

The background image is a scenic landscape. On the left, a steep, moss-covered forested hillside slopes down towards a river. The river flows from the background towards the foreground, with white water rapids visible. In the distance, a bridge spans the river, and rolling mountains are visible under a clear blue sky.

DRAFT

WATERSHED MANAGEMENT PLAN

2018

TACOMA  **WATER**
TACOMA PUBLIC UTILITIES

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1 Introduction and Summary

1.1 Background

Tacoma Water supplies approximately 50 million gallons per day of drinking water to communities totaling over 300,000 people in its retail and wholesale service area in Pierce and south King counties, and provides water to its SSP partners in South King County. The primary source of water supply is the Green River in east King County. The Green River Watershed lands, located above the intake facilities and extending approximately 25 miles upstream of the Howard Hanson Dam, comprise approximately 147,446 acres.

Tacoma Water currently owns approximately 11 percent of the watershed area, primarily land immediately adjacent to the Green River and its main tributaries. Public agencies and private companies own the remainder. These agencies and companies own lands that are dispersed throughout the Green River Watershed and generally are undeveloped forestland managed for timber production and wildlife habitat.

Tacoma Water's Green River water supply officially became a filtered surface water supply on May 1, 2015 with the completion of the Green River Filtration Facility (GRFF). Prior to the implementation of filtration, Tacoma Water implemented a rigorous watershed control program, designed to meet Washington State Department of Health (DOH) requirements for unfiltered surface water supply systems under Chapter 246-290 of the Washington Administrative Code (WAC).

1.2 Purpose

This Watershed Management Plan serves as documentation of the watershed control program implemented by Tacoma Water for the Green River Watershed. Tacoma Water's watershed control program was most recently documented in the Green River Watershed Management Plan (WSMP) that was approved in 2008 as Volume II of the utility's Water System Plan (WSP) completed in 2006. The 2008 WSMP was used as a basis for this update.

1.3 Watershed Control Program Requirements

Although Tacoma Water became a filtered surface water supply system in 2015, the utility plans to continue applying the same level of watershed controls implemented previously under requirements for unfiltered surface water supply. This higher level of watershed control provides benefits to water quality, water treatment plant operations and maintenance, fisheries, environmental stewardship, land management and forest health. Therefore, it is Tacoma Water's intent to continue to manage and improve the watershed control program consistent with practices for an unfiltered surface water supply system. The policies and strategies used to manage and implement the watershed controls are provided in Section 5

WAC 246-290-135 and WAC 246-290-668 describe regulations for water purveyors relative to source water protection and watershed controls, respectively. Additionally, water purveyors must include a current evaluation of the watershed control program as

part of their water system plan development per WAC 246-290-100. This Watershed Management Plan meets all the WAC requirement's.

WAC 246-290-135 (4)(c) describes the minimum elements of a watershed control program. These include:

- Watershed description and inventory, including location, hydrology, land ownership and activities that may adversely affect source water quality;
- An inventory of all potential surface water contamination sources and activities, including identification of site locations and owner/operators, located within the watershed and having the significant potential to contaminate the source water quality;
- Watershed control measures, including documentation of ownership and relevant written agreements, and monitoring of activities and water quality;
- System operation, including emergency provisions; and
- Documentation of water quality trends.

WAC 246-290-668 includes the requirements to “exercise surveillance over conditions and activities in the watershed affecting source water quality,” and develop a current watershed evaluation which includes a description of:

- Conditions/activities in the watershed that are adversely affecting source water quality;
- Changes in the watershed that could adversely affect source water quality that have occurred since the last watershed evaluation;
- Sample results from the monitoring program the purveyor uses to assess the adequacy of watershed protection; and
- Recommendations for improved watershed control.

The Watershed Control Program must be approved by the Washington State Department of Health.

1.4 Document Organization

This document is organized such that it generally follows the outline of WAC 246-290-135; Chapters 2 through 5 relate to each of the major elements identified in the applicable WAC sections. Chapter 6 provides an overall evaluation of the watershed control program, identifying recommendations for future improvement.

2 Watershed Hydrology and Land Ownership

DOH guidance requires that important features of the watershed — including a watershed description and location, hydrology and land ownership delineation — be described. The following sections outline these features as well as the history of the Green River Watershed.

2.1 Watershed History

The City of Tacoma purchased a privately owned water system in 1893. At that time, water quality and sanitary conditions were primary concerns because of the threat of typhoid fever. The City immediately began looking for a better and safer source of water. In 1910, the City Council authorized construction of the Green River gravity supply system. The original Green River Headworks, a major water supply pipeline, and original McMillin Reservoir were completed in 1913. A chronological summary of major events and milestones related to the Green River Watershed starting in 1887 are provided in Appendix A ; more recent activities from 2006-2017 are provided in Table 2-1.

Table 2-1. Recent Tacoma Water Actions in Green River Watershed

Year	History
2006	<ul style="list-style-type: none"> Work continued on the development of Additional Water Storage Project (AWSP) fish and wildlife habitat mitigation and restoration projects; several projects completed.
2007	<ul style="list-style-type: none"> AWSP storage begins – Surface elevation of Howard Hanson Dam pool raised from 1147 feet to 1167 feet. Acquired 640 acres from WA DNR (Far Out parcel). Signed landowner agreement with Olympic Resource Management Timber Fund, LLC.
2008	<ul style="list-style-type: none"> Replaced undersized culverts with bridges on the 5900 Road crossings at McCain Creek, May Creek, and Green Canyon Creek. New culvert installed in EF Green Canyon Creek. Fish islands created in Eagle Gorge Reservoir for fish habitat.
2009	<ul style="list-style-type: none"> Replaced undersized culverts with bridges on the 3703 Road at Gold Creek and on an unnamed creek (No Name 2). Replaced One Mile Bridge on the 5500 Road with a new bridge. Replaced bridge and culverts on the 5900 Road at Smay Creek with 2 new bridges. Washington Department of Fish and Wildlife closes the Green River to fishing within the controlled portion of the watershed.

Table 2-1. Recent Tacoma Water Actions in Green River Watershed

Year	History
2010	<ul style="list-style-type: none"> Replaced undersized culverts on the 5530 Road with a bridge at Cougar Creek, on the 3703 Road with a bridge at an unnamed creek (No Name 1 Creek). Removed stream crossings on secondary roads at Boundary Creek and Bald Creek. Acquired 60 acres surrounding Little Eagle Lake. Smay Creek and Koss Ecosystem Restoration Projects were completed to improve fish habitat.
2011	<ul style="list-style-type: none"> Replaced undersized culverts on the 5530 Road with a bridge at Sylvester Creek and on the 3703 Road with a bridge at an unnamed creek (No Name 3 Creek). Installed larger culverts on secondary road stream crossings and permanently removed culverts at three secondary road sites.
2013	<ul style="list-style-type: none"> Replaced undersized culvert on the 3703 Road with a bridge at Humphrey Creek. Acquired 360 acres on upper Sawmill Creek. Replaced an undersized culvert at an unnamed stream on the 5900 Road with a larger culvert.
2014	<ul style="list-style-type: none"> Replaced undersized culvert on the 3703 Road with a bridge at Olsen Creek, and replaced culverts at an unnamed stream on the 5530 Road and the 5900 Road. Conducted a hardwood harvest and reforestation project on 93 acres near the 13 mile marker on the 5530 Road.
2015	<ul style="list-style-type: none"> GRFF construction completed. Green River officially considered a filtered surface water supply. Replaced undersized culverts on the 5500 Road with a bridge at Cottonwood Creek, on the 5530 Road with a bridge on an unnamed stream, and on the 3703 Road with a bridge at WF Charlie Creek. Pumped ~1,000 AF of water from Eagle Lake for instream flow augmentation. Modifications to the Headworks Diversion System made to better route sediment and improve fish screen cleaning. Pipeline relining project completed within the Headworks area.
2016	<ul style="list-style-type: none"> Signed landowner agreement with Green River Timberlands, LLC.
2017	<ul style="list-style-type: none"> Demolished several abandoned residences and buildings in Lester.

2.2 Watershed Description

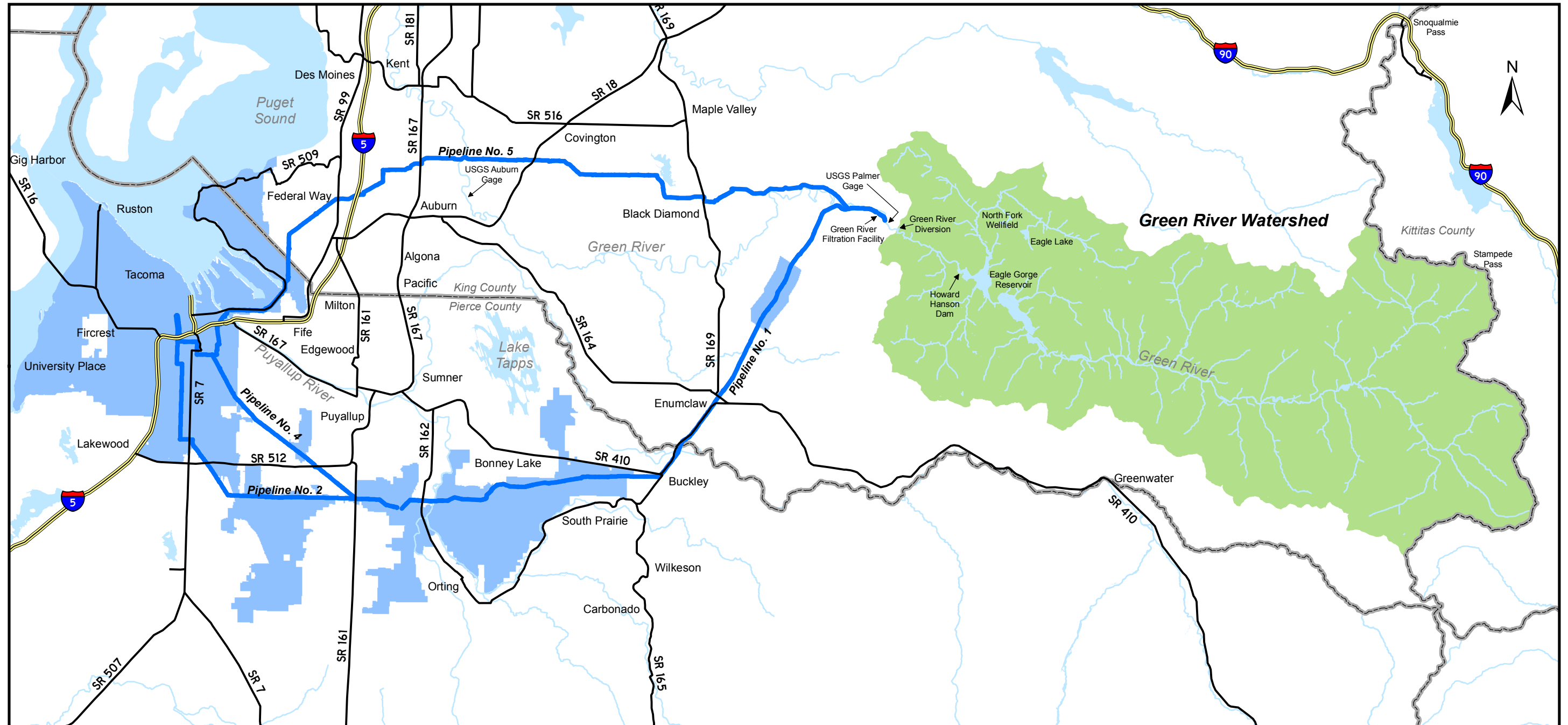
2.2.1 Geographic Features

The Green River Watershed is located in the central Cascade Mountain Range, approximately 25 miles north of Mount Rainier, as shown in Figure 2-1. The watershed

occupies a structural downwarp in the mountain range, which gives this region a relatively lower elevation than the adjacent Cascade Range to the north or south. The Green River occupies a low point, or synclinal trough, between parallel ridges, which is called the Green River Syncline. The major peaks in or near the watershed area running along the Cascade Crest from north to south are the following: Meadow Peak, 5,449 feet; Snowshoe Butte, 5,135 feet; Blowout Mountain, 5,715 feet; and Pyramid Peak, 5,715 feet. The highest points to the northwest and north of the Green River are Cougar Mountain, 4,504 feet; Rooster Comb Mountain, 4,105 feet; and the area near Smay Creek, 4,391 feet. South of the Green River from west to east are Huckleberry Mountain, 4,901 feet; Kelly Butte, 5,409 feet; and Sawmill Ridge with peaks up to approximately 5,000 feet. From the Green River Valley near Hot Springs, the dominant features are Kelly Butte to the southeast, Huckleberry Mountain to the southwest, and Rooster Comb Mountain directly north.

The general geographic setting of the Upper Green River Watershed consists of a long U-shaped valley running between two east-west parallel ridges. The valley, or trough, opens toward the west into the Puget Sound Lowland and is closed on the east by the Cascade Crest, the backbone of the Cascade Range, which runs north-south. The Green River trough runs approximately 16 miles in a direct east-west line from Howard Hanson Dam to a confluence with Sunday Creek where the Green River Valley angles toward the southeast in the direction of Blowout Mountain. The Green River Valley, for most of the distance from Howard Hanson Dam to the Sunday Creek confluence, averages nearly one-half mile in width. At places near Maywood, Hot Springs, and Lester, the Green River Valley widens to approximately one mile in width. Major water bodies located in the Upper Green River Watershed include Eagle Gorge Reservoir and Eagle Lake and are shown in Figure 2-1 and Figure 2-2.

Figure 2-1. Vicinity Map



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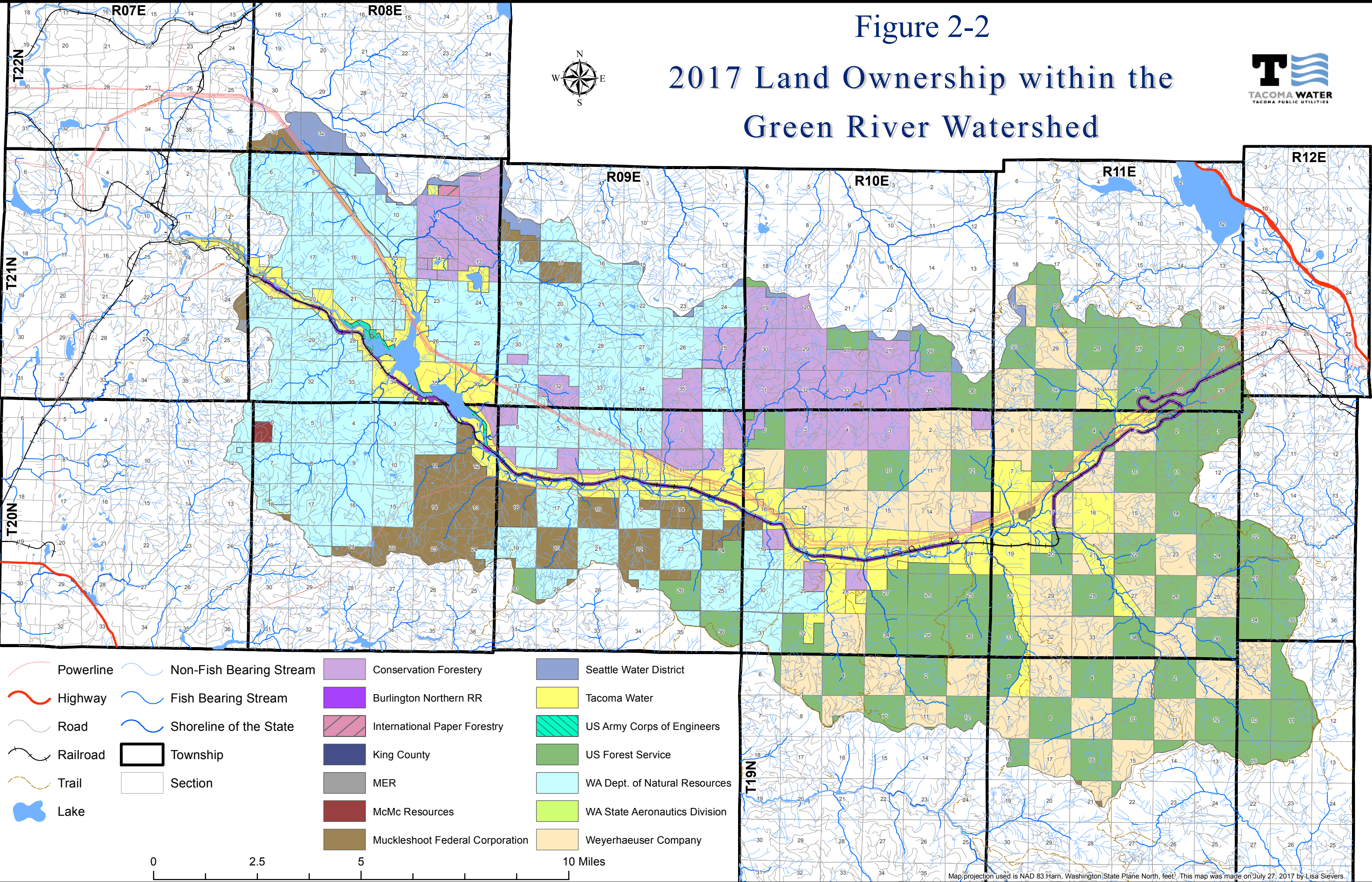
-  County Boundaries
-  Bodies of Water
-  Retail Service Area
-  Watershed Boundary

Figure 2-2

2017 Land Ownership within the Green River Watershed



The elevation of the Green River source headwaters on Blowout Mountain is approximately 4,200 feet above sea level. The Green River originates in this area as a result of snow melt and rainfall runoff. Falling an average of 313 feet per mile, the Green River flows from its source to Sunday Creek, which joins the Green River at a point located approximately 13 miles east of Howard Hanson Dam and situated at an elevation of approximately 1,900 feet. From this confluence, the Green River falls an average of 60 feet per mile to Howard Hanson Dam, which is situated at elevation of approximately 1,100 feet above sea level.

For the river segment extending from Sunday Creek to the Howard Hanson Dam (known as the lower trough of the Upper Green River Watershed), the Green River is joined by numerous feeder streams that lie to the north and south of the river. These feeder streams originate from sources located on the two adjacent ridges, each ridge running in the east-west direction. Streams in this area generally run from the north or south and intersect the Green River at right angles. Over time, streams have cut V-shaped valleys and formed an overall trellis-like drainage pattern for this area. For the river segment that runs from Blowout Mountain to Sunday Creek (known as the upper trough), the drainage pattern becomes more complex. Most streams in this area radiate out from the Green River in a dendritic drainage pattern. Smay Creek and North Fork originate north of the Green River basin and have created two separate basins that are also a major portion of the Green River Watershed.

Tacoma Water's Green River intake is located approximately 30 miles east of Tacoma at an elevation of approximately 900 feet. The contributing watershed area covers approximately 230 square miles of mountainous and heavily timbered terrain. Surface and groundwater supplies are diverted to the waterworks system, treated, and then conveyed to the Tacoma Water service area and to Tacoma Water's Second Supply Project partners (City of Kent, Covington Water District, and Lakehaven Water and Sewer District) in South King County.

2.2.2 Hydrology

The climate of the Green River Watershed is wet with temperatures ranging from temperate to cold. A prevailing onshore movement of wet air from the Pacific Ocean is cooled as it pushes up against the Cascade Range. As it begins to rise over the Cascades, the air mass reaches its condensation point and rain or snow begins to fall. Generally speaking for the central Cascade Mountain Range, temperature decreases and precipitation increases from the Puget Sound eastward to the Cascade Mountain crest. Once over the crest, temperature remains cool and precipitation declines.

Temperatures in the Green River Watershed are generally mild. At Stampede Pass January average minimum and maximum temperatures are 21 and 29.1 degrees Fahrenheit, respectively, while August average temperatures range from a low of 47.9 degrees Fahrenheit to a high of 65.2. At Palmer 3 ESE January average minimum and maximum temperatures are 31.6 and 42.4 degrees Fahrenheit respectively and August average temperatures are 51.2 and 74.3 degrees Fahrenheit. Much of the precipitation in the Green River Watershed falls in the form of snow during winter months, especially at higher elevations. Typical rainfall and temperature data for selected areas proximal to the Green River Watershed are summarized in Table 2-2.

Table 2-2. Average Rainfall and Temperature for Selected Areas Proximal to the Green River Watershed

Station Name	Average Annual Rainfall (in)	Average Annual Snowfall (in)	Average Annual Temperature (f°)	Average Maximum Temperature (f°)	Average Minimum Temperature (f°)
Stampede Pass ^a	87.68	439.3	39.8	45.8	33.7
Palmer 3 ESE ^b	90.2	36.8	49.4	58.0	40.7

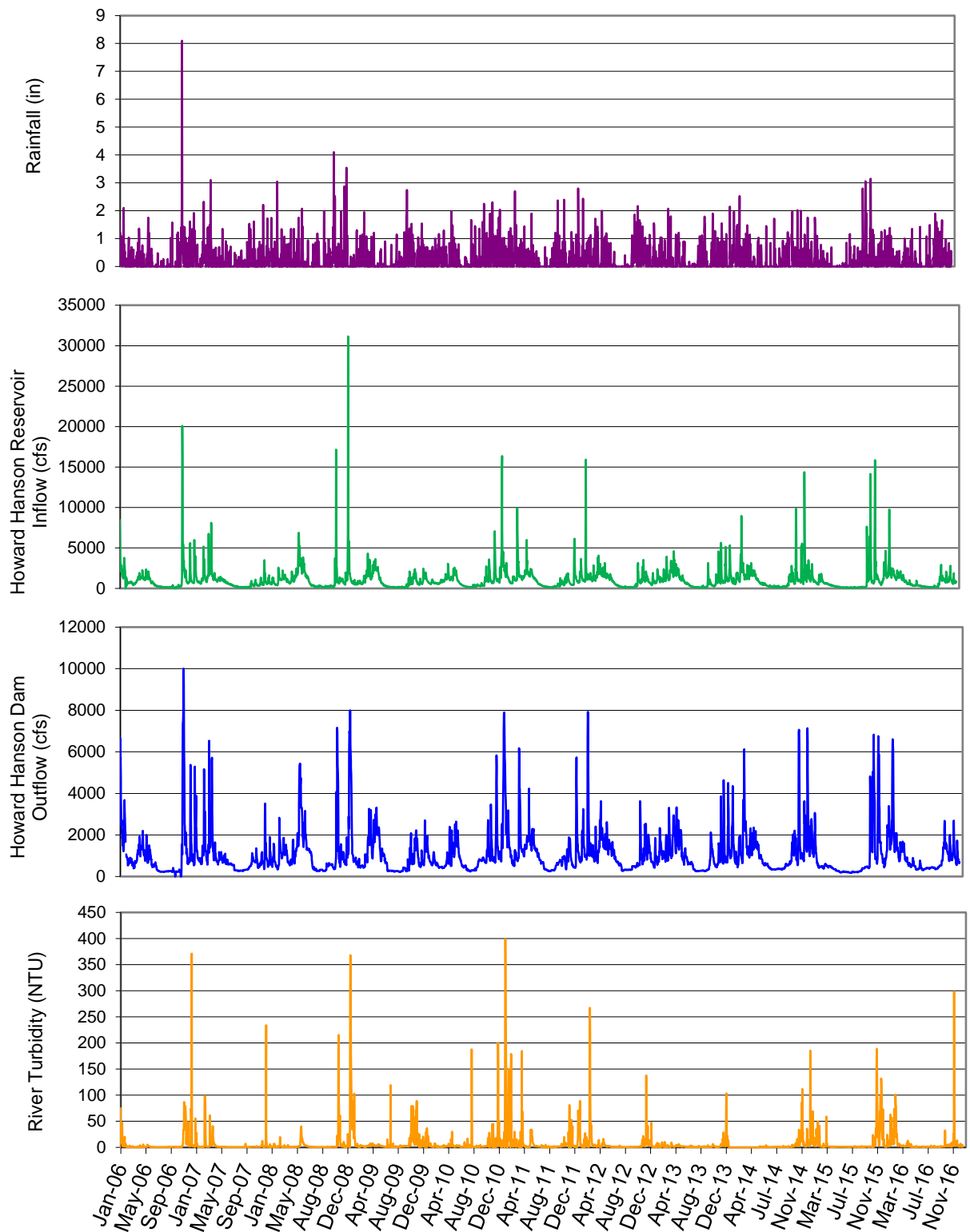
Source: Western Region Climate Center (www.wrcc.dri.edu/index.html) Accessed 24 June 2017

a: Period of Record 01/01/1944 to 03/23/2016

b: Period of Record 07/01/1924 to 05/31/2016

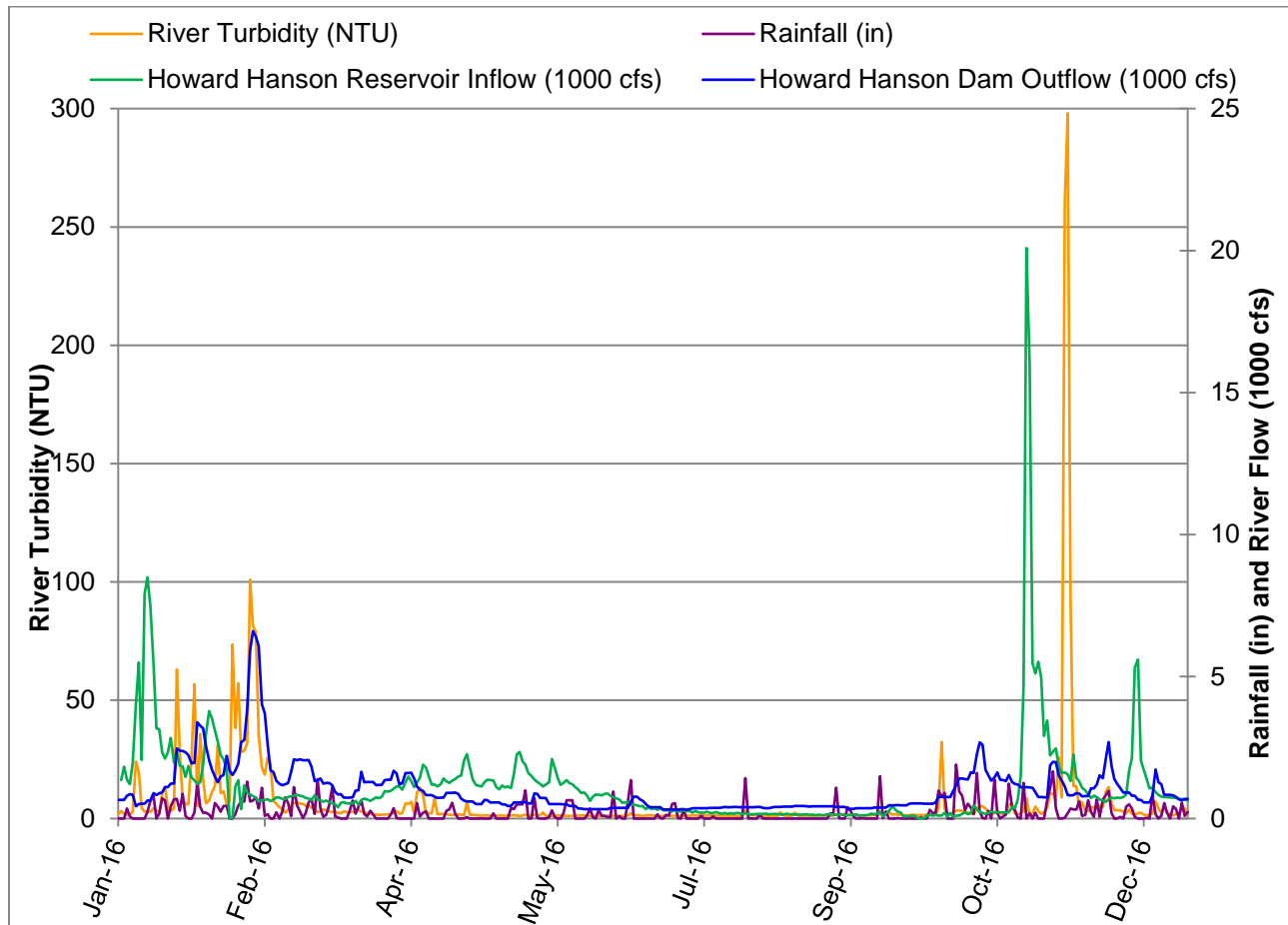
Precipitation, stream flow, and turbidity patterns for the past five years are displayed in Figure 2-3. Figure 2-4 provides a more detailed view of the relationship between rainfall, stream flow, and turbidity. As one might expect, river turbidity levels generally follow rainfall and stream flow patterns. As rainfall intensity increases, stream levels generally increase, and erosion, suspended solids, and turbidity levels tend to trend likewise. Rainfall within the watershed leads to additional influent flows to the river and increased sediment loading and turbidity from those flows.

Figure 2-3. River Flow, Precipitation and Turbidity Patterns at the Green River Headworks – 2006 through 2016



Source: Tacoma Water 8 am/12 am Report

Figure 2-4. Relationship between Rainfall, Reservoir Inflow, River Flow, and River Turbidity at the Tacoma Water Intake



Source: Tacoma Water 8 am/12 am Report

2.2.3 Water System Infrastructure

Water system infrastructure located within the Green River Watershed include the Howard Hanson Dam, the Green River diversion, and the North Fork Wellfield. These components are shown in Figure 2-2 and discussed in the following sections. Other associated elements of Tacoma Water's water system, including the GRFF, Pipeline 1, and Pipeline 5, are outside the limits of the watershed and are described in the Water System Plan and are not detailed here.

Howard Hanson Dam

The US Army Corps of Engineers (USACE) built Howard A. Hanson Dam in 1961 to provide flood control for the Green River Valley during wet periods, and conservation flow during dry summer months. The dam impounds the Green River, forming the Eagle Gorge Reservoir. The USACE operates Howard Hanson Dam, controls water levels in the reservoir, and regulates flow in the Green River during low-flow periods for flow augmentation. The USACE stores approximately 26,000 acre-feet behind the dam (to elevation 1,141 feet) for instream flow supplementation during the summer and fall, 5,000 acre-feet (to elevation 1,147 feet) to augment instream flows for fish during the

summer months, and 20,000 acre-feet (to elevation 1167 feet) of Municipal and Industrial (M&I) storage from Tacoma Water's Second Diversion Water Right under Phase 1 of the Additional Water Storage Project (AWSP). An additional 12,000 acre-feet of storage, consisting of 9,600 acre-feet to augment instream flow for fish and 2,400 acre-feet of M&I storage (to elevation 1,177 feet), may be implemented at a future time as Phase 2 of the AWSP.

An initial goal of the AWSP was the reintroduction of anadromous salmon upstream of Howard Hanson Dam. Although design and initial construction of a downstream juvenile fish passage facility at Howard Hanson Dam was started by the USACE, it was not completed. In the meantime, Tacoma Water and the Second Supply Project partners are annually donating part of their M&I storage (currently half) to benefit instream fisheries downstream of Howard Hanson Dam. NOAA Fisheries and the U.S. Fish and Wildlife Service are currently evaluating the impacts from Howard Hanson Dam operations on species listed under the Endangered Species Act and their habitats. It is expected that salmon reintroduction and the safe passage of juvenile salmon through Howard Hanson Dam will be a requirement of the USACE in a yet-to-be-completed Biological Opinion. Once these changes are implemented, it is expected that Tacoma Water will have full use of its 20,000 acre-feet of M&I storage.

Green River Diversion

Tacoma Water's diversion from the Green River occurs at the utility's intake, located approximately 30 miles east of Tacoma. Surface water is diverted from the Green River through a 23.5-foot high by 152-foot-long concrete dam. The laterally fed intake structure at the north end of the dam carries water through a short tunnel into a settling basin. The diversion dam and tunnel system is sized to accommodate a total raw water hydraulic capacity of 290 cubic feet per second (cfs).

A fixed wedge-wire fish screen system is installed in the diversion channel to safely direct fish from the diversion flow back to the river. Upgrades to the facility were completed in 2014 to better handle sediment and debris that occur with winter operations. These included replacement of the fish screen brush system, installation of sparger and eductor systems to remove entrained sediments, and a guide vane array to improve the effectiveness of the settling basin. A study to evaluate water flow through the fish screen system was conducted in 2014 and 2015 and the results were used to adjust baffles and balance velocities across the fish screens to improve effectiveness and better protect fish.

The diversion facility also includes an adult fish trapping and sorting facility to aid in the reintroduction of salmon upstream of Howard Hanson Dam. The trap and sort facility consists of a fish ladder, trap, transport flume, sampling station, and holding tanks. The trap and sort facility also includes modifications to the apron at the base of the diversion dam to provide greater fish attraction into the ladder entrance under the expected range of flows. Until reintroduction of salmon upstream of Howard Hanson Dam occurs, current use of the facility is limited to collecting fish for research purposes and to assist state and tribal hatchery facilities with broodstock collection.

North Fork Wellfield

The North Fork Wellfield is located along the North Fork of the Green River, approximately 6 miles upstream of the Green River diversion. The wellfield, developed in 1975, currently consists of seven wells spaced approximately 250 to 300 feet apart. The North Fork wells draw water from a highly permeable aquifer at depths ranging from 65 to 118 feet.

Under favorable aquifer recharge conditions, the North Fork Wellfield can sustain a maximum pumping rate of 60 to 72 MGD for approximately one week, and likely can sustain a continuous pumping rate of 24 MGD under most recharge conditions (based on studies conducted in the 1980s by Tacoma Water and Hart Crowser & Associates). The North Fork Wellfield Ramping Rate Study (R2 Resource Consultants, 2005) was completed to identify a rate of well pumping startup that would maintain stage reductions in the North Fork channel of the Green River to less than 1 inch per hour (a criterion established in the Green River Habitat Conservation Plan). The results of the study suggest that staging individual well startups at least 30 minutes apart and sequencing well startup to begin with the upstream-most well and continuing in the downstream direction should meet this requirement. Annual monitoring with pressure level loggers installed in the lower North Fork channel are being used to confirm this conclusion.

The water pumped from the wellfield does not add to the overall yield of the Green River source because of the significant hydraulic interconnection between the aquifer and the river. Rather than continuing wellfield use to ensure compliance with unfiltered surface water supply system turbidity requirements as was required under drinking water supply and treatment regulations prior to the completion of the GRFF, the North Fork Wellfield supply is now blended with the direct Green River surface water supply to increase GRFF operational efficiencies and to reduce solids handling costs.

Each well is equipped with a concrete slab and surface seal for sanitary protection and adjoins a lockable concrete structure containing valving, communications, and control equipment. Five of the seven existing wells are equipped with pumps (four have submersible pumps and motors while one has a vertical turbine pump driven by an above grade motor) and pump control valves. The pumps are automatically controlled by microwave signals transmitted from the GRFF. Pressure surges are prevented by initially discharging well flows to waste and then gradually feeding groundwater supply into a pipeline feeding into a 3-million-gallon (MG) reservoir at the GRFF. As the water level in this reservoir fluctuates, wells are sequentially turned on and off to meet supplemental water needs.

2.3 Water Quality Priorities and Critical Areas Identification

The evaluation of the watershed control program is based on two primary components: (1) water quality parameters with known/potential health significance and (2) the likelihood of those contaminants entering the water supply intake. These two components are discussed in the following sections.

2.3.1 Water Quality Priorities

The water quality parameters that are of concern in the Green River Watershed and significant to health are listed in order of priority as follows:

- Biological
- Physical
- Chemical

Biological

Surface water sources are particularly susceptible to contamination by organisms such as bacteria, viruses, and parasites that can cause serious illness and disease. A number of recognized waterborne pathogens are known to exist in Washington State surface waters. Two parasites in particular that cause waterborne illness and are the focus of drinking water regulatory efforts are *Giardia lamblia* and *Cryptosporidium*. Biological contaminants can be introduced into the watershed through excretion to the environment by infected animals or humans.

Physical

A primary physical parameter of concern is turbidity, which refers to cloudiness resulting from suspended materials in the water. Turbidity is important from a health perspective, because its presence in excess reduce the effectiveness and efficiency of water treatment and disinfection processes used to remove and/or inactivate potential biological contaminants. In a filtration facility, increases in turbidity can complicate pretreatment and increase chemical dose requirements. Iron, manganese and algae are additional physical water quality concerns; dissolved metals can cause issues with scaling in pipes and discoloration, and algae can produce taste and odor problems in the summer when water temperatures increase. Certain types of algae also have the potential to introduce certain toxic compounds, although the occurrence of such algae in Washington State surface waters such as the Green River has historically been considered infrequent and rare.

Chemical

The potential sources of chemical contamination in the Green River Watershed are rail shipments, petroleum from vehicles, herbicides or pesticides, and other organic and inorganic chemicals (some of which can be naturally occurring). The intentional introduction of chemical contamination by a malicious act is also a possibility.

More detail on potential water quality contaminants that can present health risks, and associated drinking water quality and treatment requirements and regulations, is available from the United States Environmental Protection Agency (EPA), Washington State Department of Health, and in annual water quality reports published and distributed by Tacoma Water and the other public water systems that receive water from Tacoma Water.

2.3.2 Critical Areas

DOH defines a critical area as any location within the watershed wherein human activity could degrade water quality and that requires additional protection or control to protect water quality. Within the Green River Watershed, the areas with the greatest public health significance are generally those areas closest to the water supply intake.

Therefore, the critical areas within the watershed are prioritized as follows:

- Lands and streams between Howard Hanson Dam and the water supply intake
- Lands immediately surrounding and tributary to Eagle Gorge Reservoir
- Lands adjacent to the Green River from Eagle Gorge Reservoir to Lester
- Major surface streams from Lester eastward

2.4 Land Use and Ownership

Land located within the Green River Watershed is used for a variety of purposes, including water supply, timber production, transportation, power transmission, dispersed recreation, and other multiple-use activities. Tacoma Water's primary interests are protecting water quality and controlling activities in the watershed to meet regulations of DOH and the EPA.

Tacoma Water currently owns 16,363 acres, or approximately 11.1 percent, of the Green River Watershed lands upstream of Tacoma Water's diversion dam. Utility-owned lands are primarily located within critical areas (as defined in the previous section): adjacent to Eagle Gorge Reservoir, the Green River, and its main tributaries. By owning land in critical areas, Tacoma Water increases its control over certain activities in the watershed. Public agencies and private companies own the remaining 88.9 percent of the watershed area. These remaining lands are dispersed throughout the watershed basin and do include some critical areas. A summary of current landowners and their respective portions of the Green River Watershed area is provided in Table 2-3, while the location of land parcels is mapped by land owner on Figure 2-2.

Table 2-3. Land Ownership within the Green River Watershed Upstream of Tacoma Water's Diversion Dam

Land Owner	Acres	Percentage of Green River Watershed
Tacoma Water	16,363	11.1%
Other Public Agencies		
U.S Forest Service	37,319	25.3%
Washington State Dept. of Natural Resources	42,331	28.7%
City of Seattle	1,662	1.1%
U.S Army Corps of Engineers	431	0.3%
Other Public	33	0.02%
Total Public (Other)	81,776	55.5%

Table 2-3. Land Ownership within the Green River Watershed Upstream of Tacoma Water’s Diversion Dam

Land Owner	Acres	Percentage of Green River Watershed
Private Companies		
Weyerhaeuser	23,894	16.2%
Green River Timberlands, LLC	15,227	10.3%
Muckleshoot Federal Corporation	8,531	5.8%
Burlington Northern Santa Fe Railroad (BNSF)	1,386	0.9%
Other Private (3)	270	0.2%
Total Private	49,308	33.4%
Total	147,446	100.0%

Tacoma Water presently owns approximately 132 miles of gravel forest roads within the Green River Watershed. Thirty-nine miles of the mainline roads are jointly owned with other watershed landowners. Tacoma Water is joint owner with Green River Timberlands LLC, Weyerhaeuser, and the Washington State Department of Natural Resources (DNR) on 10 miles of Road 5500 and nine miles of Road 5530 on the north side of the Green River. In addition, Tacoma Water is joint owner with DNR and Muckleshoot Federal Corporation on 14 miles of the Green River Truck Road 3703 located on the south side of the Green River. Tacoma Water also owns jointly with Muckleshoot Federal Corporation seven miles of Wolf Creek Road 5717 located on the south side of the Green River east of Road 3703.

As shown in Figure 2-2, several right-of-way and easement corridors exist in the Green River Watershed. A summary of right-of-way owners and easement holders, corridor uses, and approximate numbers of acres is provided in Table 2-4.

Table 2-4. Summary of Right-of-Way/Easement Corridors in the Green River Watershed

ROW Owner/Easement Holder	Corridor Use	Approximate Number of Acres
Bonneville Power Administration (BPA)	Power Transmission Line	2,563
Puget Sound Energy	Power Transmission Line	352
Century Link	East-West Trunk Telephone Line	15
BNSF	Stampede Pass Railroad Line	1,387

2.5 Key Access Points

There are three key access points to the controlled areas of the Green River Watershed. From the west, Road 5500 provides access to the north side of Green River, and the Green River Truck Road 3703 provides access to the south side of the Green River. Access along both routes is controlled by entry gates. From the east, Road 5900 provides access to the controlled watershed area through the entry gate at Friday Creek. General recreational access to the watershed is only allowed east of the gate at Friday Creek.

Road 5500, the Green River Truck Road 3703, and Road 5900 are all located in or near critical areas of the watershed. The entry gates prohibit the general public from entering the critical areas; however, trespass can be a concern. The areas most likely to be subject to trespass include the river itself, where fishing or hunting opportunities attract trespassers, or the old Lester town site, although all buildings there have now been demolished. Access to the closed areas of the watershed through other entry points is prevented by additional locked gates located throughout the watershed and maintained by other landowners.

3 Written Agreements

Tacoma Water has executed written agreements with public agencies and private landowners to control access and activities within the Green River Watershed. Current agreements were executed starting in the 1980s and are generally considered adequate for control of the Green River Watershed. The agreements are based in part on the provisions of the Forest Practices Act, the Safe Drinking Water Act, and associated EPA and DOH rules, regulations, policies, and guidance manuals.

Major provisions included in the Green River Watershed written agreements are summarized in Table 3-1. The contents of the individual agreements are discussed in the following sections. Copies of agreements with public agencies and private landowners are included in Appendix B and Appendix C, respectively.

Table 3-1. Summary of Written Agreements

Agency/Landowner	Date of Current Agreement	Contents
U.S. Forest Service (USFS)	8/29/1984	Includes provisions for road use rights, land exchange, sanitation requirements, posting of public use boundary, dispersed recreation, discouragement of special use permits for recreational purposes, and annual reviews.
Washington State Department of Natural Resources (DNR)	1/31/2011	Includes provision allowing Tacoma Water patrols on DNR lands, notification of any DNR non-forestry related activities, mutual sharing of annual plans, and adherence to the Requirements for the Protection of Water Supply in the Green River Watershed.
Muckleshoot Indian Tribe (MIT)	8/24/1995	Includes provisions for instream flows below the diversion dam, fisheries restoration and enhancement, transfer of real property, access and use of the upper Green River watershed, and water quality and habitat protection for the upper watershed.
Burlington Northern Santa Fe Railway (BNSF)	8/28/1996	Allows for Tacoma Water patrol of owner's land against forest fires and for protection of water quality with authority to exclude and prevent all unauthorized persons from entering lands. Includes provisions for water quality monitoring, annual reviews, acceptable and unacceptable activities, and operating instructions.
Green River Timberlands (subsidiary of Conservation Forestry)	4/5/2016	Includes provisions for water quality monitoring, annual reviews with landowners, acceptable and unacceptable forestry practices, and access by Tacoma Water for water quality monitoring.
Washington Department of Fish and Wildlife (WDFW)	3/6/1997	Specifies conditions for controlled permit elk and deer hunts, including watershed access controls, sanitary conditions, and location of game management unit.
US Army Corps of Engineers (USACE)	7/17/2003	Defines project modifications and cost share agreement for Howard Hanson Dam Additional Water Storage Project.

Table 3-1. Summary of Written Agreements

Agency/Landowner	Date of Current Agreement	Contents
Hancock Forest Management (Owned by Muckleshoot Federal Corporation)	7/26/2005	Includes provisions for water quality monitoring, annual reviews with landowners, acceptable and unacceptable forestry practices, and access by Tacoma Water for water quality monitoring.
Bonneville Power Administration (BPA)	12/29/2005	Includes provisions for road use, acceptable and unacceptable practices, adherence to Tacoma Water rules, protection of cultural resources and the environment, and access by Tacoma Water.

3.1 Agreements with Public Agencies

U.S. Forest Service

Lands owned by the US Forest Service (USFS) are located east of Rooster Comb Mountain on the north side of the Green River and east of Humphrey Creek on the south side of the Green River. USFS lands are generally one-square-mile sections dispersed in a checkerboard fashion over the eastern half of the Green River Watershed. All of the USFS lands are located outside critical areas.

The Memorandum of Understanding (MOU) between Tacoma Water and the USFS, along with its implementation procedures, is a key agreement that demonstrates control of activities in a large area within the watershed. The MOU addresses issues such as public access and controls, control of recreational activities, and sanitary conditions on USFS land in the watershed. Generally, the MOU complies with DOH policy in that it includes provisions for annual reviews, acceptable and unacceptable forestry practices, and access controls.

Washington State Department of Natural Resources

The agreement between Tacoma Water and DNR is important because of the proximity of State lands to the water supply intake. These lands are located north and south of the Green River and extend from the western boundary of the watershed to west of Lester (see Figure 2-2). DNR lands are located adjacent to critical areas and near Tacoma Water intake facilities. Logging and dispersed recreation are officially allowed on DNR lands; however, access is not available by public road to most of the lands in the Green River Watershed. Roads accessing these lands are controlled by private gates adjacent to the watershed boundaries.

The agreement with DNR replaced earlier agreements and includes provisions allowing access onto DNR lands by Tacoma Water personnel for patrol purposes, the installation of gates by Tacoma Water as needed for watershed security, and notification by DNR of any non-forestry related activities or land uses proposed on its lands. Both parties agree to share annual land management plans and to conform to the Requirements for Protection of Water Supply in the Green River Watershed (also known as the Watershed Rules) provided in Appendix D.

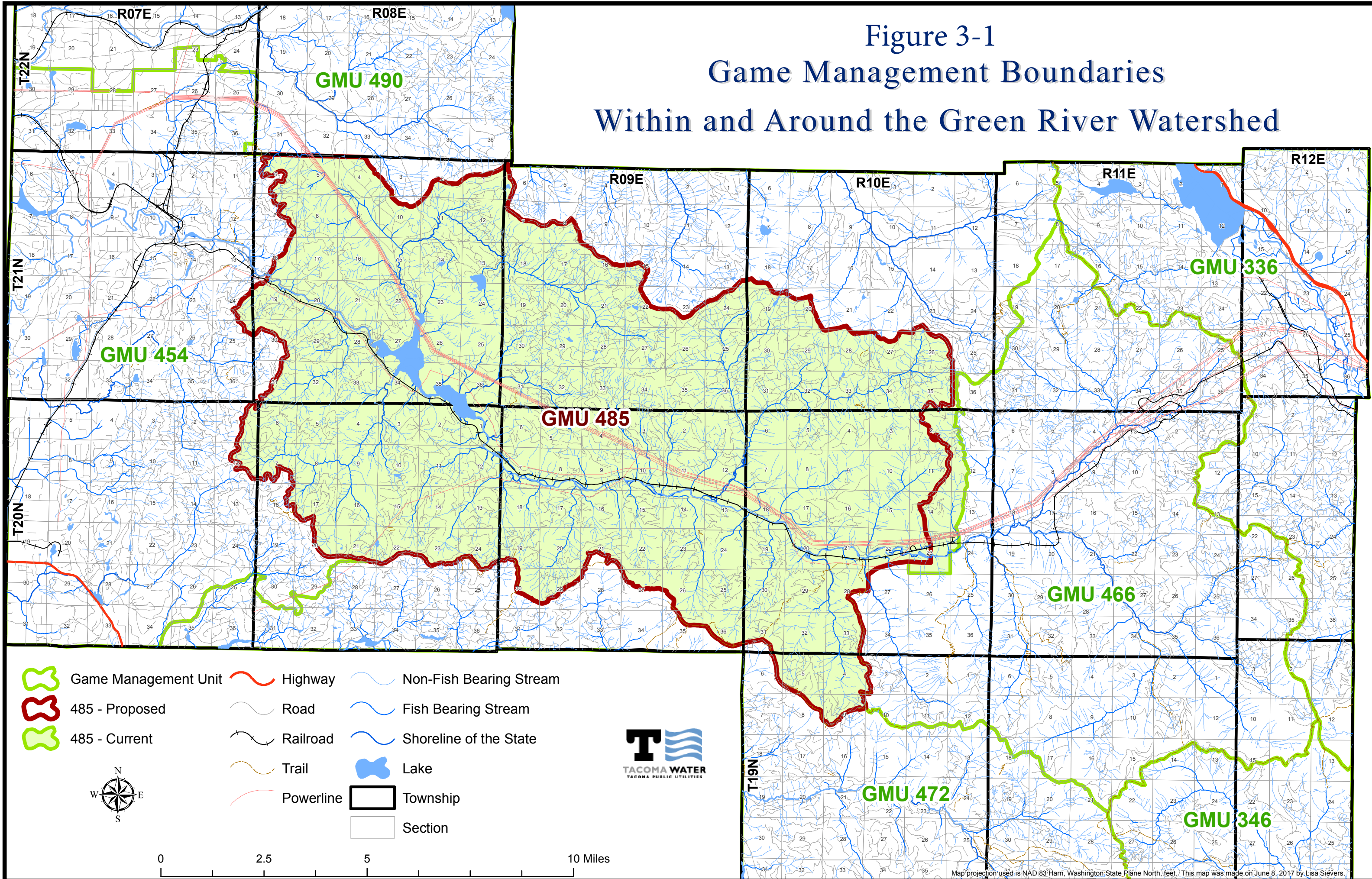
Generally, the agreement between Tacoma Water and DNR complies with DOH policy in that it includes provisions for water quality monitoring, annual reviews, acceptable and unacceptable forestry practices, and access by Tacoma Water to DNR lands. In addition, the agreement discourages recreational development on DNR land, which is consistent with DOH policy.

Washington State Department of Fish and Wildlife

The Cooperative Agreement between Tacoma Water and the Washington Department of Fish and Wildlife (WDFW) has been a successful tool for controlling deer and elk hunt activities in the Green River Watershed. This agreement outlines procedures and requirements for the annual special permit hunt in Game Management Unit (GMU) 485. GMU 485 includes most of the Green River Watershed lands extending from the western boundary at the intake facilities to the old town site of Lester. WDFW is currently adjusting the GMU 485 boundary to improve watershed security. Figure 3-1 depicts the current and anticipated GMU 485 boundaries. GMU 485 boundaries are reposted yearly.

It is believed that the agreement and associated procedures have significantly reduced hunt-related trespass and associated problems that occurred in the past. The limited number of permits and short hunting season minimize the potential impact of hunting activities on water quality while allowing for a quality hunt appreciated by hunters.

Figure 3-1 Game Management Boundaries Within and Around the Green River Watershed



U.S. Army Corps of Engineers

USACE operates the Howard Hanson Dam upstream of the Tacoma Water intake. Tacoma Water and USACE currently have a Project Cooperation Agreement (PCA) that outlines the relationship between Tacoma Water and USACE during construction of the AWSP (Phase 1). The PCA focuses on defining the scope of project modifications and documenting the cost share agreement for the project. A summary of the PCA is included in Appendix E.

All elements of the AWSP have been completed except for development of a Phase 2 juvenile downstream fish passage facility. It is anticipated that an Operations, Maintenance, Repair, Replacement, and Rehabilitation agreement/plan for the completed AWSP elements will be prepared within two to three years. The Phase 2 downstream fish passage facility is expected to take ten years or more to fund, design, and construct. Thus, Tacoma Water's responsibility for operations, maintenance, repair, replacement and rehabilitation for this facility will likely need to be developed as a future amendment.

Pursuant to its ownership and access control rights for the purpose of maintaining adequate public water supply resources, Tacoma Water engages in various activities in joint cooperation with USACE. These activities include, but are not limited to, development and maintenance of environmental mitigation sites as well as improvements to and use of the utility's lands to enable additional water storage capacity within the watershed. These activities require reasonable access over watershed roads and the cooperation of other watershed landowners as necessary to enable the efficient prosecution of such activities.

Bonneville Power Administration

Bonneville Power Administration (BPA) operates an extensive electric power transmission system throughout the region with transmission lines crossing the Green River Watershed. These transmission lines and the roads and easements serving them pass through critical areas of the watershed.

An access road use permit granted to BPA by Tacoma Water provides BPA with the right to use and maintain various roads throughout the watershed. The permit stipulates that road use permission is subject to any laws, rules, or regulations, including the Tacoma Water Requirements for Protection of Water Supply in the Green River Watershed (Appendix D) and any additional rules and regulations identified by Tacoma Water in the future. The permit also requires liability insurance for all BPA contractors or vendors, restricts use or storage of hazardous substances, includes provisions for protection of cultural resources and wetlands, and allows Tacoma Water entry into the areas used by BPA.

3.2 Agreements with Private Landowners

Tacoma Water and private landowners in the Green River Watershed have cooperated for decades to control access and activities on private lands. Many of these lands are near water sources and intake facilities and, therefore, are critical to water supply protection. The presence of an official, visible force on their lands benefits owners

through reduced vandalism, enhancing fire protection, and positive press and recognition for helping Tacoma Water to protect valuable land and water sources. In turn, the utility benefits greatly by controlling access and activities on critical lands and maintaining water quality.

The basic language in the written agreements with private landowners was updated in the 1990s to better address revised regulations and changes within the watershed. Generally, these agreements comply with DOH policy in that they include provisions for water quality monitoring, annual reviews with landowners, and acceptable and unacceptable forestry practices. They also give authority to the Tacoma Water to access other landowners' property for water quality monitoring. The Watershed Rules (Appendix D) are incorporated into agreements with private landowners.

As property within the watershed transfers to different owners over time, new agreements are prepared to establish the relationship between Tacoma Water and the new landowners.

3.3 Agreements with Muckleshoot Indian Tribe

Tacoma Water finalized an agreement, which is provided in Appendix C, with the Muckleshoot Indian Tribe (MIT) in 1995 regarding the Green/Duwamish river system. The agreement includes provisions for instream flows, fisheries restoration and enhancement, transfer of real property, access and use of the upper watershed of the Green River, and water quality and habitat protection for the upper watershed of the Green River. Also included in the agreement are provisions for an annual MIT-exclusive tribal hunt, ceremonial hunts and gatherings, and cultural and educational purposes.

4 Watershed Characteristics and Activities

To properly provide watershed control, it is necessary to understand what characteristics and activities exist within the watershed. This chapter identifies watershed characteristics and activities that have been specifically identified and assessed in terms of their potential to adversely impact water quality.

4.1 Watershed Characteristics and Impacts on Water Quality

There are many watershed characteristics that have a potential to impact source water quality. Many of these, by their nature, cannot be readily controlled. Watershed characteristics that could potentially cause biological, physical, or chemical water quality degradation include precipitation, terrain, land cover, soil type, and animal populations. Each of these characteristics and their potential impact on Green River Watershed water quality are discussed in the following sections.

4.1.1 Precipitation

Periods of heavy precipitation can result in high rates of runoff, which can cause erosion and suspension of sediment, resulting in increases in turbidity, color, and organic compounds in surface waters. In the Green River Watershed, much of the precipitation falls in the form of snow, especially at higher elevations, during colder weather periods. Higher turbidity levels typically occur in the Green River during periods of rapid snow melt or heavy rainfall, usually during the fall, winter, and spring months. Figure 2.2 illustrates the relationship between precipitation and turbidity. The February 2016 storm event that generated 6,600 cfs in the Green River downstream of Howard Hanson Dam resulted turbidity levels exceeding 100 NTU (Nephelometric Turbidity Unit) in the river.

4.1.2 Terrain

The topography of the Green River Watershed includes areas with steep slopes. In these areas, high water flow rates can contribute to erosion of topsoil, resulting in increased color and turbidity in the river water and that of its tributaries. In addition, nutrients and organic matter in eroded soil runoff can be carried to receiving bodies, which can create the potential for algae blooms and depletion of dissolved oxygen.

4.1.3 Land Cover and Soil Type

Vegetative land cover can improve the water quality of runoff by acting as a natural filter. Conversely, vegetative cover that decomposes can introduce color and dissolved organic matter (fulvic and humic compounds) to surface waters that have been associated with the formation of harmful disinfection byproducts in drinking water when such compounds react adversely with certain water disinfection and treatment chemicals. Soil types like colloidal clays can erode and remain suspended in the water column causing excessive turbidity and a change in buffering capacity that can affect water treatment downstream.

The most recent soil survey covering the Green River Watershed area is the *Soil Survey of Snoqualmie Pass Area, Parts of King and Pierce Counties, Washington* compiled by the Soil Conservation Service (Soil Conservation Service 1992). The report is a comprehensive, factual account of the soil scientists' observations, recordings, collection of data, site index, and other information. Mapping units and detailed technical descriptions that pertain to soil suitability, limitations, and soil behavior for timber, watershed, recreation, and engineering activities are included. Other reports that discuss Green River Watershed soil conditions include a soil survey conducted by the USFS for the Green River area during 1968 and 1969 (Iritani 1969), a State Soil Survey by DNR (DNR 1980), and a University of Washington thesis titled *Structure and Stratigraphy of the Keechelus Volcanic Group and Associated Tertiary Rocks in the West-Central Cascade Range* (Hammond 1963).

4.1.4 Animal Populations

Disease agents such as *Giardia*, *Cryptosporidium*, and viruses can normally be present at low levels even in uninhabited watersheds due to the presence of animals living in the watershed. Wildlife in the Green River Watershed include deer, elk, mountain goat, black bear, cougar, grouse, pigeon, quail, rabbits, rodents, raptors, and fur bearers. No domestic animal grazing occurs in the Green River Watershed.

4.2 Watershed Activities and Impacts on Water Quality

Watershed activities affecting water quality can be categorized as point or nonpoint sources. Point sources are characterized by single conveyances of contamination, such as an accidental chemical spill or discharge from the end of a pipe. Nonpoint sources involve large and diffuse sources of contamination, such as recreational activities. Depending on the nature and extent of the watershed activity, point and nonpoint sources of contamination can cause biological, physical, or chemical water quality degradation of surface waters.

In the Green River Watershed, the major potential sources of contamination are nonpoint and are associated with logging, road building, recreation, and transportation routes. Other point and nonpoint sources are associated with on-site wastewater treatment systems (septic systems), power line and rights-of-way patrols and maintenance, fisheries and wildlife management, firefighting, mining, research and education, chemical applications, and operation of Howard Hanson Dam. Each of these activities and its potential impact on source water quality are discussed in the following sections.

4.2.1 Logging

Tacoma Water-Owned Land

Forest management on Tacoma Water lands is directed by the primary need to protect the surface water source. Tacoma Water manages its timber lands within this environmental constraint, according to Tacoma Water's Habitat Conservation Plan (HCP). Tacoma Water harvests mature (70+ years old), overmature, damaged, and blowdown trees based on the condition of the timber. This timber is offered for sale by competitive sealed bidding at times when the timber stumpage market is at or near its

optimum price level. During the last ten years (2006 through 2016), Tacoma Water sold a total of 2,666,000 board feet of timber collected under contract in three timber or log sales. Timber sale revenue is deposited into the Capital Reserve Fund.

There were two timber harvests in 2006. One was designed to provide fish habitat logs for placement in the Green River and its tributaries. The other timber harvest was a late rotational thinning, designed to accelerate tree stand characteristics into mature (old growth) habitat. A 2014 harvest was a hardwood conversion designed to replace existing hardwood trees with a future conifer stand. The harvested areas are promptly reforested and maintained throughout the life of the stand by controlling competing vegetation, pre-commercial thinning, animal damage control, fire protection, and commercial thinning, with reharvesting generally anticipated to recur again every 70 years.

Tacoma Water timber harvests and revenue for 2006 through 2016 are summarized in Table 4-1

Table 4-1. Timber Harvest and Revenue from Tacoma Water-owned Land in the Green River Watershed

Year	Number of Sales	Acres	Volume (mbf) ^a	Revenue
2006	2	62	780	203,700
2014	1	94	2,111	819,244
Ten-Year Total	3	156	2,891	1,022,944

^a MBF: Thousand Board Feet

Land Owned by Others

The other landowners within the watershed manage logging on their forest lands according to their own individual forest management plans:

- USFS according to the Northwest Forest Plan (1994)
- DNR according to the DNR HCP (1997)
- Weyerhaeuser according to the Plum Creek Timber HCP (1996) inherited when they merged with Plum Creek Timber Company
- All other private forest landowners according to their own proprietary forest management plans

All forest landowners, except the USFS, must obtain an approved Forest Practices Application (FPA) permit before undertaking timber harvest, road construction, bridge installation, or herbicide application, and must abide by the Forest Practices Rules (Title 222 WAC). DNR administers FPAs, which are in effect for two years. From 2006 to 2016, the number of forest practice applications within the watershed was 147. According to these applications, there were 5,428,000 board feet of timber harvested, approximately 29.5 miles of road constructed, and approximately 41 miles of road abandoned.

4.2.2 Road Building and Maintenance

The development and maintenance of roads in a watershed can increase erosion resulting in an increase of sedimentation and turbidity if not done using best

management practices. In the Green River Watershed, road construction and maintenance is necessary to allow access to lands for forestry, land management, and fire suppression. Road construction activities and timber harvests that have been reported through FPAs from 2006 through 2016 are summarized in Table 4-2.

Table 4-2. Forest Practices Applications (FPAs) Issued in the Green River Watershed by the Washington State Department of Natural Resources

Year	Number of Forest Practice Applications	Road Construction Miles	Road Abandonment Miles	Timber Harvest Acres
2006	9	0.68	13.02	89
2007	18	4.59	1.46	1103
2008	8	1.70	0.53	368
2009	7	0.19	2.11	202
2010	15	9.04	2.75	798
2011	29	5.51	7.37	900
2012	16	1.24	1.47	310
2013	19	4.30	8.10	840
2014	4	0.56	0.82	80
2015	10	0.47	0.91	337
2016	12	1.18	2.47	401
Ten-year Total	147	29.46	41.01	5428

Habitat Conservation Measure (HCM) 3-03I from Tacoma Water's HCP requires Tacoma Water to abandon roads that are no longer needed for adjacent landowners to access their property, watershed management, forestry operations, or implementation of the HCP. HCM 3-03C requires no net increase in permanent road miles within the natural forest management zone throughout the term of the HCP.

In 2006, Tacoma Water constructed 0.33 miles of road for timber harvesting; construction was in the conservation zone of forest management. In 2014, Tacoma Water constructed 0.5 miles of road and 0.5 miles of temporary road for timber harvesting; construction was in the commercial zone of forest management. The temporary road was abandoned in 2015 following the timber harvesting activities. From 2006 to 2016, Tacoma Water abandoned 1.27 miles of road in the natural zone.

4.2.3 Recreation Activities

Within the Green River Watershed, recreation is strictly limited to the eastern portion of the watershed east of the entry gate at Friday Creek. No recreational activities are allowed within critical areas or on any Tacoma Water lands, except for the annual special permit hunts described previously. Access to the watershed between the water supply intake and the gate at Friday Creek is not provided for recreational purposes.

Recreation does occur on USFS lands within the upper watershed areas east of the gate at Friday Creek. The USFS implemented a multiple-use policy that encourages dispersed recreation on its lands. Dispersed recreation within the watershed may include snowmobiling, skiing, hiking, backpacking, fishing, hunting, and other activities in accordance with the MOU between Tacoma Water and the USFS. There are no developed camps or plans for such use on USFS lands in the Green River Watershed.

Washington State lands within the watershed are administered by DNR and are officially open to dispersed recreation; however, access to DNR lands, which are primarily located within the westernmost areas of the watershed, is limited. Entry gates restrict access by the general public. Like USFS, DNR has no developed camps or facilities on its lands within the watershed.

Recreation access allowed in the eastern portion of the watershed and is heavily used for general sightseeing and pleasure activities. During winter months, snowmobile traffic in the eastern portion of the watershed can be heavy at times, but there has been little evidence that snowmobile access causes any significant watershed water quality problems. During summer months, day trips are believed to be the most popular recreational activity. Fishing is limited but does occur in the Green River and Sunday Creek east of the gate at Friday Creek. During hunting season, hunting and overnight camping are allowed in GMU 466, the boundaries of which are shown in Figure 3-1. Off-road vehicles are not allowed anywhere within the Green River Watershed.

Within GMU 485 in the controlled area of the watershed, there are two special permit hunts each year for deer and elk (bear and cougar may also be hunted). Tacoma Water and WDFW jointly sponsor a special permit hunt for the general public; the MIT also conducts a separate hunt. Access and sanitary wastes are strictly controlled during the hunts in accordance with the written agreement between WDFW and Tacoma Water.

Section 8 of the 1995 agreement between Tacoma Water and Friends of the Green River requires Tacoma Water to construct and maintain a river access point for river recreationists on Tacoma Water property near the USGS Palmer gage. The USGS gage is located near the Headworks Control Building, downstream of the Tacoma Water diversion, but inside of the controlled watershed. Rafters and kayakers currently use the upper gravel placement site, which was developed by the USACE for the introduction of gravel and wood to the river, for raft and kayak launching. Other unchaperoned recreational uses such as picnicking, swimming, or inner-tubing are not allowed.

4.2.4 Residential Land Use/On-site Wastewater Treatment Systems

DOH identified residential land use and associated wastewater treatment discharges (point or nonpoint) as having a high potential for adversely affecting watershed and source water quality. Underground leaks and spills of septic tanks or storage facilities may remain undetected for long periods of time before affecting groundwater quality. Similarly, an imbalance or interruption to wastewater treatment systems can result in adverse effects on receiving source water bodies. To minimize the possibility of these events occurring in the Green River Watershed, Tacoma Water began acquiring private lands in 1954. Since that time, private homes and business facilities, and their associated wastewater systems, have been demolished and/or removed to minimize the risk of contamination.

Currently, two active domestic sewage sites are located in the Green River Watershed, only one of which is considered to be located in a critical area, and none of which are expected to significantly affect surface water quality. These sites, their locations, and approximate use frequencies are summarized in Table 4-3.

Table 4-3. Summary of Domestic Sewage Sites in the Green River Watershed

Facility	Location	Estimated Use
Tacoma Water House (White House)	Friday Creek	1 hour per day, 10 months per year
USACE Office	Howard Hanson Dam	Daily

The one domestic sewage site that is located in a critical area (between Howard Hanson Dam and the water supply intake) is the septic system that supports the USACE office at Howard Hanson Dam. The septic system is not located adjacent to the river and is well-managed; the tank is pumped annually and the drain field does not show any signs of failure. In 2012, the USACE added a holding tank at their new office at Howard Hanson Dam, which is monitored and pumped on an as-needed basis.

Within the watershed, wastewater is also generated at temporary work camps and during the special permit hunts. Tacoma Water provides portable toilets as needed for watershed activities.

4.2.5 Transportation Routes

Runoff from roadways and railroads contains various contaminants that are washed from the surface and carried to the receiving water bodies. Contaminants can include petroleum products, metals such as cadmium and lead, and silt and sediment from land erosion. Bacteriologic contamination from human and animal sources also can be present and cause degradation of source water quality.

Many of the roadway and railroad corridors within the watershed are located very close to the Green River and its tributaries.

Roadways

Tacoma Water currently owns approximately 132 miles of gravel forest roads within the watershed. The primary roads of interest within the watershed are the following:

- **Road 5500:** This road enters the watershed through the automatic gate at the GRFF. It continues on the north side of the Green River until it becomes Road 5530 near Baldi Substation. Tacoma Water is joint owner of 10 miles of Road 5500 with Green River Timberlands, Weyerhaeuser, and DNR. As administrator, Tacoma Water is responsible for road maintenance and commercial hauling permits.
- **Road 5530:** This nine-mile road, which runs along the north side of the Green River, connects Road 5500 to Road 5900. Tacoma Water is joint owner with Green River Timberlands, Weyerhaeuser, and DNR and administers the road.
- **Road 5900:** This nine-mile road was a former segment of the USFS 54 Road largely maintained on Tacoma Water property through various easement rights dating back

to 1933. The Forest Service relinquished all rights to the road in 2011. Tacoma Water is joint owner with Weyerhaeuser and administers the road. The road starts at its junction with the 5530 Road east of Maywood and continues along the north side of the Green River through Lester to the USFS 54 Road and USFS 52 Road intersection. Road 5900 passes through the entry gate at Friday Creek, which prevents vehicle access to the controlled watershed area from the east.

- **Green River Truck Road 3703:** This private 14-mile road enters the watershed from the west near Cumberland and is controlled at the Massey Gates. The road, which follows along the south side of the Green River until a junction with Road 5717, is jointly owned by Tacoma Water, Muckleshoot Federal Corporation, and DNR. Hancock Forest Management (on behalf of Muckleshoot Federal Corporation) administers the road and issues all commercial hauling permits.
- **Wolf Creek Road 5717:** Seven miles of this road on the south side of the Green River are jointly owned by Tacoma Water and Muckleshoot Federal Corporation, and are administered by Tacoma Water.

These roads all pass through the controlled areas of the Green River Watershed. Segments of each road are situated near the Green River and run through critical areas of the watershed. Uncontrolled human activities that may occur on these roads could potentially affect source water quality.

Railroads

The Burlington Northern Santa Fe Railway (BNSF) railroad line traverses the watershed as shown in Figure 2-2; approximately 30.5 miles of track lie within the watershed. The railroad line generally parallels the Green River and crosses through critical areas of the watershed. Uncontrolled releases (from derailments) could adversely affect source water quality in the watershed. The current use pattern is for BNSF to haul empty cars eastward on this line. The line was reconstructed and reactivated in 1996. According to the terms of the existing cooperative agreement, Tacoma Water has input regarding BNSF activities within the watershed.

4.2.6 Power Line Patrols/Maintenance

As shown on Figure 2-2 and summarized in Table 2-4, several right-of-way corridors and easements exist in the Green River Watershed. Both BPA and Puget Sound Energy (PSE) have electric power transmission lines running through the watershed. BPA has approximately 48 miles of power lines within the watershed, and PSE has approximately 34 miles. In certain areas of the watershed, these power lines run through or near critical areas. Uncontrolled human activities in these areas could affect source water quality.

Activities associated with power line patrols and maintenance in the watershed are limited. BPA flies over the watershed monthly to make an aerial inspection of its lines. Maintenance activities generally consist of brush control around transmission facilities and upkeep of the roads to those facilities. Brush control includes mechanical brush clearing and application of foliar or basal treatments.

