

Lower Lions Reach Natural Area Site Management Guidelines

December 2004



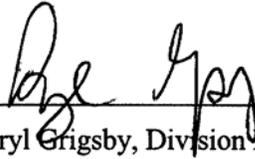
King County

Department of Natural Resources and Parks

Water and Land Resources Division

Lower Lions Reach Natural Area Site Management Guidelines

December 2004



Daryl Grigsby, Division Director

King County Water and Land Resources Division



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Lower Lions Reach Natural Area Site Management Guidelines Summary

Site Description

Lower Lions Reach Natural Area is a King County Department of Natural Resources and Parks (DNRP) Ecological Land. Ecological Lands are managed for the protection of their ecological value, with appropriate public access.

Lower Lions Reach Natural Area consists of two parcels (2.21 acres) owned in fee by King County, acquired in 2003. The Natural Area is located in unincorporated King County, approximately 4 miles southeast of Renton and 3 miles north of Maple Valley. The site is located on SE 184th Street just west of Renton Lions Club property. The Natural Area is located on the left bank (facing downstream) of the Cedar River at approximately River Mile (RM) 11.6. The parcels contained in Lower Lions Reach Natural Area are located within the 'Lower Lions Reach' of the Lower Cedar River as identified by the Cedar River Legacy program, located between RM 11.3 and RM 11.7.

The site is located on a meander bend of the Cedar River. The property lies within the FEMA 100-year floodplain and floodway of the Cedar River. Remnant side channels are evident on the northern portions of the site, where rolling topography and alluvial riverwash soil deposits are evidence of side channel activity through this area. These side channels are likely inundated during times of high water. Across the river, the right bank rises at least 100 feet above river elevation, which constrains the northward migration of the channel during high water.

Riparian vegetation on neighboring parcels in this vicinity is well-developed black cottonwood stands, with occasional red alder in the overstory. However, much of the Natural Area parcels have been cleared and the northern half of the property is predominantly dense Japanese knotweed. Along the river there are native species such as willows, alder, wild rose, and Indian plum, as well as invasive reed canarygrass. The southern portion of the site is mainly grass in the former yard and house site.

To contribute to restoring hydrologic processes and floodplain functions at the site, a floodplain restoration project is planned for the Lower Lions Reach Natural Area and adjacent Lions Club properties. The project is intended to restore Cedar River connection to a relic floodplain side channel across the Renton Lions Club and adjacent properties. The project will construct side channel entrance and outlet, grade channel to reflect site hydrology and to mimic natural side channel functions, and replant site with native plants. The scope of the invasive species control effort will depend in part on site and budgetary constraints. The project work will include control of Japanese knotweed, although the extent of knotweed removal may be limited to the side channel grading/clearing area

Public Use

The southern, grassy portion of the site is appropriate for public use, although future restoration work could revegetate this area with trees and shrubs. Informal pathways created by the former owner lead through the northern part of the site to the Cedar River. These paths are not maintained by Park staff and will likely be eliminated when side channel restoration and associated revegetation occurs. The site experiences limited use at this time. There is no established parking area at the site.

The deed contains language requiring the primary management priority to be management of the site to protect/restore/enhance fish and wildlife habitat. Public use will be accommodated at the site where it does not diminish these habitat values.

Management Objectives and Recommendations

The goals for all King County Ecological Lands are to conserve and enhance ecological value, and accommodate appropriate public use that does not harm the ecological resources on site. The following are management recommendations that are designed to support these goals. Text follows each recommendation explaining how that recommendation applies at the site.

Objective: Maintain ecological integrity of the site

Recommendation: Ensure that management and public access support the ecological value of site

Decisions about site management and public access should consider the ecological role of the side-channel habitat on the northern portion of the site (which will be the subject of a future capital project), and should preserve and protect ecological integrity. Public use at the site may be most supportable on the southern portion of the site. This overarching recommendation is carried out through the various recommendations below.

Objective: Restore native vegetation

Recommendation: Monitor and control invasive vegetation , and restore native vegetation where possible

Park staff should monitor extent and control the spread of invasive vegetation.

Within the project area, invasive species removal and several years of vegetation monitoring and maintenance may be part of the Lions Club side channel project scope. For the duration of the project monitoring and maintenance period, Park staff's primary responsibility for control of invasive plant species will be on the property outside the project area (unless other arrangements are made with project staff for maintenance within the project area).

When project monitoring is completed, Park staff will bear responsibility for invasive species control and management across the entire site.

Due to the extent of Japanese knotweed on site, control may be best targeted through a designated Small Habitat Restoration Project or work with the Noxious Weed Control Program, which would include long-term maintenance.

The grassy area in the southern portion of the site could be replanted with native trees and shrubs, to encourage succession of the cleared land to riparian forest. Such work is not planned or prioritized at this time. Any work to restore native vegetation in this area should include maintenance of new plantings to ensure plant survival.

Objective: Ensure side channel project is coordinated with stakeholders within DNRP and with Lions Club

Recommendation: Coordinate with CPOSA on project design and implementation

CPOSA will develop and implement the side channel project. This work should be coordinated with NRL, the Parks Resource Coordinator, the Basin Steward, Flood Hazard Reduction Services, as well as the Renton Lions Club.

NRL and Parks Resource Coordinator should ensure that project design and implementation consider the implications of this work for site management after project completion. Clear monitoring and maintenance responsibilities for project work should be included in terms of the Site Alteration Permit.

Recommendation: Consider interpretive component of project

If the Lions Club has continued interest in developing interpretive component of side channel restoration project, work with CPOSA, the Renton Lions Club, and Basin Steward in the future upon project implementation.

Objective: Ensure public use is not in conflict with ecological conditions at the site

Recommendation: Monitor public access

Public use is appropriate in the grassy southern portion of the site. The northern portions support relict side channels of the Cedar River. These northern areas will be the subject of a large capital project to restore an active side channel through the area. This project will make these northern portions of the site inaccessible to visitors during construction; once project is installed public access will again be possible to these areas as long as it does

not harm ecological resources. If future project work is undertaken to revegetate the southern grassy area, extent of public use may need to be reconsidered.

