

BN Peninsula Natural Area Site Management Guidelines

October 2004



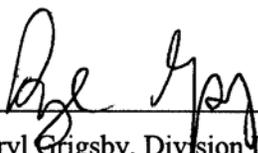
King County

Department of Natural Resources and Parks

Water and Land Resources Division

BN Peninsula Natural Area Site Management Guidelines

October 2004



Daryl Grigsby, Division Director

King County Water and Land Resources Division



King County

Department of Natural Resources and Parks
Water and Land Resources Division

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BN Peninsula Natural Area Site Management Guidelines

Summary

Site Description

BN Peninsula 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.

BN Peninsula Natural Area consists of three parcels (25 acres) owned in fee by King County, acquired in 2000. The Natural Area is located less than ¼ mile east of the Maple Valley urban growth boundary. The site is located in the vicinity of River Mile 18 on the right bank of the Cedar River, across from the confluence of Rock Creek and the Cedar.

The Natural Area is located at the southern end of a ½ mile long ridge that extends southwest into the river valley from the plateau above the Cedar River. Within the Natural Area, slopes drop steeply from this ridge to the north, west, and south. Steep forested bluffs comprise the river frontage for much of the northern and southern portions of the site. To the west, the steep slopes drop to belt of land near the elevation of the river, which rises again to another small hill at the end of the peninsula. The construction in the 1930s of the railroad grade (currently Cedar River Trail) directly west across the river from BN Peninsula Natural Area shifted the channel location to the north and east, and limited the westward meander of the river. The FEMA 100-year floodplain and floodway are mapped across the lowland belt of the Natural Area, and the site may be inundated during high flows.

The parcels were harvested early in the century, but have been under a single private ownership for most of the latter part of the century and have not been harvested. The site supports mature second-growth forest over the entire site. The ridge and slopes support typical native vegetation including western hemlock, Douglas-fir, western red cedar, and bigleaf maple. The lowland portion of the site that lies within the floodplain supports more deciduous vegetation species typical of the riparian forest along many parts of the Cedar River. The dense forest and understory likely contribute to slope stability on the steep slopes above the river.

Public Use and Access Considerations

The eastern edge of the site is relatively flat, but adjacent steep terrain and dense forest prevent access from the eastern entry road to most of the site. Much of the shoreline consists of steep bluff, prohibiting access to or from the river.

There is no known use of most of the site by the general public, other than occasional use by local residents of areas along the river. The entry road is a private road, not regularly traveled by non-residents. The steep terrain and dense vegetation limits access from the entry road to most of the site.

One parcel was acquired subject to a Life Tenant Lease, which allows a private citizen to continue to occupy an existing house for his remaining life. The lease affects the eastern 100 feet of the site, including a house, garage, and underlying land, and provides the tenant an easement from existing road to access the house. The private road through the site allows access houses to the east. The County is subject to a road maintenance agreement for upkeep of this road. There is no parking at the site, nor do public roads lead to the site.

Upon termination of this lease and removal of structures, this eastern upland portion of the site would be the main area able to support use (where access is not affected by very steep slopes and bluffs).

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 regional ecological value of site

Decisions about site management and public access should consider the ecological role of, in particular, the steep forested slopes along the boundaries of the Cedar River, the significance of this stand of mature second-growth forest, and the frequent flooding in the lowland portion of the site located in the floodway. This overarching recommendation is carried out through the various recommendations below.

Objective: Contain spread of invasive vegetation

Recommendation: Monitor and control invasive vegetation

Park staff should identify the presence of invasive plant species. At this time only limited amounts of invasives have been identified along the entry road. Park staff should continue with the current strategy to contain and, where possible, to reduce these species as time and budget permit. Control is primarily by hand removal by Park staff.

Objective: Protect the site from inappropriate public uses

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 at least quarterly.

Recommendation: Remove house and structures at appropriate time

At the end of the life tenancy term, Park staff should demolish and remove structures from site to prevent vandalism and return property to an undeveloped state. Funding from NRL capital project budget will be used for this purpose.

Objective: Ensure limited impacts of public use at the site

Recommendation: Monitor public use

Public use is very limited at this time, due to constraints on access, topography, and site conditions. Occasional use occurs by local residents. The main area for use, upon termination of the life tenancy lease and removal of the structures, would be the eastern edge of the site on the plateau above the river.

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

Objective: Develop long term ecologically based protection and restoration actions

Recommendation: Perform ecological assessment

As prioritized and funded, complete an assessment of basic ecological conditions and physical processes. Staff with appropriate expertise (e.g., ecologists, biologists, engineers) should perform this work. Existing documents, studies, and staff research may contribute substantial inventory and assessment information about the sites.

Recommendation: Develop recommendations for site restoration from assessment

As prioritized and funded, use assessment information to develop projects to achieve a set of goals and objectives consistent with those identified for King County Ecological Lands.

The WRIA 8 Chinook Salmon Conservation Plan Draft Work made several flood control and habitat enhancement recommendations for this vicinity: to consider protecting floodplain and restore area downstream of BN Peninsula on the left bank; and to consider protecting gravel recruitment and slopes on the right bank. There are no specific

plans or timeframe for implementing these Draft Plan Framework recommendations at this time. The impacts of these nearby projects upon the site should be considered as they are implemented.

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.

Table of Contents

Summary	i
Table of Contents	iv
Acknowledgements	v
Introduction	1
Part 1. General Property Information	1
Part 2. Acquisition History, Funding Source and Deed Restrictions	2
Funding Sources.....	2
Easements and Conditions	6
Part 3. Ecological and Physical Setting	7
Topography	7
Soils.....	9
Hydrology and Channel Morphology	9
Cedar River Mainstem	9
Cedar River Tributaries	10
Wetlands	10
Vegetation	10
Fish and Wildlife.....	11
Part 4. Public Use and Infrastructure	11
Part 5. Known Site History	11
Part 6. Analysis	12
Information Gaps and Development of Management Recommendations	12
Species of Concern.....	12
Restoring Processes.....	12
Ecological Structure and Function	13
Public Use	13
Part 7. Management Goals, Objectives, and Recommendations	13
Goals for Ecological Lands.....	13
Management Objectives and Recommendations	13
Implementation	15
References	16
Appendix 1: Road Easement Contact Information	17

LIST OF TABLES

Table 1. BN Peninsula Natural Area General Information.....	1
Table 2. BN Peninsula Natural Area Parcel Information.....	2
Table 3. Matrix of Management Recommendations.....	15

LIST OF FIGURES

Figure 1: Vicinity Map.....	4
Figure 2: Identification of Parcels.....	5
Figure 3: Site Features	8

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BN Peninsula Natural Area Site Management Guidelines

Introduction

BN Peninsula 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.

