**	**Asphalt 37 Concrete 45**
#3	**Should a path be constructed?**	**Yes 39 No 42**

There are still thirteen ballots left outstanding. A discussion of the efforts required to gather the unreturned ballots ensued. Mr. McKenzie explained that telephone calls have been made to those residents who have not returned their ballots. Councilmembers Boettcher and Carpenter offered to follow-up and contact the non-voters in an effort to maximize the number of returns. Their offer was accepted.

Mr. Wetherald spoke about the damage done to the road by the heavy construction trucks that had become so common in recent years. He explained that he felt it unfair for this damage being done by the contractors and the residents being saddled with the cost of reconstruction since they are not responsible for the damage. Mayor McConkey agreed that the heavy equipment traveling on the road in support of the residential construction has been a major factor in the deterioration of the road.

A very thorough discussion covering the improvements to Hunts Point Road, the proposed method of financing and the design features was carried on between the Mayor, members of the Council and residents in the audience.

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN (IAVMP)

Mayor McConkey explained that the Town's IAVMP had been returned by the Department of Ecology with a request for resubmittal following an outline they had provided. DOE has offered a three-year grant for $75,000 to be used to conduct a comprehensive control program for Eurasian milfoil. Councilmember Frantz described the process for establishing a committee and holding public meetings on the IAVMP. Mr. McKenzie listed the agencies that need to be informed of the Plan and offered the opportunity to comment on it.

It was determined that a six-member panel would best represent the community make-up. A date will be set for a public hearing to solicit comments on the elements of the IAVMP.

ANIMAL CONTROL AGREEMENT

The agreement with King County for animal control was presented in draft form. The agreement in its final form is not available yet. The matter was continued to the May Council Meeting.

A general discussion of animal control in Hunts Points followed.

COMPREHENSIVE PLAN

Town Planner Green described the status of the Legislative bill, which extended the deadline for the completion of an updated Comprehensive Plan for the Town of Hunts Point until 2004. The bill is on the Governor's desk for signature. Ms. Green told the Council that the Planning Commission had directed her to keep the Comprehensive Plan as simple as possible and still comply with the law.

Ms. Green explained in some detail the requirements of the Community Transition Facilities Siting for Sex Offenders law that recently passed. This led to a serious discussion about the possible impacts this issue could have for the Town of Hunts Point. The Council directed Mr. Kenyon to closely monitor the situation and bring the proper action to them prior to the deadline.

The question of impacts from delaying preparation of the Comprehensive Plan was discussed. Mr. McKenzie mentioned that the Town has been awarded a $5,000 grant to be used in preparation of the Comprehensive Plan. Mr. Carriveau explained that a request for extension of the grant could be made if the Council wished it done.

The Council directed Ms. Green to keep the Comprehensive Plan simple and to extend the time for completion closer to the new deadline in 2004. The Council also directed Staff to seek an extension of the grant from the State.

CRITICAL AREAS STUDY

Ms. Green stated that a major area for inclusion in the Comprehensive Plan was delineation and mapping of environmentally critical areas. Councilmember Frantz inquired about the status of the Town's current Critical Areas Ordinance. Ms. Green explained the present ordinance might not be sufficient to meet the new law. Councilmember Boettcher inquired as to the possible changes in wetlands in as short a time frame as seven years. Ms. Green responded that the wetlands might only change as they are impacted by the results of development. Those changes should be reflected in the Comprehensive Plan and Critical Areas Ordinance.

CRITICAL AREAS SURVEY OF THE WETHERILL NATURE PRESERVE

Mayor McConkey introduced the proposal from Shannon & Wilson to survey the critical areas and wetlands in the Wetherill Nature Preserve which will be done in concert with the same work by Yarrow Point. Discussion revolved around the need for such a survey. Ms. Green explained that this survey was needed to support the Comprehensive Plan and also to measure the impacts resulting from reconstruction of SR 520.

ORDINANCE

Ordinance No. 407 repealing Hunts Point Municipal Code Chapter 2.40, entitled "Board of Adjustment". Mr. Kenyon explained that this ordinance resulted from the passage of Ordinance No. 406 that placed all quasi-judicial matters in the hands of the Hearing Examiner. Since that act left the Board of Adjustment with neither duties nor responsibilities this Chapter was no longer needed in the Hunts Point Municipal Code.