4.2.7 Fisheries and Wildlife Management

Because fish and wildlife populations are an important component of the Green River Watershed, management of fisheries and wildlife is a key watershed activity. The following sections describe fisheries management, wildlife management, and activities related to the Endangered Species Act (ESA) in the watershed.

Fisheries Management

Resident fish in the Green River system include rainbow, cutthroat, and some eastern brook trout, as well as whitefish and sculpins. Uncontrolled human activities in management of fish could affect source water quality. Fishing is not allowed in the closed portions of the watershed where recreational activities may affect source water quality. Fishing is allowed in the lakes and streams east of the gate at Friday Creek, because Tacoma Water exercises limited access control over these areas. The Upper Green River Use Study (Tacoma Water, 1995) indicated that recreational activities in this part of the watershed do not significantly affect source water quality.

No plantings of hatchery fish occur upstream of the Tacoma Water diversion; however, plants by WDFW and MIT occurred above Howard Hanson Dam between 1982 and 2007.

Tacoma Water has committed to the reintroduction of anadromous salmon and steelhead upstream of Howard Hanson Dam (HCM 1-03, Tacoma Water HCP). Tacoma's Adult Trap and Sort Facility became operational in 2007; however only limited experimental releases have been made over the last 11 years due to delay by the USACE in constructing a downstream fish passage facility at Howard Hanson Dam. These include 1,423 pink salmon released in 2007, 72 coho salmon in 2008, and 89 coho salmon in 2009. Release of adult anadromous fish above Howard Hanson Dam by Tacoma Water is done at the direction of state and tribal fisheries managers. Tacoma Water has requested written direction from the fisheries managers regarding which fish to transport upstream of Howard Hanson Dam and when to begin transport. Written direction is not expected until a date for completion of downstream passage at Howard Hanson Dam is established.

Wildlife Management

Annual helicopter surveys performed by the MIT are used to inform wildlife harvest management practices. Two special permit hunts for deer, elk, bear, and cougar are usually scheduled during the fall of each year within the limits of GMU 485, located within the closed watershed area. One of the special permit hunts is open to the general public, while the other is specifically for the MIT. Tacoma Water's 1995 agreement with the MIT also allows subsistence hunts. In addition to the permit hunts in GMU 485, open season hunting is allowed by WDFW in GMU 466, located east of the old Lester town site. Uncontrolled human activities in managing wildlife could affect source water quality.

Tacoma Water belongs to a cooperative bear feeding program, which is an effort to control damage to trees in the watershed. A number of feeding stations are located on Tacoma Water land, and watershed inspectors regularly provide bear feed at each station.

Endangered Species Act

In July 2001, NOAA Fisheries and the FWS approved Tacoma Water's HCP for its Green River municipal water supply operations and watershed land management program. The HCP was developed pursuant to Section 10 of the federal ESA under the guidance of NOAA Fisheries and the FWS. The HCP describes how Tacoma Water is to protect federally listed and sensitive fish and wildlife species that could be affected by its Green River watershed municipal water supply operations. Approval of the HCP by NOAA Fisheries and the FWS was a prerequisite for obtaining Incidental Take Permits (ITPs) from the agencies to allow Tacoma Water to continue operating its water supply system in compliance with the ESA. The term of the ITPs is 50 years. Copies of the ITPs are included in Appendix F.

The two-volume HCP consists of the conservation plan in Volume 1, followed by the appendices in Volume 2. Volume 1 contains 11 chapters that cover the following: background information on the purpose and need for the HCP; an overview of existing conditions in the Green River basin, areas, and activities covered by the plan; the relationship between the Tacoma Water ITPs and the activities of the USACE on the Green River; regulatory and other legal requirements; descriptions of the 20 major Habitat Conservation Measures (HCMs) covering 32 species (five mammals, nine birds, 11 fish, six amphibians, and one reptile), and a description of the monitoring and research program. Chapter 8 focuses on costs, funding, and implementation schedules for the conservation, monitoring, and research measures. The executive summary of Tacoma Water's HCP is provided in Appendix G. Additional information regarding the HCP can be found in the HCP itself (Tacoma Water, 2001).

The USACE operates Howard Hanson Dam and Eagle Gorge Reservoir a short distance upstream of the Tacoma Water diversion. Upon the listing of Puget Sound chinook salmon and bull trout under the ESA in 1999, the USACE underwent a consultation process with the federal services to determine whether operation and maintenance of the Howard Hanson Dam project and the Additional Water Storage Project were likely to jeopardize the continued existence of the two listed species or result in the destruction of or adverse modification to their critical habitat. Both NOAA Fisheries and the FWS issued Biological Opinions directing the USACE to implement mitigation measures to protect listed fish species. Several of the mitigation measures required of the USACE overlap with commitments Tacoma Water made to the federal government in its HCP. The USACE requested a re-consultation in 2014 to include consideration of steelhead trout and orca whales as well as critical habitat for Chinook salmon, bull trout, and steelhead. NOAA Fisheries and FWS are currently developing the final biological opinions on impacts to these species and their habitats from Howard Hanson Dam and Additional Water Storage Project operations.

Plum Creek Timber Company completed an HCP for its Green River Watershed forest management operations in 1996 (Plum Creek Timber Company, 1996). They were subsequently acquired by Weyerhaeuser in 2016, who continues to manage the land under the Plum Creek HCP. No other private landowners in the watershed have HCPs.

4.2.8 Grazing

No domestic animal grazing occurs in the Green River Watershed.

4.2.9 Wildland Fire Fighting

If a fire occurs in the watershed or endangers the drainage land, firefighting activities would be coordinated and controlled by DNR and USFS. Tacoma Water will notify landowners and appropriate agencies in the event that a Tacoma Water employee observes a fire, and will assist with firefighting activities if needed.

Post fire conditions may pose water quality risks in the watershed related to increased runoff velocities, sediment transport, organic matter and chemical suppressants. Best Management Practices (BMPs) will be used to mitigate adverse effects to water quality as a result of fires or firefighting activities. The most recent large wildfire to occur in the watershed was the Sawmill Creek Fire that began in September 2017 and covered over 1,000 acres southeast of Lester.

4.2.10 Minerals Management

Several small gravel pit operations are active in the watershed; rock is used locally in the construction of forest roads. Rock pits range in size from a quarter acre to two acres and are regulated under the DNR Forest Practices Rules (WAC 222-24-060). No other active mineral extraction or mining operations presently take place in the watershed.

In general, previous owners of utility-owned lands retained their mineral rights to those lands; however, none of these retained rights have been exercised on Tacoma Water lands. Federal legislation banned oil and gas explorations on federal lands within the Green River Watershed. DNR has an active oil and gas leasing program for state lands. DNR's current policy is that exploration within the Green River Watershed is not allowed, but directional drilling from outside the watershed boundary is allowed. Presently, no active participants are exploring for oil and gas in the watershed through the DNR program.

4.2.11 Research and Education

Additional activities within the watershed are related to research and education purposes. Tacoma Water and other landowners have made efforts to gain further information about the watershed through research while at the same time making efforts to educate the public about the watershed. These activities and activities related to cultural, historical, and archeological resources are described in the following sections.

Research

Over the years, university students, state and federal agencies, private landowners, and rights-of-way easement holders have conducted research in the watershed on a variety of subjects. Topics have included the following:

- **Additional Water Storage Project:** In the past decade, Tacoma Water and the USACE have conducted several fish habitat projects, and have maintained and/or monitored water quality, fish, and wildlife habitats in support of the Howard Hanson Dam Additional Water Storage Project.
- **Elk and Deer Populations:** Since 1998, Tacoma Water has annually funded MIT studies of the elk and deer populations in the upper watershed as part of Section

6.3.9 of the 1995 agreement between the MIT and Tacoma Water. MIT has also funded and periodically conducted research on black bear, cougar, mountain goats, and other species in the watershed.

- **Rainbow/Cutthroat Hybridization:** NOAA Fisheries conducted a study in 2008 to evaluate the presence of resident rainbow trout (*Oncorhynchus mykiss*), cutthroat trout (*Oncorhynchus clarkii*), and hybrids in a tributary of the North Fork Green River.
- **Deer Nutrition Study:** Washington State University conducted a study in 2013 to evaluate deer health and nutrition in managed forest lands in Washington.

Research projects under Tacoma Water's control are evaluated on a case-by-case basis to ensure their goals or methods will not have potential to adversely affect water quality.

Education and Public Relations

Tacoma Water has developed many educational programs to help customers understand and appreciate the care Tacoma Water provides to the Green River Watershed so that abundant, safe, clean drinking water and appropriate environmental stewardship can be maintained. Some educational and public relations activities take place within the watershed itself, while others take place within the Tacoma Water service area. These education programs range from elementary school to college programs, community workshops and fairs to various children's programs. For adults, the Audubon Society holds a spring bird count in the watershed where birdwatchers seek to count species of birds by sight or by call within a 24-hour period.

Cultural, Historical, and Archeological Resources

Over the years, several cultural resource studies have been conducted in the upper Green River Watershed. Tacoma Water evaluates all requests to enter the controlled access areas of the watershed to study the cultural resources on a case-by-case basis in coordination with the MIT. At a minimum, Tacoma Water requires that the work be professional in nature and be available to the public through publication or other means. Beyond the cultural and archeological resources and studies listed below, the Stampede Tunnel is listed on the Washington State Inventory of Historical Places:

- ***A Cultural Resource Overview of the Green River Watershed Area:*** In 1978, the USFS contracted for a study and report titled *A Cultural Resource Overview of the Green River Watershed Area* (Hedlund et al, 1978). The report describes the geography, geology, and prehistory of the watershed. It also describes aboriginal use of natural resources, occupancy of the watershed by Native Americans and other groups, and historic resources in the watershed. The report indicates very little survey work has been done in the Cascade Range. It further indicates that certain sites in the Green River Watershed area show a far more complex pattern of existence than casual use for seasonal berry-picking. Two specific areas — the Twin Camp site and the Meadow Creek site — are mentioned. Concern is expressed for vandalism of open areas, and the report speaks favorably about protection afforded by Tacoma Water's controlled access policies.

The report indicates that the Green River Basin people were a composite band of food gatherers who enjoyed considerable social and economic exchange with

numerous contiguous groups. Their culture was based upon a diversified subsistence economy that required extensive mobility to best mutually exploit common resources. These resources were gathered and processed by a multi-purpose technology that had certain specialized forms and associated rituals. Fishing for salmon was the major source of food for the Native peoples that used the Green River. Their annual subsistence was supplemented by hunting mammals and gathering numerous vegetal foods.

- ***An Archaeological Reconnaissance of Howard A. Hanson Dam Project:*** In 1986, the USACE published a report titled *An Archaeological Reconnaissance of Howard A. Hanson Dam Project* (Benson and Moura, 1986). The report documented the results of archaeological reconnaissance of the Howard Hanson Dam reservoir area between the elevations of 1,100 and 1,205 feet conducted during a four-week period in June 1985 and July 1986. The archaeological investigation identified 14 prehistoric and three historic cultural resource sites. Four diagnostic projectile points recovered from the investigation suggest the area has been used by people for nearly 8,000 years.
- ***Cultural Resources Survey of the Additional Water Storage Project Area, Howard A. Hanson Dam, King County, Washington:*** In 1995, the USACE, with the cooperation of Tacoma Water, contracted for a cultural resource assessment of lands surrounding the Howard Hanson impoundment area in anticipation of raising the elevation of the summer conservation pool. The resulting report, *Cultural Resources Survey of the Additional Water Storage Project Area, Howard A. Hanson Dam, King County, Washington* (Lewarch et al, 1996), documents cultural resources recorded during a two-month reconnaissance of approximately 900 acres around Eagle Gorge Reservoir in an area between elevations 1,141 and 1,206 feet.
- ***Archaeological Investigations at Howard Hanson Reservoir, King County, Washington:*** In 1999, the USACE published *Archaeological Investigations at Howard Hanson Reservoir, King County, Washington* (Boreson 1999). Investigations were conducted from November 13 through November 20, 1998 to relocate 14 sites previously identified by Benson and Moura (1986) and to begin evaluating site significance in support of the process outlined in Sections 106 and 110 in the National Historic Preservation Act, as amended. Of the 14 previously-recorded sites, 12 were relocated and two appeared to have been destroyed by erosion. The relocated sites were six lithic scatters, two lithic manufacturing areas, one lithic reduction area, two camps, and one camp with a lithic manufacturing, reduction, and processing area. Numerous isolated finds were also recorded.

4.2.12 Chemical Application

The application of herbicides, pesticides, insecticides, and fertilizers could adversely affect water quality in the watershed. Herbicides are used on a limited basis for conifer release and to control vegetation along roadways. Historically, insecticides and pesticides have not seen significant use in the Green River Watershed. Fertilizers are used on occasion by landowners. No chemicals are applied at the North Fork Wellfield or in buffer zones. Watershed Rules and DNR Forest Practices Rules govern the application of these chemicals in the watershed. Tacoma Water staff members routinely

collect samples for chemical analysis prior to, immediately after and during the next rain event following chemical applications.

4.2.13 Howard Hanson Dam Operations

Howard Hanson Dam is located approximately 3.5 miles upstream of the Tacoma Water diversion intake. Operation of this USACE facility in such close proximity to the intake results in both beneficial and deleterious impacts to water quality. The primary purposes of the dam are for 1) flood control, 2) low-flow augmentation, 3) ecosystem restoration, and 4) M&I storage. Flood control operations have the greatest impact on water quality at the Tacoma Water Intake Facility.

Flood Control

Flood control operations at Howard Hanson Dam extend from the onset of fall rains, typically around November 1, until spring storage begins, usually between February 15 and March 1. Beginning around November 1, stored water is evacuated from the reservoir to maximize flood storage. During peak flow events, water is stored behind Howard Hanson Dam and subsequently metered out to avoid downstream flooding. The USACE operates the flood pool to keep river discharge at less than 12,000 cubic feet per second at the USGS Auburn gage. This typically results in releases at Howard Hanson Dam of 8,000 cubic feet per second or less given inflows from sources between the dam and the Auburn gage.

Flood pool operations benefit Tacoma Water by greatly reducing peak flows, suspended sediments, and debris that reach the diversion dam and intake facility. Whereas this reduction protects these facilities from the acute effects of a large flood, it prolongs the period of elevated turbidity as the flood flows are metered out over an extended period. Additionally, as the pool is evacuated below a given surface elevation, turbidity increases as the water flows erodes surficial sediments deposited on the floor of the reservoir. The surface water elevation that this inflection occurs is termed the “turbidity pool”. USACE’s general operating procedure is to maintain the pool elevation slightly above the turbidity pool level; however, this elevation is dynamic and has been increasing in response to sediment deposition behind the dam. Thus, the USACE often probes the turbidity pool elevation to determine its location and possibly to manage sediment deposition following flood storage events. This results in further extending the period of elevated turbidity experienced at the Tacoma Water Intake Facility.

Other Impacts

Outside of flood control activities, other operations at Howard Hanson Dam generally have minimal impact on water quality. Twice each year, the USACE switches its operating gates. From the late fall through the spring runoff period, the USACE releases water through its 19-foot tunnel. Then in the late spring or early summer, they switch over to regulating outflows using their 40-inch bypass. They switch back to the 19-foot tunnel in the fall. Use of the 40-inch bypass allows the USACE to more finely regulate outflows under the low-flow conditions. When these changeovers are made, stale water is released into the Green River that can result in brief water quality impacts. This release is mitigated using water from the North Fork well system as necessary. Additional short-term water quality impacts may result from other irregular maintenance

operations at Howard Hanson Dam. In all cases, potential changes to water quality are communicated by the USACE to Tacoma Water so that they can be mitigated or avoided through water supply operational measures.

When the pool behind the dam is filled in the summer, algae blooms and thermal stratification are two common issues. Algae can cause taste and odor problems in the drinking water, as well as shorten water treatment process filter run times or clog equipment. Thermal stratification can cause increases in iron and manganese concentrations in the reservoir and river water, which can lead to discoloration of the drinking water.

5 Monitoring and Control of Activities

Under DOH and other applicable requirements, a watershed control program must, at a minimum, address how a system monitors and controls adverse water quality impacts caused by watershed activities. Chapter 4 identifies and discusses watershed characteristics and human activities that occur in the Green River Watershed that have potential to adversely impact source water quality. Chapter 5 identifies and discusses measures implemented by Tacoma Water for monitoring and control of those watershed activities. Watershed monitoring and control measures include land acquisition programs, monitoring of human activities, and monitoring of water quality in the Green River Watershed.

Previous versions of the Green River Watershed Management Plan focused on certain activities identified as high priority because of their potential adverse impact on source water quality. These high priority activities were defined by DOH for unfiltered surface water supply systems and included the following:

- Logging (turbidity)
- Road building and maintenance (turbidity)
- Recreational activities and hunting (turbidity and microbiological)
- Transportation routes (microbiological and chemical)

Control of these specific activities is now grouped with other measures within Section 5.5.

5.1 Organizational Structure

Tacoma Water's Water Quality Section is responsible for watershed protection and control, land management, and environmental stewardship. These watershed responsibilities are discussed in further detail in the following sections. The Water Quality Section is also responsible for operation and maintenance of the GRFF; installation, operation, and maintenance of water treatment equipment; water quality monitoring throughout the system; cross-connection control; and response to water quality concerns.

The Water Quality Section consists of five work groups, with the Watershed Operations and Environmental Stewardship groups performing the majority of the work within the watershed.

5.1.1 Watershed Operations

Within the Water Quality Section, the watershed manager, four inspectors, and an environmental specialist are directly responsible for watershed protection, operations, and maintenance. The principal responsibilities of the Watershed Operations team include the following:

- Patrolling and inspecting the watershed, including apprehending trespassers

- Monitoring of DNR FPAs
- Collecting water samples within the watershed
- Monitoring special activities, such as controlled hunts
- Building and maintaining roads, culverts, and bridges
- Emergency management
- Administration of Game Management Watershed hunts
- Maintaining gates and signs
- Coordinating with the Tacoma Water forester and implementing forest management activities in the field
- Coordinating logging, road building, and forestry activities with landowners
- Monitoring activities conducted by other landowners and their impacts on water quality
- Monitoring and controlling invasive terrestrial and aquatic species introduction and establishment
- Maintaining the fish trap and sort facility
- Overseeing access and watershed rules compliance with governmental entities, tribes, contractors, and other watershed visitors

5.1.2 Land Management and Environmental Stewardship

Watershed forest management activities, implementation of environmental commitments, other natural resources management activities, and real property management are carried out by the Environmental Stewardship team. This group consists of an environmental programs manager, a Tacoma Water forester, a fish biologist, and a senior environmental specialist. Principal responsibilities of the Environmental Stewardship team include the following:

- Implementation of environmental agreements
 - Tacoma Water Habitat Conservation Plan
 - AWSP Project Cooperation Agreement
 - Muckleshoot Settlement Agreement
- Land acquisitions and disposals
- Review of temporary land-use requests
- Preparing and reviewing road use agreements
- Monitoring of DNR FPAs
- Forest management planning under the Tacoma Water HCP
 - Harvest planning and implementation
 - Reforestation

- Silviculture
- Road system design, construction, and retirement

Other activities relating to the watershed, such as long-range planning, policy development, research, and public information are managed, as appropriate, by one or more members of the Water Quality Section under the direction of the section manager.

5.2 Land Acquisition and Disposals

The most straightforward strategy for controlling watershed activities is to maintain direct ownership and control of watershed lands. Ownership typically allows the owner to have the greatest control over use of such lands consistent with local, state, and federal regulations. Tacoma Water has actively pursued land acquisition in critical areas of the watershed and for parcels within one-half mile of the Green River, its major tributaries, and the Eagle Gorge Reservoir. In some cases, Tacoma Water may choose to dispose of watershed lands it owns in areas where risks to water quality are low. Lands acquired and disposed of by Tacoma Water over the past 11 years are summarized in Table 5-1. Other land areas within the watershed are protected by agreements with landowners.

Table 5-1. Tacoma Water's Land Acquisition and Disposals (2006-2016)

Party to Transaction	Date	Acquired (ac)	Disposed (ac)
Washington DNR	6/20/2017	301.61	0.0
Washington DNR	1/15/2009	339.34	0.0
Olympic Resource Management	3/11/2010	60	0.0
Forterra	12/17/2012	360.11	0.0
USACE	4/9/2015		20.03
Total Transactions		1,061.06	20.03

5.3 Inspections and Patrols

Tacoma Water currently employs one watershed supervisor and four inspectors to inspect and patrol watershed lands. The inspectors are rotated on site, seven days per week, at different times during the day and night. They are also present during special events such as special permit hunts. Their presence helps deter trespass and vandalism within the watershed and helps to limit fire potential on watershed lands. On certain weekends and holidays, Tacoma Water may supplement its own staff with outside help to control access and monitor activities on watershed lands.

Inspections involve monitoring the effects of planned activities within the watershed, while patrols involve checking the watershed for unauthorized entry. Watershed inspectors generally combine inspections and patrols, conducting them simultaneously as they travel throughout the watershed. Inspectors travel within the watershed every day, visiting critical areas on a regular basis (at least monthly if weather permits). There is no set schedule for patrols or inspections of specific areas so that routines are not recognized by anyone seeking to improperly access or use watershed lands. Within the

watershed, water treatment plant operators make frequent daily visits to the intake, so that key area is continuously inspected and patrolled.

Whenever an activity takes place within the watershed that could adversely affect water quality, the watershed inspectors make daily inspections at the activity site. Inspectors monitor such activities for conformance with best management practices, landowner agreements, and state regulations. During inspections, they monitor work sites for sanitary conditions, collect water samples to evaluate the impact of activities on water quality, inspect timber harvest and road construction sites for conformance with the Forest Practices Act, and monitor applications of chemicals in the watershed. Watershed inspectors also monitor special activities such as special permit hunts. Any other special activities on utility-owned lands in the watershed, such as educational field trips, are also conducted under the supervision of utility employees.

The watershed inspectors provide significant visibility in the watershed and represent a very important element of the watershed control program. King County Sheriff's Office and WDFW officials provide law enforcement in the watershed, but the watershed inspectors deter unauthorized access to the watershed. Watershed inspectors have the authority to prepare and issue trespass/incident reports. The reports can be forwarded to the King County Sheriff's Office along with a request that a trespass citation be issued. Inspection employees drive marked Tacoma Water vehicles and wear shirts, jackets, and caps with distinctive colors and patches to set them apart from other workers, employees, contractors, and recreationalists in the watershed. This distinction helps establish the authority and identity of the watershed inspectors. CB radios and scanners allow communication with loggers who are also asked to aid in reporting trespass violations.

An additional component of the watershed surveillance program involves controlling and monitoring access into the watershed. As described in the Access Control section, access into the watershed is restricted and all visitors are required to obtain a road use permit. All vehicles that enter the watershed through the Headworks or Massey gates are automatically identified at the entry gate and logged in and out by the gate guard.

All contractors, agents, and other visitors entering the watershed, as well as landowners when stipulated in written agreements, must follow the "Requirements for Protection of Water Supply in the Green River Watershed" also known as the Watershed Rules. The Watershed Rules document explains why watershed protection is important and why Tacoma Water has the authority to control watershed activities, provides emergency contact information for Tacoma Water, and outlines permit requirements for watershed access and activities within the watershed. The latest version of these rules is attached in Appendix D.

5.4 Water Quality Monitoring

Water quality within the Green River Watershed is monitored with both long-term and site-specific programs. Long-term monitoring provides a baseline for the overall water quality of the water sources within the watershed, while site-specific monitoring provides individual evaluation of the impact of specific activities.

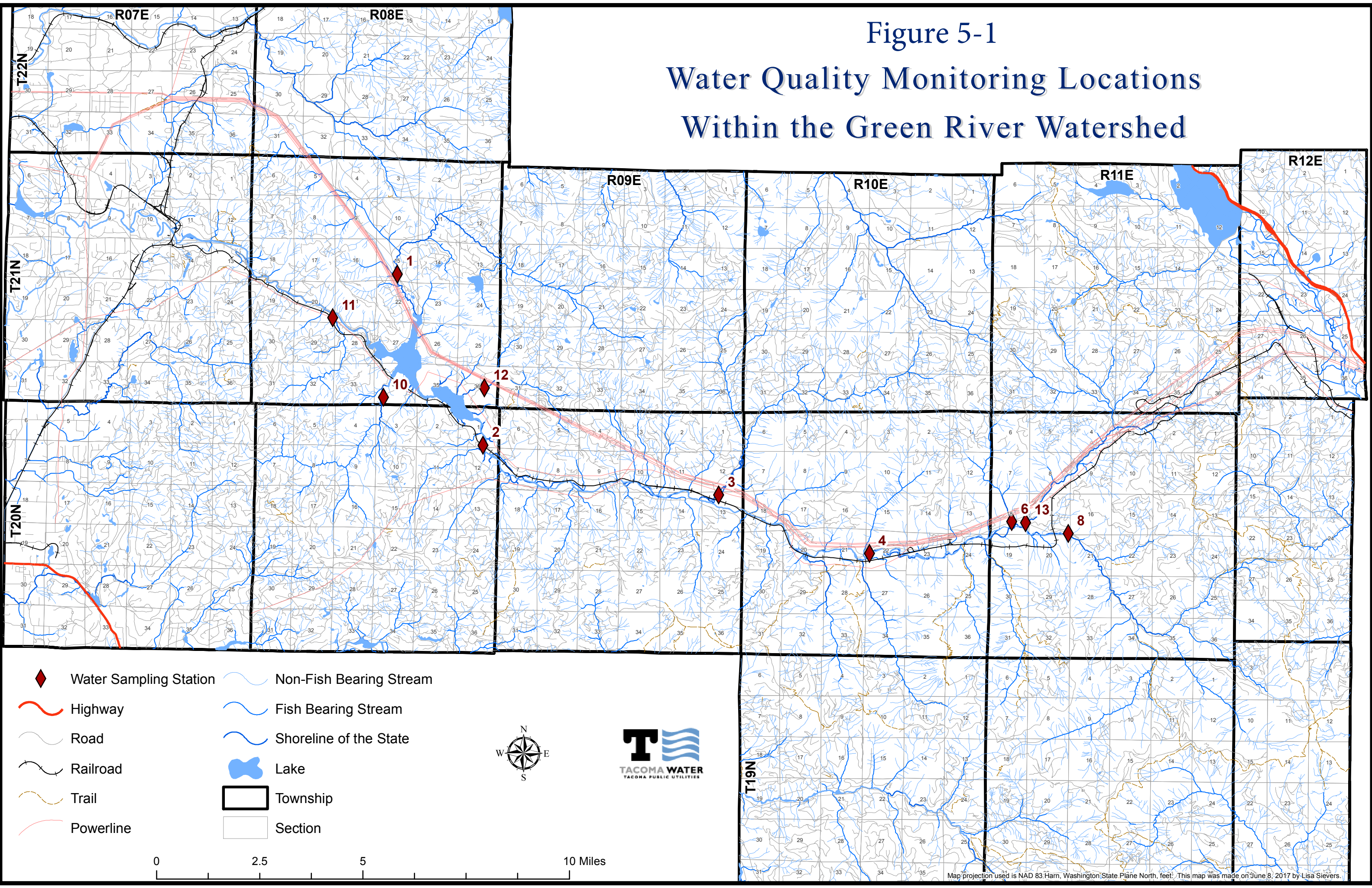
5.4.1 Long-term Monitoring

Tacoma Water conducts routine basin-wide monitoring of streams and surface waters in the Green River Watershed. The data collected serve as a water quality baseline for the watershed; deviations in the sample data may indicate a potential water quality issue. Weekly or biweekly samples are collected from 10 locations within the watershed:

- North Fork Green River NE $\frac{1}{4}$ SW $\frac{1}{4}$ 15-21-8 (W1)
- Green River at Humphrey SW $\frac{1}{4}$ SE $\frac{1}{4}$ 1-20-8 (W2)
- Smay Creek at USFS Bridge NE $\frac{1}{4}$ NW $\frac{1}{4}$ 13-20-9 (W3)
- Green River above Rock Creek SW $\frac{1}{4}$ NW $\frac{1}{4}$ 22-20-10 (W4)
- Friday Creek near Mouth SW $\frac{1}{4}$ SE $\frac{1}{4}$ 18-20-11 (W6)
- Green River above Steel Trestle SW $\frac{1}{4}$ SE $\frac{1}{4}$ 17-20-11 (W8)
- Charlie Creek at Weyerhaeuser Road SW $\frac{1}{4}$ 34-21-8 (W10)
- Bear Creek at Weyerhaeuser Road SW $\frac{1}{4}$ SW $\frac{1}{4}$ 21-21-8 (W11)
- Gale Creek (W12)
- Sunday Creek (W13)

As indicated in Figure 5-1, these locations are distributed throughout the watershed to provide indications of water quality within critical areas. Sampling station locations are selected to provide a cross-section of water quality within the watershed and to provide water quality data at strategic locations, such as points where major tributaries or side drainages enter the Green River, or points where localized activities could potentially affect water quality. Turbidity, temperature, and fecal coliform counts are analyzed and recorded for each sample that is collected. These data are regularly reviewed and any abnormalities are further investigated. Review of upstream water quality data allows Tacoma Water to anticipate potential water quality problems before they become serious and to proactively respond to and mitigate possible water quality and contamination issues (such as a dead animal in a waterway).

Figure 5-1
Water Quality Monitoring Locations
Within the Green River Watershed



In addition to the samples collected throughout the watershed, long-term monitoring is also performed in Eagle Gorge Reservoir during months where the reservoir is full, generally May through October. The monitoring consists of monthly grab samples that are analyzed for parameters including algae counts and biovolumes, taste and order (flavor rating assessment), total organic carbon, iron, manganese, UV254, chlorophyll-a, phaeophytin-a, and nutrients. The grab samples allow Tacoma Water to visually observe reservoir conditions, monitor for algae blooms that may reach the intake or affect water treatment, monitor for other potential water quality issues that may move downstream, and consider potential water quality if water is released from different reservoir depths in the future.

The monitoring also consists of continuous data collection using an unattended monitoring station that remains on the reservoir during the period from approximately May through October. The monitoring station uses a profiler to collect measurements every three hours at two meter depth reservoir intervals. It also measures “parked” measurements every hour at five meters below the water surface. The profiler measures temperature, dissolved oxygen, pH, turbidity, specific conductivity, chlorophyll (relative value), and blue-green algae (relative value). The profiler allows Tacoma Water to compare reservoir water quality trends to previous years, identify if stratification may be occurring in the reservoir, understand the potential for algae blooms, and plan GRFF operational water treatment adjustments to maximize treated water quality.

Site Specific Monitoring

When human activities take place that could adversely affect water quality within the watershed — road building, for example — Tacoma Water conducts additional site-specific water quality monitoring. Monitoring is performed before and after the occurrence of such human activities; monitored parameters are specific to the activity being monitored. Notification of Tacoma Water regarding planned landowner activities is generally a provision of the cooperative agreements that are in place with landowners within the watershed.

Particular requirements for herbicide, insecticide, or fertilizer applications in the watershed necessitate written plans and two weeks’ notice to Tacoma Water. Tacoma Water screens chemicals and application methods that are acceptable for use, monitors water quality throughout the process, and stipulates that arrangements shall be made for the availability of a watershed inspector during such applications.

Watershed employees attend chemical seminars on a regular basis to keep their chemical applicator licenses current. Seminar topics include chemical safety and use. Tacoma Water maintains records of chemical mixtures and application rates for usage within the watershed.

5.5 Watershed Control Measures

Tacoma Water’s monitoring and control efforts with respect to the activities that may impact water quality are described in the following sections.

5.5.1 Logging, Road Building and Maintenance

Potential increases in water turbidity are a primary concern relative to logging and road building and maintenance activities in the watershed. Therefore, minimizing and controlling erosion during these activities is important. Current and ongoing erosion control activities focus primarily on logging operations, watershed roads, and stream banks. The watershed inspectors are responsible for monitoring these sites on a regular basis to identify potential and actual erosion problems. They also engage in remedial actions as appropriate based on the location and nature of problems and potential impacts to water quality. Anti-erosion activities include regular visits to logging sites; consultation with contractors doing work in the watershed; regular inspection of roads, bridges, and culverts; and seeding or restoration of stream banks via engineered designs incorporating large woody debris, native plant materials, and other “soft” engineering approaches.

Tacoma-owned Land

Tacoma Water-owned lands located in critical areas of the watershed provide buffer to protect the Green River from adverse effects of runoff from upland areas. Vegetative cover on these buffer lands helps to protect source water quality within the watershed. Harvested areas are promptly reforested, and abandoned residential areas have been converted to forest. Reforested areas are maintained through their juvenile stage by eliminating competing vegetation using mechanical methods.

When erosion problems are identified on utility-owned lands or roads, Tacoma Water takes the lead on implementing needed repairs and preventive measures.

Land Owned by Others

The forests in the Green River Watershed are managed by several private companies and government agencies relative to natural resources, primarily timber. All timber harvesting activities on non-federal lands are required to meet regulations of the Forest Practices Act and the King County Shoreline Master Program. State regulations, as well as cooperative agreements with non-utility owners, give Tacoma Water employees authority to survey operations within the watershed and recommend changes necessary to maintain source water quality. Tacoma Water reviews FPAs submitted by landowners for proposed activities within the watershed and provides feedback so that potential water quality impacts can be addressed before a permit is issued by DNR. Once forest activities begin, Tacoma Water seeks to resolve any problems relative to inspection of timber harvest sites or road operations in the field. If resolution strategies are not successful in the field, Tacoma Water will report a Forest Practices Act violation to DNR so that DNR can pursue the issue through its normal enforcement channels.

When erosion problems are identified on lands owned by others, Tacoma Water staff assist in bringing issues to the attention of the proper parties, offers suggestions for remedial action, and may contribute manpower, equipment, and materials to help resolve problems.

5.5.2 Recreational Activities

Recreational activities within the Green River Watershed are minimized to the extent possible and controlled as necessary. No recreational activities, with the exception of an annual special permit hunts or other special events, are allowed within the closed areas of the watershed. Access to private forest land for recreational purposes is controlled by agreements between Tacoma Water and the respective private landowner. Access to public forest land for recreational purposes is allowed but is limited by provisions in agreements between Tacoma Water and the respective agencies. In general, only authorized personnel are allowed into the closed areas of the watershed, and the landowner agreements give Tacoma Water authority to enforce trespass laws. These access controls also benefit private landowners through the additional security this provides for their equipment and timber.

Off-road vehicle recreation is not allowed within the Green River Watershed, and water contact activities (such as swimming, boating, and fishing) are not allowed in critical watershed areas.

An annual special permit hunt is sponsored jointly by Tacoma Water, WDFW, and MIT in cooperation with the other landowners in GMU 485 Green River. This GMU primarily lies in the closed portion of the watershed, and access and sanitary wastes are strictly controlled, as stated in the agreement between Tacoma Water and WDFW. A copy of the agreement is included in Appendix B. All hunters must check in with staff at the Headworks or Massey gates and must obtain a "Road Use and Access Permit for Hunters" in addition to their special hunting permit to enter the watershed. The access permit form along with additional "Special Restrictions as required by the City of Tacoma and the Washington Department of Fish and Game" are provided in Appendix H. These two forms identify watershed rules that special permit hunters must follow. During the annual permit hunt, all roads in GMU 485 are generally open to hunting except any subject to special restrictions.

GMU 486 Stampede Pass is located east of GMU 485 in the limited-control portion of the watershed. Access to this area is primarily via USFS Road FS-52. Hunting in GMU 486 is managed under WDFW hunting regulations.

WDFW is currently considering an adjustment to the GMU 485/486 boundary in order to better manage harvest activities and watershed control (Figure 3-1). The proposed boundary would place all of GMU 485 in the controlled portion of the watershed and all of GMU 486 in the limited control area.

5.5.3 Transportation Routes

Transportation routes provide necessary access into the watershed but also introduce potential for of source contamination from vehicle or railroad spills. The Watershed Rules contain provisions for transporting and handling petroleum products and procedures for petroleum products spills. The provisions describe collection equipment and storage requirements. Should a petroleum or chemical spill occur within the watershed, the transporting party must immediately contact Tacoma Water so that Green River water can be diverted before any contamination enters the drinking water facilities. Spill containment supplies are available at locations throughout the watershed.

The BNSF Railway, which traverses the watershed and parallels the Green River, hauls a wide variety of cargo through the watershed. A good communications system has been established between Tacoma Water and BNSF to facilitate emergency response as necessary. Tacoma Water and BNSF employees converse several times a week and maintain a regular dialogue regarding watershed activities. Tacoma Water also monitors the radio frequency used by BNSF and maintains a current list of all BNSF emergency telephone contact numbers. Tacoma Water also has an Emergency Management Plan (EMP) in place with BNSF, which was prepared jointly with BNSF and the Corps of Engineers. The EMP describes guidance and protocols to follow in an emergency situation.

In the event of emergency, BNSF has a 24-hour call center that may be contacted to reach any BNSF staff member at any time. Should a railway accident occur within the watershed, the BNSF call center will immediately contact Tacoma Water to provide and coordinate information.

Tacoma Water currently operates the source water supply system in accordance with the Tacoma Water Emergency Operating Plan and facility standard operating procedures. These documents identify procedures for responding to spills in the watershed and other emergency situations.

5.5.4 Tribal Activities

Treaty tribal subsistence hunting by the MIT is also allowed in GMU 485 Green River in coordination with WDFW and Tacoma Water. Treaty hunting is conducted separately from the annual special permit hunt, but managed similarly. In addition to treaty hunting, gathering rites, cultural rites, and ceremonial hunts are allowed within the controlled portion of the watershed, as specified in Tacoma Water's agreement with the MIT in 1995. GMU 486 Stampede Pass is located within the limited control area of the watershed east of GMU 485. This area is open to treaty reserved activities for all tribes claiming these lands as part of their usual and accustomed harvest area under the Point Elliott Treaty.

5.5.5 Environmental Restoration

Environmental restoration activities are conducted to mitigate development of water resources such as the AWSP, to implement fish habitat improvements under the Tacoma Water-sponsored Ecosystem Restoration project with the USACE, to improve watershed processes and increase the resiliency of watershed lands, and to protect water quality and enhance the land's ability to naturally filter precipitation and runoff. Tacoma Water actively seeks ways to maintain and improve conditions in the watershed and in the creeks and streams that feed the Green River. Since 2003, Tacoma Water and the USACE have installed 1,261 logs in the form of engineered log jams and single log placements at 18 project sites along creeks and streams upstream of Howard Hanson Dam. Tacoma Water has also created 89 acres of managed forage pasture habitats and annually mows an additional 57 acres primarily to benefit elk. In addition, over 240 acres of forest habitat has received treatment to improve wildlife habitat and over 60 bird boxes and bat roosting structures have been installed.

Tacoma Water continues to maintain and monitor these projects as required under its HCP and other environmental agreements. In addition, since 2011, the utility has evaluated sedge distribution around Eagle Gorge Reservoir to track the re-establishment of this important food source following the implementation of municipal and industrial water storage behind Howard Hanson Dam in 2007.

No additional habitat restoration projects are currently planned, but maintenance of existing sites and natural resources monitoring will continue to be an ongoing activity.

5.5.6 Sanitation

Good sanitary practices are required of all watershed visitors to ensure contamination potential is minimized. Rules concerning toilet facilities and garbage in the watershed are included in the Watershed Rules and enforced by watershed inspectors during their patrols. Additionally, provisions related to sanitation are specifically included in some landowner agreements, while others reference the Watershed Rules. The restrictions for special permit hunters also provide sanitation requirements.

Tacoma Water is responsible for determining where and when portable toilet facilities are required in the water shed and for providing and maintaining the required units.

Contractors are responsible for providing locations to place the required units and for encouraging their use. Watershed Rules also stipulate that all trash and rubbish must be collected in containers and removed from the watershed. Toilets and trash cans are provided at controlled entry points, including the Headworks Gate and the new Massey Gate.

As described in Chapter 4, a minimal number of permanent septic systems are established within the watershed. These systems are located at points where potential degradation of source water quality is minimized, and they are regularly maintained.

5.5.7 Access Control

Access to the closed area of the Green River Watershed is closely controlled. Entry point control, gates, and watershed postings are all employed to control access to the critical areas of the watershed. Video surveillance at the Headworks gate and other locations is employed to monitor entry. Landowner agreements and permits also provide access control.

The three key access points to the closed area are controlled by locked entry gates: Road 5500 at the Headworks Gate, the Green River Truck Road 3703 at the new and old Massey gates, and Road 5900 at the gate at Friday Creek. Both the Headworks Gate and the new Massey Gate have staffed entry stations. The Headworks Gate is staffed 24 hours a day year-round, while the Massey Gate is staffed several months out of the year during hunts and when logging activities are taking place on the south side of the Green River. The gate at Friday Creek is not staffed, but is kept locked. In addition, a street light above the gate keeps the area illuminated and discourages trespass or vandalism in the area. Other locked gates are located at strategic points on roads accessing the watershed to prevent vehicle access along main routes and other routes — such as hiking trails or inactive transportation lines — that are likely to be approached by visitors. The areas closed to access are marked by signs indicating the nature of the area and the consequences of trespass.

The primary transportation routes through the watershed were identified in Chapter 4. Tacoma Water controls access on Road 5500, Road 5530, and Road 5900 between the Headworks Gate and the Friday Creek Gate through landowner agreements/easements, USACE license, and through ownership of portions of the roadway. Access on the Green River Truck Road 3703 and Wolf Creek Road 5717 is controlled through landowner agreements and partial Tacoma Water ownership of the roadway. Hancock Forest Management issues all commercial hauling permits for the Green River Truck Road 3703, while Tacoma Water administers Wolf Creek Road 5717.

Access to controlled watershed areas by contractors and other visitors along any roadway or by air requires a permit. A “Road Use/Key Permit for Green River Watershed” is provided in Appendix I as an example. Tacoma Water or other landowners may issue gate keys if a permittee requires access during off hours or through a gate that is not staffed. Any private vehicle that is not adequately insured is not allowed access to the watershed.

All permittees participating in the special permit hunts in the Green River Watershed must enter and leave the watershed through a staffed station.

5.5.8 Education

DOH policy requires that all people entering the watershed are educated regarding watershed protection. Educational brochures are available to watershed visitors at the Headworks and Massey Gates. The Watershed Rules document is also available to those contractors, agents, and visitors entering the watershed. All watershed visitors must obtain a Road Use/Key Permit, or the Road Use and Access Permit used with hunters, before being granted access to the watershed. Those forms clearly indicate that “the Green River Watershed serves as the municipal fresh water supply for the City of Tacoma” and provide a general overview of watershed requirements and source water protection.

There are also educational requirements under Tacoma Water’s HCP for Tacoma Water employees and contractors who work in the watershed. All contractors who enter the watershed to work for Tacoma Water are notified that they are operating under the HCP HCMs and must report sightings of any listed species when working in watershed habitat areas.

6 Evaluation of Watershed Management Program

Previous chapters of this document review the history and describe the current conditions of the Green River Watershed. As required by WAC 246-290-668, this chapter provides recommendations for improved watershed control.

Although the Green River water supply is now a filtered surface water supply with the completion of the GRFF, Tacoma Water intends to continue to manage and improve the watershed control program consistent with the more stringent practices developed for unfiltered surface water supply systems. Doing so ensures an elevated level of protection for the water supply, limiting exposure to adverse water quality impacts from new or increased activity in the watershed. A strong watershed control program also supports environmental stewardship commitments and GRFF operations. High water quality assists with filter plant operational efficiencies, reduces solids handling costs, and maximizes service life.

Program recommendations and activities are summarized in Table 6-1:

Table 6-1. Green River Watershed Recommendations

Activity	Recommendation	Notes
Land acquisition	Continue to identify and acquire strategic properties within the watershed that will help control access or protect water quality.	<ul style="list-style-type: none">• Green River Watershed is the primary source of water for Tacoma and surrounding communities.• Continued investment will be necessary to preserve the ability of the watershed to provide clean and abundant water supply.• Tacoma Water currently owns 11 percent of the Green River Watershed, including many critical areas.• Tacoma Water recognizes that owning a greater portion of watershed lands would provide numerous and varied benefits.• Further access controls could be established through land acquisition.• Land ownership by Tacoma Water could potentially decrease the number of other landowners; near-term acquisitions will primarily focus on securing parcels to better control public access.• Tacoma Water will maintain a long-term perspective on preserving and protecting the water supply through fee simple ownership, conservation easements, or other avenues as opportunities arise.
Agreements with new landowners	Continue to pursue written agreements with new landowners as watershed ownership changes.	<ul style="list-style-type: none">• Land within the watershed changes hands over time.• It is important that the water quality values that have been shared with existing landowners are not lost or compromised when land changes hands.• Each time land within the watershed is sold, Tacoma Water will make every effort to obtain a written agreement (which addresses topics related to drinking water quality) with the buyer of the land.
Agreement with Puget Sound Energy	Pursue a written agreement with Puget Sound Energy that describes acceptable and unacceptable maintenance practices on its right-of-way easement.	<ul style="list-style-type: none">• Tacoma Water maintains contact with PSE and provides input regarding activities, but does not have a written agreement with PSE.• Because PSE conducts some maintenance activities within the watershed, it is desirable to document Tacoma Water’s right to exert some control over those activities through a written agreement; an agreement similar to that in place with BPA is recommended.
Monitoring recreational policies	Continue to monitor the policies of other landowners, specifically DNR and USFS, for any proposed changes in the amount of recreation allowed in the watershed.	<ul style="list-style-type: none">• The amounts and locations of recreation allowed within the watershed are acceptable; however a large portion of the watershed consists of public lands.• Tacoma Water must be involved in public recreation decisions due to policy shifts within public agencies.
Use of the HCP for forest management	Continue to actively implement the Tacoma Water Habitat Conservation Plan and use it as a forest management guide.	<ul style="list-style-type: none">• The HCP contains a number of provisions related to forest management within the watershed and provides the most recent plan for watershed forest management.• Continue to actively use the HCP for decisions related to management of Tacoma Water’s watershed forests.
FPA review	Continue to provide oversight of watershed forest activities through review of FPAs.	<ul style="list-style-type: none">• Review of FPAs provides Tacoma Water with the opportunity to determine if the forest activities of other landowners meet water quality needs and to request that potential issues be addressed before permits are approved.• Addressing issues up front ensures that forest activities are conducted in a manner that does not adversely affect water quality and improves inspections of those activities.
Recreational activities	Continue to take an active role in managing recreational activities on Tacoma Water lands.	<ul style="list-style-type: none">• Recreational activities on Tacoma Water land will be tightly controlled and monitored.• Any additional recreational activities made available on Tacoma Water lands must be well supervised, staffed, and managed via specific and well defined guidelines consistent with a specific purpose.• Tacoma Water should continue to work closely with game managers (WDFW and MIT) to ensure a proper balance of water quality protection and game management is maintained.
Noxious weeds and invasive species	Continue to prevent introduction of deleterious aquatic organisms and prevent/control noxious weeds on Tacoma Water lands.	<ul style="list-style-type: none">• Equipment and materials that need to be used in water or within the high-water mark pose a threat to water quality because they could contaminate the water in which they are used.• Continue to enforce procedures for decontaminating equipment and materials that will be in water or within the high-water mark.• Decontamination procedures required as part of the Watershed Rules continue to be enforced.• Assess, treat, and monitor noxious weeds on Tacoma Water lands consistent with state law and stewardship objectives.

Appendix A – Watershed History

Year	History
1887	Northern Pacific Railroad completed and limited settlement began.
1897	Forest reserve created, curtailing further development of the eastern end of the drainage.
1905	Snoqualmie National Forest established, encompassing all forested reserve land within the watershed.
1910	City of Tacoma Green River gravity supply system authorized for construction.
1913	First water delivered to Tacoma through new Green River gravity supply system.
1914	Cooperative agreement executed between the City of Tacoma and the Secretary of Agriculture (USFS) to protect the watershed.
1943	Bonneville Power Administration (BPA) transmission line project began.
1949 - 1950	City of Tacoma obtained police power agreements with large private landowners within the watershed.
1952 - 1953	A new City of Tacoma City Charter created what is now Tacoma Public Utilities, with three operating divisions: Tacoma Water, Tacoma Power, and Tacoma Rail.
1954	Tacoma Water began acquiring private lands within the watershed.
1959	Construction of Howard Hanson Dam began. Memorandum of Understanding (MOU) signed between the US Forest Service (USFS) and the US Army Corps of Engineers (USACE) and Department of Army license given to Tacoma Water; both documents address control of Access Road "A" (a new road creating access from the west).
1961	Tacoma Water granted Lester residents limited access from the west on Access Road "A". Howard Hanson Dam completed.
1962	USFS proposed public uses of USFS lands in the watershed.
1965	Tacoma Water condemned 1,450 acres of private land within the Green River Watershed for watershed protection purposes.
1966	King County unsuccessfully condemned USFS Road 212.
1967	Tacoma Water purchased the town site of Lester.
1968	Weyerhaeuser and Tacoma Water executed agreement regarding access along the Green River Truck Road.
1975	Tacoma Water began construction of the North Fork Wellfield and pipeline within Green River Watershed.
1980	Tacoma Water purchased 835 acres of Scott Paper Company land and one lot in Ace's at Friday Creek. The State of Washington established low-flow regulations on the Green River.
1981	Tacoma Water purchased two lots in Ace's at Friday Creek.

Year	History
1982	USFS obtained “public use” rights on Burlington Northern roads. Washington Department of Game successful in its legal efforts to plant steelhead in the watershed.
1983	Tacoma Water purchased 1,604 acres from Publishers Forest Products.
1984	MOU executed between USFS and Tacoma Water addressed access and control of activities on USFS lands and provided for a land exchange. Agreement executed between Washington State Department of Natural Resources (DNR) and Tacoma Water addressed timber sales, sanitation, firewood permits, campgrounds, special use permits, use of fire suppression crew facilities, and temporary fire camp locations. Tacoma Water purchased 467 acres of Weyerhaeuser land. Agreement executed with Washington Department of Game pertaining to permit elk and deer hunts. All-citizen special permit elk and deer hunts began. Burlington Northern Railroad discontinued active rail service on its Stampede Pass line.
1985	Tacoma Water purchased 43 acres of Burlington Northern land near Friday Creek. Tacoma Water purchased one lot in Ace's at Friday Creek.
1986	Congress passed major amendments to the Safe Drinking Water Act. Tacoma Water purchased four lots in Ace's at Friday Creek. Tacoma Water purchased Lester School. 18 vacant buildings at Lester demolished. USFS relinquished public use rights on its roads west of Lester. Tacoma Water purchased 708 acres of forest land outside the watershed to exchange for USFS lands within the watershed.
1987	1,600-acre land exchange completed with Burlington Northern. Lester School and Scott Paper logging camp demolished. Tacoma Water purchased 1,180 acres of forest land outside the watershed to exchange with the USFS.
1988	Supplemental agreement executed with DNR addressed additional provisions for the “Inner Basin” area. Tacoma Water sold a 26-acre timber sale near the North Fork of the Green River. USFS Exchange Agreement executed, authorizing cost-sharing of timber cruise and other surveys on lands to be included in the land exchange.
1989	Tacoma Water sold a 32-acre timber sale. Tacoma Water purchased 879 acres of forest land outside the watershed for the USFS exchange. Tacoma Water conducted forest inventory of Tacoma Water-owned lands in the watershed.
1991	Tacoma Water sold a 33-acre timber sale near Bear Creek. Tacoma Water acquired 207 acres of USACE land along 4.5 miles of USFS 54.
1992	Tacoma Water sold a 20-acre timber sale near Gale Creek. Tacoma Water acquired administrative control on 12 miles of USFS 54. Muckleshoot Indian Tribe (MIT) began annual special permit hunts for elk and deer in the watershed.

Year	History
1993	Agreement executed between Plum Creek Timber Company and Tacoma Water for cooperation of land management in the Green River Watershed.
1994	Agreements executed with Weyerhaeuser Company and Champion International for cooperation of land management in the Green River Watershed.
1995	<p>Agreement executed between Citifor and Tacoma Water for cooperation of land management in the Green River Watershed.</p> <p>Land exchange agreement between USFS and Tacoma Water completed for the utility to acquire 1,009 acres in watershed.</p> <p>Plum Creek Timber Company land exchange completed.</p> <p>Agreement executed between MIT and Tacoma Water, establishing long-term cooperative working relationship concerning the Green River and Tacoma Water's Green River Watershed lands.</p>
1996	<p>Agreements executed with Burlington Northern Railroad and Giustina Resources for cooperation of land management in the Green River Watershed.</p> <p>Tacoma Water's Green River Watershed Forest Land Management Plan completed and adopted.</p> <p>Burlington Northern Railroad reconstructed its Stampede Pass line for reactivation of service.</p> <p>Tacoma Water purchased 1,440 acres of watershed land from Weyerhaeuser Company.</p>
1997	Tacoma Water signed a new agreement with Washington Department of Fish and Wildlife (WDFW) pertaining to permit elk and deer hunts.
1998	Howard Hanson Dam Additional Water Storage Project Final Feasibility Study Report and Final Environmental Impact Statement (EIS) published.
2001	<p>Howard Hanson Dam Section 1135 Fish and Wildlife Restoration Project completed.</p> <p>Tacoma Water Habitat Conservation Plan approved by NOAA's National Marine Fisheries Service (NOAA Fisheries) and US Fish and Wildlife Service (FWS).</p> <p>Forest Road Inventory completed on the Howard Hanson Road Management Block.</p>
2002	<p>1902 Northern Pacific Railroad Bridge over the Green River at the 1-mile marker on Road 5500 underwent extensive repairs.</p> <p>82 Roosevelt cow elk relocated to the watershed from the Chehalis River Valley by WDFW.</p> <p>Forest Road Inventory completed on the west half of the Lester Road Management Block.</p> <p>Stream Adjacent Road Assessment completed on the Howard Hanson Road Management Block.</p>
2003	<p>Sweeney Creek culverts replaced with 60-foot concrete bridge as a cooperative project between Tacoma Water, USACE, and watershed landowners.</p> <p>USACE constructed 2 engineered log jams in Green River near Watershed Office (Zone 1) with 256 logs provided by Tacoma Water.</p> <p>Stream Adjacent Road Assessment completed in the Lester Road Management Block.</p> <p>Forest Road Inventory completed on the east half of the Lester Road Management Block.</p> <p>Fish Passage Barrier Assessment completed on Tacoma Water lands.</p> <p>Project Cooperation Agreement (PCA) for the Howard Hanson Additional Water Storage Project signed by Tacoma Water and USACE authorizing work to begin on the fish and wildlife habitat mitigation sites.</p> <p>Tacoma Water completed its headworks/intake modification project.</p>

Year	History
2004	<p>Tacoma Water and USACE began work on the development of the fish and wildlife habitat mitigation and restoration sites for the Additional Water Storage Project.</p> <p>Tacoma Water purchased 302 acres of land from Plum Creek Timber Company in the Sawmill Creek drainage in cooperation with the Cascade Land Conservancy and Cascade Conservation Partnership.</p>
2005	<p>Work continued on the development of Additional Water Storage Project fish and wildlife habitat mitigation and restoration projects; several projects completed.</p> <p>Tacoma Water removed culverts and installed prefabricated steel bridges on the 5530 Road at East Maywood Creek, Gale Creek, and McDonald Creek; removed culvert on McDonald Creek on the 5530-B Road and decommissioned 900 feet of the road; and built a new 1,000-foot road to McDonald Field without crossing any streams.</p> <p>46-acre parcel of land east of Friday Creek transferred to MIT per the 1995 agreement between MIT and Tacoma Water.</p> <p>Tacoma Water signed a cooperative agreement with White River Forests.</p> <p>Road use agreement signed with BPA.</p>

Appendix B – Public Agency Agreements



INTERAGENCY AGREEMENT WITH THE CITY OF TACOMA

Agreement No. IAA 10-381

This Agreement is between the City of Tacoma (referred to as "City"), and the Washington State Department of Natural Resources, South Puget Sound Region (referred to as "DNR").

The purpose of this Agreement is to provide continued cooperation between the DNR and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners. This agreement replaces the October 26th, 1984 and the June 20th 1988 cooperative agreements between the City and DNR.

The DNR owns and manages lands within the Green River Watershed. The DNR desires to cooperate with the City in return for certain management support services, including but not limited to forest fire patrol and first attack response, and security patrol on the lands located within the boundaries of the Green River Watershed, from which the City obtains most of its municipal water supply.

Both parties recognize that production and protection of high quality water is directly related to land management, land utilization, human activities, and natural events. Well planned and executed forest management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the DNR's management objectives.

Both parties recognize the right of each party to control access upon their respective lands and roadways. Long-term cooperative approach to management of the Green River Watershed will produce mutual benefits for all concerned.

IT IS MUTUALLY AGREED THAT:

1.01 Statement of Work. The City shall furnish the necessary personnel, equipment, material and/or services and otherwise do all things necessary for or incidental to performing work set forth in Attachment A at no cost to DNR unless otherwise agreed upon in writing, as provided by 7.01, herein.

2.01 Period of Performance. The period of performance of this agreement shall begin on February 1, 2011, and end on June 30, 2020.

3.01 Payment. Payment for extraordinary costs incurred by DNR and agreed to by the City, as a result of actions or project modifications imposed by the City upon DNR to protect water quality, shall be based on the terms described in Section II B of Attachment A.

4.01 Billing Procedures The DNR shall submit invoices to the City for the extraordinary costs incurred consistent with the terms described in Section II B of Attachment A. Payment to the DNR for the agreed upon extraordinary costs will be made by warrant or account transfer within 30 days of receiving the invoice. When the agreement expires or otherwise terminates, any claim for payment not already made shall be submitted within 30 days after the expiration date or the end of the fiscal year, whichever is earlier, or the claim shall be deemed waived.

5.01 Records Maintenance. The City and DNR shall maintain books, records, documents and other evidence, to sufficiently document all direct and indirect costs incurred, as identified in Attachment A. These records shall be available for inspection, review, or audit by personnel of the City or DNR, other personnel authorized by the City, DNR, or the Office of the State Auditor as authorized by law. The City and DNR shall keep all books, records, documents, and other material relevant to this agreement for six years after agreement expiration. The Office of the State Auditor and any persons authorized by the parties shall have full access to and the right to examine any of these materials during this period.

Records and other documents in any medium furnished by one party to this agreement to the other party will remain the property of the furnishing party, unless otherwise agreed. The receiving party will not disclose or make available any confidential information to any third parties without first notifying the furnishing party and giving it a reasonable opportunity to respond. Each party will use reasonable security procedures and protections to assure that records and documents provided by the other party are not erroneously disclosed to third parties. However, the parties acknowledge that each of them are subject to Chapter 42.56 RCW, the Public Records Act.

6.01 Independent Capacity. The employees or agents of each party who are engaged in performing this agreement shall continue to be employees or agents of that party and shall not be considered for any purpose to be employees or agents of the other party.

7.01 Amendments. This agreement may be amended by mutual agreement of the parties. Amendments shall be in writing and signed by personnel authorized to bind each of the parties.

8.01 Termination. Either party may terminate this agreement by giving the other party 30 days prior written notice. If this Agreement is terminated, the City shall be liable to pay for any extraordinary costs agreed upon prior to the termination date according to the terms of this agreement.

9.01 Termination for Cause. If for any cause either party does not fulfill in a timely and proper manner its obligations under this agreement, or if either party violates any of the terms and conditions, the aggrieved party will give the other party written notice of the failure or violation. The aggrieved party will give the other party 15 working days to correct the violation or failure. If the failure or violation is not corrected within 15 days, the aggrieved party may immediately terminate this agreement by notifying the other party in writing.

10.01 Disputes. If a dispute arises, a dispute board shall resolve the dispute in the following manner: Each party to this agreement shall appoint a member to the dispute board. These board members shall jointly appoint an additional member to the dispute board. The dispute board shall evaluate the facts, contract terms, applicable statutes and rules, then determine a resolution. The dispute board's determination shall be final and binding on the parties. As an alternative to the dispute board, either of the parties may request intervention by the Washington State Department of Natural Resources Supervisor and the City of Tacoma Water Superintendent

11.01 Governing Law and Order of Precedence. This agreement is entered into under the authority granted by the laws of the City of Tacoma, the State of Washington and any applicable federal laws. The provisions of this agreement shall be construed to conform to those laws.

If there is an inconsistency in the terms of this agreement, or between its terms and any applicable statute or rule, the inconsistency shall be resolved by giving precedence in the following order:

- (1) Applicable State, City and federal statutes and rules;
- (2) Statement of Work; and
- (3) Any other provisions of the agreement, including materials incorporated by reference.

12.01 Assignment. The work to be provided under this agreement and any claim arising from this agreement cannot be assigned or delegated in whole or in part by either party, without the express prior written consent of the other party. Neither party shall unreasonably withhold consent.

13.01. Waiver. A party that fails to exercise its rights under this agreement is not precluded from subsequently exercising its rights, except as provided in 4.01 herein. A party's rights may only be waived through a written amendment to this agreement.

14.01. Severability. The provisions of this agreement are severable. If any provision of this agreement or any provision of any document incorporated by reference should be held invalid, the other provisions of this agreement without the invalid provision remain valid.

15.01. Insurance. Liability insurance coverage for the City and State (DNR) is currently secured by their respective self-insurance programs and shall remain in effect for the duration of this agreement. The failure to maintain the required self-insurance liability insurance coverage shall warrant the termination of this agreement at the option of either party. Upon request, certificates of insurance will be provided to either party outlining the coverage provided by their respective self-insurance programs.

16.01 Indemnity. To the fullest extent permitted by law, each party shall indemnify, defend and hold harmless the other, its officials, agents and employees, from and against all claims arising out of or resulting from the performance of this agreement. "Claim" as used in this agreement, means a demand for payment as a result of financial loss, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use thereof. The obligation of each party to indemnify, defend and hold the other harmless includes but is not limited to claims by the other party's agents, employees, representatives, or any contractor, subcontractor or its employees. Each party expressly agrees to indemnify, defend, and hold

harmless the other for any claim arising out of or incident to that party's or its contractor's or subcontractor's performance or failure to perform the obligations imposed by this agreement. The indemnification obligations of the respective parties shall apply only to the extent a claim is caused in whole or in part by that party's negligent acts or omissions. Each party waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless the other respective party and its officials, agents or employees.

17.01 Complete Agreement in Writing. This agreement contains all the terms and conditions agreed upon by the parties. No other understanding, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind any of the parties.

18.01 Contract Management. The Representative for each of the parties shall be the contact person for this agreement. All communications and billings will be sent to the Representative.

19.01 Representatives.

(1) The Representative for the City is Bryan King, Telephone Number 253-502-8808 or successor.

(2) The Representative for the DNR is Mark Thibo, Telephone Number 360-825-1631 or successor.

IN WITNESS WHEREOF, the parties have executed this Agreement.

CITY OF TACOMA

Dated: January 27, 2011

By: Gwinda McCrea

Title: Water Superintendent

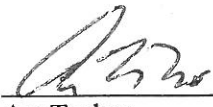
Address: Tacoma Public Utilities
3628 South 35th St.
Tacoma, WA 98409

Approved as to Form and Legality
By: Deputy City Attorney



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: January 31, 20 11

By: 
Art Tasker

Title: South Puget Sound Region Manager

Address: 950 Farman Avenue North
Enumclaw, WA 98022
360-825-1631

Interagency Agreement
Approved as to Form

By the Assistant Attorney General
State of Washington

STATEMENT OF WORK

In consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE DNR

- A. The DNR, during the life of this agreement, hereby authorizes the City to patrol the DNR's Green River Watershed lands against unauthorized persons thereon, against the starting thereon or spreading thereto of any fire and may exclude there from and prevent the entry thereon, at all times and for any purpose, of any person who does not have written authority from DNR to be on such lands. The City is also authorized to enter said DNR lands as noted in Attachment "C" for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.
- B. The DNR recognizes that gates may be deemed necessary by the City on DNR roads entering the Watershed. The DNR agrees to provide written authorization to the City for new gates once locations have been agreed upon. The installation, operation, and maintenance of all such gates, as shown on Attachment "C", if desired by City shall be the responsibility of and shall be at the expense of the City. External gates shall remain closed and locked at all times. If a gate guard is requested by DNR costs will be shared between DNR and the City.
- C. The DNR reserves to itself and to its successors and assigns the absolute right, at all times, to occupy, enter upon and utilize its lands, and the whole thereof, for any purpose or purposes incident to the ownership thereof and particularly for the purpose of growing, cultivating, and producing timber, trees, and forest growth thereon, and reforesting the same, logging, harvesting, and removing timber, trees, forest growth and forest crops there from, and constructing, maintaining and using such roads, trails, and other improvements as may be necessary or incidental to such operations. The DNR agrees to notify the City in advance of any proposed plans to conduct non-forest management-related activities or land uses within the Watershed. It is understood and agreed that all proposed uses within the Watershed would be conducted consistent with Attachment "B", the City's written "Requirements for Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements"), revised and approved by the Utility Board on August 13, 2008 or as subsequently amended as per Section IIIA below. Such Requirements are on file and available at Tacoma Public Utilities, Real Property Services, 3628 South 35th Street, Tacoma, WA 98409.

II. THE CITY

- A. The City during the life of this Agreement hereby agrees to perform its obligation, under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed.

Also, upon request the City will provide timely reports to the DNR regarding its patrol and inspection activities.

- B. The City shall reimburse the DNR for extraordinary costs incurred by the DNR in its attempt to satisfy written requests by the City's Water Division Superintendent to change its forestry related activities and timber harvesting on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary costs are the costs that are ten (10) percent or more in excess of the DNR's ordinary costs to achieve compliance with the Forest Practices Act (Chapter 76.09 RCW), the Shoreline Management Act (Chapter 90.58 RCW), and other applicable laws and regulations thereon as applicable to its lands within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity.

Upon being informed by the DNR that an activity will occur, the City will, within 30 calendar days, notify the DNR of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The DNR shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City will either agree to pay the amount specified by the DNR or request a meeting to review the matter. If the City agrees to pay the amount specified by the DNR, payment will be made by the City within 60 days of the date when the City agrees to make such payment. If the City fails to respond within 30 days to the DNR's documentation or if the parties are unable to reach mutual agreement, it is understood the DNR may choose to proceed as originally proposed. City shall not be obligated to reimburse DNR for any cost resulting from the requested change that is less than ten (10) percent above DNR's estimate of the cost prior to City review.

III. BOTH PARTIES

- A. Both parties agree to accept and abide by the Requirements as contained in Attachment "B" or as amended, revised or modified, as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the DNR for review and comment. Revisions to the Requirements will not be enforceable upon DNR lands or on DNR's solely owned access roads without the DNR's specific written approval.
- B. Both parties agree to investigate any and all alleged violations of the Requirements by the DNR, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations.
- C. Both parties agree to share with each other prior to May 31 of each year their respective annual plan for land management activities including roads, wildlife, harvesting, ownership changes, fire prevention programs, and Habitat

Conservation Plans within the Watershed. These plans will provide sufficient detail to allow both parties to plan and schedule their land management activities. Both parties agree to notify the other of any changes to such plans at least 30 days prior to implementing such changes on the ground.

- D. Both parties agree to confer concerning all proposed changes to policies, laws and/or regulations, and land transactions which may affect land management or production of timber or water in the Green River Watershed.
 - E. Both parties agree this Agreement shall be and remain in force and effect until June 30, 2020, unless otherwise terminated under this agreement or, as applied to any portion of said lands, until either party no longer maintains interest in said portion of said lands.
 - F. Both parties agree to conduct a joint performance review of this Agreement on an annual basis for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.
 - G. Neither party shall deposit any waste or debris on the other party's lands and shall not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the other party.
-

Attachment B

Requirements for Protection of Water Supply in the Green River Watershed

**TACOMA PUBLIC UTILITIES
TACOMA WATER**

**REQUIREMENTS FOR PROTECTION
OF WATER SUPPLY IN THE
GREEN RIVER WATERSHED**

William Gaines
Director of Utilities

John Kirner
Superintendent – Tacoma Water

UTILITIES ADMINISTRATION BUILDING
Tacoma, Washington 98409

EMERGENCY NUMBERS

Gate Guard (24 Hours)

(360) 886-1601

Green River Headworks (24 Hours)

(253) 502-8346

FOREWORD

The principal source of Tacoma Water's municipal drinking water supply is the Green River, which flows west from the Cascade Mountains. Green River water is diverted at a point approximately 30 miles east of the City of Tacoma. The Green River supply is one of the few unfiltered surface water supplies in the country. To protect public health and ensure a safe unfiltered drinking water supply, it is necessary that the water be maintained at its source in a state of the highest natural quality. Therefore, it is the goal of Tacoma Water to control those activities within the Green River Watershed that are not compatible with maintaining high quality water.

The Washington State Department of Health has enacted drinking water regulations requiring certain water purveyors to develop and implement an approved watershed control program. The purveyor must monitor, limit, and control all facilities and activities in the watershed affecting source water quality to preclude degradation of the physical, chemical, microbiological, and radiological quality of the source (WAC 246-290-690). State law RCW 35.88.010.070 also provides Tacoma Water with authority over its sources of water supply.

The purpose of this document is to identify requirements for water supply protection that all landowners, their agents, and other visitors to the Green River Watershed must follow. The first publication of this manual was in 1952. It has been revised over time to reflect changes to Tacoma Water policies and procedures, regulatory revisions, and changes within the watershed area. With this update, this document has been incorporated into the overall Water System Plan for Tacoma Water. The following requirements have been adopted by the City of Tacoma's Public Utility Board to afford maximum compatible multiple use of the watershed area without jeopardizing the health and safety of Tacoma Water customers.

Revised - January 11, 1966

Revised - May 4, 1967

Revised - September 2, 1970

Revised - January 20, 1971

Revised - March 17, 1976

Revised and Approved by Public Utility Board - January 23, 1980

Revised and Approved by Public Utility Board - August 25, 1993

Revised and Approved by Public Utility Board - August 13, 2008

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CHAPTER I

CONTROL OF THE WATERSHED AREA

Background

The Green River Watershed encompasses a total of 231 square miles approximately 30 miles east of the City of Tacoma in the central Cascade Mountain Range. The Green River is the primary source of Tacoma Water's unfiltered drinking water supply. The water supply is disinfected, fluoridated, and treated for corrosion control; however, due to the high quality of the source water, filtration is not required. To protect public health and ensure a safe drinking water supply, it is necessary that source water quality within the watershed be protected from degradation and contamination. Since 1906 when the City of Tacoma first declared its intention of using the Green River as its source of municipal water supply, Tacoma Water has had a continuous program for sanitary control of the area.