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 BN Peninsula 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

BN Peninsula Natural Area is 25 acres in size, and consists of three parcels. The Natural Area is located in the vicinity of RM 18¹ on the right bank (facing downstream) of the Cedar River, across from the confluence of Rock Creek with the Cedar River. This site contains a meander bend surrounded by the Cedar River on the south, west, and north sides. The Cedar River Trail runs on the other side of the river in this vicinity. See Figure 1 for a vicinity map and Figure 2 for a site map. Table 1 provides general information about the location of the Natural Area. Table 2 provides specific information for the parcels.

BN Peninsula Natural Area is 0.2 miles east of the Maple Valley incorporated area and the urban growth boundary, which runs along the Cedar River Pipeline Road in this vicinity. Within the urban growth boundary, residential lots are developed at a density of approximately six to ten houses per acre. In the immediate surroundings of BN Peninsula, parcels are zoned at a density of one home per five acres; many parcels are much larger than that size and are largely undeveloped for much of their acreage.

There are several other Ecological Lands in the vicinity. Wetland 79 and a portion of Rock Creek Natural Area lie immediately across the Cedar River and Cedar River Trail from this site. A portion of Rock Creek Natural Area lies just east and to the south of Wetland 79. Dorre Don Reach Natural Area lies approximately one mile downstream along the Cedar River; Big Bend Natural Area lies approximately 1½ miles upstream. The Maple Ridge Highlands Open Space, a multi-use King County Park, lies approximately one mile to the southeast.

Table 1. BN Peninsula Natural Area General Information.

Best Available Address	Along 248 th Ave SE in the 24000 block
Thomas Guide Map Location	p. 718, C2
Legal Description	Section 22, 23; Township 22 N, Range 6 E
Acreage	25.30 Ac
Drainage Basin	Lower Cedar River
WRIA	8
Council District	12
King County Sensitive Areas	Stream, erosion, landslide, seismic, FEMA 100-year floodplain and floodway

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

Table 2. BN Peninsula Natural Area Parcel Information.

Parcel Number	Name used in this document*	Acreage**	Purchase Date	Ownership type/price	Previous Names	Zoning	Funding Source***	Recording Number
2222069004	BN-9004	1.67	1/31/00	In fee; \$175,000 for both parcels	BNRR	RA-5	Cedar River Legacy – Open Space Bond	20000131301204
2322069009	BN-9009	8.93	1/31/00		BNRR	RA-5	Cedar River Legacy – Open Space Bond	20000131301204
2322069101 (purchased as -9101 & 2222069006)	BN-9101	14.70	3/2/00	In fee subject to a life term lease; \$250,000 for both parcels	Hubbard	RA-5	Cedar River Legacy, IAC Salmon Recovery	20010501000872 Deed of Right 20010308000011

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

**Acreage taken from King County Assessor’s data.

***Funding Source information confirmed by B. Peterson emails 1/28/05 and 2/1/05.

Part 2. Acquisition History, Funding Source and Deed Restrictions

Funding Sources

All three parcels were priorities for acquisition through the Cedar River Legacy Program. All parcels have the following text on their title deeds applying to the property: “The property herein conveyed is subject to open space use restrictions and restrictions on alienation as specified in RCW 84.34.200 et seq., and King County Ordinance Nos. 9071, 10750, 11068, and 11713.”

- Ordinance 9071 (July 27, 1989) authorized a public vote on 1989 Open Space Bonds.
- Ordinance 10750 and 11068 (March 8 and October 3, 1993) authorized the Regional Conservation Futures 1993 Bond Acquisition Program (per regulations in RCW 84.34.200). Under Conservation Futures, property use is restricted to low-impact passive-use recreation, non-motorized use, and minimum 15% impervious surfaces.
- Ordinance 11713 (February 15, 1995) refers to an allocation of Waterways 2000 funds to acquisition and stewardship. There are no explicit restrictions contained in the ordinance.

The following information pertains to the funding sources 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 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.