Resident Mort Hardwick inquired if this meant that the McAndrews Group would be conducting those functions previously conducted by the Board of Adjustment. Mr. Kenyon explained that the quasi-judicial matters previously heard by the Board of Adjustment are now to be heard by the Hearing Examiner. Mr. Hardwick inquired further about the impact of this change. Mr. Kenyon explained further that, with this change, all quasi-judicial matters that had formerly come before the Board of Adjustment including variances and substantial development permits would be handled by the Hearing Examiner. Mr. Kenyon also explained that, by having a Hearing Examiner, the members of the council would be able to establish a view regarding quasi-judicial matters, as they are free of the appearance of fairness doctrine. Mr. Hardwick then pointed out that it should be impossible for the members of the council to influence the Hearing Examiner if he is a judge and is fair and impartial.

Mr. Hardwick then expressed his recognition of these matters and that they have been assigned to the Hearing Examiner. The members of the Council will not be involved in them except as citizens. Councilmembers Carpenter and Frantz described the steps the Council was going through to make certain that the Town

Code was written in a way to allow the Hearing Examiner to bring in findings reflecting the will of the residents of Hunts Point.

Mr. Hardwick stated that it was his opinion that the Town Council was giving the ruling process to someone outside the community. Councilmember Frantz said that was true. Councilmember Carpenter stated that there was a process whereby citizens could appeal directly to Superior Court if one of the parties to the hearing disagreed with the Hearing Examiner's ruling. Mr. Hardwick commented further that the Town government gave away the community's control over community matters. Mayor McConkey demurred, pointing out that there was a need for consistency in the handling of these quasi-judicial matters and that an impartial hearing examiner, highly experienced in his profession, provided a much better chance of providing rulings that protect the Town from lawsuit than a board of adjustment composed of citizens.

Mr. Hardwick expressed his dismay that someone who was not elected by the residents of Hunts Point would decide these quasi-judicial matters. He also expressed concern that the citizens will not have a say in how the decisions are reached. He stated, "we have no vote on the judge (hearing examiner), you (the council) have given it away". The Councilmembers discussed the process for dealing with the Hearing Examiner's decisions if a citizen is unhappy with them. Mr. Hardwick was not satisfied.

MOTION: Adopt Ordinance No. 407. Moved by Frantz, seconded by Carpenter. Passed 3-0
MOTION CARRIED

RESOLUTIONS

1. Resolution No. 02-200 authorizing the Mayor to execute an intergovernmental agreement with the Washington State Department of Community, Trade and Economic Development to accept a grant of $5,000 for the development of a Comprehensive Plan.
   MOTION: Authorize the Mayor to sign the Agreement. Moved by Boettcher, Seconded by Carpenter. Passed 3-0
   MOTION CARRIED
2. Resolution No. 02-201 authorizing the Mayor to execute a contract with Shannon & Wilson for professional services delineating critical areas in the Wetherill Nature Preserve.
   MOTION: Authorize the Mayor to sign the contract with Shannon & Wilson. Moved by Carpenter, seconded by Boettcher. Passed 3-0.
   MOTION CARRIED

VIOLATIONS OF THE TREE ORDINANCE

Mr. Hardwick strongly expressed his concerns about the loss of trees on Hunts Point. He questioned the commitment of the Council and Staff of the Town to the protection of the sylvan nature of Hunts Point. His concern was heightened by letter from Mrs. Jeanne Marie Lee to the Mayor, Town Council and Planning Commission describing the cutting of a large, old growth fir tree on the property at 3645 Hunts Point Road. Mr. Hardwick's comments generated considerable discussion between the members of the Council and residents in the audience

involving the protection of trees to prevent deforestation of the Town. The Council directed Mr. Kenyon to draft a tree cutting moratorium ordinance. The Council also directed Mr. McKenzie to secure a cost estimate for the development of a tree inventory.

AVAILABILITY OF INFORMATION

Mr. Hardwick expressed his concern that information about actions of the Town Council was unavailable at the Town's website. He specifically mentioned the lack of agendas, minutes and full text of ordinances. Mr. Carriveau explained that with the updates being performed on the website staff had fallen behind in getting information posted. It can be expected that the missing items will be posted within the next two weeks.

