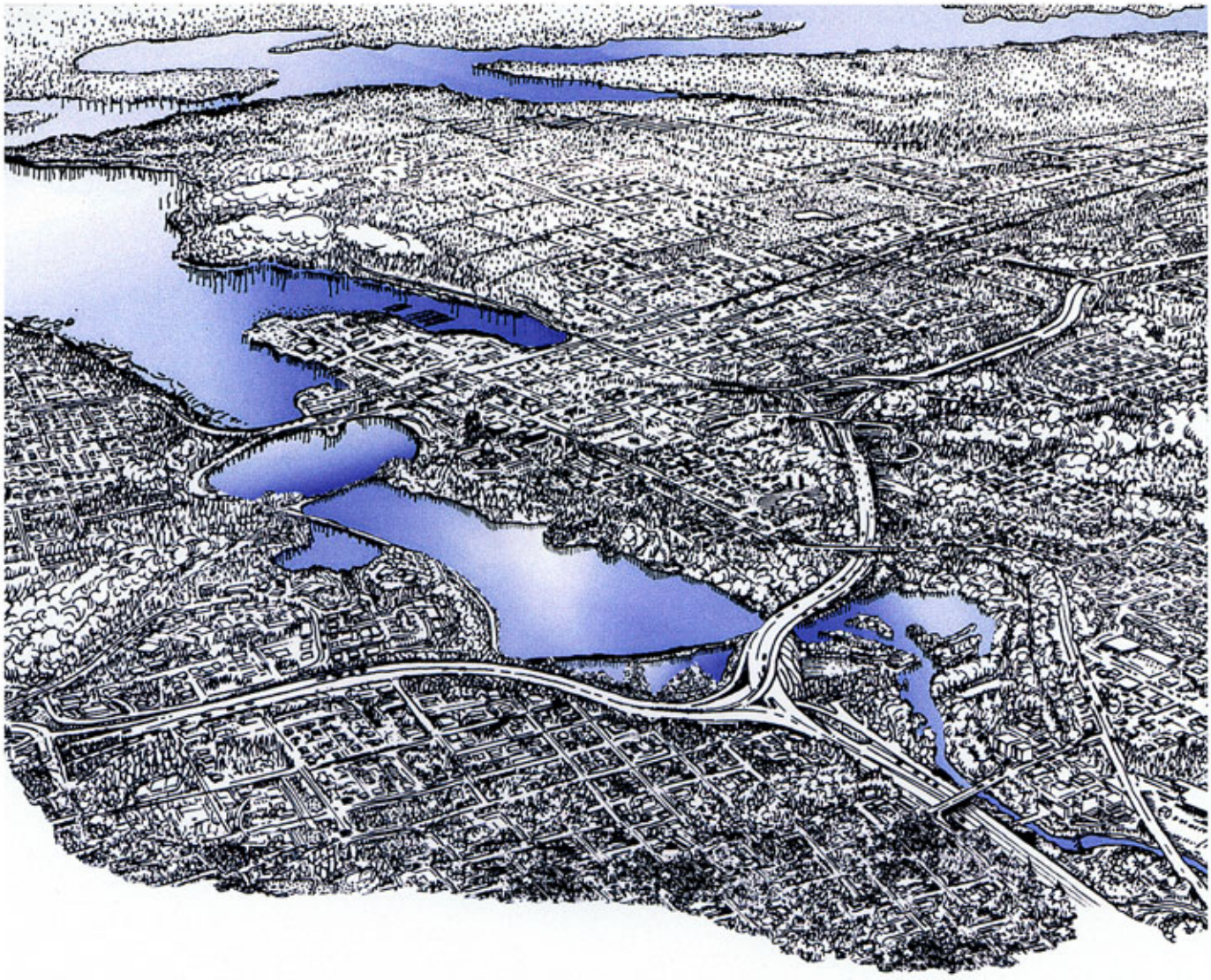
CAPITOL LAKE



A Vision for the Next Ten Years
2003 - 2013

Washington State Department of General Administration

October 2002

CAPITOL LAKE ADAPTIVE MANAGEMENT PLAN

A Vision for the Next Ten Years
2003 - 2013

Recommended for Adoption this 3rd day of October 2002

Capitol Lake Adaptive Management Committee

with representatives from:

Washington State Department of General Administration
Washington State Department of Ecology
Washington State Department of Fish and Wildlife
Washington State Department of Natural Resources
Squaxin Island Tribe
City of Olympia
City of Tumwater
Thurston County
Port of Olympia

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Washington State Department of General Administration

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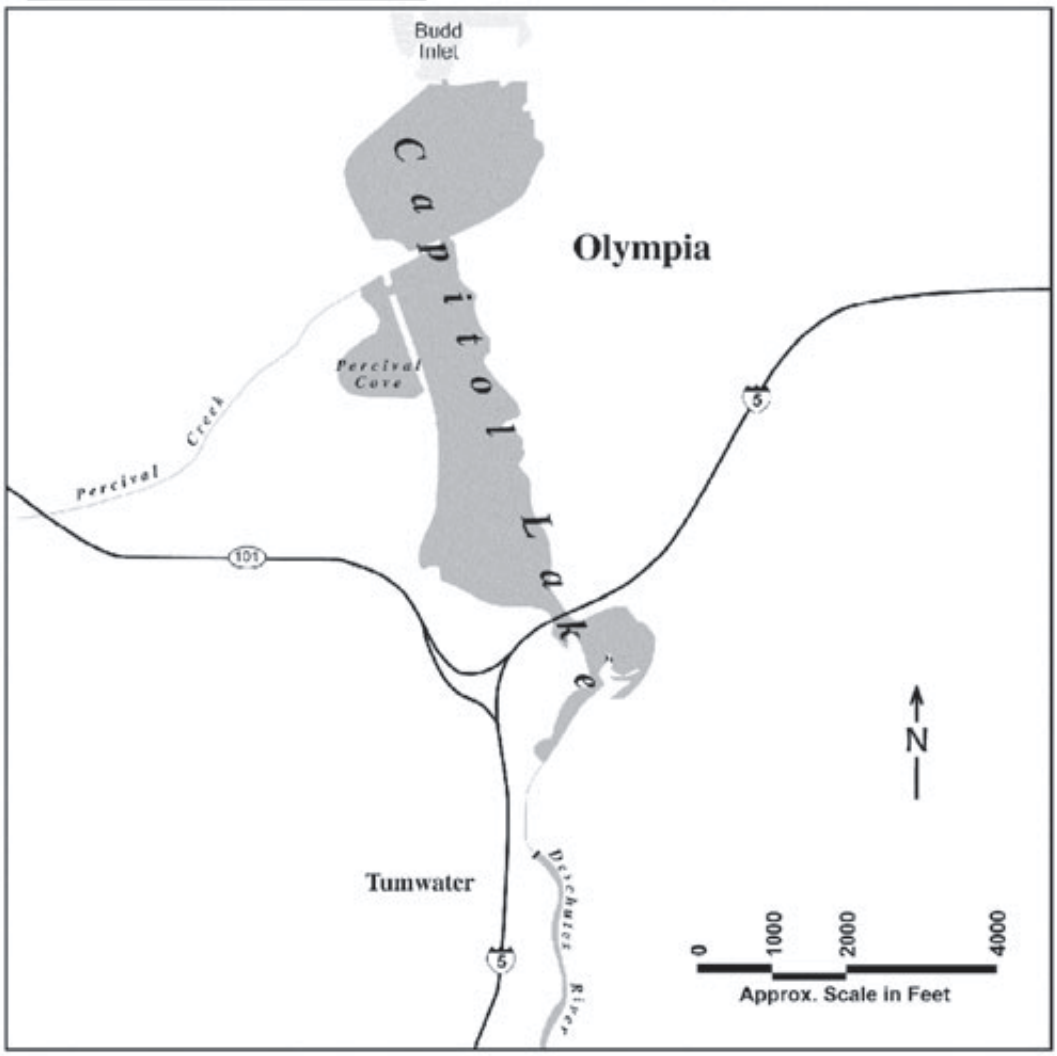
Capitol Lake Vicinity Maps



B146 97034-50 Capitol Lake EIS (8/19/93) CDF

BASE SOURCE: USGS MAP TUMWATER, WA, 1994

VISION STATEMENT

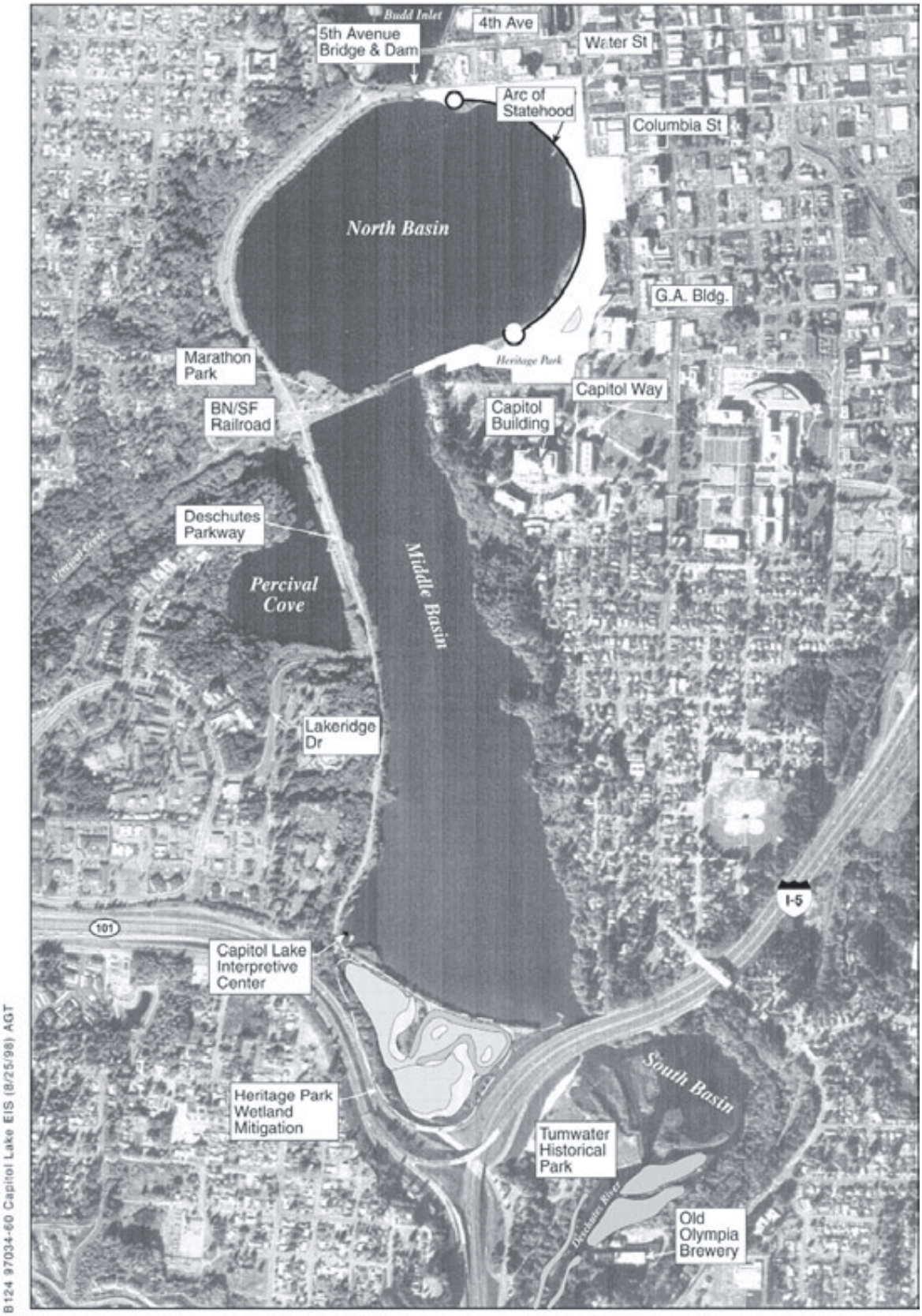
Adaptively manage Capitol Lake in a collaborative way to support a variety of public uses and an optimum aquatic environment within an urban setting.

Over the past 50 years Capitol Lake has been an integral part of the Tumwater, Olympia and State Capitol Campus communities. It has provided a venue for a number of recreational opportunities including swimming, boating, fishing and the like. Many Thurston County residents grew up with fond memories of the lake. But ever so gradually the lake has been changing.

In the next 10 years, people will see a number of changes around Capitol Lake. The state will continue to expand the Capitol Campus to the shores of the lake through the completion of Heritage Park. Repairs will be made to Deschutes Parkway, Marathon Park and the Interpretive Site. Essential infrastructure such as the LOTT *Southern Connection* and the 4th Avenue bridge will be complete. Adding a finishing touch will be street frontages along 5th Avenue, Water Street and 7th Avenue. The City of Tumwater also has long-term plans to anchor the Southern Basin of the lake by restoring the historic Brewhouse.

Even with all this human activity, sedimentation from the Deschutes River and Percival Creek will alter the character of the lake over the next decade. It is likely that there will be no visual changes to the lake adjacent to Heritage Park, but there may be changes in the Middle Basin between I-5 and the BNSF railroad trestle at Marathon Park where most of the sediment is deposited. In the next 10 years islands may begin to form similar to those near Tumwater Historical Park. In the South Basin, between I-5 and Tumwater Falls, vegetation will continue to cover the expanding islands and there will be less open water. Percival Cove may become cut off from the rest of the lake with Percival Creek flowing directly into the Middle Basin. The most dramatic change to the lake may occur if efforts to control recently discovered infestation of Eurasian milfoil are not successful.

The Capitol Lake Adaptive Management Plan (CLAMP) focuses on the points of common ground among all of the parties to this plan. Over the life of this document, new data will be developed and parties may come to a completely new understanding of what needs to be done to adequately manage the lake. However, given our current knowledge and level of financial resources, General Administration's (GA) role will continue to address the realities of managing a slowly disappearing freshwater lake.



Capitol Lake, 2002

Creation of Capitol Lake

The creation of Capitol Lake began in 1855 when the territorial legislature accepted an offer of 12 acres of land by Olympia's founder, Edmund Sylvester, for the site of the capitol. This land was located on a bluff bordered by tidelands. In 1911, the State Capitol Commission conducted a design competition for Washington's capitol building and selected the Wilder and White plan for a grouping of buildings on the bluff overlooking the city and Puget Sound. (See the figure below.)