In accordance with the laws of the State of Washington, and as required by the rules and regulations of the Washington State Department of Health, the Tacoma City Council has defined by Ordinance No. 11441 (Appendix A) the property and territory constituting the Green River Watershed over which Tacoma Water exercises certain authority and jurisdiction by virtue of ownership and cooperative agreements with landowners. Attached herewith is a map showing the boundaries of the Green River Watershed (Appendix B).

The requirements included in this document are intended to protect water quality in the watershed and complement requirements imposed by existing State and federal regulations. Tacoma Water may amend these requirements from time to time to conform to changes in watershed practices or technologies.

Regulatory Considerations

Public water systems in Washington are required to comply with WAC 246-290, the Washington State Department of Health drinking water regulations. These regulations set forth specific treatment requirements for surface water supplies such as Tacoma's Green River supply. Complete filtration treatment is required unless the utility can demonstrate that the water meets prescribed standards of quality and that potential sources of contamination in the watershed are effectively controlled. State regulations require utilities to demonstrate control of all human activities within the watershed that may adversely impact source water quality.

The Washington State Forest Practices Rules also provide important regulatory considerations; activities conducted in the watershed must meet the requirements outlined in the Forest Practices Rules (Title 222 WAC).

General Access Control

All roads entering the critical areas of the watershed are controlled by locked gates. Tacoma Water has jurisdiction over all access in the lower portion of the basin between the Headworks Gate and Massey Gates on the west and the gate at Friday Creek on the east. Tacoma Water provides surveillance over all land in the watershed.

Persons authorized in the area include workers for the various forest land and logging operations in the basin, the Bonneville Power Administration, the US Geological Survey, the US Forest

Service, Burlington Northern Santa Fe Railroad, State and Federal fish and wildlife agencies, the US Army Corps of Engineers, Puget Sound Energy, and other landowners. Hunters are also authorized during the annual special permit hunts. Activities of all persons while in the watershed are carefully controlled to preclude contamination. Portable toilets are provided and maintained by Tacoma Water at convenient locations within the watershed. Locations of permanent portable toilet installations are shown on the Green River Watershed map. Failure to use them as required may result in termination of access privileges.

Tacoma Water employees are on duty everyday and closely monitor watershed access and enforcement of these requirements. State trespass laws are used to control access.

CHAPTER II

ACCESS

Through cooperative agreements, Tacoma Water is authorized to limit Green River Watershed access to landowners and their agents. Other activities are controlled through a permit process. Tacoma Water maintains a number of locked gates on the roads leading into the watershed. The Green River Watershed map (Appendix B), indicates the locations of roadways and gates as well as land ownership. Entrance through these gates into the watershed area is granted on a permit basis. Tacoma Water's right to issue the permits is based on ownership of the roadway or by cooperative agreement with landowners. Access permits may be issued for those activities that are compatible with watershed management and Washington State Department of Health policies.

Westerly Access into the Green River Watershed

Road 5500

Road 5500 enters the watershed through the automatic, controlled gate at Tacoma Water's Green River Headworks, continuing through the watershed to Lester. Road 5500 follows a route on the north side of the Green River as shown on the Green River Watershed map.

Tacoma Water controls access on Road 5500 between the Headworks Gate on the west and the gate at Friday Creek on the east. The roadway is controlled through landowner agreements, US Army Corps of Engineers license, and by ownership of portions of the roadway.

Access for all landowner agents, contractors, or other visitors requires an access permit (Appendix C). After receipt of a permit and explanation of these watershed requirements, the driver will be responsible for any passengers and is required to inform them that they are entering a domestic water supply area. Any violations of the *Requirements for Protection of Water Supply in the Green River Watershed* will be grounds for issuing a Trespass / Incident Report (Appendix D) and denial of further access into the controlled areas of the Green River Watershed.

In addition to the access permit, supplemental requirements are in place for contractors. These special instructions for contractors are included in Chapter V. If a contractor desires access to other roadways that branch off of Road 5500, Tacoma Water must be contacted for any special requirements such as hauling permits, keys, or insurance.

Tacoma Water issues all commercial hauling permits on Road 5500.

Tacoma Water does not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to Road 5500 will be denied for any vehicle that does not have adequate insurance.

Green River Truck Road

Access on the Green River Truck Road (Road 3703) is controlled through landowner agreements and partial ownership by Tacoma Water from the Massey Gates located east of Cumberland. The roadway continues along the south side of the river, as shown on the Green River Watershed map. The Green River Truck Road is a private roadway. Access permits for use of the Green River Truck Road are issued by Tacoma Water. Hancock Forest Management issues all commercial hauling permits.

Tacoma Water and the other road owners do not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to the Green River Truck Road will be denied for any vehicle that is not adequately insured.

Gate Keys

Gate keys are issued by Tacoma Water (Appendix C) or watershed landowners to permit holders who require access into the Green River Watershed during off hours. Keys shall not be duplicated or loaned to anyone else.

All Tacoma Water-issued gate keys shall be returned to Tacoma Water before the noted expiration date.

Access into the Green River Watershed via All Other Routes

Access to eastern portion of the watershed (east of the gate at Friday Creek) over any road system from the east does not presently require the issuance of a permit. Landowner agents and other visitors cannot enter the gate at Friday Creek without a valid permit.

Access to contractors from the east via any road system does not require the issuance of an access permit unless the contractor wishes to work west of the gate at Friday Creek.

Access by air for contractors to work within the watershed will not be allowed without a valid permit.

Insurance Requirements

Property owners shall be responsible for verifying that their contractors and permit holders have adequate insurance.

Tacoma Water contractors and permit holders shall procure and keep effective a policy of public liability and property damage insurance naming Tacoma Water as an additional insured and protecting Tacoma Water and the permit holder with coverage of not less than \$500,000 combined single limit for each occurrence, providing coverage for property damage and/or personal injury including death. Said insurance shall also include contractual-type coverage and shall be primary over any insurance or self-insurance program Tacoma Water may have. A certificate of said policy including an endorsement naming Tacoma Water as an additional insured shall be forwarded to Tacoma Water for approval and filing prior to the exercise of any rights granted by the permit. The policy shall state that Tacoma Water will be provided 30 days' prior written notice in the event of cancellation of the policy.

CHAPTER III

OVERNIGHT STAYS

Temporary Residence

There are some cases where Tacoma Water determines it is in the best interest of watershed management to provide short-term temporary housing within certain areas of the watershed. This housing may be provided and/or allowed at the discretion of Tacoma Water. Any person staying within the watershed will be responsible to abide by these watershed requirements and notify their personnel that they are in a domestic water supply area. Any person observed violating these requirements or participating in any non-job-related activity west of the gate at Friday Creek will be subject to issuance of a Trespass / Incident Report and termination of access privileges.

Overnight lodging for fire surveillance or other special purposes may be authorized with prior approval of Tacoma Water.

CHAPTER IV

RULES AND REGULATIONS FOR MULTIPLE-USE FACILITIES AND OPERATIONS

As provided through ownership and cooperative agreements with landowners, it is the responsibility of Tacoma Water to ensure that contractors, corporations, and governmental agencies satisfy water quality protection requirements in the Green River Watershed. The applicable rules and regulations of the Washington State Department of Health (WAC 246-290), the Forest Practices Act, and the applicable laws of the State of Washington and its subdivisions apply to any activities in the watershed and are incorporated by this reference into these requirements.

The Washington State Forest Practices Rules provide detailed specifications for forest practices and are followed by Tacoma Water to ensure that the maintenance and operation of compatible multiple-use facilities within the Green River Watershed do not degrade water quality. For Tacoma Water-owned lands, Tacoma Water ensures that logging practices, road building, and maintenance activities meet current federal and state logging standards. For lands owned by other landowners, Tacoma Water reviews proposed activity plans and monitors the conduct of these activities. Tacoma Water attempts to resolve any identified problems in the field, but will report violations of the Forest Practices Act to the proper authorities if necessary.

In addition to the Forest Practices Rules and other existing rules and regulations, Tacoma Water implements additional requirements for the protection of water quality in the watershed. Special attention shall be paid to the following requirements for those visiting or working in the watershed:

1. Notification

Tacoma Water shall be notified by landowners and contractors one week prior to the actual starting of any project within the watershed requiring a Forest Practice Application.

2. Toilet Facilities

Tacoma Water shall be responsible for determining where toilet facilities shall be required and providing the required units. The contractor shall be responsible for providing a location to place the required units and encouraging their use.

3. Garbage

All trash and rubbish shall be collected in leak-proof containers and removed from the watershed. Trash and rubbish shall not be allowed to accumulate on the ground or in any water course. Such material shall not be disposed of by being deposited within the watershed area. All log landings and construction areas shall be kept clean of food waste, sandwich wrappers, etc. All vehicles shall have litterbags. Tacoma Water may provide garbage cans at the Headworks Gate and Massey Gates. Persons observed littering the roadways will be subject to citation and termination of access privileges.

4. Communicable Diseases

It shall be the duty of any person knowing or suspecting the presence of a communicable disease in an employee of his/her own to report these conditions immediately to the local health officer [King County Health Department hotline (206) 296-4774] and inform Tacoma Water [Gate Guard (360) 886-1601].

5. Rodent Control

The use of any disease-producing organism, such as the so-called "rat viruses", or any other bacteria for the purpose of rodent extermination, is prohibited.

6. Boating, Wading, and Equipment Use

No boating, wading, or equipment use — except as required in construction or operations — shall be authorized in the Green River, Eagle Gorge Reservoir, or in any stream, lake, or pond tributary to the same. In those instances in which such activities are unavoidable, Tacoma Water's decontamination procedures shall be followed (Appendix E).

7. Petroleum Products and Petroleum Product Spills

- a. Tankers, railroad tank cars, tank trucks, or other facilities used for the loading, unloading, and transportation of petroleum products shall be equipped for the collection of drips from the hose or other connections with the excess petroleum products contained in hose and pipelines.
- b. Wherever petroleum products are temporarily being stored within the watershed, provisions shall be made for catching accidental spills. These facilities shall be of such a capacity as to hold the maximum quantity of petroleum products possible from any one spill.
- c. If petroleum products or other undesirable materials are accidentally spilled into the Green River or its tributaries, immediate notification shall be given to Tacoma Water (at the emergency phone numbers provided) so the polluted water can be diverted before entering the water distribution system. Tacoma Water maintains oil spill equipment at the Green River Headworks. The contractor shall be liable for any damage from such river pollution.
- d. Emergency Phone Numbers
Gate Guard (24 Hours): (360) 886-1601
Green River Headworks (24 Hours): (253) 502-8346
- e. Any equipment leaking excess amounts of oil shall be repaired prior to continuation of its use within the watershed.

8. Turbidity Control

- a. Tacoma Water may require a project to be shut down within the Green River Watershed if it causes turbidity levels above 5.0 NTUs (Nephelometric Turbidity Units) at the water supply intake. The affected project shall be delayed until turbidity from the project can be reduced by sedimentation basin construction or until conditions allow for well water blending or replacement of the turbid river water.
- b. Where required, temporary sedimentation basins shall be provided of sufficient capacity to detain the runoff long enough to permit the water to significantly improve before being discharged into the main river or any tributary thereto.

Sedimentation basins shall meet Washington State Department of Ecology Stormwater Management Manual standards.

9. Spraying Herbicides, Insecticides, or Fertilizers

- a. The use and amounts of herbicides, insecticides, or fertilizers shall be limited to compounds and procedures as approved by Tacoma Water and the landowners and in accordance with the applicable rules and regulations of the Washington State Department of Health and the Forest Practice Rules (WAC 222-38). The list of approved chemicals includes the following:

- Glyphosate
- 2,4-D
- Triclopyr
- Imazapyr
- Sulfometuron Methyl
- Diuron/Oryzalin

Additional chemicals may also be acceptable but must be approved prior to use.

- b. Oil-based insecticides or herbicides shall not be used without prior approval of Tacoma Water.
- c. Two weeks' prior notice must be provided to Tacoma Water by contractors or landowners who are planning on applying herbicides, insecticides, or fertilizers. This advance notice is required for the following reasons:
 - To screen all chemicals and application methods to determine potential impact on the water supply area.
 - To locate water sampling sites which best represent any potential contamination of the river.
 - To collect water samples to be tested for each chemical applied; samples must be collected prior to chemical application, immediately after chemical application, 24 hours after chemical application, and after the next rain event (Appendix F).
 - To make arrangements for a Watershed Inspector to ride with or be available to the herbicide applicator during the application process.

10. Bridge Maintenance

Debris and material from bridge maintenance, such as rust, scale, paint, or dirt, shall be kept from dropping into the water. All work shall be carried out over a shield designed to catch such material so that they may be disposed of on land. When cleaning solvents are used, care must be taken to see that such solvents do not drop into the water.

11. Bridge Sanitation Requirements

All railroad bridges and other bridges that are to be upgraded shall be constructed to the maximum extent possible to prevent contamination of the water. Drainage from bridges should be carried onto the land on either end and disposed of in such a manner that it cannot be directly discharged or washed into the main channel.

12. Dust Control

Petroleum products shall not be used within the Green River Watershed for dust control.

CHAPTER V

SPECIAL INSTRUCTIONS TO CONTRACTORS WORKING IN THE GREEN RIVER WATERSHED

All contractor personnel must be fully instructed as to the nature of the land upon which they are to work and shall exercise proper restraint to prevent any possible contamination of the water supply. It is the express duty of the foremen and supervisors to prevent sanitary infractions and inform their workers of the danger arising from carelessness.

All permits for contractor access are issued for work purposes in a designated area only. Access is limited to a designated route to and from the work site. Failure to comply will subject the person to issuance of a trespass incident report and termination of access privileges.

No person shall be taken in or allowed to enter the watershed with a contractor unless that person is under the employment of the company receiving the access permit. **NO UNAUTHORIZED RIDERS ARE ALLOWED.** Each contractor working in the watershed shall provide Tacoma Water with a list of employees. This list must be kept current.

CHAPTER VI

RECREATION WITHIN THE GREEN RIVER WATERSHED

Unrestricted outdoor recreation in the watershed is not considered a compatible multipurpose use. Therefore fishing, swimming, hunting, and other recreational activities (other than special permit hunting and other limited recreational activities supervised by Tacoma Water) are not allowed within the borders of the Green River Watershed west of the gate at Friday Creek. Tacoma Water reserves the right to restrict access to its owned and controlled lands east of Friday Creek.

Any person apprehended accessing the controlled areas of the Green River Watershed for recreational purposes by land, water, or air will be issued a Watershed Trespass Incident Report and will be subject to being issued a King County Trespass Citation.

Tacoma Water, the Washington Department of Fish and Wildlife, and the Muckleshoot Indian Tribe jointly sponsor annual special permit hunts in the watershed in cooperation with the other landowners. Access and hunt activities are strictly controlled; all hunters must check in with staff at the Headworks Gate or Massey Gates and must obtain a "Road Use and Access Permit for Hunters" (in addition to their special hunting permit) to enter the watershed. No other recreational hunting is allowed in the watershed.

CHAPTER VII

TERMINATION OF ACCESS PRIVILEGES

Any violations of these requirements or of other applicable laws or regulations will subject the violating party and his/her employer's access permit to termination. Termination of access privileges will be initiated by a Tacoma Water letter to the individual involved as well as to the permit holder. The termination letter may offer the alleged violating party and permit holder an opportunity for a hearing before the City's Hearing Officer.

APPENDIX A

**CITY OF TACOMA ORDINANCE
NO. 11441**

ORDINANCE NO. 11441

BY DAVISSON:

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W.M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

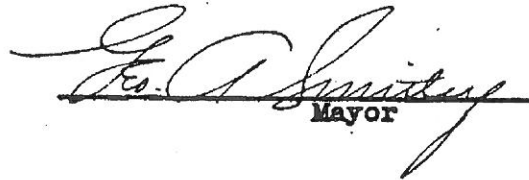
All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

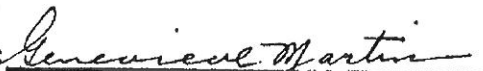
All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W.M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

citizens of the City of Tacoma and shall take effect immediately.
after publication.

Passed AUG 4 - 1937


Mayor

Attest: 
City Clerk

APPENDIX B

GREEN RIVER WATERSHED MAP

APPENDIX C

**ROAD USE/KEY PERMIT FORM FOR
THE GREEN RIVER WATERSHED**



No 9654

Permit No. _____

ROAD USE/KEY PERMIT FOR GREEN RIVER WATERSHED

Permit Date: _____ Expiration Date: _____

Printed Name: _____ Phone No: _____

Address: _____

Employer: _____

Vehicle License No./Description: _____

Key Issued: Yes No Issued by: _____

Purpose of Access: _____

The Green River watershed serves as the municipal fresh water supply for the City of Tacoma. Road use and area access are limited and controlled to protect public health. Access is only for the purpose stated above and limited to the segments of roadway owned or controlled by the City of Tacoma. Additional road use permits may be required. (Special requirements are detailed on the reverse side of this permit.)

An insurance policy must be provided by commercial haulers naming the City of Tacoma as an additional insured with minimum liability coverage of \$200,000.00 per person, \$500,000.00 per accident, and \$500,000.00 property damage.

Keys issued shall not be loaned to anyone nor duplicated. Keys are to be returned to the City of Tacoma, Water Division, PO Box 11007, Tacoma, WA 98411 on or before the expiration date indicated above.

Violations of the City's watershed regulations or any of the terms, conditions or requirements of this permit (as listed on the reverse side of this form) shall be cause for revocation of this permit and initiation of access termination procedures. Permittee(s) shall be subject to arrest and prosecution and/or impoundment of the above listed vehicle.

Permittee signature: _____

SPECIAL REQUIREMENTS

1. Permittee(s) shall not stop on the City of Tacoma roadways, except in case of vehicle mechanical failure or unsafe road conditions.
2. All permittee(s) and work crews granted access to the Green River watershed over City-owned or controlled roadways are required to comply with the City of Tacoma regulations, "Requirements for the Protection of Water Supply in the Green River Watershed." Copies are available upon request at the Headworks Control Station.
3. No person shall be taken in or allowed to enter the watershed with a permittee unless that person is in the employ of the permittee. No unauthorized riders are allowed.
4. People in charge of operations shall instruct all those who enter the watershed on their behalf about the nature of the watershed and the serious consequences arising from failure to comply with the City's regulations.
5. This permit is not assignable and any assignment of it shall be cause for revocation.
6. Permittee(s) acknowledge that the watershed roads are rough and appropriate driving precautions must be taken. Permittee(s) agree to hold harmless and indemnify the City of Tacoma, its officers, employees and other road owners and easement holders from all claims for monetary damages, litigation and judgements arising from or related to the use of the watershed roads and other access privileges.
7. The City does not warrant the condition of the road, and permittee(s) use the roadway at their own risk.
8. The permittee(s) shall not trespass on the property right of the City of Tacoma or other landowners in the watershed and shall not commit any act that may affect the quality of water.
9. Except for a limited permit hunt, recreation is not allowed within the controlled area of the watershed.

APPENDIX D

**TRESPASS/INCIDENT REPORT
FORM**

REPORT NUMBER 000316		CITY OF TACOMA GREEN RIVER WATERSHED TRESPASS REPORT				CASE NUMBER	
NAME: LAST		FIRST		INITIAL		VEHICLE LICENSE NO.	
ADDRESS						VEH. YR.	MAKE
CITY						COLOR	EXPIRES
STATE		ZIP CODE		EMPLOYER		STATE	EXPIRES
SEX	RACE	DATE OF BIRTH	HEIGHT	WEIGHT	EYES	HAIR	OWNER IF OTHER THAN DRIVER
DRIVER'S LICENSE NO.		STATE		EXPIRES	RESIDENCE PHONE NO.		ADDRESS
DATE:	MO.	DAY	YR.	TIME:		CITY	STATE
LOCATION: SECTION		TOWNSHIP		RANGE		REPORT FILED BY:	
SHERIFF CALLED		YES		NO		NAME OF OFFICER	
						BADGE NO.	

APPENDIX E

DECONTAMINATION OF EQUIPMENT AND SUPPLIES

Decontamination of Equipment and Supplies

Equipment disinfection and cleaning must be done in the presence of a representative of Tacoma Public Utilities. Contact the Watershed Supervisor or Environmental Technician to schedule cleaning and to have the work witnessed and documented. All equipment, machinery, and supplies to be used in the watershed that could be exposed to waters upstream of Tacoma Water's intake facility must be cleaned and disinfected at a location outside the watershed. The terms "machinery" and "equipment" include, but are not limited to, boats, barges, trailers, cables on heavy equipment, scientific equipment, drilling rigs, excavators, silt curtains, hoses, pumps, shovels, waders, nets, scuba equipment, and any other personal equipment that will be exposed to the water. The term "materials" includes all permanent and temporary construction materials including, but not limited to, concrete, metal, plastics, pipes, hardware, cables, ropes, valves, or other items used for projects that could be exposed to the water. Decontamination of construction materials, boats, and equipment entering the watershed shall require the following items:

1. Pressure washer using a minimum pressure of 2,000 pounds per square inch at a minimum temperature of 180 degrees F.
2. Pressurized tank sprayer or spray bottle suitable for chlorine application.
3. Chlorine bleach.
4. Biodegradable soap (for equipment and materials that would be damaged by chlorine).
5. Personnel performing decontamination shall wear the appropriate protective equipment to prevent injury.

Procedures for Decontamination of Equipment and Materials.

1. The decontamination requirement covers all aquatic vessels, machinery, equipment, and materials that are new or have been previously used outside the Green River Watershed and that will be exposed to the waters of the river, its tributaries, or the reservoir. The decontamination and cleaning procedure has four steps:
 - A. Visual inspection and physical removal and disposal of obvious plant fragments and mussel shells.
 - B. Pressure wash at 180 degrees F to remove all oil, grease, and debris.
 - C. Wash with chlorine solution.
 - D. Final visual inspection by Tacoma Water representative.
2. Detailed procedures for inspection by Tacoma Water personnel.
 - A. Examine all parts of the equipment, looking for any plant fragments, mussel shells, or any foreign matter.
 - 1) If material is green or looks like a clamshell, remove it. Pay special attention to the following areas where small plant pieces or mussel shells can easily be hidden or lodged:

- a) Storage wells and the floors of boats.
- b) Motor, propeller, and motor well and internal wetted surfaces.
- c) Hitch and bumper area.
- d) Trailer frame, inside and outside.
- e) Vehicle and trailer axles and fender wells.
- f) Gears, tracks, shovels, and axles on mechanized equipment.

B. Directions for pressure washing surfaces with hot water.

- 1) Slowly direct the pressure washer stream at all surfaces with special attention on the areas listed above. The pressure washer shall provide a minimum temperature of 180 degrees F and a minimum pressure of 2,000 PSI. Pressure washing technique may vary for materials having different sensitivity to pressure and temperature. The nozzle type, spray distance, and application rate shall be adjusted to thoroughly remove all foreign substances without damaging the equipment being decontaminated.
- 2) For new equipment or fragile materials that could be damaged by the pressure washer (e.g., fabrics and scientific instruments), surfaces may be washed with a brush during the next step instead of a pressure washer. Temperature-sensitive equipment may be stored completely dry for at least 10 days at the decontamination site as an alternative to pressure washing with hot water.
- 3) Machinery shall be examined for petroleum or chemical contamination. Examine hydraulic hoses and fittings for deterioration and wear so they are maintained in a state that prevents spills or contamination.

C. Wash surfaces with chlorine solution, following safety and environmental precautions outlined below:

- 1) Follow pressure wash with chlorine solution applied with a coarse spray using a pressurized tank sprayer or spray bottle. Concentrate spray especially toward tight spaces and crannies where plant pieces or shells might collect. Allow bleach solution to remain on the equipment for a minimum of 10 minutes. Rinse bleach solution off with fresh water.
- 2) For cleaning equipment that is damaged by bleach, scrubbing with biodegradable soap is the accepted alternative. This is acceptable for personal equipment such as rubber boots, waders, and dive suits. Inflatable watercraft must be inspected in an inflated condition so it can be thoroughly washed with biodegradable soap after all surfaces have been inspected.
- 3) Chlorine solution is not stable and must be made fresh daily. It readily decomposes to salt and water when exposed to sunlight. An effective chlorine solution must contain approximately 200 mg/L free available chlorine. This concentration can be obtained by diluting fresh household bleach (off-the-shelf Clorox contains approximately 5% chlorine), according to the following table:

<u>Household Bleach</u>	<u>Water</u>
4 milliliters	1 liter
40 milliliters	10 liters
1 tablespoon	1 gallon
1 cup	16 gallons
3 ¼ cups	50 gallons

- 4) Personal safety precautions shall be taken at all times when handling and applying chlorine solution.
- D. Directions for cleaning of outboard engines and machinery with internal surfaces that contact waters upstream of Tacoma Water's intake.
 - 1) Experience has shown that both plants and mollusks inhabit the wetted surfaces of engines and machinery that are exposed to contact with other waters. The following is a list of parts that need to be disassembled in order to be inspected, cleaned, and decontaminated:
 - a) Drive shaft housing cover
 - b) Drive shaft housing and wetted cavity
 - c) Clamp bracket assembly
 - d) Swivel bracket assembly
 - e) Propeller shaft and seals

In addition to the cleaning and inspection, the water-cooled surfaces will be flushed with three cycles of water at 180 degrees F.

3. Environmental Precautions for Use of Chlorine Solution:
 - A. To protect the environment, take care to prevent the chlorine solution from entering or being washed directly into surface waters. The Contractor shall use a coarse spray for chlorine applications and rinse the equipment where the rinse water will puddle to allow time for the photodecomposition process.
 - B. Sodium ascorbate will neutralize chlorine at ratios between 1.6 and 3 by weight depending on the pH of the solution. Based on a ratio of 2.5 for a pH of 7.8, 500 mg/L of sodium ascorbate is needed to neutralize 200 mg/L of free available chlorine. Therefore, 0.21 pounds (95 grams) of sodium ascorbate is needed to neutralize 50 gallons of chlorine wastewater solution. Adjust the amount of sodium ascorbate in proportion to the amount of chlorine solution. Test the neutralized chlorine solution for total residual chlorine using a field test kit.
 - C. Inspect all surfaces again for plant fragments or mussel shells. A final inspection and approval of vessels, machinery, and equipment must be conducted by Tacoma Water personnel and documented in an equipment decontamination log.

APPENDIX F

SAMPLE COLLECTION PROCEDURE DURING HERBICIDE SPRAYING

Headworks Phone Circuit

(Updated by N. Johnson on February 10, 2009)

I. Watershed Office (WO)

- A. Qwest Phone - (360) 886-8997 Brett Cook-Wade Green

II. Headworks Control Station (HCS)

- A. Qwest Phone
 - 1. (360) 886-0894 - Intake/I-Grid Power Monitor Reporting.
- B. Tacoma Phone
 - 1. (253) 396-3322 - COMM 32000 cabinet (share with CF, OG, OD)

III. Headworks Intake (HI)

- A. Qwest Phone - (360) 886-0894 - Conf. Room/I-Grid Power Monitor Reporting.
- B. Tacoma Phone - (253) 502-8829 - Conf. Room

IV. Watershed Maintenance Building (WMB)

- A. Qwest Phone
 - 1. (360) 886-1723 - Primary Fire Alarm
 - 2. (360) 886-7929 - Secondary Fire Alarm (Share with CF, OG, OD, OB)

V. Chemical Facility (CF)

- A. Qwest Phone
 - 1. (360) 886-7027 - Primary Fire Alarm
 - 2. (360) 886-7929 - Secondary Fire Alarm (share with OG, OD, WMB, OB)
- B. Tacoma Phone - (253) 396-3322 (share with HCS, OG, OD)

VI. North Fork Wells (NF)

- A. Tacoma Phone
 - 1. (253) 502-8345
 - 2. North Fork #3 Microwave Ringdown

VII. Headworks Communication Building (HCB)

- A. Tacoma Phone - (253) 396-3281

VIII. Headworks Residents

- A. Qwest Phone
 - 1. (360) 886-2935 - Spare

IX. Lester

- A. Qwest Phone - (360) 886-1617

X. Ozone Generation Building (OG)

- A. Qwest Phone
 - 1. (360) 886-1044 - Primary Fire Alarm
 - 2. (360) 886-7929 - Secondary Fire Alarm (share with CF, OD, WMB, OB)

- B. Tacoma Phone - (253) 396-3322 (share with CF, HCS, OD)

XI. Ozone Destruction Building (OD)

- A. Qwest Phone
 - 1. (360) 886-1931 - Primary Fire Alarm
 - 2. (360) 886-7929 - Secondary Fire Alarm (share with CF, OG, WMB, OB)
- B. Tacoma Phone - (253) 396-3322 (share with CF, HCS, OG)

XII. Operations Center (OC)

- A. Qwest Phone
 - 1. (360) 886-2913 - Primary Fire Alarm
 - 2. (360) 886-7929 - Secondary Fire Alarm (share with CF, OG, WMB, OD)
 - 3. (360) 886-2018 - B. King(2nd), Kate Brendal (2nd)
 - 4. (360) 886-1745 - Secondary Watershed Inspector
 - 5. (360) 886-1601 - Secondary Control Room
- B. Tacoma Phone
 - 1. (253) 502-8808 - Bryan King
 - 2. (253) 502-8809 - FAX
 - 3. (253) 502-8860 - Doug Blanchard
 - 4. (253) 502-8697 - Maint Shop
 - 5. (253) 502-8346 - Control Room
 - 6. (253) 396-3148 - Kate Brendal
 - 7. (253) 396-3162 - Chris McMeen
 - 8. (253) 396-3172 - Hilary Lorenz
 - 9. (253) 396-3185 - Conference Room
 - 10. (253) 396-3191 - Jeff Bolam
 - 11. (253) 396-3310 - Shop/Lisa
 - 12. (253) 396-3311 - Lee Barry
 - 13. (253) 396-3312 - Dave Lovelace
 - 14. (253) 396-3313 - Brian Milliken
 - 15. (253) 396-3314 - Ken Kurfurst

XIII. Guard Shack (GS)

- A. Qwest Phone
 - 1. (360) 886-1601 - Gateguard
 - 2. (360) 886-8900 - FAX

GREEN RIVER WATERSHED COOPERATIVE AGREEMENT

Preamble

The Green River Watershed has been utilized as Tacoma's primary source of municipal water supply since 1913. It also serves as a primary or secondary water source for a number of other communities in Pierce and King Counties

Control of human activities within the watershed is a critical element for water quality protection. Since there are several landowners in the watershed in addition to the City, the City has historically pursued cooperative agreements with the other owners to achieve the required degree of control. In the 1940s and 1950s these took the form of "Police Power" agreements which have served well until recent times. These agreements focused primarily on control of trespassers and forest fires. With significant changes in water quality regulations, new and evolving forest practices, changes in land ownerships, and transportation concerns, the agreements need to be revised to be responsive to current conditions.

Therefore, the agreement contained herein is designed and intended to document the continued cooperation between the landowners and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners.

Agreement

THIS AGREEMENT, made as of the 5th day of APRIL 2016 between GREEN RIVER TIMBERLANDS, LLC hereinafter called the "Company" and the City of Tacoma, Washington, a municipal corporation, hereinafter called the "City."

DECLARATIONS:

WHEREAS, the Company has owned and managed its forest lands within the Green River Watershed since SEPT, 2014, and

WHEREAS, without the cooperation of the Company, the City in some instances may be required to consider requesting the City Council to authorize the exercise of its eminent domain power, and

WHEREAS, the Company is desirous of cooperating with the City in return of certain management support services, including but not limited to forest fire patrol and first attack response, and security patrol on the lands located within the boundaries of the Green River Watershed, from which Watershed the City obtains most of its municipal water supply (attached and made a part hereof is a map marked Exhibit "A," showing the approximate boundaries of the Green River Watershed and Exhibit "B," the written description of the Watershed boundaries), and

WHEREAS, both parties recognize that production and protection of high quality water is directly related to land management, land utilization, human activities, and natural events, and

WHEREAS, both parties recognize that well planned and executed forest management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the Company's management objectives,

and

WHEREAS, both parties recognize the right of each party to control access upon their respective lands and roadways, and

WHEREAS, both parties recognize that a long-term cooperative approach to management of the Green River Watershed will produce mutual benefits for all concerned;

NOW, THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE COMPANY

A. The Company, during the life of this agreement, hereby authorizes the City to patrol the Company's Green River Watershed lands against trespassers thereon, against the starting thereon or spreading thereto of any fire and may exclude therefrom and prevent the entry thereon, at all times and for any purpose, of any person or persons other than officers, agents or permittees of the Company. The City is also authorized to enter said Company lands for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.

B. The Company recognizes that gates may be deemed necessary by the City on Company roads entering the Watershed. The Company agrees to provide written authorization to the City for gates once locations have been agreed upon. The installation, operation, and maintenance of all such gates if desired by City shall be the responsibility of and shall be at the expense of the City. Gate watchmen, if required by the City, shall likewise be the responsibility of and shall be at the expense of the City, unless otherwise agreed. All gates shall be fitted with Company locks or the Company shall be provided keys for the City's locks. At such times as logging operations and timber hauling are in

progress within the Watershed, gates may be left open during working hours. Gates shall remain closed and locked at other hours and at other times

C. The Company reserves to itself and to its successors and assigns the absolute right, at all times, to occupy, enter upon and utilize its lands, and the whole thereof, for any purpose or purposes incident to the ownership thereof and particularly for the purpose of growing, cultivating, and producing timber, trees, and forest growth thereon, and reforesting the same, logging, harvesting, and removing timber, trees, forest growth and forest crops therefrom, and constructing, maintaining and using such roads, trails, and other improvements as may be necessary or incidental to such operations. The Company agrees to notify in advance the City regarding any proposed plans to conduct non-forest management- related activities or land uses within the Watershed. It is understood and agreed that all proposed uses within the Watershed would be conducted consistent with the City's written "Requirements for Protection of Water Supply in the Green River Watershed."

II. THE CITY

A. The City during the life of this Agreement hereby agrees to perform its obligation, under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed. Also, the City will provide timely reports to the Company regarding its patrol and inspection activities.

B. The City shall reimburse the Company for extraordinary costs incurred by the Company in its attempt to satisfy written requests by the City's Water Division Superintendent to change its forestry related activities and timber harvesting on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary costs are the costs in excess of the Company's ordinary costs to achieve compliance with the Forest Practices Act (Chapter 76.09 RCW), the

Shoreline Management Act (Chapter 90.58 RCW), and other applicable laws and regulations thereon as applicable to its lands within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity.

C. Upon being informed by the Company that an activity will occur, the City will, within 30 calendar days, notify the Company of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The Company shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City will either agree to pay the amount specified by the Company or request a meeting to review the matter. If the City agrees to pay the amount specified by the Company, payment will be made by the City within 60 days of date of Agreement. If the City fails to respond within 30 days to the Company's documentation or if the parties are unable to reach mutual agreement, it is understood the Company may choose to proceed as originally proposed. City shall not be obligated to reimburse Company for any cost that is more than 10 percent above Company's estimate.

III BOTH PARTIES

A. Both parties agree to accept and abide by the requirements contained in a manual titled "Requirements for the Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements," dated August 25, 1993 and attached hereto and marked Exhibit "C"), as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the Company for review and comment. Revisions to the Requirements will not be enforceable upon Company lands or on Company's solely owned access roads without the Company's specific written approval.

B. Both parties agree to investigate any and all alleged violations of the

Requirements by the Company, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations

C. Both parties agree to share with each other prior to May 31 of each year their respective annual plan for land management activities within the Watershed. These plans will be written in sufficient detail to allow both parties to plan and schedule their land management activities. Both parties agree to notify the other of any changes to such plans at least 30 days prior to implementing such changes on the ground.

D. Both parties agree to communicate on all proposed changes to policies, laws and/or regulations which may affect land management or production of timber or water in the Green River Watershed.

E. Both parties agree this Agreement shall be and remain in force and effect until December 31, 2016 and from year to year thereafter until terminated by written notice of termination given by the chief operating officer of either party hereto to the other not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until either party no longer maintains interest in said portion of said lands

F. Both parties agree to conduct a joint performance review of this Agreement on an annual basis for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.

G. To the fullest extent allowed by law, the City and Company agree to defend, indemnify, and save harmless the other respective party, its officers, employees and agents from all costs, damages, claims, and legal actions that may arise or pertain to exercising any rights under this agreement including damage, injuries or death incurred by or to the City or Company's employees or employees of the City or Company's contractor(s), subcontractor(s), agent(s) or permittee(s), provided that this indemnification is not

applicable to the sole negligence or willful misconduct of either party. In addition, the Company and City acknowledge that they may be waiving immunity under Title 51 RCW, the Industrial Insurance law and that this agreement is mutually negotiated. Furthermore this agreement is intended to be strictly for the benefit of each party and no individual shall be entitled to additional rights and/or remedies.

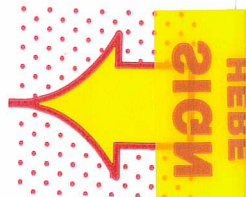
H. Neither party shall deposit any waste or debris on the other party's lands and shall not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the other party.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

This agreement supersedes and replaces any similar general agreement between the parties hereto.

04/05/2016

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES



By DAG RUTHERFORD

By Linda McCrea

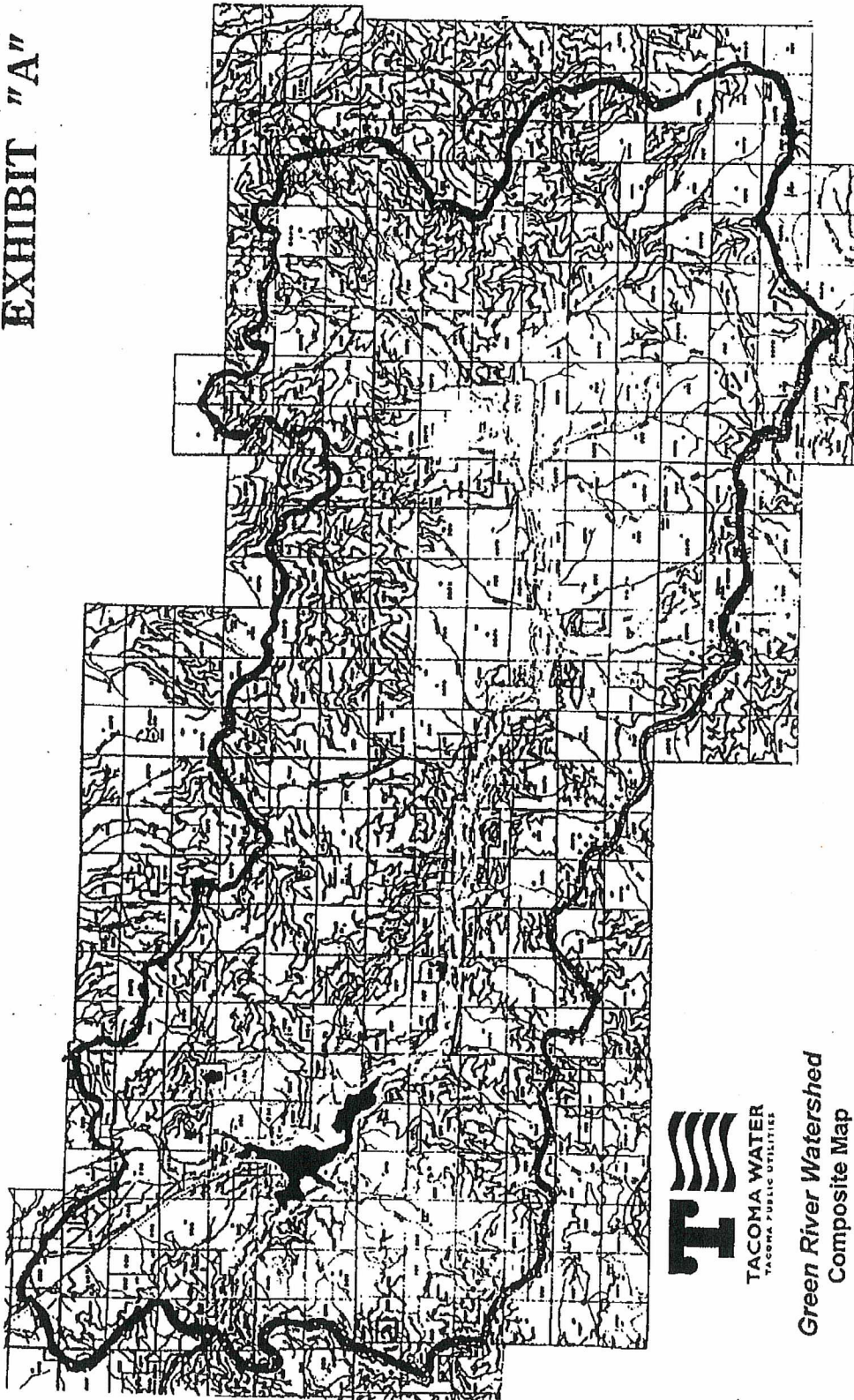
Linda McCrea, Water Superintendent

Dag Rutherford
Investment Manager for
Green River Timberlands, LLC

Approved as to form & legality:

[Signature]
Chief Asst. City Attorney
Deputy

EXHIBIT "A"



Green River Watershed
Composite Map
OWNERSHIP

ORDINANCE NO. 11441

BY DAVISSON:

EXHIBIT "B"

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

EXHIBIT "B"

All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W. M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

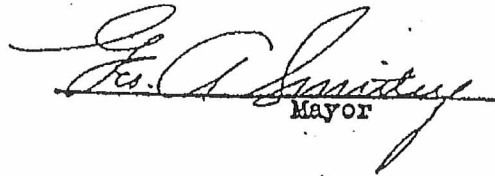
All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W. M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

EXHIBIT "B"

citizens of the City of Tacoma and shall take effect immediately.
after publication.

Passed AUG 4 - 1937


Mayor

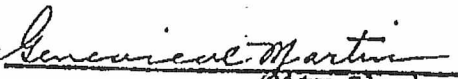
Attest: 
City Clerk

EXHIBIT "C"

Tacoma Public Utilities
Water Division

*"Requirements for the Protection of
Water Supply in the Green River Watershed"*

Revised and Approved by Utility Board – August 25, 1993

The above referenced manual is on file at:

Tacoma Public Utilities
Real Property Services
3628 South 35th Street
Tacoma, WA 98409-3192

July 26, 1984

FS Control #84-06-58-5

MEMORANDUM OF UNDERSTANDING BETWEEN THE
USDA FOREST SERVICE AND THE CITY OF TACOMA, WASHINGTON

FOR THE PURPOSE OF MANAGING THE WATER SUPPLY VALUES OF THE NATIONAL FOREST
LANDS IN THE GREEN RIVER DRAINAGE AND PROVIDING FOR THE MANAGEMENT OF
THOSE LANDS AND THEIR RESOURCES IN A MANNER WHICH WILL BEST HARMONIZE
PRESENT AND FORESEEABLE RESOURCE USE WITH DOMESTIC WATER SUPPLY NEEDS, FOR
THE CITY OF TACOMA, WASHINGTON,

THIS AGREEMENT, made this 29th day of Aug 1984, by
and between the United States of America, acting by and through the United
States Department of Agriculture, Forest Service, represented by the
Regional Forester executing this Agreement, hereinafter called the "Forest
Service," and City of Tacoma, State of Washington, acting by and through
its Mayor, hereinafter called the "City," WITNESSETH:

WHEREAS, the following described lands, all that portion of the
Mt. Baker-Snoqualmie National Forest lying within the Green River drainage
in Townships 19, 20, and 21 North, Ranges 8, 9, 10, 11, and 12 East,
hereinafter called the "drainage," comprising a total of 148,000 acres
more or less of which 42,000 acres more or less are National Forest lands
administered by the Mt. Baker-Snoqualmie National Forest, form a part of
the unfiltered water supply source for domestic consumption of the City;
and

WHEREAS, this consumption commenced in 1913 and has continued to
the present day; and

WHEREAS, the City's primary objective is to furnish an
uninterrupted supply of water meeting all standards of purity, quality,

Mapwood

A-2605

1 taste, and temperature requiring a minimum of treatment at reasonable cost
2 to the consumer; and in compliance with Federal and State safe drinking
3 water requirements under the provisions of the Federal Safe Drinking Water
4 Act of 1974; and

5 WHEREAS, the Forest Service manages the National Forest lands
6 within the Green River drainage for multiple use and sustained yield, as
7 defined by the Multiple Use-Sustained Yield Act of June 12, 1960, and the
8 National Forest Management Act of 1976. Under these controlling federal
9 statutes, National Forest lands are to be administered for outdoor --
10 recreation, range, soil, timber, watershed, wildlife, and fish purposes;
11 and

12 WHEREAS, the Forest Service owns and controls certain roads
13 within the drainage that are not needed for public access to and from
14 National Forest lands, which condition results from a land exchange
15 program in which the Forest Service has in the past, and plans to
16 continue, to convey portions of certain drainage lands to other
17 ownerships; and

18 WHEREAS, the Secretary of Agriculture, by letter dated
19 November 23, 1964, authorized the Forest Service to develop an agreement
20 with the City; and

21 WHEREAS, the City and the Forest Service wish to cooperate in
22 achieving the objectives of this Agreement.

23 NOW, THEREFORE, it is agreed that:

24 I. The Forest Service agrees:

25 A. To relinquish to the underlying landowner, within two
26 years of signing this Agreement, the public use rights
27

I. A. (Continued)

it owns on all roads in the Phase I Area as depicted in Exhibit A attached hereto and forming a part of this Agreement. The Forest Service may retain all other rights in these roads owned by the United States.

B. If land exchanges occur in the Phase II or Phase III areas as depicted in Exhibit A attached hereto and forming a part of this Agreement, then to relinquish to the underlying landowner the public use right the Forest Service owns on all roads in these areas within two years of conveyance of its title to the land except as specified in paragraph III A. The Forest Service may retain all other rights in these roads owned by the United States. It is the intent of the Forest Service to expedite the relinquishment of these public use rights.

C. That subsequent to conveyance by exchange of the lands in T20N, R10E, Sections 20, 22, and 28 only, described in Paragraph III B below, the Forest Service shall relinquish within two years to the underlying landowner the public use rights on all roads in the Phase IA Area as depicted in Exhibit A attached hereto and forming a part of this Agreement. The Forest Service may retain all other rights in these roads owned by the United States.

D. That if Forest Service contractors, timber sale purchasers, or their agents and contractors have special

I. D. (Continued)

needs to stay overnight within the drainage, their contracts shall specify a means for disposal of human waste and litter, and restoration of site upon removal of overnight facilities.

E. To discourage contractors, purchaser, agents, or the public from overnight camping within 200 feet of any perennial stream.

F. Not to develop campgrounds on National Forest land within the drainage unless the Forest Service concludes that such sites will help safeguard water quality. Any proposal to develop campgrounds shall include consultation with the City and the State Department of Social and Health Services.

G. That the City may provide human waste disposal facilities at Forest Service firewood cutting areas. Waste facilities and signing shall be provided and maintained by the City.

H. To discourage the issuance of Recreation Event Special Use Permits within the drainage for public or private gatherings such as, but not limited to, concerts, religious gatherings, group parties, or recreational vehicle clubs.

II. The City agrees:

A. To pursue acquisition of private lands of approximately equal value within the exchange boundary of the Mt. Baker-Snoqualmie National Forest to offer in exchange for lands identified in Paragraph III B below.

1 II. B. To, at its expense, provide, install and maintain all
2 signs, gates and sanitary facilities developed pursuant
3 to Paragraphs I G, III C, and D of this Agreement unless
4 otherwise mutually agreed upon.

5 C. To grant to the Forest Service an unlimited right-of-way
6 easement in a form as shown in Exhibit B, attached
7 hereto and forming a part of this Agreement, on all
8 existing City owned or controlled roads in Section 21,
9 T20N, R11E, W.M. Provided that such easement shall be
10 executed simultaneous with the Forest Service executing
11 the transaction herein specified under Paragraph I A.

12 D. To grant permanent administrative road use easements to
13 the Forest Service for the road known as the 5530 Road,
14 upon completion of the land exchange described in
15 Paragraph III B of this Agreement.

16 III. Both parties agree:

17 A. To move the boundary of Phase II or Phase III Areas
18 shown in Exhibit A and as described in Paragraph I B
19 above, to conform to completed land exchange areas. The
20 intent in relocating boundaries is not to have the
21 effect of limiting public use of National Forest land
22 and roads with public use rights. Nor is the intent to
23 permit public use on City-owned or controlled lands or
24 roads where public use rights do not exist.

25 B. To pursue a land exchange, whereby the City would select
26 all National Forest lands comprising approximately
27
28

III. B. (Continued)

1,000 acres in T 20 N, R 10 E, Sections 20, 22, 24, and 28; T 20 N, R 9 E, Section 16; and T 20 N, R 11 E, Section 18. Other National Forest lands may be included as mutually agreed upon. A non binding target date for completion of this exchange is approximately two years from the time the City acquires the ability to transfer lands and title acceptable to the Forest Service.

C. That the parties may agree to jointly sponsor City/Forest Service signs at road entry points and other locations within the drainage. No jointly sponsored sign shall have the effect or intent of limiting public use of National Forest lands or roads with public use rights. All jointly sponsored sign wording, size, color, and shape shall be mutually agreed to by both parties.

D. That the parties may agree to jointly sponsor City/Forest Service gates with locks located on National Forest lands or roads at entry points to the drainage and at other locations within the drainage both as are mutually agreed upon except that no jointly sponsored gate shall be located to limit public use of National Forest land or of roads with public use rights. The Forest Service may install and maintain a lock on these gates to allow entry and exit for administrative and official business.

1 III. E. Existing City gates and City signs on National Forest
2 lands or road right-of-ways with public use rights shall
3 be reviewed within three months for compliance with this
4 Agreement. If the sign or gate does not comply with
5 this Agreement the Forest Supervisor and Director of
6 Public Utilities shall review the matter and take
7 appropriate action.

8 F. The City and the Forest Service each reserve all rights
9 in and to lands under their respective control, --
10 including the right to sign and gate property in the
11 same manner as would be lawful absent this Agreement.
12 None of the terms or conditions of this Agreement shall
13 be deemed a waiver of any right, privilege or adverse
14 claim made by the parties, except as expressly provided
15 for herein.

16 G. That if a fire occurs or endangers the drainage lands,
17 the Forest Service may establish temporary fire-fighting
18 camps with overnight facilities. By mutual agreement
19 such camps may be located on City land. Particular
20 attention should be given to: Means to dispose of human
21 waste and litter, distance from water course, and
22 restoration of site upon removal of camp.

23 H. That the general public and recreationists shall
24 continue to have access to National Forest lands,
25 including dispersed overnight-use, and use of roads that
26 have legal public use rights including those roads
27

III. H. (Continued)

traversing City owned land unless otherwise agreed to by the Forest Service, provided that this paragraph does not apply to any City owned or controlled lands or roads that do not have established public use rights and shall not be construed as permission by the City for public use of any such City owned or controlled lands or roads.

I. Nothing in this Agreement shall be construed to prevent persons from traveling to and from their residences and/or private property located within the drainage, nor the visitors of such persons from traveling to and from these persons' residences or private property, nor shall any provision herein operate in derogation of prior-acquired private rights.

J. Upon reasonable identification, prior notice by the Forest Service, or presentation of a Forest Service permit, contract, or other authorizing Forest Service document, the City will facilitate passage through their west gate near the Water Division Headworks on Road 54 to the Forest Service, its officers, agents, contractors, servants, employees, or others who may need to use the said project road system for purposes arising out of Forest Service activities, and also to permit entry to authorized permittees of the Forest Service under its published rules and regulations, including, but not limited to, the hauling of timber products by timber sales purchasers and their agents and contractors

III. J. (Continued)

1 in common with other authorized users. The intent of
2 this paragraph is to develop a procedure for
3 implementing the rights to pass through the west gate
4 and it is not the intent to extend authority beyond that
5 shown in: Howard A. Hanson Dam and Eagle Gorge
6 Reservoir Project Department of the Army License to City
7 of Tacoma (No. DA(S)45-108-CIVENG-60-9) dated October 1,
8 1959.

9 K. To meet at least annually to review Forest Service-and
10 City work plans that may effect the other party,
11 anticipated contractor or permittee work within the said
12 drainage, informational or educational materials
13 referencing activities within the drainage, and other
14 issues of mutual interest.

15 L. To cooperate with the Department of Social and Health
16 Services to provide available data that may be helpful
17 in the study of the drainage and the water quality. The
18 Forest Service and City may jointly cooperate on studies.

19 M. That nothing in this Agreement shall be construed as
20 obligating the Forest Service or the City to expend
21 funds, or as involving the United States or the City in
22 any contract or other obligation for the future payment
23 of money, in excess of appropriations authorized by law.

24 N. That if one party to this Agreement makes a formal
25 complaint to the other party concerning their acts or
26 omissions or those of their employees or agents which
27

III. N. (Continued)

are believed to be contrary to or in violation of the provisions of this Agreement; then upon receipt of such complaint in writing, the receiving party shall immediately ascertain the facts involved and shall take steps to remedy the condition without delay, or the party initiating the complaint shall be advised in writing of the reasons or authority for declining to take corrective action. Both parties agree to exhaust this formal complaint process before initiating the termination process found in Paragraph III O.

O. That this Agreement may be terminated by either party upon written notice to the other of not less than 90 days prior to the date of termination. The written notice shall set forth the reasons for termination. Such termination shall not affect the validity of any legal document executed and delivered by the respective parties prior to termination.

P. That this Agreement may be amended, changed or altered as mutually agreed upon in writing by the City and Forest Service as deemed necessary or desirable, and it shall become a part of this Agreement.

Q. That no member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Agreement or to any benefit that may arise therefrom unless it is made with a corporation for its general benefit.

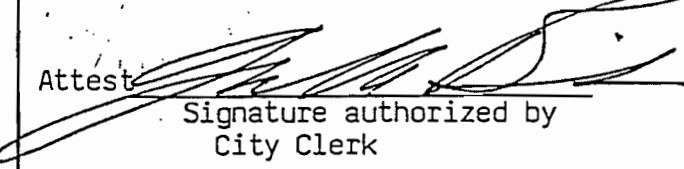
1 IN WITNESS WHEREOF, the parties hereto have executed this
2 Agreement as of the date first above written.

3
4
5 Seal of City attached
6 (Seal of City)

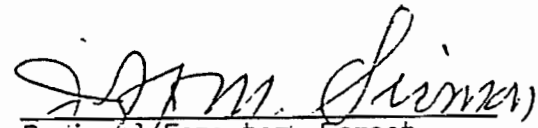
THE CITY OF TACOMA, WASHINGTON

7
8 By 

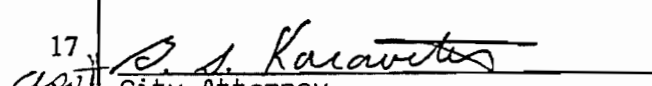
Mayor

9
10 Attest 

Signature authorized by
City Clerk

11
12 
13 Regional Forester, Forest
14 Service Pacific Northwest
15 Region, Portland

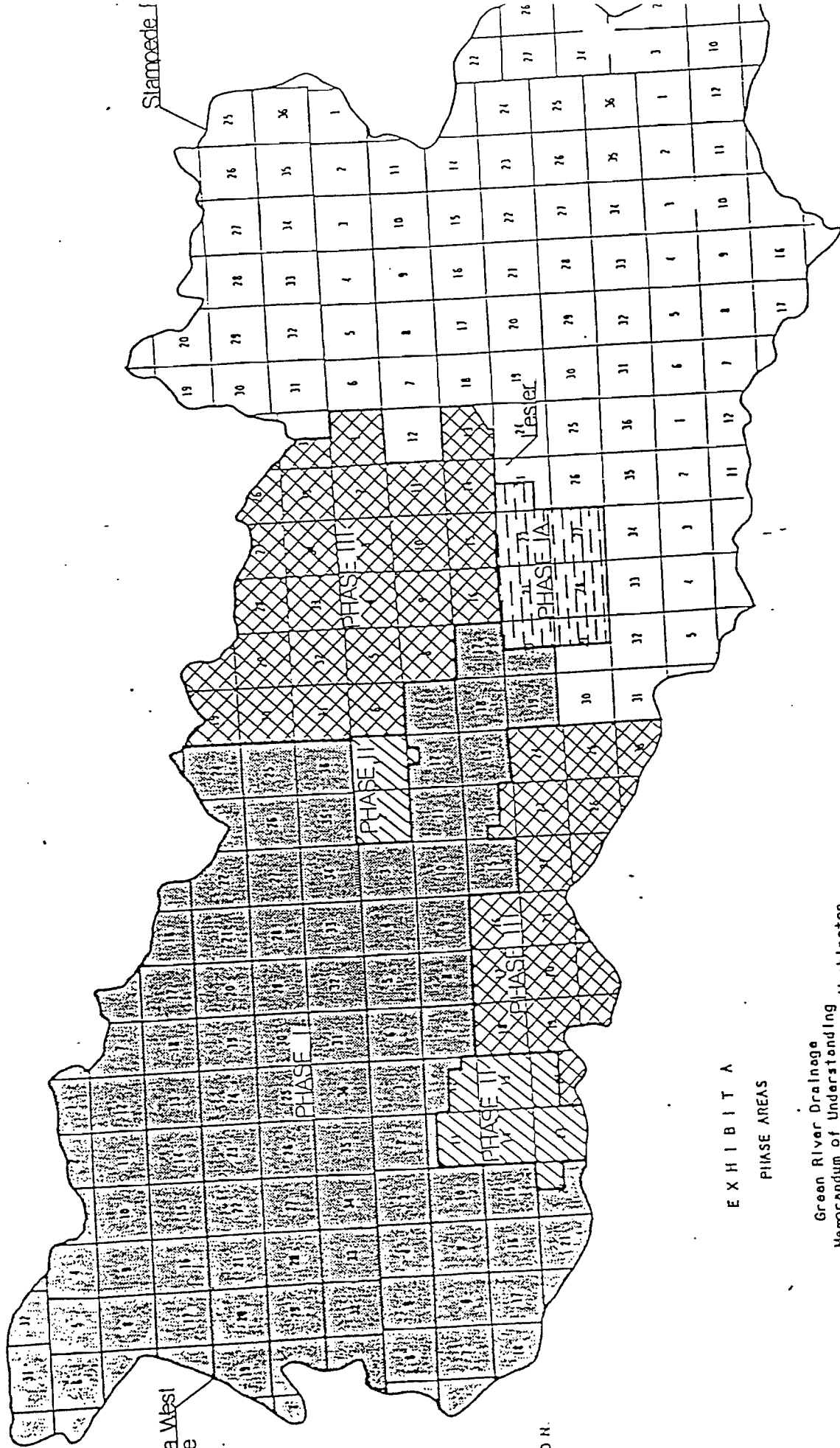
16
17 Approved as to form and legality:

18 
19 City Attorney

3117

T. 21 H.

R 11E.



Right-of-way-Easement
Green River Drainage
Memorandum of Understanding
USDA Forest Service and City of Tacoma, Washington
FS Control #84-06-58-5
1984

USDA Forest Service

(Corporation-Existing Road)
Road Name and No _____

RIGHT-OF-WAY EASEMENT DEED

THIS EASEMENT, dated this _____ day of _____, 19____,
from _____ a corporation of
the State of _____, hereinafter called "Grantor," to the
United States of America, hereinafter called "Grantee."

WITNESSETH:

Grantor, for and in consideration of \$ _____ received by Grantor,
does hereby grant to Grantee and its assigns, subject to existing ease-
ments and valid rights, a perpetual easement for a road along and across
a strip of land, hereinafter defined as the "premises," over and across
the following described lands in the County of _____ State
of _____:

Said premises are shown on the plat attached hereto marked Exhibit A.

The word "premises," when used herein, means said strip of land, whether or
not there is an existing road located hereon. Except where it is defined
more specifically, the word "road" shall mean roads now existing or here-
after constructed on the premises or any segment of such roads.

Said premises shall be _____ feet on each side of the centerline
with such additional width as required for accommodation and protection
of cuts and fills. If the road is located substantially as described
herein, the centerline of said road, as constructed, is hereby deemed
accepted by Grantor and Grantee as the true centerline of the premises
granted. If any subsequent survey of the road shows that any portion of
the road, although located substantially as described, crosses lands of
the Grantor not described herein, the easement shall be amended to
include the additional lands traversed; if any lands described herein are
not traversed by the road as constructed, the easement traversing the
same shall be terminated in the manner hereinafter provided.

Exhibit B--Continued

The acquiring agency is the U.S. Department of Agriculture, Forest Service.

This grant is made subject to the following terms, provisions, and conditions applicable to Grantee, its permittees, contractors, and assigns:

A. Except as hereinafter limited, Grantee shall have the right to use the road on the premises without cost for all purposes deemed necessary or desirable by Grantee in connection with the protection, administration, management, and utilization of Grantee's lands or resources, now or hereafter owned or controlled, subject to such traffic-control regulations and rules as Grantee may reasonably impose upon or require of other users of the road. Grantee shall have the right to construct, reconstruct, and maintain roads within the premises.

Grantee alone may extend rights and privileges for use of the premise to other Government Departments and Agencies, States, and local subdivisions thereof, and to other users including members of the public.

B. Grantee shall have the right to cut timber upon the premises to the extent necessary for constructing, reconstructing, and maintaining the road. Timber so cut shall, unless otherwise agreed to, be cut into logs of lengths specified by the timber owner and decked along the roads for disposal by the owner of such timber.

This easement is granted subject to the following reservations by Grantor, for itself, its permittees, contractors, assigns, and successors in interest:

1. The right to cross and recross the premises and road at any place by any reasonable means and for any purpose in such manner as will not interfere unreasonably with use of the road.

2. The right to all timber now or hereafter growing on the premises, subject to Grantee's right to cut such timber as hereinbefore provided.

Exhibit B --Continued

It is agreed that the Grantor shall have the right to use the existing road described herein for all purposes deemed necessary or desirable by Grantor in connection with the protection, administration, management, and utilization of Grantor's lands or resources now or hereafter owned or controlled, subject, however, to traffic control regulations as Grantee may reasonably impose under 36 CFR 261.12, the bearing of road main- tenance costs proportionate to use as provided in 36 CFR 212.7(d).

If, at any time, the Regional Forester determines that the road, or any segment thereof, is no longer needed, the easement traversed thereby shall terminate. In the event of such determination, the Regional Forester shall furnish to the Grantor, its successors, or assigns, a statement in recordable form evidencing termination.

IN WITNESS WHEREOF, Grantor has caused this instrument to be executed by its duly authorized officers and its corporate seal to be hereunto affixed on the day and year first above written.

by _____
Title _____

SEAL

Attest:

(Secretary)

Exhibit B--Continued

State of _____)
County of _____) ss.

On this _____ day of _____, 19____, before me the undersigned a notary public in and for said County and State, personally appeared _____ and _____, known to me to be the _____ and _____ of _____, the corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its bylaws or a resolution of its Board of Directors.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year above written.

Notary Public for the State
of _____, Residing
at _____
My Commission Expires _____

SEAL



1984-159
A 2098

COOPERATIVE AGREEMENT BETWEEN THE
CITY OF TACOMA, DEPARTMENT OF PUBLIC UTILITIES
AND THE STATE OF WASHINGTON, DEPARTMENT OF NATURAL RESOURCES

FOR THE PURPOSE OF MANAGING AND BALANCING TIMBER AND WATER SUPPLY
VALUES OF DEPARTMENT OF NATURAL RESOURCES FOREST LANDS IN THE GREEN RIVER
WATERSHED DRAINAGE AREA AND PROVIDING FOR THE MANAGEMENT OF THOSE LANDS
AND THEIR RESOURCES IN A MANNER WHICH WILL BEST HARMONIZE PRESENT AND
FORESEEABLE USE WITH DOMESTIC WATER SUPPLY NEEDS FOR THE CITY OF TACOMA,
WASHINGTON, AND THE SATISFACTION OF TRUST OBLIGATIONS.

THIS AGREEMENT, made this 26th day of October 1984, by
and between the State of Washington, Department of Natural Resources,
hereinafter called the "DNR" and City of Tacoma, Department of Public
Utilities, hereinafter called the "City", WITNESSETH:

WHEREAS, the following described lands lying within the Green
River drainage in Townships 20 and 21 North, Ranges 7 and 8 East, W.M.,
hereinafter called the "Drainage," comprising 34,000 acres more or less of
which 8,200 acres more or less are lands administered by the State of
Washington, Department of Natural Resources, form a part of the unfiltered
water supply source for domestic consumption of the City; and

WHEREAS, a Memorandum of Understanding was entered into between
the Department of Natural Resources, State of Washington, and the City of

1 Tacoma concerning timberland management practices in the Green River
2 Watershed in order to expeditiously negotiate and enter into an agreement
3 that fulfills the needs of both parties without additional legislation; and
4

5 WHEREAS, the DNR has recently negotiated a land exchange wherein
6 their ownership increased to approximately 15,700 acres, more or less, in
7 Tacoma's Green River Watershed; and
8

9 WHEREAS, the City's primary objective is to furnish an
10 uninterrupted supply of water of a standard of purity, taste, and
11 temperature requiring a minimum of treatment at the lowest possible cost
12 to the consumer; and in compliance with Federal and State safe drinking
13 water requirements under the provisions of the Federal Safe Drinking Water
14 Act of 1974; and
15

16 WHEREAS, the DNR is required to manage trust land under its
17 stewardship in a prudent manner in order to provide income for the trust
18 beneficiaries; and
19

20 WHEREAS, THE DNR may designate the Green River Watershed as a
21 sensitive area in accordance with its planning guidelines; and
22

23 WHEREAS, RCW 79.01.128 permits the DNR to alter its land
24 management practices within the limits of a city or town watershed to
25 protect water quality; and
26
27
28

1 WHEREAS, both parties have given consideration to the water and
2 timber resources of the subject area and desire to cooperate in achieving
3 and harmonizing the objectives of both agencies; and

4
5 WHEREAS, the City and the DNR wish to cooperate in achieving the
6 objectives of this Agreement.

7
8 NOW, THEREFORE, it is agreed that:

9
10 I. Commercial

11
12 A. The DNR will provide the City with a copy of the Notice
13 of Sale for all board¹ and area² timber sales prior
14 to the sales being sold at public auction.

15
16 B. The City will furnish purchasers of board and area
17 timber sales on-site sanitary facilities for their
18 employees and agents. The City agrees to provide such
19 facilities at no cost to the DNR or its agents. The
20 DNR will advise in their contracts with purchasers that
21 the City will require them to comply with the City's
22 existing Requirements for Protection of Water Supply in
23 the Green River Watershed or subsequent additions as
24 mutually agreed upon by both parties.

1 C. The DNR will provide the City with a copy of each
2 direct³ timber sale contract. Direct sales will be
3 concentrated so that the City can provide and maintain
4 appropriate sanitary facilities at a central location
5 near the sale sites. The City agrees to provide such
6 facilities at no cost to the DNR or its agents. The
7 DNR will advise in their contracts with purchasers that
8 the City will require them to comply with the City's
9 existing Requirements for Protection of Water Supply in
10 the Green River Watershed or subsequent additions as
11 mutually agreed upon by both parties.

12
13 D. For such activities as, but not limited to, bee
14 keeping, cone picking, Christmas tree cutting, bough
15 cutting, mineral prospecting or mining - such items
16 will be considered to be miscellaneous forest
17 activities. These activities will be treated as normal
18 DNR land management activities.

19
20
21 ¹board sales: Sales with an appraised value of \$20,000 or more.
22 Approved by the Board of Natural Resources. Advertised
23 for four weeks.

24 ²area sales: Sales with an appraised value of less than \$20,000.
Advertised for 10 days.

25 ³direct sales: Sales with an appraised value of less than \$1,000. Do
26 not have to be advertised for sale.

II. Firewood Permits

The City will issue free access permits to DNR firewood permittees when DNR specifies access through the Headworks Gate or the Massey Gate. Permittees may bring other persons with them to accompany and assist them during the firewood gathering. A maximum of two vehicles per permittee will be allowed and a maximum of six persons. The DNR will manage firewood permits so that no more than 100 permits per cutting unit are issued during any particular cutting period and no more than two cutting units will be active during any cutting period. Firewood permittees must enter and exit each day through designated access points. Access will be permitted from 8:00 a.m. until 6:30 p.m. daily when access is through the Headworks Gate or Massey Gate. These hours may be adjusted by mutual agreement. Gates will be staffed by City personnel during the above referenced hours.

Road systems may be closed at certain times to firewood gathering by mutual agreement between the City and DNR. Such times may be during log hauling and fire danger periods.

It will not be necessary for firewood permittees to issue to the City an insurance rider indicating the City as an additional insured for the vehicles in which the party will be traveling.

1 The DNR will require permittees to comply with the City's
2 existing Requirements for Protection of Water Supply in the
3 Green River Watershed or subsequent additions as mutually
4 agreed upon by both parties.

5
6 Firewood permits will be concentrated so that the City can
7 provide and maintain appropriate sanitary facilities at a
8 central location near the sale sites. The City agrees to
9 provide such facilities at no cost to the DNR or its
10 Permittees.

11
12 III. General

13
14 A. DNR will not develop recreation campgrounds on DNR
15 lands within the drainage without agreement from the
16 City to do so.

17
18 B. DNR agrees not to issue Recreational Event Special Use
19 Permits within the drainage for public or private
20 gatherings such as, but not limited to, concerts,
21 religious gatherings, group parties, or recreational
22 vehicle clubs.

1 C. If DNR contractors, timber sale purchasers, or their
2 agents and contractors have special needs to stay
3 overnight within the drainage, their contracts shall
4 specify a means for disposal of human waste and litter,
5 and restoration of the site upon removal of overnight
6 facilities. Site shall not be closer than 200 feet
7 from any perennial stream.

8
9 D. DNR presently has an agreement with the U.S. Forest
10 Service (U.S.F.S.) for the use of a U.S.F.S. building
11 in the town of Lester to house DNR fire suppression
12 crews during the fire season. If the U.S.F.S. should
13 relinquish ownership of this facility to the City, the
14 City agrees to permit the DNR to continue to use this
15 facility at no charge to house fire suppression crews.

16
17 E. If a fire occurs or endangers the drainage lands, the
18 DNR may establish temporary fire-fighting camps with
19 overnight facilities. By mutual agreement, such camps
20 may be located on City land. Particular attention
21 should be given to: means to dispose of human waste
22 and litter, distance from water course, and restoration
23 of site upon removal of camp.