CLEAN UP DAY

Mayor McConkey announced that the 82nd Annual Clean Up Day would occur on Sunday, May 19th, 2002. The evening reception will be held at the Michael Koss home 3614 Hunts Point Road.

MEETING WITH U.S. CONGRESS MEMBERS

Councilman Frantz reported on a meeting he attended with U.S. Representatives Jennifer Dunn and Don Young who is Chairman of the Transportation Committee. The gist of the meeting was the lack of Federal funds for local highway projects.

AUDIT OF ACCOUNTS

Vouchers No. 11823 through 11853 in the amount of $55,513.29 were presented for review, approval and signatures of the Council. Approval granted.

ADJOURNMENT

Mayor McConkey adjourned the Council Meeting at 9:53 P.M.

Approved

Jack McKenzie, Town Administrator

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AUDIT OF ACCOUNTS

Vouchers No. 11823 through 11853 in the amount of $55,513.29 were presented for review, approval and signatures of the Council. Approval granted.

ADJOURNMENT

Mayor McConkey adjourned the Council Meeting at 9:53 P.M.

Approved

Jack McKenzie, Town Administrator

TOWN OF HUNTS POINT

SPECIAL COUNCIL MEETING

October 16, 2001

CALL TO ORDER

Mayor Fred McConkey called the meeting to order at 7:00 P.M. Councilmembers Jan Brekke, Trish Carpenter, Ted Frantz and Jeff Wright were present. Councilmember Laurie Oki was excused. Also present were Town Administrator Jack McKenzie and J.P. Carriveau.

INTEGRATED AQUATIC VEGETATION MANAGEMENT PLAN

Mayor McConkey introduced Terence McNabb, President of Aquatechnex and reminded everyone that Aquatechnex is the firm the Town hired in the past to apply aquatic herbicides for control of Eurasian milfoil in Hunts Point waters.

Mr. McNabb provided a concise presentation describing the history of Eurasian milfoil in the United States and the impact everywhere including Lake Washington. He also described the various means used in attempts to control it. This included herbicides, fabric bottom barriers and mowing with an aquatic harvester. None of these efforts has provided a solution to the problem on a long-term basis.

Mr. McNabb explained the lawsuit instigated by an environmental group called "Headwaters" against the Talent Irrigation District in Oregon. A determination by the U.S. 9th District Court resulting from this suit was that aquatic herbicides are pollutants under the Clean Water Act. This finding has thrown milfoil control activities into disarray. Fears of a lawsuit resulting from the 9th District Court decision caused the Town of Hunts Point to cancel aquatic herbicide applications during the summer of 2001.

Mr. McNabb then described the Integrated Aquatic Vegetation Management Plan (IAVMP) he had drafted for the Town of Hunts Point. He stated that such plans are required before aquatic weed control grants applications can be submitted to the State Department of Ecology. He suggested that Hunts Point conduct a two to three year program to establish a condition wherein native aquatic plants can return to the littoral zone around Hunts Point. This will improve water quality for native plants and fish and reduce the long-term cost of milfoil control. He recommended that a grant application for a multi-year program in the amount of $75,000 be submitted. Discussion among the Councilmembers and residents in the audience about the attitudes about milfoil control by Medina and Yarrow Point ensued.

MOTION: Adopt the IAVMP prepared by Aquatechnex and authorize the Town Administrator to work with Aquatechnex to prepare and submit a grant application to the Department of Ecology to fund the implementation of the IAVMP. Moved by Brekke, seconded by Wright. Passed 4-0 MOTION CARRIED