Park staff should note changes in visitor numbers and types of recreational activities at Lower Lions Reach Natural Area and observe any noticeable visitor impacts on the ecological condition of the site. This information should be reported annually to King County Natural Resource Lands Management Staff responsible for updating site management guidelines.

Recommendation: Control litter/dumping and encroachment activities

Park staff should monitor the site for encroachment, dumping, and other trash and respond as necessary to maintain a clean and safe property. Monitoring should occur on a weekly basis. Park staff should consider installing litter/dumping policy signs on the property if litter activity increases.

Objective: Track nearby habitat enhancement activities

Recommendation: Consider impacts of future nearby habitat enhancement projects upon site

The Cedar River Basin Plan and Flood Hazard Reduction Plan and WRIA 8 Chinook Salmon Recovery Plan contain a number of recommendations for the Lower Lions reach that may be considered for future recommendations. These general proposals are aimed at the multiple objectives of the basin plan (flood hazard reduction, habitat quality and salmonid health, and water quality and quantity) and FHRP, though they are not prioritized or scheduled for implementation in the near term.

These recommendations include buyout of frequently flooded sites (primarily downstream of property) and levee removal/side channel restoration. There are no specific plans or timeframe for implementing these Basin Plan or Draft Plan Framework recommendations at this time.

As projects on the Natural Area are prioritized and funded by King County groups outside of the Natural Resource Lands group (or by other implementing agencies), projects should be reviewed by NRL through the “Application to Alter Parks Division and NRL Managed Properties” process to coordinate site management with project work.

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Lower Lions Reach Natural Area Site Management Guidelines

Introduction

Lower Lions Reach Natural Area is a King County Department of Natural Resources and Parks (DNRP) Ecological Land. Ecological Lands are a category of Water and Land Resources Division (WLRD) properties managed for the protection of their ecological value. Appropriate public access and interpretive opportunities are accommodated on these sites where they do not harm the ecological value of the site.

The parcels contained in Lower Lions Reach Natural Area are located within the 'Lower Lions Reach' of the Lower Cedar River. The extent of this reach was identified through the Cedar River Legacy program, which directs public conservation efforts in the Lower Cedar River. Lower Lions Reach is located between RM 11.3 and RM 11.7.¹ Seventeen parcels were identified within the reach totaling about 39 acres, most of which is currently in private ownership (see Appendix 1).

This document provides general property and acquisition information, a description of existing site conditions, a chronology of recent events and management actions, and a list of management objectives and recommendations for Lower Lions Reach Natural Area. These site management guidelines were developed using guidance established in the King County Water and Land Resources Division Ecological Lands Handbook (King County 2003).

Part 1. General Property Information

Lower Lions Reach Natural Area is located in unincorporated King County, approximately 4 miles southeast of Renton and 3 miles north of Maple Valley. See Figure 1 for a vicinity map and Figure 2 for a site map depicting river miles. Table 1 provides general information about the location of the Natural Area. Table 2 provides specific information for the parcels. Full parcel numbers for every parcel in the reach are provided in Appendix 1.

Lower Lions Reach Natural Area is 2.21 acres in size, and consists of two parcels. The Natural Area is located on the left bank (facing downstream) of the Cedar River at approximately River Mile (RM) 11.6. The Natural Area lies on the east side of SR 169, southeast of the junction of SR 169 and Cedar Grove Road SE. The site is bounded by the Cedar River to the north and SE 184th St to the south. The three parcels to the east and southeast of the site are owned by Renton Lions Club.

The vicinity is characterized by low-density housing at one house per five or ten acres. To the northeast and southeast of the site across the Cedar River, on both sides of Cedar Grove Road, are a number of parcels zoned for mineral extraction. To the east of these parcels lies the King County Cedar Hills Landfill.

Table 1. Lower Lions Reach Natural Area General Information.

Best Available Address	21000 block of SE 184 th St, north side
Thomas Guide Map Location	687 H2
Legal Description	Section 32, Township 23, Range 6
Acreage	2.21 Acres
Drainage Basin	Lower Cedar River Basin
WRIA	WRIA 8
Council District	12
King County Sensitive Areas	Stream, FEMA 100-year floodplain and floodway, erosion, and seismic

¹ River miles depicted in the Lower Cedar River Basin and Nonpoint Pollution Action Plan (WMC 1998) are used in this report; actual river miles may be somewhat different due to improved technology in measurements.

Table 2. Lower Lions Reach Natural Area Parcel Information.

Parcel Number	Name used in document*	Acreage **	Purchase Date**	Ownership type/price	Previous Names	Zoning	Funding Source	Recording Number
3223069115	Lower Lions-9115	1.33 Ac	9/15/2003	Owned in Fee; \$210,000 for both	McGuirk	RA-5	CFT and KCD Opportunity Fund	20030915 001592
3223069034	Lower Lions-9034	0.88 Ac						

*Parcels are referred to by the site name plus the last four digits of the ten digit parcel number.

**Acreage, purchase date, and sale price taken from King County Assessor's data.

The King County Flood Hazard Reduction Services section purchased a former home site at 3223069063 (two lots to the west) in 1997. The lot is currently vacant, located just west of where an unnamed tributary enters the Cedar River (see Figure 2).

Part 2. Acquisition History, Funding Source and Deed Restrictions

The two parcels were acquired in 2003 through the Cedar River Legacy program. The deed contains the following language:

“By the acceptance of this deed, King County, for its self and its successors and assigns, hereby covenants and agrees to use and manage the real property for the purpose of protecting, restoring, and/or enhancing native fish and wildlife habitat and the natural features and processes sustaining such habitat. Furthermore, King County acknowledges that it is responsible for exercising sufficient long term control over the property to ensure the primary habitat conservation purpose of the real property.”

