May 7, 2010

Ray Hoffman, Director
Seattle Public Utilities
PO Box 34018
Seattle, WA 98124-4018

Dear Mr. Hoffman:
The Cedar River Habitat Conservation Plan Oversight Committee would like to respectfully submit our completed Year Eight Comprehensive Review of the City of Seattle HCP for your consideration.

Introduction

The Cedar River Habitat Conservation Plan (HCP) requires the HCP Oversight Committee to conduct periodic comprehensive reviews of overall progress on implementation, including the identification of significant issues and proposals that would more effectively and economically mitigate incidental take. The Cedar River Watershed HCP is a 50-year commitment to maintain and improve clean water and other ecosystem services, as well as protect eight federally listed and a host of other species on approximately 90,000 acres at the foot of a rapidly expanding urban area. The HCP is implemented through the Seattle Public Utilities (SPU).

The HCP and associated agreements are designed to meet the City of Seattle's responsibilities for water supply, electrical generation and environmental protection (HCP 2.2-1). The conservation efforts currently being undertaken have heightened importance given the threat of climate change impacts. It is likely that stressors on existing species and the challenges of water management will increase with predicted changes in precipitation patterns. One of the central themes of our review is to encourage SPU to consider every opportunity to increase ecosystem resilience and management flexibility to meet future challenges of climate change during the implementation of the HCP.

As an Oversight Committee for the HCP it is our responsibility to serve as a sounding board for discussions regarding HCP implementation. Our role is to assist HCP staff to identify issues, work for resolution and periodically conduct a review of HCP implementation progress (HCP 5-4.9). Members of the Oversight Committee include representatives from a broad range of expertise and stakeholders including members from two committees that help in implementing associated agreements: the Cedar River Instream Flow Commission, which guides and oversees implementation of the instream flow management program and the Cedar River Anadromous Fish Committee which advises the City on implementation of mitigation measures for the fish migration barrier at the Landsburg Dam.

The objective of the Reviews is to provide a comprehensive evaluation of the overall progress of HCP implementation and to identify and address significant issues for SPU to consider. We also consider recommending funding allocations and any proposed amendments that might more effectively and economically mitigate any incidental take (HCP 13.2).

ORGNIZATION AND APPROACH TO THE REVIEW

We tasked a subcommittee to research the major accomplishments and progress toward specific commitments in the HCP. The initial findings were reviewed by the entire Oversight Committee and revised as suggested. Our review reflects the following organization of the conservation strategies: Watershed management, Instream flows and Landsburg fish passage mitigation. Our conclusions are based on interviews with HCP staff, briefings provided to the Oversight Committee and information on the SPU web site. The next comprehensive review is anticipated by the end of 2012 to cover HCP activities through year 11.

MAJOR ACCOMPLISHMENTS SINCE THE PREVIOUS REVIEW

Since the last review by the Oversight Committee there have been several important developments in HCP implementation. We appreciate the timely and professional briefings we have received on these and other developing issues by the SPU staff.

A very careful and deliberate strategic planning process has been completed, including several important features. More information about the strategic planning process can be found at: **http://www.seattle.gov/util/About_SPU/Water_System/Habitat_Conservation_Plan/ManagingtheWatershed/StrategicPlanning/index.htm**.

The website represents a new standard in accessibility and transparency in implementation reporting. The contributors should be recognized for their innovation and thoughtfulness of presentation. The site represents a challenge to other HCPs to increase accessibility of information. See: **http://www.seattle.gov/util/About_SPU/Water_System/Habitat_Conservation_Plan/index.asp**

The Muckleshoot Settlement is important to the implementation of the HCP. The Muckleshoot Settlement can be viewed as a mechanism for implementing HCP water allocation intent (HCP 4.4-45) expanding the City's initial intent to allocate a portion of its 300 MGD water claim from the HCP stated level of 150 MGD to a higher level of 176 MGD, and extending this commitment from 50 years to "in perpetuity". The settlement also clarified considerations such as tribal hunting and gathering.