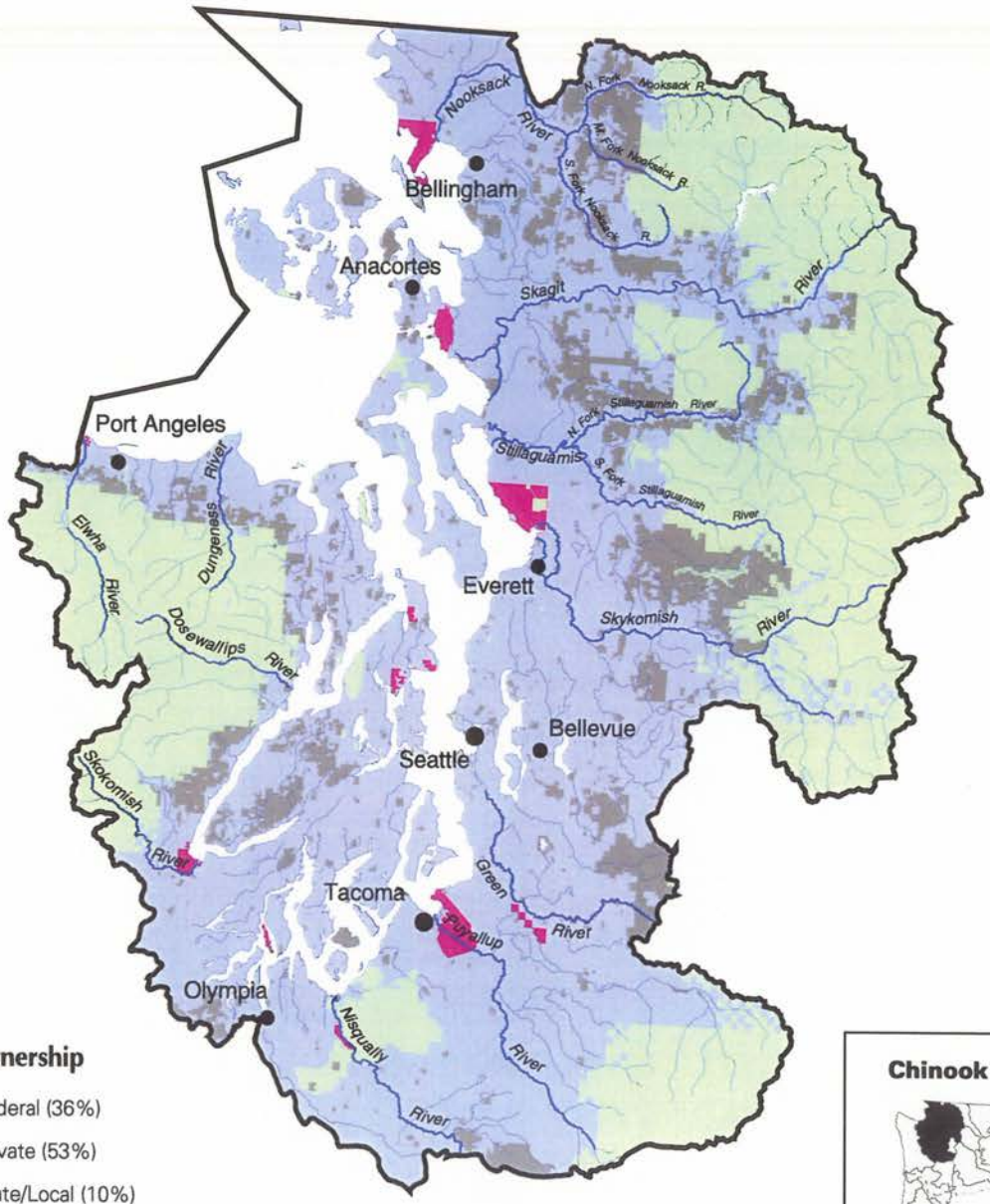
ADJOURNMENT:

Mayor McConkey adjourned the Special Town Council Meeting at 8:04 P.M.

APPROVED _____, Mayor

Jack V. McKenzie, Town Administrator

PUGET SOUND
CHINOOK SALMON ESU



Land Ownership

- Federal (36%)
- Private (53%)
- State/Local (10%)
- Tribal (1%)

Note: Map is for general reference only.

United States Department of Commerce
National Oceanic & Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
HABITAT CONSERVATION DIVISION
525 N.E. Oregon St., Suite 410
Portland , OR 97232
Tel (503) 231-2223

Scale:

10 0 10 20 30 Miles

10 0 10 20 30 Kilometers

MAP DATE: 2/11/99

CREATED BY: D.H.
HCDGIS\RGN\WS\STONE\CHIN

Chinook Salmon ESUs