Easements

The two parcels have the following easements or conditions on the title:

- “Right to make necessary slopes for cuts or fills upon property herein described as disclosed in Volume 32 of Commissioner’s Records, Page 135, filed January 25, 1932.” The Title Officer’s Review of Title Report indicates that “In conjunction with the taking of a portion of the property for SE 184th St, the County acquired the right to construct cuts and fills outside the acquired right of way as necessary to protect the road surface from landslide hazard.” (King County. 2003. Title Officer’s Review of Title Report. 2/19/03.)
- “Terms and conditions of notice of charges by water, sewer, and/or storm and surface water utilities, recorded under recording number 9304282240.” This relates to tap charges required within Cedar River Water and Sewer District, but does not pertain to this parcel (King County 2003b)

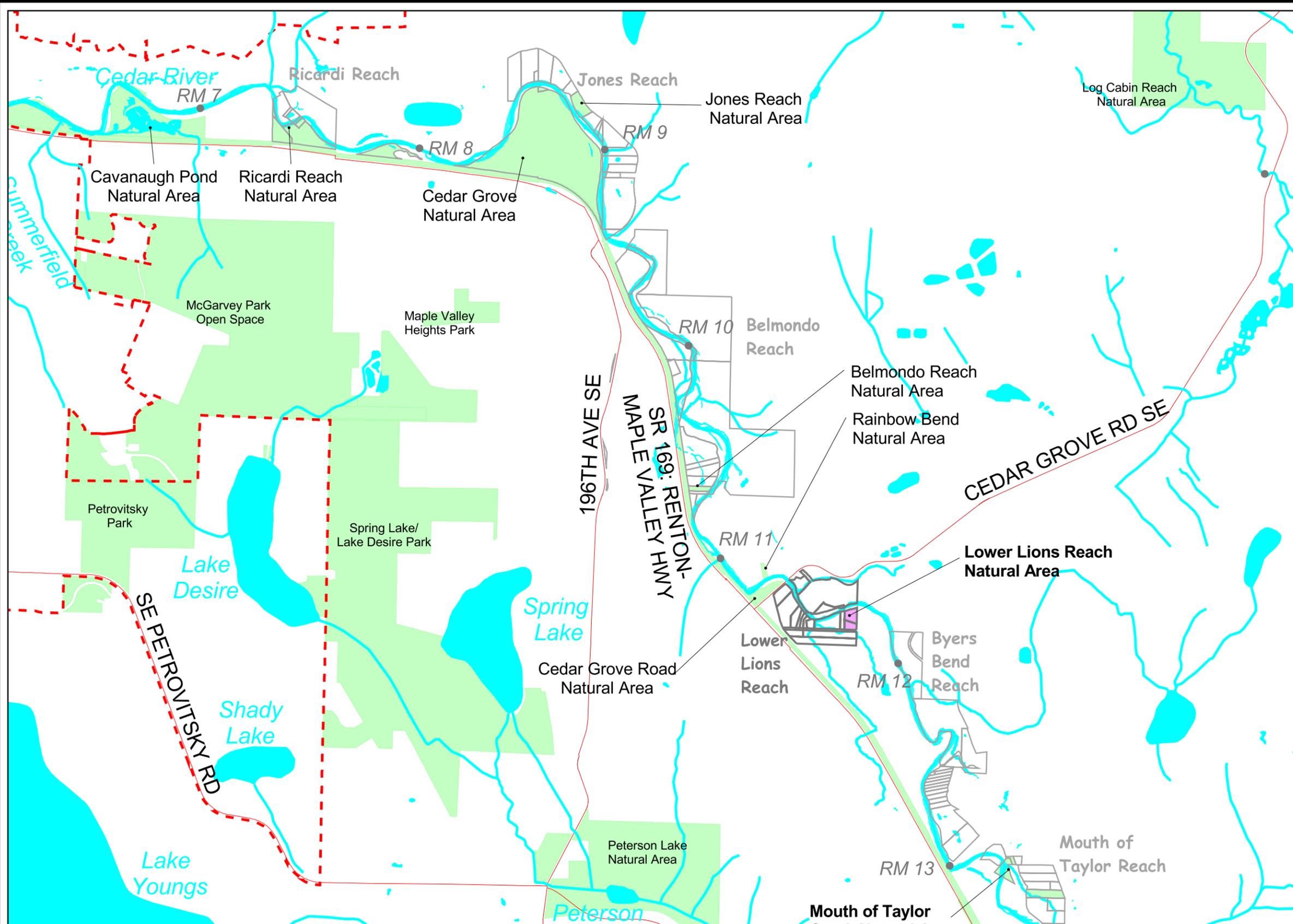
There is a record of survey including this property recorded under map survey 197702259002 that discloses property dimensions.

Funding

Funding from the Conservation Futures Tax Levy and King Conservation District Cedar River Opportunity Fund was used for this purchase.

Conservation Futures Tax Levy

Conservation Futures Tax (CFT) levy is authorized by state statute RCW 84.34.230. A county may place this levy upon all taxable property in its jurisdiction. Revenues may be placed in a Conservation Futures Fund for jurisdictions or nonprofit nature conservancy corporations to acquire open space land or rights to future development within that county (these development rights are termed “conservation futures” in RCW 84.34.220). Open space is defined in RCW 84.34.020 generally as land contributing to natural resources, streams, water supply, public land network, historic sites, visual quality, or as certain agricultural conservation lands. Acquisition criteria identified by King County include: wildlife, salmonid, or rare plant habitat value; scenic resource, community separator, greenbelt, or general park and



Legend

- River Mile Markers
- Lower Lions Reach N. A.
- Public Lands
- River Reach Boundaries
Lower Cedar River reach extents are designated by Cedar River Legacy Program
- Rivers and Lakes
- ~ Streams
- - - KC Urban Growth Area
- Streets