On March 18, 1947, the Governor of the State of Washington approved House Bill 236 [RCW 79.24.160] authorizing the issuance of bonds for the "Deschutes Basin Project." It also detailed the purposes for the funding, defined the powers of the State Capitol Committee, and declared an emergency to get the project started expeditiously.

In June 1948, an application was made to the U.S. Army Corps of Engineers for approval to construct a 230,000 cubic yard earth dam at the north end of the basin (5th Avenue) with an 80 foot concrete spillway structure. Along with the dam, the request was made to construct an earth fill of 186,500 cubic yards along the westerly shore for Deschutes Parkway and an additional earth fill of 375,000 cubic yards at the northeast end of the basin, where Heritage Park is today. This request was subsequently approved by the Corps in February 1949, and construction of Capitol Lake was completed on October 10, 1951.

Wilder and White -- Washington Capitol Group c. 1911. Courtesy of the Washington State Capital Museum

Capitol Lake Adaptive Management Plan

OBJECTIVES: **Page**

1. Adaptively manage the Capitol Lake basin.

Adaptive Management

The concept of adaptive management is to treat management practices as experiments, learn from them and use them as a basis for changes and adjustments. Adaptive management is a flexible approach where best judgement is utilized to implement action, test hypotheses, evaluate results and adjust subsequent actions accordingly. Under adaptive management, learning becomes ongoing, interactive and self-correcting.

Adaptive Management:

- Treats management practices as experiments from which learning occurs,
- Mimics the scientific method,
- Highlights uncertainties,
- Specifies hypotheses or questions,
- Structures actions to test the hypotheses,
- Evaluates results, and
- Adjusts subsequent actions accordingly.

For the purpose of this document, the "Capitol Lake basin" shall mean all the sub-basins being: the South Basin, the Middle Basin, Percival Cove and the North Basin as shown on page 5.

Current view from the Capitol Lake Interepretive Center. Courtesy of Entranco, 1998.

CLAMP Steering Committee Role

The purpose of the Capitol Lake Adaptive Management Plan Steering Committee is to advise the Department of General Administration regarding issues related to Capitol Lake, the Capitol Lake Basin and other factors that could impact Capitol Lake or the Capitol Lake Basin. The director of the Department of General Administration is ultimately responsible for the management of Capitol Lake, and the adoption or amendment of this plan. General Administration may also seek the advice of the Capitol Campus Design Advisory Committee as is necessary. The director reports to the State Capitol Committee, which has oversite authority for the entire Capitol Campus.

The Capitol Lake Adaptive Management Plan (CLAMP) Steering Committee includes the following members:

WA Department of General Administration
WA Department of Fish and Wildlife
Squaxin Island Tribe
City of Olympia
Port of Olympia
WA Department of Ecology
WA Department of Natural Resources
City of Tumwater
Thurston County

The CLAMP Steering Committee will meet the 1st Thursday in March, June, September, and December at 8:00 a.m. in the Lower Conference Room of the 1058 Building, 1058 Capitol Way, in Olympia, Washington, unless other arrangements are made. Public Forums will be held at the General Administration Auditorium or another appropriate location and will be scheduled as needed. Other special meetings will be scheduled as needed. All meetings are open to the public and anyone with an interest in the process is invited to attend. A 5 minute time period is reserved for public comment at the beginning of each CLAMP meeting.

The CLAMP Steering Committee will choose a Chair and a Vice-Chair to conduct the meetings. The Chair will conduct the committee meetings and public forums. The Vice-Chair will serve in the Chair's absence. The staff will work with the committee Chair and Vice-Chair to establish the agenda for committee meetings and public forums. The Chair, or his/her appointee, will represent the CLAMP Steering Committee at other meetings or functions as directed by the Steering Committee.

Staff to the Steering Committee will be provided by the Department of General Administration Office of Capital Planning and Management. Staff will be responsible for meeting organization, presentations, minutes, mailings, map and text drafting, and other duties as directed by the committee.

Technical personnel representing the jurisdictions of the Steering Committee will meet as required to provide input to the Steering Committee. Each Steering Committee member will provide a list of persons who could provide technical assistance to this planning process on a variety of CLAMP issues. Other technical assistance may be requested of the Steering Committee members on a case by case basis.

All participants in this planning process bring with them the legitimate purpose and goals of their organizations. All parties recognize the legitimacy of the goals of others and assume that their own goals will also be respected. These discussions will try as much as possible to maximize attainment of all the goals of all the parties.

The Capitol Lake Adaptive Management Plan Steering Committee does not function on a "majority rule" principle. The goal is for the committee to achieve consensus on major issues. However, if consensus cannot be reached, majority, minority and even individual written reports will be accepted by the Department of General Administration.

All participants accept the responsibility to keep their governing authorities informed of the progress of discussions. A commitment is made to support and implement the Plan as adopted herein.

CLAMP Steering Committee - Jurisdictions and Representatives

WA Dept of General Administration	**Grant Fredricks**, Deputy Director, chair
City of Tumwater	**Chris Parsons**, Councilmember, vice chair
WA Dept of Fish & Wildlife	**Sue Patnude,** Regional Director Steve Keller, Regional Director *(past)* Sara LaBorde, Regional Director *(past)* Mike Kuttel, Regional Director *(past)*
WA Dept of Natural Resources	**Gary Cooper**, Aquatic Asst. Region Manager Vicki Christiansen, Regional Manager *(past)* Howard Thronson, Regional Manager *(past)*
WA Dept of Ecology	**Sue Mauermann**, Regional Director
Squaxin Island Tribe	**Jeff Dickison**, Habitat Biologist
City of Olympia	**Stan Biles**, Mayor T. J. Johnson, Councilmember *(past)* Margaret McPhee, Councilmember *(past)* Emmett Dobey, Manager P^2D^2 *(past)*
Thurston County	**Dick Blinn**, Director of Water and Waste Management Department
Port of Olympia	**Andrea Fontenot**, Sr. Land Use Planner

How Can the Plan be Amended?

The CLAMP will be updated or amended every biennium or whenever deemed appropriate by the CLAMP Steering Committee. A basic principle of adaptive management is frequent communication about new findings and adjusting management actions accordingly. Beginning in 2003 there will be an annual CLAMP Public Meeting. This will be GA's primary opportunity to tell interested parties what has been happening and give them the BIG picture. A CLAMP Report Card will also be distributed, which will evaluate the past year's performance toward the CLAMP objectives. This communication strategy is described in Objective #14 on page 48, and the Report Card can be found on pages 50-53.

The State is required to prepare a 10 year capital plan, as well as budget for the next two-year biennium. Budgeting for the next 10 years is being based on our current efforts to manage the lake as a freshwater impoundment. While this objective has no defined time period, it would be the desire of General Administration to continue managing the lake as a fresh water body until 2013, unless lessons learned from adaptive management or other funding opportunities indicate a different time frame.

Activities in Years 2003-2005

Activities in this time period will be a continuation of the CLAMP Steering Committee process.

CLAMP Budget 2003-2005

The costs to support the CLAMP Steering Committee process are described in Objective #14. Budgeting for the next 10 years is based on the current efforts to manage the lake as a freshwater impoundment.

Activities in Years 2005-2013

The activities will be the same as in the 2003-2005 biennium.

CLAMP Budget 2005-2013

Budgeting for the next 10 years is based on the current efforts to manage the lake as a freshwater impoundment.

2. Complete an estuary feasibility study to determine a long-range management decision.

Studying the Estuary Alternative

Capitol Lake was created by damming a portion of southern Budd Inlet. The exploration of returning the lake to an estuary began with the *Environmental Impact Statement (EIS) for the Capitol Lake Adaptive Management Plan* (1999). The EIS evaluated one no action, two estuary, and three fresh water alternatives. It also generated some surprising new information. For example, it was discovered that the 100 year flood elevation for a lake was several feet higher than without the dam. This information was further refined by a *CLAMP Flood Analysis Study* (2000) which found the difference in flood elevations between a lake and estuary to be approximately three feet. This data is now being further refined and mapped in Objective 5.

Other aspects of an estuary alternative were explored by two other CLAMP funded studies. The first was a *CLAMP Hydraulic Scour Analysis* (2000) which determined that it may be possible to armor the road crossings in the basin to accommodate an estuary. However, the report also indicated that Deschutes Parkway and to a lesser degree some of the shoreline parks, might require further geotechnical study and possibly retrofit to insure structural stability in an estuarine environment. The second report, referred to as the *CLAMP Budd Inlet Water Quality Modeling Report* (2000), indicated that "a substantial water quality improvement (an increase of 1-5mg/l dissolved oxygen) is realized in south and central Budd Inlet as a result of returning Capitol Lake to a tidal estuary … (with improvements) observed throughout the Budd Inlet, but particularly in the most water quality impaired areas in East Bay and West Bay".

Estuary Alternative - at early stage of transition - at low tide. Courtesy of Entranco, 1998.

Activities in Years 2003-2005

The CLAMP Steering Committee first investigated the costs, benefits and trade-offs of an estuary alternative for Capitol Lake in 1997. During the 2003-2005 biennium CLAMP activities will include the collection of information to support the need for dedicated resources to support this objective.

CLAMP Budget 2003-2005

The costs to prepare a scope of work for a comprehensive analysis of Capitol Lake as an estuary alternative will be $40,000.

Activities in Years 2005-2013

During the 2005–2007 biennium CLAMP will work with others to gain new knowledge regarding such a transition. One possible opportunity for a cooperative project could be with the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) commonly referred to as the "Puget Sound Nearshore Project". This is a collaborative project between the U.S. Army Corps of Engineers, other federal agencies, and the state of Washington.

Potential activities during this biennium could include working with the Corps and its partners to define the scope of work for this comprehensive analysis of transforming Capitol Lake to an estuary. A key item for this scope of work will be to address the possible impacts to navigation & boating interests in the southern Budd Inlet. This analysis will also need to identify the financial costs to local and state infrastructure of such a restoration effort, including the identification of feasible local, state and federal funding sources.

CLAMP Budget 2005-2013

If a joint study with the Puget Sound Nearshore Project is feasible, it may be possible to share the cost of the comprehensive analysis with the Army Corps. In such projects 50% of the cost would be covered by the Corps with the remaining amount being the required local match. It may be possible that some of the already completed CLAMP studies can be used as local match. It may also be possible that the required local match for this study may come from a variety of state funding sources (e.g. GA, WDFW, WDNR, WDOE, etc.).

3. Restore earthquake damaged state infrastructure within the basin. *[For additional information regarding this objective, refer to pages 3-1 to 3-10 and 6-1 to 6-4 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]*

BACKGROUND

Deschutes Parkway

Deschutes Parkway is a 1.6 mile long major connector road between Interstate 5, Tumwater, downtown Olympia and Olympia's west side. It also offers a popular walking and jogging path, and provides access to Marathon Park, the Capitol Lake Interpretive Center and 324 parking stalls. Over 7,000 vehicles traveled the parkway during the work week prior to the February 28, 2001 earthquake, and the northern half of the road will remain closed until repaired.

Replace Existing Option

After the 2001 Nisqually earthquake, soil shifted from beneath the roadway in several areas and moved toward Capitol Lake. The earthquake's motion caused various layers of soil to mix together, making some parts of the road buckle, separate and drop. In some areas, sidewalks dropped two to three feet and sections of the road cracked and fell. Unstable soil under parts of the roadbed has slipped away. In other areas, the sidewalk and roadbed stayed in place and surrounding earth did not. The material under the roadway has dropped away in some places, leaving large voids beneath the concrete and asphalt.

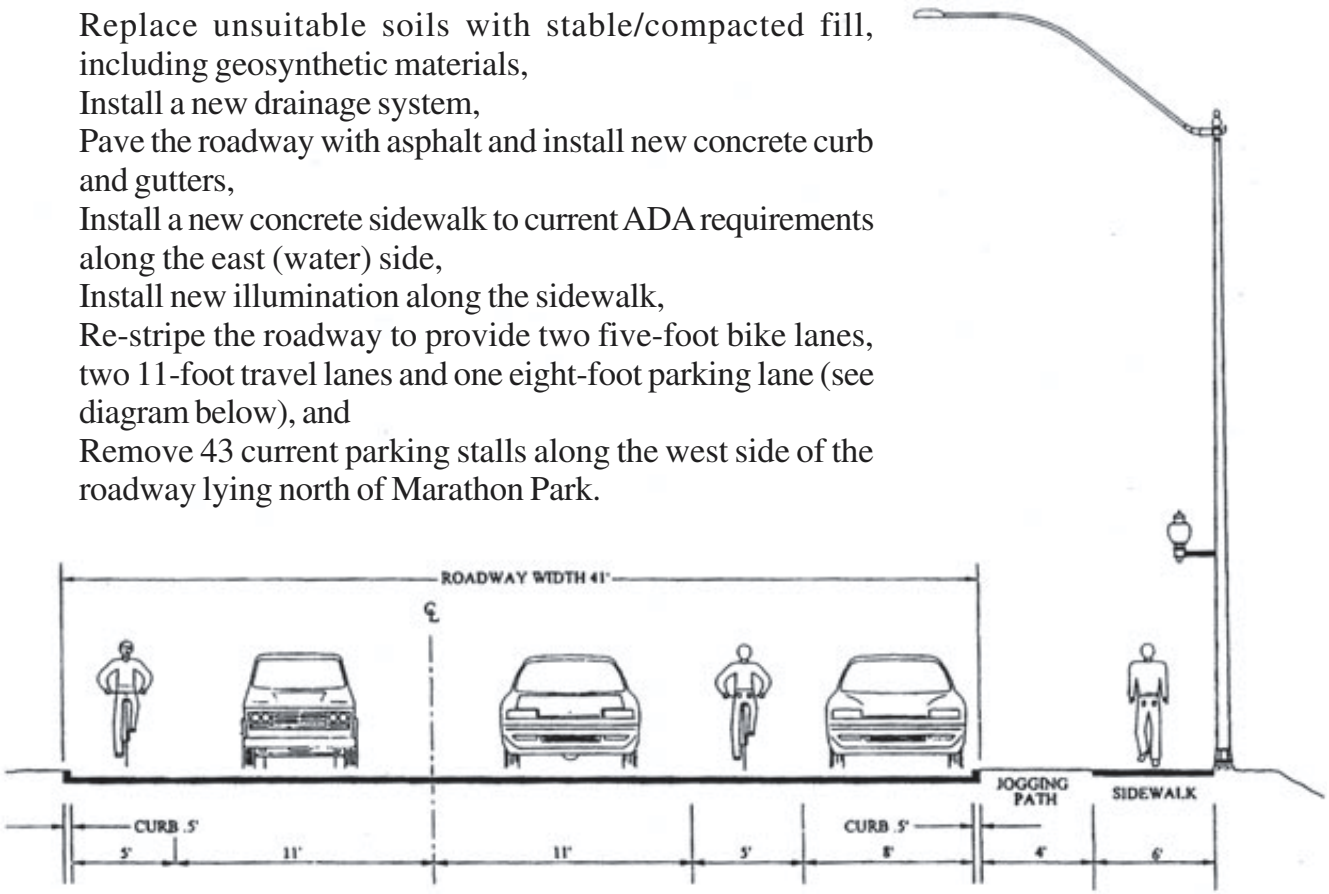
The Department of General Administration contracted with the Washington State Department of Transportation (WSDOT) to study the effects of the earthquake and determine long-term repair solutions for Deschutes Parkway. GA has identified a preferred approach to restore Deschutes Parkway based upon various factors, including cost, delay, impact upon LOTT sewer construction, and input from stakeholder groups and the public.