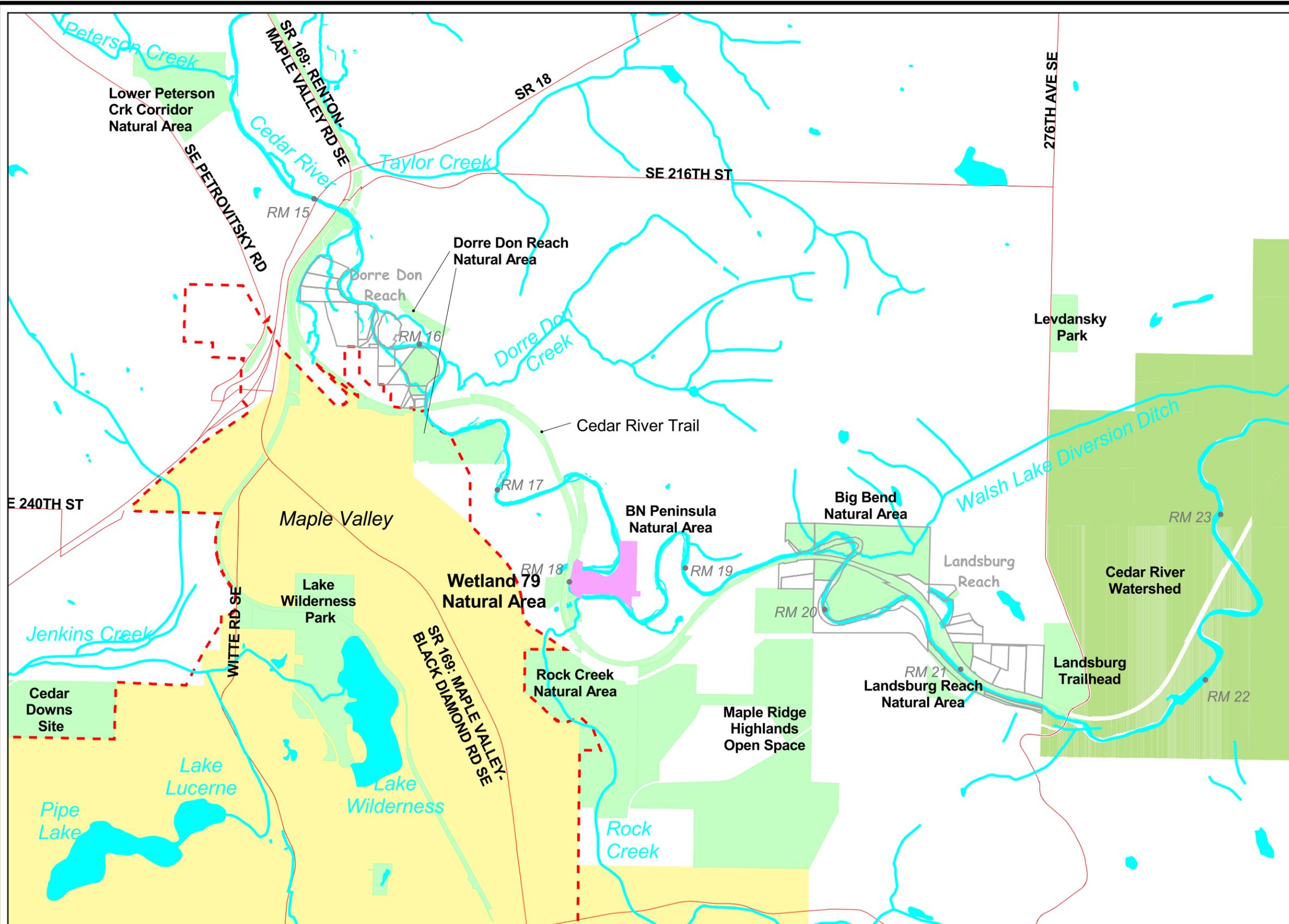
Purchases made with Conservation Futures funds are to be used for low-impact, passive-use recreation. Motorized use is limited to parking/staging/maintenance areas. “Non-vegetative impervious surfaces” should cover less than 15% of the site (CFT 2002). Conservation futures interests shall not be transferred 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).

- *1989 Open Space Bond:* King County voters authorized the \$117,640,000 King County Open Space Bond initiative, described in King County Ordinance 9071, in November 1989 to provide funds for the acquisition, development, renovation and improvement of public green spaces, green belts, open space, parks and trails in King County. Specific goals included preserving wildlife, enhancing scenic vistas, providing access to the water and open space, and providing trail connections between virtually all the cities in King County to a regional trail system and trails within the suburban cities and unincorporated areas of King County (King County Council 1989). King County Ordinance 9071 authorizes reclassification of bond funds in Section 8, part C. Restrictions on land conveyance associated with Open Space Bond funds are identified in Section 8, part D.
- *Waterways 2000 funds:* In 1993 King County Council approved the Waterways 2000 Program that established a system of interlocking greenways in six priority basins (i.e. Bear Creek Basin, Lower Cedar River Basin, Griffin Creek Basin, Patterson Creek Basin, Middle Green River Basin, and Middle Fork Snoqualmie River Basin). These greenways were protected through a variety of measures: acquisition, conservation easements and Public Benefit Rating System (PBRS). The King County Waterways 2000 properties are to provide major recreational opportunities, protect high quality habitat lands, safeguard critical scenic resources, preserve properties of cultural and historic importance and help preserve major fish runs (King County Council 1989, Motion 9175). Conserving threatened high quality biological systems, is the program’s primary objective (King County Motion 9175, Appendix A: Program vision, objectives and workplan). King County Council appropriated acquisition funds for Waterways 2000 properties through the pooling several funding sources (i.e. 1989 Open Space Bond, CFT and REET funds). These funds are restricted to open space acquisition only (CFT), park and open space acquisition only (REET) and open space capital purposes only (1989 Bond funds) (King County 1995, Waterways 2000 Acquisition and Stewardship Recommendations). CFT and open space bond funds are described above; there are no restrictions associated with the use of REET funds.

The BN-9101 parcel was acquired using “Interagency Committee for Outdoor Recreation: Salmon Program Federal Recovery Projects” funds (IAC grant #99-1576A).

- *Salmon Recovery Funding Board:* The Washington State Salmon Recovery Funding Board (SRFB) was created in 1999 to administer funds for salmon recovery appropriated by the state legislature and Congress (RCW 77.85). (SRFB 2002) SRFB’s mission is to “support salmon recovery by funding habitat protection and restoration projects and related programs and activities that produce sustainable and measurable benefits for fish and their habitat.” SRFB receives administrative support from the State Interagency Committee for Outdoor Recreation (IAC).