A new Incidental Takes Permit was issued to SPU by NOAA Fisheries. In 2007, NOAA Fisheries removed sockeye salmon as an ESA-unlisted species, and the Cedar River interim and replacement sockeye hatcheries, from the City of Seattle's Incidental Take Permit (ITP). This decision was in response to a federal lawsuit that challenges NOAA Fisheries' review of the effects of the sockeye hatchery in the issuance of the ITP to Seattle. The HCP research and monitoring activities related to the Cedar River Sockeye Hatchery still remain covered activities under the ITP.

A minor modification (Sept 2008) encompassing 6 aspects of the HCP implementation was agreed to with the Services. The modification primarily influences changes in funding allocation, timing of activities for the Walsh Lake Restoration, Riparian Conifer Under-planting, Bull Trout Weir, Long-term

Stream Monitoring, Downstream Habitat Protection and Restoration, and the Water Quality Monitoring for the Effects of Fish Passage above Landsburg Dam.

Response to the five-year review

In 2006, the five-year review from the Oversight Committee had 12 suggestions for SPU to consider in future implementation of the HCP. Chuck Clarke (SPU Director) responded to Oversight Committee suggestions, January 2007. Each request has made significant progress or has been completed since the five-year review. The subjects covered in the previous review and subsequent progress is summarized below. The following comments on each of those suggestions reflect the SPU response and subsequent work by HCP staff.

1. Increase effort dedicated to road improvement until this performance commitment is back on schedule;
    - Miles of road improvement and maintenance is well ahead of schedule. Road decommissioning has met the financial commitment and has focused on higher risk roads significantly reducing the risk of sediment delivery to streams.

2. Increase riparian under-planting if appropriate, or negotiate a more appropriate level of planting and/or another use of funds;
    - A careful analysis was conducted resulted in a minor modification with the Services in 2008. Conifer under-planting prescriptions were revised from treating 424 acres with conifer under-planting to treating 201 acres (including 51 acres already planted) with a combination of conifer under-planting, conifer under-planting with understory clearing, and release of existing conifer seedlings (by thinning overstory).

3. Continue to use bridges instead of culverts, where appropriate, and increase financial commitment to this activity;
    - The City has exceeded expectations in the rate in which high risk culverts have been replaced with appropriately sized culverts or a bridge (257 completed as of 2008 when the commitment was 100), to the best of our knowledge, this effort will appreciably reduce the impacts of potentially damaging high flows. We applaud the City in this proactive effort to safeguard and restore watershed process.

4. Request an extension in the period of performance for replacing stream crossings from the other parties to the Cedar River HCP;
    - We believe the city is still behind on their commitment to replacing 34 stream crossings for fish passage (8 completed as of 2008) but are well above their commitment for replacing culverts for passing peak flows. We request the City brief the Oversight Committee on ongoing status and priorities of work to update fish passages.

5. Be prepared to fund and purchase properties downstream of Landsburg;
    - There have been recent purchases on the lower Lions and Belmondo reaches. The acquisition of high value properties has been extended through 2012 to allow careful consideration to best meet this commitment.

6. Continue to report incidents of exceeding down ramping rates in the Annual Flow Compliance Report;

- Operation of Masonry Dam, Cedar Falls Hydroelectric Facility and the Landsburg Diversion Dam has kept down ramping rate exceedences to the target of less than 4 events per year since 2005 at the three instream flow compliance points on the Cedar River. All exceedences that have occurred have been reported to the Cedar River Instream Flow Commission and documented in meeting minutes and the annual compliance reports.

7. Provide information to the Oversight Committee on the fate of woody debris removed at Landsburg Dam;

- Woody debris is actively monitored and managed at the Landsburg Dam. Wood either 1) passes downstream on its own, 2) is assisted/aligned so it moves downstream, or 3) if LWD sticks on the dam and cannot move downstream it is pulled out and passed downstream of the dam (it may be cut into manageable sizes). No wood is collected. When a pulse of wood is anticipated heavy equipment is stationed on each side of the dam, and can operate 24/7.

