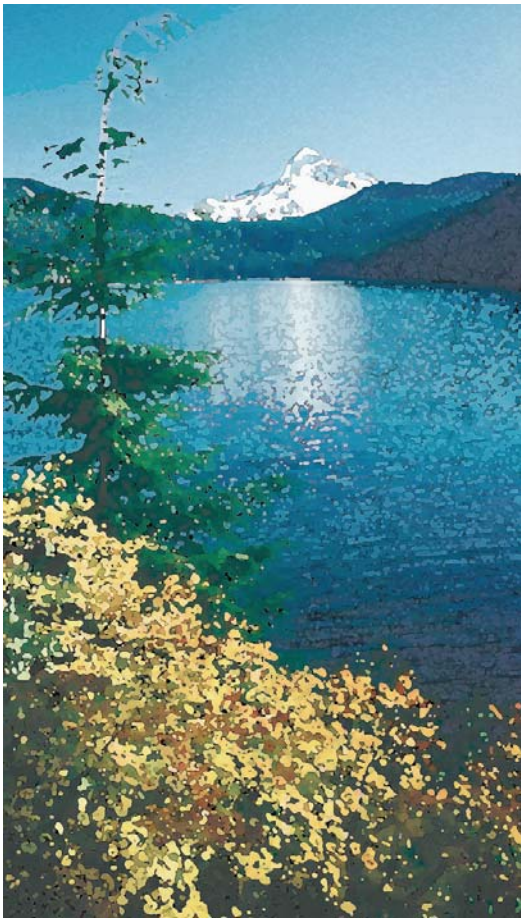

Record of Decision

Proposed Issuance of Incidental Take Permit for the
Bull Run Water Supply Habitat Conservation Plan

NMFS

April 2009

Contents

Acronyms and Abbreviations

BLM	Bureau of Land Management
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
City	City of Portland
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
HCP	Habitat Conservation Plan
IA	Implementation Agreement
ITP	Incidental Take Permit
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
O&M	operation and maintenance
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
PGE	Portland General Electric
ROD	Record of Decision
TMDL	total maximum daily load
USGS	U.S. Geological Survey

Record of Decision

for the

Proposed Issuance of an Incidental Take Permit for the
Bull Run Water Supply Habitat Conservation Plan

Lead Agency: National Marine Fisheries Service

Responsible Officials:

Barry A. Thom
Acting Regional Administrator
National Marine Fisheries Service
7600 Sand Point Way N.E.
Seattle, Washington 98115-0070

For Further Information Contact:

Nancy Munn
National Marine Fisheries Service
1201 NE Lloyd Blvd., Suite 1100
Portland, OR 97232

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SECTION 1

Introduction

This Record of Decision (ROD) documents the decision by the National Marine Fisheries Service (NMFS) to issue an Incidental Take Permit (ITP), pursuant to the Endangered Species Act (ESA) Section 10(a)(1)(B), to the City of Portland (City). NMFS issued this ROD in compliance with the agency decision-making requirements of the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) NEPA regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and NMFS' NEPA implementing procedures found at National Oceanic and Atmospheric Administration (NOAA) Administrative Order 216-6. This decision was based upon the analysis included within the Bull Run Water Supply Habitat Conservation Plan Final Environmental Impact Statement (FEIS), issued January 23, 2009, public comments on the Draft Environmental Impact Statement (DEIS) and FEIS, the ESA Section 7(a)(2) Biological Opinion issued by NMFS on January 5, 2009, and NMFS' Statements of Section 10(a)(2)(B) Findings, all included in this document by reference.

Within the FEIS, NMFS analyzed the possible environmental and socioeconomic impacts from the operation and maintenance of the City's Bull Run water supply, over a 50-year period, under a range of protection measures for anadromous salmonid species. The Proposed Action is to issue an ITP for the covered activities, according to the protection measures provided in the Bull Run Water Supply Habitat Conservation Plan (HCP).

This ROD is designed to 1) state NMFS' decision and present the rationale for that decision; 2) identify the alternatives considered in the FEIS in reaching the decision; and 3) state whether all means to avoid or minimize environmental harm from implementation of the selected alternative have been adopted (40 CFR 1505.2).

SECTION 2

Project Description

2.1 Purpose and Need

The purpose of the Proposed Action is to enable the City to continue to operate the Bull Run water supply system on a long-term basis while complying with the ESA. The need for the Proposed Action is to provide broader protection and conservation for listed, proposed, and unlisted species than is available under Section 9 of the ESA while managing the Bull Run water supply system on a long-term basis. The City's needs and goals are to 1) provide cost-effective minimization and mitigation measures for incidental take; 2) ensure an adequate long-term water supply at reasonable cost to ratepayers; 3) comply with state water quality standards and total maximum daily load (TMDL) designations for the Bull Run River and Sandy River Basin; and 4) to protect identified unlisted species the City believes could become listed during the 50-year period of the Bull Run HCP.

2.2 Specific Project Description

The City has used the Bull Run Watershed for water supply since 1895. The City's water system provides water to residents and businesses within the city limits of Portland, Oregon, (retail supply) as well as to a number surrounding communities (wholesale supply). Approximately 800,000 Oregonians receive all or part of their water supply from the Bull Run Watershed. The Bull Run water supply system is the largest municipal water supply system in the state.