Project sponsors such as cities, counties, agencies, tribes, non-profit organizations, and private citizens submit applications to local lead entities such as Watershed Resource Inventory Area Steering Committees. The lead entities submit prioritized lists of project applications to SRFB for consideration. Sponsors request funds to protect or restore salmon habitat, commit to long-term monitoring, and provide a monetary or in-kind match of 15% or more. Projects may include



Legend

- Cedar River Mile Markers
- BN Peninsula Natural Area
- Selected Public Lands
- Cedar River Watershed
- 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

May 15, 2004

800 0 800 1600 2400 3200 4000 Feet

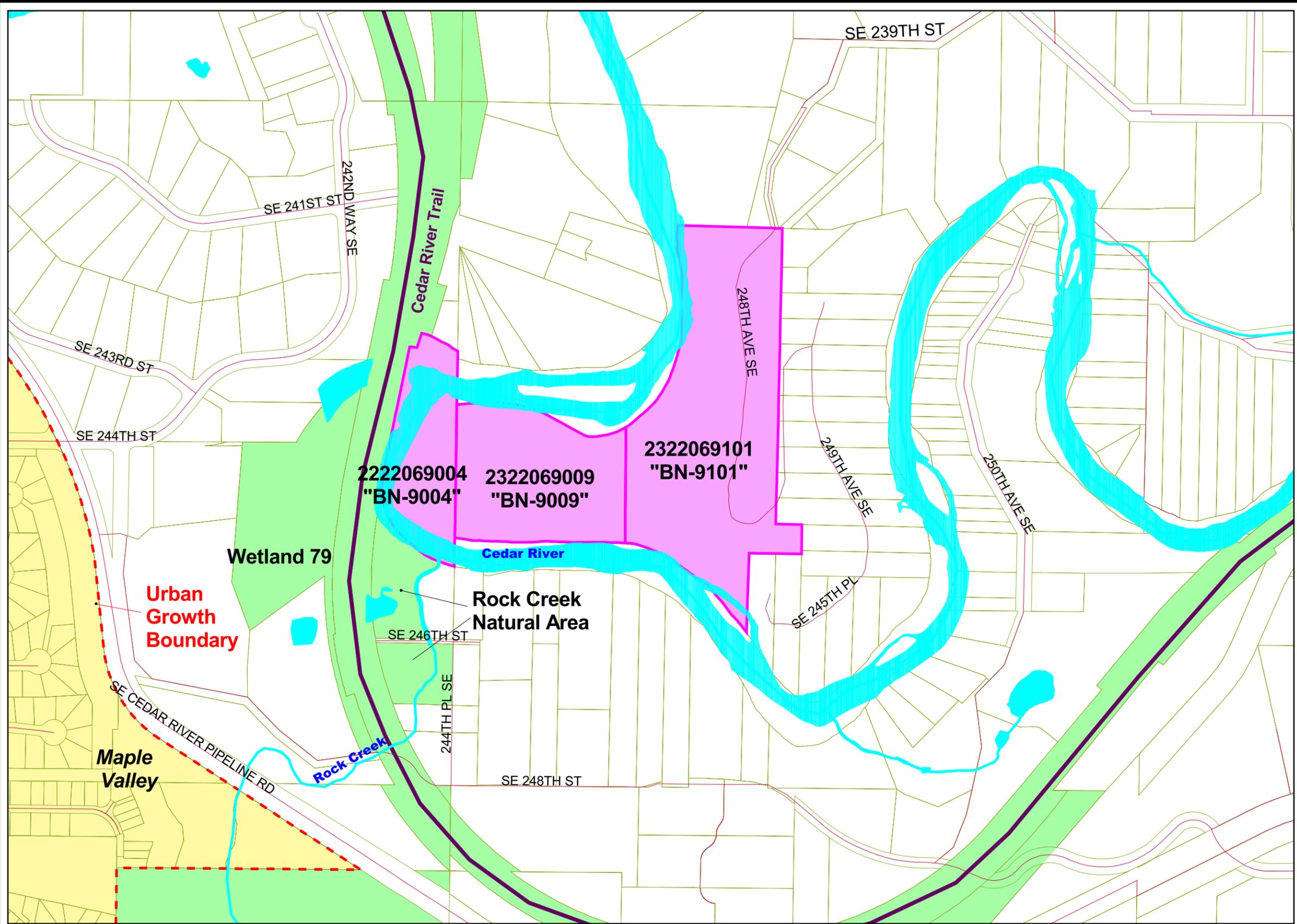
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Figure 1

Vicinity Map



Legend

Parcel names represent the last four digits of the ten-digit parcel identification number.

-  Rivers and Lakes
-  Streams
-  Cedar River Trail
-  KC Urban Growth Area
-  Streets
-  Bn peninsula.shp
-  King County Tax Parcels
-  Public Lands
-  Municipal Boundaries



May 15, 2004
 100 0 100 200 300 400 500 Feet

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Figure 2

BN Peninsula Natural Area, Parcel Numbers and Names

acquisition; in-stream passage or diversion; in-stream, riparian, upland, or estuarine habitat actions; or assessments and studies.

Lands acquired in fee with SRFB assistance must be dedicated to habitat conservation, outdoor recreation or salmon recover uses in perpetuity. This is done through a recorded Deed of Right to Use Land for Habitat Conservation, Salmon Recovery, or Outdoor Recreation Purposes. This Deed conveys property interests to the public forever.

Funding for Parcel BN-9101 was from the IAC from its “Federal Funds for Salmon Habitat” program, an early inception of the SRFB program. (Kniestedt pers. comm. 2004)The BN-9101 parcel is subject to a “Deed of Right to use land for public recreation purposes” to IAC (Recording number 20010308000011). This deed secures “the right to use the real property described below forever for the outdoor recreation purposes described in the Project Contract.” This project was funded in the first year of Salmon Recovery Funding Board projects by IAC. That first year, they had not yet developed the Deed of Right for Salmon Recovery as is always filed on SRFB projects in subsequent years. While a standard Deed of Right for outdoor recreation was filed on this project, it was part of the Salmon Recovery Funding Board projects that would subsequently have Deed of Right for Salmon Recovery filed. The available project contract documents indicate that the priorities for acquisition include habitat value at a high priority and, secondarily, passive recreation (Kniestedt pers. comm. 2004).

Easements and Conditions

There are additional easements and title statements in the BN-9004 and -9009 parcels’ title documents for waste disposal system and quit claim deeds. Due to modification of parcel boundaries over time, these easements are no longer applicable to these particular parcels; they affect a portion of the site formerly included in parcel 2222069004 that now lies to the south of the Cedar River, adjacent to the Cedar River Trail and Rock Creek.