N

August 2, 2004

600 0 600 1200 1800 2400 3000 Feet

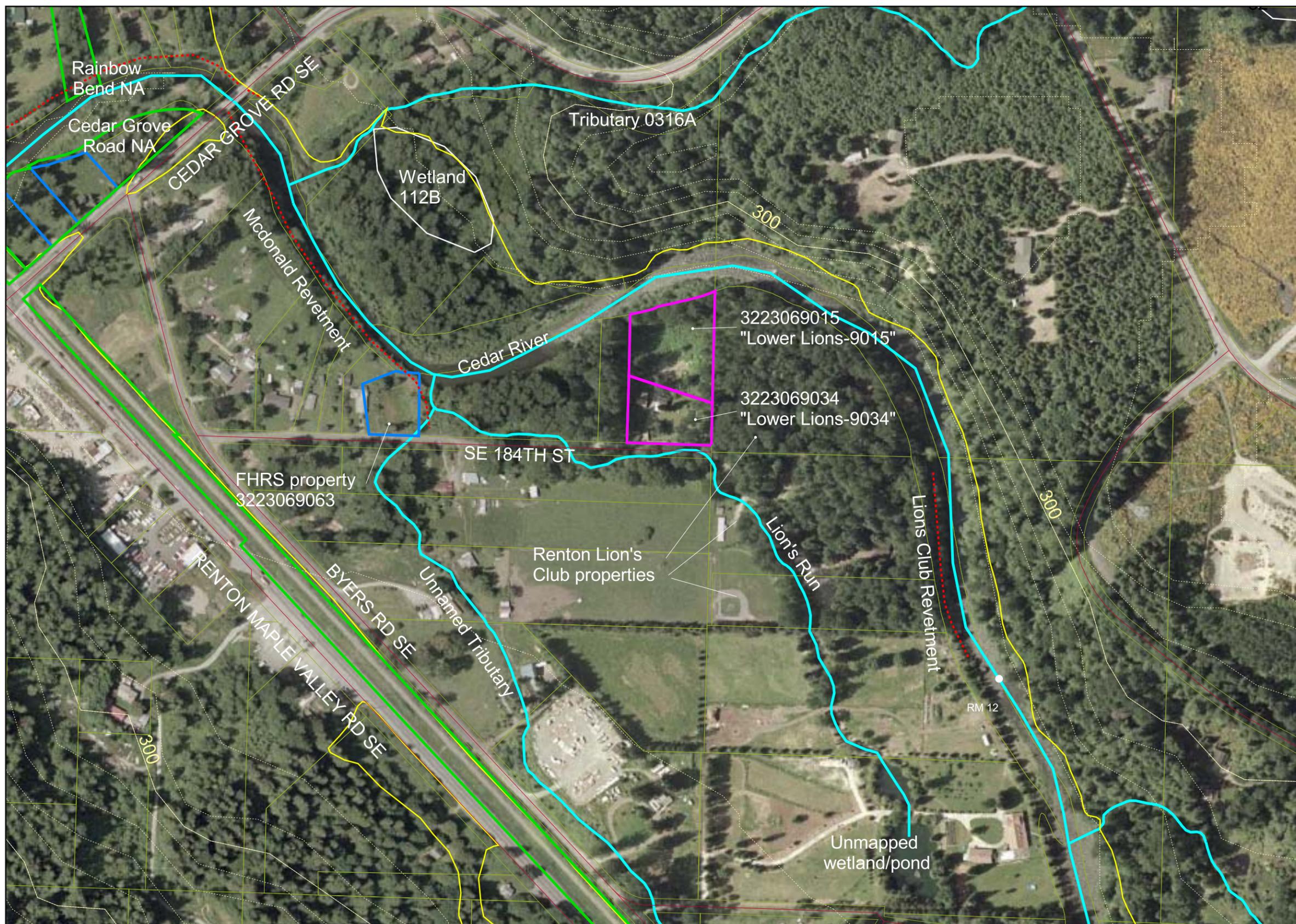
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Figure 1

Lower Lions Reach Natural Area: Vicinity Map



Legend

- Lower Lions Reach Natural Area
- Levees and Revetments
- Parks and Natural Areas
- FHR Property
- River Mile Markers
- Streets
- Floodplains - 100 year
- Streams
- Wetlands
- King County Tax Parcels
- 100 ft Contour lines
- 20 ft Contour Lines



June 7, 2004
 90 0 90 180 270 360 450 Feet

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Note: Wetland, Stream, Floodplain and Topographic layers are approximate, mapped from King County GIS.



King County

File Name: IL:\wint5\rc\NR Land Mgmt\Ingrid ArcView Projects\smg parkview projects\lower lions fig 2.apr

Figure 2

Lower Lions Natural Area: Site Features

open space value; or historic and cultural resources. Additional consideration is given to passive recreation opportunity, interpretive opportunity, threat of loss, complexity of acquisition, public-private partnership, regional significance, relationship of proposed acquisition to existing parks, trails, or greenway systems or plans, and short-term and long-term stewardship commitment at the site (KCC 26.12.025).

King County Council directs the spending of a portion of annual CFT funds; a Citizen's Oversight Committee reviews and approves competitive applications for the remainder of the funds. CFT funds are allocated to sponsoring jurisdictions with the requirement that matching funds from the applicant jurisdiction are of equal or greater value to CFT funding sought (matching funds may be cash, land trade, or value of land purchased adjacent to proposed acquisition). Acquisitions may be fee-simple or less-than-fee acquisitions.

Purchases made with Conservation Futures funds are to be used for low-impact, passive-use recreation. Motorized use is limited to parking/staging/maintenance areas. "Non-vegetative impervious surfaces" should cover less than 15% of the site (CFT 2002). Conservation futures interests shall not be transferred except with agreement that land interests shall be preserved in accordance with the intent and language of RCW 84.34.230; uses of lands shall not be altered unless equivalent lands within the geographic jurisdiction are provided (KC Ordinance 10750, p. 10).