1 F. The City and the DNR each reserve the rights in and to
2 the lands under their respective control, including the
3 right to sign and gate property in the same manner as
4 would be lawful absent this Agreement. None of the
5 terms or conditions of this Agreement shall be deemed a
6 waiver of any right, privilege or adverse claim made by
7 the parties, except as expressly provided for herein.

8
9 G. Nothing in this Agreement should be construed to
10 prevent persons from traveling to and from their
11 residences and/or private property located within the
12 drainage, nor the visitors of such persons from
13 traveling to and from these persons' residences or
14 private property, nor shall any provision herein
15 operate in degradation of prior-acquired private rights.

16
17 H. DNR and City agrees to meet at least annually to review
18 DNR and City plans that may affect the other party.
19 Proposed timber sales, anticipated contractor or
20 permittee work within the drainage, and other issues of
21 mutual interest will be discussed.

22
23 I. Nothing in this Agreement shall be construed as
24 obligating the DNR or the City to expend funds, or
25 human resources, or as involving the DNR or the City in
26 any contract or other obligation for the future payment
27 of money, in excess of appropriations authorized by law.

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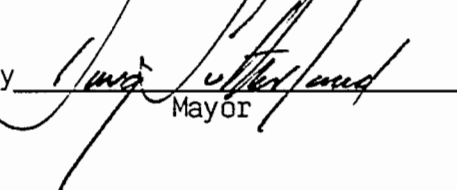
J. This Agreement may be terminated by either party upon written notice to the other of not less than 12 months prior to the termination. The written notice shall set forth the reasons for termination. Such termination shall not affect the validity of any legal document executed and delivered by the parties prior to termination.


K. This Agreement may be amended upon agreement in writing by the City of Tacoma's Department of Public Utilities and the DNR.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.


Seal of City attached
(Seal of City)

THE CITY OF TACOMA, WASHINGTON

By  Mayor


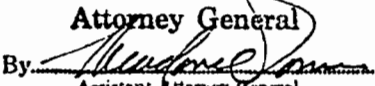
Attest 
Signature authorized by
City Clerk

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES


Commissioner of Public Lands

Approved as to form and legality:


CITY ATTORNEY


STATE ATTORNEY GENERAL
Approved as to Form Only
20th day of September 1984
KENNETH O. EIKENBERRY
Attorney General
By  Assistant Attorney General



1988-333
A2098

SUPPLEMENT TO THE
COOPERATIVE AGREEMENT BETWEEN THE
CITY OF TACOMA, DEPARTMENT OF PUBLIC UTILITIES
AND THE STATE OF WASHINGTON, DEPARTMENT OF NATURAL RESOURCES

FOR THE PURPOSE OF MANAGING AND BALANCING TIMBER AND
WATER SUPPLY VALUES OF DEPARTMENT OF NATURAL RESOURCES FOREST
LANDS IN THE GREEN RIVER WATERSHED DRAINAGE AREA AND
PROVIDING FOR THE MANAGEMENT OF THOSE LANDS AND THEIR
RESOURCES IN A MANNER WHICH WILL BEST HARMONIZE PRESENT AND
FORESEEABLE USE WITH DOMESTIC WATER SUPPLY NEEDS FOR THE CITY
OF TACOMA, WASHINGTON, AND THE SATISFACTION OF TRUST
OBLIGATIONS.

THIS SUPPLEMENTAL AGREEMENT, made this 20th day
of June 1988, by and between the State of Washington,
Department of Natural Resources, hereinafter called the "DNR"
and City of Tacoma, Department of Public Utilities,
hereinafter called the "City", WITNESSETH:

WHEREAS, the following described lands lying within
the Green River drainage in Townships 20 and 21 North,
Ranges 7 and 8 East, W.M., and lying within the boundaries of
the original agreement, and hereinafter called the "Inner
Basin", as located in red on the attached map marked as
Exhibit A, comprising 5700 acres more or less of which
4800 acres more or less are lands administered by the State

A209851

1 of Washington, Department of Natural Resources, form the most
2 vulnerable portion of the drainage of the unfiltered water
3 supply source for domestic consumption of the City; and

4 WHEREAS, a Cooperative Agreement was entered into
5 between the Department of Natural Resources, State of
6 Washington, and the City of Tacoma concerning timberland
7 management practices in the Green River Watershed in order to
8 fulfill the needs of both parties without additional
9 legislation; and

10
11 WHEREAS, the City's primary objective is to furnish
12 an uninterrupted supply of water of a standard of purity,
13 taste, and temperature requiring a minimum of treatment at
14 the lowest possible cost to the consumer; and in compliance
15 with Federal and State safe drinking water requirements under
16 the provisions of the Federal Safe Drinking Water Act of 1974
17 and the 1986 Amendments thereto; and

18
19 WHEREAS, the DNR is required to manage trust land
20 under its stewardship in a prudent manner in order to provide
21 income for the trust beneficiaries; and

22
23 WHEREAS, the DNR may designate the Green River
24 Watershed as a sensitive area in accordance with its planning
25 guidelines; and
26

1 WHEREAS, RCW 79.01.128 permits the DNR to alter its
2 land management practices within the limits of a city or town
3 watershed to protect water quality; and

4 WHEREAS, both parties have given consideration to
5 the water and timber resources of the subject area and desire
6 to cooperate in achieving the objectives of this Agreement.

7
8 NOW, THEREFORE, it is agreed that:

9 I. All of the provisions of the original agreement
10 dated October 26, 1984 shall continue to apply to the area
11 designated herein as the Inner Basin.

12 II. Additional provisions shall apply to the Inner
13 Basin as follows:

- 14 1. There will be no overnight camping allowed
15 within the Inner Basin.
- 16 2. No fire fighting camps will be established
17 within the Inner Basin.
- 18 3. During the regular annual review meetings
19 between the City and DNR, those projects
20 in the five year timber sale development
21 plan that fall within the Inner Basin
22 shall be identified. The City will
23 identify those projects they feel require
24 detailed review by City representatives
25 and DNR agrees to notify the City when the
26

1 project contract and specifications are
2 available for review.

3 4. The DNR agrees to notify the City of its
4 plans to apply any pesticides or
5 fertilizers within the Inner Basin, to
6 allow the City to closely monitor the
7 application. If the City objects to the
8 application of any chemical that they feel
9 should not be applied within the Inner
10 Basin the DNR agrees to meet with the City
11 to investigate the reasons for such
12 objections. Water samples shall be taken
13 at the discretion of the City by City
14 personnel. All cost of monitoring and
15 sampling shall be at the expense of the
16 City.

17 5. The DNR agrees to allow the City, upon
18 prior approval of the DNR, to shut down
19 any projects within the Inner Basin
20 causing excess turbidity (above 5 NTUs at
21 the water supply intake). No shutdown
22 shall be requested for relatively minor
23 turbidity problems if sufficient water is
24 available in the North Fork Well Field to
25 adequately blend or replace the Green
26 River supply. The affected project shall
27

1 be delayed until such time as conditions
2 allow for adequate blending or replacing
3 of the turbid river water.

4 IN WITNESS WHEREOF, the parties hereto have executed
5 this Supplemental Agreement as of the date first above
6 written.

7
8 Approved:
9 City of Tacoma
10 Dept. of Public Utilities

Accepted:
State of Washington
Dept. of Natural Resources

11
12 By: *KPD Leon*
13 Superintendent
Water Division

By: *W. Michael Briggs*
Area Manager
South Puget Sound Area

14 Date: 5/26/88

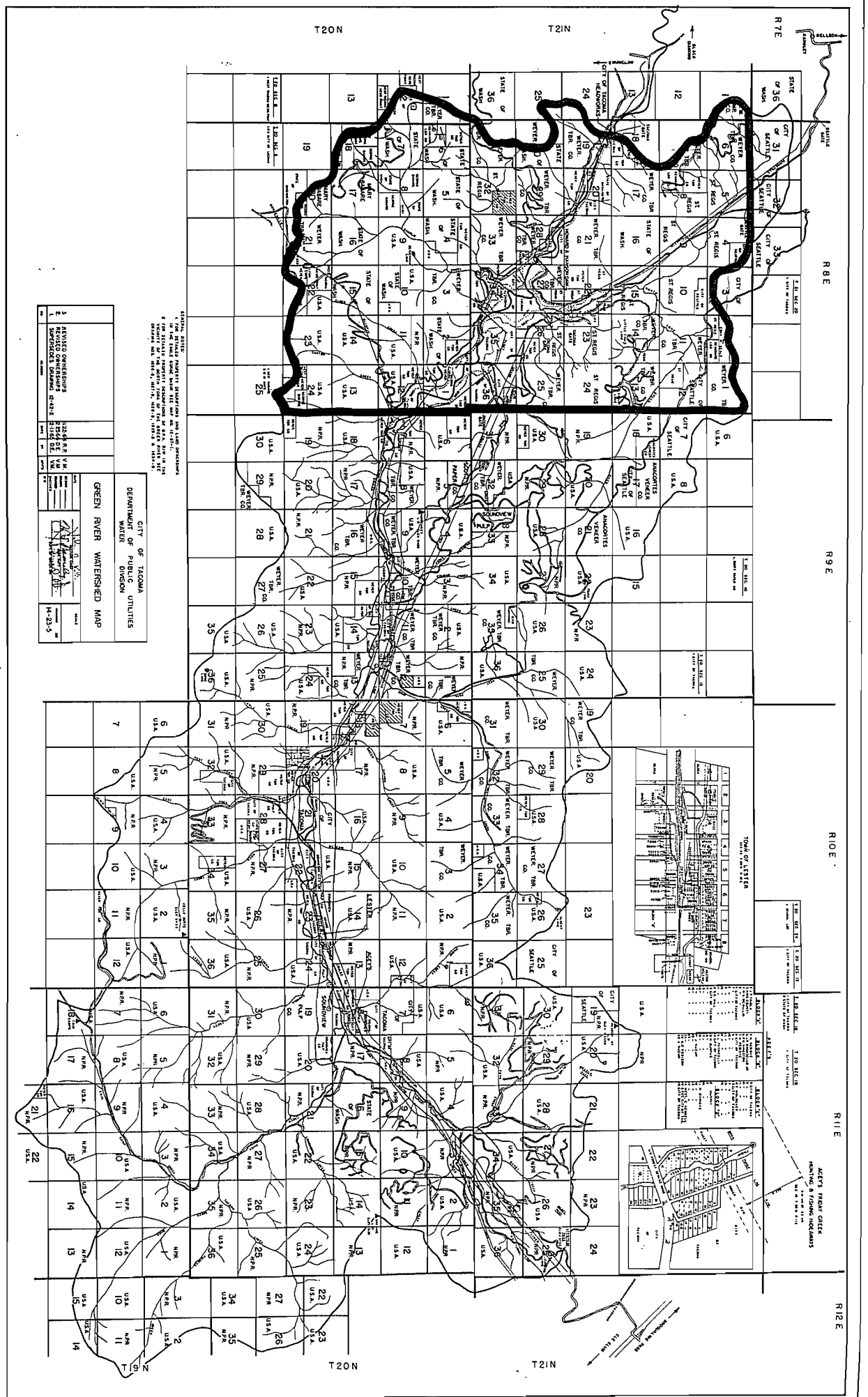
Date: June 20, 1988

15 Approved as to Form & Legality:

16
17
18 By: *Mark Blum*
19 Chief Asst. City Attorney

20 Description Approved:

21
22 By: *Kenneth J. Henry*
23 Engineer



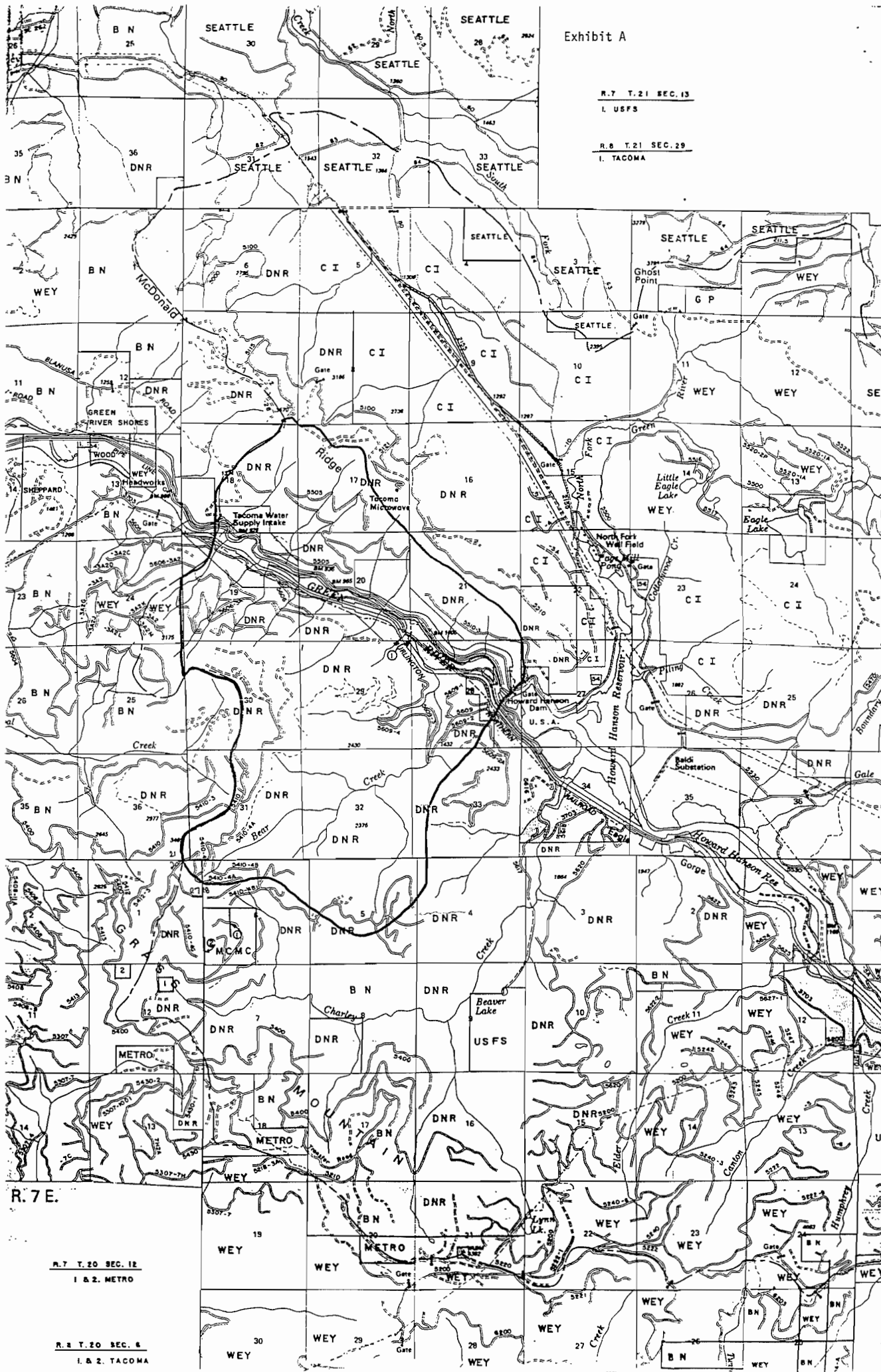


Exhibit A

R.7 T.21 SEC.13
I. USFS

R.8 T.21 SEC.29
I. TACOMA

R.7 E.

R.7 T.20 SEC.12
I & 2. METRO

R.8 T.20 SEC. 6
I & 2. TACOMA

AGREEMENT

This Agreement, made as of the 6th day of March 1997, between the Department of Fish and Wildlife, hereinafter called "Department" and the City of Tacoma, hereinafter called the "City".

DECLARATIONS:

WHEREAS, on April 25, 1984, the City and the Department completed an agreement which allowed for quality permit deer and elk hunts in the City's Green River Watershed, hereinafter called "Watershed", and

WHEREAS, the permit hunts have proven to be beneficial to the Department's mandate to provide hunting opportunities and manage wildlife, and also beneficial to the City's mandate to control access and maintain water quality within the Watershed, and

WHEREAS, the Department and City desire to continue to provide controlled permit hunts for deer and elk which allow for a high success rate, a balanced harvest between the sexes, maintain a high quality trophy hunt with high numbers of mature male deer (4+ years) and elk (5+ years), and low hunter density, hereinafter called a "quality hunt", and

WHEREAS, this agreement is intended to supersede the existing agreement and all supplements thereto.

NOW THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

THE DEPARTMENT:

1. The Department agrees to recommend to the Fish and Wildlife Commission elk hunting and deer hunting permits, which may include auction permits, in Game Management Unit (GMU) 485 (Green River), subject to this agreement. The Department will consult with the City on dates for the hunting season. Final hunting season dates will be provided by the Department to the City each year.

2. The Department will notify all permittees that they are expected to attend a pre-hunt meeting on dates mutually agreed to by the Department and the City, and the need for an access permit from the City to enter and cross over lands owned and controlled by the City. All permittees will be subject to terms and conditions of this agreement as well as the City's "Requirements for Protection of the Water Supply in the Green River Watershed."

3. The Department will provide assistance in monitoring seasons and in controlling hunting violations in GMU 485 (Green River) during permit hunts, as well as during the regular westside deer and elk hunting seasons. To the best of its ability and authority, the Department will assist the City in controlling trespass within the Watershed.

4. The Department agrees to recommend the closure of GMU 485 (Green River) to the hunting of deer and elk. The Department will so advertise the area as a special closure area as follows: "GMU 485 (Green River): Except for permit hunts, all lands within GMU 485 (Green River) are designated as a 'closed area' to the hunting of deer and elk throughout the year. During the general westside elk season and general deer season, all lands within GMU 485 are also designated as a 'closed area' to the hunting of all other wild animals and wild birds." The City enforces trespass within GMU 485 (Green River) on lands owned or controlled by the City during all times of the year.

5. The Department agrees the City will control access to hunters through its Headworks Control Station Gate; through the Massey Gate on the Weyerhaeuser Road; or other such access points that are mutually agreeable.

THE CITY:

1. The City agrees to issue access permits each year for deer and elk hunting in GMU 485 (Green River) to successful permittees.

2. The City agrees to mail a hunting packet containing an access permit, rules and regulations, and other information or materials provided by the Department or the City pertaining to the hunt to each successful permittee.

3. The City will host a meeting of all applicants following the permit drawings to inform hunters of the special conditions and requirements of the City. Hunters' attendance will be voluntary but encouraged.

4. The City agrees to inform and coordinate with other landowners in the Watershed regarding this agreement and their desires in the management of their lands.

5. The City agrees to maintain the agreed to GMU 485 (Green River) boundary with signs designating the area as GMU 485, Hunting by Permit Only.

6. The City will have its regular Green River Watershed inspectors on duty during the time of these permit hunts and will assist the Department in controlling hunting violations during these hunts. The City will assist the Department in controlling hunting violations within the Watershed.

BOTH PARTIES:

1. Both parties agree to maintain the existing GMU 485 (Green River) boundary as it is now described. Future boundary changes will be determined by mutual agreement if one party desires to change the existing boundary description.

2. Both parties agree to abide by the present "Requirement for Protection of Water Supply in the Green River Watershed." These rules will be strictly enforced during the course of these hunts. Additionally, the City will provide portable toilets (Sani Kans) in the Watershed for the convenience of the hunters and all hunters are encouraged to carry portable toilets (porta potties) with them in their vehicles, but it is not a strict requirement. The individual access permits are subject to cancellation for violation of access permit conditions.

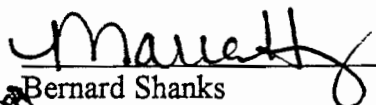
3. Both parties agree to participate in the annual permittees meeting hosted by the City. The major subjects to be discussed will be the City's requirements for access, any special requirements by the Department, and any landowners' concerns which may affect the permit hunt.

4. Both parties agree any newspaper advertising or public relations efforts by either the City or the Department will name both parties and the landowners as cooperating in this activity.

5. Both parties agree to have informal meetings each year or as mutually agreed, to determine if this agreement needs to be changed, expanded, or canceled. Other landowners may be invited to attend this meeting.

6. Both parties agree this agreement is subject to cancellation by either the City or the Department by notifying the other party before December 1st in any calendar year. This condition is intended to allow the Department time to adjust its publications and rules in case this agreement is canceled.

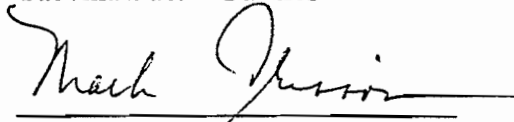
State of Washington
Department of Fish and Wildlife

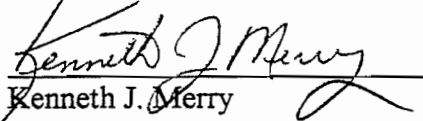

Bernard Shanks
Director

Approved as to form and legality:

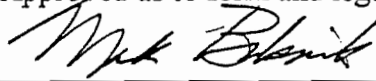
Assistant Attorney General

City of Tacoma
Tacoma Public Utilities


Mark Crisson
Director of Utilities


Kenneth J. Merry
Water Superintendent

Approved as to form and legality:


Chief Assistant City Attorney

Pursuant to Public Utility Board
Resolution U- 6984, adopted
4/25/84

SUMMARY

**PROJECT COOPERATION AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CITY OF TACOMA
FOR MODIFICATION OF THE
HOWARD HANSON DAM
FOR ECOSYSTEM RESTORATION
AND
MUNICIPAL & INDUSTRIAL (M&I) WATER SUPPLY**

The Project Cooperation Agreement (PCA) between the Department of the Army (Corps of Engineers) and City of Tacoma (Tacoma Water) was entered into on July 17, 2003, for the purposes of defining the project modifications and cost share agreement between the Corps and Tacoma Water for the Howard Hanson Dam Additional Water Storage Project (AWSP).

The PCA is composed of the following sections:

Article I Definitions and General Provisions

This section defines the terms of the agreement.

Article II Obligations of the Government and the Non-Federal Sponsor

This section defines the relative obligations of the Corps of Engineers and Tacoma Water relative to cost sharing, operations and maintenance, repair and replacement, crediting and/or reimbursement given by the federal government to the local sponsor for its project contributions.

Article III Water Supply Storage

This section discusses the rights, uses and associated responsibilities relative to water storage behind Howard Hanson Dam for both Tacoma Water and the Corps of Engineers.

Article IV Lands, Relocations, Disposal Areas, and Public Law 91-646 Compliance

This section addresses the responsibilities of the Corps of Engineers and Tacoma Water relative to the real estate involved in implementing the AWSP.

Article V Credit for Lands, Relocations, and Disposal Areas

This section addresses issues pertaining to credit to Tacoma Water for the value of the lands, easements, rights-of-way, suitable borrow, dredged or excavated material disposal areas, and improvements made by Tacoma Water to properly dispose of dredged or excavated materials.

Article VI Project Modification Coordination Team

This section establishes a Project Modification Coordination Team and defines its responsibilities.

Article VII Method of Payment

This section addresses the responsibilities of the Corps to maintain and share project accounting records, and to project future project costs for modifications and betterments, and the responsibilities of Tacoma Water for its financial contributions.

Article VIII Dispute Resolution

This section addresses the manner in which disputes between the parties are to be resolved.

Article IX Operation, Maintenance, Repair, Replacement, and Rehabilitation

This section discusses the responsibilities of the Corps and Tacoma Water for the maintenance, repair, replacement and rehabilitation of project modifications.

Article X Indemnification

Tacoma Water shall hold the federal government harmless from all damages arising from implementation of the project except for damages due to fault or negligence of the government or its contractors.

Article XI Maintenance of Records and Audit

This section addresses record keeping and auditing of records pertaining to costs incurred as a result of the project.

Article XII Federal and State Laws

The Corps and Tacoma Water agree to comply with all federal and state laws during construction and implementation of the project.

Article XIII Relationship of Parties

The Corps and Tacoma Water are not to be considered the officer, agent, or employee of the other. Neither party shall provide any contractors with a release that waives any rights of the other party to seek relief or redress against contractors involved in the project.

Article XIV Officials Not to Benefit

No member of Congress nor any resident commissioner may benefit from the PCA.

Article XV Termination or Suspension

This section addresses the rights of each party in terminating the agreement.

Article XVI Hazardous Substances

This section addresses how project sponsors are to address the investigation into, or existence of, any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that may exist in, on, or under lands, easements, and rights-of-way required for implementation of the project.

Article XVII Notices

Required communications pertaining to the PCA shall given in writing to the Director of Utilities and the District Engineer.

Article XVIII Confidentiality

The parties to the PCA agree to maintain confidentiality of information when requested to do so by the providing party.

Article XIX Historic Preservation

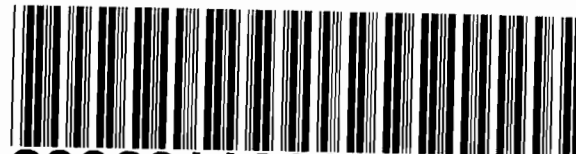
This section addresses how the costs of identification, survey and evaluation of historic properties are to be assigned.

Article XX Section 902 Project Cost Limits

This section states that Tacoma Water understands that Section 902 of Public Law 99-662 establishes the maximum amount of total project modification costs at Howard Hanson Dam. On the date of the signing of the PCA, the maximum amount was estimated to be \$101,460,000.

Article XXI Obligations of Future Appropriations

Nothing in the PCA shall constitute an obligation of future appropriations by the City of Tacoma where creating such obligation would be inconsistent with State of Washington or City of Tacoma law.



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CITY OF TACOMA MISC
PAGE 001 OF 013
01/19/2006 09:57
KING COUNTY, WA

45.00

WHEN RECORDED RETURN TO:

Tacoma Public Utilities

Asset Management

P.O. Box 11007 • Tacoma, WA 98411

DO NOT MARK OUTSIDE THE BORDER LINES OF THIS DOCUMENT

CITY OF TACOMA

DEPARTMENT OF PUBLIC UTILITIES

ACCESS ROAD USE PERMIT NO. 1791

WATER DIVISION

Reference No.	P2004-138mfj
Grantor:	City of Tacoma, Department of Public Utilities, Water Division, (d.b.a Tacoma Water)
Grantee:	United State of America, acting by and through the Bonneville Power Administration, Department of Energy
Legal Description:	Portions of Sections 13 and 14 in Township 21 North, Range 07 East; Sections 4, 5, 9, 15, 18, 19, 20, 21, 22, 23, 26, 27, 28, 35 and 36 in Township 21 North, Range 08 East; Sections 1 and 2 in Township 20 North, Range 08 East; Sections 7, 8, 9, 10, 11, 12 and 13 in Township 20 North, Range 09 East; Sections 13, 17, 18, 20, 21, 22, 23 and 24 in Township 20 North, Range 10 East; and Sections 3, 4, 8, 9, 17 and 18 in Township 20 North, Range 11 East, W.M., King County , Washington
Tax Parcel No(s):	not applicable

This Permit made and entered into this 29th day of December, 2005, by and between the CITY OF TACOMA, DEPARTMENT OF PUBLIC UTILITIES, WATER DIVISION, a municipal corporation, (d.b.a. Tacoma Water), hereinafter designated as "Tacoma Water," and the United States of America, Department of Energy, acting by and through the Bonneville Power Administration, also know as BPA, hereinafter referred to as "Permittee."

WITNESSETH:

PREMISES

Tacoma Water, for and in consideration of the mutual benefits and covenants herein contained, does hereby grant to the Permittee permission, subject to the terms and conditions contained herein, to use the following described real property interest:

A non-exclusive right to use and maintain the existing roads: Headworks Road 5500 (11.5 miles), Pages Flat Road 5512 (3.6 miles), Humphrey Road 5530 (9.5 miles), Lester Road 5900 (7.6 miles), High Trestle Road 52 and 5201 (0.7 miles) and Stampede Pass Road 54 (3.4 miles); over and across the following described lands in the City of Tacoma's Green River Watershed in King County, Washington, located approximately as shown on the attached Exhibit "A" and lying in portions of Sections 13 and 14 in Township 21 North, Range 07 East, W.M.; portions of Sections 4, 5, 9, 15, 18, 19, 20, 21, 22, 23, 26, 27, 28, 35 and 36 in Township 21 North, Range 08 East, W.M.; portions of Sections 1 and 12 in Township 20 North, Range 08 East, W.M.; portions of Sections 7, 8, 9, 10, 11, 12 and 13 in Township 20 North, Range 09 East, W.M.; portions of Sections 13, 17, 18, 20, 21, 22, 23 and 24 in Township 20 North, Range 10 East, W.M.; and portions of Sections 3, 4, 8, 9, 17 and 18 in Township 20 North, Range 11 East, W.M., all located in King County, Washington; subject to all other easements and permits granted by Tacoma Water to other parties, whether recorded or unrecorded.

PURPOSE

Tacoma Water herein issues this Permit to Permittee granting Permittee non-exclusive rights of ingress and egress over existing roads so Permittee may have access to and from existing or future transmission lines. Permittee agrees to make no other use of the property or enlarge its use without the prior written consent of Tacoma Water. This Permit reflects the desire of the parties to reach an agreement as to the Permittee's use of certain properties in King County, State of Washington, for access to Permittee's transmissions lines, to which Tacoma Water currently holds various property rights by virtue of various instruments recorded in the King County Auditor's Office, King County, Washington; and over areas which BPA owns the transmission line rights-of-way easements for (1) the Grand Coulee-Raver No. 1 and 2 (operated in Mile 44 through 71 as Schultz-Raver No. 1 and 2) as represented on BPA drawings 153741 through 153768; (2) the Vantage-Covington No. 1 and 2 (operated as Schultz-Raver No. 3 and 4); the Rocky Reach-Raver (operated as Schultz-Raver No. 4); (3) the Grand Coulee-Olympia (operated as Olympia-Grand Coulee No.1); (4) the Tacoma-Grand Coulee (operated as Covington-Columbia No. 3); and (5) Covington-Grand Coulee No. 1, including Tract

VC-AR-89-2 on BPA map 153751 and VC-AR-88-1 on BPA Map 153750. In addition, the City desires to establish a road maintenance agreement within the Green River Watershed with BPA; and BPA desires permanent rights over said road network within the Green River Watershed accessing its existing transmission rights-of-way as identified above.

TERMS AND CONDITIONS

This permission is further granted to the Permittee under the following terms and conditions:

1. PERMIT PERIOD

Tacoma Water hereby grants to Permittee limited permission to use the above-described Premises for the purposes stated herein, beginning upon the date of execution for a period of one year, and for subsequent one year periods upon payment of the Use Fee for that year.. The permission to use the subject Premises is granted subject to the conditions and terms stated herein.

2. PROCESSING AND USE FEES

Permittee shall pay the following:

- a. A Use Fee in the sum of TWO THOUSAND DOLLARS (\$2,000.00) per year shall be payable by Permittee to Tacoma Water upon signing this Permit and on or before the first day of February each year thereafter during the permit period. Tacoma Water will provide an invoice for the Premises Use Fee due each year.
- b. Payment of all fees shall be made payable to City of Tacoma Treasurer and delivered to City of Tacoma, Department of Public Utilities, Tacoma Water, P.O. Box 11007, Tacoma, Washington 98411-0007, or other such address as the Department of Public Utilities may hereafter designate.

3. OWNERSHIP

- a. Tacoma Water owns and/or controls the above-described Premises consistent with and as part of its Utility System. The permission granted herein is subordinate to and subject to the paramount right of Tacoma Water to use said lands.

- b. The real property described above as the Premises is necessary for the operation, maintenance or improvement of Tacoma Water facilities. Therefore, Permittee or its agents, employees or property may be subject to hazards of utility operations, which Permittee hereby expressly assumes. Permittee shall not damage or interfere with Tacoma Water's use of the premises, or its structures or facilities located thereon.

4. AUTHORIZED USE AND ROAD DAMAGE

It is understood and agreed that in the event said Premises are damaged by Permittee, its employees, contractors, agents or assigns, that Permittee, subject to the availability of appropriations, or its assigns, will repair such damage, or pay Tacoma Water for the cost to repair such damages based upon the mutually agreed to actual and reasonable cost of repairs.

5. INDEMNIFICATION

Permittee shall be responsible for and shall hold Tacoma Water harmless, only to the extent allowed by the Federal Torts Claim Act, *62 Stat.982 as amended*, for any damage or injury to third parties or to the property of third parties arising from BPA's performance under this agreement. Nothing in this agreement shall be construed to create any independent contractual obligation, agreement or arrangement for BPA to indemnify or hold Tacoma Water harmless for such liability.

6. LIABILITY INSURANCE

Permittee certifies that as a federal agency, the Permittee is self-insured. However, Permittee shall require any and all contractors or vendors using the existing road that is the subject of the Permit to access BPA property, to have and maintain during the term of their use of the existing road, Commercial General Liability (CGL) insurance coverage and a Business Auto Policy (BAP) on which the Grantor shall be listed as an Additional Named Insured for purposes of its activities utilizing the existing road. Coverage under both policies shall include policy limits of no less than \$2,000,000.00 combined single limit of liability per occurrence, \$5,000,000.00 general aggregate limit, written on ISO occurrence-based, not "claims made," policy forms. No self-insured retained limits are to apply to the Grantor.

7. WAIVER OF CLAIMS

The parties recognize that the rights conveyed pursuant to this Permit to use the above described existing roads may potentially expose Permittee to certain hazards. Permittee herein assumes the risk of loss, and waives any and all claims of damage or injury which may result from the use of the rights of access provided by this Permit, excluding however any loss, damage or injury caused by Tacoma Water, its agents' or its employees' negligence. It is agreed and understood that any damage to the Premises caused by or resulting from Permittee's use of the access granted by this Permit shall either be immediately repaired by Permittee immediately upon Tacoma Water's demand, or by Tacoma Water, in which case the mutually agreed to actual and reasonable cost of such repairs shall be reimbursed to Tacoma Water by Permittee.

8. GENERAL CONDITIONS

- a. For purposes of this Permit, "Public" is defined as the general public, and not restricted to any particular group or geographical area.
- b. Tacoma Water does not warrant its authority to permit the above described use of the Premises, for the purposes intended by the Permittee, and therefore, the Permittee agrees to secure any other rights needed by Permittee it for its lawful use of said Premises.
- c. The rights herein granted shall be subject and subordinate to any prior agreements or contracts made or entered into by Tacoma Water and, further, shall be subject to any subsequent agreements between city, state or federal wildlife, fish, ecology, energy, or other regulatory agency having jurisdiction over the City of Tacoma's hydroelectric, water supply, and railway systems. Permittee shall, at all times, give access to said agencies and employees for the purpose of making studies of or performing other duties in connection with said endeavors, and shall have no claim against Tacoma Water arising from the activities of these or any other regulatory agencies.
- d. The permission granted herein is subject to any federal, state or local laws, rules or regulations that apply to federal agencies and (1) which are now in effect or which hereafter might become effective, or (2) which may be imposed upon the use of said Premises by any regulating authority, including Tacoma Water's "Requirements for Protection of Water Supply in the Green River Watershed," which will be issued to the Permittee upon signing this Permit. Tacoma Water reserves the right at any and all times to prescribe additional safety

rules and regulations for the conduct, operation and maintenance of any or all the rights and privileges granted under the terms of this Permit. Tacoma Water will endeavor to give sixty (60) days' notice to Permittee of any such additional rules and regulations.

- e. The rights and privileges under this Permit shall at all times be subject to and subordinate to the construction, operation and maintenance of the Utility Systems of Tacoma Water, and shall not at any time or in any manner interrupt or interfere therewith; and Tacoma Water shall not be liable to the Permittee or to any of its licensees, permittees, agents, contractors, guests or customers thereon on account of such construction, operation or maintenance, or any act or thing done in connection therewith.
- f. The Permittee will, at all times, maintain the Premises in an orderly manner and will not create or permit any nuisance or hazard to exist or allow the Premises to be used for any immoral or unlawful purposes.
- g. This Permit is non-exclusive and shall not prohibit Tacoma Water from granting other permits of like or other nature to others, nor shall it prevent Tacoma Water from using any of the subject Premises or affect its right to full supervision and control over all or any part of the said Premises, none of which is hereby surrendered.
- h. Permittee shall not damage or interfere with Tacoma Water's use of the Premises, structures or facilities.
- i. Permittee shall strictly observe and comply with all standard road use rules published by Tacoma Water, regulatory agencies, or any other road use rules including, but not limited to, road closures, of which Tacoma Water shall give Permittee reasonable notice.
- j. Tacoma Water and the Permittee shall enter into a separate agreement for use of the Premises herein described by Permittee for the construction of new transmission line, log, rock or other heavy haul purposes.
- k. Permittee and Tacoma Water will meet and discuss Permittee's interest in acquiring permanent access rights, and pursue good faith negotiations towards this end.

9. ASSIGNMENT

Unless otherwise expressly stated and agreed to herein, this Permit is non-assignable and non-transferable.

10. HAZARDOUS SUBSTANCE

- a. No goods, merchandise, or material shall be kept, stored or sold on the Premises which are in any way explosive or hazardous; and no offensive or dangerous trade, business or occupations shall be carried on therein or thereon, and nothing shall be done on or from the Premises other than as provided for in this Permit. No machinery or apparatus shall be used or operated on the Premises which will in any way injure the Premises; provided, however, that nothing in this paragraph shall preclude Permittee from bringing, keeping or using on or about the Premises such materials, supplies, equipment and machinery as are necessary or customary in carrying out the required uses of this Permit.
- b. In the event such uses include keeping or storage of inflammable or explosive substances, such substances shall be stored in closed containers, and shall be stored, used or dispensed in the manner prescribed by the regulations of Tacoma Water or other public bodies having authority in the matter and, in any event, in the safest possible manner. Permittee shall be liable for the remediation of any hazardous substance on the Premises resulting from Permittee's use of said Premises, and the remediation, clean-up or restoration costs resulting therefrom.

11. ENVIRONMENTAL / CULTURAL RESOURCES

- a. Permittee acknowledges that surveys for cultural resources may be required on all Tacoma Water property included in this Permit where ground-disturbing activities are proposed.
- b. Results of such surveys shall be communicated to Permittee; however, all studies, recommendations and analyses shall remain the sole property of Tacoma Water. Alternatively, Tacoma Water may revoke this Permit if, in its sole opinion, cultural resources may be threatened, and shall have no liability to Permittee as a result thereof. If revoked for protection of cultural resources, Tacoma Water shall refund to Permittee a pro rata share of the Use Fee.
- c. Permittee shall not adversely impact any wetlands on Tacoma Water property. If construction impacts are unavoidable, mitigation must be

approved by Tacoma Water and/or the local regulatory agencies. All wetland inspection and mitigation shall be satisfied before construction can begin.

12. INSPECTION

Tacoma Water, its officers and agents, may at any and all times enter upon the Premises hereinabove described, or any part thereof, for any purpose in connection with the construction, revision, operation or maintenance of the Utility Systems of Tacoma Water, at reasonable times in connection with this Permit, or for the purposes of inquiry or inspection.

13. TERMINATION

- a. Operational Necessity: In the event it should become necessary for Tacoma Water to temporarily close access to the Premises or otherwise limit the use of the Premises to such an extent as to necessitate discontinuance of the use thereof by the Permittee, Tacoma Water will give the Permittee written notice of such discontinuance as soon as practicable. Said notice to be given by certified mail addressed to Permittee at 28401 Covington Way SE, Kent, WA 98042, and discontinuance of the use shall be effective IMMEDIATELY upon delivery thereof. In the event there is inadequate time to give a written notice to the Permittee, a phone call will be made to the Covington Office at 253-631-9154 or 360-563-0572.
- b. Other: Tacoma Water reserves the right to terminate this Permit upon 180 days' written notice for any reason beyond its control including, but not limited to, operational requirements and budgetary requirements. The 180 days' written notice of such termination shall be sent to Permittee by certified mail at Permittee's offices at 28401 Covington Way SE, Kent WA 98042.

14. RECORDING

This Permit may be filed with the County Auditor's office. Should any subsequent transactions pertaining to resale, lease or permitted use of the subject Premises occur, it is the undersigned Permittee's duty to provide notice to each subsequent user of the rights provided this Permit.

P2004-138/mfjP1791

IN WITNESS WHEREOF, We have executed this instrument in Snohomish,
County, Washington, on behalf of the United State of America,
Department of Energy, acting by and through the Bonneville Power Administration,
said company having caused its name to be hereunto subscribed and affixed and
these presents to be executed by the proper party thereunto duly authorized, this
1st day of December, 2005.

ACCEPTED

Subject to said Terms and Conditions:

United State of America, Department of Energy
Acting by and through the Bonneville Power Administration

Adelmo A. dela Cruz 12/1/05
Adelmo dela Cruz
Deputy Regional Manager

STATE OF WASHINGTON)
COUNTY OF King) SS

I certify that I know or have satisfactory evidence that Adelmo dela Cruz is the
person who appeared before me, and said person acknowledged that he signed
this instrument, on oath stated that he was authorized to execute the instrument
and acknowledged it as the Deputy Regional Manager of the Bonneville Power
Administration to be the free and voluntary act of such party for the uses and
purposes mentioned in the instrument.

Dated this 1st day of December, 2005.

[Signature]
Notary Public in and for the State
of Washington
Residing in King County
My Commission Expires 9/12/09



P2004-138/P1791

Dated this 24th day of December, 2005.

Formal Public Utility Board action is not necessary pursuant to Resolution No. U-8228.

APPROVED:
CITY OF TACOMA
Department of Public Utilities

APPROVED AS TO FORM:



Water Division Superintendent


Assistant City Attorney

APPROVED:


Water Quality Manager

APPROVED:


Watershed Supervisor

REVIEWED:


Watershed Forester

REVIEWED:


Real Property Services

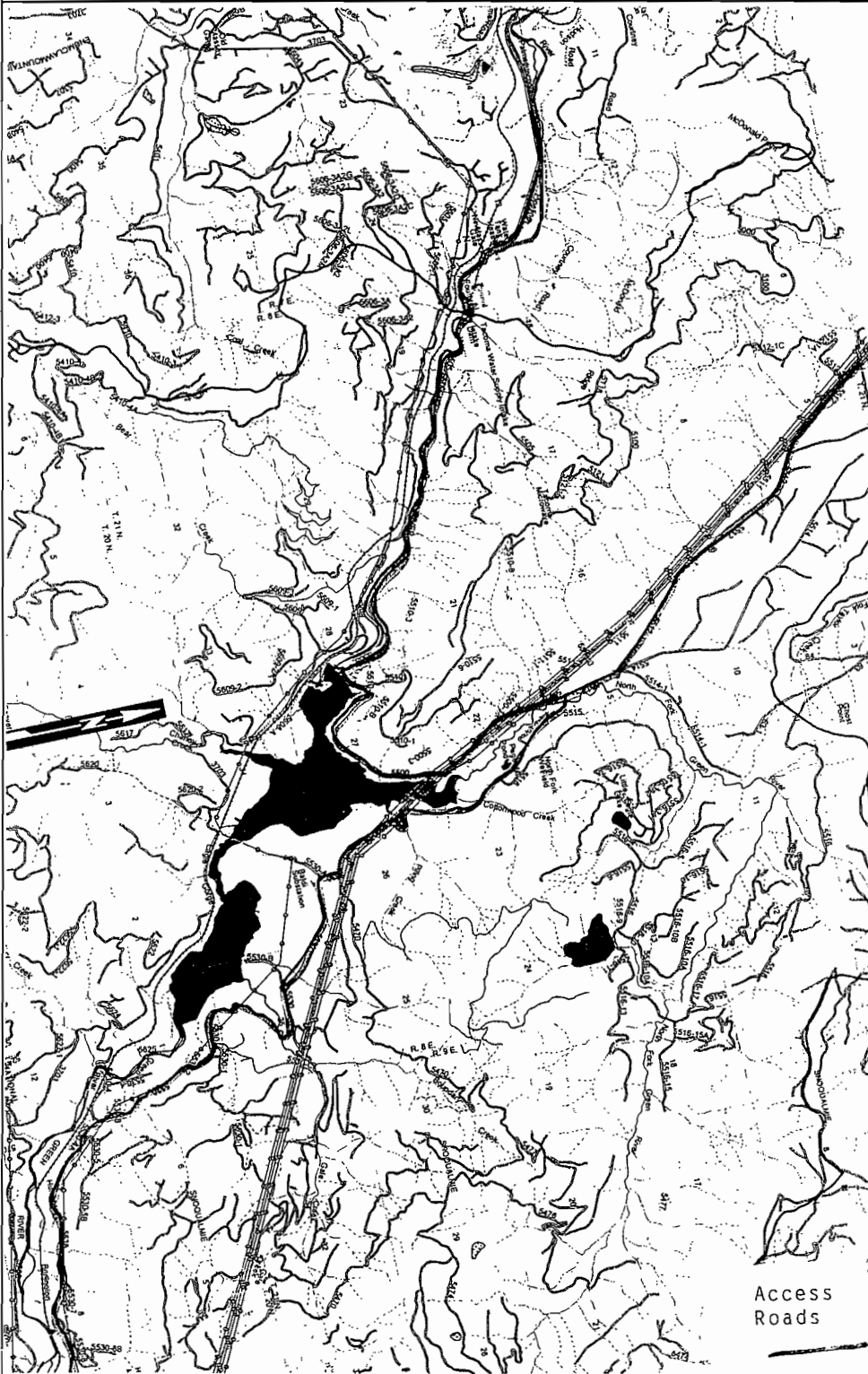
City of Tacoma - Department of Public Utilities - Real Estate Management

Date November 14, 2005

Marsha Johnson
Real Estate Officer

Bonneville Power Administration
Portions of T20N R8, 9, 10 & 11E W.M. & T21N
R8E W.M.
King County WA

Project No.
2004-138
P1791



REAL ESTATE MANAGEMENT ILLUSTRATION

This illustration is not to scale. It is provided as a convenience to assist in identifying significant characteristics of the installation. No liability is assumed by reason of reliance hereon.

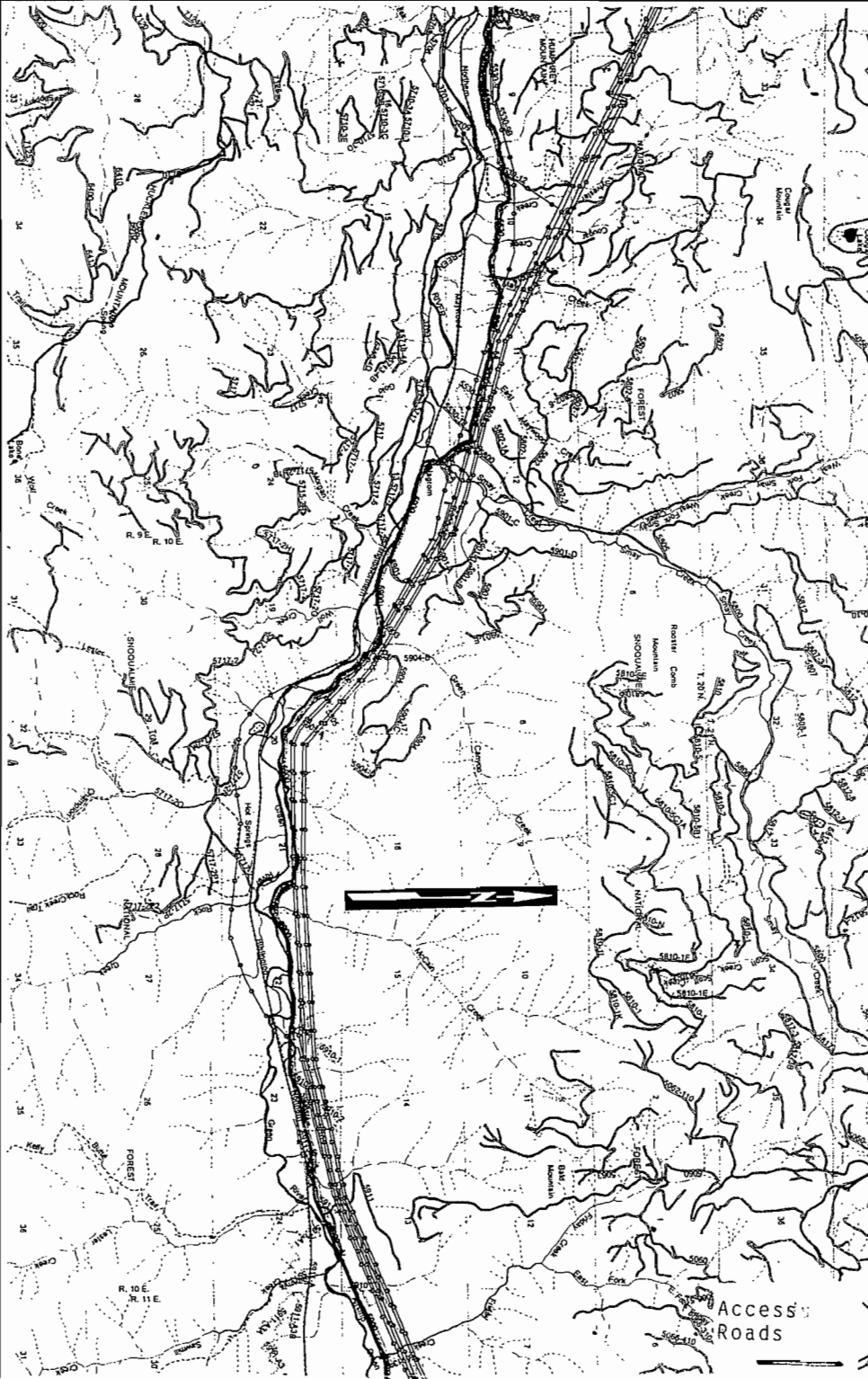
Exhibit A
Page 1 of 3

City of Tacoma - Department of Public Utilities - Real Estate Management

Date November 14, 2005
 Marsha Johnson
 Real Estate Officer

Bonneville Power Administration
 Portions of T20N R8, 9, 10 & 11E W.M. & T21N
 R8E W.M.
 King County WA

Project No.
 2004-138
 P1791



REAL ESTATE MANAGEMENT ILLUSTRATION

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Exhibit A
 Page 2 of 3

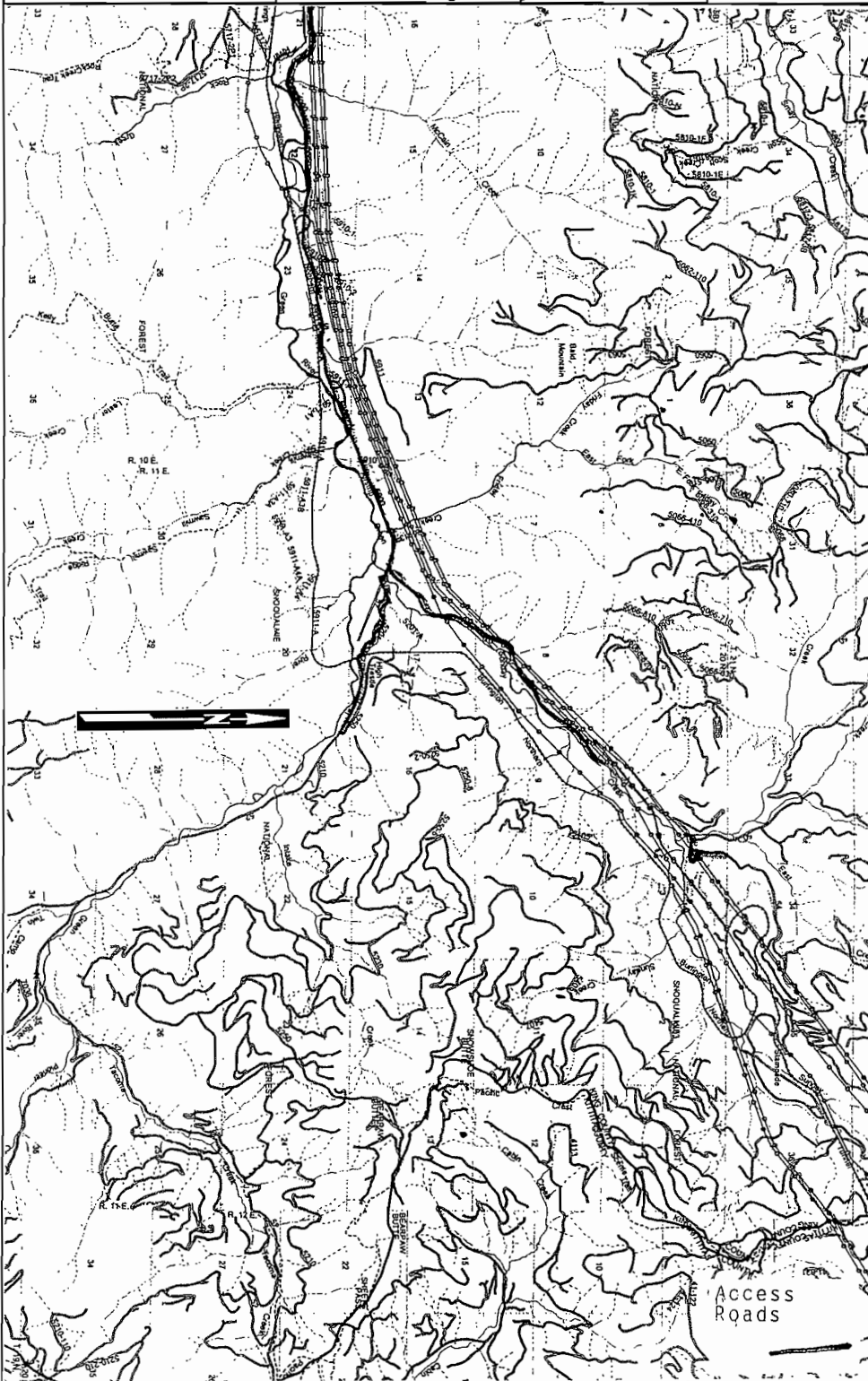
City of Tacoma - Department of Public Utilities - Real Estate Management

Date November 14, 2005

Marsha Johnson
Real Estate Officer

Bonneville Power Administration
Portions of T20N R8, 9, 10 & 11E W.M. & T21N
R8E W.M.
King County WA

Project No.
2004-138
P1791



REAL ESTATE MANAGEMENT ILLUSTRATION

This illustration is not to scale. It is provided as a convenience to assist in identifying significant characteristics of the installation. No liability is assumed by reason of reliance hereon.

Exhibit A
Page 3 of 3

Appendix C – Private Landowner Agreements

~~9310220515~~

A2553

93 OCT 22 PM 2: 57

GREEN RIVER WATERSHED COOPERATIVE AGREEMENT

RECORDED
CATHY PEARSALL-STIPEK
AUDITOR PIERCE CO. WASH

Preamble

The Green River Watershed has been utilized as Tacoma's primary source of municipal water supply since 1913. Because of the high quality of the water from this source and the protection it receives from potential contamination, the City is able to meet health regulations without complex water filtration treatment. Disinfection of the water with chlorine is the only required treatment for this supply which serves approximately 250,000 people.

Control of human activities within the watershed is a critical element for water quality protection. Since there are several landowners in the watershed in addition to the City, the City has historically pursued cooperative agreements with the other owners to achieve the required degree of control. In the 1940s and 1950s these took the form of "Police Power" agreements which have served well until recent times. These agreements focused primarily on control of trespassers and forest fires. With significant changes in water quality regulations, new and evolving forest practices, changes in land ownerships, and transportation concerns, the agreements need to be revised to be responsive to current conditions.

Therefore, the agreement contained herein is designed and intended to document the continued cooperation between the landowners and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners.

~~9310220515~~

RECEIVED THIS DAY

WATER DIVISION WATERSHED AGREEMENT A2553

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KING COUNTY RECORDS
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1993-340
A2553

DP

Agreement

THIS AGREEMENT, made as of the 17th day of September, 1993, between Plum Creek Timber Company, L.P., hereinafter called the "Company" and the City of Tacoma, Washington, a municipal corporation, hereinafter called the "City."

DECLARATIONS:

WHEREAS, the Company and the City own certain lands in King County, Washington, located within the boundaries of the Green River Watershed, from which Watershed the City obtains most of its municipal water supply (attached and made a part hereof is a map marked Exhibit "A," showing the approximate boundaries of the Green River Watershed and Exhibit "B," the written description of the Watershed boundaries), and

WHEREAS, both parties recognize that production and protection of high quality water is directly related to land management, land utilization, human activities, and natural events, and

WHEREAS, both parties recognize that well planned and executed forest management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the Company's management objectives, and

WHEREAS, both parties recognize the right of each party to control access upon their respective lands and roadways, and

WHEREAS, both parties recognize that a long-term cooperative approach to management of the Green River Watershed will produce multiple benefits for all concerned;

NOW, THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE COMPANY

A. The Company, during the life of this agreement, hereby authorizes the City to patrol the Company's Green River Watershed lands against trespassers thereon, against the starting thereon or spreading thereto of any fire and may exclude therefrom and prevent the entry thereon, at all times and for any purpose, of any person or persons other than officers, agents, or permittees of the City and officers, agents or permittees of the Company. The City is also authorized to enter said lands for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.

B. The Company recognizes that gates may be deemed necessary by the City on Company roads entering the Watershed. The Company agrees to provide written authorization to the City for gates once locations have been agreed upon. The installation, operation, and maintenance of all such gates if desired by City shall be the responsibility of and shall be at the expense of the City. Gate watchmen, if required by the City, shall likewise be the responsibility of and shall

be at the expense of the City, unless otherwise agreed. All gates shall be fitted with Company locks or the Company shall be provided keys for the City's locks. At such times as logging operations and timber hauling are in progress within the Watershed, gates may be left open during working hours. Gates shall remain closed and locked at other hours and at other times.

C. The Company reserves to itself and to its successors and assigns the absolute right, at all times, to occupy, enter upon and utilize its lands, and the whole thereof, for any purpose or purposes incident to the ownership thereof and particularly for the purpose of growing, cultivating, and producing timber, trees, and forest growth thereon, and reforesting the same, logging, harvesting, and removing timber, trees, forest growth and forest crops therefrom, and constructing, maintaining and using such roads, trails, and other improvements as may be necessary or incidental to such operations. The Company agrees to consult in advance with the City regarding any proposed plans to conduct non-forest management-related activities or land uses within the Watershed. It is understood and agreed that all proposed uses within the Watershed would be conducted to be consistent with the City's written "Requirements for Protection of Water Supply in the Green River Watershed."

II. THE CITY

A. The City during the life of this Agreement hereby agrees to perform its obligation, under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed. Also, the City will provide timely reports to the Company regarding its patrol and inspection activities.

B. The City shall not deposit any waste or debris on said Company lands and will not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the Company.

C. The City shall reimburse the Company for extraordinary costs incurred by the Company in its attempt to satisfy written requests by the City's Water Division Superintendent to change its forestry related activities and timber harvesting on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary costs are the costs in excess of the Company's ordinary costs to achieve compliance with the Forest Practices Act (Chapter 76.09 RCW), the Shoreline Management Act (Chapter 90.58 RCW), and other applicable laws and regulations thereon as applicable to its lands within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity.

Upon being informed by the Company that an activity will occur, the City will, within 30 calendar days, notify the Company of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The Company shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City may agree in writing to pay the amount specified by the Company or request a meeting to review the matter. If the City fails to respond or if the parties are unable to reach mutual agreement, it is understood that the Company may choose to proceed as originally proposed. City

shall not be obligated to reimburse Company for any cost that is more than 10 percent above Company's estimate.

III. BOTH PARTIES

A. Both parties agree to accept and abide by the requirements contained in a manual titled "Requirements for the Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements," dated August 25, 1993 and attached hereto and marked Exhibit "C"), as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the Company for review and comment. Revisions to the Requirements will not be enforceable upon Company lands or on Company's solely owned access roads without the Company's specific written approval.

B. Both parties agree to investigate any and all alleged violations of the Requirements by the Company, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations.

C. Both parties agree to share with each other prior to May 31 of each year their respective annual plan for land management activities within the Watershed. These plans will be written in sufficient detail to allow both parties to plan and schedule their land management activities. Both parties agree to notify the other of any changes to such plans at least 30 days prior to implementing such changes on the ground.

D. Both parties agree to confer on all proposed changes to laws and/or regulations which may affect land management or production of timber or water in the Green River Watershed.

E. Both parties agree this Agreement shall be and remain in force and effect until December 31, 1994, and from year to year thereafter until terminated by written notice of termination given by the chief operating officer of either party hereto to the other not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until the Company no longer maintains interest in said portion of said lands.

F. Both parties agree to conduct a joint performance review of this Agreement on an annual basis for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.

G. To the fullest extent allowed by law, the City and Company agree to defend, indemnify, and save harmless the other respective party, its officers, employees and agents from all costs, damages, claims, and legal actions that may arise or pertain to exercising any rights under this agreement including, but not limited to, the allowance of recreational users in the Watershed pursuant to Section II.A. hereof and damage, injuries or death incurred by or to the City or Company's employees or employees of the City or Company's contractor(s), subcontractor(s), agent(s) or permittee(s), provided that this indemnification is not applicable to the sole negligence or willful misconduct of either party. In addition, the Company and City acknowledge that they may be waiving immunity under Title 51 RCW, the Industrial Insurance law and that this agreement is mutually

negotiated. Furthermore, this agreement is intended to be strictly for the benefit of each party and no individual shall be entitled to additional rights and/or remedies.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

This agreement supersedes and replaces any similar general agreement between the parties hereto.

PLUM CREEK TIMBER CO., L.P.

CITY OF TACOMA

DEPARTMENT OF PUBLIC UTILITIES

By

Gary Johnson
Manager

By

Kenneth J. Mery
Deputy Director Water Superintendent

Approved as to form & legality:

Mark Babin
Chief Asst. City Attorney

September 15, 1993

M-32

9310220515

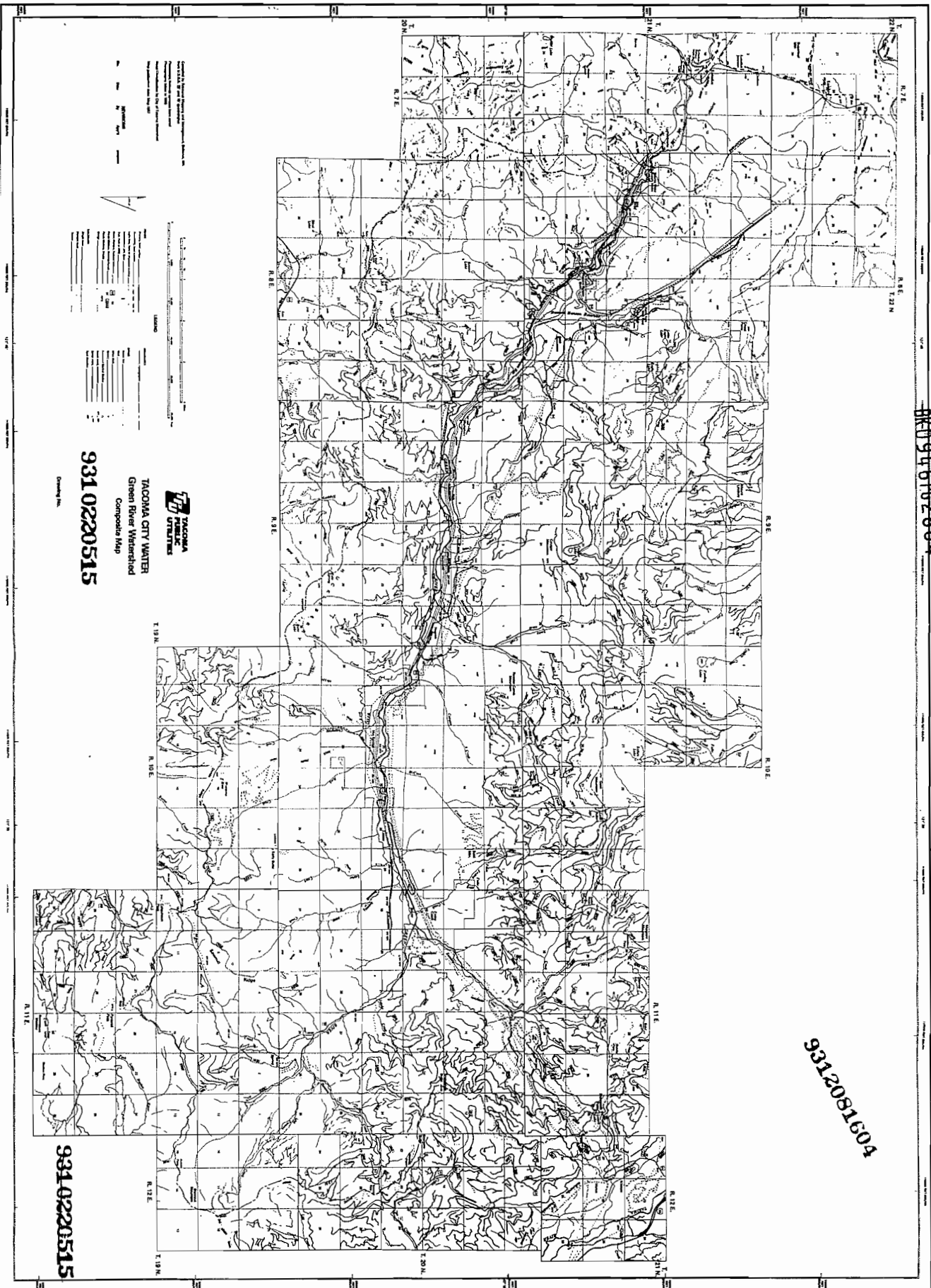
9312081604

PKU 946 PG 2684

9312081604

EXHIBIT A

83626940BK



ORDINANCE NO. 11441

BY DAVISSON:

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

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All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W.M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W.M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

citizens of the City of Tacoma and shall take effect immediately.
after publication.

Passed AUG 4 - 1937

E. A. Smith
Mayor

Attest: *Genevieve Martin*
City Clerk

9312081604

COPY

RJR/A2553

RECEIVED

APR 07 1995

KING COUNTY
RECORDER

1995-317
A2553

AMENDMENT NO. 1
TO
GREEN RIVER WATERSHED COOPERATIVE AGREEMENT
BETWEEN
CITY OF TACOMA AND PLUM CREEK TIMBER COMPANY, L. P.

The City of Tacoma, Water Division and Plum Creek Timber Company, L. P. are parties to an agreement dated September 17, 1993, and both parties desire to have said agreement amended to clarify the applicability to certain land.

NOW THEREFORE IT IS FURTHER AMENDED AS FOLLOWS:

III. BOTH PARTIES -

E. Both parties agree this Agreement shall be and remain in force and effect until December 31, 1994, and from year to year thereafter until terminated by written notice of termination given by the chief operating officer of either party hereto to the other not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until ~~the Company~~ either party no longer maintains interest in said portion of said lands.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

PLUM CREEK TIMBER CO., L.P.

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

BY Gary Johnson

BY Kenneth J. Merry
Deputy Director, Water Superintendent

Manager

Approved as to Form and Legality

B. S. Karavits
Chief Assistant City Attorney

Date 4/3/95

Page 1 of 2

This Amendment amends that document recorded October 22, 1993, under Fee Number 9310220515.

Wrong No.

9504070430

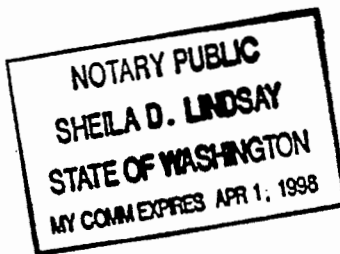
STATE OF WASHINGTON)
) SS
 COUNTY OF King

I certify that I know or have satisfactory evidence that Early Johnson
 _____ is/are the person(s) who appeared before me, and said
 person(s) acknowledged that he/she/they signed this instrument, on oath stated that he/she/they
 was/were authorized to execute the instrument and acknowledged as the
Manager of PLUM CREEK TIMBER COMPANY, L.P. to be the free and
 voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: 4-3-95

Sheila D. Lindsay
 Notary Public in and for the State
 of Washington

Residing in Sumner
 My appointment expires 4-1-98



9504070430

RETURN TO
 REAL ESTATE MANAGEMENT
 TACOMA PUBLIC UTILITIES
 P.O. BOX 11003

1996-309
A 2603

**GREEN RIVER WATERSHED
COOPERATIVE AGREEMENT**

Preamble

The Green River Watershed has been utilized as Tacoma's primary source of municipal water supply since 1913. Because of the high quality of the water from this source and the protection it receives from potential contamination, the City is able to meet health regulations without complex water filtration treatment. Disinfection of the water with chlorine is the only required treatment for this supply which serves approximately 250,000 people.

Control of human activities within the watershed is a critical element for water quality protection. Since there are several landowners in the watershed in addition to the City, the City has historically pursued cooperative agreements with the other owners to achieve the required degree of control. In the 1940s and 1950s these took the form of "Police Power" agreements which have served well until recent times. These agreements focused primarily on control of trespassers and forest fires. With significant changes in water quality regulations, new and evolving forest practices, changes in land ownerships, and transportation concerns, the agreements need to be revised to be responsive to current conditions.

Therefore, the agreement contained herein is designed and intended to document the continued cooperation between the landowners and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners.

Agreement

THIS AGREEMENT, made as of the 28th day of August, 1996 between Burlington Northern Railroad Company, hereinafter called the "Company" and the City of Tacoma, Washington, a municipal corporation, hereinafter called the "City."

DECLARATIONS:

WHEREAS, the Company is desirous of cooperating with the City in return for certain management support services, including but not limited to forest fire patrol and first attack response, and security patrol on the lands located within the boundaries of the Green River Watershed, from which Watershed the City obtains most of its municipal water supply (attached and made a part hereof is a map marked Exhibit "A," showing the approximate boundaries of the Green River Watershed and Exhibit "B," the written description of the Watershed boundaries), and

WHEREAS, both parties recognize that production and protection of high quality water is directly related to land management, land utilization, human activities, and natural events, and

WATER AGREEMENT 2603

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KING COUNTY RECORDS

PM

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0950

961014-0950

WHEREAS, both parties recognize that well planned and executed management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the Company's management objectives, and

WHEREAS, both parties recognize the right of each party to control access upon their respective lands and roadways, and

WHEREAS, both parties recognize that a long-term cooperative approach to management of the Green River Watershed will produce mutual benefits for all concerned;

NOW, THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE COMPANY

A. The Company, during the life of this agreement, hereby authorizes the City to patrol the Company's Green River Watershed lands against trespassers thereon, against the starting thereon or spreading thereto of any fire and may exclude therefrom and prevent the entry thereon, at all times and for any purpose, of any person or persons other than officers, agents or permittees of the Company. The City is also authorized to enter, after reasonable notice, said Company lands for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.