Life Tenant Lease

The BN-9101 parcel is subject to a Life Tenant Lease granted by the Hubbards (previous owners) to John M. Bartels, Jr, which applies “for the remaining life of John M. Bartels, Jr., or for so long as he shall continue to occupy the same as his personal residence.”² King County filed an Assignment of Lease Agreement in 2000 transferring the interest to King County.³ The lease affects the east 100 feet of parcel BN-9101, including a house, garage, and underlying land, and provides the tenant an easement from existing road to access the house. The tenant does not have the right to assign the lease, and he is responsible for utilities, including well maintenance (King County 2000 p. 2). The tenant is to refrain from making major improvements to the house without permission and is to turn over the premises “in as good state and condition as they are now (ordinary wear and damage by the elements or fire excepted).” The lease runs for the remaining life of the tenant, “or so far as he shall continue to occupy said premises”; the lease shall terminate upon the tenant’s death or “discontinuance by lessee of occupancy of the leasehold as his primary personal residence.”

No action was taken to collect rent when the property was acquired. In late 2004, NRL was advised by King County Prosecuting Attorney’s Office that rent collection should begin on the site. NRL worked with King County Real Estate Services to collect rent on an annual basis as required by the terms of the life tenancy lease. Real Estate Services Lease was assigned #1821.

Road Maintenance Agreement

The BN-9101 parcel is subject to an easement for roadway purposes recorded July 21, 1954 (#4467083) which is 30 feet in width and is located in the eastern part of the site. The parcel title also indicates the

² Lease Agreement Granted May 10, 1990, Recording # 199005241235.

³ Recording # 20000302000942

road is subject to a maintenance agreement “to bear cost of maintenance, repair, or reconstruction of roadway among the common users thereof, as contained in instrument recorded June 28, 1983, under Recording Number 198306280641.” The road maintenance agreement does not specifically limit the use of the road to residents. It indicates that “the surface of the roadway shall be maintained so as to allow free and reasonable passage of such vehicular traffic as may be reasonable and necessary in order that all parties may enjoy full and free use of the parcels of real property affected hereby.” The maintenance costs “shall be borne in equal shares by the ownership of each parcel of real property.” The agreement states that parties subjecting the road to extraordinary wear and tear are responsible in full for costs of repair. There are no descriptions of road standards or maintenance requirements. This covenant is administered by the Cedardale Road Association (see Appendix 1 for contact information). According to Mr. Bartels, the tenant, the association spends “approximately \$2000 per year on grading and materials. There are ten families that contribute \$200 per year, and other families contribute periodically.” (King County 2000b)

King County is required to contribute to this road maintenance fund, although terms are not specified in the agreement.

Other Easements and Deed Conditions

The site is also affected by a utility easement along the private road through the property.

Part 3. Ecological and Physical Setting

This section describes the existing natural resources and ecological processes associated with the BN Peninsula Natural Area. Additional analysis is provided in Part 6 below. Figure 3 depicts site features including topography, streams, wetlands, and floodplains.