Cedar River Opportunity Fund

The property was purchased with a King Conservation District (KCD) grant to the Cedar River Opportunity Fund (CROF) (King County 2001a). This fund originated with Lake Washington Forum staff during the 1998-1999 allocation of KCD funds (King County 2001b). CROF funds from the 1998-99 funding round were designated to be used acquire property "to preserve future habitat restoration opportunities," to leverage other funds for habitat acquisition, and to leverage other funds for flood buyout opportunities (King County 2001b). Restrictions associated with this funding source are cited above on page 2 at the beginning of this section.

Part 3. Ecological and Physical Setting

This section describes the natural resources and ecological processes associated with Lower Lions Reach Natural Area. Additional analysis is presented in Part 6 below. Figure 2 provides information on site features such as topography, streams, wetlands, and floodplains.

Topography and Soils

The river valley is approximately 1/3 mile wide at this point. The valley is bounded by steep slopes abutting residential parcels along SR 169 to the west, and steep undeveloped slopes on the east side of the Cedar River. The river meanders across the flat valley bottom through this reach, the western extent of the meanders limited by the Cedar River Trail and SR 169. In the vicinity of the Natural Area, the rivercourse is located against the eastern wall of the valley. The valley wall rises at least 100 feet above the right bank of the Cedar River from approximately 1/2 mile upstream and through the site.

The King County soil survey maps this site as riverwash, which is described as "long, narrow areas of sand, gravel and stones along channels of larger streams." If vegetated, common species include cottonwoods or willows. "Overflow and alteration by severe erosion and deposition are frequent." (Snyder et al 1973)

Hydrology and Channel Morphology

Cedar River

Lower Lions Reach Natural Area is located at approximately River Mile 11.6 (see Figure 2). Using Research and analysis has been conducted using maps and aerial photographs to describe historic change in channel characteristics (King County 1993a; also Perkins 1994). These studies classified the Lower Cedar River into eight river reaches. According to Perkins (1994), reaches were selected based on morphology and slope. The river reach between RM 10.0 (RM 9.4 in Perkins) and RM 13.8 was classified as a single river reach in the Current and Future Conditions Report (King County 1993a, p. 5-22; Perkins 1994). The Current and Future Conditions Report (King County 1993a) describes historic conditions in this reach as follows:

“[The reach] was extensively braided in 1865, with braided zones ranging in width from 800 to 1300 feet so that the river occupied almost the entire width of the valley floor. By 1936, the river had abandoned many of its channels but still had an obvious meander belt between 300 and 600 feet wide... Most bends in this reach are constrained by revetments or the valley wall, leading to a relatively stable channel in the past two decades.” (King County 1993a, p. 5-29)

This analysis indicates that the 1895 active channel width was 460 feet, and in 1989 the active channel width was only 120 feet. The natural degree of confinement was characterized as “unconfined,” but the current level of hydrological modifications was characterized as “high.” Wetted channel width has decreased from a maximum of 299 feet and minimum of 161 feet in 1895 to a maximum of 108 feet and minimum of 90 feet in 1989. During this same time period, historic pool frequency decreased from “high” in 1895 to “low” in 1989. (Perkins 1994, Blair 2003a)

Remnant side channels are evident on the northern portions of the site, where rolling topography and alluvial riverwash soil deposits are common evidence of channel activity through this area. These side channels are likely inundated during times of high water.

Floodplain

The mapped FEMA 100-year floodplain for the Cedar River depicts areas predicted to be inundated by a flood event of a severity that has a 1% chance of occurring in any given year (Faegenburg, pers. comm. 2004) (Figure 2). The mapped FEMA 100-year floodplain is slightly less than 1/3 mile wide within 1/2 mile upstream of the site, and through the vicinity of the Natural Area, including most of the valley bottom between the eastern valley slopes and the Cedar River Trail. Approximately 1/4 mile downstream the mapped floodplain narrows to 1/4 mile wide, encompassing Cedar Grove Downstream Natural Area and the Rainbow Bend meander bend. The Rainbow Bend levee across the river, and the Cedar River Trail embankment just downstream, maintain the course of the river at the site during normal flows.

The FEMA floodway is the area within and adjacent to the channel that is subject to the deepest and fastest flood flows. Although the FEMA floodway is not mapped on Figure 2, it is contained entirely within the mapped 100-year floodplain. The Renton Lions Club properties and Lower Lions Reach Natural Area lie entirely within the FEMA floodway. The 100-year floodplain and floodway maps for this reach of the Cedar River have been recently updated and are considered best available data, but are awaiting adoption by FEMA (Faegenburg, pers. comm. 2004).

Tributaries

An unnamed, unnumbered tributary flows just south of the site and enters the Cedar River near RM 11.6. This tributary is not documented in the Current and Future Conditions Report or Catalog of Washington Streams, but is mapped by King County Stream GIS data layers (see Figure 2; King County 1993a and Williams et al. 1975). This tributary as mapped on the GIS system appears to receive drainage from two main sources. The eastern source is called ‘Lions Run,’ and flows from a man-made pond on the property south of the Lions Club parcels (Bikle pers. comm. 2004). The western source of water is mapped as

originating on steep slopes on the west side of SR 169. No further information is available on this tributary.

On the other side of the river, Tributary WRIA #08.0316A enters the Cedar River on the right bank at approximately River Mile 11.5, 0.1 miles upstream of Cedar Grove Road SE. The Cedar River Current and Future Conditions Report indicates that the tributary basin is largely undeveloped, with no record of any flooding problems and no future problems expected (King County 1993a p. 4-23). The report indicates that deep pool habitat is lacking in this tributary (King County 1993a p. 7-30).

Wetlands

Neither the King County Wetlands Inventory nor the National Wetlands inventory map wetlands at the site. An area that appears as a pond or wetland from aerial photos, is located to the south of the Lions Club properties, as noted in the tributary description above. This apparently is a man-made pond (Bikle pers. comm. 2004).

Wetland 112B is identified across the river just downstream of the site, but this wetland was not inventoried in the King County Wetland Inventory.