Damaged road bed and sidewalk on Deschutes Parkway. Courtesy of Thurston Regional Planning Council, 2001.

Sinkhole caused by damaged culvert on Deschutes Parkway. Courtesy of Thurston Regional Planning Council, 2001.

The preferred approach would return Deschutes Parkway to its preexisting condition with some modifications. This work will:

- Replace unsuitable soils with stable/compacted fill, including geosynthetic materials,
- Install a new drainage system,
- Pave the roadway with asphalt and install new concrete curb and gutters,
- Install a new concrete sidewalk to current ADA requirements along the east (water) side,
- Install new illumination along the sidewalk,
- Re-stripe the roadway to provide two five-foot bike lanes, two 11-foot travel lanes and one eight-foot parking lane (see diagram below), and
- Remove 43 current parking stalls along the west side of the roadway lying north of Marathon Park.



Deschutes Parkway - Replacement Cross Section

Prior to the Nisqually earthquake there were approximately 380 parking stalls on Deschutes Parkway - 64 on the west side and 316 on the east side - with 249 of these located between Lakeridge Drive and 5th Avenue. Once the Parkway is rebuilt there will be 341 parking spaces - of which 196 will be located between Lakeridge Drive and 5th Avenue.

It is estimated that the repair will be completed by the spring of 2003. This approach will enhance the pre-earthquake road and enable better performance in an earthquake similar to the February 28, 2001 Nisqually quake. However, the road will not be earthquake resistant and will not meet the City of Olympia's road standards for surface amenities, such as parking lanes and sidewalks.

Rebuilding the existing road is preferred due to cost and time constraints. The earthquake resistant improvements would cost an additional $9 to $11 million, and repairing the road to meet current city standards would cost an additional $3 million, plus the acquisition cost of more land to widen the road. It is thought that it will be very difficult to receive state funding for these additional improvements, and there is uncertainty as to whether additional federal funding is available. Comments from public meetings indicate that the community wants the entire road to be repaired and reopened as soon as possible.

Deschutes Parkway Reconstruction Schedule

August 2001 – September 2001	-- Schematic Design.
October 2001 – December 2001	-- Environmental review and design development
January 2002 – February 2002	-- Permit application, determine mitigation, and design continuation
March - May 2002	-- Finalize permits and design
Mid-May 2002	-- Advertise & bid project for construction
Mid-June 2002	-- Bid opening
July 1, 2002	-- Contractor mobilizes (road closes for construction)
October 31, 2002	-- Road opens
May 1, 2003	-- Project complete with landscaping

The most recent estimated cost of the preferred approach is $6,280,000, which will be paid for by Federal Highway emergency funds (FHWA) and $820,000 from State earthquake repair funds.

Activities in Years 2003 - 2005:

None

CLAMP Budget 2003 - 2005:

None

Activities in Years 2005 - 2013:

No specific activities are planned beyond rebuilding the parkway.

CLAMP Budget 2005 - 2013:

None

ADDITIONAL BACKGROUND

Marathon Park

Marathon Park was built in 1969. It offers approximately two acres of turf, restroom facilities, picnic tables, 55 parking stalls, a stretching station for joggers, and a dock in the North Basin of Capitol Lake. The Nisqually earthquake caused subsidence in the park, cracks in the parking lot surface and severed utility lines to the restroom. As a result of the damage the entire park will be reconstructed.

Like Deschutes Parkway, Marathon Park was constructed on fill material, which rested over various layers of soil. During the earthquake these soil layers were mixed, and pressurized water from below was forced to the surface, creating sand boils all over the park. Engineers have monitored the ground activity in Marathon Park and the area seems to have stabilized. A trail through the park is open to pedestrians, but the majority of the park will remain closed until reconstruction is complete - estimated to be December 2003.

Capitol Lake Interpretive Center

The Capitol Lake Interpretive Center was also severely damaged by the earthquake. The Interpretive Center consists of restrooms, a walking trail with wooden footbridges and a fishing dock. The walking trail through the wetlands crumbled and dropped up to 12 feet in some areas. The wooden footbridges sustained minor damage. All utilities to the restroom were severed. Like Marathon Park, it seems to have settled and no longer appears to be shifting.

Restroom facilities at Marathon Park were severely damaged. Courtesy of Thurston Regional Planning Council, 2001.

Earthquake damage to the trail at the Interpretive Center. Courtesy of Thurston Regional Planning Council, 2001.

Activities in Years 2003 - 2005:

GA has worked with the Federal Emergency Management Agency (FEMA) to establish an estimate for the repair cost to both Marathon Park and the Interpretative Center. Seventy-five percent (75%) of the funding for reconstruction of Marathon Park and the Interpretive Center will be provided by FEMA, with the remaining 25% from State earthquake repair funds. It is likely that the repairs to Marathon Park and the Capitol Lake Interpretive Center will be initiated and completed in this time frame.

CLAMP Budget 2003 - 2005:

The estimated reconstruction cost for Marathon Park is $584,000. The estimated reconstruction cost for the Capitol Lake Interpretive Center is $363,000. Costs for both will be shared by FEMA and the State on a 75/25 basis. The reconstruction of Marathon Park and the Capitol Lake Interpretive Center is anticipated by December 2003.

Activities in Years 2005 - 2013:

No specific activities are planned at this time.

CLAMP Budget 2005 - 2013:

None.

LOTT Southern Connection

To reconstruct Deschutes Parkway, GA will also be required to coordinate with the LOTT Wastewater Alliance regarding the installation of the *Southern Connection* sewer interceptor. This facility will be located within the right-of-way along Deschutes Parkway from Tumwater Falls to LOTT's Capitol Lake Pump Station, located north and west of Marathon Park.

The February 28, 2001 earthquake delayed the placement of the LOTT sewer transmission line in Deschutes Parkway. The current wastewater pipe is at its maximum capacity, and enabling LOTT to proceed with the installation of the sewer line is critical to the sewage management needs of the community. LOTT anticipates completion of the *Southern Connection* in early 2003. LOTT has negotiated easements with GA that ensure that the pipelines will be done in cooperation with the Deschutes Parkway reconstruction and will remain where they are placed - even if the Deschutes Parkway should eventually be relocated.

The LOTT Wastewater Alliance will incorporate many improvements to Heritage Park during the placement of their utility lines in the park. These improvements include fire hydrants, fencing, an asphalt access road, and a new foot bridge (see below) that will connect Heritage Park to Marathon Park. The total cost of the Capitol Lake Pump Station is approximately $3.3 million. The cost of the *Southern Connection* in both Olympia and Tumwater is estimated at $9.6 million.

Proposed new footbridge between Heritage and Marathon parks.
Photo courtesy LOTT Wastewater Alliance, 2001.

4. Complete the development of Heritage Park.

[For additional information regarding this objective, refer to pages 2-1 to 2-5 and 6-4 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

This ongoing activity would complete the vision of the 1911 Washington State Capitol Campus Plan by architects Wilder and White. Heritage Park is part of the North Capitol Campus Sub-Area Plan. A key element of the campus plan is that the North Basin of the lake serves as a reflection pool for the Capitol Building.

The Heritage Park Master Plan calls for several different phases. Phase III was completed in June 2001. This particular work included the placement of capstones on the Arc of Statehood shoreline wall and construction of a walkway adjacent to the Arc. Benches, drinking fountains, lighting, and other pedestrian amenities have been incorporated into this promenade. Two rows of trees parallel the walkway.

The Heritage Park Master Plan was adopted in 1992 but was designed to be flexible and adjust to emerging issues. For example, the original Master Plan did not incorporate the following elements:

- A *Millennium Carillon* - a bell tower proposed to be located near the Western Washington Inlet and the Arc of Statehood. (This will be privately funded.)
- The *Law Enforcement Memorial* – located at the top of the slope overlooking Heritage Park, adjacent to the Temple of Justice. (Construction is anticipated in 2003 and will be privately funded.)
- A representation of the 1859 *Washington Territorial Capitol* at the site of the old train depot, currently used by Thurston County Economic Development Council. (Construction is anticipated in 2003-2004 and will be privately funded.)
- The bronze plaques for each county in the state mounted on the sandstone monuments along the Arc of Statehood. (This will be privately funded.)

The City of Olympia has also participated in the Heritage Park plan by finalizing the Heritage Park fountain block. This will include completing acquisition of the private parcels adjacent to the fountain and fronting on Water Street between 4th and 5th Avenues. The City has also performed a variety of maintenance work on the state-owned Heritage Park playground and restroom facility. In addition, the City is working with GA to complete Phase IV of the park project.

Heritage Park will be one of the first users of reclaimed water for irrigation purposes once the LOTT wastewater plant is upgraded to make this available. The reclaimed water is distinguished by its "purple pipe" and requires a completely separate system from the drinking water lines.

Phase IV: 2001 - 2003 The widening of Water Street, 5th Avenue and 7th Avenue to accommodate additional parking, bike lanes, and utilities. The hillside between the Temple of Justice and the lake will be stabilized. The cost of Phase IV is estimated at $4 million dollars

CLAMP Activities and Budget in the Years 2003 - 2005:

Phase V: 2003 - 2005 Complete Heritage Park to include site leveling, landscaping, the installation of an irrigation system, new restroom complex and amphitheater. The cost of Phase V is estimated at $5.55 million.

Heritage Park and Olympia Fountain Block completion ca. 1997. Courtesy of The Portico Group.

5. Expand and enhance public use of State owned lands and adjacent public spaces within the Capitol Lake region.

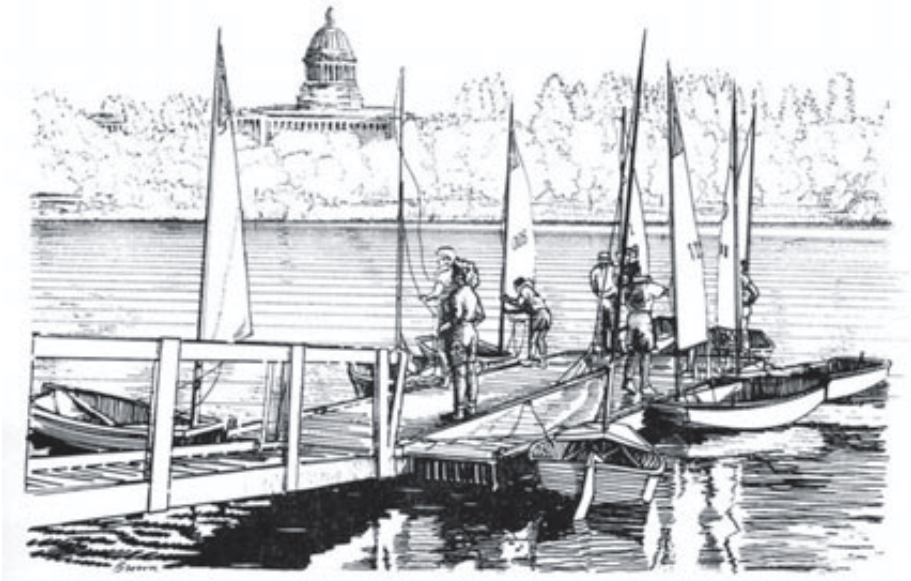
[For additional information regarding this objective, refer to pages 6-1 to 6-11 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

During 2000, the Department of General Administration solicited the community's assistance to "*Complete The Vision*." This research explored the desired human uses and activities on state lands within the Capitol Lake Basin. A twenty (20)-person stakeholder committee was formed and several community workshops were held to secure public input. From these efforts the *Use Plan For The Capitol Lake Basin* was prepared. This document provides guidance on preferred uses and activities for various areas of the basin including Heritage Park, Deschutes Parkway, Marathon Park, and the Capitol Lake Interpretive Center.

The plan identified the need for a variety of water recreation opportunities, bicycle and pedestrian pathways, picnic areas, and other recreation opportunities. The development of a swim area in the lake was a frequently mentioned topic. In the mid-1960s, a designated swim area was developed in the lake. However, water quality and clarity issues led to the closure of the area in 1986. Construction work on Heritage Park filled in the former swimming beach, which is now part of the Arc of Statehood.

In February 2002, GA reactivated the Stakeholder Committee with the goal of developing a vision for what the lake would look like 10, 20 and 30 years into the future. The Stakeholder Committee met several times and endorsed a *Public Use Vision Proposal.* This suggested that the management of Capitol Lake and it's surrounding public lands was actually like managing a wildlife refuge within an urban area, and required a new stewardship ethic. This proposal incorporated the creation of islands, over-the-water boardwalks, wildlife area, viewing platforms, inter-connected trails, interpretive areas, dam improvements and other public use elements. This proposal was presented to the CLAMP Steering Committee but was not adopted by them.



Water recreation is a community interest on Capitol Lake.

All of the lands in the Capitol Lake region were once home to a thriving Native American population. Beneath the soils and shorelines of today's State Capitol Campus and Capitol Lake is the environment known to the Squaxin Island Tribal people. Embedded in the earth are artifacts of their existence. All uses of this land must be mindful of this cultural heritage.

Capitol Lake Region - Downtown Olympia

Not unlike 50 years ago, the completion of Heritage Park, the repairs of Deschutes Parkway, and the renovation of other Capitol Lake public spaces will draw the community's attention to focus onto Capitol Lake. These public investments will likely become the catalyst for redevelopment of other areas adjacent to the lake.

Future view along rebuilt 4th Avenue Bridge ("Gateway Corridor").