B. The Company recognizes that one or more vehicular rail crossings may be deemed necessary by the City in order to access its lands made inaccessible by increased commercial rail service. The Company agrees to provide written authorization to the City for any such rail crossing, once its location has been agreed upon by the parties. The cost of installation and maintenance of all such crossings shall be the responsibility of the City. Gates at locations to limit access to these crossings will be installed and maintained by the City if desired by the Company.

C. The Company will provide the City with current copies of time tables and operating instructions for right of way within the watershed and will make arrangements to inform operating personnel when they are within the watershed boundaries.

II. THE CITY

A. The City, during the life of this Agreement, may patrol and inspect Company's said lands under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed. Also, the City will provide timely reports to the Company regarding any noteworthy patrol and inspection activities.

B. The City shall reimburse the Company for extraordinary costs incurred by the Company in its attempt to satisfy written requests by the City's Water Division Superintendent to change its maintenance and operation related activities on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary

costs are the costs in excess of the Company's ordinary costs to achieve its operation and maintenance objectives within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity, but will not include remediation corresponding to any effects of a derailment in the watershed or any cost of complying with lawful regulatory or court orders..

At least thirty (30) days before the beginning of any major project, the Company shall notify the City, in writing, that an unusual activity will occur (such as a bridge replacement or track realignment). The City will, within 30 calendar days, notify the Company of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The Company shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City will either agree to pay the amount specified by the Company or request a meeting to review the matter. If the City agrees to pay the amount specified by the Company, payment will be made by the City within 60 days of date of Agreement. If the City fails to respond within 30 days to the Company's documentation or if the parties are unable to reach mutual agreement, it is understood the Company may choose to proceed as originally proposed. City shall not be obligated to reimburse Company for any cost that is more than 10 percent above Company's estimate.

III. BOTH PARTIES

A. Both parties agree to accept and abide by the requirements contained in a manual titled "Requirements for the Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements," dated August 25, 1993 and attached hereto and marked Exhibit "C"), as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the Company for review and comment. Revisions to the Requirements will not be enforceable upon Company lands or on Company's solely owned access roads without the Company's specific written approval. This provision does not constrain the City from taking any lawful action to prevent, restrain or place conditions on any proposed activities of the Company in conformance with its regulations.

B. Both parties agree to investigate any and all alleged violations of the Requirements by the Company, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations.

C. Both parties agree to communicate in writing on all known proposed changes to policies, laws and/or regulations which may affect land management or production of timber or water in the Green River Watershed.

D. Both parties agree this Agreement shall be and remain in force and effect until December 31, 1996, and from year to year thereafter until terminated by written notice to the other party of termination given by an officer or the chief operating officer of either party or

his/her designee. Such notice shall be provided not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until the Company no longer maintains interest in said portion of said lands.

E. Both parties agree to conduct a joint performance review of this Agreement whenever either party deems such review necessary for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.

F. Both parties agree to notify the other in the event of any emergency as soon as possible.

G. To the fullest extent allowed by law, the City and Company agree to defend, indemnify, and save harmless the other respective party, its officers, employees and agents from all costs, damages, claims, and legal actions that may arise or pertain to exercising any rights under this agreement including damage, injuries or death incurred by or to the City or Company's employees or employees of the City or Company's contractor(s), subcontractor(s), agent(s) or permittee(s), provided that this indemnification is not applicable to the sole negligence or willful misconduct of either party. In addition, the Company and City acknowledge that they may be waiving immunity under Title 51 RCW, the Industrial Insurance law and that this agreement is mutually negotiated. Furthermore, this agreement is intended to be strictly for the benefit of each party and no individual shall be entitled to additional rights and/or remedies.

H. Neither party shall deposit any waste or debris on the other party's lands and shall not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the other party.

I. Both sides agree to cooperate to integrate radio communications systems and other communications systems to facilitate rapid and effective communication between the parties.

J. This Agreement is not intended and shall not be interpreted to be applicable to, or eliminate the responsibility and or liability of the parties hereto with respect to their respective actions in performing their primary functions as a rail common carrier and a municipal water supplier.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

This agreement supersedes and replaces any similar general agreement between the parties hereto.

BURLINGTON NORTHERN RAILROAD
COMPANY

By Thomas K. Lee
Its Division Superintendent

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

By Kenneth J. Mery
Deputy Director, Water Superintendent

Approved as to form & legality:

Mark E. Brink
Chief Asst. City Attorney

9610140950

9610140950

BY DAVISSON:

EXHIBIT "B"

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

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All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W.M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W.M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

9611190462

RECEIVED THIS DAY

Nov 9 10 48 AM '96

BY THE CLERK OF
RECORDS & ELECTIONS
KING COUNTY

**GREEN RIVER WATERSHED
COOPERATIVE AGREEMENT**

Preamble

The Green River Watershed has been utilized as Tacoma's primary source of municipal water supply since 1913. Because of the high quality of the water from this source and the protection it receives from potential contamination, the City is able to meet health regulations without complex water filtration treatment. Disinfection of the water with chlorine is the only required treatment for this supply which serves approximately 250,000 people.

Control of human activities within the watershed is a critical element for water quality protection. Since there are several landowners in the watershed in addition to the City, the City has historically pursued cooperative agreements with the other owners to achieve the required degree of control. In the 1940s and 1950s these took the form of "Police Power" agreements which have served well until recent times. These agreements focused primarily on control of trespassers and forest fires. With significant changes in water quality regulations, new and evolving forest practices, changes in land ownerships, and transportation concerns, the agreements need to be revised to be responsive to current conditions.

Therefore, the agreement contained herein is designed and intended to document the continued cooperation between the landowners and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners.

9611190462

1996-238

Agreement

THIS AGREEMENT, made as of the 23 day of October, 1996
between Giustina Resources, hereinafter called the "Company" and the City of
Tacoma, Washington, a municipal corporation, hereinafter called the "City."

DECLARATIONS:

WHEREAS, the Company has owned and managed its forest lands within the
Green River Watershed since December 1995, and

WHEREAS, without the cooperation of the Company, the City in some instances
may be required to consider requesting the City Council to authorize the exercise
of its eminent domain power, and

WHEREAS, the Company is desirous of cooperating with the City in return of
certain management support services, including but not limited to forest fire patrol
and first attack response, and security patrol on the lands located within the
boundaries of the Green River Watershed, from which Watershed the City obtains
most of its municipal water supply (attached and made a part hereof is a map
marked Exhibit "A," showing the approximate boundaries of the Green River
Watershed and Exhibit "B," the written description of the Watershed boundaries),
and

WHEREAS, both parties recognize that production and protection of high quality
water is directly related to land management, land utilization, human activities,
and natural events, and

WHEREAS, both parties recognize that well planned and executed forest management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the Company's management objectives, and

WHEREAS, both parties recognize the right of each party to control access upon their respective lands and roadways, and

WHEREAS, both parties recognize that a long-term cooperative approach to management of the Green River Watershed will produce mutual benefits for all concerned;

NOW, THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE COMPANY

A. The Company, during the life of this agreement, hereby authorizes the City to patrol the Company's Green River Watershed lands against trespassers thereon, against the starting thereon or spreading thereto of any fire and may exclude therefrom and prevent the entry thereon, at all times and for any purpose, of any person or persons other than officers, agents or permittees of the Company. The City is also authorized to enter said Company lands for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.

B. The Company recognizes that gates may be deemed necessary by the City on Company roads entering the Watershed. The Company agrees to provide written authorization to the City for gates once locations have been agreed upon. The installation, operation, and maintenance of all such gates if desired by City shall be the responsibility of and shall be at the expense of the City. Gate watchmen, if required by the City, shall likewise be the responsibility of and shall be at the expense of the City, unless otherwise agreed. All gates shall be fitted with Company locks or the Company shall be provided keys for the City's locks. At such times as logging operations and timber hauling are in progress within the Watershed, gates may be left open during working hours. Gates shall remain closed and locked at other hours and at other times.

C. The Company reserves to itself and to its successors and assigns the absolute right, at all times, to occupy, enter upon and utilize its lands, and the whole thereof, for any purpose or purposes incident to the ownership thereof and particularly for the purpose of growing, cultivating, and producing timber, trees, and forest growth thereon, and reforesting the same, logging, harvesting, and removing timber, trees, forest growth and forest crops therefrom, and constructing, maintaining and using such roads, trails, and other improvements as may be necessary or incidental to such operations. The Company agrees to notify in advance the City regarding any proposed plans to conduct non-forest management-related activities or land uses within the Watershed. It is understood and agreed that all proposed uses within the Watershed would be conducted consistent with the City's written "Requirements for Protection of Water Supply in the Green River Watershed."

II. THE CITY

A. The City during the life of this Agreement hereby agrees to perform its obligation, under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed. Also, the City will provide timely reports to the Company regarding its patrol and inspection activities.

B. The City shall reimburse the Company for extraordinary costs incurred by the Company in its attempt to satisfy written requests by the City's Water Division Superintendent to change its forestry related activities and timber harvesting on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary costs are the costs in excess of the Company's ordinary costs to achieve compliance with the Forest Practices Act (Chapter 76.09 RCW), the Shoreline Management Act (Chapter 90.58 RCW), and other applicable laws and regulations thereon as applicable to its lands within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity.

Upon being informed by the Company that an activity will occur, the City will, within 30 calendar days, notify the Company of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The Company shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City will either agree to pay the amount specified by the Company or request a meeting to review the matter. If the City

agrees to pay the amount specified by the Company, payment will be made by the City within 60 days of date of Agreement. If the City fails to respond within 30 days to the Company's documentation or if the parties are unable to reach mutual agreement, it is understood the Company may choose to proceed as originally proposed. City shall not be obligated to reimburse Company for any cost that is more than 10 percent above Company's estimate.

III. BOTH PARTIES

A. Both parties agree to accept and abide by the requirements contained in a manual titled "Requirements for the Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements," dated August 25, 1993 and attached hereto and marked Exhibit "C"), as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the Company for review and comment. Revisions to the Requirements will not be enforceable upon Company lands or on Company's solely owned access roads without the Company's specific written approval.

B. Both parties agree to investigate any and all alleged violations of the Requirements by the Company, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations.

C. Both parties agree to share with each other prior to May 31 of each year their respective annual plan for land management activities within the Watershed. These plans will be written in sufficient detail to allow both parties to

plan and schedule their land management activities. Both parties agree to notify the other of any changes to such plans at least 30 days prior to implementing such changes on the ground.

D. Both parties agree to communicate on all proposed changes to policies, laws and/or regulations which may affect land management or production of timber or water in the Green River Watershed.

E. Both parties agree this Agreement shall be and remain in force and effect until December 31, 1996, and from year to year thereafter until terminated by written notice of termination given by the chief operating officer of either party hereto to the other not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until either party no longer maintains interest in said portion of said lands.

F. Both parties agree to conduct a joint performance review of this Agreement on an annual basis for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.

G. To the fullest extent allowed by law, the City and Company agree to defend, indemnify, and save harmless the other respective party, its officers, employees and agents from all costs, damages, claims, and legal actions that may arise or pertain to exercising any rights under this agreement including damage, injuries or death incurred by or to the City or Company's employees or employees of the City or Company's contractor(s), subcontractor(s), agent(s) or permittee(s), provided that this indemnification is not applicable to the sole negligence or

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willful misconduct of either party. In addition, the Company and City acknowledge that they may be waiving immunity under Title 51 RCW, the Industrial Insurance law and that this agreement is mutually negotiated. Furthermore, this agreement is intended to be strictly for the benefit of each party and no individual shall be entitled to additional rights and/or remedies.

H. Neither party shall deposit any waste or debris on the other party's lands and shall not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the other party.


IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

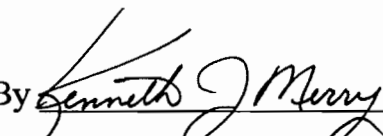
This agreement supersedes and replaces any similar general agreement between the parties hereto.

GIUSTINA RESOURCES

CITY OF TACOMA

DEPARTMENT OF PUBLIC UTILITIES

By 
LANDS MGR.

By 
Deputy Director, Water Superintendent

Approved as to form & legality:


~~Chief~~ Asst. City Attorney

EL-442

9611190462



RESOLUTION NO. U-9224

WHEREAS a proposed cooperative agreement has been negotiated between the Water Division and Giustina Resources so as to continue cooperation between the landowners and the City of Tacoma for the purpose of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners, and

WHEREAS the City of Tacoma, Water Division desires to enter into the Green River Watershed Cooperative Agreement with Giustina Resources, copy of which is on file with the Clerk of the Board; Now, therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

That the Water Superintendent be and is hereby authorized to enter into said proposed cooperative agreement with Giustina Resources, and said agreement to be substantially in the same form as approved by the City Attorney and on file with the Clerk of the Board.

Approved as to form & legality:

Daryl Hedman

Chairman

Mark Bubenik

Chief Assistant City Attorney

Bil Moss

Secretary

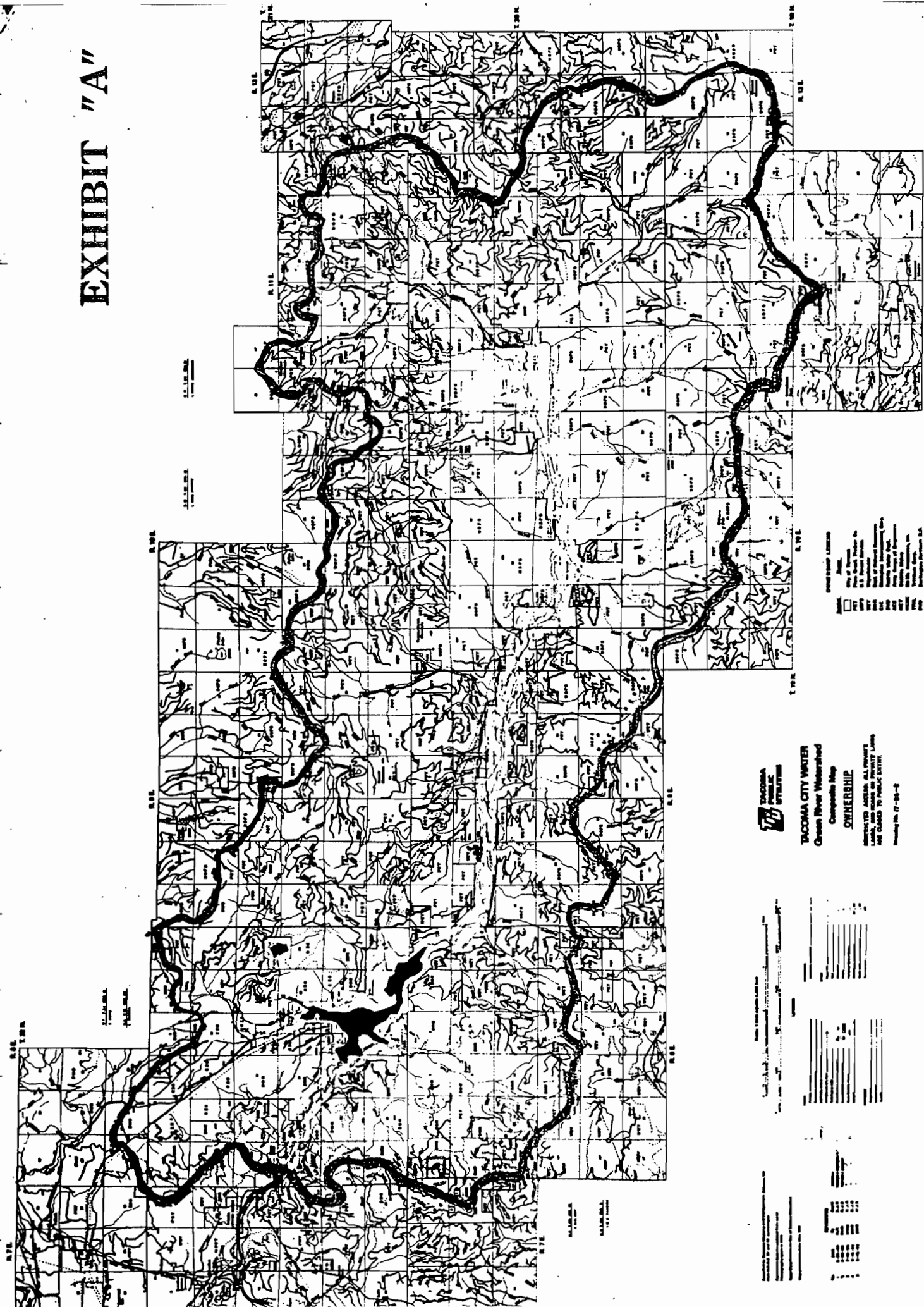
Lydia Stevenson

Clerk

Adopted October 23, 1996

cmp

EXHIBIT "A"



TACOMA CITY WATERSHED
Green River Watershed

Composite Map

OWNERSHIP

UNIMPROVED LANDS: ALL RIGHTS
UNDER THE WATER RIGHTS ACT
ARE CLAIMED TO PUBLIC ENTITY

Issued by: 11-10-8

- Legend**
- ☐ Public Entity
 - ☐ Private Land
 - ☐ Water Right
 - ☐ Road
 - ☐ Building
 - ☐ Contour
 - ☐ Elevation
 - ☐ Spot Elevation
 - ☐ Stream
 - ☐ Lake
 - ☐ Wetland
 - ☐ Forest
 - ☐ Agriculture
 - ☐ Urban
 - ☐ Suburban
 - ☐ Rural
 - ☐ Mountain
 - ☐ Valley
 - ☐ Plateau
 - ☐ Desert
 - ☐ Tundra
 - ☐ Swamp
 - ☐ Marsh
 - ☐ Wetland
 - ☐ Forest
 - ☐ Agriculture
 - ☐ Urban
 - ☐ Suburban
 - ☐ Rural
 - ☐ Mountain
 - ☐ Valley
 - ☐ Plateau
 - ☐ Desert
 - ☐ Tundra
 - ☐ Swamp
 - ☐ Marsh

BY DAVISSON:

EXHIBIT "B"

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

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All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W.M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W.M.

Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

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EXHIBIT "B"

citizens of the City of Tacoma and shall take effect immediately.
after publication.

Passed AUG 4 - 1937

E. A. Smith
Mayor

Attest: *Genevieve Martin*
City Clerk

9611190462

GREEN RIVER WATERSHED COOPERATIVE AGREEMENT

Preamble

The Green River Watershed has been utilized as Tacoma's primary source of municipal water supply since 1913. Because of the high quality of the water from this source and the protection it receives from potential contamination, the City is able to meet health regulations without complex water filtration treatment. Disinfection of the water with chlorine is the only required treatment for this supply which serves approximately 250,000 people.

Control of human activities within the watershed is a critical element for water quality protection. Since there are several landowners in the watershed in addition to the City, the City has historically pursued cooperative agreements with the other owners to achieve the required degree of control. In the 1940s and 1950s these took the form of "Police Power" agreements which have served well until recent times. These agreements focused primarily on control of trespassers and forest fires. With significant changes in water quality regulations, new and evolving forest practices, changes in land ownerships, and transportation concerns, the agreements need to be revised to be responsive to current conditions.

Therefore, the agreement contained herein is designed and intended to document the continued cooperation between the landowners and the City for the purposes of insuring production of high quality water from the Green River Watershed, now and in the future, and supporting the land management objectives of the Watershed landowners.

Agreement

THIS AGREEMENT, made as of the 26th day of July, 2005
between White River Forests, LLC, hereinafter called the "Company" and the City
of Tacoma, Washington, a municipal corporation, hereinafter called the "City."

DECLARATIONS:

WHEREAS, the Company has owned and managed its forest lands within the
Green River Watershed since December 2002, and

WHEREAS, without the cooperation of the Company, the City in some instances
may be required to consider requesting the City Council to authorize the exercise
of its eminent domain power, and

WHEREAS, the Company is desirous of cooperating with the City in return of
certain management support services, including but not limited to forest fire patrol
and first attack response, and security patrol on the lands located within the
boundaries of the Green River Watershed, from which Watershed the City obtains
most of its municipal water supply (attached and made a part hereof is a map
marked Exhibit "A," showing the approximate boundaries of the Green River
Watershed and Exhibit "B," the written description of the Watershed boundaries),
and

WHEREAS, both parties recognize that production and protection of high quality
water is directly related to land management, land utilization, human activities, and
natural events, and

WHEREAS, both parties recognize that well planned and executed forest management practices and certain limited research, educational, and land use activities are compatible with the City's water quality objectives and with the Company's management objectives, and

WHEREAS, both parties recognize the right of each party to control access upon their respective lands and roadways, and

WHEREAS, both parties recognize that a long-term cooperative approach to management of the Green River Watershed will produce mutual benefits for all concerned;

NOW, THEREFORE, in consideration of the above stated declarations and objectives, the parties do hereby agree as follows:

I. THE COMPANY

A. The Company, during the life of this agreement, hereby authorizes the City to patrol the Company's Green River Watershed lands against trespassers thereon, against the starting thereon or spreading thereto of any fire and may exclude therefrom and prevent the entry thereon, at all times and for any purpose, of any person or persons other than officers, agents or permittees of the Company. The City is also authorized to enter said Company lands for purposes of inspection and investigation of actual or potential problems which are causing or may cause adverse impacts on water quality.

B. The Company recognizes that gates may be deemed necessary by the City on Company roads entering the Watershed. The Company agrees to provide written authorization to the City for gates once locations have been agreed upon. The installation, operation, and maintenance of all such gates if desired by City shall be the responsibility of and shall be at the expense of the City. Gate watchmen, if required by the City, shall likewise be the responsibility of and shall be at the expense of the City, unless otherwise agreed. All gates shall be fitted with Company locks or the Company shall be provided keys for the City's locks. At such times as logging operations and timber hauling are in progress within the Watershed, gates may be left open during working hours. Gates shall remain closed and locked at other hours and at other times.

C. The Company reserves to itself and to its successors and assigns the absolute right, at all times, to occupy, enter upon and utilize its lands, and the whole thereof, for any purpose or purposes incident to the ownership thereof and particularly for the purpose of growing, cultivating, and producing timber, trees, and forest growth thereon, and reforesting the same, logging, harvesting, and removing timber, trees, forest growth and forest crops therefrom, and constructing, maintaining and using such roads, trails, and other improvements as may be necessary or incidental to such operations. The Company agrees to notify in advance the City regarding any proposed plans to conduct non-forest management-related activities or land uses within the Watershed. It is understood and agreed that all proposed uses within the Watershed would be conducted consistent with the City's written "Requirements for Protection of Water Supply in the Green River Watershed."

II. THE CITY

A. The City during the life of this Agreement hereby agrees to perform its obligation, under the terms of this Agreement, insofar as it is able to do so with the workers and equipment that it may have employed and available upon said Watershed. Also, the City will provide timely reports to the Company regarding its patrol and inspection activities.

B. The City shall reimburse the Company for extraordinary costs incurred by the Company in its attempt to satisfy written requests by the City's Water Division Superintendent to change its forestry related activities and timber harvesting on lands or roads within the Watershed to satisfy City's water quality objectives. For the purposes of this agreement, said extraordinary costs are the costs in excess of the Company's ordinary costs to achieve compliance with the Forest Practices Act (Chapter 76.09 RCW), the Shoreline Management Act (Chapter 90.58 RCW), and other applicable laws and regulations thereon as applicable to its lands within the Green River Watershed. Such extraordinary costs shall include increased costs and income foregone, resulting from and experienced at the time of the change in activity.

Upon being informed by the Company that an activity will occur, the City will, within 30 calendar days, notify the Company of any specific concerns the City has about the proposed activity and specify any changes desired by the City. The Company shall provide documentation to the City of any extraordinary costs anticipated due to the requested change. Within 30 calendar days of the date of receipt of such documentation, the City will either agree to pay the amount specified by the Company or request a meeting to review the matter. If the City

agrees to pay the amount specified by the Company, payment will be made by the City within 60 days of date of Agreement. If the City fails to respond within 30 days to the Company's documentation or if the parties are unable to reach mutual agreement, it is understood the Company may choose to proceed as originally proposed. City shall not be obligated to reimburse Company for any cost that is more than 10 percent above Company's estimate.

III. BOTH PARTIES

A. Both parties agree to accept and abide by the requirements contained in a manual titled "Requirements for the Protection of Water Supply in the Green River Watershed" (hereinafter called "Requirements," dated August 25, 1993 and attached hereto and marked Exhibit "C"), as the basis for the City's efforts to protect the water supply and water quality within the Green River Watershed. Proposed revisions to the Requirements will be provided to the Company for review and comment. Revisions to the Requirements will not be enforceable upon Company lands or on Company's solely owned access roads without the Company's specific written approval.

B. Both parties agree to investigate any and all alleged violations of the Requirements by the Company, the City, their officers, agents, or permittees on any lands within said Watershed and mutually agree to discuss such violations and determine what action shall be taken to correct such violations.

C. Both parties agree to share with each other prior to May 31 of each year their respective annual plan for land management activities within the Watershed. These plans will be written in sufficient detail to allow both parties to

plan and schedule their land management activities. Both parties agree to notify the other of any changes to such plans at least 30 days prior to implementing such changes on the ground.

D. Both parties agree to communicate on all proposed changes to policies, laws and/or regulations which may affect land management or production of timber or water in the Green River Watershed.

E. Both parties agree this Agreement shall be and remain in force and effect until December 31, 2005, and from year to year thereafter until terminated by written notice of termination given by the chief operating officer of either party hereto to the other not less than 60 days prior to the termination date thereof or, as applied to any portion of said lands, until either party no longer maintains interest in said portion of said lands.

F. Both parties agree to conduct a joint performance review of this Agreement on an annual basis for the purpose of assessing whether mutual objectives are being met and to determine the need for additions, deletions, or modifications to the Agreement.

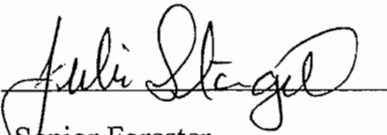
G. Neither party shall deposit any waste or debris on the other party's lands and shall not cut, damage or destroy any timber, trees or forest growth thereon, and will not construct on any of said lands any buildings or improvements without first obtaining written permission of the other party.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed in duplicate as of the day and year first above written.

This agreement supersedes and replaces any similar general agreement between the parties hereto.

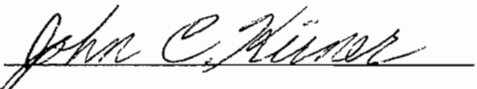
WHITE RIVER FORESTS, LLC
By: Hancock Natural Resource Group, Inc.
Its manager

By: Hancock Forest Management, Inc.
Its property manager

By 
Its: Senior Forester

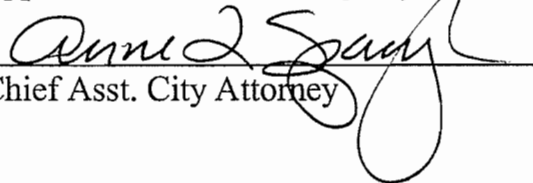
By 
Its: Area Manager
7-26-05

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

By 
Deputy Director, Water Superintendent

EL-442

Approved as to form & legality:


Chief Asst. City Attorney

APPENDIX C

WRITTEN AGREEMENT WITH MUCKLESHOOT INDIAN TRIBE

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**AGREEMENT BETWEEN THE MUCKLESHOOT INDIAN TRIBE
AND THE CITY OF TACOMA
REGARDING THE GREEN/DUWAMISH RIVER SYSTEM**

The Muckleshoot Indian Tribe, a federally recognized Indian tribe, and the City of Tacoma, acting by and through its Department of Public Utilities, Water Division, agree as follows:

RECITALS

- A. The Muckleshoot Indian Tribe ("MIT") is a federally recognized Indian tribe located on the Muckleshoot Indian Reservation in King and Pierce Counties, Washington. MIT has rights under, and is the successor to certain bands and tribes who were parties to, the Treaty of Point Elliott (12 Stat. 927) and the Treaty of Medicine Creek (10 Stat. 1132). MIT holds federally guaranteed rights under the Treaty of Point Elliott, including fishing and hunting rights, in the Green/Duwamish River System. MIT has rights and responsibilities for the management of the fish and wildlife resources and other natural resources of the Green/Duwamish River System, including the protection of those resources from environmental degradation.
- B. The City of Tacoma, by and through its Department of Public Utilities, Water Division, ("TPU") owns and operates a municipal water supply system on the Green/Duwamish River System, and controls access to the Upper Watershed of the Green River for water quality protection. As owner and operator of a municipal water supply system, TPU has a responsibility to provide a safe, adequate and affordable water supply to its customers. As part of this responsibility, TPU carries out conservation of water resources through conservation programs, water demand management programs and by augmentation of its available water supply through such means as aquifer recharge and exploration and use of additional well capacity.
- C. MIT and TPU want to resolve past differences over water resource issues concerning the Green/Duwamish River System, and to work cooperatively in the future to manage the resources of the Green/Duwamish River System. MIT and TPU recognize that other Resource Agencies share responsibility for managing the resources of the Green/Duwamish River System, and MIT and TPU will work together to enlist the support of the Resource Agencies in the implementation of this Agreement.
- D. This Agreement settles all MIT claims against TPU arising out of, or relating to, TPU's municipal water supply operations on the Green/Duwamish River System, including the

First and Second Diversions, the proposed Second Supply Project, and TPU's activities in the Upper Watershed of the Green River, except as set forth in Section 10 of this Agreement. MIT's claims arise out of its federally guaranteed treaty rights and other federal laws. It is not the intent of the parties to address, in this Agreement, the proposed Howard Hanson Dam Additional Storage Project, except as specifically set forth herein relating to the evaluation of feasibility studies.

- E. This Agreement culminates several years of negotiations, technical analysis and working together to develop understanding and recognition of each other's needs, interests, responsibilities and requirements. The parties intend that this Agreement establishes the commitment and framework for a long-term cooperative working relationship between MIT and TPU concerning the Green/Duwamish River System.

SECTION 1. DEFINITIONS

For purposes of this Agreement, the following definitions shall apply:

- 1.1. "Auburn Gage" shall mean the United States Geological Service Gage No. 12113000; which is located on the Green River at approximately River Mile 32.0.
- 1.2. "Average to Dry Year" shall mean when Howard Hanson Dam reservoir conditions correspond to Zone 3 as described and used in Exhibit A to this Agreement.
- 1.3. "Bypass Reach" shall mean the stretch of the Green River between the intake for the FRF surface water supply and the surface water discharge from the FRF into the Green River.
- 1.4. "Capital Repair and Replacement Fund" shall be as defined in Section 3.1.5 of this Agreement.
- 1.5. "Ceremonial Hunt" shall mean an occasional hunt by designated MIT members for funerals and one annual function sponsored by MIT approved by the MIT Hunting Committee pursuant to MIT's Hunting Ordinance.
- 1.6. "cfs" shall mean cubic feet per second.
- 1.7. "Construction Financing" shall mean the bond proceeds from the revenue bonds sold to finance construction of the Second Supply Project and the FRF.
- 1.8. "Controlled Area" shall mean that portion of the Upper Watershed of the Green River closed to public access by TPU to protect the water supply of the Green River.

- 1.9. "Corps of Engineers" shall mean the United States Army Corps of Engineers or its successor agency.
- 1.10. "Drought Year" shall mean any year in which the water equivalent of the snowpack at the Stampede Pass National Weather Service snow measurement station is less than twelve (12) inches on May 1 of any year, or when Howard Hanson Dam reservoir conditions correspond to Zone 4 as described and used in Exhibit A of this Agreement after May 1 of any year.
- 1.11. "First Diversion" shall mean the diversion of water from the Green River under TPU's initial water right claim of 113 cfs.
- 1.12. "Fisheries Restoration Facility" or "FRF" shall be defined as in Section 3 of this Agreement.
- 1.13. "Fisheries Trust Fund" shall be as defined in Section 3.3.
- 1.14. "Game Management Unit 485" or "GMU 485" shall mean the area in the Upper Watershed of the Green River set by WDFW for management purposes.
- 1.15. "General Trust Fund" shall be as defined in Section 5.
- 1.16. "Green/Duwamish River System" shall mean the Green River, the Duwamish River and their tributaries, the watersheds of the Green River, the Duwamish River and their tributaries, and Elliott Bay.
- 1.17. "Headworks" shall mean the area at TPU's Green River diversion structures including the dam, intake, settling basin, water control building and associated structures.
- 1.18. "Howard Hanson Dam" shall mean that certain dam located at approximately River Mile 64.5 of the Green River owned by the United States and operated by the Corps of Engineers.
- 1.19. "Howard Hanson Dam Additional Storage Project" shall mean the proposed modifications to Howard Hanson Dam that are presently being studied by the Corps of Engineers to increase substantially the water storage of Howard Hanson Dam.
- 1.20. "Indirect Costs" shall mean the lesser of 32.6% or the actual indirect cost rate, if any, negotiated annually between MIT and the Inspector General of the Department of the Interior. Indirect Costs are calculated by multiplying the direct costs by the indirect cost rate. Indirect Costs are in addition to direct costs.

- 1.21. "Limited Control Area" shall mean that portion of the Upper Watershed of the Green River outside the Controlled Area.
- 1.22. "MIT" shall be as defined in Recital A to this Agreement.
- 1.23. "O&M" shall mean the operations and routine maintenance of the FRF.
- 1.24. "O&M Base Amount" shall be as defined in Section 3.1.4.2 of this Agreement.
- 1.25. "Palmer Gage" shall mean the United States Geological Service Gage No. 12106700, which is located on the Green River 0.7 miles downstream from the diversion dam portion of the Headworks at approximately River Mile 60.3.
- 1.26. "Resource Agencies" shall mean those governmental agencies with responsibility for fisheries, wildlife or water resources.
- 1.27. "Second Diversion" shall mean the proposed diversion of Green River water under TPU's second diversion water right obtained in 1986 of up to 100 cfs.
- 1.28. "Second Supply Project" shall mean TPU's proposed approximately thirty-three (33) mile long pipeline from the Headworks of the Green River to the City of Tacoma, including the proposed Headworks modification and associated facilities (also known as Pipeline 5), along with aquifer recharge and groundwater referenced in Sections 2.3 and 2.4.
- 1.29. "Second Supply Project Operation" shall mean the Second Supply Project supplying of water directly from the Green River to the City of Tacoma, or other customers, users or Second Supply Project participants.
- 1.30. "State Instream Flows" shall mean those instream flows required by the State of Washington as a condition of TPU's water right for the Second Diversion issued in 1986.
- 1.31. "Tacoma Diversion" shall mean the diversion of water from the Green River by TPU under its first and second diversion water rights.
- 1.32. "TPU" shall be defined as stated in Recital B to this Agreement.
- 1.33. "Tribal Hunt" shall mean the annual exclusive hunt in the Controlled Area conducted by MIT under Section 6.3 of this Agreement.
- 1.34. "Upper Watershed of the Green River" shall mean that portion of the Green/Duwamish River System generally located upstream of the Headworks as shown on

the map attached as Exhibit B.

1.35. "USFS" shall mean the United States Forest Service or its successor agency.

1.36. "WDNR" shall mean the Washington State Department of Natural Resources or its successor agency.

1.37. "WDOE" shall mean the Washington State Department of Ecology or its successor agency.

1.38. "WDOH" shall mean the Washington State Department of Health or its successor agency.

1.39. "WDFW" shall mean the Washington State Department of Fish and Wildlife or its successor agency or agencies.

1.40. "Wet Year" shall mean when Howard Hanson Dam reservoir conditions correspond to Zone 1 as described and used in Exhibit A to this Agreement.

1.41. "Wet to Average Year" shall mean when Howard Hanson Dam reservoir conditions correspond to Zone 2 as described and used in Exhibit A to this Agreement.

1.42. "1995 Dollars" shall mean actual dollars spent in 1995 or dollars spent in subsequent years adjusted for inflation as defined by the Consumer Price Index, All Urban Consumers (CPI-U), U.S. City Average Index, All Items 1982-84= 100, with changes for 1996 being defined as the value for June 1996 divided by 152.5 (the value for June of 1995), as published by the United States Department of Labor, Bureau of Labor Statistics. Subsequent years expenditures shall be adjusted accordingly.

SECTION 2. INSTREAM FLOWS

2.1. Guaranteed Minimum Instream Flow Levels That Vary With Annual Conditions

TPU shall provide the following guaranteed minimum continuous instream flows, which will vary with weather conditions during the summer months, in the Green River as measured at the Auburn Gage. For Wet Years the minimum continuous instream flow shall be 350 cfs. For Wet to Average Years the minimum continuous instream flow shall be 300 cfs. For Average to Dry Years the minimum continuous instream flow shall be 250 cfs. For Drought Years, the minimum continuous instream flow shall range from 250 to 225 cfs, depending on the severity of the drought. Before any decision to drop

instream flows from 250 cfs to 225 cfs (as measured at the Auburn Gage), consultation among the Resource Agencies, MIT, the Corps of Engineers, and TPU shall explore alternatives to lowering the minimum continuous instream flow, and TPU shall comply with the requirements of Section 2.6 of this Agreement.

2.2. Instream Flow Levels for Second Diversion

TPU shall meet the continuous instream flow requirements identified in Sections 2.2.1 and 2.2.2 whenever it is withdrawing water from the Green River with its Second Diversion. TPU shall meet both sets of instream flow requirements before it can withdraw any water with its Second Diversion. To the extent that these instream flow requirements are greater than the State Instream Flows, these instream flow requirements control.

2.2.1. Instream Flow Requirements for Palmer Gage

TPU shall meet the following continuous instream flow requirements, as measured at the Palmer Gage, as a condition of withdrawing water from the Green River with its Second Diversion. From July 15 to September 15 of each year the continuous instream flow level shall be 200 cfs. From September 16 to October 31 of each year the continuous instream flow level shall be 300 cfs. For all other days of the year (November 1 to July 14), the continuous instream flow level shall be 300 cfs, which is the same as the State Instream Flows for those days.

2.2.2. Instream Flow Requirements for Auburn Gage

In addition to the instream flow requirements of Section 2.2.1, from July 15 to September 15 of each year, TPU shall meet the continuous instream flow requirement of 400 cfs, as measured at the Auburn Gage, as a condition of withdrawing water from the Green River with its Second Diversion. TPU specifically understands that if instream flows at the Auburn Gage fall below 400 cfs during the referenced period, the Second Diversion may not be used even if the instream flow requirements in Section 2.2.1 are being met.

2.3. Artificial Recharge

TPU intends to store an additional 6000 acre-feet of water, to be withdrawn from the Green River, in the aquifers in the South Tacoma Well Field or in other locations. This water will then be pumped back out into TPU's supply system during the summer to help offset the summer peak water needs of its customers.

2.4. Groundwater

TPU is investigating the availability of groundwater in the Tacoma Tideflats area. The goal is to develop an additional pumping capacity of 10 million gallons per day ("mgd") and a maximum of 6000 acre-feet of water per year to also offset the summer peak needs of its customers.

2.5. Operational Modifications and Surcharge Storage at Howard Hanson Dam

The Corps of Engineers operates Howard Hanson Dam for flood control and fish conservation. MIT and TPU desire to have the operations of Howard Hanson Dam modified to further the purposes of this Agreement. The parties acknowledge that modifications in the operations of Howard Hanson Dam, as proposed in this Section 2.5., require the cooperation of the Corps of Engineers to accomplish the intended results.

2.5.1. Modifications to Summer Operations

The operation of Howard Hanson Dam for fish conservation is designed to protect against a drought that has a probability of occurrence of one in fifty years. While maintaining that standard, the parties agree that the operations should be modified during the summer to provide additional flows in the Green River for fish. The volume of water that the parties propose for the Corps of Engineers to release during the summer would be greater than what the Corps of Engineers releases under existing Corps of Engineers operating protocols for Howard Hanson Dam. TPU agrees that if the Corps of Engineers modifies existing operations of Howard Hanson Dam to release more water during the summer months and fall precipitation does not occur in sufficient quantities to meet the instream flow requirements of Section 2.1., TPU shall restrict its withdrawals of water from the Green River by its First Diversion to allow the Corps of Engineers to recoup water required to maintain its federally mandated minimum instream flows. TPU may rely on its new well capacity to meet its demand requirements during the period it restricts its Green River withdrawals.

2.5.2. Surcharge Storage

TPU and MIT will also propose that the Corps of Engineers alter the operation of Howard Hanson Dam in a second way to store up to an extra 5000 acre-feet of water during Drought Years in the Howard Hanson Dam reservoir above the present storage of 25,000 acre feet, which the Corps of Engineers stores for release during the summer and fall for fish conservation purposes. Based on

historical weather patterns, Drought Years are anticipated to occur with an annual frequency of approximately one in five years. In Drought Years, the reservoir in the summer months would be filled with an extra 5000 acre-feet of water for use in augmenting fisheries instream flows in the summer. A decision to store 5000 acre/feet of surcharge storage, will be recognition of a drought condition, and will establish the instream flow at 250 cfs as measured at the Auburn Gage, pursuant to Section 2.1. Up to 50% of the extra storage may be used in spring, summer, or fall by the Resource Agencies and MIT at their discretion as determined by formal agency coordination. Exercise of such discretion by the Resource Agencies and MIT in the spring and early summer may limit TPU's ability to support instream flow levels under Section 2.1. later in the year. TPU's ability to fulfill its obligations under Section 2.1. in Drought Years are dependent upon use of at least 2500 acre/feet of the surcharge storage.

2.5.3. Use of Surcharge Storage by TPU

Following a Drought Year when TPU has relied to a greater degree upon its groundwater system, the level of water stored in the aquifers used by TPU is often not returned to its maximum capacity by June 1, and TPU's groundwater system starts the peak demand season below optimal conditions. With the potential increased reliance upon TPU's groundwater system in certain years under this Agreement, that condition will worsen with the increased stress placed on the groundwater system in Drought Years. To counteract this condition and in an attempt to return the groundwater system back to full conditions as soon as possible following a Drought Year, in the years that the aquifer is below capacity as a result of its use during a Drought Year, TPU may use up to 5000 acre-feet of surcharge storage behind Howard Hanson Dam in non-Drought Years to provide additional water to recharge the aquifers for its groundwater system.

2.5.4. Continuing Applicability of Instream Flow Requirements

If TPU proceeds with the Second Supply Project, and if the Corps of Engineers does not make the operational changes identified in Sections 2.5.1. and 2.5.2., the instream flow requirements in Section 2.2 concerning the Second Diversion shall still apply, and the instream flow requirements in Sections 2.1 and 2.6 shall also still apply. However, TPU may determine that the Second Supply Project is not feasible, unless TPU can find a feasible alternate source of 5000 acre feet of water.

2.6. Water Use Curtailment by TPU

During periods when reservoir inflow and reservoir storage at Howard Hanson Dam are not sufficient to maintain minimum instream flows above 250 cfs at the Auburn Gage, TPU will have the option to maintain a minimum drought flow of 225 cfs whenever use of TPU's First Diversion is beginning to be partially curtailed. Thirty days prior to requesting that the instream flows required pursuant to Section 2.1. be reduced from 250 cfs to 225 cfs, TPU shall convene a drought coordination meeting with the Resource Agencies and MIT to fully explore all alternatives that will allow maintaining a 250 cfs minimum instream flow. Before lowering instream flows to 225 cfs, TPU shall, at a minimum, institute water use restrictions consistent with TPU's water use curtailment plan.

2.7. Real-time Monitoring of Steelhead Spawning and Incubation

WDFW currently monitors steelhead spawning and incubation on the Green/Duwamish River System for fisheries management purposes. MIT and TPU shall jointly develop an additional monitoring program for the steelhead spawning and incubation season, which is from April through July each year. The purpose of this program will be to assure that the Second Supply Project does not adversely affect established steelhead redds beyond the pre-Second Supply Project instream flow conditions. TPU shall fund MIT and the WDFW for the cost of this additional monitoring program, and the total estimated annual cost in 1995 Dollars is ten thousand dollars (\$10,000) per year. The goal of the program will be to record the location of the steelhead redds and provide that information to MIT, Resource Agencies and TPU on a real-time basis. In the event that MIT, TPU and the Resource Agencies determine that the Second Supply Project operations are adversely affecting incubation conditions beyond those that already exist without the operation of the Second Supply Project, a timely consultation process with TPU, MIT and the Resource Agencies will be initiated to develop a response to those conditions.

2.8. Ongoing Commitment to Instream Flow Coordination

2.8.1. TPU and MIT commit to continuing the established practice of coordination of Green River flow management decisions with the Resource Agencies and the Corps of Engineers, before and during droughts, Howard Hanson Dam reservoir refill, or other management or natural events that may adversely affect Green River instream flows. TPU and MIT will develop a consultation process, pursuant to Section 9, to address instream flow issues,

steelhead redd monitoring, and future diversions.

2.8.2. MIT will support TPU's request to WDOE and WDFW to clarify that the above instream flow requirements for the Second Diversion exceed and thereby encompass the 750 cfs reserved by WDFW under a separate prior agreement with TPU that was to be used annually at WDFW's discretion to support fish passage and spawning.

2.9. Future Diversions

2.9.1. TPU shall not pursue any further diversion of Green/Duwamish River System water from May through October of any year before the completion, if approved, of the Howard Hanson Dam Additional Storage Project. If the Howard Hanson Dam Additional Storage Project is approved, TPU may apply for a storage right for water stored at Howard Hanson Dam reservoir as a result of the Howard Hanson Dam Additional Storage Project, as well as a diversion right to make use of that additional stored water.

2.9.2. TPU does not anticipate, but may in the future, apply for a diversion of additional water from the Green River to occur between the months of November and April in future years. TPU shall consult with MIT, according to the consultation process contained in Section 9., before submitting a water right application to WDOE to assure any fishery impacts are properly addressed.

2.9.3. Development of any water rights in the Green/Duwamish River System by TPU in addition to the First and Second Diversion water right shall be subject to the continuous instream flow requirements of this Agreement.

2.10. Verification and Monitoring of Instream Flows, Water Supply and Water System Demand

Before the commencement of Second Supply Project Operation, TPU shall be responsible for insuring that MIT has access to United States Geological Service streamflow data, or any successor equivalent data source, for the purpose of monitoring and verifying instream flow levels at the Palmer Gage and the Auburn Gage on a current, instantaneous basis, as well as access to information regarding discharge levels and reservoir elevations at Howard Hanson Dam. TPU will make access to such data and information available at the FRF and at an MIT office location, identified by MIT, using current communications technology, which will be updated as mutually agreed upon as such technology changes. Upon request of MIT, TPU shall provide timely system water

supply information, including well and municipal reservoir levels and system water demand information.

SECTION 3. FISHERIES RESTORATION AND ENHANCEMENT

3.1. Fisheries Restoration Facility (FRF)

MIT owns and operates the Keta Creek fish facility on the Green/Duwamish River System. MIT desires to further its goals of Green River fisheries restoration and enhancement through the ownership and operation of an additional, more comprehensive, fisheries facility on the Green/Duwamish River System. TPU supports the restoration and enhancement of the Green/Duwamish River System fisheries, and will help MIT in achieving its goal of a Fisheries Restoration Facility (FRF) on the Green/Duwamish River System through the means set forth below.

3.1.1. Development and Construction of the FRF

3.1.1.1. Payment of Development and Construction Costs of FRF

TPU shall pay up to eight million-five-hundred thousand dollars (\$8,500,000), in 1995 Dollars, for the development of the FRF to be owned by MIT. These funds shall cover the costs of development of the FRF. Those costs include the design, engineering, environmental analyses, permitting (except water rights permitting and development as set forth in Sections 3.1.1.4., 3.1.1.5. and 3.1.1.6), site work, construction, construction management, fish release site developments, capital equipment, and contingency at fifteen percent (15%).

3.1.1.2. Design of FRF

TPU shall contract with a design engineering firm, subject to MIT's approval, to design and engineer the FRF in consultation with MIT, following the basic conceptual elements contained in Fish Pro, Inc.'s August 7, 1995, proposal for a tribal fisheries restoration facility on the upper Green River. The conceptual plan is attached as Exhibit C to this Agreement. The line item dollar figures in Exhibit C are estimates only, and the parties are not bound, in any manner, by the various line item cost estimates contained within Exhibit C, subject to the total cost as described in Section 3.1.1.1.

3.1.1.3. Construction of FRF

TPU shall be responsible for the permitting and construction of the FRF in consultation with MIT. Although the details of how to proceed with the permitting and construction processes have not been finalized, it is expected TPU will proceed with a competitive selection process and contract with a construction contractor, to be mutually agreed upon, and that TPU shall be responsible for construction management. TPU reserves the right to reject any and all bids, and, if necessary, modify the FRF to meet the development costs limitations specified in Section 3.1.1.1., or to negotiate adjustments to the selected bid proposal. Any such modifications or adjustments shall be subject to MIT approval. If the parties agree, MIT may, as owner, contract with the selected construction contractor, if it will benefit the development of the FRF, however, TPU shall still be responsible for construction management, including the processing and approval of all requests for payment under the contract. MIT and TPU shall consult, review and approve, as necessary, during each phase of design review, permitting, and construction pursuant to Section 9. MIT and TPU shall review and approve any proposed changes to the design of the FRF. TPU shall pay for any cost overruns associated with the development and construction of the FRF. Any cost savings realized by TPU in the construction of the FRF shall be used first, to offset any costs that exceed TPU's estimated costs (such estimates to be reviewed by MIT) in the permitting, development and conveyance of water to the FRF site under Sections 3.1.1.4., 3.1.1.5. and 3.1.1.6., and, second, for mutually agreed upon improvements to the FRF.

3.1.1.4. FRF Groundwater Facilities

TPU shall, at its own cost, and not as part of the funds identified in Section 3.1.1.1, provide the necessary wells, well houses, and pumping facilities to deliver 2 cfs of groundwater to the operations center area of the FRF as further provided in Section 3.1.3.1.

3.1.1.5. FRF Water Conveyance Facilities

If water rights can be obtained for the FRF, TPU shall at its own cost, and not as part of the funds identified in Section 3.1.1.1, provide surface and groundwater conveyances to the FRF via gravity fed pipe or pumps. The water conveyance facilities shall be designed for expansion to 35 cfs in the future.

3.1.1.6. Costs of Development and Conveyance of Water to FRF

TPU shall pay all the costs associated with obtaining the permits for FRF water rights, and developing and conveying the ground and surface water, and such costs shall not be charged against the funds for the FRF identified in Section 3.1.1.1.

3.1.1.7. Fish Ladder and Trap and Haul Facilities at Headworks

All costs involved in the fish ladder and trap and haul facilities proposed for the Headworks are not to be charged against the funds for the FRF identified in Section 3.1.1.1, but shall be funded and paid for separately by TPU. TPU shall design and construct the trap and haul facilities consistent with the recommendations agreed upon among the Resource Agencies, MIT and TPU. TPU shall be responsible for all operations, maintenance and other costs of the fish ladder and trap and haul facilities at the Headworks.

3.1.2. Land for FRF

3.1.2.1. Transfer of Land for FRF

TPU shall convey to MIT, or to the United States in trust for MIT if so requested by MIT, eleven (11) acres of property adjacent to the Green River and westerly of the TPU Water Control Station suitable for constructing a fisheries restoration facility as shown on Exhibit D of this Agreement. TPU shall also convey to MIT the floodway property between the Green River and the FRF.

3.1.2.2. Transfer of Land for FRF Expansion

TPU shall convey to MIT, or to the United States in trust for MIT if so requested by MIT, an additional two (2) acres of property adjacent to the property identified in Section 3.1.2.1. in the year 2007 suitable for future expansion of the FRF, should MIT deem it necessary.

3.1.2.3. Change in Use of Land

The intended use of the property identified in Sections 3.1.2.1. and 3.1.2.2. is to construct and expand the FRF. Any future proposed changes in use or new uses of this property shall be compatible with TPU's desire to

protect the Upper Watershed of the Green River and protect TPU's ability to construct a water filtration facility in the future should such facility be necessary. MIT and TPU will jointly determine any future proposed changes in use or new uses of this property.

3.1.2.4. TPU's Right of First Refusal to Repurchase Land

After the FRF is completed, if MIT elects to cease operations at the FRF, and decides to sell the property identified in Sections 3.1.2.1 and 3.1.2.2. along with the FRF, TPU shall have the right of first refusal to purchase this property at fair market value. If the FRF facilities are not permitted and constructed, and MIT and TPU mutually determine that permitting and construction of the FRF, or its water supply, are not feasible pursuant to Section 3.1.7 below, TPU shall convey to MIT property that is of equal acreage from the TPU lands in the Limited Control Area in lieu of the property identified above.

3.1.3. FRF Water Supply

3.1.3.1. Groundwater

TPU shall provide to MIT, at TPU's own cost, and not as part of the funds identified in Section 3.1.1.1, up to 2 cfs of groundwater, if available, for incubation purposes at the FRF. If 2 cfs are not fully available, then TPU shall provide the remaining quantity from surface water and, if required, the facilities to treat the surface water to water quality standards sufficient for fisheries incubation needs..

3.1.3.2. Surface Water

TPU shall assist and support MIT in acquiring a 25 cfs surface water right from the Green River via a gravity pipeline and river pumping. TPU shall pay all costs associated with obtaining the water right pursuant to Section 3.1.1.6.

3.1.3.3. Surface Water for FRF Expansion

TPU shall assist and support MIT in acquiring an additional 10 cfs surface water right for future expansion of the FRF. TPU shall pay all costs associated with obtaining the water right pursuant to Section 3.1.1.6.

3.1.3.4. Determination of Use of Gravity Flow v. Pumping of Surface Water

When instream flows at the Palmer Gage are greater than the instream flows required by the State Instream Flows plus the flow required by the FRF, then the FRF water will be diverted at the Tacoma Diversion and will flow by gravity to the FRF. When instream flows at the Palmer Gage are less than State Instream Flows plus the amount of water required by the FRF, water will be pumped to the FRF from the Green River at the FRF site. TPU and MIT will jointly determine when to use the river pump to avoid impacts on spawning and incubation of any anadromous fish species in the Bypass Reach.

3.1.4. Operations and Maintenance of FRF

3.1.4.1. Payment of O&M by TPU

TPU shall pay MIT for O&M of the FRF, for the life of the FRF, commencing at the beginning of operation of the FRF. Commencement of the operation of the FRF shall mean that point at which the contractor has completed all performance tests on the FRF and TPU has accepted the FRF for operation. TPU shall make O&M payments to MIT in four equal installments to be paid at the beginning of each quarter of each year.

3.1.4.2. Amount of O&M

For the first year of operation, as defined in Section 3.1.4.1., TPU shall pay MIT for O&M of the FRF three hundred and fifty thousand dollars (\$350,000) ("O&M Base Amount"). From the second year forward, the O&M Base Amount shall be subject to annual adjustment in accordance with the Consumer Price Index, All Urban Consumers (CPI-U), U.S. City Average Index as published by the United States Department of Labor, Bureau of Labor Statistics, or an equivalent successor index, for the life of the FRF. (See "1995 Dollars" definition in Section 1.42. For calculation of the index) Indirect Costs shall be calculated on the O&M Base Amount as adjusted annually in accordance with the CPI-U.

3.1.4.3. Power Costs of FRF

TPU shall pay all power costs for the FRF, which shall be paid directly to the supplier based on the actual bills for the FRF. FRF power

costs shall not be included in the O&M Base Amount.

3.1.4.4. Use of Unused O&M

Any O&M Base Amount, as adjusted annually, plus Indirect Costs, not used by MIT in a calendar year for the FRF may be used by MIT for fisheries enhancement or be carried forward to the next year.

3.1.4.5. Annual Activities Report

MIT will provide an activity report (which includes financial accounting for O&M) concerning FRF operations to TPU by April 1 of each year for the life of the FRF.

3.1.5. Capital Repair and Replacement Fund

TPU, through the Tacoma City Treasurer, shall establish a Capital Repair and Replacement Fund in trust for MIT, and pay into that fund forty-five thousand dollars (\$45,000) per year for 10 years to be used solely for long term renewal and/or replacement of FRF equipment or capital repairs to the FRF. TPU shall make the initial payment into the Capital Repair and Replacement Fund at the end of the first year the FRF is operational, as defined in Section 3.1.4.1. A budget for expenditures from the Capital Repair and Replacement Fund shall be determined by MIT and provided annually to TPU for review and comment. TPU shall pay MIT from the Capital Repair and Replacement Fund for items contained in the annual budget upon request from MIT. In the event of an emergency capital repair or replacement, MIT may make a request to TPU for an emergency payment from the Capital Repair and Replacement Fund. Interest accruing on the Capital Repair and Replacement Fund shall be reinvested into the Capital Repair and Replacement Fund.

3.1.6. Monitoring and Evaluation and Interim Measures

TPU shall fund monitoring and evaluation of the FRF to provide a basis for long-term watershed restoration projects. MIT and TPU will work together to develop a scope for the monitoring and evaluation program and shall develop a budget for the program. MIT and TPU may mutually agree to implement interim measures for fisheries enhancement prior to the completion and operation of the FRF. The total cost of monitoring and evaluation and interim measures shall not exceed six hundred and seventy-five thousand dollars (\$675,000).

3.1.7. Contingency for FRF

MIT and TPU presently intend to proceed with the FRF, however, in the event that MIT and TPU mutually determine that permitting and construction of the FRF, or its water supply, are not feasible any time within five years of the effective date of this Agreement, then MIT shall elect one of the alternatives identified in Sections 3.1.7.1 or 3.1.7.2. below in lieu of constructing the FRF. This contingency, if chosen by MIT and TPU, only applies to those funds identified in Sections 3.1.1.1., 3.1.4. and 3.1.5. that TPU would have paid if the FRF were built, and does not affect any other obligations, financial or otherwise, of TPU under this Agreement. MIT will make its decision regarding which alternative it will select within thirty (30) days of the mutual determination not to proceed with the FRF.

3.1.7.1. Alternative A.

Within 120 days of MIT's decision to choose this alternative, TPU shall pay MIT a total of twelve million dollars (\$12,000,000), in 1995 Dollars, in a lump sum into the Fisheries Trust Fund to be used for fisheries enhancement on the Green/Duwamish River System. In the event that MIT elects this alternative, TPU and MIT shall develop a joint consultation process, pursuant to Section 9, to decide the use of the funds for programs for the Green/Duwamish River System for purposes of fisheries enhancement.

3.1.7.2. Alternative B.

Within 120 days of MIT's decision to choose this alternative, TPU shall pay to MIT any and all unused funds from the funds identified in Section 3.1.1.1. in a lump sum into the Fisheries Trust Fund to be used for fisheries enhancement on the Green/Duwamish River System. TPU and MIT shall develop a joint consultation process, pursuant to Section 9, to decide the use of the funds for fisheries enhancement programs. TPU may deduct actual expenditures incurred after the effective date of this Agreement, i.e., design, permitting and construction costs (excluding costs identified in Sections 3.1.1.4., 3.1.1.5., 3.1.1.6. and 3.1.1.7) from the lump sum payment. In addition, TPU shall make annual payments to MIT, or to other entities at MIT's direction, limited to the actual operating budgets of the alternative fisheries production facilities or enhancement options, up to the O&M Base Amount, adjusted annually in accordance with Section 3.1.4.2., identified for the FRF in Section 3.1.4, for the life of said facilities

or options. Indirect Costs shall be paid by TPU to MIT for payments made directly to MIT. The annual payments shall be made commencing with the operation of those alternative fish production facilities or enhancement options. The Capital Repair and Replacement Fund shall be established and managed pursuant to Section 3.1.5., but the use of such funds shall be to provide for capital repairs and replacement at the alternative fish facilities.

3.2. Interim Support

3.2.1. Interim Biologist

Upon TPU's receipt of Construction Financing for the Second Supply Project, TPU shall pay sixty-five thousand dollars (\$65,000) per year plus Indirect Costs each year to support an interim project biologist to assist MIT with FRF design, consultation and permitting, until FRF O&M funds are initiated, or MIT and TPU mutually determine that permitting and construction of the FRF or its water supply are not feasible pursuant to Section 3.1.7.

3.2.2. Keta Creek Operations

TPU shall pay MIT up to one hundred and twenty-five thousand dollars (\$125,000) per year plus Indirect Costs for Keta Creek Fish Facility operations. The exact amount of each year's payment will be based upon the pro rata share of fish actually planted in the Upper Watershed of the Green River. TPU shall make such payments until the FRF is operational, or MIT and TPU mutually determine that permitting and construction of the FRF or its water supply are not feasible pursuant to Section 3.1.7.

3.3. Fisheries Trust Fund

3.3.1. Establishment of Fisheries Trust Fund

MIT shall establish a Fisheries Trust Fund to be used to enhance and restore fish runs and habitat of the Green/Duwamish River System before receiving any funds under this Agreement earmarked for a Fisheries Trust Fund.

3.3.2. Lump Sum Payment by TPU into Fisheries Trust Fund

TPU shall pay MIT a lump sum payment of six million dollars (\$6,000,000)

to MIT in April 2007 into the Fisheries Trust Fund to assist with future expansion or adjustments in the FRF. In the event MIT decides in the future that expansion of the FRF is not feasible, or MIT decides that funds should be used for other purposes, or MIT and TPU mutually determine that permitting and construction of the FRF or its water supply are not feasible pursuant to Section 3.1.7., then MIT may, at its discretion, transfer the six million dollar (\$6,000,000) payment to the General Trust Fund.

SECTION 4. TRANSFER OF REAL PROPERTY

4.1. Real Property for FRF

Upon TPU's receipt of Construction Financing for the Second Supply Project, TPU shall convey to MIT, or to the United States in trust for MIT if so requested by MIT, the property described in Section 3.1.2.

4.2. Upper Watershed of the Green River

Upon TPU's receipt of Construction Financing for the Second Supply Project, TPU shall convey to MIT, or to the United States in trust for MIT if so requested by MIT, forty (40) acres of property, including timber, from property it owns in the Upper Watershed of the Green River located in the Limited Control Area as generally shown on Exhibit E. TPU shall provide a water supply to the property sufficient for the equivalent of service to a typical residence. Conditions of land use and access shall assure compatibility with TPU's water quality protection program as identified and incorporated in the deed.

4.3. Lake Kapowsin

Upon TPU's receipt of Construction Financing for the Second Supply Project, TPU shall convey to MIT, or to the United States in trust for MIT if so requested by MIT, twelve (12) acres of property it owns on an island in Lake Kapowsin including standing timber as described and shown on Exhibit F, thirty (30) acres of property it owns in the old town site along Lake Kapowsin as described and shown on Exhibit G, and the thirteen (13) acre former resort site it owns along the southwest shore of the Lake Kapowsin as described and shown on Exhibit H. Prior to conveyance of the properties at Lake Kapowsin, TPU agrees that MIT may use the properties, provided however, that MIT may not construct any permanent improvements on the properties until the conveyance process is completed. During this interim use period, MIT agrees to indemnify and hold harmless TPU, subject to Section 11.4, from any claims, litigation or judgments for

damages by MIT members or their guests arising from any use or activity on or near said properties.

4.4. Requirements for Transfers of Real Property

4.4.1. All Conveyances By Statutory Warranty Deed

All real property conveyed by TPU to MIT, or to the United States in trust for MIT if so requested by MIT, under this Agreement shall be by statutory warranty deed.

4.4.2. All Lands To Be Free of Hazardous Substances

TPU shall provide MIT with copies of the appropriate Phase I Environmental Assessment conducted by TPU for all real property conveyed to MIT prior to any conveyances. TPU shall be responsible for all costs of cleaning up any Hazardous Substance deposited on any of the properties prior to the date of the conveyances to MIT, or in lieu of cleaning up said properties, TPU shall provide mutually agreeable substitute real property. As used in this Section 4.4., "Hazardous Substance" means any substance that is toxic, ignitable, reactive or corrosive and which is regulated by any local government, the State of Washington or the United States as a "hazardous waste," "extremely hazardous waste," or a "hazardous substance." The cost of clean up as used in this Section 4.4. shall include all costs of remediation and monitoring, all fines and penalties, and all costs and attorneys' fees incurred in the defense of any action by a regulating governmental authority.

SECTION 5. GENERAL TRUST FUND PAYMENTS

MIT will establish a General Trust Fund for the benefit of MIT and its members under any terms and conditions that it wishes. The General Trust Fund will create a permanent trust fund. MIT will deposit all or a portion of the payments made by TPU under this Section 5 into the General Trust Fund, which will be managed to provide security for MIT and its members both in the present and the future. The General Trust Fund may be managed in such a way to allow for the partial disbursement of funds from the General Trust Fund annually, which disbursements should increase over time if the General Trust Fund is managed prudently. These disbursements would be a permanent resource for MIT and its members to be spent on meeting the needs of MIT and its members as determined by MIT each year.

TPU shall make the following payments to MIT under the following payment schedule. After TPU makes the Payment Upon Second Supply Project Operation set forth below in this

Section 5, TPU shall make the payments to MIT by January 31 of each succeeding year:

Initial Payment Upon TPU Receipt of Second Supply Project Construction Financing

\$1,000,000

Payment Upon Commencement of Second Supply Project Operation

Year 1 \$1,500,000

Additional Payments to MIT

Year 2	\$ 200,000
Year 3	200,000
Year 4	200,000
Year 5	200,000
Year 6	200,000
Year 7	200,000
Year 8	200,000
Year 9	1,000,000
Year 10	250,000
Year 11	250,000
Year 12	250,000
Year 13	250,000
Year 14	250,000
Year 15	250,000
Year 16	250,000
Year 17	250,000
Year 18	250,000
Year 19	250,000
Year 20	1,500,000
Year 21	300,000
Year 22	300,000
Year 23	300,000
Year 24	300,000
Year 25	300,000
Year 26	300,000
Year 27	300,000
Year 28	300,000

Year 29	300,000
Year 30	2,000,000
Year 31	350,000
Year 32	350,000
Year 33	350,000
Year 34	350,000
Year 35	350,000
Year 36	350,000
Year 37	350,000
Year 38	350,000
Year 39	350,000
Year 40	3,000,000
TOTAL	\$19,750,000

SECTION 6. ACCESS AND USE OF THE UPPER WATERSHED OF THE GREEN RIVER

6.1. Guiding Principles

6.1.1. The Upper Watershed of the Green River is highly valued by and significant to MIT and its members. The MIT and its members want to access the Upper Watershed of the Green River in order to practice, and teach their children about, traditional tribal cultural and spiritual activities and values. These customs include hunting and the gathering of natural resources, including medicines, berries, mushrooms, roots and wood fiber, and arise out of, and are in furtherance of, MIT's treaty rights. MIT and its members have a strong interest in a safe and private environment in which to hunt for elk and deer and to practice their religious and ceremonial activities.

6.1.2. The Upper Watershed of the Green River also provides an unfiltered water supply for TPU. TPU controls access to the Upper Watershed of the Green River in order to protect the water quality and pristine natural resource values that are present in the area. This allows TPU to maintain the highest water quality standards required by the WDOH to ensure the health and safety of TPU's customers. Without this protection, a filtered water system could be required and TPU may be unable to justify the necessity to keep access to the Upper Watershed of the Green River restricted.

6.1.3. TPU and MIT share a concern for the safety of persons traveling through the Upper Watershed of the Green River. The parties agree to work together in scheduling access for MIT to reduce the risks of travel on roads in the Upper Watershed of the Green River and to cooperate in the implementation of this Agreement to promote safety in the Upper Watershed of the Green River.

6.1.4. TPU and MIT recognize and desire to meet each other's needs while protecting the values each holds for the Upper Watershed of the Green River. It is in both parties' interests to ensure that access to the Upper Watershed of the Green River remains controlled to protect the water quality for as long as possible. Because of this, TPU and MIT developed the following provisions in Sections 6.2. through 6.5. to provide MIT and its members with access to the Upper Watershed of the Green River for cultural and spiritual purposes while protecting TPU's ability to maintain the standards necessary to protect the water quality in the Upper Watershed of the Green River.

6.1.5. By consenting to MIT's access to the Upper Watershed of the Green River, TPU can only authorize access to its own property. TPU cannot, and does not have the authority to, permit access to property owned by others in the Upper Watershed of the Green River.

6.1.6. TPU and MIT recognize that the flora and fauna of the Upper Watershed of the Green River are sustainable resources if managed properly. In the exercise of hunting and gathering activities under this Section 6, MIT agrees to abide by sound biological practices to protect these resources for future generations.

6.1.7. This Section of this Agreement presents an opportunity to build upon the relationships developed during the negotiations and to increase communication and the level of trust between the parties over time. To be successful, each party must work with its representatives to ensure that the standards and guidelines outlined below are carried out.

6.2. General Provisions Concerning Access

6.2.1. Indemnification

MIT recognizes that the Headworks road through the Controlled Area to Limited Control Area, and other roads in the Upper Watershed of the Green River, are primitive and narrow, and that TPU cannot ensure any driver's safety. In this regard MIT agrees to hold harmless and indemnify TPU, subject to Section 11.4., from all claims and litigation that MIT members or their guests may institute against TPU for monetary damages arising from accidents occurring on or near

said roads, but only to the extent said claim or litigation alleges or contends that TPU, or its employees, agents or representatives, were negligent in the design, construction and/or maintenance of said road(s).

6.2.2. Access for MIT Staff

TPU shall provide access to the Upper Watershed of the Green River to MIT staff pursuant to a separate access program for purposes such as monitoring forest practices as they relate to fish and wildlife habitat and impacts on cultural resources, conducting scientific studies, conserving and enhancing treaty protected natural resources, and maintaining and monitoring the property TPU will convey to MIT, as well as any other property that MIT may obtain.

6.2.3. Annual Review

Representatives of MIT and TPU shall meet annually to review how the process of access by MIT and its members to the Upper Watershed of the Green River is working, and to make changes or modifications to the access process, provided however, that any changes or modifications shall be subject to the written agreement of both MIT and TPU, and any changes that require modifications or amendments to the provisions of this Agreement are subject to the requirements of Section 11.11.

6.3. Hunting

MIT and TPU agree to the following guidelines for MIT exclusive hunts within the Upper Watershed of the Green River.

6.3.1. Annual Tribal Hunt

An annual MIT exclusive Tribal Hunt for deer and elk shall be conducted as appropriate given biological considerations. The Tribal Hunt shall be separate from the special drawing hunt for all citizens.

6.3.2. Scheduling of Annual Tribal Hunt

The timing of the hunting season will be determined by the WDFW, MIT, and TPU, in coordination with MIT fishing and the timing of the non-Indian hunt. The hunt in the Upper Watershed of the Green River is possible only by close cooperation between TPU, WDFW, and other landowners.

6.3.3. Harvest Numbers

Harvest numbers will be set by agreement between WDFW and MIT based upon sound biological principles.

6.3.4. Limitations for Safety or Water Quality Reasons

TPU reserves the right to limit the number of people entering the Upper Watershed of the Green River for the GMU 485 Tribal Hunts and the non-Indian hunts as necessary to control the hunting activity for safety reasons and water quality impacts. This limitation will not be unreasonably imposed, but rather is intended to assure that water quality controls in the Upper Watershed of the Green River are maintained. MIT agrees to abide by the same requirements relating to water quality and safety that apply to the non-Indian GMU 485 hunt.