Revetments

On the eastern edge of the Lions Club parcels, the Lions Club revetment extends along the left bank of the river. Just downstream of Lower Lions Reach Natural Area, the MacDonald revetment extends along the left bank of the Cedar River from the FHRS owned parcel (3223069063) to Cedar Grove Road SE. (See Figure 2)

These revetments are maintained by the Flood Hazard Reduction Services (FHRS) section of WLR as part of their river protection facility inventory. FHRS performs both routine and post-flood inspections and maintenance on all such facilities. Routine maintenance activities on these facilities typically include vegetation management, such as removal of blackberries, in order to ensure adequate access and visibility for inspection of the revetments' structural integrity.

In addition to the routine maintenance and repair of these flood hazard reduction facilities, the FHRS Section performs mapping and other flood-related studies and projects on lands adjacent to King County's large rivers, including the Cedar River. FHRS and/or its contracted surveyors may have placed permanent stakes or rebar along the levees/revetments or riverbanks to mark sites at which river cross-sections are measured (Koon pers. comm. 2003b).

Vegetation

Riparian vegetation on neighboring parcels in this vicinity is well-developed black cottonwood stands, with occasional red alder in the overstory. However, much of the Natural Area parcels have been cleared and the northern half of the property is predominantly dense Japanese knotweed. Along the river there are native species such as willows, alder, wild rose, and Indian plum. The riparian edge supports invasive reed canarygrass as well.

Within the former yard of the house are large conifers including Douglas-fir and spruce, horticultural plants, grass, and a small area of invasive butterfly bush. On adjacent properties there is a limited amount of English ivy, but none was noted on site.

Fish and Wildlife

The Cedar River is used by chinook, sockeye, and coho salmon, as well as rainbow, steelhead, and cutthroat trout in this vicinity. No further inventory of fish or wildlife use has been performed at the site.

Part 4. Public Use and Site Management Chronology

This section describes public use and infrastructure at the site, and provides an overview of site management activities to date.

Public Use

Following acquisition, vandalism and squatting were problematic at the site until the structures were removed (below). The site experiences little to no use at this time. There is no parking at the site.

Informal pathways created by the former owner lead through the site to the Cedar River. These paths are not maintained by Park staff.

Site Management Activities

Following site acquisition, a house, outbuildings, and foundations were demolished and removed from the site in April 2004. The septic tank was cleaned and filled. Debris was removed from the site. A partially vegetated berm extending along the western edge of the site was excavated and buried trash removed. A vegetated berm within the area of Japanese knotweed, on the northern portion of the site parallel to the river was not excavated or investigated for presence of buried trash. The well head was capped to allow future use of water in future enhancement work. All exposed soils were hydroseeded.

The fence was left standing along SE 184th St. Three-man rocks were placed along the driveway to prevent vehicle entry. A Parks Rules sign is posted at the entrance.

Part 5. Analysis

The purpose of this section is to provide a context and foundation for developing recommendations that meet the NRL program mission of protecting the ecological value of land in Lower Lions Reach Natural Area. Site-specific information, public access considerations, and the larger landscape considerations described in the conservation principles section of the *Ecological Lands Handbook* will be used to help meet this purpose.

Species of Concern

Because of the lack of a comprehensive biological inventory at the site, the species identified in this document do not account for all species that use the site for one or more stages of their lifecycles. However, documented evidence of Chinook salmon, and probable use by bald eagles, both listed as threatened under the Endangered Species Act, make habitat preservation and restoration necessary management priorities at the site.

Restoring Process, Structure, and Function

To contribute to restoring hydrologic processes and floodplain functions at the site, a floodplain restoration project is planned for the Lower Lions Natural area and adjacent Lions Club properties. The project is intended to: "Restore Cedar River connection to a relic floodplain side channel across the Renton Lions Club and adjacent properties [i.e. Lower Lions Reach Natural Area]. Construct side channel entrance and outlet, grade channel to reflect site hydrology and to mimic natural side channel [functions], and replant site with native plants." (King County 2004; Eastman pers.comm. 2004)

A Salmon Recovery Funding Board grant funded hydrologic analysis and preliminary side channel restoration design (Pentec 2003). King County CPOSA staff will complete the restoration project design in fall 2004 and are expected to initiate the permitting process in late 2004/early 2005 and implement the restoration project during the summer of 2005 or 2006.

In order to restore riparian habitat conditions, it will be necessary to control invasive, non-native species, and actively promote development and growth of a native riparian plant community. The scope of the invasive control effort will depend in part on site and budgetary constraints. The project work will include control of Japanese knotweed, although the extent of knotweed removal may be limited to the side channel grading/clearing area (Eastman pers. comm. 2004). Removal of all knotweed on site is not feasible, due to the extent of knotweed on the site and the presence of knotweed upstream on the Cedar (Eastman pers. comm.. 2004). Additional project work with the Lions Club may include further knotweed control (ibid.).

Plantings will represent the historic vegetative communities commonly associated with forested riparian areas in western Washington and at the site in particular. Efforts will be made to maintain structural complexity, historic levels of plant diversity and multiple canopy layers to provide a variety of vegetative and physical features for fish and wildlife.

The WRIA 8 Chinook Salmon Recovery Plan draft (WRIA 8 Service Provider Team 2004) made several flood control and restoration recommendations for this vicinity (Appendix F, p. 7, Reach 10). These are listed under the Recommendations section (Part 6).

Public Use

Public use is appropriate in the grassy southern portion of the site. Grass is not maintained by mowing, and should be monitored for invasive species encroachment. Future project work could consider revegetating this area with native trees and shrubs, but no plans have been made to conduct such work at this time.

The northern portions support relict side channels of the Cedar River. These northern areas will be the subject of a large capital project to restore an active side channel through the area. Project construction will make these northern portions of the site inaccessible to visitors. Once project the project has been installed public access will again be possible to these areas as long as it does not harm ecological resources.

There is little to no public use of the site at the current time.