The two significant local government projects within the Olympia Downtown are the "Gateway Corridor" and the LOTT Wastewater Alliance sanitary sewer improvements. (See LOTT discussion on page 16.) The Gateway Corridor, commonly referred to as the 4th Avenue Bridge replacement, includes more than just replacing the bridge. The streetscape along 4th Avenue and Olympic Way will be widened and made more pedestrian friendly. Roundabouts and landscape medians will add visual amenities while serving an important traffic safety function.

Mitigation for the bridge will be provided by enhancing the northern shore of the Port Lagoon in lower Budd Inlet. Olympia's streetscape amenities along 4th Avenue will dovetail with the State's upgrade to 5th Avenue, Water Street and 7th Avenue. The completion of the Heritage Park fountain block will help finish off the amenities adjacent to Heritage Park. The completion to the Heritage Park fountain block is currently not in the City of Olympia Capital Facilities Plan.

The reconstruction of Deschutes Parkway and the widening of 5th Avenue will create a pedestrian bottleneck at the Capitol Lake dam. The four foot sidewalk is less than what is required for a major collector. It is likely that increased activity adjacent to the lake will justify the need for a pedestrian bypass of the dam.

Since the mid-1990's Olympia has explored ways of directing future growth to its downtown core. Increasing residential densities downtown is a key means of addressing the Growth Management Act goal to reduce sprawl. The blocks adjacent to Heritage Park are some of the most attractive and most viable for conventionally financed housing to emerge. These fronting blocks lie along 5th Avenue, Water Street and 7th Avenue.

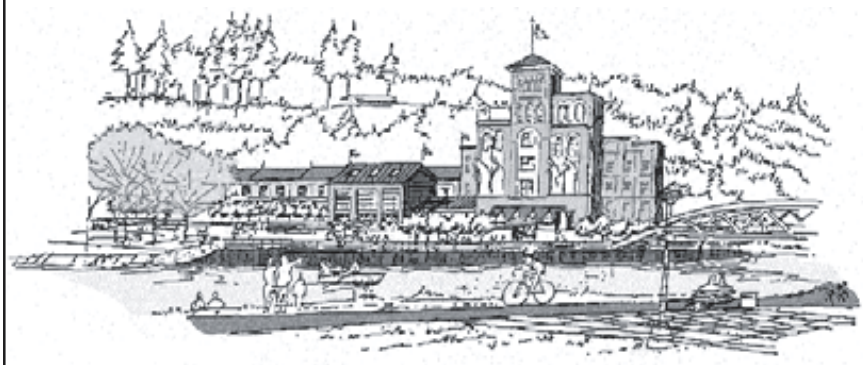
Example of potential residential development within the Gateway Corridor.

"Living downtown" for most people means leaving traditional single family neighborhoods. This transition is only successful when the urban amenities and attractions meet or exceed those available in the "burbs". The two key amenities for new downtown housing are the city's Percival Landing boardwalk and the state's Heritage Park. Other downtown attractions include easy access to grocery stores, Olympia Farmer's Market, the fountain block, shopping and entertainment within the downtown core. In fact studies have shown that increasing activity and thoughtful designs of new developments will add to the security and safety of streets, parks and public spaces.

In 2002 Olympia rezoned some of the blocks adjacent to Heritage Park in order to realize the residential redevelopment envisioned. Future buildings will vary in height from 5 to 6 stories with structured, not surface parking. While it may take 20 years to complete this transformation, the city hopes that new street edges, urban amenities, and new development will encourage people to live, walk, and recreate in the downtown - Olympia's newest neighborhood.

Capitol Lake Region - New Market Historic District

The City of Tumwater also has plans to renovate areas adjacent to Capitol Lake in the South Basin (south of I-5). These plans are contained within a master plan for the New Market Historic District. Design proposals call for a restored historic Brewhouse to be the focal point of a pedestrian Grand Plaza which includes a new footbridge across the Deschutes River. The Brewery Complex is graphically depicted in the figures on page 25, as seen from Tumwater Historical Park and along the Grand Plaza. Although funds are not yet available, this proposal will anchor the southern end of Capitol Lake to the importance of interconnecting new projects throughout the Capitol Lake region. The design proposal includes a looped pedestrian trail for the South Basin.



View from proposed Waterfront Promenade.

View along potential Grand Plaza.

Future views of the New Market Historic District.

Activities in Years 2003 - 2005:

The City of Olympia will be finishing the Gateway Corridor. General Administration will initiate the design process for the Capitol Lake dam pedestrian bypass.

CLAMP Budget 2003 - 2005:

The cost of Olympia's Gateway Corridor (which includes design and construction) is estimated at $39,123,000. Funding is being provided by 13 sources with the largest being: Federal Highways, $18,276,000; a loan from the State Public Works Trust Fund, $9,996,000; city water, sewer and Capital Facility Plan funds, $6,546,000; and city impact fees, $2,580,000. The cost of the design phase for the Capitol Lake dam pedestrian bypass will be $100,000.

Activities in Years 2005 - 2013:

Construction of the Capitol Lake dam bypass will be in the 2005-2007 biennium.

CLAMP Budget 2005 - 2013:

A preliminary construction estimate for the Capitol Lake dam bypass is $650,000.

6. Develop and implement a flood hazard management strategy to protect lands adjacent to Capitol Lake.

[For additional information regarding this objective, refer to pages 5-1 to 5-10 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

In 1999 and 2000 GA partnered with the cities of Olympia and Tumwater to share the cost of obtaining up-to-date flood information. This work was necessary because the February 1996 Deschutes River flows exceeded the previous 100-year flood values established by the Federal Emergency Management Agency (FEMA).

This preliminary flood report identified the maximum potential flooding on properties in downtown Olympia to be a greater depth and larger geography than previously mapped. Preliminary indications were that landscaping mounds of a foot in height inside Heritage Park might provide substantial protection from flooding. However, these mounds would eliminate or reduce visual access to the water's edge from the surrounding streets.

Flooding on Columbia Street at Legion Way, c. 1975.
Courtesy of Gand Eichrodt Collection.

To help prevent flooding events around Capital Lake, GA had adopted operation proceedures for the Capitol Lake dam which incorporate Deschutes River flows, lake level and tidal phases. This is accomplished by coordination with the U.S. Geological Survey and Thurston County Emergency Services.

In response to the Nisqually Earthquake FEMA is funding a flood hazard management strategy to address these issues. The work will benefit the reconstruction of Deschutes Parkway, Marathon Park, and the Capitol Lake Interpretive Center. The study will utilize new hydrologic modeling of the Deschutes River, its sub-basins and the interaction of twice-a-day high tides. Sea level rise will also be a factor considered in the report.

FEMA is providing the $161,000 for the flood hazard management study. It is projected to be completed by spring 2003.

Activities in Years 2003 - 2005:

Implementation of parts of the flood hazard management study will occur. The cities of Olympia and Tumwater may need to adopt new Flood Insurance Rate Maps for lands affected by the flood study. Activities to implement the flood study may be integrated into future phases of Heritage Park or within redevelopment projects in downtown Olympia. The Capitol Lake dam operation needs a direct communication link with the gauging stations on the Deschutes River.

CLAMP Budget 2003 - 2005:

Response to the flood study will be $40,000. Providing a direct communication link with the Deschutes River gauging will cost $20,000.

Activities in Years 2005 - 2013:

There will likely be additional response to the flood study required in the 2005-2013 biennium.

CLAMP Budget 2005 - 2013:

Future measures to mitigate flood risks are estimated at $330,000.

Flooding at corner of 7th Avenue and Columbia Street (June 1951). Courtesy of Susan Parish Collection.

7. Rehabilitate the fish ladder in the Capitol Lake dam to provide year-round fish passage into and out of Capitol Lake.

[For additional information regarding this objective, refer to pages 5-1 to 5-3 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

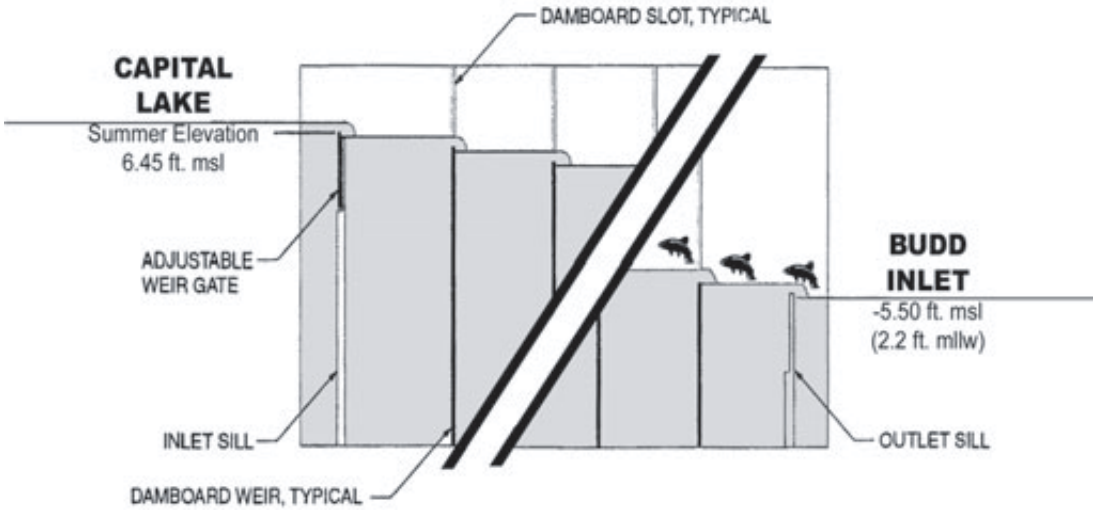
BACKGROUND

In 2000 GA partnered with the Washington Department of Fish and Wildlife (WDFW) to upgrade the fish ladder in the Capitol Lake dam. Unrestricted fish access into and out of the basin has been a problem during the winter months due to the lake being lowered one foot to provide added flood protection. An initial evaluation by WDFW indicated that the fish ladder could be restored to about 90 percent effectiveness by simply replacing the worn out weirs (which create the small pools in the fish ladder) and maintaining a constant lake elevation.

Repairs to the fish ladder were not possible in 2000, so temporary repairs were made that year. In 2001 a consultant developed a scope of work for how the fish ladder could best be repaired. This report confirmed WDFW's observations that the needed repairs were relatively minor. The report suggested 1) debris removal, 2) replacement of the wooden weirs with recycled plastic weirs, and 3) minor changes to the lake inlet at the top end of the ladder.

GA has been working with WDFW to repair the fish ladder within its present configuration. These proposed repairs could be made during the "fish window" of June through September 2002. To help prevent future damage to the repaired fish ladder GA plans to install a debris collection barrier in front of the dam to collect floating logs and other material that could harm the fish ladder. In addition, periodic underwater material debris collection will be necessary to ensure the functionality of the ladder. These repairs are projected to cost $100,000.

FISH LADDER - CROSS SECTION



Activities in Years 2003 - 2005:

General Administration may have to hire a contractor to inspect the fish ladder yearly and remove problem debris in a timely fashion.

CLAMP Budget 2003 - 2005:

A contract for fish ladder preservation and repair will cost General Administration $25,000 per biennium.

Activities in Years 2005 - 2013:

Continue contracting for ongoing preservation and repair for the dam.

CLAMP Budget 2005 - 2013:

Estimated at $120,000 for this period.

Capitol Lake dam from the lake side c. 1998. Courtesy of General Administration.

8. Relocate the Percival Cove fish rearing operation and rehabilitate Percival Cove for other users.

[For additional information regarding this objective, refer to pages 4-1 to 4-9 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

Since 1952, the Washington Department of Fish and Wildlife (WDFW) has been actively involved in salmon production and fishery enhancement in the Deschutes-Capitol Lake Watershed. Historic release rates of hatchery Chinook salmon have ranged from over 12,000,000 sub-yearlings in 1973, to the present program of 3,800,000 sub-yearling and 200,000 yearlings each spring. Each release size contributes to different segments of the harvest spectrum, and each survives and contributes at different rates, depending on rearing and ocean survival conditions.

Southern Puget Sound salmon and fisheries enhancement began prior to the construction of Capitol Lake in 1951. Tumwater Falls was a natural barrier to the upstream migration of anadromous fish. In 1954 the Washington Department of Fisheries built a fishway around the falls, thus opening up more than 40 miles of stream habitat.

Initially, salmon fingerlings were released below Tumwater Falls and in the 1970s they were planted in a deep pool next to the old brewery across from Historical Park. The fish were fed and eventually migrated out of the lake after several weeks. This location worked very well until the river changed its course and filled in the deep pool and bird predation became a significant problem. This yearling Chinook program targets the Puget Sound recreational angler, since the yearling Chinook tend to reside in the sound in greater numbers than do the sub-yearling Chinook releases.

Beginning in 1974, approximately 1 million yearling Chinook were annually reared in Percival Cove. Losses from bird predation and declining water quality caused WDFW to reduce this number to 200,000 and confine the fish to net pens since 1988. In 1998, a new *fish health policy* between WDFW and the Treaty Tribes limits the transfer of fish between fish health zones. Fish raised at Percival Cove are initially grown outside the Deschutes watershed at the Mckeman Hatchery in Hood Canal. They are then transferred to Percival Cove in November where they are released in April of the next year.

With the Deschutes-Capitol Lake Chinook salmon program currently out of compliance with this fish health policy, a yearly variance is required for the program to continue. In addition to this issue, continued concerns about declining water quality have lead WDFW to search for an alternative location to Percival Cove.

To address these issues, WDFW is proposing to:

- Construct an incubation and hatching facility within this fish health zone, and
- Construct a new rearing facility with a protected water source and rearing ponds large enough to maintain the Deschutes-Capitol Lake program.

Early in 2002 WDFW exercised its option to renew the Percival Cove lease with GA, for another 10 years or until November 2011. However, the fish rearing operation in the cove must meet Washington Department of Ecology water quality requirements. If these water quality standards cannot be achieved, then WDFW will terminate the use of the cove for fish rearing purposes. WDFW is exploring a number of potential sites for this replacement facility. The department is hopeful that the new hatchery facility can be funded, built and be operational by mid-decade. WDFW has hired a consultant to evaluate these sites, prepare a conceptual site plan and develop a preliminary cost. It is likely that a plan to rehabilitate Percival Cove will also be warranted.

Activities in Years 2003 - 2005:

Subject to funding and permits, it is likely that the construction of the Percival Cove replacement facility will occur in this period of time.

CLAMP Budget 2003 - 2005:

The cost to construct a replacement facility for Percival Cove will be contained in the WDFW capital budget.