6.3.5. Coordination of Monitoring and Information Sharing

TPU watershed inspectors shall carry out inspection and monitoring of the Upper Watershed of the Green River. MIT monitors shall work within the Upper Watershed of the Green River during the GMU 485 Tribal Hunts to enforce MIT hunting regulations. MIT will provide TPU with copies of MIT's hunting regulations annually. MIT hunters will provide TPU watershed inspectors the biological data and specimens of the animals taken, including teeth and other animal parts. TPU shall share such data and specimens with WDFW and MIT.

6.3.6. Ceremonial Hunts

TPU shall provide reasonable year round access for Ceremonial Hunts in the Limited Control Area. If the Limited Control Area is inaccessible, then TPU shall provide access for Ceremonial Hunts in the Controlled Area, provided however, that MIT complies with the applicable laws and regulations in authorizing the Ceremonial Hunt. For Ceremonial Hunts, TPU will waive the requirement that MIT provide two days notice to TPU if access is required via the Headworks and Massey Gate. MIT will contact designated TPU watershed inspectors to notify them of the Ceremonial Hunt. The designated hunter for the MIT Ceremonial Hunt will provide TPU watershed inspectors with the biological data and specimens of the animals taken for ceremonial purposes in the same manner as outlined for the Tribal Hunt. Guidelines for Ceremonial Hunts will be developed in consultation with TPU, MIT and WDFW.

6.3.7. Access to Controlled Area for Tribal Hunts

TPU shall provide access into the Controlled Area for the Tribal Hunts via the Headworks and Massey Gates only. For purposes of this Agreement, access on to lands within the Controlled Area and hunting requirements within the Controlled Area will be by agreement with TPU, WDFW, other landowners, and MIT.

6.3.8. Access to Limited Control Area for Hunting

Unlimited access is available through Stampede Pass into the Limited Control Area when the pass is open. When Stampede Pass is closed, prearranged access with a 2-day notice shall be via the Headworks Gate except as provided in Section 6.3.6. Access through the Controlled Area will be for one daily group round trip in and out of the Controlled Area for MIT members. All individuals requesting access will gather at the Headworks at an agreed-upon time.

6.3.9. Biological Information and Studies

It is the desire of MIT and TPU to sustain the biological health of the elk and deer herds in the Upper Watershed of the Green River over time. MIT hunters will respect this desire and follow MIT's laws and regulations in order to protect the biological integrity of the herds. TPU will cooperate with WDFW and MIT to fund any mutually agreed upon biological study relating to herd composition and population counts. TPU's contribution shall not exceed \$15,000 per year in 1995 Dollars.

6.4. Access to MIT Property

As described in Section 4 of this Agreement, TPU shall convey real property to MIT located in the Limited Control Area. MIT and its members shall have access to this property for day time activities as well as overnight visits as determined by MIT.

6.4.1. Access Via Stampede Pass

Unlimited access is available to MIT members via Stampede Pass to these lands when the pass is open.

6.4.2. Access Through Controlled Area

Access through the Controlled Area for prearranged group activities can be arranged via the Headworks Gate with 2-day notice to the TPU watershed

inspectors.

6.4.3. Emergency Access

Additionally, TPU shall provide emergency access through the Controlled Area to MIT's property in the Limited Control Area via the Headworks Gate.

6.4.4. Additional Access

When the Stampede Pass is closed, MIT members may access MIT's property through the Controlled Area via the Headworks Gate. The visits must be prearranged with 2-day notice. Access through the Controlled Area shall be for one daily group trip in and out of the Controlled Area for MIT members. All individuals requesting access shall gather at the Headworks at an agreed-upon time.

6.5. Cultural Activities

6.5.1. General Principles on Access for Cultural Activities

6.5.1.1. MIT members shall have the opportunity to access the Upper Watershed of the Green River on a year around basis for gathering, cultural and educational purposes. MIT and its members will be able to bring elders and children to the Upper Watershed of the Green River, and to educate the children, passing on the ceremonies and traditions of the Tribe. MIT and its members will be able to gather traditional medicines, roots, berries, vegetation, herbs, mushrooms, and downed fire wood from TPU and MIT lands. They will also be able to exercise their spiritual and ceremonial traditions. Gathering of such items from TPU lands will be for the personal and family use of MIT members or for ceremonial purposes, and not for significant commercial purposes.

6.5.1.2. Communication through designated contacts for both MIT and the TPU is essential for any mutually agreed upon daytime activity that requires access through or into the Controlled Area.

6.5.1.3. It is the responsibility of TPU to monitor health, safety and water quality concerns in the Upper Watershed of the Green River. These requirements will be imposed according to the state and federal water quality and safety standards and the requirements for the protection of the Upper Watershed of the Green River. TPU shall respect the activities of MIT members in the Upper Watershed of the Green River and not disrupt

MIT members in the exercise of spiritual practices except when restrictions are required for health, safety, and water quality concerns.

6.5.2. Access to Limited Control Area

Access by MIT and its members for gathering, cultural and educational purposes shall be on a year around basis, with unlimited access via Stampede Pass into the Limited Control Area. When Stampede Pass is closed, prearranged access with 2-days notice shall be via the Headworks Gate. Access through the Controlled Area to reach the Limited Control Area will be for one daily group trip in and out of the Controlled Area for MIT members. All individuals requesting access will gather at the Headworks at an agreed-upon time.

6.5.3. Access to Controlled Area

Access into the Controlled Area for gathering, cultural or educational activities will be for day time access only. Access into the Controlled Area must be prearranged for group or individual activities with 2-day notice given to TPU. TPU agrees that MIT may have at least one prearranged activity per week, and the MIT request shall be accompanied with an agreed-upon itinerary. MIT may have additional trips into the Controlled Area during special gathering seasons, provided however, that such trips must be arranged with and approved by TPU. The parties acknowledge that planning and flexibility are important components to additional access into the Controlled Area.

6.5.4. Designation of Contact Persons

TPU and MIT will each designate a minimum of four contact persons each year to coordinate access by MIT and its members into or through the Controlled Area. MIT will be responsible for providing any equipment MIT guides may need, such as radios and vehicles, to properly monitor the Upper Watershed of the Green River and during access into or through the Controlled Area during the hunting season and for cultural activities. TPU will provide training to MIT Guides on water quality protection measures, safety, ownership boundaries, road use and the location of cultural resources of interest and significance to MIT. Any additional TPU staffing requirements, if needed, will be determined by TPU and hired in accordance with TPU's prescribed Civil Service rules and regulations. TPU will make available all information on job announcements and training opportunities to MIT's designated representatives.

6.5.5. Coordination of Access

Access for MIT activities in the Upper Watershed of the Green River will not occur without communication between MIT and TPU. The MIT designated representatives will coordinate all planned MIT activities in the Upper Watershed of the Green River. TPU's designated representatives will be responsible for accommodating access exercised by MIT pursuant to this Section 6.5.

6.5.6. Commitment to Safety and Maintenance of Water Quality

MIT and TPU, as well as MIT members, will take into account issues of safety and water quality protection, and persons entering the Upper Watershed of the Green River will cooperate with TPU's efforts to maintain a safe environment and protect water quality. MIT guides will be responsible for notifying MIT members who access the Upper Watershed of the Green River of the health, safety, or water quality rules that apply while in the Upper Watershed of the Green River, and enforcing those rules. TPU acknowledges, however, that MIT and MIT guides are not, and cannot be, held legally liable for the conduct and actions of MIT members. MIT and TPU will jointly develop policies and procedures concerning MIT members that violate those rules.

SECTION 7. WATER QUALITY AND HABITAT PROTECTION FOR THE UPPER WATERSHED OF THE GREEN RIVER – STEWARDSHIP PROGRAM

7.1. TPU to Conduct Land Management to Benefit Water Quality and Fish and Wildlife Habitat

TPU will conduct land exchanges, purchases, and land management in the Green/Duwamish River System for water quality enhancement, and, to the greatest extent feasible, for greater benefit to fish and wildlife habitat in the Green/Duwamish River System.

7.2. Development of Process for Fisheries Restoration Needs

TPU, in consultation with MIT, will develop a process in a timely manner for addressing fisheries restoration needs on City-owned lands in the Upper Watershed of the Green River.

7.3. TPU to Share Information on Its Land Management Activities

TPU will provide MIT with an annual preview of planned or scheduled land

management activities on City-owned property in the Upper Watershed of the Green River. TPU will also continue to provide MIT with early review of all WDNR forest practice applications on City-owned property within the Upper Watershed of the Green River. TPU and MIT staffs will work cooperatively to address concerns of either party.

7.4. Cooperation in Upper Watershed Restoration

TPU will consider revenues from logging or other sources currently contributed by TPU to the Watershed Fund for projects to benefit anadromous fish and water quality in the Upper Watershed of the Green River. TPU and MIT will cooperate with the USFS and other agencies as appropriate to obtain federal funding for watershed restoration and water quality enhancement through programs such as the Watershed Alliance.

7.5. Annual Meeting of Landowners

TPU and MIT shall initiate an annual meeting of all landowners in the Upper Watershed of the Green River to exchange information and encourage cooperation of all in implementation of watershed programs and participation in projects designed to protect and enhance water quality and fish and wildlife habitat. This Agreement is not intended to imply that TPU is authorizing MIT to use lands owned by others.

7.6. TPU to Monitor Compliance with State Forest Practices Requirements

TPU will continue to monitor compliance with existing state forest practices regulations concerning timber harvest, road construction, land cleanup, riparian and wetland management zones, wildlife reserve trees, chemical applications, etc. as they relate to water quality in the Upper Watershed of the Green River. TPU will report all violations to the contractor/landowner and to the WDNR. TPU will include a summary of this activity in TPU's annual Green River Watershed Activities Report.

7.7. Exchange of Information

7.7.1. TPU Annual Reports and Management Plan

TPU will provide MIT with a copy of the annual Green River Watershed Activities Report furnished to the WDOH by TPU, and provide a current copy of TPU's Forest Management Plan for City-owned property in the Upper Watershed of the Green River, along with any updates or revisions, and solicit the MIT's input regarding any proposed revisions to TPU's Forest Management Plan.

7.7.2. MIT Annual Activities Report

MIT will provide TPU with an annual report of MIT's activities in the Upper Watershed of the Green River, including fish planting information.

7.8. TPU to Participate in Watershed Analysis

TPU agrees to fully support and participate in any watershed analysis initiated in the Upper Watershed of the Green River. TPU will evaluate the Watershed Administrative Units in which it has a greater than a 10 percent ownership to determine whether to initiate a Level II watershed analysis. MIT will have the opportunity to review this evaluation.

SECTION 8. MIT POLICY SUPPORT

TPU shall pay MIT one hundred thousand dollars (\$100,000) per year, plus Indirect Costs, for policy support, which may include support for the Fish Committee, Hunting Committee, or other Tribal Council efforts, for 4 years from 1995 to 1998 to assist with completion of the settlement process, implementation of this Agreement, and MIT's review of, and participation in, the feasibility studies for the proposed Howard Hanson Dam Additional Storage Project. TPU shall make the policy support payment to MIT for 1995 within 30 days after the effective date of this Agreement. TPU shall make the policy support payments to MIT for 1996, 1997 and 1998 by January 31 of each year.

SECTION 9. JOINT POLICY COMMITTEE

9.1. Establishment of Committee

Within fifteen (15) days of the effective date of this Agreement, a committee shall be formed consisting of up to three (3) representatives of MIT, to be selected and subject to removal and replacement by MIT, and up to three (3) representatives of TPU, to be selected and subject to removal and replacement by TPU. Regardless of the number of representatives a party has on the Committee, MIT and TPU shall each have one vote on matters in this Agreement that require approval of the parties. It is the intent of the parties that the Committee be given wide flexibility in the procedures and the manner in which the matters before the Committee are handled. It is the intent of MIT and TPU to attempt to achieve consensus on matters requiring action. In the event that a matter cannot be resolved, it shall be subject to the dispute resolution provisions of Section 11.3.

9.2. Meetings of Committee

The Committee shall meet and confer regularly as needed, but at least annually, to be informed of activities pertinent to this Agreement, to consult over matters pertinent to this Agreement and to exercise such approval authority as specifically delineated in this Agreement. Either party may call for a meeting of the Committee. All meetings shall be upon reasonable notice to Committee members. Along with the notice, the party requesting the meeting, or the parties together, will prepare a draft agenda for the meeting, and circulate the draft agenda. Meetings of the Committee will take place at a mutually agreed upon location. At least one representative of each party must be present for Committee action to be valid. Minutes of each meeting shall be taken, and reviewed by MIT and TPU for any corrections.

9.3. Purpose and Authority of Committee

The purpose of the Committee is to be informed of activities pertinent to this Agreement, to consult over matters pertinent to this Agreement and to exercise such approval authority over matters contained in this Agreement including the following:

9.3.1. The Committee shall have authority to carry out the activities set out under Section 2.7.

9.3.2. The Committee shall be responsible for carrying out the consultation requirements of Section 2.9.2.

9.3.3. The Committee shall have approval authority over the development of the FRF pursuant to Section 3.1.1.

9.3.4. The Committee shall have authority to make decisions concerning Section 3.1.6., including the scope of a monitoring and evaluation program and budget for such program, implementation of interim measures to enhance fisheries and the allocation of costs between the interim fisheries measures and the monitoring and evaluation program.

9.3.5. The Committee shall determine, pursuant to Section 3.1.7., within five (5) years whether the permitting and construction of the FRF or its water supply are feasible, however, such determination shall be subject to the review and approval of MIT's Tribal Council and TPU's Director of Utilities.

9.3.6. The Committee shall be responsible for reviewing and modifying matters concerning access as provided in Section 6.2.3.

SECTION 10. RESOLUTION OF CLAIMS

10.1. This Agreement resolves, releases and extinguishes ALL claims past, present and future against TPU by MIT arising or related to TPU's First and Second Diversions from the Green/Duwamish River System or other TPU Water Division operations on the Green/Duwamish River System; provided however, that such release of claims does not include any claims for negligent or intentional acts by TPU, including violation of this Agreement, which occur after the effective date of this Agreement, and/or future additional Green/Duwamish River System activities, developments or diversions by TPU. Additionally, this Agreement does not signify a position either in favor of or in opposition to the Howard Hanson Dam Additional Storage Project by MIT.

10.2. MIT agrees to support, through written correspondence and participation in governmental agency meetings and hearings, if requested by TPU, the permitting, the construction and the operation of Second Supply Project, including the headworks modifications, Pipeline 5 and the intertie pipeline between Seattle and Tacoma, and TPU's proposals for aquifer recharge and additional well development. This Agreement does not affect any claims that MIT may have against third parties, including the City of Seattle, and operations of the intertie to convey water from the Cedar River.

10.3. MIT agrees not to seek further restrictions or changes to the operation of the First Diversion or the Second Supply Project, except as provided in this Agreement.

SECTION 11. MISCELLANEOUS

11.1. Conditions

Except for proceeding with obtaining permits and design of the FRF (Section 3.1.1.3), Section 3.2.2. (Interim Support for Keta Creek Operations), the use of property under Section 4.3 (Lake Kapowsin), Section 6 (Access and Use of the Upper Watershed of the Green River) and MIT policy support (Section 8), this Agreement is conditioned upon TPU's obtaining Construction Financing for the Second Supply Project, and obtaining an agreement with the Corps of Engineers for operational changes described in Section 2.5. and the approval, if legally necessary, of the Department of the Interior Bureau of Indian Affairs. TPU shall give notice to MIT promptly upon TPU's receipt of Construction Financing.

11.2. Termination or Delay of Second Supply Project

If TPU decides to terminate the Second Supply Project, then TPU would provide MIT notice of such a decision and it would be publicly announced by TPU's Director of Public Utilities. A decision to terminate the Second Supply Project shall terminate all of TPU's rights and obligations in this Agreement, and this Agreement would become void, except to the extent that TPU agrees to work with MIT and negotiate in good faith to resolve the MIT treaty rights issues. If the Second Supply Project is delayed for more than one (1) year, the Joint Policy Committee shall convene to consider which provisions of this Agreement should continue during the delay period of the Second Supply Project.

11.3. Dispute Resolution

11.3.1. MIT and TPU intend that the commitments made in this Agreement shall establish a long term working relationship between them on the Green/Duwamish River System. In the event that any disputes arise between the parties during the term of this Agreement, the parties shall make a good faith effort to resolve any conflict, claim or controversy by meeting to discuss and consider possible solutions. Any technical disputes shall be brought to the Joint Policy Committee. If, after good faith efforts, the Joint Policy Committee is unable to resolve the conflict, either party may request non-binding mediation of the dispute, and the other party will participate in good faith in the mediation process.

11.3.2. In the event that either party, acting in good faith, believes that the other party has violated the terms of this Agreement, notice of the alleged violation shall be given by sending a detailed written statement describing the violation. Within fifteen (15) days of receipt of the notice, a meeting of the Joint Policy Committee shall be convened to attempt to resolve the matter. If, after good faith efforts, the Joint Policy Committee is unable to resolve the conflict, either party may request non-binding mediation of the dispute, and the other party will participate in good faith in the mediation process.

11.4. Limited Waiver of Sovereign Immunity and Jurisdiction

MIT hereby waives, in a limited manner, its sovereign immunity from suit in the United States District Court for the Western District of Washington, only, and no other court, concerning disputes regarding to the interpretation or enforcement of this Agreement that cannot be resolved pursuant to Section 11.3., provided however, that such waiver does not apply to any claims for damages except for MIT's indemnification obligations under Sections 4.3 and 6.2.1. up to the amount of coverage under MIT's general liability insurance, such insurance policy limits to be no less than one million dollars (\$1,000,000), which amount shall be adjusted for inflation at least every ten (10)

years, or any claims for damages for the misuse of funds paid under this Agreement up to the actual amount found by the Court to have, in fact, been misused. This limited waiver of sovereign immunity is solely for the benefit of TPU, and MIT does not waive its sovereign immunity from suit as to any other person or entity. The parties agree that this Agreement resolves claims based upon the Treaty of Point Elliott (12 Stat. 927) and other federal law, and, therefore, the federal courts have jurisdiction to the extent authorized in this Agreement.

11.5. Notice

All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given on the date of service, if served personally on the party to whom notice is to be given, or on the third day after mailing if mailed to the party to whom notice is given by first class mail, registered or certified, postage prepaid and properly addressed. MIT and TPU shall each designate at least one representative to whom all notices, demands and other communications in connection with this Agreement shall be directed. Such designation shall be given in the same manner as that set forth in this section.

11.6. Interest

Any amounts due one party to the other pursuant to the terms of this Agreement shall bear interest from the due date, or the date the right of reimbursement accrues, at the rate published or publicly announced most recently prior to such date as the lowest rate that can be legally charged by Seattle First National Bank, or its successor, for commercial, short-term unsecured loans.

11.7. Waiver

Any of the provisions of this Agreement may be waived, but only by a written consent of the party waiving such provisions. A waiver or any breach of, or failure to enforce, any of the provisions of this Agreement shall not in any way affect, limit or waive a party's rights to enforce compliance thereafter with each and every provision of this Agreement.

11.8. Successors and Assigns

This Agreement shall be binding on the parties and on their successors in interest and assigns. When TPU is referred to in this Agreement, it shall mean the City of Tacoma, Department of Public Utilities, Water Division, and its successors in interest and assigns.

11.9. No Third Party Beneficiaries

No third party is intended to, or shall have, any rights under this Agreement. MIT and TPU intend that this Agreement be strictly between MIT and TPU, and therefore only the parties have any right to enforce this Agreement or any provision of this Agreement.

11.10. Conditions Beyond the Control of the Parties

Neither party shall be liable for, nor shall be considered in breach of or default under this Agreement, because of any delay or failure to perform as required by this Agreement that is the result of any cause or condition beyond that party's control.

11.11. Amendments

The provisions of this Agreement, including all exhibits and attachments, may be modified or amended only upon the mutual written agreement of the parties, duly executed by lawfully authorized officers or officials of each party. MIT's Chairperson and TPU's Director of Public Utilities are authorized to make minor modifications to this Agreement in writing, if the modifications are consistent with the provisions and intent of this Agreement.

11.12. No Release of Third Parties

This Agreement is not intended by the parties to act, nor shall it act, to release any third parties not named herein from any claims or liabilities whatsoever.

11.13. Severability

If any provision of this Agreement shall to any extent be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

11.14. Equal Participation in Drafting

MIT and TPU have equally participated in the drafting of this Agreement. No ambiguity shall be construed against either party based upon a claim that that party crafted the ambiguous language.

11.15. Headings Not Controlling

The headings in this Agreement are for convenience and reference only, and are not part of this Agreement, and in no way amplify, define, limit or describe the scope or

intent of this Agreement.

11.16. Effective Date

This Agreement shall become effective upon execution by MIT and TPU.

DATED this 24th day of AUGUST, 1995.

MUCKLESHOOT INDIAN TRIBE

By Virginia Cross

CITY OF TACOMA

By Harold S. Moss

By Mark Quinn

009

Howard Hanson Storage Operation

Upon approval by the U.S. Army Corps of Engineers, modification of existing operating protocols at Howard Hanson Dam will facilitate maintenance of enhanced "basement" flow levels at the Palmer and Auburn gages. This will be accomplished by releasing available storage volume behind Howard Hanson Dam in accordance with established "rule curves" that are monitored on a daily basis. The rule curves will set minimum basement flow levels that can be maintained at any given point in time. During times of the year that available inflow into Howard Hanson Reservoir is not sufficient to maintain minimum instream flows, storage will be drafted from the reservoir. Under severe cases, diversion from Tacoma's P1 senior water right will also be cut back to make up the deficit.

Operating Zones

Figure 1 presents a relationship between available storage volume behind Howard Hanson Dam and time of year, and four discrete dam operation rule curves. The rule curves define the outer boundaries of instream flow operating zones which provide criteria for regulating the release rate as a function of time of year and available storage volume.

Table 1 provides tabular input for maintenance of Auburn flows based on time of year and available storage volume behind Howard Hanson Dam. To use Table 1, find the day and month in the first column. Then find the appropriate operating zone defined by the available storage for that day. As an example, an available storage volume of 20,000 acre feet on August 15 would fall within Operating Zone 2.

Special Conditions

Under Operating Zone 4, Tacoma must make up the instream flow deficit by cutting back on diversion from its P1 senior water right, requiring that the City draft additional groundwater to make up the resulting supply deficit. Discussions are under way with the U.S. Army Corps of Engineers concerning mechanisms to allow storage of an additional 5,000 acre feet for groundwater recharge under such conditions. It is contemplated that storage would be limited to the well deficit as of May 1, up to a maximum of 5,000 acre feet per year.

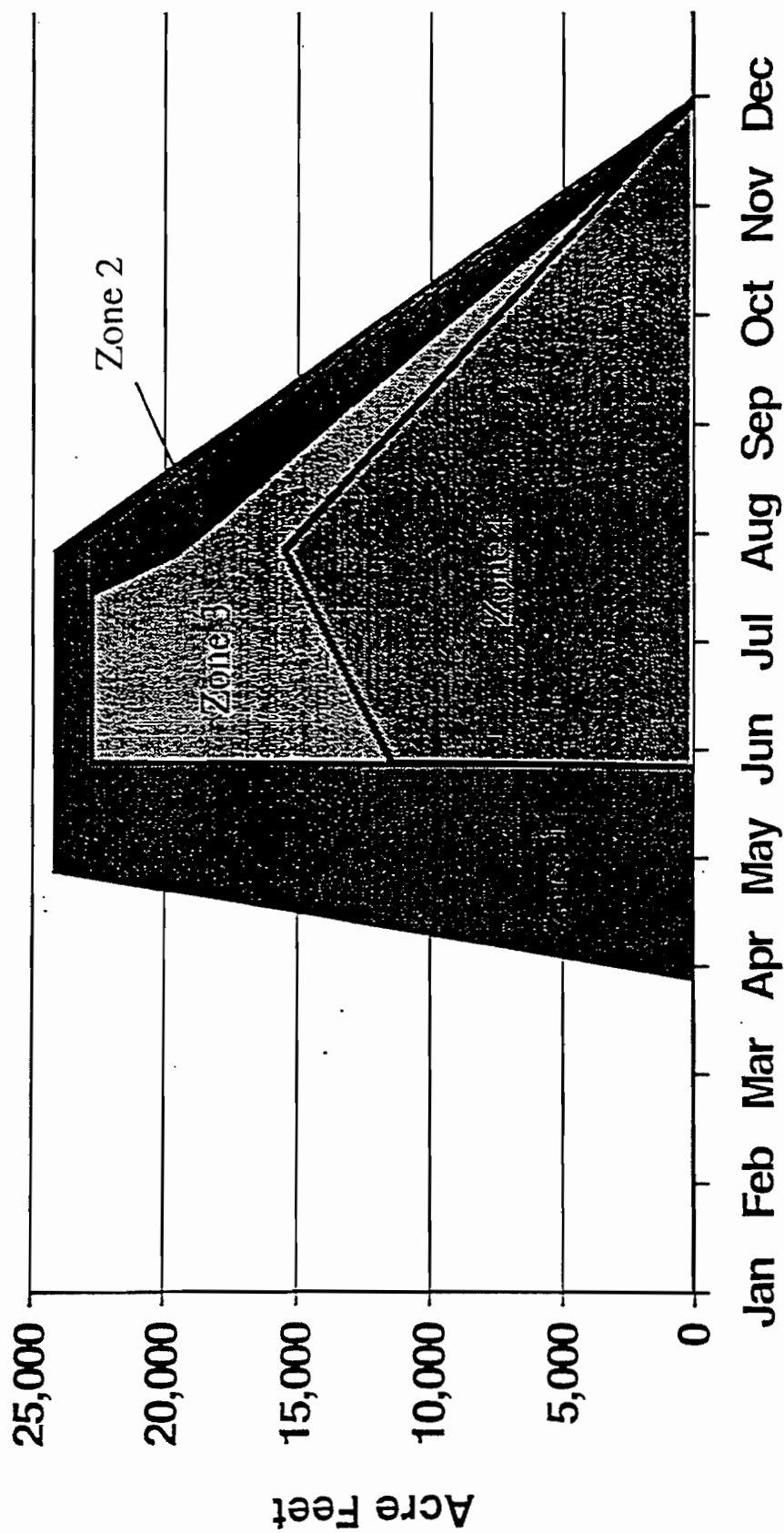


Figure 1
Operating Zones

Table 1
Operating Zones Based on Date and Reservoir Storage Volume

DATE	Acre Feet	Zone 1	Acre Feet	Zone 2	Acre Feet	Zone 3	Acre Feet	Zone 4	Acre Feet
31-Mar	0	↔	-	↔	-	↔	-	↔	0
1-Apr	781	↔	-	↔	-	↔	-	↔	0
2-Apr	1,561	↔	-	↔	-	↔	-	↔	0
3-Apr	2,342	↔	-	↔	-	↔	-	↔	0
4-Apr	3,123	↔	-	↔	-	↔	-	↔	0
5-Apr	3,903	↔	-	↔	-	↔	-	↔	0
6-Apr	4,684	↔	-	↔	-	↔	-	↔	0
7-Apr	5,465	↔	-	↔	-	↔	-	↔	0
8-Apr	6,245	↔	-	↔	-	↔	-	↔	0
9-Apr	7,026	↔	-	↔	-	↔	-	↔	0
10-Apr	7,806	↔	-	↔	-	↔	-	↔	0
11-Apr	8,587	↔	-	↔	-	↔	-	↔	0
12-Apr	9,368	↔	-	↔	-	↔	-	↔	0
13-Apr	10,148	↔	-	↔	-	↔	-	↔	0
14-Apr	10,929	↔	-	↔	-	↔	-	↔	0
15-Apr	11,710	↔	-	↔	-	↔	-	↔	0
16-Apr	12,490	↔	-	↔	-	↔	-	↔	0
17-Apr	13,271	↔	-	↔	-	↔	-	↔	0
18-Apr	14,052	↔	-	↔	-	↔	-	↔	0
19-Apr	14,832	↔	-	↔	-	↔	-	↔	0
20-Apr	15,613	↔	-	↔	-	↔	-	↔	0
21-Apr	16,394	↔	-	↔	-	↔	-	↔	0
22-Apr	17,174	↔	-	↔	-	↔	-	↔	0
23-Apr	17,955	↔	-	↔	-	↔	-	↔	0
24-Apr	18,735	↔	-	↔	-	↔	-	↔	0
25-Apr	19,516	↔	-	↔	-	↔	-	↔	0
26-Apr	20,297	↔	-	↔	-	↔	-	↔	0
27-Apr	21,077	↔	-	↔	-	↔	-	↔	0
28-Apr	21,858	↔	-	↔	-	↔	-	↔	0
29-Apr	22,639	↔	-	↔	-	↔	-	↔	0
30-Apr	23,419	↔	-	↔	-	↔	-	↔	0
1-May	24,200	↔	-	↔	-	↔	-	↔	0
2-May	24,200	↔	-	↔	-	↔	-	↔	0
3-May	24,200	↔	-	↔	-	↔	-	↔	0
4-May	24,200	↔	-	↔	-	↔	-	↔	0
5-May	24,200	↔	-	↔	-	↔	-	↔	0
6-May	24,200	↔	-	↔	-	↔	-	↔	0
7-May	24,200	↔	-	↔	-	↔	-	↔	0
8-May	24,200	↔	-	↔	-	↔	-	↔	0
9-May	24,200	↔	-	↔	-	↔	-	↔	0
10-May	24,200	↔	-	↔	-	↔	-	↔	0
11-May	24,200	↔	-	↔	-	↔	-	↔	0
12-May	24,200	↔	-	↔	-	↔	-	↔	0
13-May	24,200	↔	-	↔	-	↔	-	↔	0
14-May	24,200	↔	-	↔	-	↔	-	↔	0
15-May	24,200	↔	-	↔	-	↔	-	↔	0
16-May	24,200	↔	-	↔	-	↔	-	↔	0
17-May	24,200	↔	-	↔	-	↔	-	↔	0
18-May	24,200	↔	-	↔	-	↔	-	↔	0
19-May	24,200	↔	-	↔	-	↔	-	↔	0
20-May	24,200	↔	-	↔	-	↔	-	↔	0

Table 1
Operating Zones Based on Date and Reservoir Storage Volume

DATE	Acre Feet	Zone 1	Acre Feet	Zone 2	Acre Feet	Zone 3	Acre Feet	Zone 4	Acre Feet
21-May	24,200	↔	-	↔	-	↔	-	↔	0
22-May	24,200	↔	-	↔	-	↔	-	↔	0
23-May	24,200	↔	-	↔	-	↔	-	↔	0
24-May	24,200	↔	-	↔	-	↔	-	↔	0
25-May	24,200	↔	-	↔	-	↔	-	↔	0
26-May	24,200	↔	-	↔	-	↔	-	↔	0
27-May	24,200	↔	-	↔	-	↔	-	↔	0
28-May	24,200	↔	-	↔	-	↔	-	↔	0
29-May	24,200	↔	-	↔	-	↔	-	↔	0
30-May	24,200	↔	-	↔	-	↔	-	↔	0
31-May	24,200	↔	-	↔	-	↔	-	↔	0
1-Jun	24,200	↔	22,748	↔	22,748	↔	11,372	↔	0
2-Jun	24,200	↔	22,748	↔	22,748	↔	11,440	↔	0
3-Jun	24,200	↔	22,748	↔	22,748	↔	11,507	↔	0
4-Jun	24,200	↔	22,748	↔	22,748	↔	11,575	↔	0
5-Jun	24,200	↔	22,748	↔	22,748	↔	11,642	↔	0
6-Jun	24,200	↔	22,748	↔	22,748	↔	11,710	↔	0
7-Jun	24,200	↔	22,748	↔	22,748	↔	11,777	↔	0
8-Jun	24,200	↔	22,748	↔	22,748	↔	11,845	↔	0
9-Jun	24,200	↔	22,748	↔	22,748	↔	11,912	↔	0
10-Jun	24,200	↔	22,748	↔	22,748	↔	11,980	↔	0
11-Jun	24,200	↔	22,748	↔	22,748	↔	12,047	↔	0
12-Jun	24,200	↔	22,748	↔	22,748	↔	12,115	↔	0
13-Jun	24,200	↔	22,748	↔	22,748	↔	12,182	↔	0
14-Jun	24,200	↔	22,748	↔	22,748	↔	12,250	↔	0
15-Jun	24,200	↔	22,748	↔	22,748	↔	12,317	↔	0
16-Jun	24,200	↔	22,748	↔	22,748	↔	12,385	↔	0
17-Jun	24,200	↔	22,748	↔	22,748	↔	12,452	↔	0
18-Jun	24,200	↔	22,748	↔	22,748	↔	12,520	↔	0
19-Jun	24,200	↔	22,748	↔	22,748	↔	12,587	↔	0
20-Jun	24,200	↔	22,748	↔	22,748	↔	12,655	↔	0
21-Jun	24,200	↔	22,748	↔	22,748	↔	12,722	↔	0
22-Jun	24,200	↔	22,748	↔	22,748	↔	12,790	↔	0
23-Jun	24,200	↔	22,748	↔	22,748	↔	12,857	↔	0
24-Jun	24,200	↔	22,748	↔	22,748	↔	12,925	↔	0
25-Jun	24,200	↔	22,748	↔	22,748	↔	12,992	↔	0
26-Jun	24,200	↔	22,748	↔	22,748	↔	13,060	↔	0
27-Jun	24,200	↔	22,748	↔	22,748	↔	13,127	↔	0
28-Jun	24,200	↔	22,748	↔	22,748	↔	13,195	↔	0
29-Jun	24,200	↔	22,748	↔	22,748	↔	13,262	↔	0
30-Jun	24,200	↔	22,748	↔	22,748	↔	13,330	↔	0
1-Jul	24,200	↔	22,748	↔	22,748	↔	13,398	↔	0
2-Jul	24,200	↔	22,748	↔	22,748	↔	13,465	↔	0
3-Jul	24,200	↔	22,748	↔	22,748	↔	13,533	↔	0
4-Jul	24,200	↔	22,748	↔	22,748	↔	13,600	↔	0
5-Jul	24,200	↔	22,748	↔	22,748	↔	13,668	↔	0
6-Jul	24,200	↔	22,748	↔	22,748	↔	13,735	↔	0
7-Jul	24,200	↔	22,748	↔	22,748	↔	13,803	↔	0
8-Jul	24,200	↔	22,748	↔	22,748	↔	13,870	↔	0
9-Jul	24,200	↔	22,748	↔	22,748	↔	13,938	↔	0
10-Jul	24,200	↔	22,748	↔	22,748	↔	14,005	↔	0

Table 1
Operating Zones Based on Date and Reservoir Storage Volume

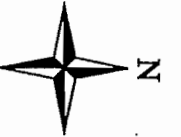
DATE	Acre Feet	Zone 1	Acre Feet	Zone 2	Acre Feet	Zone 3	Acre Feet	Zone 4	Acre Feet
11-Jul	24,200	↔	22,748	↔	22,748	↔	14,073	↔	0
12-Jul	24,200	↔	22,748	↔	22,748	↔	14,140	↔	0
13-Jul	24,200	↔	22,748	↔	22,748	↔	14,208	↔	0
14-Jul	24,200	↔	22,748	↔	22,748	↔	14,275	↔	0
15-Jul	24,200	↔	22,748	↔	22,748	↔	14,343	↔	0
16-Jul	24,200	↔	22,748	↔	22,748	↔	14,410	↔	0
17-Jul	24,200	↔	22,748	↔	22,748	↔	14,478	↔	0
18-Jul	24,200	↔	22,748	↔	22,748	↔	14,545	↔	0
19-Jul	24,200	↔	22,748	↔	22,748	↔	14,613	↔	0
20-Jul	24,200	↔	22,748	↔	22,748	↔	14,680	↔	0
21-Jul	24,200	↔	22,748	↔	22,463	↔	14,748	↔	0
22-Jul	24,200	↔	22,748	↔	22,178	↔	14,815	↔	0
23-Jul	24,200	↔	22,748	↔	21,893	↔	14,883	↔	0
24-Jul	24,200	↔	22,748	↔	21,608	↔	14,950	↔	0
25-Jul	24,200	↔	22,748	↔	21,323	↔	15,018	↔	0
26-Jul	24,200	↔	22,748	↔	21,038	↔	15,085	↔	0
27-Jul	24,200	↔	22,748	↔	20,753	↔	15,153	↔	0
28-Jul	24,200	↔	22,748	↔	20,468	↔	15,220	↔	0
29-Jul	24,200	↔	22,748	↔	20,183	↔	15,288	↔	0
30-Jul	24,200	↔	22,748	↔	19,898	↔	15,355	↔	0
31-Jul	24,200	↔	22,748	↔	19,613	↔	15,423	↔	0
1-Aug	24,200	↔	22,748	↔	19,457	↔	15,490	↔	0
2-Aug	24,012	↔	22,748	↔	19,301	↔	15,370	↔	0
3-Aug	23,824	↔	22,748	↔	19,145	↔	15,250	↔	0
4-Aug	23,636	↔	22,567	↔	18,989	↔	15,129	↔	0
5-Aug	23,448	↔	22,386	↔	18,833	↔	15,009	↔	0
6-Aug	23,260	↔	22,205	↔	18,677	↔	14,888	↔	0
7-Aug	23,072	↔	22,024	↔	18,521	↔	14,768	↔	0
8-Aug	22,884	↔	21,843	↔	18,365	↔	14,647	↔	0
9-Aug	22,696	↔	21,662	↔	18,209	↔	14,527	↔	0
10-Aug	22,508	↔	21,481	↔	18,053	↔	14,406	↔	0
11-Aug	22,320	↔	21,300	↔	17,897	↔	14,286	↔	0
12-Aug	22,132	↔	21,119	↔	17,741	↔	14,165	↔	0
13-Aug	21,944	↔	20,938	↔	17,585	↔	14,045	↔	0
14-Aug	21,756	↔	20,757	↔	17,429	↔	13,924	↔	0
15-Aug	21,568	↔	20,576	↔	17,273	↔	13,804	↔	0
16-Aug	21,380	↔	20,395	↔	17,117	↔	13,683	↔	0
17-Aug	21,192	↔	20,214	↔	16,961	↔	13,563	↔	0
18-Aug	21,004	↔	20,033	↔	16,805	↔	13,442	↔	0
19-Aug	20,816	↔	19,852	↔	16,649	↔	13,322	↔	0
20-Aug	20,628	↔	19,671	↔	16,493	↔	13,201	↔	0
21-Aug	20,440	↔	19,490	↔	16,337	↔	13,081	↔	0
22-Aug	20,252	↔	19,309	↔	16,181	↔	12,960	↔	0
23-Aug	20,064	↔	19,128	↔	16,025	↔	12,840	↔	0
24-Aug	19,876	↔	18,947	↔	15,869	↔	12,719	↔	0
25-Aug	19,688	↔	18,766	↔	15,713	↔	12,599	↔	0
26-Aug	19,500	↔	18,585	↔	15,557	↔	12,478	↔	0
27-Aug	19,312	↔	18,404	↔	15,401	↔	12,358	↔	0
28-Aug	19,124	↔	18,223	↔	15,245	↔	12,237	↔	0
29-Aug	18,936	↔	18,042	↔	15,089	↔	12,117	↔	0
30-Aug	18,748	↔	17,861	↔	14,933	↔	11,996	↔	0

Table 1
Operating Zones Based on Date and Reservoir Storage Volume

DATE	Acre Feet	Zone 1	Acre Feet	Zone 2	Acre Feet	Zone 3	Acre Feet	Zone 4	Acre Feet
31-Aug	18,560	↔	17,680	↔	14,777	↔	11,876	↔	0
1-Sep	18,372	↔	17,499	↔	14,621	↔	11,755	↔	0
2-Sep	18,184	↔	17,318	↔	14,465	↔	11,635	↔	0
3-Sep	17,996	↔	17,137	↔	14,309	↔	11,515	↔	0
4-Sep	17,808	↔	16,956	↔	14,153	↔	11,394	↔	0
5-Sep	17,620	↔	16,775	↔	13,997	↔	11,274	↔	0
6-Sep	17,432	↔	16,594	↔	13,841	↔	11,153	↔	0
7-Sep	17,244	↔	16,413	↔	13,685	↔	11,033	↔	0
8-Sep	17,056	↔	16,232	↔	13,529	↔	10,912	↔	0
9-Sep	16,868	↔	16,051	↔	13,373	↔	10,792	↔	0
10-Sep	16,680	↔	15,870	↔	13,217	↔	10,671	↔	0
11-Sep	16,492	↔	15,689	↔	13,061	↔	10,551	↔	0
12-Sep	16,304	↔	15,508	↔	12,905	↔	10,430	↔	0
13-Sep	16,116	↔	15,327	↔	12,749	↔	10,310	↔	0
14-Sep	15,928	↔	15,146	↔	12,593	↔	10,189	↔	0
15-Sep	15,740	↔	14,965	↔	12,437	↔	10,069	↔	0
16-Sep	15,552	↔	14,784	↔	12,281	↔	9,948	↔	0
17-Sep	15,364	↔	14,603	↔	12,125	↔	9,828	↔	0
18-Sep	15,176	↔	14,422	↔	11,969	↔	9,707	↔	0
19-Sep	14,988	↔	14,241	↔	11,813	↔	9,587	↔	0
20-Sep	14,800	↔	14,060	↔	11,657	↔	9,466	↔	0
21-Sep	14,612	↔	13,879	↔	11,501	↔	9,346	↔	0
22-Sep	14,424	↔	13,698	↔	11,345	↔	9,225	↔	0
23-Sep	14,236	↔	13,517	↔	11,189	↔	9,105	↔	0
24-Sep	14,048	↔	13,336	↔	11,033	↔	8,984	↔	0
25-Sep	13,860	↔	13,155	↔	10,877	↔	8,864	↔	0
26-Sep	13,672	↔	12,974	↔	10,721	↔	8,743	↔	0
27-Sep	13,484	↔	12,793	↔	10,565	↔	8,623	↔	0
28-Sep	13,296	↔	12,612	↔	10,409	↔	8,502	↔	0
29-Sep	13,108	↔	12,431	↔	10,253	↔	8,382	↔	0
30-Sep	12,920	↔	12,250	↔	10,097	↔	8,261	↔	0
1-Oct	12,732	↔	12,069	↔	9,941	↔	8,141	↔	0
2-Oct	12,544	↔	11,888	↔	9,785	↔	8,020	↔	0
3-Oct	12,356	↔	11,707	↔	9,629	↔	7,900	↔	0
4-Oct	12,168	↔	11,526	↔	9,473	↔	7,779	↔	0
5-Oct	11,980	↔	11,345	↔	9,317	↔	7,659	↔	0
6-Oct	11,792	↔	11,164	↔	9,161	↔	7,539	↔	0
7-Oct	11,604	↔	10,983	↔	9,005	↔	7,418	↔	0
8-Oct	11,416	↔	10,802	↔	8,849	↔	7,298	↔	0
9-Oct	11,228	↔	10,621	↔	8,693	↔	7,177	↔	0
10-Oct	11,040	↔	10,440	↔	8,537	↔	7,057	↔	0
11-Oct	10,852	↔	10,259	↔	8,381	↔	6,936	↔	0
12-Oct	10,664	↔	10,078	↔	8,225	↔	6,816	↔	0
13-Oct	10,476	↔	9,897	↔	8,069	↔	6,695	↔	0
14-Oct	10,288	↔	9,716	↔	7,913	↔	6,575	↔	0
15-Oct	10,100	↔	9,535	↔	7,757	↔	6,454	↔	0
16-Oct	9,912	↔	9,354	↔	7,601	↔	6,334	↔	0
17-Oct	9,724	↔	9,173	↔	7,445	↔	6,213	↔	0
18-Oct	9,536	↔	8,992	↔	7,289	↔	6,093	↔	0
19-Oct	9,348	↔	8,811	↔	7,133	↔	5,972	↔	0
20-Oct	9,160	↔	8,630	↔	6,977	↔	5,852	↔	0

Table 1
Operating Zones Based on Date and Reservoir Storage Volume

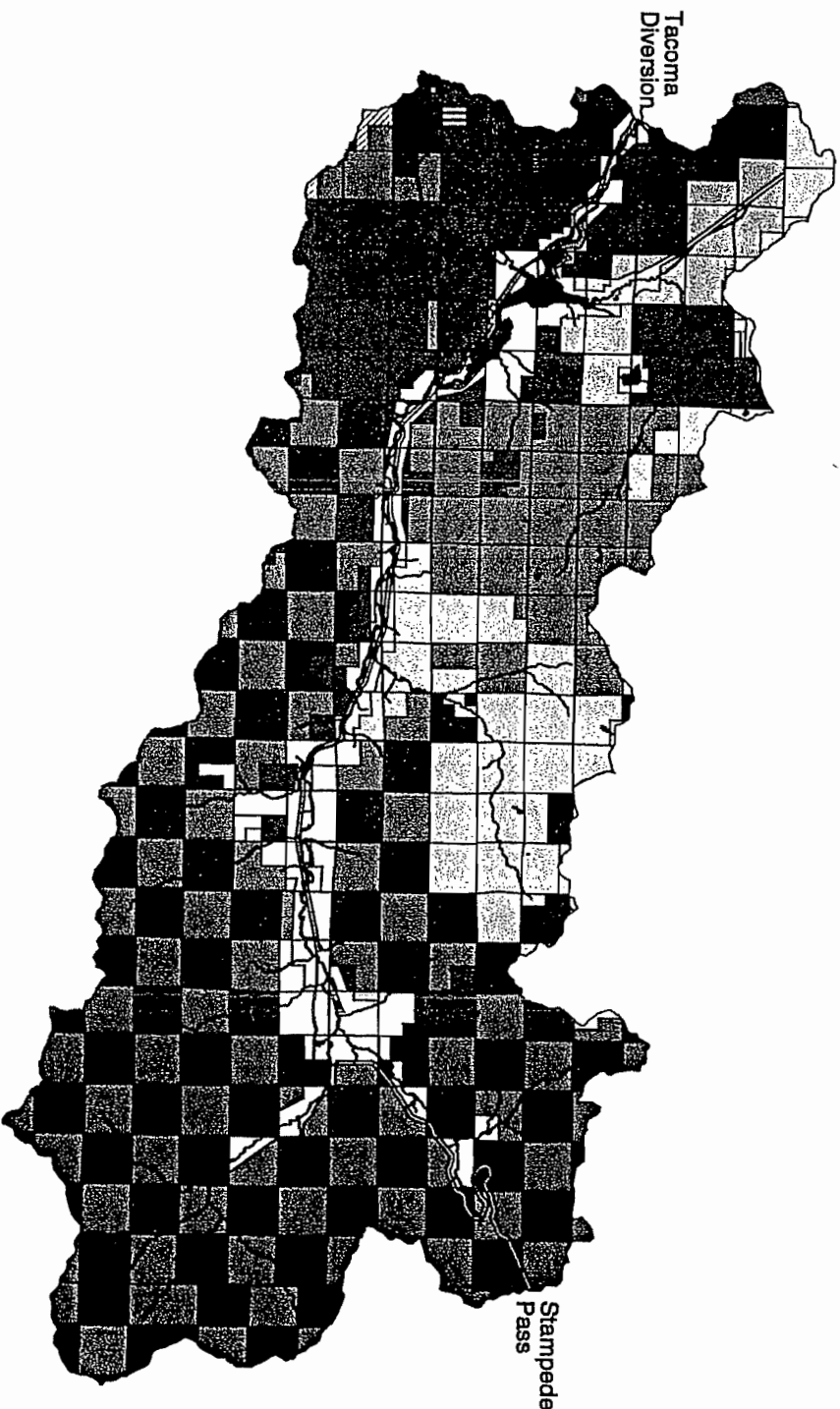
DATE	Acre Feet	Zone 1	Acre Feet	Zone 2	Acre Feet	Zone 3	Acre Feet	Zone 4	Acre Feet
21-Oct	8,972	↔	8,449	↔	6,821	↔	5,731	↔	0
22-Oct	8,784	↔	8,268	↔	6,665	↔	5,611	↔	0
23-Oct	8,596	↔	8,087	↔	6,509	↔	5,490	↔	0
24-Oct	8,408	↔	7,906	↔	6,353	↔	5,370	↔	0
25-Oct	8,220	↔	7,725	↔	6,197	↔	5,249	↔	0
26-Oct	8,032	↔	7,544	↔	6,041	↔	5,129	↔	0
27-Oct	7,844	↔	7,363	↔	5,885	↔	5,008	↔	0
28-Oct	7,656	↔	7,182	↔	5,729	↔	4,888	↔	0
29-Oct	7,468	↔	7,001	↔	5,573	↔	4,767	↔	0
30-Oct	7,280	↔	6,820	↔	5,417	↔	4,647	↔	0
31-Oct	7,092	↔	6,639	↔	5,261	↔	4,526	↔	0
1-Nov	6,904	↔	6,458	↔	5,100	↔	4,406	↔	0
2-Nov	6,716	↔	6,277	↔	4,955	↔	4,285	↔	0
3-Nov	6,528	↔	6,096	↔	4,810	↔	4,165	↔	0
4-Nov	6,340	↔	5,915	↔	4,665	↔	4,044	↔	0
5-Nov	6,152	↔	5,734	↔	4,520	↔	3,924	↔	0
6-Nov	5,964	↔	5,553	↔	4,375	↔	3,804	↔	0
7-Nov	5,776	↔	5,372	↔	4,230	↔	3,683	↔	0
8-Nov	5,588	↔	5,191	↔	4,085	↔	3,563	↔	0
9-Nov	5,400	↔	5,010	↔	3,940	↔	3,442	↔	0
10-Nov	5,212	↔	4,829	↔	3,795	↔	3,322	↔	0
11-Nov	5,024	↔	4,648	↔	3,650	↔	3,201	↔	0
12-Nov	4,836	↔	4,467	↔	3,505	↔	3,081	↔	0
13-Nov	4,648	↔	4,286	↔	3,360	↔	2,960	↔	0
14-Nov	4,460	↔	4,105	↔	3,215	↔	2,840	↔	0
15-Nov	4,272	↔	3,924	↔	3,070	↔	2,719	↔	0
16-Nov	4,084	↔	3,743	↔	2,925	↔	2,599	↔	0
17-Nov	3,896	↔	3,562	↔	2,780	↔	2,478	↔	0
18-Nov	3,708	↔	3,381	↔	2,635	↔	2,358	↔	0
19-Nov	3,520	↔	3,200	↔	2,490	↔	2,237	↔	0
20-Nov	3,332	↔	3,019	↔	2,345	↔	2,117	↔	0
21-Nov	3,144	↔	2,838	↔	2,200	↔	1,996	↔	0
22-Nov	2,956	↔	2,657	↔	2,055	↔	1,876	↔	0
23-Nov	2,768	↔	2,476	↔	1,910	↔	1,755	↔	0
24-Nov	2,580	↔	2,295	↔	1,765	↔	1,635	↔	0
25-Nov	2,392	↔	2,114	↔	1,620	↔	1,514	↔	0
26-Nov	2,204	↔	1,933	↔	1,475	↔	1,394	↔	0
27-Nov	2,016	↔	1,752	↔	1,330	↔	1,273	↔	0
28-Nov	1,828	↔	1,571	↔	1,185	↔	1,153	↔	0
29-Nov	1,640	↔	1,390	↔	1,040	↔	1,032	↔	0
30-Nov	1,452	↔	1,209	↔	895	↔	912	↔	0
1-Dec	1,264	↔	1,028	↔	750	↔	791	↔	0
2-Dec	1,076	↔	847	↔	605	↔	671	↔	0
3-Dec	888	↔	666	↔	460	↔	550	↔	0
4-Dec	700	↔	485	↔	315	↔	430	↔	0
5-Dec	512	↔	304	↔	170	↔	309	↔	0
6-Dec	324	↔	123	↔	25	↔	189	↔	0
7-Dec	136	↔	-	↔	-	↔	68	↔	0
8-Dec	-	↔	-	↔	-	↔	-	↔	0



LEGEND

- Water Body
- Reservoir
- Swamp
- Lake
- Hydrography
- Stream
- Owner
 - Army Corps of Engineers
 - Burlington Northern Railroad
 - Champion International Corp
 - CITICOR
 - State DNR
 - King County
 - MCNC
 - METRO
 - OTHER
 - Plum Creek Timber Co.
 - State Aeronautics Div.
 - Seattle Water Div.
 - Small Private
 - Tacoma Water Div.
 - U S Forest Service
 - Weyerhaeuser Co.

WATERSHED OWNERSHIP		
Owner	Area (Acres)	Percentage (%)
ACR	406.81	0.2
BNR	1186.87	0.9
CIC	4460.81	3.0
CYR	12028.74	8.2
IKR	15791.32	10.7
KCR	8.78	0.0
MCNC	145.82	0.1
METRO	280.16	0.2
OTHER	80.19	0.1
PCRC	80743.04	54.5
RD	31.25	0.0
SRD	2588.49	1.8
TCWR	13461.06	9.1
UBR	18596.60	12.8
WCD	10292.79	7.0
Total	247284.73	100.0



TACOMA CITY WATER
UPPER GREEN RIVER WATERSHED
OWNERSHIP
July, 1995

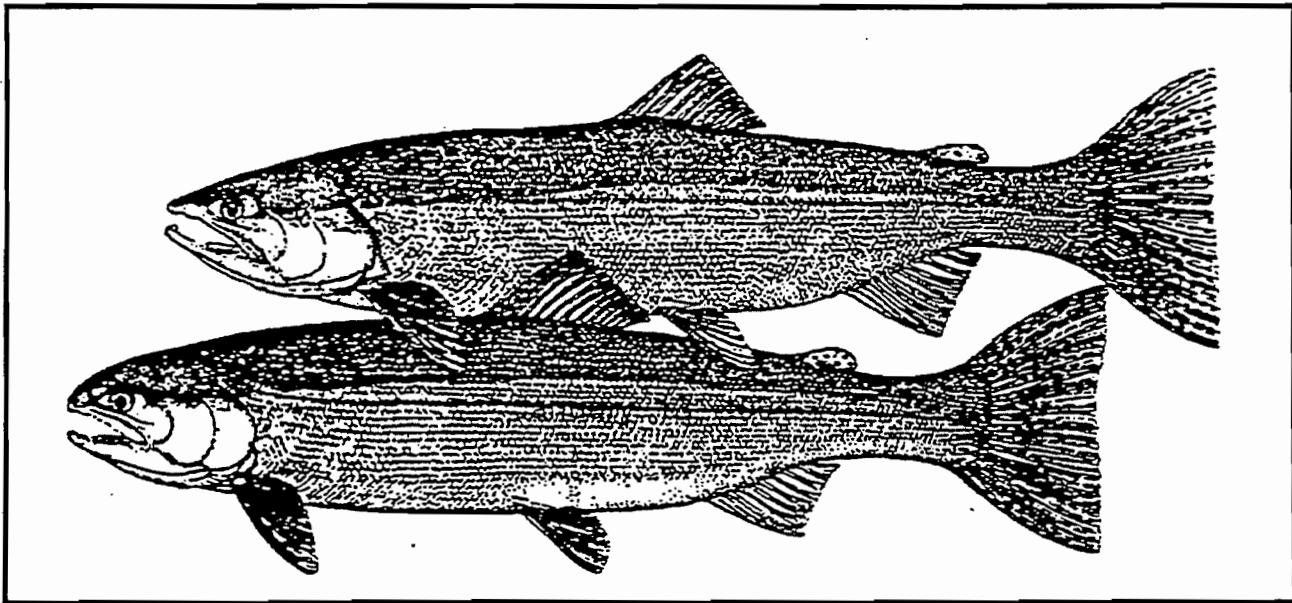


FISHPRO

Engineers and Environmental Consultants

A TRIBAL FISH RESTORATION FACILITY ON THE UPPER GREEN RIVER

The Muckleshoot Tribe
and
Tacoma Public Utilities



August 7, 1995

Upper Green River Restoration Fish Culture Facility

Summary of Design Criteria Based on \$8,500,000 Capital/Construction Budget

Rearing Program

350,000 steelhead
500,000 chinook
500,000 coho

Assumptions associated with this design scenario include:

1. Groundwater for incubation
2. Evaluation Center 5,500 ft² and will provide:
 - a. reception area
 - b. restroom
 - c. office/conference room
 - d. laboratory
 - e. crew room and locker room
3. Free-standing freezer for diet storage - 500 ft²
4. No river barrier. Weir, ladder and trap included. Minimum construction in floodway at rearing facility.
5. Construct one new duplex. Pre-manufactured homes may be less expensive than a designed stick built spec. structure. Retain and refurbish farmhouse as residence. Use outbuilding already on-site as shop/storage building.
6. Site work cost estimate reflects balance in cut/fill.
7. Aeration headtank upgraded to condition groundwater.
8. It is assumed there is sufficient incubation water supply.
9. Raceways to be in-ground concrete.
10. Adult holding includes provisions for :

a. Steelhead	150 males, 150 females	2.5 ft ³ /fish
b. Chinook	200 males, 200 females	8 ft ³ /fish
c. Coho	220 males, 220 females	4 ft ³ /fish
11. Automatic feeding system with computer control is included in plan.
12. The shop would be relocated from the operations and evaluation center to an insulated portion of the upgraded existing barn building.

13. If the water supply is not pumped, generation for emergency power can be reduced.
14. Separate well water stabilization with a fiberglass headtank would cut some costs from the main supply, should sufficient head be available from the gravity feed line - no headtank would be required.
15. Eliminate all paving except between smaller raceway units.
16. Central alarm, monitoring and controls could be basic, but fiber optic is recommended as cost of any loss from lightning would significantly offset the small, if any, cost difference.
17. A portable "vacuum" cleaning system to a centralized drain to the clarifier is recommended in lieu of a central control/pump system. This will retain flexibility and lessen site utility cost.

Opinion of Probable Cost

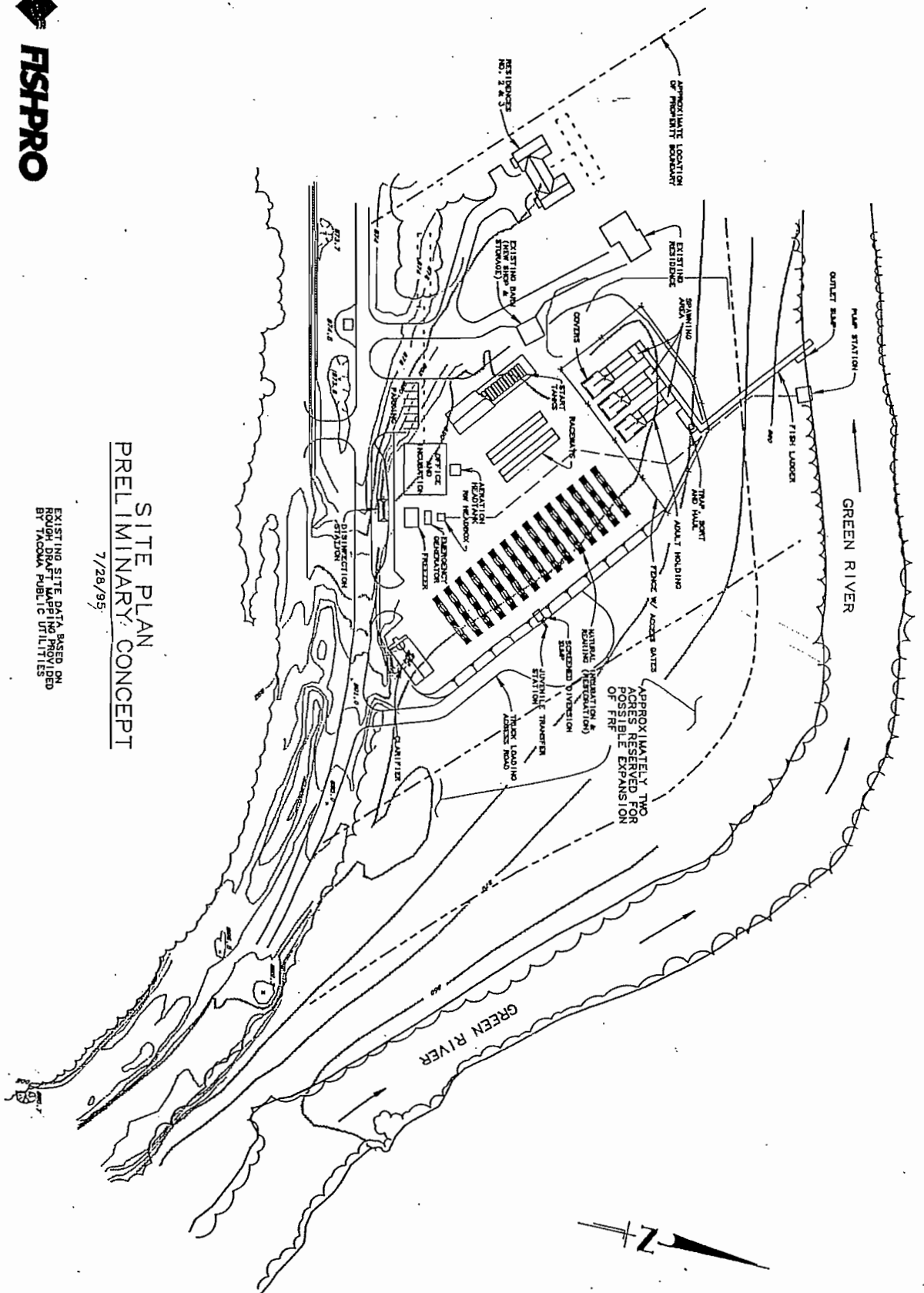
1. Sitework	275,000	
Grading, cut/fill (assume balance), trenching		
2. Utilities	300,000	
3. Residences	170,000	
4. Existing Residence Upgrade	30,000	
5. Incubation & Evaluation Center (5,500 sq.ft.)	550,000	
6. Freezer (500 sq.ft.)	50,000	
7. Adult Holding (3 doubles)	540,000	
8. Adult Holding Improvements	70,000	
9. Natural Incubation/Rearing (15 doubles 3'x50')	1,000,000	
10. River Ladder, Trap and Haul	380,000	
11. Start Tank Shelter (4,050 sq.ft., includes foundations, floor, roof, plumbing & electrical)	170,000	
12. Aeration Headtank	125,000	
13. Start Tanks (22 at 3'x3'x18')	99,000	
14. Standby Power and Building	150,000	
15. 8'x80' Raceway Pair (2)	330,000	
16. Upgrade Farm Buildings (shop/storage)	20,000	
17. Truck Disinfection Station	16,000	
18. Clarifier	215,000	
19. Outlet Sump	15,000	
20. Exterior Piping	950,000	
21. Instrumentation and Control	150,000	
22. Fish Rearing Equipment	86,000	
Vertical Trays, 48 ea. \$38,400		
Iso buckets, 304 ea. \$7,600		
Formalin System, \$40,000		
Subtotal		5,631,000
Contingency (15%)	853,650	
Subtotal		6,544,650
Construction Engineering and Permitting (10%)	654,465	
Construction Management (5%)	327,233	
Subtotal		7,526,348
23. EIS	275,000	
24. Land Use Permitting	80,000	
25. Capital Equipment	418,652	
26. Release Site Developments	200,000	
Subtotal		973,652
Total		<u>8,500,000</u>

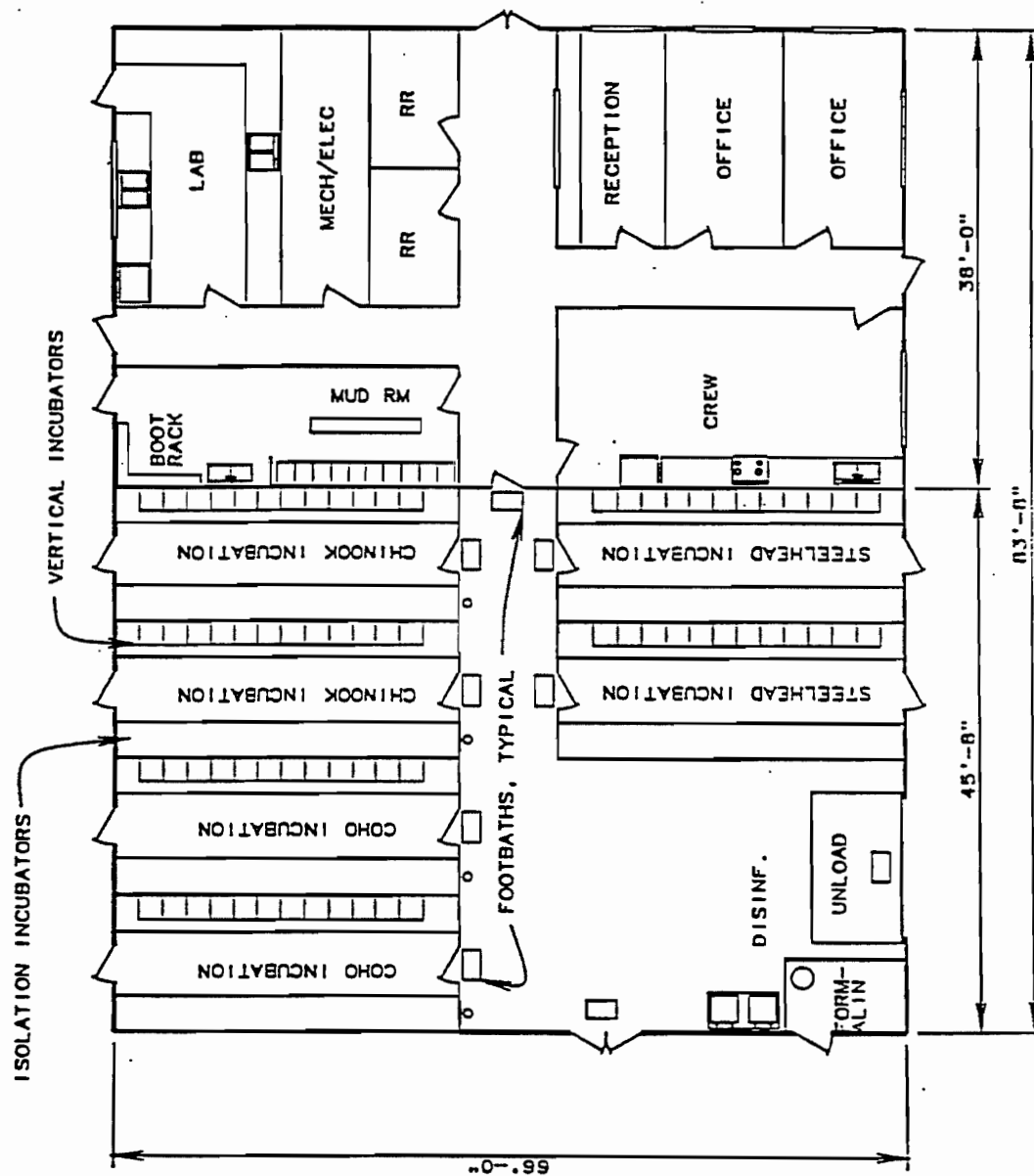


SITE PLAN PRELIMINARY CONCEPT

7/28/95

EXISTING SITE DATA BASED ON
ROUGH DRAFT MAPPING PROVIDED
BY TACOMA PUBLIC UTILITIES





EVALUATION CENTER HATCHERY BUILDING SCHEMATIC

SCALE: 1/16" = 1'-0"



Green River Restoration								
Summary Adult Holding, Incubation and Rearing Requirements								
8/3/95								
Species	Adult Holding Total Ft3 / Species	Group Description Rearing Criteria	Release No.	Iso buckets	Vertical Stack Incubators (No. Stacks)	Raceway Size	No. of Raceways (Peak)	
Steelhead	1200	0.2 lbs / ft3	280,000	48	2	50' x 3' x 2.6'	19	
Steelhead	300	>1 lbs / ft3	70,000	12	10	80' x 8' x 3'	1	
Chinook	5120	0.2 lbs / ft3	400,000	126	4	50' x 3' x 2.6'	14	
Chinook	1280	>1 lbs / ft3	100,000	32	14	80' x 8' x 3'	1	
Coho	2800	0.2 lbs / ft3	400,000	76	4	50' x 3' x 2.6'	14	
Coho	720	>1 lbs / ft3	100,000	10	14	80' x 8' x 3'	1	
TOTALS				304	48			
Total Functional Rearing Units								
8' x 80' x 3' 3								
50' x 3' x 2.6' 30								

**TACOMA PUBLIC UTILITIES GREEN RIVER PROJECT
ESTIMATED HATCHERY CAPITAL EQUIPMENT REQUIREMENTS**

AREA or ITEM	ESTIMATED COST
I. Production Capacities	
II. Water Supply Issues	
A. Monitoring equipment	\$5,000
B. De-gassing equipment	\$0
C. Other	\$2,000
Subtotal	\$7,000
III. Power Issues (In site costs)	
Subtotal	\$0
IV. Fuel Issues (In site costs)	
Subtotal	\$0
V. Staffing	
Subtotal	\$0
VI. Housing	
Subtotal	\$0
VII. Lab / Office	
A. Computers	\$6,000
B. Printers	\$0
C. Furniture	\$4,000
D. Lab equipment	\$25,000
Subtotal	\$35,000
VIII. Storage Issues	
A. Shelves / storage units	\$5,000
Subtotal	\$5,000
IX. Shop Issues	
A. Major tools	\$8,000
Subtotal	\$8,000
X. Communications	
Subtotal	\$0
XI. Docking / Rearing Pens	
Subtotal	\$0
XII. Maintenance / Unclassified	
A. Tractor forklift	\$15,000
B. Vehicles	\$48,356
Subtotal	\$63,356
XIII. Brood Collection and Holding	
A. Transport equipment	\$7,000
B. Pumps	\$0

C. Crowders / dividers		\$5,000
D. Other		\$3,000
E. Tag detection		\$12,000
	Subtotal	\$27,000
XIV. Eggtake Issues		
A. Racks		\$1,000
B. Egg room misc. equipment		\$0
	Subtotal	\$1,000
XV. Incubation Issues		
A. Incubators (in site cost)		\$0
B. Egg sorters		\$3,000
C. Scales		\$3,000
D. Treatment system		\$3,000
E. Other		\$0
	Subtotal	\$9,000
XVI. Rearing / Release		
A. Feeding equipment		\$137,500
B. RW cleaning equipment		\$4,000
C. Boat / trailer		\$0
D. Counters		\$0
E. Scales		\$1,000
	Subtotal	\$142,500
XVII. Marking / Tagging		
		\$13,000
	Subtotal	\$13,000
XVIII. Fry Transfer		
A. Transport truck / tanks		\$50,000
B. Pumps / hose		\$6,000
C. Other		\$2,000
	Subtotal	\$58,000
XIX. Safety Issues		
	Subtotal	\$0
XX. Environmental Issues		
	Subtotal	\$0
XXI. Other		
	Subtotal	\$0
TOTAL		\$368,856
Contingency 13.5%		\$49,796
GRAND TOTAL		<u>\$418,652</u>

HEADWORKS FISHERIES PARCEL DESCRIPTION

PARCEL A:

That portion of the Easterly 1243.00 feet, as measured along the Northerly line of the Northern Pacific Railroad Company Right-of-Way, of the West Half (W½) of the Northeast Quarter (NE¼) Section 13, Township 21 North, Range 7 East, W.M., in King County, Washington, lying Northerly of said right-of-way and lying Southerly of the North line of the Green River.