8. Oversight Committee recommends that the City evaluate the appropriateness of starting implementation of, or continuing to implement, the following HCP activities;

a. Request that the Instream Flow Commission decide whether to implement the Cedar Dead Storage Engineering Feasibility Study

- The IFC anticipates that SPU will be providing independent funding to plan, design and construct land-based pumping facilities to replace the existing Chester Morse Lake Temporary Floating Pump Plant. In addition to providing more reliable emergency pumping capacity, this proposed facility could potentially be used to implement the Chester Morse Lake Dead Storage project described in Section E. 3. of the Instream Flow Agreement for the Cedar River (IFA), if such a project is deemed appropriate by all parties to the HCP and the Muckleshoot Tribe. Therefore, funding originally allocated by the HCP to support engineering and associated analyses for the dead storage project is no longer required for this purpose.

b. Request that the Instream Flow Commission evaluate whether the switching criteria study is still needed

- The IFC recommended that funding for the development of improved switching criteria, provided under Section E.4. of the IFA should remain under the jurisdiction of the IFC. Existing switching criteria established by Sections B.7 and B.8 of the IFA have not yet exhibited significant flaws and may be satisfactory for future decision making. However, the decision to accept or amend the current switching criteria could be influenced by the final configuration and potential use of the proposed new Chester Morse Lake pumping facilities, by other potential facility alterations and by factors such as climate change. Therefore, the IFC wishes to extend the deadline for expenditure of these funds to the year 2020.

c. Request that the Services evaluate whether use of funds for the riparian under-planting program should be changed.

- Covered by 2008 minor amendment to reduce from 424 acres with conifer under-planting to 201 acres (including 51 acres already planted).

9. Extend the completion year for the downstream habitat activities (both under the Instream Flows and Landburg Mitigation components of the HCP) to 2010;
   - Covered by the 2008 minor modification extended downstream habitat timeline to 2012.

10. Identify a set of metrics and associated benchmarks directly related to listed species;
   - SPU has provided a publically-accessible, web-based outlet for information on progress in implementing the HCP and the status of selected species in the HCP. The web site established a broad range of easily obtainable and understandable metrics. This outlet effectively consolidates and summarizes much of the monitoring information conducted under the HCP and is an effective means for communicating the results of HCP implementation. Keep up the good work and leadership.

11. Work toward integrating HCP components internally and with other conservation and recovery efforts;
   - The recently completed strategic planning work is a major contribution toward this overall goal. The Oversight Committee would like to see future developments to incorporate consideration of a broad range of climate change adaptations into strategic planning.
   - SPU has demonstrated through ongoing funding partnerships that it seeks efficiencies toward common goals.

12. When possible pursue grant funding to supplement HCP cost and performance commitments;
   - Significant progress has been demonstrated in seeking outside funding for important efforts, grants include $1,365,538 from US Fish and Wildlife Service (USFWS) under the Cooperative Endangered Species Conservation Fund for the downstream habitat land acquisition program.
   - Nearly $100,000 from King Conservation District (KCD) and National Fish and Wildlife Federation (NFWF) for the eradication of knotweed and plant native vegetation in the lower Cedar River. The project was done in collaboration with Cascade Land Conservancy, King County Noxious Weed program, and Friends of the Cedar River Watershed.
   - Approximately $2,000,000 in matching funds from the U. S. Army Corps of engineers to investigate and implement fish passage and water efficiency improvements at the Ballard Locks. Recent acquisition of $226,000 in partial matching funds from the United States Geological Survey to implement the Cedar River Peak Flow Adaptive Management Study.
   - Over $150,000 in grant support from the King Conservation District to implement the Cedar River Chinook Salmon Spawning Survey Project.
   - Final approval has been received for a 2010 Salmon Recovery Funding Board (SRFB) grant for $500,000 for land acquisition in the lower Cedar in partnership with the Friends of the Cedar River Watershed (FRCW) and other sources for extensive volunteer/outreach base to involve private property owners in restoration, in addition to treating publicly owned lands using Washington Conservation Corps (WCC) and Earthcorps crews.
   - An application made to NFWF Community Salmon Funds for $49,000 of to supplement funds for property owners in restoration. In addition, through conducting cooperative projects, in-kind contributions have been made from several sources toward watershed studies.

Progress on performance and financial commitments

One of the unique aspects of the Cedar River HCP is the specificity of performance and financial commitments for many of the strategies. The City has created an impressive tracking system (HCP

Information Management System, HIMS) to document expenditures related to specific commitments. The system can generate reports on expenditures and commitments by reporting period. This was an ambitious task and it has served implementation tracking well.