Activities in Years 2005 - 2013:

Restoration of Percival Cove will likely occur during this time period.

CLAMP Budget 2005 - 2013:

The cost to rehabilitate will be contained in the WDFW capital budget.

Salmon net pens in Percival Cove, c. 1998.
Courtesy of Thurston Regional Planning Council.

Feeding fingerling salmon in Percival Cove, c. 1986.
Courtesy of Thurston Regional Planning Council.

9. Improve lake edges to be fish, wildlife and people friendly.

[For additional information regarding this objective, refer to pages 4-8 to 4-9 and 9-1 to 9-7 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

Capitol Lake was created in 1951 by filling portions of southern Budd Inlet. That fill now comprises Deschutes Parkway (from Tumwater to the dam), 5th Avenue west of Water Street, and the Capitol Lake dam. Later additions of fill for the basin include: Capitol Lake Park - now part of Heritage Park, Marathon Park, Interstate 5, Capitol Lake Interpretative Center, and Tumwater Historical Park. These fills have been protected by armoring (sometimes called riprap) along the new shoreline. A portion of the shoreline in the Tumwater Historical Park was repaired in the early 1990s after flooding from the Deschutes River damaged the park. One of the key features of Heritage Park was the construction of a concrete bulkhead to form the "Arc of Statehood". While these armored shorelines look neat and clean, they often dive steeply into the water and lack the shallows normally found along a lake which are beneficial to fish and wildlife.

Capitol Lake also contains sections of shorelines, that are relatively unchanged from when they were on the shores of Budd Inlet. These "high quality" shorelines are located on the east side of the Middle Basin (from the Steam Plant to I-5), the eastern shore of the South Basin (across from Tumwater Historical Park), and the western shore of Percival Cove. These shorelines are characterized by overhanging, native vegetation and are relatively undeveloped. Planted vegetation along the filled shorelines has been dominated by ornamental plants, turf grass, and hedges which provide very little fish or wildlife value. Over time, volunteer trees and aquatic vegetation have slowly improved the lake's habitat. However, landscaping efforts to keep these volunteer trees under control have highlighted the need for a comprehensive vegetation plan for Capitol Lake. Such a plan would clarify where volunteer trees and other types of native vegetation will be encouraged, and other areas where maintenance personnel will maintain a formal park-like setting.

It is likely that the North Basin of Capitol Lake and most of Heritage Park will be maintained in a formal park-like setting. However, there still may be opportunities to improve the aquatic habitat along these shorelines, which may have little effect on the visual character of the area. If permitted, dredged spoils from other parts of the lake may be placed along the shoreline to create shallow water areas. These shallows would be colonized by wetland and aquatic plants, and would be below the eye level of pedestrians walking along Deschutes Parkway or in Heritage Park. The southern portion of Heritage Park was planted to maintain vegetation along the water's edge.

It is also likely that the shoreline along the western shore of the Middle Basin, and the causeway across Percival Cove may be allowed to become more natural over time. Views of the Capitol will become less dominant, unless the vegetation is maintained to keep specific viewpoints from Deschutes Parkway. Also the February 2001 Nisqually earthquake caused a large landslide along the eastern shore of the South Basin across from Tumwater Historical Park, and along the dike in the Interpretive site. While looking "messy" both have added large woody debris to the shoreline and will not be cleaned up unless they pose a threat to health or safety.

As part of the Deschutes Parkway restoration, trees will be planted adjacent to the water along those portions where repairs include the lake edge. These trees will help improve the fish and habitat in those areas and will be planted in late 2002 or early 2003.

Activities in Years 2003 - 2005:

General Administration will need to hire a consultant to prepare a comprehensive vegetation plan for the shoreline of Capitol Lake. Operation and maintenance guidelines for GA employees are needed which incorporate the Integrated Pest Management (IPM) measures from Objective 12.

CLAMP Budget 2003 - 2005:

A comprehensive vegetation plan for Capitol Lake will cost approximately $60,000. The cost of a maintenance and operation manual will be $20,000.

Activities in Years 2005 - 2013:

The comprehensive vegetation plan along with the sediment habitat study from Objective 13 will direct improvements of shoreline habitat. These improvements will be completed over the span of four biennia, so that all major habitat vegetation is completed by the end of the 10 year plan.

CLAMP Budget 2005 - 2013:

Providing people, wildlife and fish friendly shoreline edges is estimated at $950,000 for this period. This will include design, permitting, planting, and construction costs.

The shoreline of Deschutes Parkway provided little habitat when it was constructed, c. 1951. Courtesy of Susan Parish Collection.

Percival Cove provides good habitat with mature trees, overhanging vegetation and large woody debris in the water, c. 2001. Courtesy of Thurston Regional Planning Council.

10. Maintain Capitol Lake with fewer than 100 resident Canada geese.

[For additional information regarding this objective, refer to pages 10-1 to 10-9 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

Beginning in 1999 GA undertook the effort to eliminate human-goose conflicts in Heritage and Marathon Parks. Both parks were overrun with these waterfowl, which severely limited their use by the public. In 1999 GA initiated a Canada goose harassment program which is now an ongoing part of their management of Capitol Lake. Harassment techniques include the selective use of pyrotechnics and water soluble paintballs to frighten the birds. The department experimented with dogs to harass the geese, but this effort was discontinued. Signage for people to not feed the geese was added around the lake. Temporary fencing along the shoreline of Marathon Park helped keep the geese out of that area and allowed the grass to recover.

Between 1998 and 1999 the local resident goose population increased from 1,900 to 2,600 based upon the Audubon Christmas bird count. This represented an uncontrolled population growth of 21 percent, and exceeded the Seattle area goose population count. In 1999 GA began to contract with the U.S. Department of Agriculture (USDA) to help manage the geese on Capitol Lake. Their responsibilities included continuing to addle eggs in the nests around the lake, and to remove geese from Capitol Lake during the bird's "molt" of their flying feathers between May and July. The USDA removed 486 geese from the basin in 2000 and another 393 geese in 2001.

The resident Canada goose population for the entire county has been targeted at 750 birds by the USDA and the Washington State Department of Fish and Wildlife. The target year-end population for Capitol Lake is 100 or fewer birds. In 1999, a total of 1,875 birds were counted during the molt goose count. In 2000, 1,560 birds were counted and in 2001 the total was 1,340 birds. Although not meeting the countywide target, the numbers are encouraging for long-term population management. The graph on the following page compares Thurston County's Christmas bird count with the molt bird count from the last three years.

Geese and other waterfowl along Percival Cove, c. Summer, 1998. Courtesy of Thurston County Water and Waste Management Department.

Activities in Years 2003 - 2005:

GA plans to continue to work with others to manage geese on Capitol Lake. Staff will continue to support the Interlocal Waterfowl Management Committee and the summer molt bird count. GA will also continue to contract with USDA to "round up" and dispose of the excess geese. It is the goal of GA to keep the geese, as much as possible, away from the developed park and recreational areas and facilities on the lake.

CLAMP Budget 2003 - 2005:

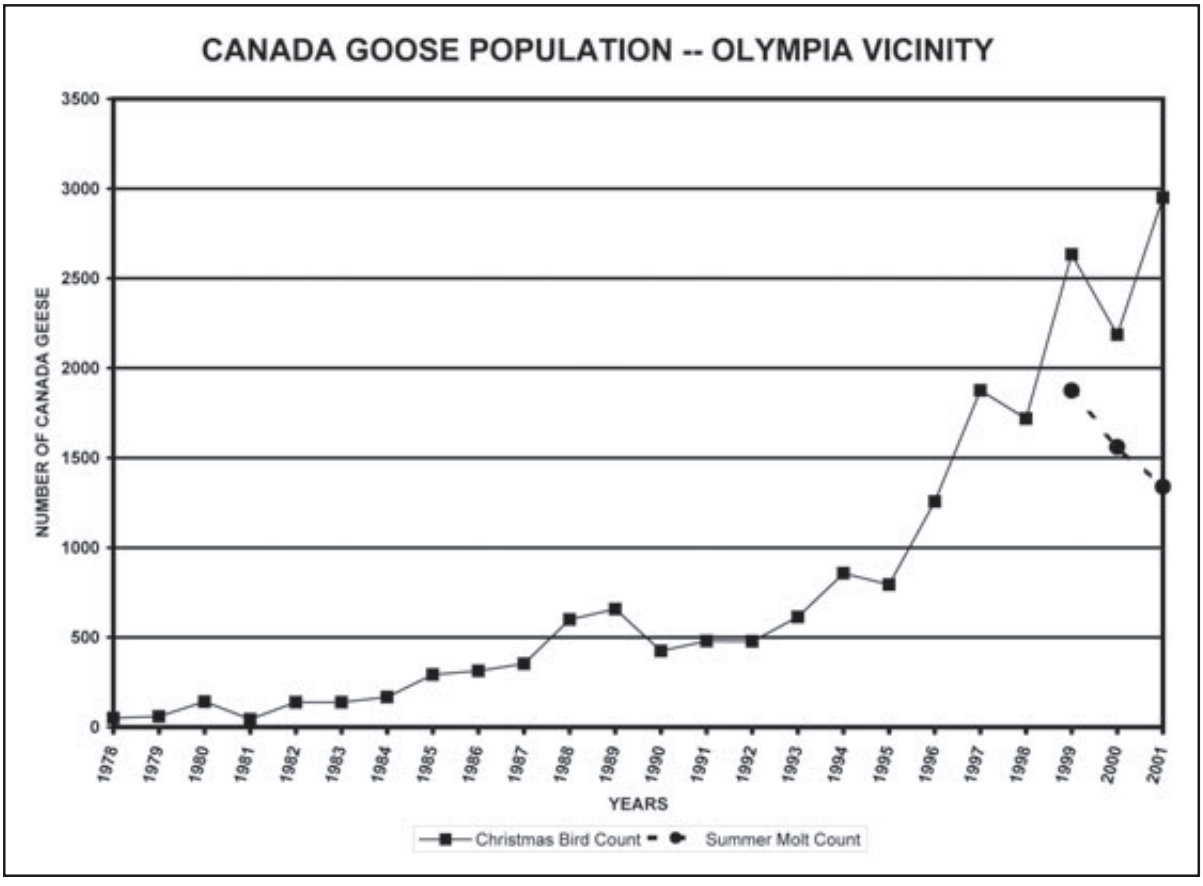
GA, the City of Tumwater and the Port of Olympia together expend about $45,000 annually to manage geese in the Capital Lake basin.

Activities in Years 2005 - 2013:

GA will modify its management practices based upon the summer bird count, changing conditions and recommendations from the Interlocal Waterfowl Management Committee.

CLAMP Budget 2005 - 2013:

The projected cost to General Administration to manage Canada geese will be $45,000 per biennium. Additional costs of $5,000 to $15,000 per year will be incurred by local governments until the target population is reached.



11. Improve the water quality in Capitol Lake to meet State standards. *[For additional information regarding this objective, refer to pages 8-1 to 8-10 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]*

BACKGROUND

The Deschutes River is a 57 mile long river that historically discharged into an estuary at the head of Budd Inlet. It resembled Mud Bay in Eld Inlet as it appears today -- shallow, deep sediments, nutrient rich water, and a mixture of salt and fresh waters. Its watershed is approximately 162 square miles and includes timber and agricultural lands and increasingly residential and urban land uses. Percival Creek, a four-mile long creek with approximately 13 square miles of watershed, also discharged to the former Budd Inlet estuary.

In 1951 a dam was built along the extension of Fifth Avenue blocking off the lower estuary to the free exchange of fresh and salt water during the ebb and flood cycles of the tides. The dam created a 320 acre fresh water impoundment from what had formerly been an estuarine environment. Although the newly created water body was named Capitol Lake, according to the lake definition in WAC 173-201A, it is actually an impoundment of the river. By definition, a lake must have a mean detention time of 15 days or longer. The mean detention time of water in Capitol lake can be less than one day depending on the winter flows in the river or up to 11 days during summer low flows.

Capitol Lake is now the largest fresh water source to southern Budd Inlet, and therefore has a significant effect on its water quality. In past years, GA undertook an annual summer lake drawdown for various reasons. This practice was discontinued after 1997 due to a number of water quality and fish habitat concerns. Water quality modeling simulations (completed in conjunction with the LOTT treatment plant upgrade) indicated that the summer drawdown had an adverse impact upon dissolved oxygen levels in Budd Inlet during late summer to early fall. The simulation (Brown and Caldwell, 2002) indicated that a measurable improvement of dissolved oxygen in lower Budd Inlet would result from the mixing of fresh and salt water afforded by an estuary.