EXCEPT the East 100.00 feet thereof.

AND EXCEPT the Westerly 1023.00 feet thereof, as measured along the Northerly line of said right-of-way.

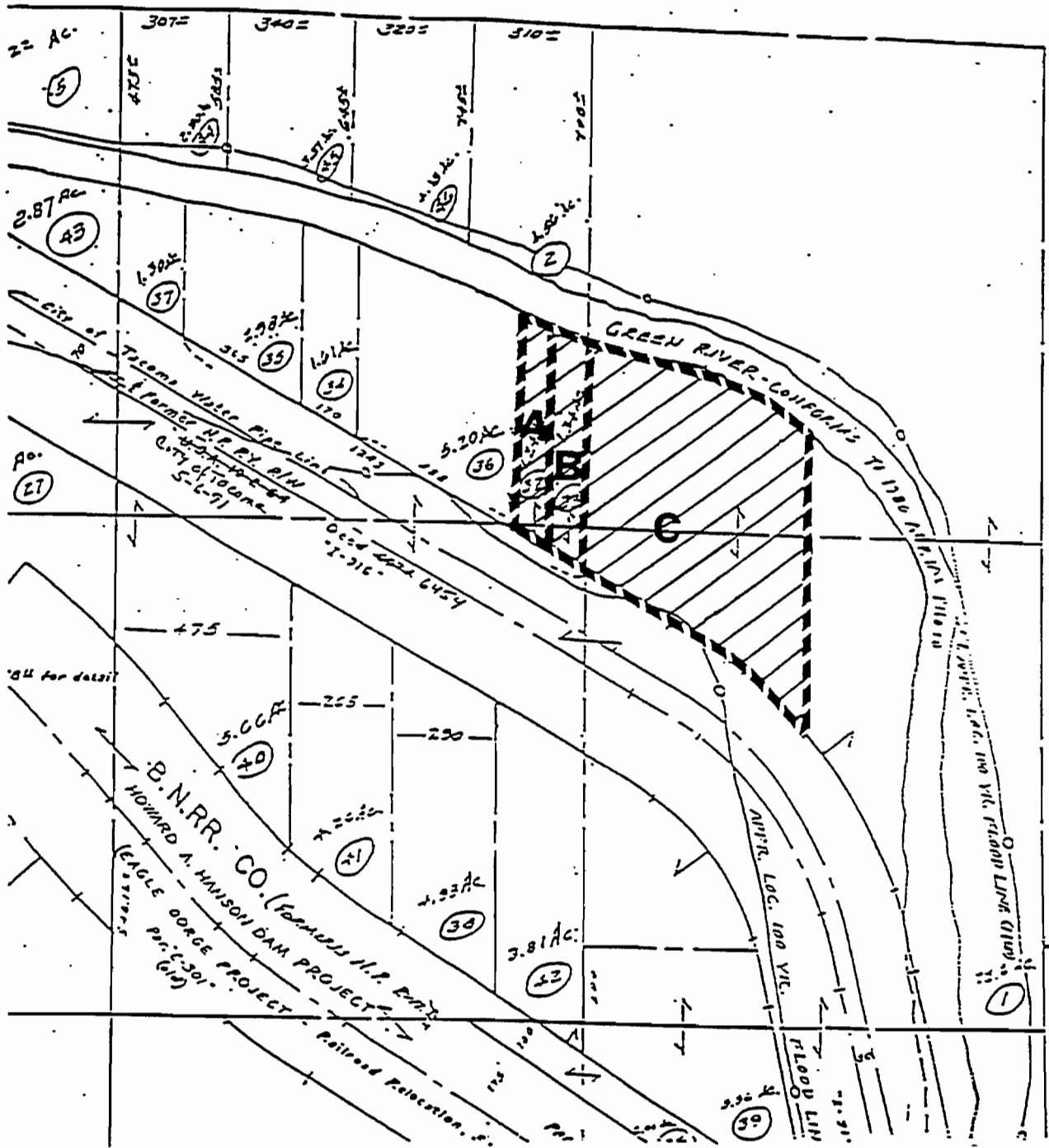
PARCEL B:

The East 100.00 feet of the following described tract:

That portion of the West Half (W½) of the Northeast Quarter (NE¼) of Section 13, Township 21 North, Range 7 East, W.M., in King County, Washington, lying Northerly of the Northern Pacific Railroad Company Right-of-Way, and lying Southerly of the North line of the Green River.

PARCEL C:

The West 600.00 feet of the East Half (E½) of the Northeast Quarter (NE¼) of Section 13, Township 21 North, Range 7 East, W.M., King County, Washington, lying South of the Green River and North of the abandoned 400.00 foot charter right-of-way of the Northern Pacific Railroad Company as conveyed to the City of Tacoma under King County Auditor File No. 9107191368. Dimensions are approximate. Survey to verify actual dimensions and description.



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 08/07/95

Carol A. Bellinger

Acting Real Estate Management
Supervisor

SITE MAP
GREEN RIVER WATERSHED
HEADWORKS FISHERIES PARCEL
SEC13-T21N-R7E

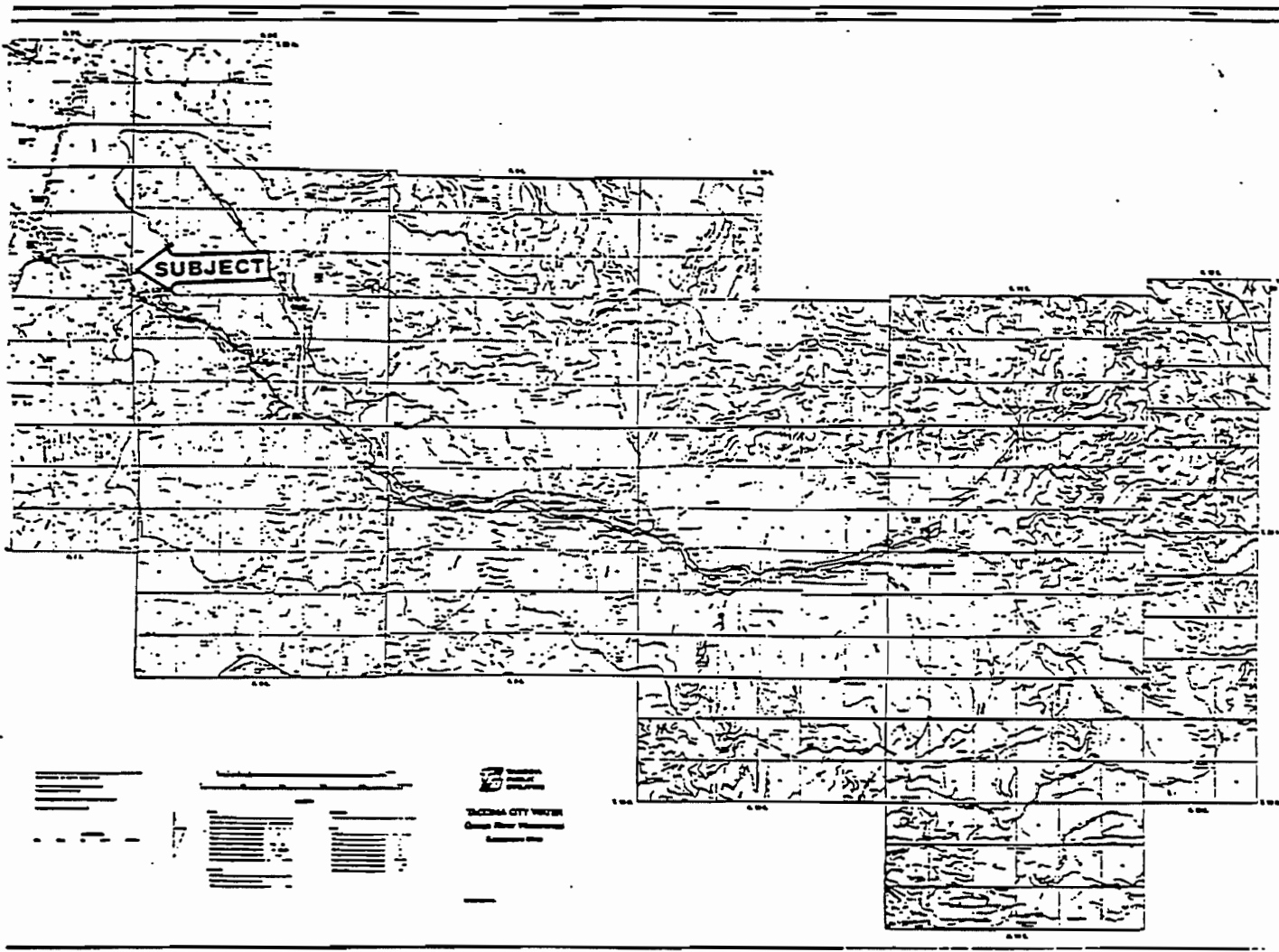
KING COUNTY

Scale

NTS

Project No.

95-157CJK



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

<p>Date 07/28/95</p> <p>Carol A. Bellinger Real Estate Management Supervisor</p>	<p>AREA MAP</p> <p>GREEN RIVER WATERSHED HEADWORKS FISHERIES PARCEL NE¼ OF SECTION-T20N-R7E, W. M. KING COUNTY</p>	<p>Scale</p> <p>1"=400'</p> <p>Project No.</p> <p>95-157 CJK</p>
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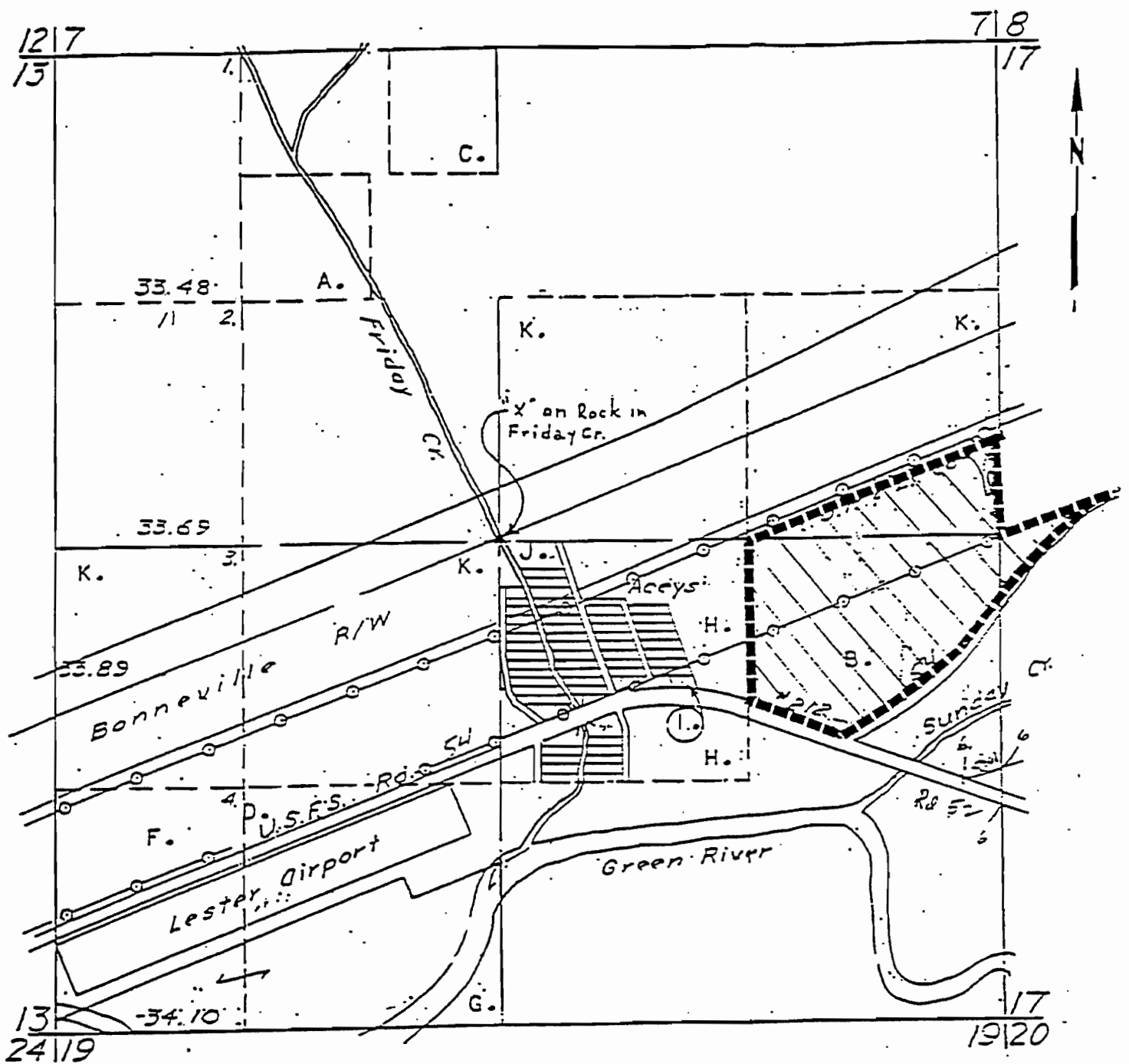
FRIDAY CREEK PARCEL
40 ACRES

The Southeast Quarter (SE1/4) of the Northeast Quarter (NE1/4) of Section 18, Township 20 North, Range 11 East, W. M., King County, Washington, lying South of the Puget Sound Power and Light Company Transmission Line Right-of-Way, and;

The Northeast Quarter (NE1/4) of the Southeast Quarter (SE1/4) of Section 18, Township 20 North, Range 11 East, W. M., King County, Washington, lying North and West of United States Forest Service Road No. 223 (also known as Road 54).

ALSO the Southwest Quarter (SW1/4) of the Northwest Quarter (NW1/4) of Section 17, Township 20 North, Range 11 East, W. M., King County, Washington, lying South of the Puget Sound Power and Light Company Transmission Line and West of United States Forest Service Road (also known as Road 54); and;

The Northwest Quarter (NW1/4) of the Southwest Quarter (SW1/4) of Section 17, Township 20 North, Range 11 East, W. M., King County, Washington, lying North and West of United States Forest Service Road 223 (also known as Road 54).



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 07/24/95

SITE MAP

Scale

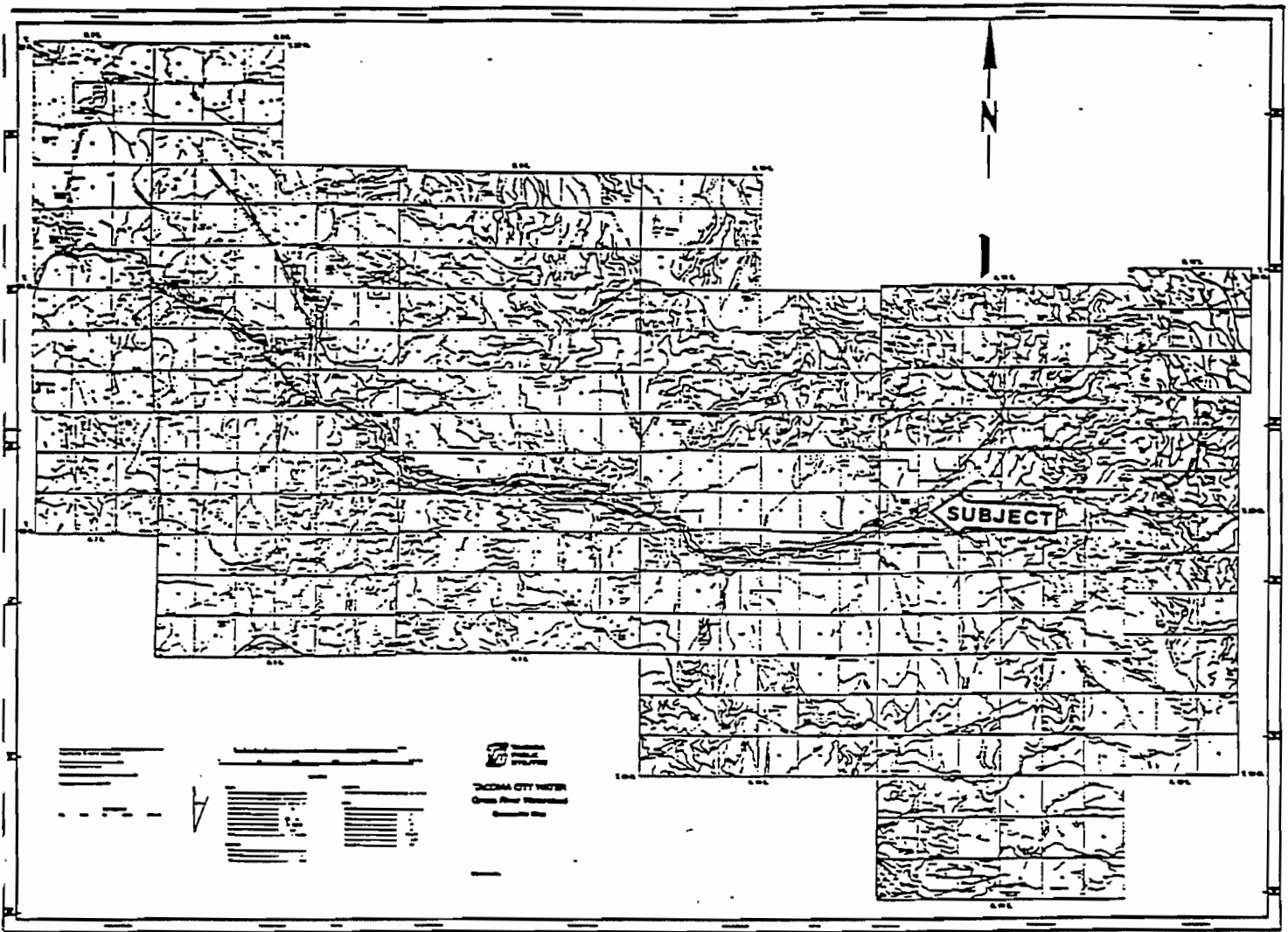
GREEN RIVER WATERSHED
FRIDAY CREEK 40 ACRE PARCEL
SECTION 18-T20N-R11E, W. M.
KING COUNTY

NTS

Project No.

95-156CJK

Carol A. Bellinger
Real Estate Management Supervisor



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 07/24/95

AREA MAP

Scale

GREEN RIVER WATERSHED
FRIDAY CREEK 40 ACRE PARCEL
SECTION 18-T20N-R11E, W. M.
KING COUNTY

N T S

Project No.

Carol A. Bellinger
Real Estate Management Supervisor

95-156CJK

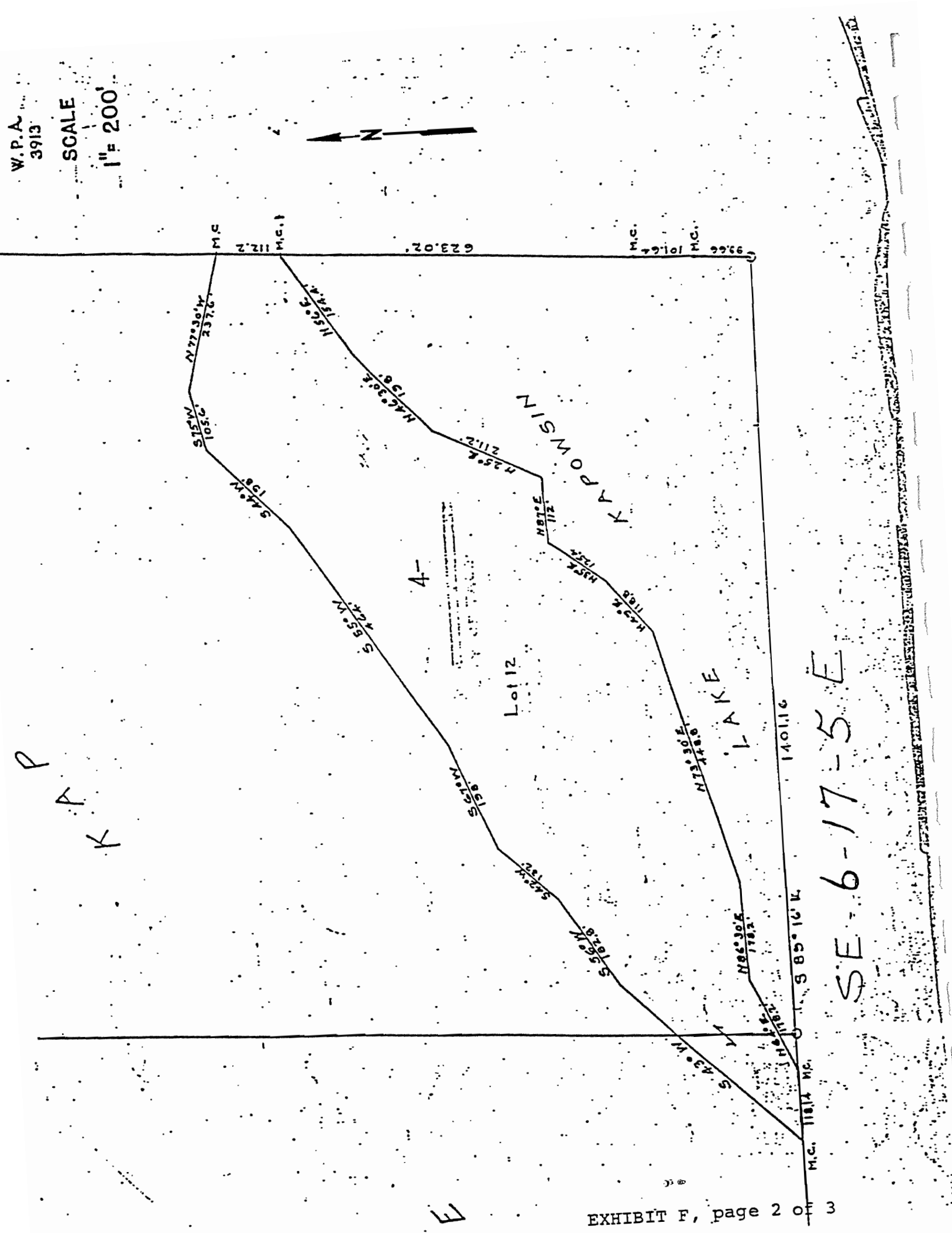
LAKE KAPOWSIN ISLAND

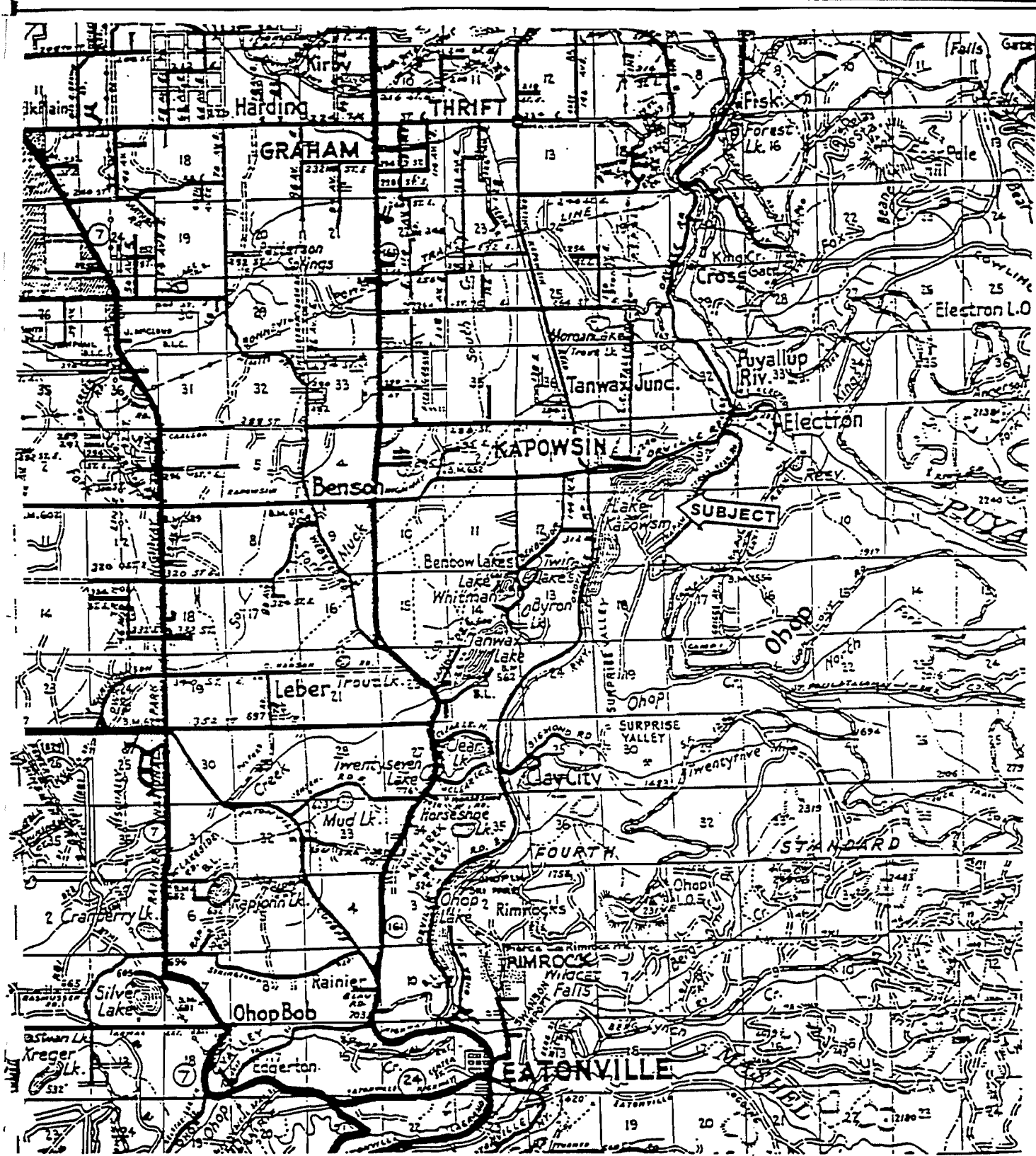
Parcel 051706 400 0

Government Lot 12, located in the South Half (S 1/2) of the Southeast Quarter (SE 1/4) of Section 6, Township 17 North, Range 5 East, W.M. and in the Southwest Quarter (SW 1/4) of the Southwest Quarter (SW 1/4) of Section 5, Township 17 North, Range 5 East, W.M., containing approximately 12 acres.

2
 4
 6

EXHIBIT F, page 2 of 3





CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT		
Date 07/20/95 Carol A. Bellinger Real Estate Management Supervisor	AREA MAP LAKE KAPOWSIN	Scale
		NTS
		Project No.
		95-156CJK

OLD KAPOWSIN TOWN SITE

Parcel 051706 300 2

Beginning at the Northeast corner of Block 15, Kapowsin; thence South a distance of 120.00 feet; thence East a distance of 200.00 feet; thence North a distance of 120.00 feet; thence West a distance of 200.00 feet to Beginning; LESS the East 39.00 feet of the West 80.00 feet; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 051706 300 3

Beginning 113.25 feet South of the Northwest Corner of Tract A of Kapowsin; thence South, a distance of 100.00 feet; thence West, a distance of 195.00 feet; thence North, a distance of 100.00 feet; thence East, a distance of 195.00 feet, more or less, to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

TOGETHER with that portion of the vacated right-of-way as per Ordinance 92-69.

Parcel 051706 300 4

Beginning at the Southwest corner of Tract B, Kapowsin; thence East, a distance of 594.00 feet; thence South to the Meander Line of Lake Kapowsin; thence Westerly, along said Meander Line, to the centerline of the creek; thence Northwesterly along said centerline to Beginning. EXCEPT Chicago, Milwaukee, St. Paul Railroad Right-of-Way. EXCEPT Beginning 35.00 feet South of the Southeast corner of Lot 21, Block 6, of Kapowsin; thence West, a distance of 125.00 feet; thence South, a distance of 50.00 feet; thence East, a distance of 125.00 feet; thence North, a distance of 50.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 051706 300 5

Beginning at the Northeast corner of Kapowsin Lumber Cos Id; thence East, a distance of 150.00 feet; thence South, parallel to the Lumber Cos East line, to the Shore of Kapowsin Lake; thence Westerly, along the Shore of said Lake, to the Cos East line; thence North along said East line to the Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M. LESS 0.39 acre of right-of-way.

OLD KAPOWSIN TOWN SITE

Parcel 051706 300 6

Beginning 100.00 feet East and 100.00 feet North of the Southwest corner of Lot 5, Block 5, Kapowsin; thence North, a distance of 50.00 feet; thence West, a distance of 100.00 feet; thence South, a distance of 50.00 feet; thence East, a distance of 100.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

TOGETHER with that portion of vacated right-of-way per Ordinance 92-69.

Parcel 051706 300 8

Beginning 150.00 feet North of the Southeast corner of Lot 8, Block 5, Kapowsin; thence North, a distance of 50.00 feet; thence West, a distance of 100.00 feet; thence South, a distance of 50.00 feet; thence East, a distance of 100.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

TOGETHER with per vacated right-of-way per Ordinance 92-69.

Parcel 051706 300 9

Beginning 35.00 feet South of the Southeast corner of Lot 21, Block 6, Kapowsin; thence West, a distance of 125.00 feet; thence South, a distance of 50.00 feet to the center of the East right-of-way; thence, along the center of said right-of-way, a distance of 125.00 feet; thence North, a distance of 50.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 051706 301 0

Beginning at the Northwest corner of Tract A, Kapowsin; thence South, a distance of 113.25 feet; thence West, a distance of 227.90 feet; thence North 76°00'00" West, a distance of 98.80 feet; thence North 100.00 feet; thence East 326.70 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

OLD KAPOWSIN TOWN SITE

Parcel 051706 301 1

Beginning at the Southeast corner of Lot 9, Block 7 of Kapowsin; thence South to the Meander Line of Lake Kapowsin; thence Southeasterly on said Meander Line, to a point South of the Southwest corner of Lot 8, Block 7 of said addition; thence North to said Southwest corner; thence East, a distance of 50.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.
EXCEPT Chicago, Milwaukee, St. Paul Right-of-Way.

Parcel 051706 301 2

Beginning at the Southwest corner of Lot 26, Block 2 of Kapowsin; thence East, a distance of 100.00 feet; thence South, a distance of 200.00 feet; thence West, a distance of 100.00 feet; thence North, a distance of 200.00 feet to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.
TOGETHER with that portion of vacated Burnett Street per Ordinance 92-69.

Parcel 051706 301 3

Beginning at the Southeast corner of Lot 13, Block 8 in Kapowsin; thence Southwesterly on the South line of said block to intersect on the East line extended of Lot 9, Block 7 of said addition; thence South on said line to the Meander Line of Lake Kapowsin; thence Northeasterly on said Meander Line to a point South of the Beginning; thence North to Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 051706 301 5

Beginning 41.00 feet East of the Northeast corner of Block 15 of Kapowsin; thence East, a distance of 39.00 feet; thence South, a distance of 120.00 feet; thence West, a distance of 39.00 feet; thence North, a distance of 120.00 feet to the Beginning; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

OLD KAPOWSIN TOWN SITE

Parcel 051706 301 7

& 4/5 abandoned 100.00 foot right-of-way of Chicago, Milwaukee, St. Paul Right-of-Way in the Southwest of Section.

ALSO the West 165.00 feet of said right-of-way in the Southeast of said section; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 488500 001 0

All blocks City of Tacoma Water District together with vacated avenues and alleys per Ordinance 92-69; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

Parcel 488510 001 0

Blocks 1 and 2 City of Tacoma Water District together with that portion of the vacated road per Ordinance 92-69.

Parcel 488510 045 0

Lots 15 through 19, all within the Southeast Quarter (SE1/4) and Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

**** Lots 15, 18, and 19 only. Does not appear to be any Lot 16 & 17.

Parcel 488510 062 0

Lots 33 through 37 in the Northwest Quarter (NW1/4) of the Southeast Quarter (SE1/4) of Section 6, Township 17 North, Range 5 East, W. M.

**** Lots 35, 36, and 37 only.

Parcel 488550 001 0

Lots 1 through 8, Block 1; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.
SUBJECT to easement
TOGETHER with that portion of vacated Prichard Street per Ordinance 92-69.

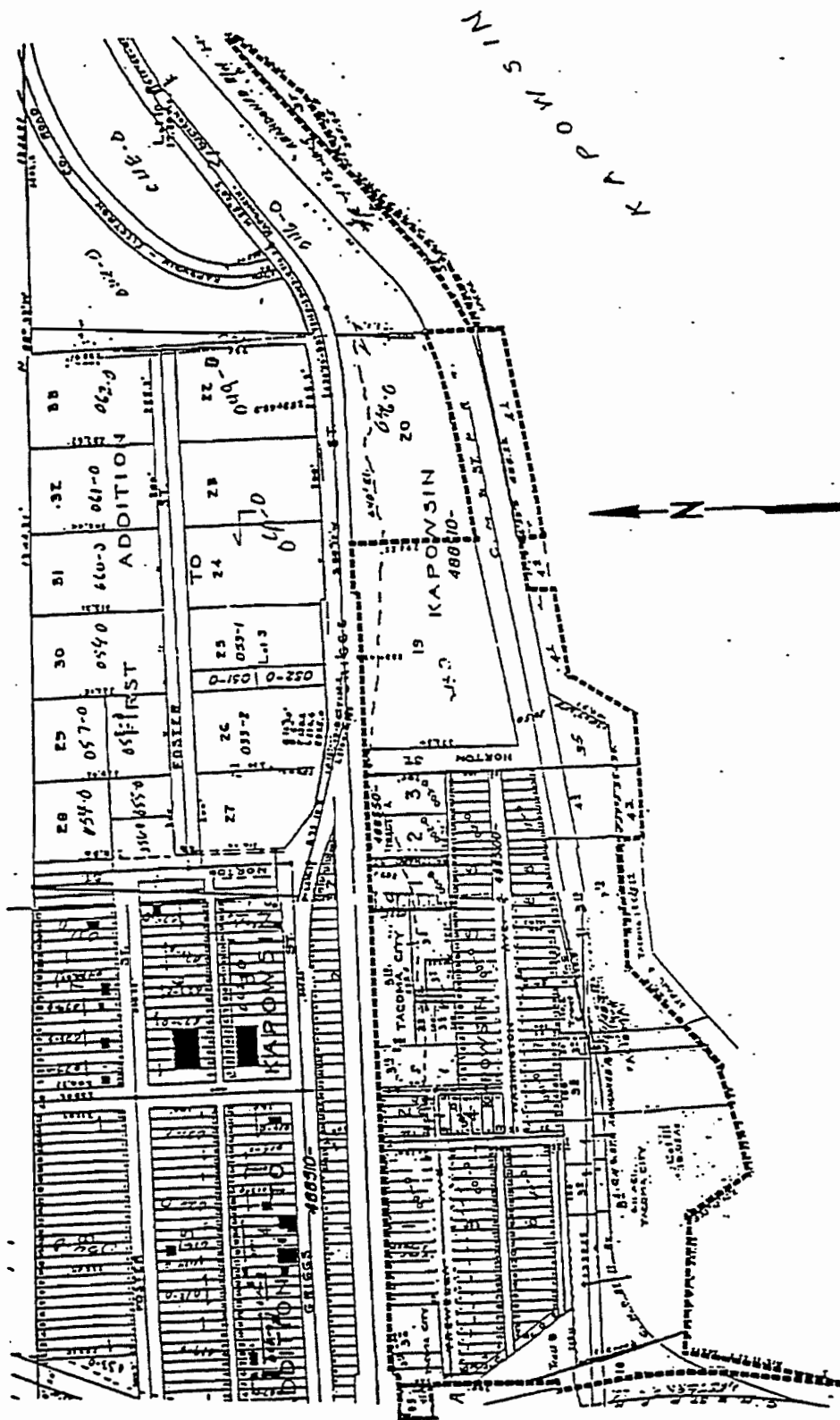
Parcel 488550 002 0

Lots 1 through 8, Block 2; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.
SUBJECT to easement
TOGETHER with that portion of vacated Prichard Street per Ordinance 92-69.

Parcel 488550 003 0

Lots 1 through 8, Block 3; all within the Southwest Quarter (SW1/4) of Section 6, Township 17 North, Range 5 East, W. M.

SUBJECT to easement



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 07/20/95

Carol A. Bellinger
Real Estate Management Supervisor

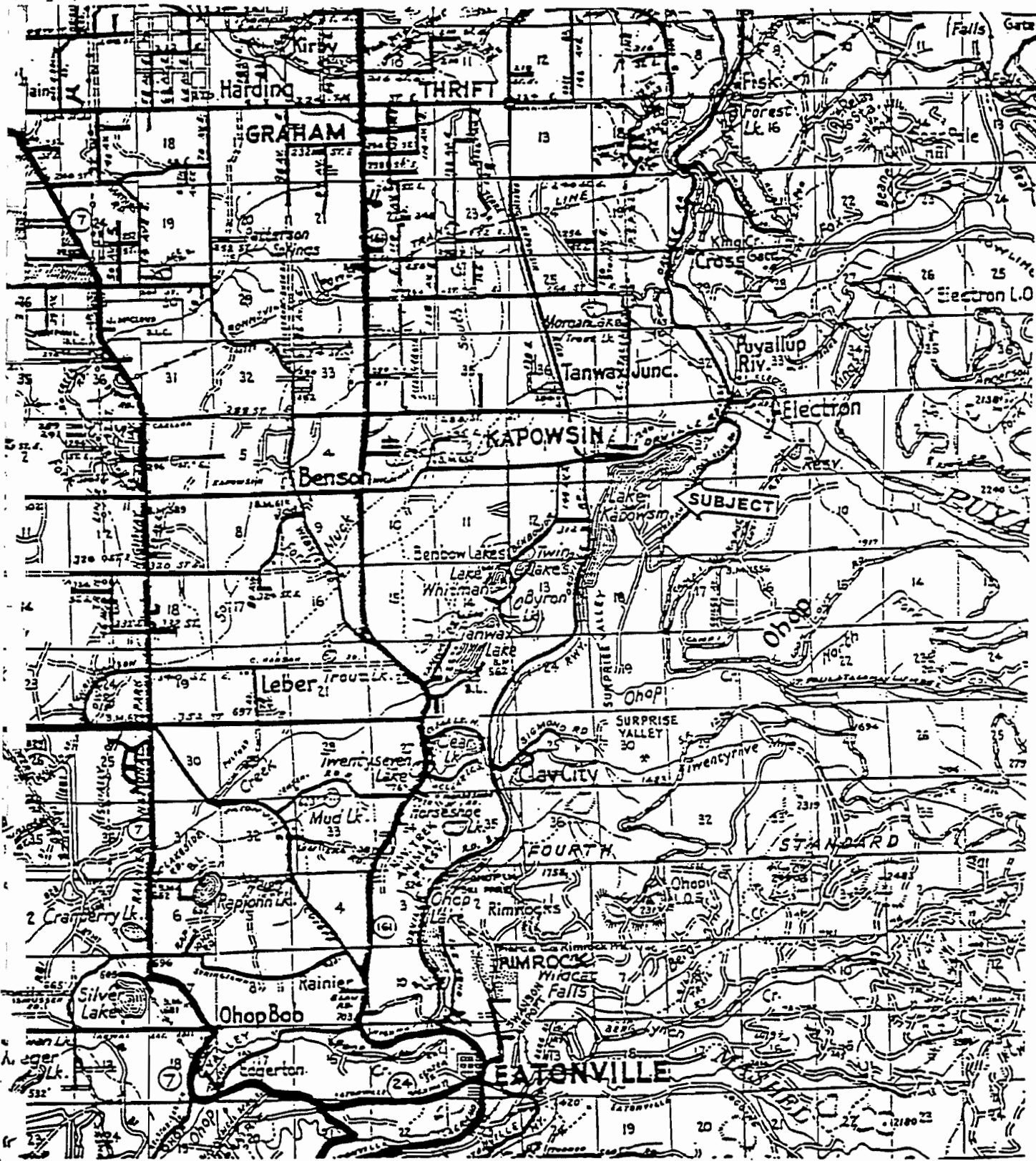
SITE MAP
LAKE KAPOWSIN
OLD KAPWOSIN TOWN SITE
30 ACRES

Scale

NTS

Project No.

95-156CJK



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 07/20/95	<p>AREA MAP</p> <p>LAKE KAPOWSIN</p>	Scale
		NTS
<p>I A. Bellinger</p> <p>Estate Management Supervisor</p>		<p>Project No.</p> <p>95-156CJK</p>

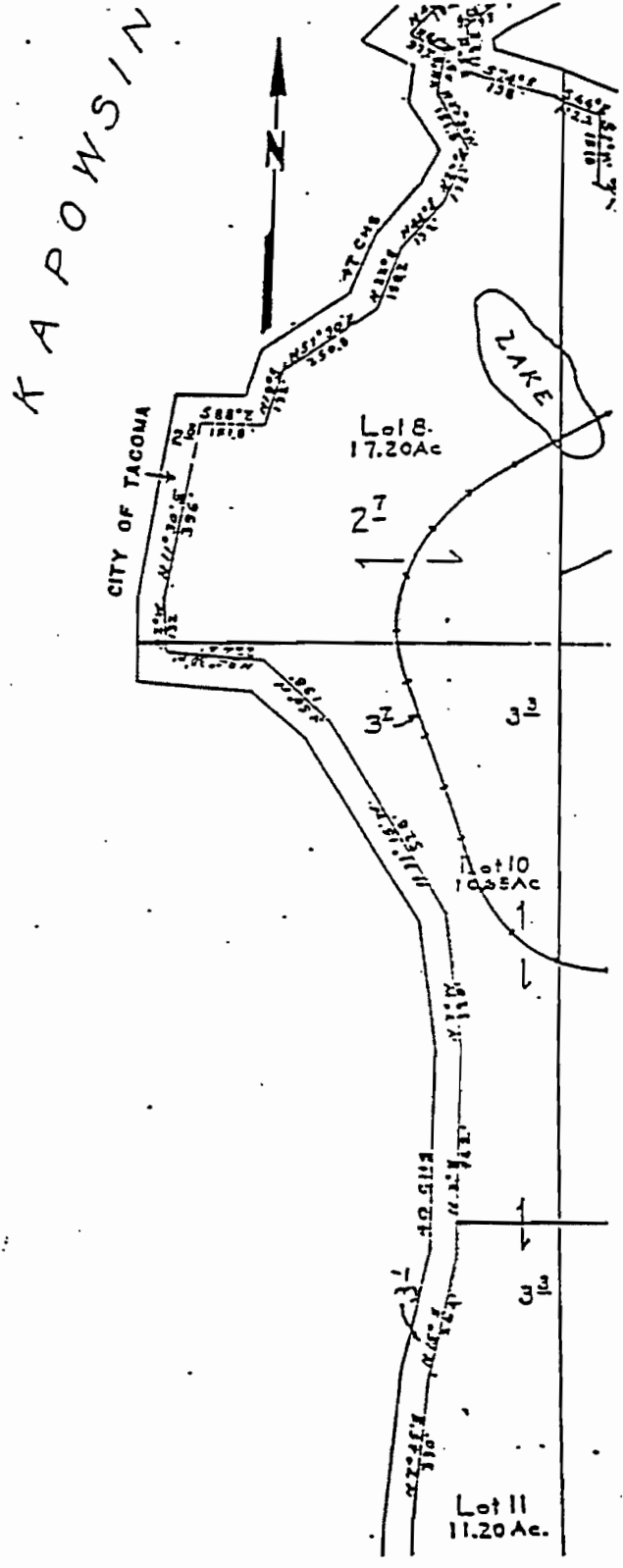
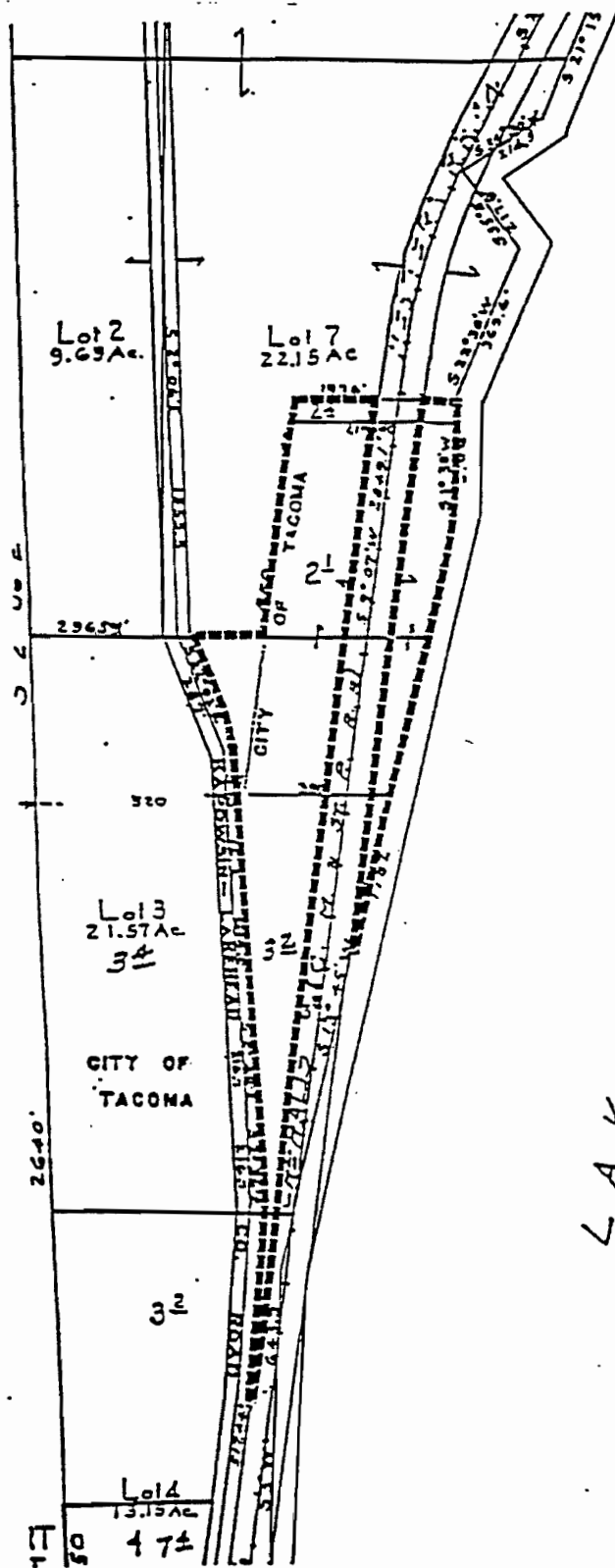
OLD RESORT SITE

Parcel No. 051707 200 1

Beginning 3000.00 feet South and 520.00 feet East of the Northwest corner of Section 7, Township 17 North, Range 5 East, W.M.; thence Northeasterly, parallel to the East right-of-way, a distance of 850.00 feet; thence East, a distance of 214.40 feet to the Meander Line of Kapowsin Lake; thence Southwesterly, along said Meander Line, to a point due East of the Beginning; thence West, a distance of 350.00 feet to the Beginning.
EXCEPT the Railroad Right-of-Way.

Parcel No. 051707 300 2

Beginning 3000.00 feet South and 520.00 feet East of Northwest corner of Section 7, Township 17 North, Range 5 East, W.M.; thence North 09°07'00" East to the North line of the Northwest Quarter (NW¼) of the Southwest Quarter (SW¼) of Section 7, Township 17 North, Range 5 East, W.M.; thence West to the Easterly line of the county road; thence Southeasterly on said line to the South line of the Northwest Quarter (NW¼) of Southwest Quarter (SW¼) of Section 7, Township 17 North, Range 5 East, W.M.; thence East to the Meander Line of Lake Kapowsin; thence Northeasterly on said Meander Line to a point East of Beginning; thence West to the Beginning.
ALSO Government Lot 4.
EXCEPT the South 650.00 feet.
EXCEPT Chicago, Milwaukee, St. Paul Right-of-Way.



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

Date 07/20/95

SITE MAP

Scale

NTS

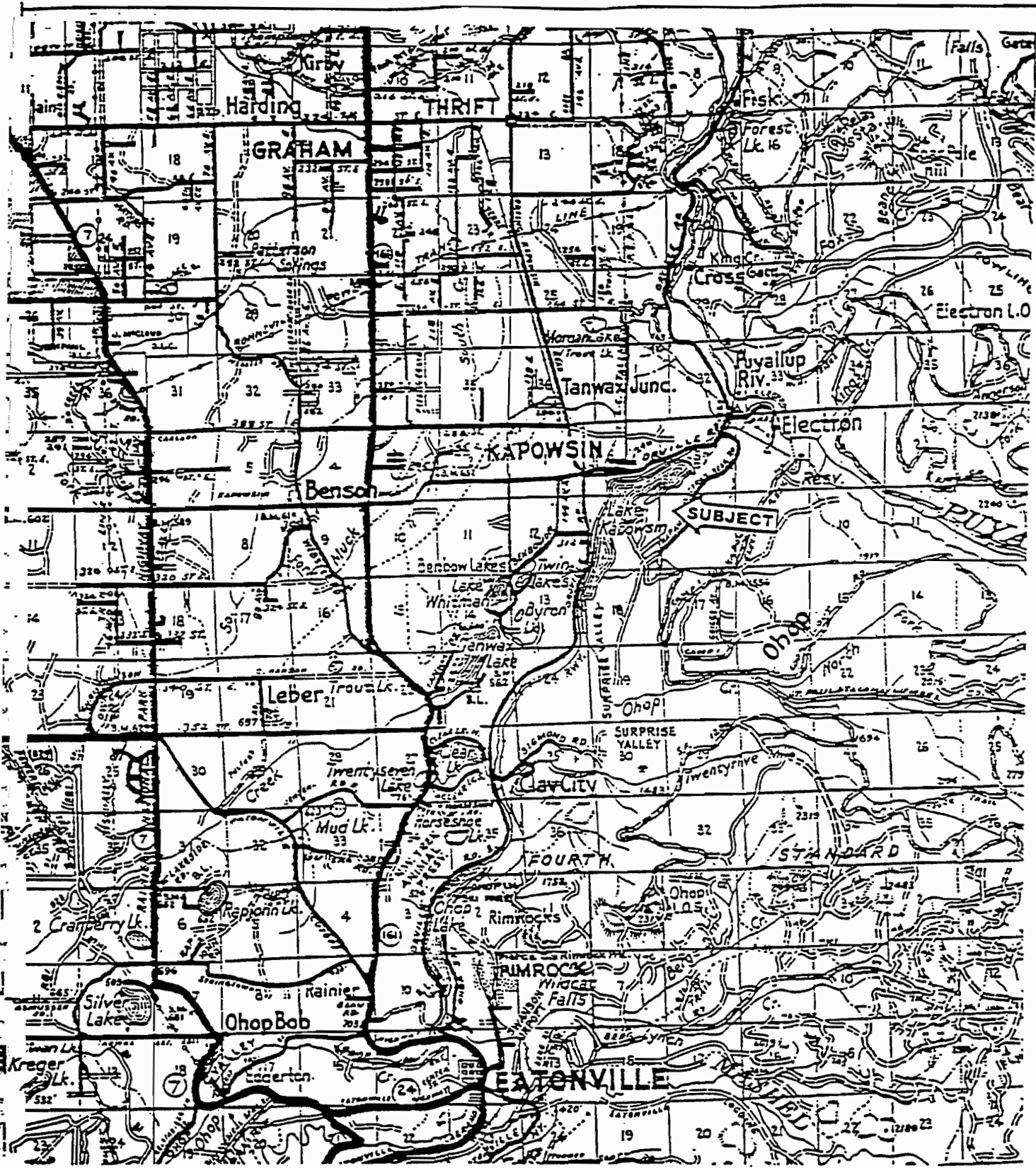
Project No.

LAKE KAPOWSIN
OLD RESORT SITE
13 ACRES

95-156CJK

Carol A. Bellinger

Real Estate Management Supervisor



CITY OF TACOMA - DEPARTMENT OF PUBLIC UTILITIES - REAL ESTATE MANAGEMENT

<p>Date 07/20/95</p> <p>pl A. Bellinger</p> <p>Real Estate Management Supervisor</p>	<p>AREA MAP</p>	<p>Scale</p>
	<p>LAKE KAPOWSIN</p>	<p>NTS</p>
		<p>Project No.</p> <p>95-156CJK</p>

Appendix D – Requirements for Protection of Water Supply in the Green River Watershed

DRAFT

**TACOMA PUBLIC UTILITIES
TACOMA WATER**

**REQUIREMENTS FOR PROTECTION
OF WATER SUPPLY IN THE
GREEN RIVER WATERSHED**

Jackie Flowers
Director of Utilities

Scott Dewhirst
Superintendent – Tacoma Water

UTILITIES ADMINISTRATION BUILDING
Tacoma, Washington 98409

EMERGENCY NUMBERS

Gate Guard (24 Hours)	(253) 502-8697
Gate Guard (24 Hours) alternate	(360) 886-1601
Green River Filtration Facility (24 Hours)	(253) 502-8346

FOREWORD

The principal source of Tacoma Water's municipal drinking water supply is the Green River, which flows west from the Cascade Mountains. Green River water is diverted at a point approximately 30 miles east of the City of Tacoma. To protect public health and ensure a safe drinking water supply, it is necessary that the water be maintained at its source in a state of the highest natural quality. Therefore, it is the goal of Tacoma Water to control those activities within the Green River Watershed that are not compatible with maintaining high quality water.

The Washington State Department of Health has enacted drinking water regulations requiring water purveyors to develop and implement an approved watershed control program. The purveyor must exercise surveillance over conditions and activities in the watershed affecting source water quality (WAC 246-290-668). The Washington State Department of Health's approval of Tacoma Water's Green River Filtration Facility was based on the expectation that watershed control practices would remain at similar levels as an unfiltered surface water supply. State law RCW 35.88.010 also provides Tacoma Water with authority over its sources of water supply.

The purpose of this document is to identify requirements for water supply protection that all landowners, their agents, and other visitors to the Green River Watershed must follow. The first publication of this manual was in 1952. It has been revised over time to reflect changes to Tacoma Water policies and procedures, regulatory revisions, and changes within the watershed area. This document has been incorporated into the overall Water System Plan for Tacoma Water. The following requirements have been adopted by the City of Tacoma's Public Utility Board to afford maximum compatible multiple use of the watershed area without jeopardizing the health and safety of Tacoma Water customers.

Revised - January 11, 1966

Revised - May 4, 1967

Revised - September 2, 1970

Revised - January 20, 1971

Revised - March 17, 1976

Revised and Approved by Public Utility Board – January 23, 1980

Revised and Approved by Public Utility Board – August 25, 1993

Revised and Approved by Public Utility Board – August 13, 2008

Revised and Approved by Public Utility Board – _____, 2019

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CHAPTER I

CONTROL OF THE WATERSHED AREA

Background

The Green River Watershed encompasses a total of 231 square miles approximately 30 miles east of the City of Tacoma in the central Cascade Mountain Range. The Green River is the primary source of Tacoma Water's drinking water supply. The water supply is treated at the Green River Filtration Facility; however, watershed control remains a critical component to maintaining water quality. To protect public health and ensure a safe drinking water supply, it is necessary that source water quality within the watershed be protected from degradation and contamination. Since 1906 when the City of Tacoma first declared its intention of using the Green River as its source of municipal water supply, Tacoma Water has had a continuous program for sanitary control of the area.

In accordance with the laws of the State of Washington, and as required by the rules and regulations of the Washington State Department of Health, the Tacoma City Council has defined by Ordinance No. 11441 (Appendix A) the property and territory constituting the Green River Watershed over which Tacoma Water exercises certain authority and jurisdiction by virtue of ownership and cooperative agreements with landowners.

The requirements included in this document are intended to protect water quality in the watershed and complement requirements imposed by existing State and Federal regulations. Tacoma Water may amend these requirements from time to time to conform to changes in watershed practices or technologies.

Regulatory Considerations

Public water systems in Washington are required to comply with WAC 246-290, the Washington State Department of Health drinking water regulations. These regulations set forth specific treatment requirements for surface water supplies such as Tacoma's Green River supply and require suppliers to exercise surveillance over conditions and activities in the watershed that may affect drinking water quality. Tacoma Water is required to have a watershed control program in place to protect source water from contamination.

The Washington State Forest Practices Rules also provide important regulatory considerations; activities conducted in the watershed must meet the requirements outlined in the Forest Practices Rules (Title 222 WAC).

Activities on watershed lands owned by Tacoma Water are regulated by the Green River Habitat Conservation Plan in order to protect sensitive species and those listed under the Endangered Species Act. Habitat Conservation Measure 3-04V covers sightings of species covered under the plan and states: "Tacoma will notify the USFWS in a timely manner of any reported sighting of a spotted owl, marbled murrelet, grizzly bear, gray wolf, Pacific fisher, California wolverine, or Canada lynx in the Upper HCP Area." Tacoma Water asks that all sightings of any of these species on Tacoma Water lands be reported to the Watershed Manager. Please report date and time of sighting, location of sighting and observed behavior of the particular species."

General Access Control

All roads entering the critical areas of the watershed are controlled by locked gates. Tacoma Water has jurisdiction over all access in the lower portion of the basin between the Headworks Gate and Massey Gates on the west and the gate at Friday Creek on the east. Tacoma Water provides surveillance over all land in the watershed.

Persons authorized in the area include workers for the various forest land and logging operations in the basin, the Bonneville Power Administration, the US Geological Survey, the US Forest Service, Burlington Northern Santa Fe Railroad, State and Federal fish and wildlife agencies, the US Army Corps of Engineers, Puget Sound Energy, and other landowners. Hunters are also authorized during the annual special permit hunts. Activities of all persons while in the watershed are carefully controlled to preclude contamination. Portable toilets are provided and maintained by Tacoma Water at convenient locations within the watershed. Failure to use them as required may result in termination of access privileges.

Tacoma Water employees are on duty every day and closely monitor watershed access and enforcement of these requirements. State trespass laws are used to control access.

CHAPTER II

ACCESS

Through cooperative agreements, Tacoma Water is authorized to limit Green River Watershed access to landowners and their agents. Other activities are controlled through a permit process. Tacoma Water maintains a number of locked gates on the roads leading into the watershed. Entrance through these gates into the watershed area is granted on a permit basis. Tacoma Water's right to issue the permits is based on ownership of the roadway or by cooperative agreement with landowners. Access permits may be issued for those activities that are compatible with watershed management and Washington State Department of Health policies. This permit process is detailed in Appendix B: Road Use Permit Form for Green River Watershed.

Westerly Access into the Green River Watershed

Road 5500

Road 5500 enters the watershed through the automatic, controlled gate at Tacoma Water's Green River Filtration Facility, continuing through the watershed to Lester. Road 5500 follows a route on the north side of the Green River.

Tacoma Water controls access on Road 5500 between the Headworks Gate on the west and the gate at Friday Creek on the east. The roadway is controlled through landowner agreements, US Army Corps of Engineers license, and by ownership of portions of the roadway.

Access for all landowner agents, contractors, or other visitors requires an access permit (Appendix B). After receipt of a permit and explanation of these watershed requirements, the driver will be responsible for any passengers and is required to inform them that they are entering a domestic water supply area. Any violations of the *Requirements for Protection of Water Supply in the Green River Watershed* will be grounds for issuing a Trespass / Incident Report (Appendix C) and denial of further access into the controlled areas of the Green River Watershed.

In addition to the access permit, supplemental requirements are in place for contractors. These special instructions for contractors are included in Chapter V. If a contractor desires access to other roadways that branch off of Road 5500, Tacoma Water must be contacted for any special requirements such as hauling permits, keys, or insurance.

Tacoma Water issues all commercial hauling permits on Road 5500.

Tacoma Water does not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to Road 5500 will be denied for any vehicle that does not have adequate insurance.

Green River Truck Road

Access on the Green River Truck Road (Road 3703) is controlled through landowner agreements and partial ownership by Tacoma Water from the Massey Gates located east of Cumberland. The roadway continues along the south side of the river. The Green River Truck Road is a private roadway. Access permits for use of the Green River Truck Road are issued by Tacoma Water.

Tacoma Water and the other road owners do not warrant the condition of the road, and drivers with access permits use the roadway at their own risk. Access to the Green River Truck Road will be denied for any vehicle that is not adequately insured.

Gate Keys

Gate keys are issued by Tacoma Water (Appendix F: Green River Watershed Gate Policy and Key Permit) or watershed landowners to permit holders who require access into the Green River Watershed during off hours. Keys shall not be duplicated or loaned to anyone else.

Key holders shall promptly return all keys when their official business has concluded, or when requested by Tacoma Water or the issuing landowner. A receipt will be issued for keys returned to Tacoma Water. Failure to return a key when asked by Tacoma Water will result in the key being considered as lost or stolen, and the key holder will be responsible for paying the penalty under Section 7.3 of the Policy found in Appendix F: Green River Watershed Gate Policy and Key Permit.

Access into the Green River Watershed via All Other Routes

Access to eastern portion of the watershed (east of the gate at Friday Creek) over any road system from the east does not presently require the issuance of a permit. Landowner agents and other visitors cannot enter the gate at Friday Creek without a valid permit.

Access to contractors from the east via any road system does not require the issuance of an access permit unless the contractor wishes to work west of the gate at Friday Creek.

Access by air for contractors to work within the watershed will not be allowed without a valid permit.

Insurance Requirements

Property owners, seeking to access City of Tacoma property to access their own property, contractors retained by them and permit holders, shall have and maintain adequate general liability and automobile liability insurance coverage, and shall provide verification upon the request to City of Tacoma officials, that adequate insurance coverage has been obtained and is in effect.

Contractors performing services for the City of Tacoma at their own expense shall procure and maintain in effect during the entire term of their contracts the specific insurance requirements specified therein, including:

- A) Commercial Automobile coverage, providing coverage for bodily injury and property damage, with policy limits of no less than \$1,000,000 combined single limit of liability. The City of Tacoma shall be named as an additional insured. Coverage shall apply to owned, non-owned and hired vehicles.

Property owners shall be responsible for verifying that their contractors and permit holders have adequate insurance.

CHAPTER III

OVERNIGHT STAYS

Temporary Residence

There are some cases where Tacoma Water determines it is in the best interest of watershed management to provide short-term temporary housing within certain areas of the watershed. This housing may be provided and/or allowed at the discretion of Tacoma Water. Any person staying within the watershed will be responsible to abide by these watershed requirements and notify their personnel that they are in a domestic water supply area. Any person observed violating these requirements or participating in any non-job-related activity west of the gate at Friday Creek will be subject to issuance of a Trespass / Incident Report and termination of access privileges.

Overnight lodging for fire surveillance or other special purposes may be authorized with prior approval of Tacoma Water.

CHAPTER IV

RULES AND REGULATIONS FOR MULTIPLE-USE FACILITIES AND OPERATIONS

As provided through ownership and cooperative agreements with landowners, it is the responsibility of Tacoma Water to ensure that contractors, corporations, and governmental agencies satisfy water quality protection requirements in the Green River Watershed. The applicable rules and regulations of the Washington State Department of Health (WAC 246-290), the Forest Practices Act, and the applicable laws of the State of Washington and its subdivisions apply to any activities in the watershed and are incorporated by this reference into these requirements.

The Washington State Forest Practices Rules provide detailed specifications for forest practices and are followed by Tacoma Water to ensure that the maintenance and operation of compatible multiple-use facilities within the Green River Watershed do not degrade water quality. For Tacoma Water-owned lands, Tacoma Water ensures that logging practices, road building, and maintenance activities meet current Federal and State logging standards. For lands owned by other landowners, Tacoma Water reviews proposed activity plans and monitors the conduct of these activities. Tacoma Water attempts to resolve any identified problems in the field, but will report violations of the Forest Practices Act to the proper authorities if necessary.

In addition to the Forest Practices Rules and other existing rules and regulations, Tacoma Water implements additional requirements for the protection of water quality in the watershed. Special attention shall be paid to the following requirements for those visiting or working in the watershed:

1. Notification

Tacoma Water shall be notified by landowners and contractors one week prior to the actual starting of any project within the watershed requiring a Forest Practice Application.

2. Toilet Facilities

Tacoma Water shall be responsible for determining where toilet facilities shall be required and providing the required units. The contractor shall be responsible for providing a location to place the required units and encouraging their use.

3. Garbage

All trash and rubbish shall be collected in leak-proof containers and removed from the watershed. Trash and rubbish shall not be allowed to accumulate on the ground or in any water course. Such material shall not be disposed of by being deposited within the watershed area. All log landings and construction areas shall be kept clean of food waste, sandwich wrappers, etc. All vehicles shall have litterbags. Tacoma Water may provide garbage cans at the Headworks Gate and Massey Gates. Persons observed littering the roadways will be subject to citation and termination of access privileges.

4. Communicable Diseases

It shall be the duty of any person knowing or suspecting the presence of a communicable disease in an employee of his/her own to report these conditions immediately to the local health officer [King County Health Department hotline (206) 296-4774] and inform Tacoma Water [Gate Guard (360) 886-1601].

5. Rodent Control

The use of any disease-producing organism, such as the so-called “rat viruses”, or any other bacteria for the purpose of rodent extermination, is prohibited.

6. Boating, Wading, and Equipment Use

No boating, wading, or equipment use — except as required in construction or operations — shall be authorized in the Green River, Eagle Gorge Reservoir, or in any stream, lake, or pond tributary to the same. In those instances in which such activities are unavoidable, Tacoma Water’s decontamination procedures shall be followed (Appendix D).

7. Petroleum Products and Petroleum Product Spills

- a. Tankers, railroad tank cars, tank trucks, or other facilities used for the loading, unloading, and transportation of petroleum products shall be equipped for the collection of drips from the hose or other connections with the excess petroleum products contained in hose and pipelines.
- b. Wherever petroleum products are temporarily being stored within the watershed, provisions shall be made for catching accidental spills. These facilities shall be of such a capacity as to hold the maximum quantity of petroleum products possible from any one spill.
- c. If petroleum products or other hazardous materials are accidentally spilled into the Green River or its tributaries, or has the potential to reach the water supply immediate notification shall be given to Tacoma Water (at the emergency phone numbers provided) so the polluted water can be diverted before entering the water distribution system. Tacoma Water maintains oil spill equipment at the Green River Headworks and at most bridge crossings. The contractor shall be liable for any damage from such river pollution.
- d. **Emergency Phone Numbers**

Gate Guard (24 Hours):	(253) 502-8697
Gate Guard (24 Hours) alternate:	(360) 886-1601
Green River Filtration Facility (24 Hours):	(253) 502-8346
- e. Any equipment leaking excess amounts of oil shall be repaired prior to continuation of its use within the watershed.

8. Turbidity Control

- a. Tacoma Water may require a project to be shut down within the Green River Watershed if it causes turbidity levels above 5.0 NTUs (Nephelometric Turbidity Units) at the water supply intake. The affected project shall be delayed until turbidity from the project can be reduced by sedimentation basin construction or until conditions allow for well water blending or replacement of the turbid river water.
- b. Where required, temporary sedimentation basins shall be provided of sufficient capacity to detain the runoff long enough to permit the water to significantly improve before being discharged into the main river or any tributary thereto.

Sedimentation basins shall meet Washington State Department of Ecology Stormwater Management Manual standards.

9. Spraying Herbicides, Insecticides, or Fertilizers

- a. The use and amounts of herbicides, insecticides, or fertilizers shall be limited to compounds and procedures as approved by Tacoma Water and the landowners and in accordance with the applicable rules and regulations of the Washington State Department of Health and the Forest Practice Rules (WAC 222-38). The list of approved chemicals includes the following:
 - Glyphosate
 - Triclopyr
 - Aminopyralid

Additional chemicals may also be acceptable but must be approved prior to use.

- b. Oil-based insecticides or herbicides shall not be used without prior approval of Tacoma Water.
- c. Two weeks' prior notice must be provided to Tacoma Water by contractors or landowners who are planning on applying herbicides, insecticides, or fertilizers. This advance notice is required for the following reasons:
 - To screen all chemicals and application methods to determine potential impact on the water supply area.
 - To locate water sampling sites which best represent any potential contamination of the river.
 - To collect water samples to be tested for one or more of the chemicals applied; samples must be collected prior to chemical application, immediately after chemical application, and after the next rain event (Appendix E).
 - To make arrangements for Tacoma Water staff to ride with or be available to the herbicide applicator during the application process.

10. Bridge Maintenance

Debris and material from bridge maintenance, such as rust, scale, paint, or dirt, shall be kept from dropping into the water. All work shall be carried out over a shield designed to catch such material so that they may be disposed of on land. When cleaning solvents are used, care must be taken to see that such solvents do not drop into the water.

11. Bridge Sanitation Requirements

All railroad bridges and other bridges that are to be upgraded shall be constructed to the maximum extent possible to prevent contamination of the water. Drainage from bridges should be carried onto the land on either end and disposed of in such a manner that it cannot be directly discharged or washed into the main channel.

12. Dust Control

Petroleum products shall not be used within the Green River Watershed for dust control.

CHAPTER V

SPECIAL INSTRUCTIONS TO CONTRACTORS WORKING IN THE GREEN RIVER WATERSHED

All contractor personnel must be fully instructed as to the nature of the land upon which they are to work and shall exercise proper restraint to prevent any possible contamination of the water supply. It is the express duty of the foremen and supervisors to prevent sanitary infractions and inform their workers of the danger arising from carelessness.

All permits for contractor access are issued for work purposes in a designated area only. Access is limited to a designated route to and from the work site. Failure to comply will subject the person to issuance of a trespass incident report and termination of access privileges.

No person shall be taken in or allowed to enter the watershed with a contractor unless that person is under the employment of the company receiving the access permit. **NO UNAUTHORIZED RIDERS ARE ALLOWED.** Each contractor working in the watershed shall provide Tacoma Water with a list of employees. This list must be kept current.