The Lions Club has expressed an interest in developing an interpretive component of the side channel restoration project on the Natural Area and Lions Club parcels (Bikle pers. comm. 2004). This possibility would be explored in the future upon project implementation.

The deed explicitly reflects funding source requirements to prioritize habitat conservation (restoration/enhancement/protection of habitat) as the primary purpose of site management. Public use will be accommodated at the site where it does not diminish these habitat values.

Part 6. Management Goals, Objectives, and Recommendations

The objectives and recommendations in this section are derived from the standard practices for most NRL sites. Office of Rural and Resource Programs staff will revise the recommendations for Lower Lions Reach Natural Area as new information from baseline inventory, assessment, and site monitoring programs and other initiatives becomes available for use in land management decisions.

Goals for Ecological Lands

The goals for all King County Ecological Lands are to:

- conserve and enhance ecological value, and
- accommodate appropriate public use that does not harm the ecological resources on site

The objectives and recommendations that follow are designed to support these goals at this site.

Management Objectives and Recommendations

Objective: Maintain ecological integrity of the site

Recommendation: Ensure that management and public access support the ecological value of site

Decisions about site management and public access should consider the ecological role of the side-channel habitat on the northern portion of the site (which will be the subject of a future capital project), and should preserve and protect ecological integrity. Public use at the site may be most supportable on the southern portion of the site. This overarching recommendation is carried out through the various recommendations below.

Objective: Restore native vegetation

Recommendation: Monitor and control invasive vegetation, and restore native vegetation where possible

Park staff should monitor extent and control the spread of invasive vegetation.

Within the project area, invasive species removal and several years of vegetation monitoring and maintenance may be part of the Lions Club side channel project scope. For the duration of the project monitoring and maintenance period, Park staff's primary responsibility for control of invasive plant species will be on the property outside the project area (unless other arrangements are made with project staff for maintenance within the project area).

When project monitoring is completed, Park staff will bear responsibility for invasive species control and management across the entire site.

Due to the extent of Japanese knotweed on site, control may be best targeted through a designated Small Habitat Restoration Project or work with the Noxious Weed Control Program, which would include long-term maintenance.

The grassy area in the southern portion of the site could be replanted with native trees and shrubs, to encourage succession of the cleared land to riparian forest. Such work is not planned or prioritized at this time. Any work to restore native vegetation in this area should include maintenance of new plantings to ensure plant survival.

Objective: Ensure side channel project is coordinated with stakeholders within DNRP and with Lions Club

Recommendation: Coordinate with CPOSA on project design and implementation

CPOSA will develop and implement the side channel project. This work should be coordinated with NRL, the Parks Resource Coordinator, the Basin Steward, Flood Hazard Reduction Services, as well as the Renton Lions Club.

NRL and Parks Resource Coordinator should ensure that project design and implementation consider the implications of this work for site management after project completion. Clear monitoring and maintenance responsibilities for project work should be included in terms of the Site Alteration Permit.

Recommendation: Consider interpretive component of project

If the Lions Club has continued interest in developing interpretive component of side channel restoration project, work with CPOSA, the Renton Lions Club, and Basin Steward in the future upon project implementation.

Objective: Ensure public use is not in conflict with ecological conditions at the site

Recommendation: Monitor public access

Public use is appropriate in the grassy southern portion of the site. The northern portions support relict side channels of the Cedar River. These northern areas will be the subject of a large capital project to restore an active side channel through the area. This project will make these northern portions of the site

inaccessible to visitors during construction; once project is installed public access will again be possible to these areas as long as it does not harm ecological resources. If future project work is undertaken to revegetate the southern grassy area, extent of public use may need to be reconsidered.

Park staff should note changes in visitor numbers and types of recreational activities at Lower Lions Reach Natural Area and observe any noticeable visitor impacts on the ecological condition of the site. This information should be reported annually to King County Natural Resource Lands Management Staff responsible for updating site management guidelines.

Recommendation: Control litter/dumping and encroachment activities

Park staff should monitor the site for encroachment, dumping, and other trash and respond as necessary to maintain a clean and safe property. Monitoring should occur on a weekly basis. Park staff should consider installing litter/dumping policy signs on the property if litter activity increases.

Objective: Track nearby habitat enhancement activities

Recommendation: Consider impacts of future nearby habitat enhancement projects upon site

The Cedar River Basin Plan and Flood Hazard Reduction Plan (FHRP) contain a number of recommendations for the Lower Lions reach that may be considered for future recommendations. These general proposals are aimed at the multiple objectives of the basin plan (flood hazard reduction, habitat quality and salmonid health, and water quality and quantity) and FHRP, though they are not prioritized or scheduled for implementation in the near term.

The WRIA 8 Chinook Salmon Recovery Plan draft (WRIA 8 Service Provider Team 2004) made several flood control and habitat enhancement recommendations for this vicinity (Appendix F, p. 7, Reach 10). These recommendations incorporated information and recommendations from the Lower Cedar Basin Plan (WMC 1998) and the 1993 Flood Hazard Reduction Plan (King County 1993b).

- *Cedar Grove Road Mobile Home Park Flood Buyout and Levee Removal*: “Purchase mobile home property and relocate approximately 55 mobile homes; purchase and remove 9 single family homes, and restore ~40 acres of floodplain area with vegetation and off-channel features.”
- *Cedar Grove Road Junkyard Buyout*: “Acquire left bank parcels [near RM 11.5] used for salvage operation and restore floodplain.”
- *Buyouts near McDonald Levee*: “Acquire additional developed properties on left bank in vicinity of McDonald levee and modify levee and restore floodplain.” This is located adjacent to junkyard area.
- *Lions Club Side Channel Restoration* “Re-formation of an ~800 foot long historic side channel and associated floodplain, may involve additional acquisition downstream of Lion’s Club property.” Located on left-bank at approx. RM 11.7; project is as in text.
- *Byers Reach Side Channel* involves left bank levee removal and floodplain restoration at approx. RM 12.9 (Byer’s Curve revetment is left bank at approximately RM 12.7-12.8).