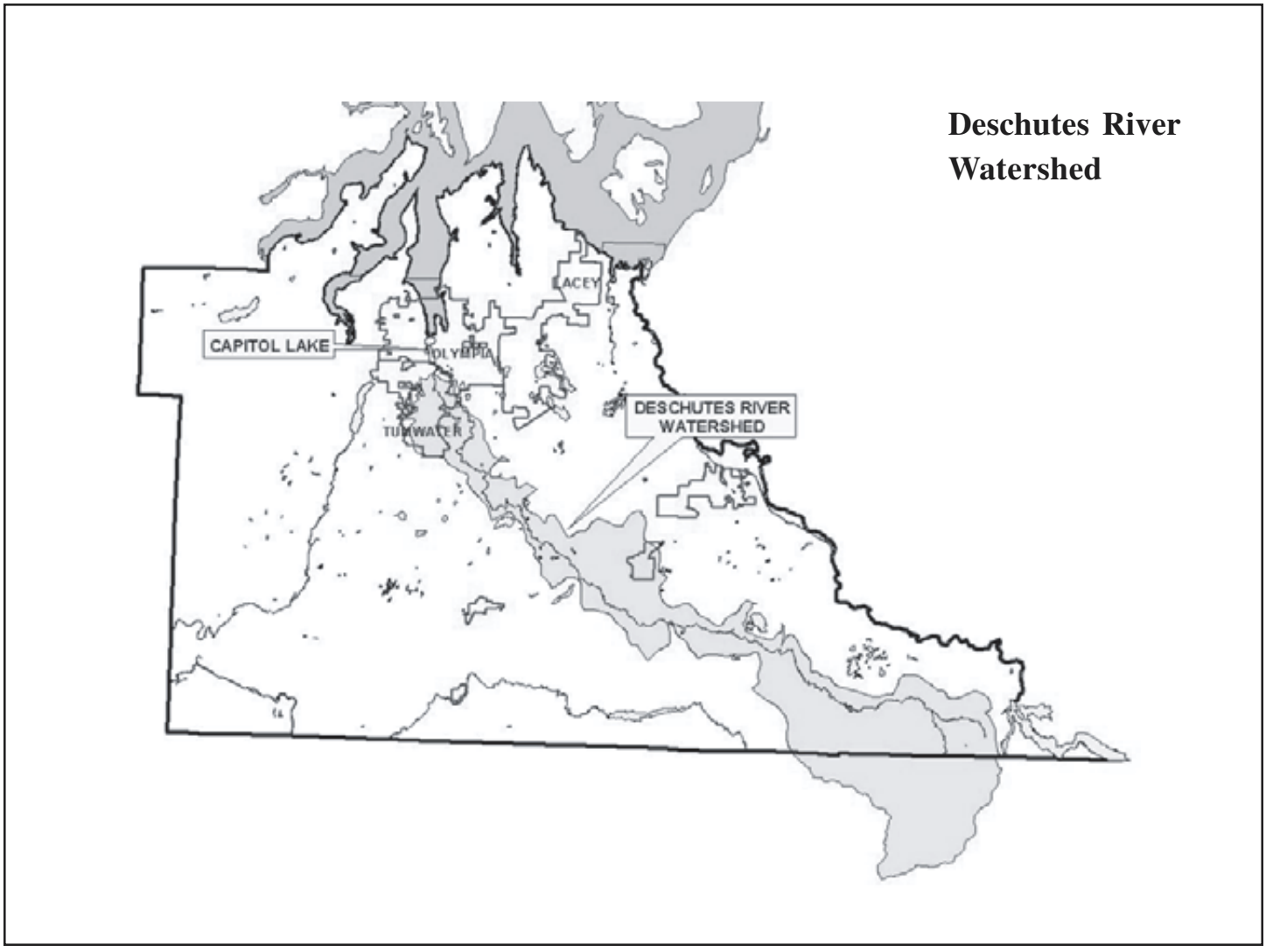
Winter Flows

There is a significant link between the water quality of the lake and Budd Inlet. The freshwater algae produced in Capitol Lake consume oxygen when it decomposes in the salt water environment north of the Capitol Lake dam. In lower Budd Inlet low dissolved oxygen levels occur in the summer months and are lowest near Capitol Lake (LOTT, 1998). Settling of this organic material also produces an increase in sediment oxygen demand in the inlet. Therefore, any development or lake management practice which increases the biomass of lake algae could further depress summer dissolved oxygen levels in Budd Inlet.

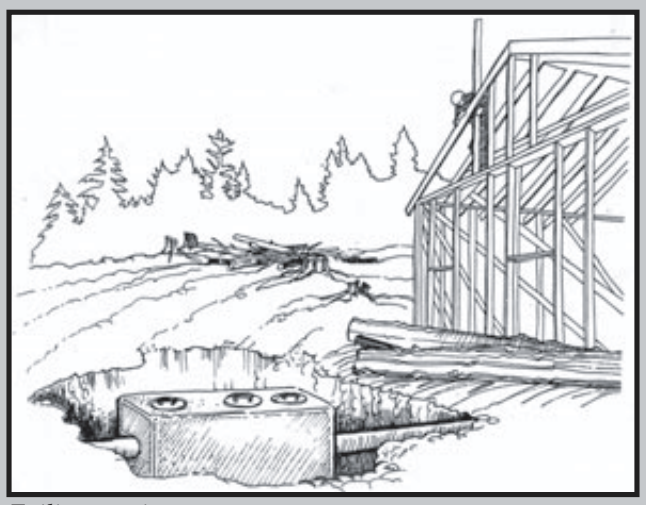
During the winter, flows in the Deschutes River are high and Capitol Lake is essentially an expansion of the Deschutes River. In 1993 a winter water quality study (Thurston County Environmental Health, 1993) found conditions between the north and middle basins of the lake to be very similar. Total suspended solids were found to decrease slightly between the two basins, implying that material was settling out of suspension as flow velocities decreased within the middle basin. Aside from sedimentation, winter water quality conditions have little influence on summertime conditions in the lake because the hydraulic detention time of the water is very short.

Summer Flows

During the summer, flow in the river is low, detention time begins to approach that of a lake, and conditions common to eutrophic lakes appear. [In eutrophic lakes the production of filamentous and free floating algae and rooted aquatic plants increase, often to nuisance levels.] Past studies (CH2M Hill, June 1978 and WSU, 1975) concluded that plant growth in the lake is limited by both nitrogen and phosphorus at various times throughout the growing season. However, phosphorus is usually the nutrient in shortest supply, and the most manageable nutrient to control. Summertime inputs of nutrients have the greatest impact on algae production

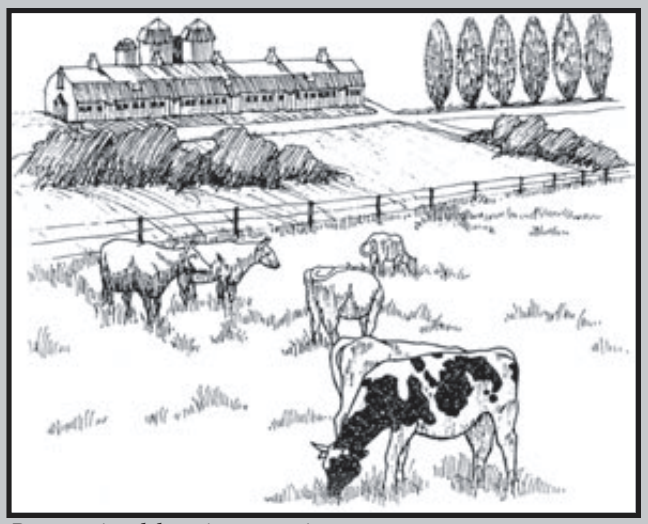


Historic Sources of Nonpoint Pollution in the Deschutes Watershed



Failing on-site systems.

Stormwater runoff.



Poor animal keeping practices.

in Capitol Lake. Because almost all of the lake is less than 10 feet in depth, conditions are also ideal for rooted aquatic plants. However, the water column nutrient levels have less impact on rooted aquatic plant growth because they can utilize nutrients stored in the sediments.

A 1984 pollutant study (Entranco, 1984) estimated that 70% of the annual total phosphorus load to Capitol Lake was carried by the river, 8% was contributed by Percival Creek, 14% was attributable to the brewery discharges, and 8% miscellaneous sources. It was estimated that dairy discharges along the Deschutes River contributed 14% of the 70% carried by the river. Based upon these and other local water quality studies, sources of fecal coliform to the lake include failing on-site septic systems, stormwater outfalls, poor animal keeping practices, water fowl, and what's carried downstream by the Deschutes River and Percival Creek.

Limited water exchange and circulation in Capitol Lake in summer months also contributes to an increase in water temperature. Water quality standards for surface water temperatures were established to protect sensitive aquatic species, such as salmonids. Water temperature in the North Basin is often 3 to 5 degrees Celsius warmer than in the Deshutes River and typically near or above the Class A water quality standard (18 degrees Celsius maximum) during summer months.

Capitol Lake is on the Washington State Department of Ecology 303d list of impaired water bodies for violating state water quality standards for *Fecal Coliform Bacteria* and *Total Phosphorus*.

Water Contact Activities and Swimming

In 1964 a bathing beach was constructed in the Northeast corner of the North Basin in what was called Capitol Lake Park. Swimming occurred there until 1985 when it was closed because of high fecal coliform counts, poor water visibility (caused by algae blooms), and poor water circulation. The old swimming area was filled in as a part of the construction of Heritage Park.

Since 1999 Thurston County Environmental Health has been collecting water samples in the middle and north basin. A set of five water samples were collected near the Heritage Park shoreline in June 2002. The sample results meet the state's lake water quality standards for fecal coliform bacteria (not more than 50 colonies per 100 milliliters and not more than 10% of the sample results exceeding 100 colonies per 100 milliliters). The water quality standards are established to protect the beneficial uses of lakes, including water contact recreation. Other water quality concerns along Heritage Park shoreline were also being reviewed in 2002, including lake sediment quality and potential contamination within the storm sewer systems that discharge to the lake.

A designated public bathing beach may serve hundreds of users at a time. The swimmers themselves are often a significant source of localized pollution. Because a natural body of water does not have continuous disinfection (as does a pool with water filters and chlorine), there are several factors to be considered when siting a bathing beach. Water quality and clarity, nearby and upstream source of pollution, water circulation into and out of the swim area, and safety features such as water depth, underwater obstacles, and aquatic plant growth are a few of the factors. The presence of silty lake sediments is a significant deterrent to establishing a successful swimming beach in Capitol Lake.

Poor water quality for swimming was first dealt with by periodically draining the lake and back flushing with salt water (from southern Budd Inlet). This practice was begun in 1968, and occurred up to several times during the summer. It was continued until the swimming beach was closed in 1985. Flushing the lake with salt water effectively destroyed the lake's fresh water ecosystem and a recent study shows that this practice depressed dissolved oxygen levels in southern Budd Inlet. Salt water back flushing of the lake was discontinued in 1997.

In 1982 a thick rubber swim curtain was installed around the swimming area, to separate it from the rest of the lake water. In 1983 sodium aluminate (alum) was used to improve water clarity inside the curtain, but a drawdown of the lake caused a rip in the barrier. Fresh water was added to the swim area from the city's domestic supply at a rate up to 1,000 gallons a minute which augmented two artesian sources that flowed into the swim area. Even with this high rate of dilution, bacterial counts within the swimming area did not meet swimming standards.

Operation and management of the former Capitol Lake swimming beach was the responsibility of the City of Olympia Parks, Recreation and Cultural Services Department. In 1987 Olympia commissioned a report to reestablish a swimming beach in Capitol Lake. The report concluded that the construction of a swimming pool was the only feasible solution to address these chronic water quality problems, and included several alternative pool designs.

Swimming at Capitol Lake Park, c. 1964.

Reestablishing a swimming area in Capitol Lake would require significant cost, and the commitment of a long-term management entity. Even then there would be no guarantee that the facility could meet bathing beach water quality and clarity standards. Such an area will require a suitable location with good circulation, an upland area with parking and restrooms, placement of sand on the lake bottom to reduce turbidity, no or manageable pollution sources (stormwater outfalls) in the immediate vicinity, and an adequate supply of clean water (which may include, but not be limited to, artesian wells or LOTT reuse water). The Department of General Administration would be willing to consider partnering with another public entity to manage a bathing beach in Capitol Lake, if these siting and water quality assurances can be met and reasonably maintained.

Current and Future Actions

Since 1998 Thurston County has led a watershed planning process for the Deschutes River Water Resource Inventory Area (WRIA #13). There are 63 WRIA's statewide, and the boundaries are similar to a watershed. The process is focused on future water allocation and establishing in-stream flows which are based upon fisheries needs. Having adequate supplies of clean water is essential to fish and human uses within the basin. Another on-going watershed activity is the Thurston Conservation District's work on salmon recovery. In 1999 the Conservation Commission prepared a limiting factors analysis for the watershed. This report identified the most productive stream reaches for various species of salmon. It and other studies will help prioritize restoration efforts within the basin.

Beginning in 1999 General Administration contracted with Thurston County Environmental Health Department to collect summer water samples from the lake. This was necessary to collect current data and resolve inconsistencies between sampling sites and methods from previous water quality studies. The results from 2000 were encouraging. They showed a high level of dissolved oxygen, very low levels of fecal coliform and good water clarity. Results from 2001 sampling have been affected by the low flows of water from the Deschutes River. Sampling for 2002 was affected by the lake drawdown that occured for the repair to Deschutes Parkway. Water quality results for 2002 are not available at this time.

The Washington State Department of Ecology will initiate a Total Maximum Daily Load (TMDL) project for the Deschutes River watershed during the 2003-2005 biennium. A TMDL plan will include Capitol Lake and Budd Inlet and any point discharge permits in the basin. The purpose of a TMDL plan is to identify the sources of pollutants and limit the nutrients coming into Capitol Lake.

Activities in Years 2003 - 2005:

GA will continue its contract with Thurston County Environmental Health to monitor water quality in the lake and work with Olympia, Tumwater, Thurston County and WSDOT to treat and reduce direct discharges into the lake from untreated stormwater. City of Olympia is focussing its efforts on reducing pollutants in stormwater discharges within the Capitol Lake Basin during this time period. The Washington Department of Fish and Wildlife, in cooperation with the Squaxin Island Tribe, is seeking to address nutrient loading in Percival Cove by siting another fish rearing facility with appropriate pollution controls somewhere in the basin. GA will also need to respond to unforeseen water related issues.

CLAMP Budget 2003 - 2005:

The cost to General Administration during this biennium will be $45,000 to have water quality sampled by Thurston County Environmental Health. To provide for water quality contingencies will be $45,000 for possible improvements.

Activities in Years 2005 - 2013:

Implementation of the TMDL study would occur during this time period. GA would continue to monitor lake conditions and respond to water quality issues and make improvements.

CLAMP Budget 2005 - 2013:

The cost to General Administration to continue with ambient lake monitoring and to make water quality improvements is estimated at $740,000.

12. Eliminate the Purple Loosestrife and Eurasian Milfoil noxious weed infestations throughout Capitol Lake.

[For additional information regarding this objective, refer to pages 7-6 and 9-1 to 9-7 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

Purple Loosestrife was initially discovered in Capitol Lake in 1986. By 1987 the infestation was described as "bad" and initial communications between the Thurston County Noxious Weed Control Board and GA were made. In 1988, GA initiated control measures but in 1989 the Weed Board required GA to remove all Purple Loosestrife flower heads. From 1989 to 1993, flower head removal was performed by various maintenance personnel and contract groups for GA. From 1993 to 1995, GA contracted with Resource Management, Inc. to perform an aquatic herbicide treatment program in Capitol Lake.

From 1996 through 2000, Purple Loosestrife control returned to manual flower head clipping. The result of this was that seed production was controlled but plant stem densities increased. In 1998, wetland soils from the south end of the lake were removed and replaced as a mitigation measure for Heritage Park, but the new soils quickly became infested. In 1999, the Weed Board released 5,000 Galerucella beetles as a biological control for Loosestrife.

The conclusions drawn by the Weed Board from this period were that the year 2000 infestation was reduced approximately 80% from 1987 levels. However, the lack of continuity in treatments from year to year and the lack of follow-up monitoring after treatments in the same season has limited the potential benefit of the implemented measures. The conclusion by GA was that cutting just the flower heads has caused increased density of plants and an increasing level of effort just to keep up with the growth.