As noted in previous reviews, the Oversight Committee recognizes that differences between planning and implementation can be reasonably expected for any long-term project. The Oversight Committee has been informed of and consulted about performance commitments and where actual costs differ from projected financial commitments in the HCP. Departures in expenditures reflect deliberate decisions and should be expected under adaptive management. Although the Oversight Committee has identified some cases where implementation is behind the anticipated schedule, these are rare and arguably minor and of little consequence. The City has more than upheld their financial commitments in the implementation of the HCP.

Finance expenditures for the HCP tell very little of the story. All commitments have been met, and were usually exceeded. The HCP is unique in that the nature of the tasks and expenditures are carefully articulated. SPU and the HCP staff have demonstrated leadership by virtue of their acquisition of information to guide decision making, innovation and transparency.

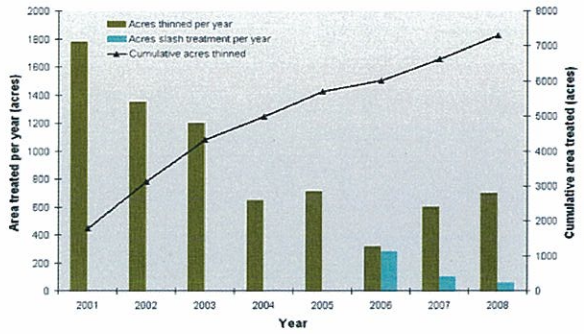
Watershed management

Implementation of SPU's commitments in the HCP to watershed management of the Cedar River from 2000 through 2008 was reviewed. This review summarizes the status of implementation and identifies subjects that SPU should consider with respect to continuing implementation of watershed management.

Under the HCP the City has agreed to these commitments:

- Eliminate timber harvest for commercial purposes to effectively create a watershed ecological reserve, providing long-term, comprehensive protection of the watershed ecosystem.
- Provide a total of about $27.2 million for a comprehensive program to restore fish and wildlife habitats that have been degraded by past activities such as logging and road construction.
- Remove approximately 38% of the forest roads within the watershed by 2020. Employ restoration thinning, planting, and other approaches to restore the natural forest processes and functions that create and maintain habitats for at-risk species.
- Design and conduct projects to restore habitat in streams and streamside areas and to improve water quality over the long term.
- Provide more than $6 million to design and conduct comprehensive research and monitoring studies that will provide the information needed to achieve the conservation objectives of the HCP over the long term.

Upland Forest Area Treated with Restoration Thinning



Implementation and integration

SPU should be commended for its commitment to and diligence in meeting important watershed restoration targets and increasing the transparency of information primarily through the web site (for example the inset figure reported cumulative progress on restoration thinning). Completion of the Strategic Planning for all major aspects of

watershed management should be hailed as a significant accomplishment. It is evident from these plans that an integrated management approach is the expectation where the consequence of an action is never considered in isolation. Considerable positive benefit in water quality and the protection of habitats is being realized for road improvements that have been completed. Together with completed efforts to re-vegetate and stabilize stream banks, and improve stand density through thinning, the watershed is well on its way to meeting long-term watershed management goals.

Fueling the innovation behind the plans and management to date is a carefully conceived and implemented research and monitoring program. Recent reports on the commitment for conifer underplanting, effects of salmon re-colonization above Landsburg on water quality, and restoration thinning illustrate the use of or onsite analysis and other best available science to inform pending management decisions. The impact of research such as the reconstruction of past watershed condition, and ongoing population monitoring, will be invaluable in meeting the uncertainties of the future.

Considerations for achieving objectives over the long term

This review provides an opportunity for the HCP Oversight Committee to identify and address issues and to propose ways for more effective mitigation of incidental take. Although there are no current issues with implementation, there four issues that SPU should continue to assess as it plans watershed management in future decades.

1. Invasive species control

The initiation of an invasive species control effort for terrestrial plants and European Milfoil is a valuable and cost effective contribution to the long-term conservation goal of the watershed. An ounce of proactive control is worth a ton of damage control. Invasive species have the potential to limit habitat effectiveness and the future ability of species to adapt to changes in climate and flow regimes. We encourage SPU to consider inventories and strategies for a broad range of invasive species, including aquatic invertebrates and algae, forest diseases, and forest pest insects that might have severe and adverse effects on watershed ecosystems. Cost effective control of Knotweed on the watershed is of concern, and we encourage SPU to consider all treatments, including herbicides to provide early containment of this aggressive species.