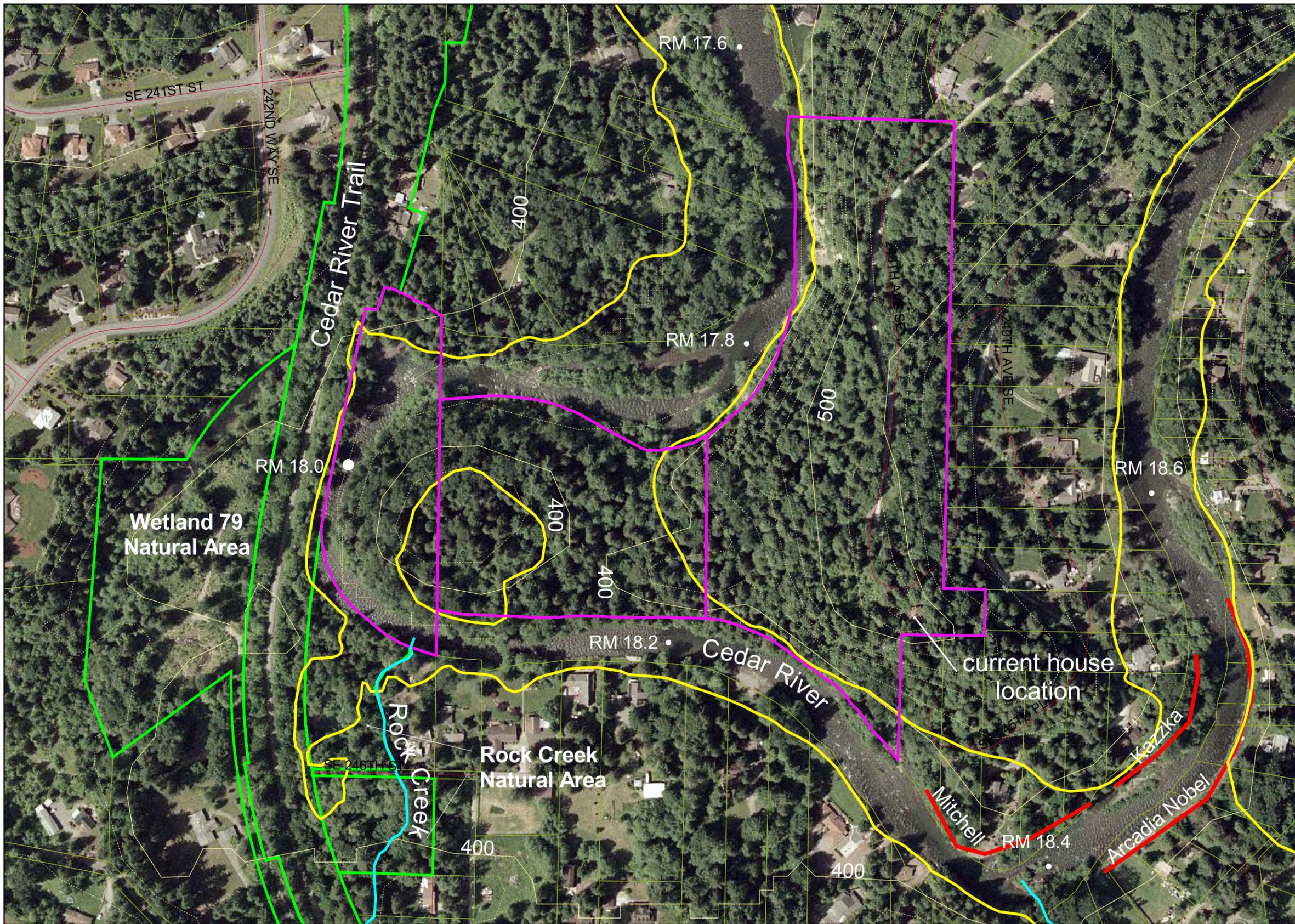
Topography

The Cedar River valley in the vicinity of BN Peninsula Natural Area is approximately ¼ mile wide. The Cedar River makes pronounced meanders through this area, flowing against steep slopes on the right bank from about one mile upstream to one mile downstream of the site.

The Cedar River Current and Future Conditions Report describes this reach of the Cedar River between RM 17 and RM 21.7 at Landsburg as follows (BN Peninsula Natural Area is located at approximately RM 18.3 through 17.7 (WMC 1998)):

“This historically stable reach flows through a narrow floodplain that is constrained in many places by cliffs composed of glacial sediments. No lateral migration could be detected [between 1936-1989] although the cliffs are probably retreating slowly at some slide areas at the outside banks of bends. Bank erosion of floodplain deposits has prompted installation of revetments in some locations, most notably from RM 18.4-18.6” (King County 1993, p. 5-29, -30)

The meander bend containing the Natural Area represents the southern end of a narrow ½ mile-long ridge extending southwest from the plateau above the Cedar River (see Figure 3). Within the Natural Area, the ridge runs from the northwest corner of BN-9101 to the south. To the east, outside the Natural Area, slopes are moderately steep, with houses located near the base of the slope close to the riverbank. Within the Natural Area, steep slopes drop sharply (~150 or more in height across 300 feet distance) to the Cedar River on the northwest corner and southern edge of parcel BN-9101. Steep slopes also are located at the southwest corner, where the land drops approximately 100 feet and then rises again to form a hill at the western edge of the peninsula in parcel BN-9009 and -9004. Acquisition documents note that there is a small beach on the south that is accessible only from the river (unclear from document on which parcel this is located).



Legend

Cedar River mile markers are from 1998 Cedar River Basin Action plan

- BN Peninsula Natural Area
- Cedar River Mile Markers
- Cedar River 1/10 Mile Markers
- Floodplains - 100 year
- Streams
- 100 ft Contour Lines
- 20 ft Contour Lines
- Selected Public Lands
- King County Tax Parcels
- Streets
- Levees



May 14, 2004
 90 0 90 180 270 360 450 Feet

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Stream, floodplain, and topographic layers approximate, mapped from King County GIS layers



King County

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Figure 3

BN Peninsula Natural Area, Site Features

Soils

The King County Soil Survey maps following soils at the site (Snyder et al. 1973):

- The majority of the peninsula is mapped as Neilton very gravelly loamy sand, 2-15% slopes (NeC). Neilton soils are excessively drained, undulating or rolling soils formed under conifers, on terraces, in stratified very gravelly glacial outwash.
- The western edge of the peninsula is mapped as Riverwash (Rh) soils. Riverwash is “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.”
- The northern part of the site is classified as Alderwood gravelly sandy loam (AkF), very steep slopes (25-75%). Runoff is rapid to very rapid; erosion hazard is severe to very severe; slippage potential is severe. Alderwood soils are moderately well-drained soils located at upland sites, formed under conifers in glacier deposits.

Hydrology and Channel Morphology

Cedar River Mainstem

As noted above, BN Peninsula Natural Area is located at approximately RM 18.3 through 17.7 (WMC 1998). Using maps and aerial photographs, Perkins (1994) described historic changes in channel characteristics for the river reach extending between RM 17 and RM 21.7 (also, King County 1993a, p. 5-22). This reach was identified based on channel morphology and slope (see Figure 3). The Cedar River Current and Future Conditions Report describes historic conditions in this reach as being stable with a narrow floodplain constrained in many places by cliffs of glacial sediments.

This analysis indicates that the 1895 active channel width was 180 feet; the 1989 active channel width is 90 feet. The natural degree of confinement was “moderately confined,” and the current level of hydrological modifications is “moderate.” Wetted channel width has decreased from a maximum 143 feet and minimum 77 feet in 1895 to a maximum 99 feet and minimum 82.5 feet in 1989. During this same period, historic pool frequency decreased from “high” to “moderate”. (Perkins 1994, Blair 2003)

This bend of the Cedar River used to flow to the west of the railroad embankment, the current Cedar River Trail. Wetland 79, on the west side of the Trail, is a portion of former river channel that was cut off by construction of the railroad grade. A report on restoration work at Wetland 79 indicates that:

“Wetland 79 was formed in the 1930s when the Burlington Northern Railroad constructed a raised railroad bed and shifted the alignment of the Cedar River to the north. A culvert under the railroad bed was the only remaining connection between the wetland and the river.” (EPA 2001)

The river course was changed to its current position by this construction. The change in course may have affected the erosion and movement of the channel throughout this vicinity and at the site.

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 3). FEMA designates a floodway which indicates the area of the deepest and fastest flood flows. The floodway is not mapped on Figure 3, but is contained entirely within the mapped 100-year floodplain. 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).

The mapped FEMA floodplain and the floodway both extend across most of BN-9004 and -9009 parcels, except for the topographic rise on the southwest corner of BN-9009. The floodplain extends onto the opposite (left) bank of the river along the steep slopes on the northern portion of BN-9101. The narrow river valley and slopes of the riverbanks limit the mapped floodplain to less than 1/10 mile wide in the vicinity (more than 1 mile upstream and downstream).