While there has been a significant reduction in the amount of Purple Loosestrife present in the wetlands adjacent to Capital Lake, the goal of GA is to eradicate this plant from these properties. Eradication of a noxious weed is also the goal of regulatory groups like the Thurston County Noxious Weed Board. The eradication of Purple Loosestrife is important to provide open water and also to eventually allow deep water disposal of dredged sediments in Puget Sound.

In September 2001 the presence of Eurasian water milfoil was discovered in Capitol Lake. While milfoil is not a designated or selected noxious weed in Thurston County, without immediate attention this aquatic weed could eventually grow throughout Capitol Lake with dense mats of floating vegetation. A plan to control and then eradicate the milfoil will be developed. It will be implemented in 2002.

In 2002 GA plans to have the CLAMP Steering Committee adopt the Integrated Aquatic Vegetation Management Plan as the framework for controlling Purple Loosestrife on Capitol Lake. Yearly management may change

based upon the success of the previous year's program and the level of the infestation. GA will also need to have a control plan for milfoil prepared as soon as feasible. It is likely there will be implementation measures to address this noxious weed as well.

The cost to General Administration to control/eradicate noxious weeds at Capitol Lake in 2002 will be $200,000, of which $50,000 is being provided by the Washington State Department of Ecology as a grant.

Activities in Years 2003 - 2005:

GA will continue to implement the Aquatic Vegetation Management Plans for both Purple Loosestrife and Eurasian Milfoil.

CLAMP Budget 2003 - 2005:

After initial application and planning the cost to General Administration may be $95,000 per biennium.

Activities in Years 2005 - 2013:

The activities will be similar to the 2003 to 2005 time period.

CLAMP Budget 2005 - 2013:

The cost to General Administration may be $95,000 per biennium.

Purple Loosestrife (Lythrum salicaria L.)

Eurasian Milfoil (Myriophyllum spicatum L.)

13. Develop and implement a comprehensive sediment management strategy for the Capitol Lake basin.

[For additional information regarding this objective, refer to pages 7-1 to 7-7 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

Approximately 35,000 cubic yards of sediment are deposited in the basin every year from the Deschutes River. Since the Capitol Lake dam was built in 1951 almost 1.7 million cubic yards of material have found their way into the lake. This volume would fill a 160 ft. x 300 ft. football field 318 feet high and the annual sediment load would add another 6 1/2 feet every year.

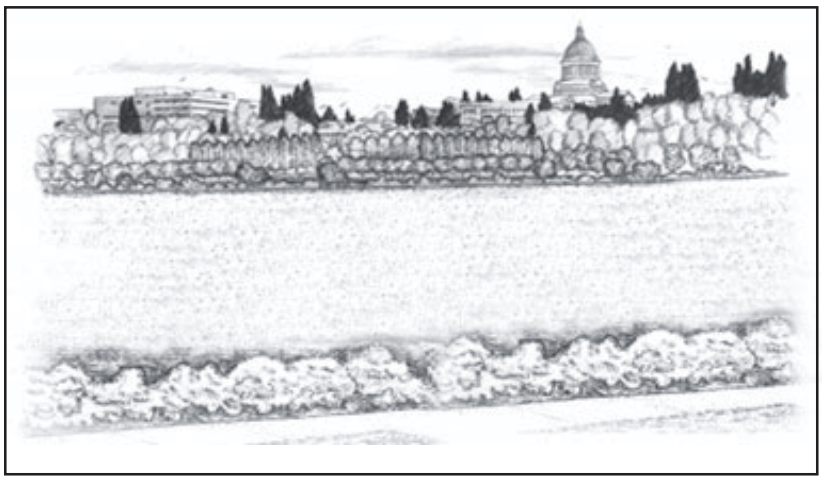
Sediment Management has been a focus of the CLAMP Steering Committee work program for the past several years. Efforts have targeted sampling the sediment, determining how it could be handled and disposed of, and whether a Pilot Sediment Removal Project was feasible or warranted. Cost estimates have been generated for these alternatives along with a list of required federal, state and local permits.

The last dredge operation in the lake occurred in 1986 in the Middle Basin Sediment Trap. Recent sedimentation characterization was limited to this area which lies just north of the I-5 bridge. None of the samples exceeded established limits, so it can be safely placed in an upland location outside of the basin. The US Army Corps of Engineers was extremely concerned regarding the possible spread of Purple Loosestrife (a noxious weed) from seeds in the lake sediments if placed in the marine environment.

These concerns eliminate the possibility of marine water disposal, without the eradication of Purple Loosestrife seeds from the lake sediments. As a result, GA has undertaken a plan to eliminate Purple Loosestrife from state owned shoreline areas. (See Objective #11) If this effort is successful, it may be in the 2010s before the sediments are considered "clean" and the marine water quarantine could be lifted.

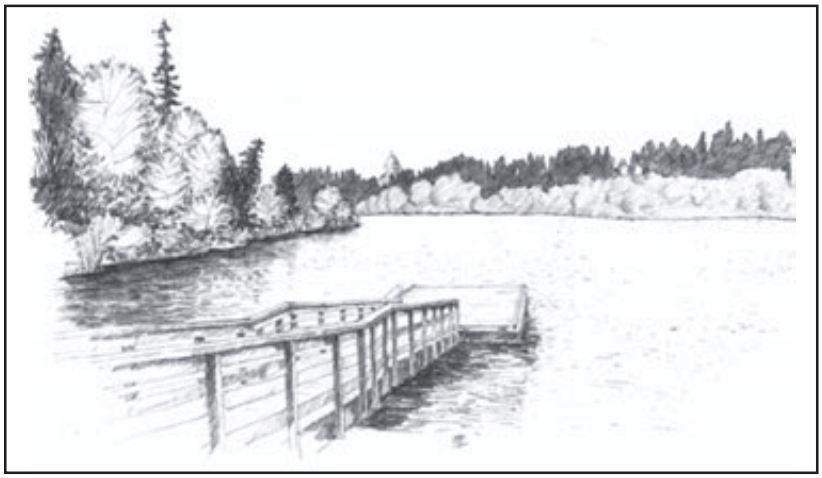
A variety of dredging, handling and disposal techniques have been evaluated. It was determined that the only feasible dredging technique was the hydraulic dredge (a.k.a. Mud Cat) used on the lake in 1979 and 1986.

The only upland site adjacent to the lake which may be able to process the dredged material is an 11 acre site located west of Marathon Park. The cost of dredging will be significantly higher than the two previous events, because of additional review for the Endangered Species Act, and the potential need for a centrifuge to dewater the sediments and transport of the material out of the basin. Estimates to dredge in 2000 were about $30 per cubic yard. Cost estimates for marine disposal in Puget Sound are generally one-quarter of those of upland disposal.

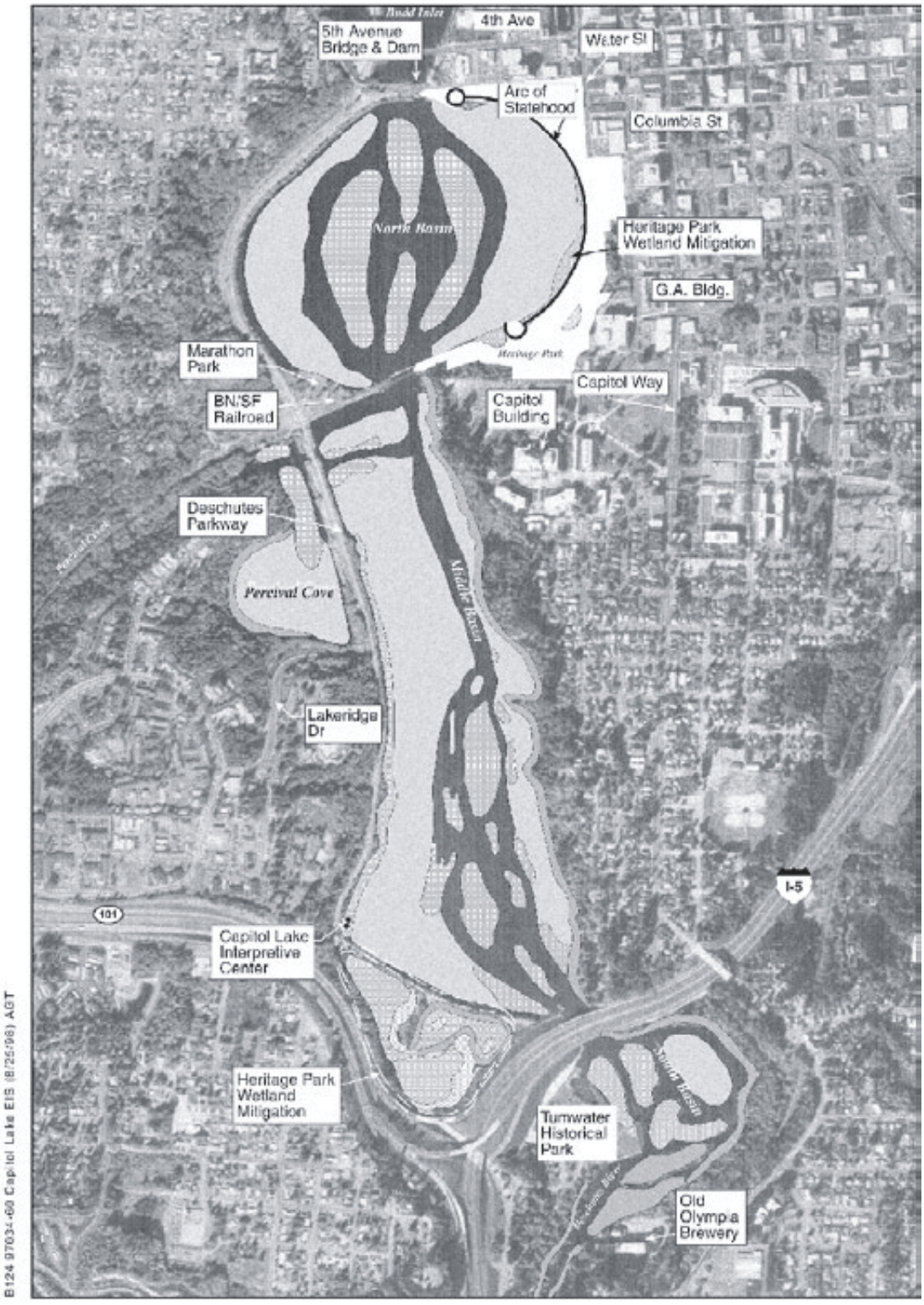


Over the next ten years views of the North Basin of Capitol Lake should not change other than the growth of trees planted along the shoreline of Heritage Park.

Over the next ten years views of the Middle Basin may include small gravel bars or islands forming just north of Interstate 5.



Over the next ten years views of the South Basin will be similar to today, with an expansion of the gravel bars and vegetated islands.


5th Avenue Bridge & Dam
4th Ave
Water St
Arc of Statehood
Columbia St
North Basin
Heritage Park Wetland Mitigation
G.A. Bldg.
Marathon Park
BN/SF Railroad
Capitol Building
Capitol Way
Deschutes Parkway
Percival Cove
Middle Basin
Lakeridge Dr
I-5
101
Capitol Lake Interpretive Center
Heritage Park Wetland Mitigation
Turnwater Historical Park
Old Olympia Brewery
B124 97034-60 Capitol Lake EIS (8/25/98) AGT
0
900 feet
1800 feet
N
Estimated Time to Maturation:
100 to 150 Years
Freshwater
Existing Emergent Wetland
Existing Scrub-Shrub
Existing Freshwater Forested Wetland
Predicted Future Emergent Wetland
Predicted Future Scrub-Shrub
No-Action Alternative

The figure on page 46 depicts how Capitol Lake may fill in over the next 100 to 150 years without a comprehensive sediment management strategy. The South Basin at the base of Tumwater Falls will fill in the fastest. It will continue to change from open water to a series of island and river bars. The Middle Basin north of I-5 will continue to become more shallow, and some islands may appear during the next 10 years. It is likely that Percival Cove may be cut off from the rest of the lake by sedimentation from Percival Creek. It is also likely that there will be few visual changes due to sedimentation in the North Basin adjacent to Heritage Park.

At the upland disposal rate, the cost to remove sediment from Capitol Lake equal to the rate it is being deposited would be about $1 million per year, and about $40 million if all the sediments that have been deposited in the lake since it was created were removed. It may be possible to use dredged material within the basin to create fish and wildlife friendly edges. (See Objective #9)

Remaining sediment management issues include:

- A better understanding of the sediment deposition rates in all the lake basins,
- A preliminary site design of the possible sediment handling site,
- Determining the permitablity of the possible sediment handling site, and
- Conceptual designs for use of sediments used to improve shoreline habitat.

Activities in Years 2003 - 2005:

A consultant will be hired to address the unanswered sediment questions and develop a comprehensive sediment management strategy. It is likely this strategy will involve the use of dredged lake sediment for shoreline enhancement. A second but related study would evaluate sediment budget and its impacts on southern Budd Inlet.

CLAMP Budget 2003 - 2005:

The budget to prepare the sediment managment strategy will be $65,000. The second sediment study for southern Budd Inlet will cost $100,000. Funding would be 50% from GA and 50% from an unspecified grant funding source, with the most likely source being the U.S. Army Corps of Engineers.

Activities in Years 2005 - 2013:

It may be possible to use dredged material within the basin to create fish and wildlife friendly edge.

CLAMP Budget 2005 - 2013:

The costs for dredging is described in Objective 9.

14. Communicate with the community, legislators, and the State Capitol Committee on a routine basis regarding Capitol Lake.

[For additional information regarding this objective, refer to pages 1-1 to 1-15 in the Capitol Lake Adaptive Management Plan - 1999 to 2001 (1999).]

BACKGROUND

While being the last Objective of the CLAMP Plan, having an effective public involvement program will be essential to adaptively managing Capitol Lake. In the past business and environmental groups, neighborhood groups, campus visitors, shoreline property owners and legislators have all shown a keen interest in the CLAMP process. So there are multiple purposes for routinely communicating with folks including:

- Sharing new information regarding what has been learned,
- Reviewing past accomplishments,
- Explaining what activities or construction is scheduled, and
- Providing a feedback opportunity for the public.

Three primary techniques will be used to inform people about Capitol Lake and the status of CLAMP activities.