As projects on the Natural Area are prioritized and funded by King County groups outside of the Natural Resource Lands group (or by other implementing agencies), projects should be reviewed by NRL through the “Application to Alter Parks Division and NRL Managed Properties” process to coordinate site management with project work.

There are no specific plans or timeframe for implementing these Basin Plan or Draft Plan Framework recommendations at this time.

Implementation

Many of these recommendations pertain to ongoing site maintenance and short-term management. These short-term recommendations are currently being implemented through actions by the Parks Resource Coordinator. Table 3 presents the time frame and sections responsible for recommendations.

The CPOSA side channel restoration project is the main restoration activity that is planned to occur at the site in the foreseeable future.

Table 3. Matrix of Management Recommendations

Recommendations	year	Park Resource Staff	Basin Steward	WRIA Project Coord.	CPOSA	WEAT	FHRS	NRL staff	Lions Club
Priority One									
Monitor and control invasive vegetation	At least quarterly	X							
Monitor public access	Weekly	X							
Control litter/dumping activities	Weekly	X							
Coordinate with CPOSA on project design and implementation; Consider interpretive component of project	2004-2006	X	X		X			X	X
Priority Two									
Consider impacts of future nearby habitat enhancement activities on site	As needed		X	X			X	X	
Update Site Management Guidelines	Within at least five years	X	X				X	X	

References

- Blair, G. R. 2003. "Cedar Calculation Wetted Channel Width from Active Channel Width_Perkins 1994." Produced as part of the 2003 Ecosystem Diagnosis and Treatment analysis for WRIA 8. Available on internal King County drives at: WLRNT4\WRIA8_Science\WRIA 8 EDT\EDT 1st draft results and ratings.
- King County. 2004. Scope Definition Worksheet for Project 1D1155 (0D1155), Lions Club Channel Restoration Phase 1. Dated 3/11/04, Ingrid Haynes.
- King County. 2003a. King County Ecological Lands Handbook. King County Department of Natural Resources and Parks, Water and Land Resources Division. Seattle, Washington.
- King County. 2003b. Title Officer's Review of Title Report. 2/19/03. In acquisition files.
- King County. 2001a. Email from A. Bikle to L. Holecek and F. Roland dated 11/6/2001, in Rainbow Bend Natural Area acquisition files.
- King County. 2001b. Email from A. Bikle to L. Holecek et al dated 11/7/01 describing KCD Grant Fund Request, in Rainbow Bend Natural Area acquisition files.
- King County. 1993a. Current and Future Conditions Report. King County Department of Public Works, Surface Water Management Division. November 1993 printing. Seattle, WA.
- King County. 1993b. King County Flood Hazard Reduction Plan. King County Surface Water Management. January 1993 printing. Seattle, WA. Includes Appendix B: Problem Sites and Project Recommendations.
- King County. 1991. King County Wetlands Inventory. Volume 2: East. King County Environmental Division: Parks, Planning and Resources Department. March, 1991 Edition; 1990 original date.
- Perkins, S. J. 1994. The Shrinking Cedar River. American Water Resources Association 1994 Annual Summer Symposium. p. 649-658. Available online at <http://geopacific.com/Perkins/links.htm>
- Snyder et al. 1973. Soil Survey of King County, Washington. USDA.
- Williams, R. W., R. M. Laramie, and J. J. Ames. 1975. A Catalog of Washington Streams and Salmon Utilization: Volume 1, Puget Sound Region. Washington Department of Fisheries, Olympia, WA.
- WMC (Watershed Management Committee). 1998. Lower Cedar River Basin Plan and Nonpoint Pollution Action Plan. Produced by King County DNR and the Cedar River Watershed Management Committee. July 1998 Printing. Seattle, WA.
- WRIA 8 Service Provider Team. 2003. WRIA 8 Draft Plan Framework and Preliminary Actions List 2003. Draft published 12/31/03.
- Personal Communication
- Bikle, A. 2004. Basin Steward, Land and Water Stewardship Services, DNRP. Personal communication with Ingrid Lundin April and August 2004.
- Clark, D. 2004. Section Manager, Flood Hazard Reduction Services, DNRP. Pers. comm. with Ingrid Lundin. 4/9/04.
- Faegenburg, N. 2004. King County DNRP Flood Hazard Reduction Services Engineer. Personal Communication with Ingrid Lundin, as comments on Mouth of Taylor Reach NA SMG. August 17, 2004.
- Harig, D. 2003. Parks Resource Coordinator, DNRP. Personal Communication with Ingrid Lundin. Various dates, 2003.
- Holecek, L. 2003. Acquisitions Agent, Capital Projects and Open Space Acquisitions Section, DNRP. Email Communication with Ingrid Lundin 9/15/03
- Koon, J. 2003. Engineer, Flood Hazard Reduction Services, DNRP. Personal communication with Ingrid Lundin. June 26, 2003.

Appendix 1: List of all parcels in Lower Lions Reach

Parcel acreage derived from Assessor's Database. Properties listed generally from north to south in the reach. Refer to Figure 1 for Reach Identification.

Lower Lions Reach		
Assessor's Parcel #	Acreage	Ownership
322306	-9084	1.70 Private Ownership
	-9056	13.45 Private Ownership
	-9085	1.14 Private Ownership
	-9058	1.45 Private Ownership
	-9050	4.19 Private Ownership
	-9131	1.32 Private Ownership
	-9090	0.47 Private Ownership
	-9094	0.40 Private Ownership
	-9089	0.41 Private Ownership
	-9063	0.55 FHRS
	-9022	2.94 Private Ownership
	-9132	0.70 Private Ownership
	-9115	1.33 King County Ecological Land
	-9034	0.88 King County Ecological Land
	-9133	0.98 Private Ownership
	-9017	3.22 Private Ownership
-9102	4.06 Private Ownership	
Total		39.19 Acres in Lower Lions Reach