There are no levees or revetments along the Cedar River on this site. The Cedar River Trail serves as a levee/revetment along the left bank across from BN-9004; this former railroad grade limits the western extent of river movement in this location. Three revetments are located immediately upstream on the right and left banks of the Cedar between RM 18.4 and 18.5: Mitchell, Kazzka, and Arcadia Nobel (see Figure 3). These facilities are maintained by the Flood Hazard Reduction Services (FHRS) section of WLRD, which performs routine maintenance such as periodic vegetation management and post-flood inspections and repairs. Routine maintenance activities on these facilities may include removal of blackberries in order to ensure adequate access and visibility for inspection of the facilities' 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 levee or riverbanks to mark sites at which river cross-sections are measured (Koon pers. comm. 2003b).

Cedar River Tributaries

Rock Creek (WRIA #08.0339) is the only tributary in the vicinity. The Class 2 salmonid-bearing stream is tributary to the Cedar River just east of the Cedar River Trail from Wetland 79. The Current and Future Conditions Report describes Rock Creek as outstanding habitat for most of its length, used by all species of salmonids.

“[The limited level of disturbance] contributes to a stable, diverse habitat even in the higher-gradient reaches. Natural system stability is enhanced by a relatively low gradient, a storm hydrology dampened by large amounts of glacial outwash soils, and a series of uninventoried riparian wetlands between RM 2.6 and 0.8...Much of the riparian vegetation, which has a high proportion of coniferous trees, is approaching old growth in size and structural complexity. Most of the stream has high volumes of LWD.” (King County 1993, p. 7-73)

Wetlands

The King County Wetlands Inventory and the National Wetlands Inventory do not map any wetlands on BN Peninsula Natural Area. There are no mapped seeps or wetlands on site, though these features may be present on the property, particularly on the slopes or at the base of the steep slopes.

Wetland 79 Natural Area is located across the Cedar River. The King County Wetlands Inventory maps Wetland 79 as a Class 3, 0.3 acre wetland (King County 1991). This site replicates a naturally formed oxbow: a crescent-shaped body of water located in an abandoned river channel. This is the last remaining oxbow wetland still connected to the Cedar River, by a culvert under the Cedar River Trail (King County 1998, King County 2001).

Vegetation

The property is heavily forested with mature second growth forest or old growth on most of the site. While the site was logged decades ago, the site is notable for the age since last cut as compared to much of the vicinity. The forest is relatively old in age for second-growth forests in the vicinity. The composition of the slopes and ridgeline is typical native vegetation including western hemlock, Douglas-fir, western red cedar, and bigleaf maple, with a prevalence of more deciduous species on the floodplain portion of the peninsula. The healthy forest cover on the steep slopes may contribute to slope stability on

the bluffs. The entire extent of the property is forested, except for a small area on BN-9101 occupied by structures.

There are no noxious weeds for which control is required mapped at the site. Invasive species are present along the road, particularly at the lower eastern extent of the road. Parks resource staff have cut ivy off of the trees periodically.

Fish and Wildlife

The mainstem Cedar River supports coho salmon, chinook salmon, sockeye salmon, coastal cutthroat trout, and winter steelhead (Kerwin 2001 p. 329). There have been no studies of wildlife presence at the site.

Part 4. Public Use and Infrastructure

There is no known use of the site by the general public, other than occasional use by local residents of areas along the river. The entry road is a private road, not regularly traveled by non-residents. The steep terrain and dense vegetation limits access from the entry road to most of the site. Much of the shoreline consists of steep bluff, prohibiting access to or from the river.

A 910 square foot house and a garage stand on the property, occupied by the tenant. The current tenant lives on the property in the house. When the tenancy ends, the house and outbuildings will be removed from the site. Natural Resource Lands program capital improvement funds will need to be used for this purpose.

Access to the property is solely from 248th Ave SE, a private road. The road and associated utility lines run through the site. A spur road leads to the residence on the property, which is currently being used by the lessee. The main road leads through the site, providing access to homes to the east of the property. As noted above (Part 2), King County is part of a road maintenance covenant to contribute financially to road upkeep. There is no specific language prohibiting use of the road by the general public, although the covenant's language to allow "full and free use" by "all parties" may be interpreted to refer to a level of use by visitors to King County property that would be roughly the same as use by other parcel owners. The road maintenance covenant indicates that "parties subjecting the road to extraordinary wear and tear are responsible in full for costs of repair."⁴ These conditions should be considered in determining the degree to which King County can permit use of this road by the general public.

There may be informal trails at the site, particularly from the end of the private road along the southern river boundary. Steep slopes along the ridge in the eastern part of the site limit access. No trails have been documented at the site. King County Parks staff have used GPS to locate the boundary along the eastern and southern edges; there appear to be no areas of encroachment.

Part 5. Known Site History

Burlington Northern has owned the western BN-9004 and -9009 parcels since railroad construction early in the century. These parcels had no legal access at the time of purchase by King County.

The BN-9101 parcel had been owned for decades by a single owner, prior to the recent sale. The longtime owner is the current holder of the life tenancy lease.

⁴ King County. 2000. Title Officer's Review of Title Report. Dated 2/4/00. p. 2

Part 6. 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 lands within BN Peninsula 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.

Information Gaps and Development of Management Recommendations

There are significant gaps in how much is known and understood about ecological conditions and physical processes in BN Peninsula Natural Area because recent comprehensive baseline inventories of plant, fish, and wildlife species, and geologic and hydrologic conditions do not exist. This type of information is necessary prior to developing restoration concepts and specific designs, particularly for large-scale changes and modifications to site features. If basic site inventory and assessment is not done, there is a strong likelihood of inadvertently harming either individual plant or animal species or ecological processes that sustain one or more of these species. Consideration should also be given to impact on flood characteristics.

Therefore, prior to undertaking major management activities in this Natural Area, a site inventory and assessment should be undertaken that is focused, at a minimum, on the conditions and processes that the management activities will affect. Such assessment or evaluations of proposed actions should be conducted by those staff with appropriate expertise (e.g. Watershed and Ecological Assessment Team staff). Inventory and assessment information may be available in the Current and Future Condition Report, Habitat Limiting Factors Analysis, Basin Plan, and Ecosystem Diagnosis and Treatment study of the Cedar River (being conducted at the time of writing), as well as past and future work by King County Ecological staff.