2. Restoration thinning program

Implementation of restoration programs to date has been excellent. Reconstruction of watershed condition has allowed detailed project planning using the best available science. Strategic planning has developed a logical set of guidelines and recommendations for implementation of the restoration programs. The set of expectations sets a high standard for planning and analysis. The benefit of these activities for the future stand condition is not at dispute, considering the scale at which analysis is conducted. Look at alternatives to lower per area cost and subsequently expand the program to forests that could long serve as habitat and carbon stores, and more aggressively integrate restoration planting for tree species diversity with the thinning program.

3. Climate change and planning

Recently completed Strategic planning for watershed management activities charts a course that will serve the implementation of watershed management for decades. All the plans contain the intent to incorporate new information through an adaptive management process. Climate change creates unique challenges to forest management. Given the potential consequences of climate change on forest growth and species, the Oversight Committee requests a summary of adaptive strategies that can be incorporated into the restoration philosophy landscape template. We would like SPU to report on current and future efforts to consider increasing the adaptability of watersheds to climate change.

4. Coordinated wildlife management

The Settlement Agreement (SA) with the Muckleshoot Tribe includes provisions that relate to upland management in the watershed that could have long term implications to the HCP. The SA commits the City and Tribe to develop a cooperative plan for management of wildlife in the watershed in order to assure the Tribe's ability to exercise its treaty reserved rights for ceremonial and subsistence hunting and gathering. According to the SA, the tribe may authorize ceremonial, subsistence and management hunting by Tribal members. The Tribe will also undertake a deer, elk and cougar research program in the watershed, funded by the City ($250,000 per year for 10 years), to better inform the parties in managing wildlife. The Tribe also will continue habitat improvement work, supplemented with City funding ($50,000 per year for 10 years). The agreement provisions specify that activities conducted to support tribal hunting must be consistent with the HCP. This additional commitment of resources should be a welcome addition to other HCP efforts if there is good coordination between HCP and SA activities. The Oversight Committee recommends that the City ensure that the HCP and SA are coordinated and that the City include a report on the progress of the wildlife management efforts undertaken through the SA in its annual HCP reviews.

Instream flow component

Implementation of SPU's commitments in the HCP to managing stream flow in the Cedar River from 2000 through 2008 was reviewed. This review summarizes the status of implementation and identifies issues that SPU should continue to consider with respect to continuing implementation of the Cedar River HCP.

The HCP established six objectives for streamflow management in the Cedar River Habitat Conservation Plan (City of Seattle, 2000):

1. Implement a beneficial instream flow regime that will provide habitat for anadromous fish from Cedar Falls to Lake Washington;
2. Reduce risks of stranding juveniles and dewatering redds;
3. Provide an instream flow regime that improves habitat conditions;
4. Maintain firm yield, water quality, and operational flexibility of water supply system;
5. Support improvement of downstream migration through Hiram Chittenden Locks; and
6. Preserve flexibility for meeting future needs of people and fish.

Instream flow management practices were developed to achieve these objectives using a three-tiered approach of critical flows, normal guaranteed flows, and supplemental flows. Critical flows are

minimum flows that would be maintained during periods of severe drought. Normal guaranteed flows refer to seasonally variable flows that are provided in at least 9 out of 10 years. Supplemental flows are provided in addition to normal guaranteed flows at specific periods in the spring, summer, and fall in some years depending on the supplement. There are also down ramping rate criteria (the maximum rate at which flows may be reduced per hour below Masonry Dam, the Cedar Falls Hydroelectric Facility and Landsburg Dam as a result of the City's operations.). The city has continued the commitment to an adaptive approach (through the Instream Flow Committee, IFC) to managing flows above the guaranteed levels for the benefit of instream resources. All these flow management approaches are potentially influenced by watershed restoration and potential changes in precipitation timing and amount as influenced by climate change.