CHAPTER VI

RECREATION WITHIN THE GREEN RIVER WATERSHED

Unrestricted outdoor recreation in the watershed is not considered a compatible multipurpose use. Therefore fishing, swimming, hunting, and other recreational activities (other than special permit hunting and other limited recreational activities supervised by Tacoma Water) are not allowed within the borders of the Green River Watershed west of the gate at Friday Creek. Tacoma Water reserves the right to restrict access to its owned and controlled lands east of Friday Creek.

Any person apprehended accessing the controlled areas of the Green River Watershed for recreational purposes by land, water, or air will be issued a Watershed Trespass Incident Report and will be subject to being issued a King County Trespass Citation.

Tacoma Water, the Washington Department of Fish and Wildlife, and the Muckleshoot Indian Tribe jointly sponsor annual special permit hunts in the watershed in cooperation with the other landowners. Access and hunt activities are strictly controlled; all hunters must check in with staff at the Headworks Gate or Massey Gates and must obtain a “Road Use and Access Permit for Hunters” (in addition to their special hunting permit) to enter the watershed. No other recreational hunting is allowed in the watershed.

CHAPTER VII

TERMINATION OF ACCESS PRIVILEGES

Any violations of these requirements or of other applicable laws or regulations will subject the violating party and his/her employer's access permit to termination. Termination of access privileges will be initiated by a Tacoma Water letter to the individual involved as well as to the permit holder.

DRAFT

APPENDIX A

CITY OF TACOMA ORDINANCE NO. 11441

ORDINANCE NO. 11441

BY DAVISSON:

An ordinance defining the property and territory constituting the Green River Water Shed over which the City of Tacoma is seeking to exercise authority and jurisdiction; declaring an emergency, and providing that this ordinance shall take effect immediately after publication.

BE IT ORDAINED BY THE CITY OF TACOMA:

Section 1. That in order to comply with the rules and regulations of the State Board of Health of the State of Washington and in connection with the seeking by the City of Tacoma to exercise authority and jurisdiction over the Green River Water Shed, the limits of the territory and property constituting such water shed are defined as hereinafter set forth, which said property is all located in King County, Washington, and is described as follows, to-wit:

That portion of Section 36 lying on the Green River side of the divide, Township 22 North, Range 7 East W. M.

That portion of Sections 31, 32 and 33 lying on the Green River side of the divide, Township 22 North, Range 8 East W.M.

That portion of Sections 1, 24, 25 and 36 lying on the Green River side of the divide, Township 21 North, Range 7 East W. M.

All of Sections 5, 6, 8 to 17 inclusive, 20 to 29 inclusive, 32 to 36 inclusive, and that portion of Sections 1, 2, 3, 4, 7, 18, 19, 30 and 31 lying on the Green River side of the divide, Township 21 North, Range 8 East W. M.

All of Sections 17, 18, 19, 20, 21 and 25 to 36 inclusive and that portion of Sections 6, 7, 8, 9, 13, 15, 16, 22, 23 and 24 lying on the Green River side of the divide, Township 21 North, Range 9 East W. M.

All of Sections 30 to 35 inclusive and that portion of Sections 18, 19, 20, 23, 25, 26, 27, 28, 29 and 36 lying on the Green River side of the divide, Township 21 North, Range 10 East W. M.

All of Sections 29, 31 to 35 inclusive, and that portion of Sections 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30 and 36 lying on the Green River side of the divide, Township 21 North, Range 11 East W. M.

That portion of Sections 1, 12 and 13 lying on the Green River side of the divide, Township 20 North, Range 7 East W. M.

All of Sections 1 to 16 inclusive, and that portion of Sections 17, 18, 20, 21, 22, 23, 24, 25, 26 and 27 lying on the Green River side of the divide, Township 20 North, Range 8 East W. M.

All of Sections 1 to 18 inclusive, 20, 22 to 25 inclusive, and that portion of Sections 21, 26, 27, 28, 29, 30, 35, and 36 lying on the Green River side of the divide, Township 20 North, Range 9 East W. M.

All of Sections 1 to 30 inclusive, 32 to 36 inclusive, and that portion of Section 31 lying on the Green River side of the divide, Township 20 North, Range 10 East W. M.

All of Sections 2 to 10 inclusive, 15 to 36 inclusive, and that portion of Sections 1, 11, 12, 13 and 14 lying on the Green River side of the divide, Township 20 North, Range 11 East W. M.

All of Sections 27 and 34, and that portion of Sections 3, 22, 23, 26 and 35 lying on the Green River side of the divide, Township 20 North, Range 12 East W.M.

All of Sections 1 to 4 inclusive, and that portion of Sections 5, 6, 8, 9, 10, 11 and 12 lying on the Green River side of the divide, Township 19 North, Range 10 East W. M.

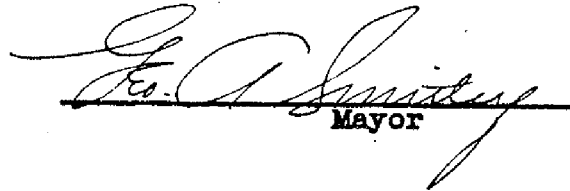
All of Sections 1 to 6 inclusive, 8 to 12 inclusive, 16, and that portion of Sections 7, 13, 14, 15, 17, 18, 20, 21 and 22 lying on the Green River side of the divide, Township 19 North, Range 11 East W. M.

All of Sections 3, 10 and 11, and that portion of Sections 2, 12, 13, 14 and 15 lying on the Green River side of the divide, Township 19 North, Range 12 East W.M.

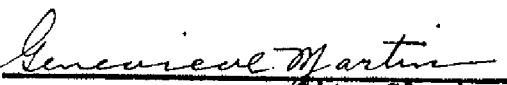
Section 2. That this ordinance is necessary for the immediate preservation of the public health and safety of the

citizens of the City of Tacoma and shall take effect immediately.
after publication.

Passed AUG 4 - 1937



Mayor

Attest: 

City Clerk

DRAFT

APPENDIX B

ROAD USE PERMIT FORM FOR THE GREEN RIVER WATERSHED



N 9654

Permit No. _____

ROAD USE PERMIT FORM FOR THE GREEN RIVER WATERSHED

Permit Issue Date: _____ Permit Expiration Date: _____

Printed Name: _____ Office Phone No. : _____

Address: _____

Employer: _____

Vehicle Plate No.: _____ Make: _____ Model: _____ Color: _____ Year: _____

Purpose of Access: _____ Job Location: _____

The Green River Watershed serves as the municipal fresh water supply for the City of Tacoma and many communities in Pierce and King Counties. Road use and area access are limited and controlled to protect public health. Access is *only* for the purpose stated above and limited to the segments of roadway owned or controlled by the City of Tacoma. Additional road use permits may be required. **Special requirements are detailed on the reverse side of this permit.**

Property owners, seeking to access City of Tacoma property to access their own property, contractors retained by them and permit holders, shall have and maintain adequate general liability and automobile liability insurance coverage, and shall provide verification upon the request to City of Tacoma officials, that adequate insurance coverage has been obtained and is in effect.

Contractors performing services for the City of Tacoma at their own expense shall procure and maintain in effect during the entire term of their contracts the specific insurance requirements specified therein, including:

- A) Commercial Automobile coverage, providing coverage for bodily injury and property damage, with policy limits of no less than \$1,000,000 combined single limit of liability. The City of Tacoma shall be named as an additional insured. Coverage shall apply to owned, non-owned and hired vehicles.

Property owners shall be responsible for verifying that their contractors and permit holders have adequate insurance.

Violations of the City's Watershed regulations as stated in the "Requirements for the Protection of Water Supply in the Green River Watershed" or any of the terms, conditions or requirements of this permit (as listed on the reverse side of this form) shall be cause for revocation of this permit and initiation of access termination procedures. Permittee(s) shall be subject to arrest and prosecution and/or impoundment of the above-listed vehicle.

Permitee signature: _____

SPECIAL REQUIREMENTS

1. Permittee(s) acknowledge that the Watershed roads are rough and appropriate driving precautions must be taken. Permittee(s) agree to hold harmless and indemnify the City of Tacoma, its officers, employees and other road owners and easement holders from all claims for monetary damages, litigation and judgements arising from or related to the use of the Watershed roads and other access privileges.
2. The City does not warrant the condition of the road, and permittee(s) use the roadway at their own risk.
3. Permittee is required to follow all safety guidelines on City of Tacoma roads including: following posted maximum speeds and other road-use instructions and calling out all mile and half mile markers using a CB radio. Headlights must remain on while driving.
4. All permittee(s) and work crews granted access to the Green River Watershed over City-owned or controlled roadways are required to comply with the City of Tacoma regulations as stated in the "Requirements for the Protection of Water Supply in the Green River Watershed." Copies are available upon request at the Headworks Operations Building.
5. Permittee(s) shall not stop on City of Tacoma roadways, except in case of vehicle mechanical failure or unsafe road conditions.
6. The permit holder must notify City of Tacoma staff immediately if a hazardous material spill occurs. Hazardous materials include but are not limited to: fuels, oils, coolants, pesticides, or any other substance that could pose a hazard to, or is known to have adverse effects on drinking water.
7. People in charge of operations shall instruct all those who enter the Watershed on their behalf about the nature of the Watershed and the serious consequences arising from failure to comply with the City's regulations regarding protection of its water supply.
8. No personal shall be taken in or allowed to enter the Watershed with a permittee unless that person is in the employ of the permittee. **No unauthorized riders are allowed.**
9. This permit is not transferrable and any assignment of it shall be cause for revocation.
10. The permittee(s) shall not trespass on the property right of the City of Tacoma or other landowners in the Watershed and shall not commit any act that may affect the quality of water. Permittees found in any body of water for anything other than specific assigned job requirements will have their access privileges revoked.
11. Except for a limited permit hunt, recreation of any type is not allowed within the controlled area of the Watershed. **This permit provides access to and from the job location only.**

Permittee initials: _____

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APPENDIX C

TRESPASS/INCIDENT REPORT FORM

REPORT NUMBER -000316		CITY OF TACOMA GREEN RIVER WATERSHED TRESPASS REPORT				CASE NUMBER	
NAME: LAST		FIRST		INITIAL		VEHICLE LICENSE NO.	
ADDRESS					VEH. YR.	MAKE	MODEL
CITY		STATE	ZIPCODE	EMPLOYER		COLOR	EXPIRES
SEX	RACE	DATE OF BIRTH	HEIGHT	WEIGHT	EYES	HAIR	
OWNER IF OTHER THAN DRIVER							
DRIVER'S LICENSE NO.			STATE	EXPIRES	RESIDENCE PHONE NO.		ADDRESS
DATE: IMO.		IDAY	YR.	TIME:		CITY	STATE
ZIP CODE							
LOCATION: SECTION			TOWNSHIP	RANGE	PROPERTY OWNER		REPORT FILED BY:
SHERIFF CALLED					YES	NO	BADGE NO.
NAME OF OFFICER							

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APPENDIX D

DECONTAMINATION OF EQUIPMENT AND SUPPLIES

Decontamination of Equipment and Supplies

All equipment, machinery, and supplies to be used within the restricted access portion of the Green River Watershed that could be exposed to waters upstream of the Tacoma Water Intake, must be cleaned and disinfected at a location outside the watershed.

The terms “machinery” and “equipment” include, but are not limited to, the following: boats, barges, trailers, cables on heavy equipment, scientific equipment, drilling rigs, excavators, silt curtains, hoses, pumps, shovels, waders, nets, scuba equipment, and any other personal equipment that could be exposed to the water. Materials include all temporary or permanent construction materials including but not limited to the following: lumber, concrete, metal, plastics, pipes, hardware, cables, ropes, valves or other items used for projects that could be exposed to the water.

Equipment disinfection and cleaning must be done in the presence of a representative of Tacoma Water. Contact the Watershed Supervisor or Environmental Technician to schedule cleaning and to have the work witnessed and documented.

Decontamination requires the following items:

1. Pressure washer/steam cleaner capable of producing 2000 psi and water temperature of 140 degrees Fahrenheit with working gauges to indicate pressure and temperature. If steam cleaner has capability to entrain bleach into the spray, then Item 2 can be eliminated.
2. Pressurized tank sprayer or spray bottle suitable for bleach application.
3. Chlorine bleach, normal household strength.
4. Biodegradable soap (for equipment or material that would be damaged by bleach).
5. Personal protective equipment to prevent injury or exposure for worker performing the cleaning.

Procedures for Decontamination of Equipment and Materials

1. Overview of Procedures

The decontamination requirement covers all aquatic vessels, machinery, equipment, and materials that have been previously used outside the Green River Watershed and will be exposed to the waters of the river, its tributaries or the reservoir. The decontamination has three steps:

- a. Visual inspection and physical removal and disposal of plant fragments, soils and mussel shells.
- b. Pressure wash at 140 degrees F with chlorine bleach entrained in the spray to remove all oil, grease, dirt and debris.

- c. Final inspection by Tacoma Water representative.

2. Detailed Procedures for Inspection by Tacoma Water Personnel

Examine all parts of equipment and vessels looking for dirt, plant fragments, mollusk shells or foreign matter. Pay special attention to the following areas:

- a. Storage wells, bait tanks, and under floorboards of boats.
- b. Motor, propeller and motor well.
- c. Trailer hitch and bumper area.
- d. Trailer frame inside and out including pads for boat bottom.
- e. Vehicle and trailer axles and fender wells.
- f. Gears, tracks, shovels, and axles on mechanized equipment and areas behind cover plates.

3. Directions for Pressure Washing Surfaces and Flushing Internal Cooling Surfaces on Equipment and Engines

- a. **Pressure washer will have working temperature and pressure gauges.**
- b. Direct the pressure washer stream at all surfaces with special attention to the areas listed in Section 2. Surfaces should have a minimum of 30 seconds contact time with water heated to 140 degrees F at 2000 psi. The nozzle type, spray distance and application rate shall be adjusted to thoroughly remove all foreign substances without damaging the equipment being cleaned.
- c. Boat motors, pumps and other equipment with internal wetted surfaces will be flushed with a minimum three volumes of 140-degree F water with bleach added at the required ratio.
- d. For materials that could be damaged by bleach or pressure washing, an alternative of storing the equipment dry in a facility for 10 days may be acceptable based on the inspection. Such equipment will still be inspected and required to be cleaned before storage with biodegradable soap and brushes.

4. Directions for Cleaning Outboard Engines and Machinery with Internal Surfaces that Contact Water Upstream of Tacoma Water's Intake

Experience has shown that both plants and mollusks inhabit the wetted surfaces that are exposed to contact with other waters. The following is a list of parts that need to be disassembled in order to be inspected, cleaned, and decontaminated:

- a. Drive shaft housing cover
- b. Drive shaft housing and wetted cavity

- c. Clamp bracket assembly
- d. Swivel bracket assembly
- e. Propeller shaft and seals.

In addition to the cleaning and inspection, the water-cooled surfaces will be flushed with three cycles of 140-degree water bleach solution.

5. Chlorine Washing for Equipment that Cannot be Pressure Washed

- a. Pressure-sensitive materials can be decontaminated with a chlorine solution applied with a pressurized tank sprayer or spray bottle. Concentrate spray especially toward tight spaces and crannies where plant pieces or shells might collect. Allow bleach solution to remain on the equipment for a minimum of 10 minutes or until it has dried. Do not rinse.
- b. For equipment that can be damaged by bleach, scrubbing with biodegradable soap is the acceptable alternative. This is acceptable for personal equipment like rubber boots, wet suits, and waders without felt soles. **Felt soles must be soaked in a bleach water solution!**
- c. Chlorine solution is not stable and must be made up daily. It readily decomposes to salt and water when exposed to sunlight. An effective chlorine solution must contain 200 mg/l free available chlorine. The concentration can be obtained by diluting fresh household bleach according to the following table:

Household Bleach	Water
1 tablespoon	1 gallon
1 cup	16 gallons
3 ¼ cups	50 gallons

- d. Personal safety precautions shall be taken at all times when handling and applying chlorine solution.

6. Discharge and Neutralization of Bleach

The contractor will be responsible to find a site outside the watershed suitable for cleaning and the application of the bleach solution. The residual solution will be allowed to puddle allowing time for the photo-decomposition process. Spent chlorine solution in dip tanks or wastewater holding tanks shall not be discharged on site until solution is neutralized. Information on using sodium ascorbate to neutralize chlorine is available.

7. Final Inspection and Approval

Final inspection and approval of vessels, machinery, and equipment must be conducted by Tacoma Water personnel and documented in an equipment decontamination log.

Addendum
Cleaning of Equipment for Terrestrial Invasive Species

It is understood that heavy equipment, trucks and work vehicles are the primary vector for the introduction of invasive species in the Green River Watershed. The following are guidelines for contractors entering the Green River Watershed for work on Tacoma Water property.

Soils, plant material and seed on tires, tracks and digging implements are the main source for introducing invasive species and noxious weeds.

Inspection by Tacoma Water personnel will identify all deficiencies in the cleanliness of the equipment. They will look for all soils and plant material stuck in tracks as well as hydraulic fittings and hoses in poor condition.

As stated in Appendix D, it is the contractor's responsibility to find a site outside the Watershed for steam cleaning the equipment.

- The steam cleaner must have functioning gauges to show pressure of 2000 psi. Cleaning will remove all foreign material from the equipment.
- Tracked equipment will rotate track so all surfaces can be cleaned and inspected.
- Bucket, claws and shovels will be opened and closed so all surfaces can be cleaned and inspected.
- Trailers hauling equipment will have clean decks and ramps prior to loading equipment.

The final step in decontamination is the wash of all surfaces with the bleach water solution referenced earlier in Appendix D. Bleach either entrained in the spray of the pressure washer or in a pressurized pump tank is acceptable.

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APPENDIX E

SAMPLE COLLECTION PROCEDURE DURING HERBICIDE SPRAYING

SAMPLE COLLECTING PROCEDURE DURING HERBICIDE SPRAYING

SAMPLE SIZE = 1 Liter

**Short term spray projects using a single sample point below the treatment area.
One sample container for each chemical being tested is required.**

<u>Sample No.</u>	<u>Sample Time</u>
1.	Control sample (before spraying)
2.	After unit completed
3.	After rain event

ALL SAMPLES SHALL BE TAGGED TO PROVIDE THE FOLLOWING INFORMATION

- 1. Container No.**
- 2. Sample collection point (location – name of river or stream, section, township, and range)**
- 3. Date and time of sample collection**
- 4. Name of sample collector**
- 5. Herbicide being sprayed**

APPENDIX F

GREEN RIVER WATERSHED GATE POLICY AND KEY PERMIT

City of Tacoma Green River Watershed Gate Policy and Key Permit

(Adopted by Water Superintendent on 06/30/2014)

1. PURPOSE

The purpose of this Policy is to assist in providing security for persons and City property through the control of City gates in the Green River Watershed and issuance of gate keys.

2. POLICY

In effort to improve physical security for the City of Tacoma Green River Watershed facilities, a Gate and Key Permit Policy (Policy) has been established to control gate access and issuing and managing watershed gate keys. These practices have been adopted to heighten awareness in areas of the watershed that need limited access due to concerns for security or high valued items. Acceptance of keys from the City obligates the person to follow this Policy.

3. SCOPE

This Policy will cover the procedures for requesting, returning, and reporting of lost or stolen keys belonging to the City as well as the responsibilities of all key holders.

4. GENERAL RESPONSIBILITIES

4.1 A key shall only be issued to individuals who have a legitimate and official requirement for a key. A requirement for access alone, when access can be accomplished by other means such as request for entry accompanied by a City employee, shall not be considered an entitlement to a key.

4.2 All keys are issued by City of Tacoma, Department of Public Utilities, Water Division (doing business as "Tacoma Water") and shall remain the property of Tacoma Water.

4.3 Any exemptions, changes or special provisions to this Policy shall be made only with the approval of the Tacoma Water Superintendent, Deputy Superintendent, or Green River Watershed Manager.

5. KEY REQUESTS AND ISSUANCE

5.1 All requests for keys must be submitted to Tacoma Water on a KEY REQUEST FORM ("KR Form").

5.2 The KR Form must be filled out in its entirety and then signed by the appropriate authorizing individual(s). Individuals eligible to hold a key cannot authorize their own keys.

5.3 Only the key holder can pick up their key and must show a picture ID when picking up their key.

5.4 At least semi-annually Tacoma Water shall conduct an audit of keys issued.

5.5 Tacoma Water Green River Watershed Manager shall be responsible for the issuance of keys.

6. KEY HOLDER RESPONSIBILITIES

6.1 All exterior access gates must remain closed and locked at all times.

6.2 All interior gates must be left as found.

6.3 Keys must not be used for any purpose other than official business.

6.4 Keys must not be duplicated.

6.5 Keys must not be loaned out or transferred to another person.

6.6 The City of Tacoma retains the right to revoke keys at any time, for any reason.

6.7 Possession of a key does not mean unrestricted access; the key holder must have a valid and current permit and be conducting official business.

6.8 Do not hide keys; keys found hidden will be revoked and the key holder will be subject to the lost key rule.

6.9 Lost keys must be reported to the Tacoma Water Green River Headwork's office within 48 hours.

7. LOST, STOLEN AND BROKEN KEYS

The holder of a City key assumes responsibility for the safekeeping of the key and its use. *It is understood that the key shall not be loaned, issued to, or made available by any other means to unauthorized persons.*

7.1 Lost or stolen keys shall be reported immediately to the Tacoma Water Green River Watershed Manager at phone 253-502-8808.

7.2 If a key is broken or otherwise damaged, the pieces must be returned to Tacoma Water. If a key is broken off in a lock, it must be reported immediately to the Tacoma Water Green River Watershed Manager at phone 253-502-8808.

7.3 The penalty (e.g. cost of re-coring the lock) for a lost or stolen key is one thousand dollars (\$1,000.00). The penalty may be deducted from the contractor's retention or paid directly to the City of Tacoma.

8. RETURN OF KEYS

All key holders shall promptly return all keys when their official business has concluded or Tacoma Water has asked for return of the keys. A receipt will be issued for the keys returned. Failure to return a key when asked will be considered a lost or stolen, and the key holder will be responsible for pay the penalty under section 7.3 of the Policy.

KEY REQUEST FORM (KR form)
CITY OF TACOMA GREEN RIVER WATERSHED

Name _____

Company _____

Address _____

Office Phone _____

Cell Phone _____

Driver's License _____

Permit Number _____

KEY ISSUE AGREEMENT – SIGNED BY KEY HOLDER UPON RECEIPT OF KEY

In return for the use of this key, I agree that I have read and understand City of Tacoma Green River Watershed Gate Policy and Key Permit and furthermore I agree, 1) not to give or loan the key to others; 2) not to make or attempt to copy, alter, duplicate or reproduce the key; 3) to use the key for authorized purposes only; 4) to safeguard the key; 5) to immediately report any lost or stolen keys; 6) to produce or surrender the key upon request. I also agree that if the key is lost, stolen or not surrendered when requested, I will be required to pay Tacoma Water one thousand dollars (\$1,000.00), which reflects the cost of replace the lock core that is affected.

Signed _____ Date _____

OFFICIAL DO NOT WRITE BELOW

Date Issued _____

Issued By _____

Key # _____ Date returned _____ Received By _____

Key # _____ Date returned _____ Received By _____

Key # _____ Date returned _____ Received By _____

Key#_____ Not Returned Reason: ☐ Lost ☐ Stolen ☐ Broken ☐ Other

Explain the circumstances for key not returned:

Appendix E – Project Cooperation Agreement

SUMMARY

**PROJECT COOPERATION AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CITY OF TACOMA
FOR MODIFICATION OF THE
HOWARD HANSON DAM
FOR ECOSYSTEM RESTORATION
AND
MUNICIPAL & INDUSTRIAL (M&I) WATER SUPPLY**

The Project Cooperation Agreement (PCA) between the Department of the Army (Corps of Engineers) and City of Tacoma (Tacoma Water) was entered into on July 17, 2003, for the purposes of defining the project modifications and cost share agreement between the Corps and Tacoma Water for the Howard Hanson Dam Additional Water Storage Project (AWSP).

The PCA is composed of the following sections:

Article I Definitions and General Provisions

This section defines the terms of the agreement.

Article II Obligations of the Government and the Non-Federal Sponsor

This section defines the relative obligations of the Corps of Engineers and Tacoma Water relative to cost sharing, operations and maintenance, repair and replacement, crediting and/or reimbursement given by the federal government to the local sponsor for its project contributions.

Article III Water Supply Storage

This section discusses the rights, uses and associated responsibilities relative to water storage behind Howard Hanson Dam for both Tacoma Water and the Corps of Engineers.

Article IV Lands, Relocations, Disposal Areas, and Public Law 91-646 Compliance

This section addresses the responsibilities of the Corps of Engineers and Tacoma Water relative to the real estate involved in implementing the AWSP.

Article V Credit for Lands, Relocations, and Disposal Areas

This section addresses issues pertaining to credit to Tacoma Water for the value of the lands, easements, rights-of-way, suitable borrow, dredged or excavated material disposal areas, and improvements made by Tacoma Water to properly dispose of dredged or excavated materials.

Article VI Project Modification Coordination Team

This section establishes a Project Modification Coordination Team and defines its responsibilities.

Article VII Method of Payment

This section addresses the responsibilities of the Corps to maintain and share project accounting records, and to project future project costs for modifications and betterments, and the responsibilities of Tacoma Water for its financial contributions.

Article VIII Dispute Resolution

This section addresses the manner in which disputes between the parties are to be resolved.

Article IX Operation, Maintenance, Repair, Replacement, and Rehabilitation

This section discusses the responsibilities of the Corps and Tacoma Water for the maintenance, repair, replacement and rehabilitation of project modifications.

Article X Indemnification

Tacoma Water shall hold the federal government harmless from all damages arising from implementation of the project except for damages due to fault or negligence of the government or its contractors.

Article XI Maintenance of Records and Audit

This section addresses record keeping and auditing of records pertaining to costs incurred as a result of the project.

Article XII Federal and State Laws

The Corps and Tacoma Water agree to comply with all federal and state laws during construction and implementation of the project.

Article XIII Relationship of Parties

The Corps and Tacoma Water are not to be considered the officer, agent, or employee of the other. Neither party shall provide any contractors with a release that waives any rights of the other party to seek relief or redress against contractors involved in the project.

Article XIV Officials Not to Benefit

No member of Congress nor any resident commissioner may benefit from the PCA.

Article XV Termination or Suspension

This section addresses the rights of each party in terminating the agreement.

Article XVI Hazardous Substances

This section addresses how project sponsors are to address the investigation into, or existence of, any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that may exist in, on, or under lands, easements, and rights-of-way required for implementation of the project.

Article XVII Notices

Required communications pertaining to the PCA shall given in writing to the Director of Utilities and the District Engineer.

Article XVIII Confidentiality

The parties to the PCA agree to maintain confidentiality of information when requested to do so by the providing party.

Article XIX Historic Preservation

This section addresses how the costs of identification, survey and evaluation of historic properties are to be assigned.

Article XX Section 902 Project Cost Limits

This section states that Tacoma Water understands that Section 902 of Public Law 99-662 establishes the maximum amount of total project modification costs at Howard Hanson Dam. On the date of the signing of the PCA, the maximum amount was estimated to be \$101,460,000.

Article XXI Obligations of Future Appropriations

Nothing in the PCA shall constitute an obligation of future appropriations by the City of Tacoma where creating such obligation would be inconsistent with State of Washington or City of Tacoma law.

Appendix F – Incidental Take Permits

NATIONAL MARINE FISHERIES SERVICE
PERMIT FOR INCIDENTAL TAKE OF ENDANGERED/THREATENED SPECIES

Permit Number: 1305

Expiration Date: ~~June~~^{July} 7, 2051

Permit Holder:

Tacoma Public Utilities, Water Division
(an agency of the City of Tacoma, Washington)
3628 South 35th Street
Tacoma, WA 98409-3192

Principal Officer and Contact:

Superintendent
Tacoma Water
P.O. Box 11007
Tacoma, WA 98411-0007
Phone: (253) 502-8206
Fax: (253) 502-8694

Reporting Requirements: As described in Section 8 of the Implementation Agreement ("IA") and section 8.0 of the related Habitat Conservation Plan (HCP).

Authorization:

The City of Tacoma, through its agency Tacoma Water, together with its authorized officers, employees, contractors, and agents, is hereby authorized to incidentally take members of the Covered Species listed on the attached Table 1 (Covered Species), in connection with its timber management activities in western Washington, subject to the provisions of the IA, the HCP, Section 10 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. §§ 1531-1543), the National Marine Fisheries Service (NMFS) regulations governing ESA-listed species permits (50 CFR Parts 222.301-222.309), and the conditions hereinafter set forth. In the event of a conflict between these provisions and the provisions of the IA, the language of the IA shall govern. The period of the permit is 50 years.

Abstract:

The City owns and manages approximately 15,173 acres within the Green River watershed in King County, Washington. These properties are located west of the City of Tacoma, Washington,

along the upper Green River, which flows west and north from the Cascade mountains for approximately 75 miles to its confluence with the Black River to form the Duwamish River (Waterway) at River Mile 12, which then empties into Puget Sound at Elliott Bay. The Permit area is defined to be: 1) those areas affected by the operation of the City's water supply diversion, 2) areas in the watershed where mitigation and restoration activities will occur in association with specific projects, and 3) all lands owned by the City in the upper Green Watershed. For purposes of this permit and the supporting HCP, the upper Green Watershed is defined to be upstream of the Tacoma Headworks at River Mile 61.0, including the Howard Hanson Dam and Reservoir up to elevation 1,167 feet, which are operated under separate agreements and authorities by the U.S. Army Corps of Engineers. The middle Green River is located between the Tacoma Headworks and the confluence with Big Soos Creek near Auburn, Washington at River Mile 33.8. The lower Green River continues from Big Soos Creek to the upstream extent of tidal influence at River Mile 11.0.

This permit covers activities required to implement the suite of measures, prescriptions, projects, and other operations described in the HCP prepared by the City that occur at various locations within the upper, middle, and lower Green River areas. The upper Green Watershed is the focus of most activities, which now include, but are not limited to, the supply of municipal water through diversion at the Tacoma Headworks, operation of the North Fork Green River Well Field, maintenance of appurtenant facilities, and forest management. A more fully described in section 3.3 of the IA, activities covered by this permit including water withdrawals for municipal water supply, construction and operation of fish passage facilities, construction of Headworks improvements, a suite of mitigation and restoration efforts at various sites in the Green River watershed, facilities maintenance, conservation measures implemented in cooperation with the U.S. Army Corps of Engineers, and forest management and timber harvest activities. The Permit and HCP also cover certain monitoring, mitigation, habitat restoration and construction activities, and related scientific experiments.

The HCP applies prescriptions to protect and restore aquatic and riparian habitats and to minimize and mitigate take associated with water withdrawals from the mainstem Green River and the North Fork of the Green River. Forest management is focused on the maintenance and development of riparian forest functions primarily through limitations on the annual harvested acreage and a forest management approach stratified by ecological principles. The HCP also provides for limits on harvest and other activities within wetland areas and on unstable slopes, and contains prescriptions dealing with road construction, maintenance and restoration activities, and management for water quality. The initial prescriptions in the HCP are subject to adjustment based on an adaptive management procedure outlined in the HCP. The HCP establishes a process for participation of state and Federal agencies, Indian Tribes, and other interested parties to review and comment upon the results of plan implementation and to assist in developing the research and monitoring program.

Incidental Take

The covered activities that may cause incidental take of Covered Species will be conducted on the covered lands, waters, and facilities described in section 3.4 of the IA (the “plan area”). The covered activities will be conducted on the permittee’s property and facilities located in King County in the State of Washington, which property encompasses approximately 15,173 acres of the Upper Green Watershed and such other areas defined in section 3.4 of the IA.

NMFS anticipates that an undetermined number of Covered Species may be taken as a result of covered activities over the 50-year life of the permit. The incidental take of this species is expected to be in the form of harm, harassment, kill and injury.

Conditions:

1. The provisions of this permit may be amended as provided in Section 13 of the IA.
2. Transferability of the permit shall be governed by NMFS regulations in force at the time of a desired transfer. Under regulations in force at the time of issuance of this permit (50 C.F.R. § 222.305(a)), the permittee may not transfer or assign this permit to any other person(s), as person is defined in Section 3(12) of the ESA.
3. This permit does not authorize the permittee or any other person to take ESA-listed species in the territorial waters of another country without the consent of that country. The permittee is responsible for securing consent from that country and complying with that country’s appropriate laws.
4. A copy of this permit, including the accompanying HCP and related agreements, must be available to City personnel at the permittee’s office in Tacoma, Washington (or if the permittee moves the operation center to a different location, at the relocated center of operations). All applicable provisions of this permit must be presented and clearly explained to all authorized officers, employees, contractors, or agents of the permittee conducting covered activities in the plan area.
5. The permittee, in effecting the take authorized by this permit, is considered to have accepted the terms and conditions of this permit and to be prepared to comply with the provisions of this permit, the applicable regulations, and the ESA.
6. As provided for in Section 8.4 of the IA, upon request by NMFS, the permittee must allow NMFS to enter upon and inspect the plan area.


7. The permittee is responsible for the activities of any individual who is operating under the authority of this permit. Such activities include capturing, handling, releasing, transporting, maintaining, and caring for any fish authorized to be taken by this permit.

8. The permit takes effect for currently listed Covered Species on the date of issuance. For unlisted covered species, the permit will take effect upon the listing of such species as endangered, or if such species is listed as threatened, upon the effective date of a rule under Section 4(d) of the ESA prohibiting take of such species.

9. This permit will not cover activities that may adversely affect any site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places until completion of any consultation that may be required under Section 106 of the National Historic Preservation Act with regard to that activity.

10. Upon locating any dead, injured, or sick individuals of any listed species covered by this permit, the permittee shall, within three working days, notify NMFS's Washington State Branch Office, Olympia, Washington ((360)753-9530). Instructions for proper handling and disposition of such specimens will be issued at that time. Care must be taken in handling sick or injured specimens to ensure effective treatment and care, and in the handling of dead specimens to preserve biological material in the best possible state. This condition does not apply to spawned-out carcasses.

11. The fee in 50 CFR Section 222.307(d)(5) to cover the cost of issuance of this permit has been waived.

Issued by : 
Donna Darm
Acting Regional Administrator,
Northwest Region

Date: 7/9/01



FEDERAL FISH AND WILDLIFE PERMIT

1. PERMITTEE

TACOMA DEPARTMENT OF PUBLIC UTILITIES, WATER DIVISION
3628 S. 35TH STREET
TACOMA, WA 98411

2. AUTHORITY-STATUTES

16USC1539(A)&1533(D)
16 USC 703-712

REGULATIONS (Attached)

50 CFR 13
50 CFR 17.22 & 17.32
50 CFR 21.23
50 CFR 21.27

3. NUMBER

TE044757-0

4. RENEWABLE

☒ YES
☐ NO

5. MAY COPY

☒ YES
☐ NO

6. EFFECTIVE

7-6-01

7. EXPIRES

7-6-51

8. NAME AND TITLE OF PRINCIPAL OFFICER (If #1 is a business)

JOHN C KIRNER
DEPUTY WATER SUPERINTENDENT

9. TYPE OF PERMIT

THREATENED AND ENDANGERED SPECIES

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED

11. CONDITIONS AND AUTHORIZATIONS:

- A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.
- B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.
- C. VALID FOR USE BY PERMITTEE NAMED ABOVE.
- D. Further conditions of authorization are contained in the attached Special Terms and Conditions.

☒ ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS

ISSUED BY

Rowan W. Gould

TITLE

DEPUTY REGIONAL DIRECTOR

DATE

JUL 6 2001

U. S. Fish and Wildlife Service, Portland, Oregon
Special Terms and Conditions for Permit TE044757-0

- E. The authorization granted by this permit is subject to full and complete compliance with, and implementation of, the Tacoma Water Habitat Conservation Plan (HCP), and Implementation Agreement (IA), executed by the permittee, the U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service, and those portions of the Habitat Conservation Plan expressly incorporated therein. This permit, the HCP, and IA are binding upon the permittee, and any authorized officer, employee, contractor, or agent conducting permitted activities. Tacoma Water shall be responsible for ensuring compliance with the HCP by any Tacoma authorized officer, employee, contractor, or agent while conducting covered activities.
- F. The permittee, and its authorized officers, employees, contractors, and agents are authorized pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended, to incidentally take only the permit species listed in Table 1 in the course of otherwise lawful covered activities (as such activities are described in the IA and HCP), in accordance with the terms and conditions of the HCP, IA, and as conditioned herein.
- G. Migratory Birds other than Bald Eagle. This section 10(a) permit also constitutes a Special Purpose Permit under 50 CFR 21.27 for the take of those permit species subject to incidental take which are listed as threatened or endangered under the Endangered Species Act of 1973 as amended, and which are also protected by the Migratory Bird Treaty Act, except for the bald eagle. Such Special Purpose Permit shall be valid for a period of 3 years from the effective date, provided the section 10(a) permit remains in effect for such period. Such Special Purpose Permit shall be renewed, provided that the permittee continues to fulfill its obligations under this agreement. Each such renewal shall be valid for the maximum period of time allowed by 50 CFR 21.27 or its successor at the time of renewal.
- H. Bald Eagle. The Service will not refer the incidental take of any bald eagle (*Haliaeetus leucocephalus*) for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §668-668d), as long as the permittee continues to fulfill its obligations under this agreement, provided that such take results from covered activities conducted in accordance with the HCP on lands covered by this permit.
- I. The permittee shall immediately notify the Service's Western Washington Fish and Wildlife Office (tel: 360-753-9440) of new locations or sightings of grizzly bears, gray wolf, Pacific fisher, California wolverine, and Canada lynx found in the permit area. All other sightings of other permit species will be reported to the Service in accordance with requirements outlined in the HCP.

- J. Upon locating any dead, injured, or sick individuals of any listed species covered by this permit, the permittee shall, within 3 working days, notify the Service's Western Washington Fish and Wildlife Office, Lacey, Washington (tel: 360-753-9440). Instructions for proper handling and disposition of such specimens will be issued at that time. Care must be taken in handling sick or injured specimens to ensure effective treatment and care, and in the handling of dead specimens to preserve biological material in the best possible state.
- K. The permittee shall refer to permit number TE044757-0 in all correspondence and reports concerning permit activities. Any questions you may have about this permit should be directed to the Field Office Supervisor, U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Lacey, Washington (tel: 360-753-9440).
- L. All applicable provisions of this permit must be presented and clearly explained to all authorized officers, employees, contractors, or agents of the permittee conducting authorized covered activities.
- M. Reporting requirements: The permittee shall submit implementation reports to the Service's Portland Regional Office and the Western Washington Fish and Wildlife Office as per the HCP (Section 6), or as amended by mutual consent between the Service and the permittee.
- N. The permittee is not required to obtain a new permit if there is a change in the legal individual or business name, or in the mailing address of the permittee. The permittee is required to notify the issuing office (Portland Regional Office) within 10 calendar days of such change. This provision does not authorize any change in location of the conduct of the permitted activity when approval of the location is a qualifying condition of the permit.
- O. All sections of Title 50, Code of Federal Regulations, Part 13, Part 17.22, and Part 17.32 are conditions of the permit. If any such regulations are modified, any future action taken with respect to this permit shall be in accordance with such regulations in existence at the time such action is taken except as specifically otherwise provided for by law or in the IA.

Table 1. Permit Species in Tacoma's Multi-Species Habitat Conservation Plan

Mammals:

Grizzly Bear, *Ursus arctos* *
Gray Wolf, *Canis lupus* *
California Wolverine, *Gulo gulo*
Canada Lynx, *Lynx canadensis* *
Pacific Fisher, *Martes pennanti*

Birds:

Bald Eagle, *Haliaeetus leucocephalus* *
Marbled Murrelet, *Brachyramphus marmoratus* *
Northern Spotted Owl, *Strix occidentalis caurina* *
Common Loon, *Gavia immer*
Northern Goshawk, *Accipiter gentilis*
Olive-sided Flycatcher, *Contopus borealis*
Pileated Woodpecker, *Dryocopus pileatus*
Peregrine Falcon, *Falco peregrinus*
Vaux's Swift, *Chaetura vauxi*

Fish:

Bull Trout, *Salvelinus confluentus* *
Coastal Cutthroat Trout, sea run, *Oncorhynchus clarki clarki*
Dolly Varden, *Salvelinus malma*
Pacific Lamprey, *Entosphenus tridentatus*
River Lamprey, *Lampetra ayresi*

Amphibians:

Oregon-spotted Frog, *Rana pretiosa*
Cascade Frog, *Rana cascadae*
Tailed Frog, *Ascaphus truei*
Cascade Torrent Salamander, *Rhyacotriton cascadae*
Larch Mountain Salamander, *Plethodon larselli*
VanDykes Salamander, *Plethodon vandykei*

Reptiles:

Northwestern Pond Turtle, *Clemmys marmorata*

*Denotes species listed as Threatened or Endangered under the Endangered Species Act at the time of permit issuance.

Appendix G – Habitat Conservation Plan Executive Summary

1. Executive Summary

Tacoma Water's Green River Habitat Conservation Plan



Tacoma has relied on the Green River as its primary source of water supply since 1913. It is contemplated that this reliance on the Green River will not only continue into the foreseeable future, but will also be increased with the construction of Tacoma's Second Supply

Project, a major regional water supply project. The supply of water to 300,000 people places a strain on the natural environment associated with the Green River source of water supply. A forecast of continued growth in this region further complicates water supply versus natural resource protection issues. The Tacoma Water utility has listened and does care about the costs, negative effects, and hardships that our efforts to meet our responsibilities for water supply may cause in relation to natural resource preservation. This Habitat Conservation Plan puts forth the best program that Tacoma could develop to satisfy both water supply concerns and to protect the natural resources of the Green River system in the future.

Tacoma has pursued a number of projects, now known collectively as the Second Supply Project, because it involves the second supply pipeline from the Green River to Tacoma, for more than 20 years. Efforts by Tacoma to design and permit this project have recognized the importance of associated environmental considerations. The recent listing of Puget Sound chinook salmon and bull trout as threatened under the Endangered Species Act adds further weight to the environmental concerns associated with water supply operations. Tacoma Water and its project partners, whose primary mission is to protect public health and provide for the water supply needs of an expanding population in the Puget Sound area, now find themselves in a position where both future water supply and environmental protection must be considered in their actions.

Tacoma Water has taken the lead in the development of the Second Supply Project since its inception. As the largest utility in Pierce County, with both direct and wholesale services outside of the city limits of Tacoma and outside of Pierce County, Tacoma Water is an appropriate agency to lead the development of the Second Supply Project. Given Tacoma's mission to provide for future water supply for its existing and future customers, it would be irresponsible for Tacoma Water not to address these water supply and environmental preservation issues.



1 The growth projections for Pierce and South King Counties indicate that existing water
2 utilities in those counties will be unable to meet future water demands with the current
3 sources of supply available to them. This water supply shortage situation is most critical
4 for the City of Kent, Lakehaven Utility District and Covington Water District. In
5 addition, outlying communities served by the City of Seattle need additional water and
6 the City of Tacoma and potential wholesale customers of Tacoma in Pierce County will
7 require additional water in the future.

8
9 Throughout its efforts to design and permit the various elements of the Second Supply
10 Project, Tacoma has attempted to address environmental issues associated with water
11 supply development. The listings of Puget Sound chinook salmon and bull trout raised
12 this recognition of environmental issues to a high level and resulted in the decision by
13 Tacoma to implement a Habitat Conservation Plan for all Green River operations of its
14 utility. It is believed that the development of a Habitat Conservation Plan superimposed
15 upon the other permitting processes that Tacoma has participated in while resolving the
16 issues associated with its operations on the Green River, provides a reasonable, sensible
17 and responsible approach to addressing the dual responsibilities of water supply and
18 environmental protection.

19
20 When Tacoma Water began diverting water from the Green River in 1913, its sole
21 objective was to provide pure, clean, potable water to the citizens of Tacoma. At that
22 time the City took early steps to protect water quality in the interest of protecting the
23 public health of the citizens it served. These steps included limiting human access to
24 portions of the watershed and acquiring land adjacent to the Green River and its major
25 tributaries. At the time Tacoma also thought it necessary to limit fish access to the upper
26 watershed to protect public health. This action reduced fish production in the basin, but
27 at the same time attempts were made to make up the loss with the best tools available at
28 the time – fish production from hatcheries. In retrospect, it is unfortunate that protection
29 of public health and water quality also resulted in blocking access to up to 66 linear miles
30 of quality stream habitat in the Upper Green River watershed.

31
32 Since 1974, Tacoma has been required to comply with the provisions of the federal Safe
33 Drinking Water Act. The Act requires that unfiltered water systems, such as Tacoma's,
34 develop a Watershed Management Plan to protect water quality by controlling access to
35 the watershed. This has the added benefit of protecting the watershed from human
36 activities. Under this program, the City has developed agreements with landowners in
37 the watershed upstream of Tacoma's diversion dam to protect water quality. Tacoma has
38 developed a Forest Land Management Program, which emphasizes the protection of
39 water quality and natural systems. Although these efforts significantly improved the



1 protection of the watershed and water quality in the interest of protecting public health,
2 access to the upper watershed by anadromous fish remains blocked at the diversion dam.

3
4 During the 1980s and 1990s, a greater knowledge of disease transmission potential from
5 fish began to reduce concerns regarding the public health impact of fish above Tacoma's
6 diversion. In addition, a greater knowledge of fishery needs and requirements brought to
7 the forefront the value of the contribution upper watershed habitat provides the Green
8 River. Extensive scientific studies during the 1980s and 1990s, conducted by the City in
9 pursuit of the Second Supply Project and the Additional Water Storage Project at Howard
10 Hanson Dam, and an agreement with the Muckleshoot Indian Tribe, further
11 supplemented the formidable body of data regarding Green River fisheries and potential
12 approaches to its restoration and enhancement.

13
14 Since 1913, Tacoma has been the beneficiary of water from the Green River, both from
15 the standpoint of protecting the health of the citizens of Tacoma and from the economic
16 benefit which use of the water has brought to the City. Now the City is required by the
17 Endangered Species Act and by the expectations of its customers to make a major
18 commitment to contributing to the effort to reverse the trend of Puget Sound salmon
19 stocks toward extinction by minimizing the effects of its actions on the ecosystem.
20 Tacoma Water has a substantial arsenal of resources and knowledge at its disposal in
21 making this contribution to fish and wildlife species.

- 22
- 23 • Tacoma owns approximately 10 percent of the Upper Green River watershed
24 upstream of its diversion, with the ownership located in the valley floor and
25 adjacent uplands around the mainstem and its major tributaries.
 - 26 • The City has a substantial knowledge base of conditions in the Green River
27 watershed as a result of studies pertaining to the Second Supply Project and the
28 Howard Hanson Dam Additional Water Storage Project.
 - 29 • Development of an agreement with the Muckleshoot Indian Tribe enhanced
30 knowledge of the Green River fisheries and included major commitments by
31 Tacoma to protection of that resource.
 - 32 • Tacoma's Forest Land Management Plan emphasizes the protection of water
33 quality and natural systems in the upper watershed.
 - 34 • Agreements with landowners upstream of Tacoma's diversion provide
35 supplemental protection to water quality in addition to that required by state law
36 and regulations.
- 37



1 As a result of Tacoma's history on the Green River, as well as its plans for future use and
2 its commitment to future protection of the upper watershed, Tacoma made the decision to
3 pursue a Habitat Conservation Plan for its Green River operations. This Habitat
4 Conservation Plan is a significant commitment to the restoration and rehabilitation of
5 Green River fisheries. It is recognized that the use of the Green River for public water
6 supply comes at a cost. It is the goal of this Habitat Conservation Plan to avoid adverse
7 impacts where possible and to minimize and mitigate them where avoidance is not
8 possible.

9
10 Tacoma's Habitat Conservation Plan was very difficult to develop because it required
11 careful coordination between two major operating entities. The U.S. Army Corps of
12 Engineers' facility at Howard Hanson Dam and Tacoma's diversion create fisheries
13 impacts that can be addressed effectively only by working in a coordinated manner. This
14 situation is further complicated by Endangered Species Act requirements that differ for
15 Tacoma's and the U.S. Army Corps of Engineers' facilities. As a non-federal entity,
16 Tacoma developed its Habitat Conservation Plan under the provisions of Section 10 of
17 the Endangered Species Act. As a federal agency, the U.S. Army Corps of Engineers
18 entered consultation with the National Marine Fisheries Service and the U.S. Fish and
19 Wildlife Service (Services) under Section 7 of the Act. Sections 7 and 10 have differing
20 requirements, time horizons, and expectations for those who operate under their
21 provisions. Resolution of coordination issues has been and will remain one of the major
22 challenges to implementing the Endangered Species Act in the upper Green River basin.

23
24 The Plan relies on well-coordinated actions by Tacoma and the U.S. Army Corps of
25 Engineers to address major fisheries issues. In addition, a number of habitat conservation
26 measures also address potential impacts of Tacoma's land management operations on
27 terrestrial species in the Upper Green River basin. Although not the primary focus of this
28 habitat conservation planning effort, listed terrestrial species either are or may become
29 present in the Upper Green River basin. Potential impacts to these species have been
30 addressed separate from water storage and withdrawal.

31
32 As stated previously, the central aspect of this Habitat Conservation Plan is a coordinated
33 effort, which relies on actions by Tacoma and U.S. Army Corps of Engineers to address
34 major fisheries issues. Key issues include:

- 35
36 • Upstream fish passage around Tacoma's water diversion and U.S. Army Corps of
37 Engineer's Howard Hanson Dam.



- 1 • Downstream fish passage through Howard Hanson Dam and past Tacoma's
2 water diversion.
- 3 • Reintroduction of large woody debris downstream of Tacoma's diversion.
- 4 • Reintroduction of spawning gravels below Howard Hanson Dam.
- 5 • Fish habitat restoration both above Howard Hanson Dam and below Tacoma's
6 diversion.
- 7 • Wildlife habitat conservation measures on Tacoma's lands in the upper
8 watershed.
- 9 • Flow issues including minimum instream flows, storage of water for fisheries
10 releases, and increased regulation of Tacoma's diversion for fisheries protection.

11
12 Upstream fish passage issues will be addressed by the development of a trap-and-haul
13 facility at Tacoma's diversion dam. Some may argue that laddering the diversion dam
14 and Howard Hanson Dam is a more natural method for providing upstream fish passage.
15 However, the extreme difficulty of laddering Howard Hanson Dam has caused federal,
16 state, and Tribal fisheries representatives to agree that the trap-and-haul facility is the best
17 approach to restoring anadromy in the upper Green River watershed.

18
19 The facility itself will include water-to-water transfer of fish from a trap at the top of the
20 diversion dam to transport trucks for release into the Green River upstream of Howard
21 Hanson Dam. Fish sorting and laboratory facilities will be provided to support fish
22 passage and transport activities.

23
24 The downstream fish passage facility at Howard Hanson Dam will be the single most
25 expensive improvement to Green River fisheries associated with this Habitat
26 Conservation Plan. Major problems with downstream fish passage at many dams include
27 intake structures for fish that are located deeper than fish are accustomed to sounding, or
28 too little water spilled over the top where fish tend to migrate. Hydroelectric dams have
29 the additional problem of entraining fish into turbines. Howard Hanson Dam does not
30 have turbines because it is not a hydroelectric dam; however, it currently traps fish
31 behind the dam in the spring as water is stored for augmenting low river flows during the
32 summer.

33
34 The downstream fish passage facility at Howard Hanson Dam is designed to collect fish
35 near the surface of the water at all pool elevations by passing half or more of the water
36 through a surface outlet designed to attract and pass fish. Downstream fish passage at



1 Tacoma's diversion will be assisted by the installation of fish screens and other
2 improvements to the diversion dam itself.

3
4 The absence of large woody debris downstream of Howard Hanson Dam is a concern
5 from two standpoints. First, woody debris provides cover to fish in the river. Second, the
6 decay of woody debris provides nutrients and shelter for insects and lower-order animals,
7 which serve as food for various fish species. Under this Habitat Conservation Plan,
8 woody debris from the upper watershed will be collected in the reservoir and transported
9 around Howard Hanson Dam and Tacoma's diversion, and either released into the river
10 to find its own resting place, or anchored at desired locations.

11
12 Since its construction, Howard Hanson Dam has blocked the normal downstream
13 movement of gravel from the upper Green River into the river below the dam. This has
14 resulted in a gradual armoring of the riverbed that has worked its way downstream from
15 Howard Hanson Dam as high winter flows carry gravels originating downstream of
16 Howard Hanson Dam even farther downstream. This has reduced the areas available to
17 salmon for spawning. Under the Habitat Conservation Plan, gravel will be placed within
18 the floodplain during low flow conditions so that high winter flows can transport the
19 gravel into the river to take the place of the gravels trapped behind Howard Hanson Dam.
20 This effort should help arrest the loss of spawning gravels and begin to replace gravel in
21 areas suitable for spawning.

22
23 Fish habitat restoration projects in the Green River watershed will be implemented in
24 collaboration with the U.S. Army Corps of Engineers. One of the most valuable efforts
25 may be the restoration of side channel habitats in the middle river to provide juvenile
26 rearing areas during periods of high flow. Two areas have been identified where
27 historical side channels can be reconnected with the river. In addition, Tacoma and the
28 U.S. Army Corps of Engineers have conducted multiple years of studies of side-channel
29 reaction to variations in flow and the use of side channels by salmonid species. This
30 information will be used to identify the most productive side-channel habitat
31 reconnection projects. In addition, habitat improvements will be implemented in the river
32 itself both above Howard Hanson Dam and in the vicinity of Tacoma's diversion pool.
33 These improvements primarily include placement of large woody debris and boulders.

34
35 Wildlife habitat conservation measures in the upper Green River watershed address
36 several areas of concern – upland forest management, riparian management, road
37 construction and maintenance, and specific wildlife habitat management. The Plan sets
38 aside 39 percent of Tacoma's ownership in a natural reserve lying closest to the Green
39 River where no active forest management will take place. Another 35 percent is



1 designated to accelerate development of late seral forest habitat, and 26 percent is
2 dedicated to sustainable timber production. In addition to the natural reserve, riparian
3 buffers will be left in a natural state along all streams to maintain water quality and
4 provide habitat. Road construction and maintenance measures are designed to minimize
5 their impact on the environment and to keep the miles of roads on Tacoma's land at a
6 minimum. The Plan seeks coverage of 32 fish and wildlife species for their incidental
7 take during Tacoma's covered activities for 50 years. The Plan spells out 24 measures to
8 protect 14 specific wildlife species' dens, nests, and foraging areas.

10 Tacoma Water's mission as a public water supply utility causes stream flow issues to be
11 the most significant aspect of this Habitat Conservation Plan. Tacoma will voluntarily
12 reduce its First Diversion Water Right claim from the 400-cfs claim established in 1912
13 to the currently developed water withdrawal of 113 cfs. Tacoma will also amend its
14 water rights to incorporate the higher instream flows previously agreed to with the
15 Muckleshoot Indian Tribe in a 1995 settlement agreement. Tacoma will provide funding
16 support for a project at Howard Hanson Dam to store 5,000 acre-feet of water for stream
17 flow augmentation during summer months. Tacoma will contract with the U.S. Army
18 Corps of Engineers to support augmented flow releases from Howard Hanson Dam
19 during low flow periods by reducing Tacoma's use of surface water during years when
20 fall rains do not arrive when normally expected. This battery of actions is the result of
21 more than 15 years of discussions with federal, state and local resource agencies, and the
22 Muckleshoot Indian Tribe, to determine how Tacoma's operations on the Green River
23 could best be carried out with minimal adverse impact on Green River fisheries.

25 Monitoring all of the habitat conservation measures to assure the Services and public that
26 Tacoma is fulfilling its commitments is another important component of this Habitat
27 Conservation Plan. Monitoring will be carried out most intensively during the first 10
28 years of the Plan, but will continue throughout the full 50-year duration of the Habitat
29 Conservation Plan.

31 Tacoma Water's Habitat Conservation Plan will be funded primarily by revenues from
32 water users. Existing ratepayers, future ratepayers, and Tacoma's partners in the Second
33 Supply Project will all pay a share of the cost of implementing the Plan. Tacoma will
34 seek federal participation at a substantial level based upon the U.S. Army Corps of
35 Engineers' responsibilities under the Endangered Species Act that result from
36 construction and operation of Howard Hanson Dam. Other grants or sources of revenue
37 will be pursued as available in an attempt to lessen the impact of this effort on ratepayers.



Tacoma has assembled a package of habitat conservation measures that takes advantage of the shared reliance both the water utility and fish have on high quality water and watershed protection. In addition, Tacoma seeks to offset the impacts of water diversion. Tacoma has attempted to respond to concerns expressed by the federal Services, the Muckleshoot Indian Tribe, state resource agencies, and the public in the preparation of this Habitat Conservation Plan. It is recognized that not everyone will be completely satisfied by the package provided here. Consequently, Tacoma will continue to identify the costs, impacts and hardships that the operation of the utility may cause on other groups and interests. It will seek to resolve issues as they arise throughout implementation of the plan.

Tacoma Water relies on the conjunctive use of surface and groundwater supplies to meet the current water demands of its customers. A diversion on the Green River supplies approximately 85 percent of Tacoma Water's annual demand, and groundwater sources supply the remaining 15 percent. Over two decades ago, Tacoma Water recognized that a municipal water shortage would eventually impact the people who live and work in the City of Tacoma, Pierce County, and South King County. The utility responded by developing a long-range plan to acquire the additional water supplies it believed would be needed to meet the forecasted water demands of the region's expanding population.

After studying a range of surface and groundwater source alternatives, including water conservation and reuse, Tacoma Water concluded that the two most feasible options for future additional water supplies were the Second Supply Pipeline and the Howard Hanson Additional Water Storage Project.

Tacoma Water's Habitat Conservation Plan was developed to describe to the National Marine Fisheries Service and U.S. Fish and Wildlife Service how the water utility proposes to operate its Green River municipal water supply system in a manner that is consistent with the requirements of the federal Endangered Species Act. The Plan discusses the operation of the existing Headworks facility, as well as the proposed Second Supply and Additional Water Storage Projects.

The Plan contains both aquatic and terrestrial habitat conservation measures. It attempts to balance the habitat needs of the fish and wildlife species affected by Tacoma's water supply operations with the municipal water needs of the human population in Tacoma, Pierce County, and South King County.

The Plan is organized into eleven chapters and six appendices. Chapters 1 and 2 contain the Executive Summary and Introduction, respectively. Chapter 3 discusses the



1 Endangered Species Act with an emphasis on how it pertains to Tacoma Water's
2 municipal water supply operations in the Green River watershed. This chapter also
3 discusses Habitat Conservation Plans, the Incidental Take Permit, and other federal and
4 state regulations addressed in the Habitat Conservation Plan.
5
6 The existing physical and biological conditions of the Green River basin are discussed in
7 Chapter 4, along with the engineered infrastructure and operations, such as Howard
8 Hanson Dam, that affects or is affected by Tacoma Water's Plan.
9
10 The 64 habitat conservation measures that Tacoma Water is committing to implement
11 over the 50-year duration of its Habitat Conservation Plan are described in Chapter 5.
12 Each commitment is inscribed within a box to indicate that it is a commitment.
13 Immediately following each conservation measure, the rationale and ecosystem benefits
14 of the measure are provided to explain to the reader why the measure is in the Plan, and
15 how it will be funded.
16
17 Chapter 6 describes how Tacoma Water will monitor its commitment to implement each
18 of the 64 habitat conservation measures described in Chapter 5. The monitoring program
19 is divided into compliance and effectiveness monitoring, and a research effort that will
20 provide funding to investigate downstream fish passage through Howard Hanson
21 Reservoir, the fish outmigration passage facility, flow management, and the distribution
22 and abundance of sediment and woody debris in the middle Green River.
23
24 The combined impacts of Tacoma Water's First Diversion Water Right claim, Second
25 Diversion Water Right, and the Howard Hanson Additional Water Storage Project on the
26 fish and wildlife species covered by this Habitat Conservation Plan are analyzed in
27 Chapter 7. Discussion of the impacts on fish is organized by species, life stage, and
28 lower, middle and upper watershed.
29
30 Chapter 8 discusses how Tacoma Water intends to fund implementation of the Habitat
31 Conservation Plan. It provides estimated costs for the habitat conservation measures, as
32 well as costs for the monitoring and research components. It also identifies the
33 separation of funding responsibilities between Tacoma Water and the U.S. Army Corps
34 of Engineers for those measures in the Plan that are components of the Howard Hanson
35 Additional Water Storage Project.
36
37 Alternatives to both water withdrawal and management of Tacoma's lands in the upper
38 Green River watershed are discussed in Chapter 9. The water withdrawal alternatives
39 includes one that would divert most of Tacoma's water right from the Green River in the



1 vicinity of Auburn (River Mile 29.2) rather than from the existing diversion at Palmer
2 (River Mile 61.0). Another would remove the existing diversion dam altogether; three
3 reduced-withdrawal alternatives examine limiting sales of water to Tacoma Water's
4 wholesale customers. Under the alternatives that examine Tacoma Water's proposed
5 land management in the upper watershed are a "no timber harvest" alternative and an
6 alternative that would allow timber harvesting only for the purpose of creating or
7 enhancing fish and wildlife habitat.

8
9 Following Chapters 10 (Literature Cited) and 11 (HCP Document Preparers) are six
10 appendices: the life histories of the fish and wildlife species discussed in the Plan;
11 excerpts from the 1995 agreement between the Muckleshoot Indian Tribe and City of
12 Tacoma; excerpts from Tacoma's 1998 draft comprehensive water plan update; road
13 surface erosion and hydrology prescriptions from the Lester Watershed Analysis; a memo
14 describing Tacoma's response to six principles of project operation requested by natural
15 resource agencies; and the legal description of lands owned by Tacoma and proposed for
16 coverage under the Incidental Take Permit.

17
18 The elements contained within this Habitat Conservation Plan are the product of more
19 than two decades of intense discussions with federal, state, and local resource agencies,
20 as well as a decade of discussions with the Muckleshoot Indian Tribe. Diligent water
21 resource planning, and numerous fisheries and habitat studies in the Green River basin
22 were conducted with the intent of designing a municipal water supply project that
23 addresses important natural resource needs as well as the water supply needs of a
24 growing population.



Appendix H – Special Restrictions

CITY OF TACOMA
GREEN RIVER WATERSHED
"ROAD USE AND ACCESS PERMIT FOR HUNTERS"

This access is granted from the Headworks or Massey Gate into GMU 485. Permit is valid from applicable opening to closing day of special deer or elk season in GMU 485 or until date of deer or elk harvest.

The Green River Watershed area serves as the municipal fresh water supply for the City of Tacoma. Use of this road and access to this area is limited and controlled for the protection of public health. The watershed is a multiple use area with forestry, powerline, railroad, Corps of Engineers, and City workers using roads and other areas during the hunt. This permit is subject to the special conditions specified herein as well as the special restrictions attached hereto.

The City of Tacoma, Department of Public Utilities, herewith grants to the signed driver and passengers hereinafter referred to as permittee(s) a revocable and temporary permit to enter and hunt across its watershed lands on GMU 485. Access is limited for the stated purposes.

1. Access to some roads may be restricted due to logging operations or road hazards.
2. The permittee(s) shall not trespass on the property rights of the City of Tacoma or other landowners in the Watershed area by committing any act which may affect the quality of water. Permittee(s) shall observe all Federal, State and local rules and regulations concerning fire and care and protection of the forest. Permittee(s) shall not throw burning material or any other materials from permittees vehicle. Permittee(s) understand that trespassers shall be subject to criminal trespass prosecution. The permittee shall be held responsible to inform any passengers in his vehicle that they are within the Green River Watershed area and are subject to the same rules and regulations as the Permittee is required to follow.
3. Violations of these regulations shall be cause for revocation of this permit and future permit privileges.
4. The permittee(s) agree to idemnify and hold the City of Tacoma, ^{Hancock Timber} ~~Weyerhaeuser Co.~~, Plum Creek Timber Co., Burlington Northern Santa Fe Railroad Co., Giustina Resources, Dept. of Natural Resources, Washington State Dept. of Fish and Wildlife, Army Corps. of Engineers, and the U.S. Forest Service harmless from any and all claims for damages including personal injury, death and property damages arising out of the use of all roads, property and all other areas accessed by this permit.
5. The City does not warrant the condition of the roads and permittee(s) use of the roadways is at their own risk. These are primitive, private roads and permittees must exercise extra caution.
6. All permittee(s) to the Green River Watershed agree to abide by the City of Tacoma regulations, "Requirement for the Protection of Water Supply in the Green River Watershed".

Name of Permittee _____ Hunting License No. _____

Name of Permittee's Companion _____

Address _____

Emergency Phone No. in Case of Accident _____

Vehicle Model _____ Color _____ License No. _____

Any violation of this permit shall be cause for the permittee(s) to be restricted from future access across City-owned or controlled lands within the Green River Watershed.

Issued by _____

Permittee signature _____

All permittee must sign this permit. Permittee's signature signifies their agreement to the terms of this permit.

SPECIAL RESTRICTIONS AS REQUIRED BY THE CITY OF TACOMA AND THE WASHINGTON
DEPARTMENT OF FISH AND GAME

The following is a list of conditions which must be followed by permit applicants drawn for the Game Management Unit 485 (Green River). The requirements are necessary to insure the protection of the Watershed and the quality of Tacoma's water supply. Violation of any of these may result in the loss of your access permit.

1. Gate hours for the Headwork's Gate and Massey Gate are 6:00 A.M. to 7:00P.M. All hunters must be checked out at Headwork's Gate and Massey Gate by 7:00 P.M.
2. Both the permittee and his/her assistant's names must be listed on the duplicate access permit issued by the City of Tacoma. If the permittee chooses to take a different person as an assistant on different days, the new name must be listed on the access permit and the old one marked off. Access changes must be made at the entrance gate.
3. Access permits are valid from opening day of the special deer season in GMU 485 until the date of when the permit is filled or the closing of the season, whichever comes first.
4. The access permit must be carried in the vehicle and a special numbered card must be displayed on the dashboard of the vehicle or some other location as to be visible from outside the vehicle by Watershed personnel or Game Department personnel.
5. Only one other person may accompany the permittee during the hunt (disabled hunters may have two helpers). This person must be at least 12 years of age, unless he or she has completed the Washington State Hunting Safety Course, and must not be armed with a hunting weapon unless he or she also has a valid permit for GMU 485.
6. Permittees access to GMU 485 will only be allowed at the Headwork's Gate and the Massey Gate.
7. Permittees are required to enter and exit the special hunt area each day through the two designated gates. Permittees and their assistant's must check in and out of GMU 485 with a City of Tacoma employee each trip through the gate. There is no camping in GMU 485.
8. If a permittee is successful on harvesting a deer, bear, and cougar during the hunt, the permittee shall turn in his permit when exiting the Watershed.
9. The entrails and other remains of harvested deer, bear, or cougar must be removed away from any active or flowing stream. Entrails must also be removed to above the high water line for Howard Hansen Dam.
10. No open fires or removal of wood or trees is allowed in GMU 485.

11. The elimination of human waste in the Green River Watershed is prohibited. The City of Tacoma will provide portable toilets and all hunters are encouraged to bring portable toilets in their vehicles. Individual access permits are subject to cancellation if the permittee is caught defecating in the Watershed.
12. Access permits will be terminated for violations of City of Tacoma or Washington Department of Fish and Wildlife rules.
13. Only one lawful weapon (modern firearm, muzzle loader, bow) will be allowed for each permittee.
14. Each hunter that kills a deer, bear, or cougar in GMU 485 will mark the location on a master map provided by the City of Tacoma.
15. Each hunter that harvests a deer, bear or cougar must turn in a tooth from the harvested animal to the Department of Fish and Wildlife. An incisor tooth will be removed from deer and the premolar shall be removed from bear or cougar. This will be turned in at the Headwork's Gate or Massey Gate.
16. Hunters are reminded that GMU 485 is closed to the hunting of wild animals not listed on the hunting permit.

Appendix I – Road Use/Key Permit for Green River Watershed Access Permits



No 9654

Permit No. _____

ROAD USE/KEY PERMIT FOR GREEN RIVER WATERSHED

Permit Date: _____ Expiration Date: _____

Printed Name: _____ Phone No: _____

Address: _____

Employer: _____

Vehicle License No./Description: _____

Key Issued: Yes No Issued by: _____

Purpose of Access: _____

The Green River watershed serves as the municipal fresh water supply for the City of Tacoma. Road use and area access are limited and controlled to protect public health. Access is only for the purpose stated above and limited to the segments of roadway owned or controlled by the City of Tacoma. Additional road use permits may be required. (Special requirements are detailed on the reverse side of this permit.)

An insurance policy must be provided by commercial haulers naming the City of Tacoma as an additional insured with minimum liability coverage of \$200,000.00 per person, \$500,000.00 per accident, and \$500,000.00 property damage.

Keys issued shall not be loaned to anyone nor duplicated. Keys are to be returned to the City of Tacoma, Water Division, PO Box 11007, Tacoma, WA 98411 on or before the expiration date indicated above.

Violations of the City's watershed regulations or any of the terms, conditions or requirements of this permit (as listed on the reverse side of this form) shall be cause for revocation of this permit and initiation of access termination procedures. Permittee(s) shall be subject to arrest and prosecution and/or impoundment of the above listed vehicle.

Permittee signature: _____

SPECIAL REQUIREMENTS

1. Permittee(s) shall not stop on the City of Tacoma roadways, except in case of vehicle mechanical failure or unsafe road conditions.
2. All permittee(s) and work crews granted access to the Green River watershed over City-owned or controlled roadways are required to comply with the City of Tacoma regulations, "Requirements for the Protection of Water Supply in the Green River Watershed." Copies are available upon request at the Headworks Control Station.
3. No person shall be taken in or allowed to enter the watershed with a permittee unless that person is in the employ of the permittee. No unauthorized riders are allowed.
4. People in charge of operations shall instruct all those who enter the watershed on their behalf about the nature of the watershed and the serious consequences arising from failure to comply with the City's regulations.
5. This permit is not assignable and any assignment of it shall be cause for revocation.
6. Permittee(s) acknowledge that the watershed roads are rough and appropriate driving precautions must be taken. Permittee(s) agree to hold harmless and indemnify the City of Tacoma, its officers, employees and other road owners and easement holders from all claims for monetary damages, litigation and judgements arising from or related to the use of the watershed roads and other access privileges.
7. The City does not warrant the condition of the road, and permittee(s) use the roadway at their own risk.
8. The permittee(s) shall not trespass on the property right of the City of Tacoma or other landowners in the watershed and shall not commit any act that may affect the quality of water.
9. Except for a limited permit hunt, recreation is not allowed within the controlled area of the watershed.