Prior to minor management activities (e.g., small planting project) the proposed activity should be evaluated to determine whether or not the activity could do harm to existing or future desired ecological processes and conditions. If the likely outcome is harm, then the activity should not be undertaken.

Species of Concern

Because of the lack of a comprehensive biological inventory at these sites, 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 Processes

The primary alteration to ecological processes in this area was railroad construction that constrained channel migration, isolating the Wetland 79 former meander channel and limiting the western extent of the river through this bend. This altered channel is now a permanent condition, since there are no proposed plans to alter the location of the railroad grade to affect the river's location.

In addition to the railroad grade, natural features such as steep slopes affect the river's course through the area. There is potential for flooding or for change of river course through the lowland part of the peninsula on parcels BN-9004 and -9009. There are no plans for any activity to affect processes at the site.

More in-depth analysis of historic river conditions, hydraulics, and hydrology would be needed to determine the approach of any restoration project to restore ecological processes (as is also true of any

project to restore structure and function as described in the next section), and to ensure that the project does not result in adverse flood impacts.

Ecological Structure and Function

In general, the main structural considerations may be to control invasive, non-native species, and to promote establishment and growth of a native riparian plant community, where possible, given site and budgetary constraints. Plantings should represent the historic vegetative communities commonly associated with forested riparian areas in western Washington and at this site in particular. Inherent in the restoration should be efforts to maintain structural complexity, historic levels of plant diversity and multiple canopy layers in order to provide a variety of vegetative and physical features that would provide a number of niches for wildlife.

BN Peninsula has a relatively well developed riparian and upland forest through much of the site. Though further inventory may identify areas where native tree and shrub plantings could contribute to vegetation structure, or where invasive and non-native species could be controlled, there are few areas identified at this time that need attention (in Part 3).

Public Use

Due to restrictions on road access, topography, and dense forested cover, this site is inappropriate for extensive public use. Currently entry into the site is additionally restricted by the presence of the life tenant. There are no apparent revenue-generating opportunities at this site.

Part 7. 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 BN Peninsula 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 regional ecological value of site

Decisions about site management and public access should consider the ecological role of, in particular, the steep forested slopes along the boundaries of the Cedar River, the significance of this stand of mature second-growth forest, and the frequent flooding in the lowland portion of the site located in the floodway. This overarching recommendation is carried out through the various recommendations below.

Objective: Contain spread of invasive vegetation

Recommendation: Monitor and control invasive vegetation

Park staff should identify the presence of invasive plant species; at this time only limited amounts of invasives have been identified along the entry road. Park staff should continue with the current strategy to contain and, where possible, to reduce these species as time and budget permit. Control is primarily by hand removal by Park staff.

Objective: Protect the site from inappropriate public uses

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 at least quarterly.

Recommendation: Remove house and structures at appropriate time

At the end of the life tenancy term, Park staff should demolish and remove structures from site to prevent vandalism and return property to an undeveloped state. Funding from NRL capital project budget will be used for this purpose.

Objective: Ensure limited impacts of public use at the site

Recommendation: Monitor public use

Public use is very limited at this time. The main areas for use, upon removal of the structures, would be the eastern portions of the site on the plateau above the river.

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

Objective: Develop long term ecologically based protection and restoration actions

Recommendation: Perform ecological assessment

As prioritized and funded, complete an assessment of basic ecological conditions and physical processes. Staff with appropriate expertise (e.g., ecologists, biologists, engineers) should perform this work. Existing documents, studies, and staff research may contribute substantial inventory and assessment information about the sites.

Recommendation: Develop recommendations for site restoration from assessment

As prioritized and funded, use assessment information to develop projects to achieve a set of goals and objectives consistent with those identified for King County Ecological Lands.

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.

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

The WRIA 8 Chinook Salmon Conservation Plan Draft Work Plan (WRIA 8 Service Provider Team 2004) made several flood control and habitat enhancement recommendations for this vicinity (Appendix F, p. 3, Reach 16). There are no specific plans or timeframe for implementing these Draft Plan Framework recommendations at this time. The impacts of these nearby projects upon the site should be considered as they are implemented.

- Consider protecting floodplain area on left bank, downstream of the ‘BN Nose’ property [i.e. BN Peninsula Natural Area] and upstream of Orchard Grove revetment [i.e. levee, between RM 17.3 and 17.0]. If protected, explore restoration opportunities.

- Consider protecting gravel recruitment area and unstable slopes on the right bank, at the downstream end of Reach 16 and upstream of the Cedar River Trail bridge [at RM 17].

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.

Recommendations that address long-term management will need to be developed when funded and prioritized by DNRP management (within the work programs of NRL, Science, Basin Stewards, CPOSA, and FHRS). As new information is gathered for the site, restoration projects may be developed following adoption of these site management guidelines. Projects should be consistent with management objectives and approaches described above and in the Ecological Lands Handbook. Funding for restoration projects may be available through Surface Water Management CIP funding or salmon conservation planning funds.

Table 3. Matrix of Management Recommendations

Recommendations	Year	Park Resource Staff	Basin Steward	NRL staff	WRIA Project Coord.	WEAT
Priority One						
Monitor and control invasive vegetation	At least quarterly	X				
Control litter/dumping and encroachment activities	At least quarterly	X				
Monitor public access	At least quarterly	X				
Priority Two						
Remove house and structures	When life tenancy term ends					
Perform ecological assessments	As prioritized and funded			X		X
Develop recommendations from assessment	As prioritized and funded		X	X	X	X
Consider impacts of future nearby habitat enhancement projects upon site	As necessary		X	X	X	
Update Site Management Guidelines	Within at least five years	X		X		

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Appendix 1: Road Easement Contact Information

Road Easement Contact Information:

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C/o Ron Greising

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