Implementation and integration

SPU has implemented an instream flow regime for the Cedar River that complies with targets through releases from Chester Morse reservoir and diversions at Landsburg. Normal guaranteed flows have been achieved at all times in HCP years 1-8. Spring supplemental flows have been provided in 6 of 8 years (target: 70% of days in all normal years). The two years in which spring supplemental flows were not provided were droughts years. The summer supplemental block was provided in 7 of 9 years (target: 63% of years). Early fall supplements were provided in all years. Fall normal high supplements were provided in at least 8 out of 9 years (targets: 60 to 80% of years). Exceedences of down ramping rates have been less than the City's internal performance target (no more than a total of 4 events per year below the City's facilities at Masonry Dam, Cedar Falls hydroelectric facility and Landsburg Dam) since 2005. SPU, in conjunction with the IFC, has been conducting a variety of research and monitoring activities addressing a number of prioritized areas of uncertainty identified by the IFC. Information collected by these activities has been used guide instream flow management practices for a number of purposes including protection of salmon and steelhead redds, creation of naturally shaped freshets and voluntary augmentation of late summer base flows.

SPU should be commended for its commitment to and diligence in exceeding instream flow performance targets. Its participation in and leadership of the IFC appears to be an effective means to ensure that water management activities are consistent with instream flow targets for the Cedar River. Seattle should continue to support the IFC. Both committees should work closely with the strategic plans for watershed management to understand and maximize opportunities to mitigate and adapt to possible implications to climate change.

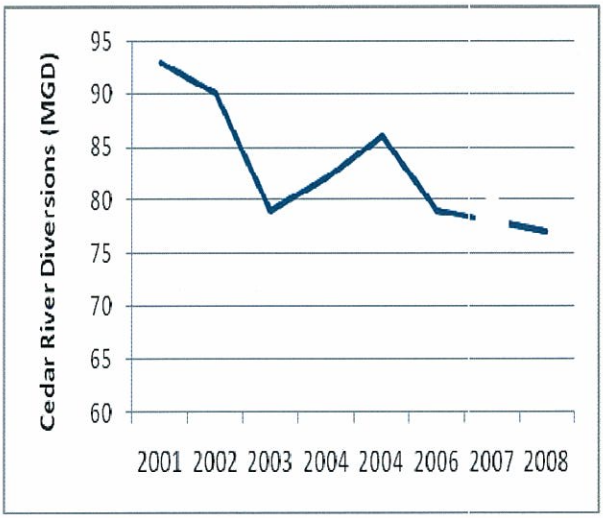
As noted above, significant progress has been made in the accessibility of implementation information via the web site. We encourage SPU to continue to develop this website and increase the level of integration between components. For example, streamflow metrics such as those used in the annual instream flow compliance report (e.g., % of days that spring supplemental flows were provided) could be added as another topic to the list of fish, bird, mammal, amphibian, and riparian habitat metrics (**http://www.seattle.gov/util/About_SPU/Water_System/Habitat_Conservation_Plan/IndexofMetrics/index.htm**). This suggestion is not intended to duplicate information reported in the annual instream flow compliance report. Instead, Seattle should evaluate whether the web-based reporting of flow metrics could be integrated efficiently with the existing annual instream flow compliance reporting.

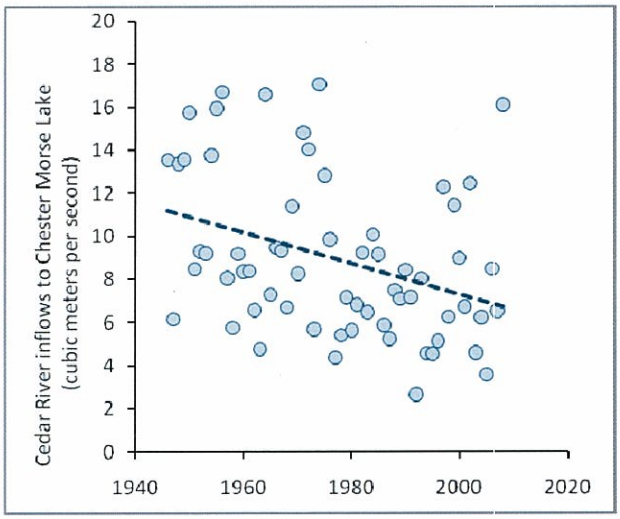
Considerations for achieving objectives over the long term

This review provides an opportunity for the HCP Oversight Committee to identify and address issues and to propose ways for more effective mitigation of incidental take. Although there are no current issues with implementation or proposals for mitigating take, there are two issues that SPU should continue to assess as it plans streamflow management in future decades.