1. CLAMP Home Page. This will be the primary method of information distribution. Summaries of new reports will also be posted here. And copies of various reports (such as the CLAMP Environmental Impact Statement) may be downloaded from this site. It will also include links to other General Administration sites (such as the reconstruction of Deschutes Parkway). This will be updated after every CLAMP Steering Committee meeting.

2. *Capitol Lake News.* Handouts or flyer for special topics will be created, as needed and will be distributed to a list of interested parties. These will be printed under the banner of *Capitol Lake News.* These will be available at special events (such as *Lakefair*) and other community or neighborhood meetings.

3. CLAMP Annual Public Meeting. An annual meeting will be GA's primary opportunity to tell interested parties what's been happening and give them a view of the big picture. Beginning in 2003, the annual CLAMP meeting will be scheduled in the fall, near the September CLAMP Steering Committee meeting. A ***CLAMP Report Card*** will also be distributed which evaluates the past year's performance towards accomplishing the 14 Objectives listed in the CLAMP 10 Year Plan. Every attempt will be made to have this meeting taped by TVW or TCTV.

Information gained from the annual public meetings will be provided to the CLAMP Steering Committee. All of the objectives will be reviewed once a year and modifications to the Plan can occur as new data becomes available. The CLAMP Steering Committee will make a recommendation on the CLAMP 10 Year Plan to the Director of the Department of General Administration. GA will be responsible for implementing most of the tasks listed in the CLAMP 10 Year Plan.

As the Steering Committee is advisory to the GA Director, the Capitol Campus Design Advisory Committee (CCDAC) also provides design advice to the State Capitol Committee (SCC). Capitol Campus sub-area plans are approved by the SCC and changes to any adopted campus plans will require their approval. Finally, any activities that require state funding will most often be funded through the capital budget process. Projected Capitol Lake budgets for the next 10 years have been generated and can be found on page 54.

Activities in 2003-2005

A CLAMP Home Page will be created and the adopted CLAMP Plan will be available from that site. Staff will make presentations to community and neighborhood groups as requested. The Campus Master Plan would be amended to reflect the CLAMP 10 Year Plan.

CLAMP Budget 2003-2005

GA has contracted with Thurston Regional Planning Council (TRPC) since 1997 to staff the Steering Committee meetings and provide policy, graphics, and mapping support as needed. TRPC's current contract with GA is $100,000. The cost to amend the Campus Master Plan is estimated at $50,000

Activities in 2005-2013

The first annual CLAMP meeting will occur near September 2003 and occur yearly thereafter. Post cards or written notices may be mailed to persons on an interested parties list. An advertisement for the meeting may be placed in the local print media. One-on-one meetings may also be arranged with print reporters and the local editorial board in advance of the annual CLAMP meeting.

CLAMP Budget 2005-2013

It is likely that planning support to the CLAMP process will be $100,000 per biennium.

CLAMP 10 YEAR PLAN –
Annual Report Card

October 3, 2002

CLAMP - 10 YEAR PLAN OBJECTIVES	PERFORMANCE MEASURES	TARGET SEPT 2003	ACTUAL SEPT 2003	TARGET FOR 100% COMPLETION	RESPONSIBLE AGENCY
1. Adaptively manage the Capitol Lake basin.	A. Number of management actions per year which foreclosed choosing an alternative aquatic environment.	0		June each year	GA
2. Complete an estuary feasibility study to determine a long-range management decision.	A. % of Capitol Lake basin estuary study scope of work and budget is complete.	25%		June 2005	GA
3. Restore earthquake damaged state infrastructure within the basin.	A. % of Deschutes Parkway is reconstructed.	100%		Oct 2003	WSDOT for GA
	B. % of Marathon Park is reconstructed.	100%		Dec 2003	GA
	C. % of the Capitol Lake Interpretive Site is reconstructed.	100%		Dec 2003	GA
4. Complete the development of Heritage Park.	A. % of Heritage Park - Phase IV is constructed.	100%		June 2003	GA
	B. % of Heritage Park - Phase V is constructed.	0		June 2005	GA

GA = Washington Department of General Administration
WDFW = Washington Department of Fish and Wildlife
WDOE = Washington Department of Ecology
WSDOT = Washington Department of Transportation

CLAMP - 10 YEAR PLAN OBJECTIVES	PERFORMANCE MEASURES	TARGET SEPT 2003	ACTUAL SEPT 2003	TARGET FOR 100% COMPLETION	RESPONSIBLE AGENCY
5. Expand and enhance public use of state owned lands and adjacent public spaces within the Capitol Lake region.	B. % of the Capitol Lake dam pedestrian bypass is constructed.	0		June 2007	GA
	C. % of the Heritage Park Fountain Block is completed.	80%		Unknown	Olympia
	D. % of the blocks fronting onto Heritage Park is privately redeveloped (5th Avenue, Water Street & 7th Avenue).	5%		Unknown	Olympia
	E. % of the old Brewhouse in the New Market Historic District is redeveloped.	0		Unknown	Tumwater
6. Develop and implement a flood hazard management strategy for lands adjacent to Capitol Lake.	A. % of flood strategy is approved by the CLAMP Steering Committee.	100%		June 2003	GA
	B. % of measures listed in flood strategy are completed.	5%		June 2007	GA Olympia Tumwater
7. Rehabilitate the fish ladder in the Capitol Lake dam to provide year-round fish passage into and out of Capitol Lake.	A. % of Capitol Lake dam fish ladder is repaired.	100%		Sept 2002	GA
8. Relocate the Percival Cove fish rearing operation and rehabilitate Percival Cove for other users.	A. % of new fish facility for the Deschutes River is constructed.	10%		June 2007 (?)	WDFW
	B. % of Percival Cove sediments are remediated.	0		Unknown	WDFW

GA = Washington Department of General Administration
WDFW = Washington Department of Fish and Wildlife
WDOE = Washington Department of Ecology
WSDOT = Washington Department of Transportation

CLAMP - 10 YEAR PLAN OBJECTIVES	PERFORMANCE MEASURES	TARGET SEPT 2003	ACTUAL SEPT 2003	TARGET FOR 100% COMPLETION	RESPONSIBLE AGENCY
9. Improve lake edges to be fish, wildlife and people friendly.	A. % of plan for improving shoreline vegetation is approved by the CLAMP Steering Committee.	50%		June 2004	GA
	B. % of Phase I fish, wildlife and people friendly edges is constructed.	0		June 2007	GA
	C. % of Phase II fish, wildlife and people friendly edges is constructed.	0		June 2009	GA
	D. % of Phase III fish, wildlife and people friendly edges is constructed.	0		June 2011	GA
	E. % of Phase IV fish, wildlife and people friendly edges is constructed.	0		June 2013	GA
10. Maintain less than 100 resident Canada Geese on Capitol Lake.	A. Number of consecutive years the Canada goose population does not exceed this target population.	1 year		Sept 2005	GA Port of Oly Tumwater
11. Improve water quality in Capitol Lake to meet State standards.	A. % of Total Maximum Daily Load (TMDL) study is complete.	10%		June 2006	WDOE
	B. % level of total phosphorous in Capitol Lake meets or exceeds Ecology's requirements.	25%		Unknown	WDOE GA
	C. % level of fecal coliform bacteria in Capitol Lake meets or exceeds Ecology's requirements.	50%		Unknown	WDOE GA
	D. % level of storm drain that flow to Capitol Lake from downtown Olympia which are dye tested.	100%		June 2003	Olympia
	E. Strategy to address stormwater outfalls into Capitol Lake is approved by the CLAMP Steering Committee.	50%		June 2004	GA Olympia Tumwater
	F. % of measures listed in stormwater strategy is completed.	10%		Unknown	GA Olympia Tumwater

GA = Washington Department of General Administration
WDFW = Washington Department of Fish and Wildlife
WDOE = Washington Department of Ecology
WSDOT = Washington Department of Transportation

CLAMP - 10 YEAR PLAN OBJECTIVES	PERFORMANCE MEASURES	TARGET SEPT 2003	ACTUAL SEPT 2003	TARGET FOR 100% COMPLETION	RESPONSIBLE AGENCY
12. Eliminate the Purple Loosestrife and Eurasian Milfoil noxious weed infestations throughout Capitol Lake.	A. Number of consecutive years Purple Loosestrife is eliminated from Capitol Lake.	1 year		Sept 2012	GA
	B. Number of consecutive years Eurasian Milfoil is eliminated from Capitol Lake.	1 year		Sept 2008	GA
13. Develop and implement a comprehensive sediment management strategy for the Capitol Lake basin.	A. % of sediment strategy report is approved by CLAMP Steering Committee.	75%		March 2004	GA
	B. % of southern Budd Inlet sediment report is approved by CLAMP Steering Committee.	50%		Dec 2004	GA
14. Communicate with the community, legislators, and the State Capitol Committee on a routine basis regarding Capitol Lake.	A. Number of consecutive years an annual Capitol Lake public meeting is held.	1 year		June each year	GA
	B. Number of consecutive years report card is provided on the year's accomplishments.	1 year		Sept each year	GA
	C. % of CLAMP 10 –Year Plan amended into the Capitol Campus Master Plan.	25%		June 2004	GA

GA = Washington Department of General Administration
WDFW = Washington Department of Fish and Wildlife
WDOE = Washington Department of Ecology
WSDOT = Washington Department of Transportation

CAPITOL LAKE ADAPTIVE CLAMP 10 YEAR PLAN

OBJECTIVES	2001-2003 Current Biennium	2003-2005 Biennium	Products	2005-2007 Biennium	Products
1. Adaptively manage the Capitol Lake basin.		– –	(See #14)	– –	(See #14)
2. Complete an estuary feasibility study to determine a long-range management decision.		$40,000 GA		Unknown	
3. Restore earthquake damaged state infrastructure within the basin.	$820,000 GA $6,280,000 FHWA	$236,750 GA $710,000 FEMA	Repair Marathon Park Repair Marathon Park		
4. Complete the development of Heritage Park.	$2,100,000 GA	$5,500,000 GA	Complete Heritage Park		
5. Expand and enhance use of State owned lands and adjacent public spaces within the Capitol Lake region.	– –	$100,000 GA	Design - Cap Lake Dam Ped Bypass	$650,000 GA	Construct - Cap Lake Dam Ped Bypass
6. Develop a flood hazard management strategy to protect lands adjacent to Capitol Lake.	$161,000 FEMA	– – $40,000 GA $20,000 GA	Flood Plan Response Link to gauging stations	$75,000 GA	Flood Plan Response
7. Rehabilitate the fish ladder in the Capitol Lake dam to provide year-round fish passage into and out of Capitol Lake.	$100,000 GA	$25,000 GA	Fish Ladder Inspection & Repair	$25,000 GA	Fish Ladder Preserve & Repair
8. Relocate the Percival Cove fish rearing operation and rehabilitate Percival Cove for other users.	– –	Unknown		Unknown	
9. Improve lake edges to be fish, wildlife and people friendly.	– –	$60,000 GA $20,000 GA	Study - Fish Friendly Shoreline Habitat Manual for Cap Lake O & M Operations	$200,000 GA	Construct - Fish Friendly Habitat
10. Maintain Capitol Lake with fewer than 100 resident Canada geese.	$45,000 GA	$45,000 GA	USDA for Goose Control	$45,000 GA	USDA for Goose Control
11. Improve the water quality in Capitol Lake to meet State standards.	$21,000 GA	$40,000 GA $45,000 GA	Lake Water Sampling WQ Improvements	$40,000 GA $120,000 GA	Lake Water Sampling WQ Improvements
12. Eliminate the Purple Loosestrife and Eurasian Milfoil noxious weed infestations throughout Capitol Lake.	$150,000 GA $50,000 DOE	$95,000 GA	Noxious Weed Control	$95,000 GA	Noxious Weed Control
13. Implement a comprehensive sediment management strategy for the Capitol Lake basin.	– –	$65,000 GA $50,000 GA $50,000 ACE	Study - Use of Sediment for Habitat Study - Budd Inlet Sediment	– –	(See #8)
14. Communicate with the community, legislators, and the State Capitol Committee on a routine basis regarding Capitol Lake.	$100,000 GA	$100,000 GA $50,000 GA	Support to CLAMP Steering Committee Amend Campus Master Plan	$100,000 GA	Support to CLAMP Steering Committee
Subtotal	$3,336,000 GA $6,280,000 FHWA $161,000 FEMA $50,000 DOE	$6,531,750 GA $50,000 ACE $710,000 FEMA		$1,350,000 GA	
TOTAL	**$9,827,000**	**$7,291,750**		**$1,350,000**	

MANAGEMENT PLAN - BUDGET (2003-2013)

2007-2009 Biennium	Products	2009-2011 Biennium	Products	2011-2013 Biennium	Products	2003-2013 TOTAL
– –	(See #14)	– –	(See #14)	– –	(See #14)	
Unknown		Unknown		Unknown		$40,000 GA
						$236,750 GA $710,000 FEMA
						$5,500,000 GA
						$750,000 GA
$85,000 GA	Flood Plan Response	$85,000 GA	Flood Plan Response	$85,000 GA	Flood Plan Response	$390,000 GA
$30,000 GA	Fish Ladder Preserve & Repair	$30,000 GA	Fish Ladder Preserve & Repair	$35,000 GA	Fish Ladder Preserve & Repair	$145,000 GA
Unknown		Unknown		Unknown		Unknown
$250,000 GA	Construct - Fish Friendly Habitat	$250,000 GA	Construct - Fish Friendly Habitat	$250,000 GA	Construct - Fish Friendly Habitat	$1,030,000 GA
$45,000 GA	USDA for Goose Control	$45,000 GA	USDA for Goose Control	$45,000 GA	USDA for Goose Control	$225,000 GA
$40,000 GA $155,000 GA	Lake Water Sampling WQ Improvements	$40,000 GA $155,000 GA	Lake Water Sampling WQ Improvements	$40,000 GA $150,000 GA	Contract - Lake Water Sampling WQ Contingency	$200,000 GA $625,000 GA
$95,000 GA	Noxious Weed Control	$95,000 GA	Noxious Weed Control	$95,000 GA	Noxious Weed Control	$475,000 GA
– –	(See #8)	– –	(See #8)	– –	(See #8)	$115,000 GA $50,000 ACE
$100,000 GA	Support to CLAMP Steering Committee	$100,000 GA	Support to CLAMP Steering Committee	$100,000 GA	Support to CLAMP Steering Committee	$550,000 GA
$800,000 GA $312,500 ACE		$800,000 GA		$800,000 GA		$10,281,750 GA $362,500 ACE $710,000 FEMA
$1,112,500		**$800,000**		**$800,000**		**$11,354,250**