1. Assessing future performance based on trends in climate and water use

Future prospects for achieving the Cedar River HCP instream flow targets will depend on trends in diversions and inflows in concert with adaptive strategies and operations to maintain system reliability. Diversions have been trending downward since 2001 (Figures below) and, as a result, the City will likely continue to achieve instream flow targets in the next decade - not withstanding unanticipated (i.e., unlikely) prolonged or frequent drought or changes in usable reservoir storage capacity.





Over the longer term, trends in climate and the population in the SPU service area impact the reliability of supplemental flows. There has been a long-term decreasing trend for inflow to Chester Morse Lake particularly due to a reduction in late spring-early summer (~0.8 cfs/year for May-July period since 1945). It is not certain that this trend will persist, but it is worth examining the implications of such a trend.

There have been two recent low-flow years (2001 and 2005) when spring supplemental flows were not provided, but no evidence that these types of years are becoming more common. Spring supplemental flows depend on streamflow during late winter and spring refill and there has not been a trend in mean Cedar River flows above Chester Morse Lake for February through April nor has there been a trend in April 1 snow-water equivalent (e.g., since 1959 at Mt. Garnder Snotel station).

The impact on summer and fall supplemental flows may be less certain. Currently, the downward trend in inflows is unlikely to threaten summer or fall supplemental flows because of the concurrent downward trend in diversions. The Oversight Committee does recommend that the City verify that climate forecasts used for water supply planning are consistent with 1) an updated current (circa 2008) baseline for May-July inflows from the Cedar River to Chester Morse Lake of about 6.7 cms and 2)

projections of the current downward trend in inflows from the Cedar River to Chester Morse Lake of about -0.72 cms/decade. Furthermore, the Oversight Committee requests confirmation of climate change scenarios incorporate inter-annual flow variability including the expression of low flow years and the impact of these projects on the frequency that summer, early fall, and fall high normal supplemental flow blocks are provided.

Given the potential for unanticipated hydrologic consequences of climate change or prolonged periods of drought, the Oversight Committee requests a summary of adaptive strategies and operating policies that the City believes will adequately insure that targets for each of the supplemental block (spring, summer, early fall, and fall high normal) continue to be achieved.

2. Verifying the ecological benefits from a managed streamflow regime

Through the Cedar River HCP, the agreement with the Muckleshoot Tribe, and the Instream Flow Commission, the City has flexibility in how instream flows are managed while still providing a reliable water supply. The City should continue to evaluate how instream flows are providing expected ecological benefits, for example, in terms of spawning and rearing success of salmon, but also evaluate whether there are alternatives which could provide greater ecological benefits without sacrificing either the benefits from the current flow regime or system reliability.

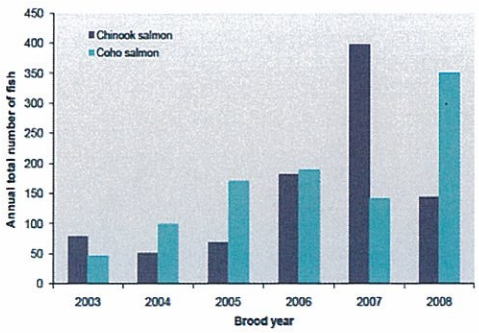
Landsburg Fish Passage Facilities

Implementation of SPU's commitments in the HCP to managing fish passage at Landburg from 2000 through 2008 was reviewed. This review summarizes the status of implementation and identifies issues that SPU should continue to consider with respect to continuing implementation of the Cedar River HCP.

The HCP established a broad objective for fish passage at Landburg in the Cedar River Habitat Conservation Plan (City of Seattle, 2000): Reestablishing fish passage into 17 miles of high quality mainstem and tributary habitat in Seattle's Municipal Watershed upstream of Landsburg Dam. Achieving this goal is viewed as a key component of salmon recovery efforts in the Lake Washington Basin.

Implementation and integration

Adult Salmon Passed Upstream of Landsburg Dam



The construction of Landsburg fish passage facilities at the dam and aqueduct crossing were completed in 2003. The facilities included 1) a full channel fish way to allow passage over the aqueduct and improved habitat conditions; 2) a fish ladder and sorting facility at the diversion dam, to provide passage for salmon and steelhead, resident rainbow and cutthroat trout. Sorting facilities allow the exclusion of sockeye, which, because of their much higher numbers, can pose a risk to drinking water quality 3) Tip-out downstream passage gate to provide safe passage for downstream migrating fish as they pass over the diversion dam, and 4) special screens on the municipal water intake to route downstream migrating fish away from the municipal water intake and safely back into the river.

Monitoring of this effort has been complete and ambitious. Data from fish count and the re-colonization studies are accessible and encouraging (see inset Figure). A multidisciplinary approach to monitoring has utilized expertise from several organizations. The City has done an excellent job of communicating and has been able to protect virtually all Chinook and steelhead redds from dewatering.

Considerations for achieving objectives over the long term

This review provides an opportunity for the HCP Oversight Committee to identify and address issues and to propose ways for more effective mitigation of incidental take. Although there are no current issues with implementation or proposals for mitigating take, there are two issues that SPU should continue to assess as it plans Landsburg management in future decades.

1. Continued research funding

The anadromous fish monitoring and research track record has been impressive. Studies like predation by piscivores in the lower river and Lake Washington, genetics studies on the Steelhead/O. mykiss and Coho and Chinook above Landsburg, and other cooperative research has shown a commitment to continuous improvement to the scientific basis on the conservation strategy effectiveness. To the best of your ability, remain diligent to ensure continued funding valuable research and monitoring into the future. Keep the OC updated about research funding and how the OC can best serve as advocates promote future research funding.

2. Maintain reporting on Fish passage at Landsburg

The city should be proud of the prompt construction and effective operation of the Landsburg fish passage facilities and has reported timely counts of all species and provided detailed information of species, sex and marked percentages for Chinook and Coho during sorting. Keep the Oversight Committee informed on fish passage trends and continue to ensure new information is has maximum benefit in all areas of HCP implementation. The decline of steelhead in Lake WA and Puget Sound that triggered ESA-listing is of concern and recognizably the product of events at a scale beyond what the HCP can report. Additional steelhead recovery actions beyond the HCP within the Lake WA watershed deserve discussions by many parties. We encourage SPU to contribute to those discussions as possible.

Summary of proposed recommendations

- Consider ways to provide access to Oversight Committee briefings to create a more enduring record of business. This is a complicated and multifaceted HCP and the staff at SPU has done an excellent job updating the Oversight Committee at their biannual meetings. Because the volume of activity and the diversity of subjects covered by the SPU staff briefings are at times difficult to track, the Oversight Committee would like to encourage SPU to consider ways to provide increased accessibility to materials from previous Oversight Committee meetings.
- Maintain and continue the website. The development and posting of the new website is a major accomplishment and staff should be commended. Continue to develop new metrics to measure progress toward goals and increase the visibility of research and monitoring conducted on the watershed.
- Consider climate change impacts within your strategic planning efforts. We believe there would be benefits to more extensive consideration of the implications of possible climate

change on, for example, vegetation structure and how watershed activities integrate such as effects on net instream flow.

- Consider increasing opportunities for all types of restoration thinning. Explore additional opportunities. Keep the Oversight Committee informed on efforts to expand and impediments to implement active stand restoration.
- Explore all options for early invasive species control; early control saves future expenditures and ecological degradation. Consider a broad range of invasive species monitoring.
- Explore ways of verifying the ecological benefits from a managed streamflow regime.
- Assess risks of instream performance targets given trends in climate and water use.
- Keep the Oversight Committee informed concerning continued funding opportunities for research that relates to conservation efficiency (such as the metrics used to measure strategy progress) and other priority information needs, so that we can better support these efforts in a competitive funding environment.
- This review identified a number of areas in which the Oversight Committee would like to be kept informed. These include efforts to control invasive species, conduct restoration thinning, coordinated wildlife management, contribution to other regional conservation efforts, fish passage at Landsburg, and instream flows. Planning concerning climate change is of particular interest. New developments related to climate forecasts and scenarios, ideas of mitigation and adaption, trends in water use are all of interest.

On behalf of the HCP Oversight Committee

Sincerely,

Richard Bigley

Richard E. Bigley PhD
Chair, 8-Year Review Committee