The Bull Run River is a major tributary of the Sandy River; the Sandy River flows into the Columbia River. This watershed plays a role in supporting the larger aquatic ecosystem of the Sandy River Basin. Three key factors helped shaped the context for the City's decision to develop an HCP: ESA species listings, Clean Water Act compliance, and water supply reliability and affordability. Foremost were the listings of the anadromous fish and the associated ESA regulatory requirements.

The City submitted an application to NMFS for an ITP in accordance with Section 10(a)(1)(B) of the Federal ESA, as amended. The City is seeking this authorization so that activities associated with implementing the Bull Run Water Supply HCP comply with the ESA, while providing protection for species listed under the ESA.

Issuance of the ITP would be conditioned on implementation of the Bull Run Water Supply HCP, which is designed to provide conservation benefits to the species for which incidental take would be authorized. The City developed its Bull Run Water Supply HCP with technical assistance from NMFS. The duration of the proposed ITP is 50 years.

Following is an expanded description of the facilities, species, and activities covered by the proposed ITP and Bull Run Water Supply HCP and the associated protection measures to be implemented by the City.

2.3 Covered Facilities

Covered facilities that are owned, operated, or used by the City include, but are not limited to:

- Bull Run Dam 1 and Dam 2, and associated structures
- Reservoir 1 (Lake Ben Morrow) and Reservoir 2
- Reservoir 2 spillway approach canal
- Diversion dam and pool below Dam 2
- Spillway weir and pool below Dam 2
- Reservoir log booms and other reservoir structures
- Headworks facility (screens, chlorination facility, operation equipment)
- Water supply conduits (including interties and blowoffs), bridges, and trestles, except mainstem Sandy River crossings
- Water quality monitoring stations and flow gauges in the lower Bull Run River and the Little Sandy River
- Microwave communication towers located adjacent to waterways and reservoirs
- Sandy River Station maintenance facility
- City-owned or maintained roads and other paved or graveled surfaces on non-Federal lands
- City-owned or maintained easements on nonfederal lands owned by others (e.g., water supply conduit easements on private land)
- Easements owned or maintained by others on City-owned land (e.g., Bonneville Power Administration powerline easement on City land)

2.4 Covered Species

Covered species would be authorized for incidental take during the time they are listed as threatened or endangered. Five[1] species would be covered under the ITP, 1) spring and fall Lower Columbia River Chinook salmon; 2) Lower Columbia River steelhead; 3) Lower Columbia River coho salmon; 4) Columbia River chum salmon; and 5) Pacific eulachon (not presently listed). Table 1 lists the covered species and their status.

[1] The Bull Run HCP states that there are six covered species, differentiating between fall and spring Chinook salmon. However, the EIS states that there are five covered species because fall and spring Chinook salmon are the same species.

TABLE 1
Covered Species

Common Name	Scientific Name	Status*
Lower Columbia River Chinook Salmon (Spring and Fall)	*Oncorhynchus tshawytscha*	T
Lower Columbia River Steelhead	*Oncorhynchus mykiss*	T
Lower Columbia River Coho Salmon	*Oncorhynchus kisutch*	T
Columbia River Chum Salmon	*Oncorhynchus keta*	T
Pacific Eulachon	*Thaleichthys pacificus*	PT

*Status Codes: T = Threatened PT = Proposed Threatened

2.5 Covered Activities

2.5.1 Operation, Maintenance, and Repair of the Water System

Incidental take coverage would include all activities associated with the continued operation and maintenance of the water supply system as follows:

- Storage of water in reservoirs and regulation of reservoir surface elevations
- Diversion of water for water supply
- Alteration of flows downstream from the water supply dams and diversion
- Release of water from reservoirs into the Bull Run River
- Adjustment of water intake depth to regulate temperature, turbidity, and color
- Seasonal closure of gates at the Dam 1 spillway to store additional water
- Removal of debris (including logs) from the reservoirs
- Operation of boats and barges on reservoirs
- Delivery and storage of fuel and lubricants for water supply system vehicles and equipment
- Delivery and storage and use of chlorine gas for water supply disinfection
- Draining of water supply conduits
- General landscape maintenance
- Operation, maintenance, and repair of all covered facilities

2.5.2 Habitat Conservation, Research, and Monitoring Measures

Incidental take coverage would include all activities associated with the implementation of the habitat conservation measures, and the research and monitoring measures. Any additional habitat conservation measures and monitoring measures implemented as a part of adaptive management would also be covered.

2.5.3 Incidental Land Management Activities

Incidental take coverage would include land management activities on lands within the Sandy River Basin. These activities include management of City-owned riparian lands; maintenance and repair of City roads, bridges, culverts, parking lots, easements, and rights-of-way on nonfederal lands in the Bull Run Watershed; and operation and maintenance of the Sandy River Station maintenance facility.

2.5.4 Activities Not Covered by the Bull Run HCP

Incidental take coverage would not include the following water system activities:

- Operation and maintenance of City facilities at Bull Run Lake
- Operation and maintenance of the Lusted Road Treatment Facility
- Operation and maintenance of Dodge Park
- Operation, maintenance, and replacement of City conduits crossing the mainstem Sandy River
- Operation and maintenance of hydroelectric facilities at Dam 1 and Dam 2
- Operation and maintenance of minor City facilities on national forest lands that are upstream of Dam 2 and outside the riparian area surrounding the reservoirs
- Maintenance and repair of roads on federal land
- All aspects of the City's water supply system outside the Sandy River Basin
- City funding of the Oregon Department of Fish and Wildlife (ODFW) fish hatchery operations under the City's pre-existing federal hydropower license would also be excluded
- Activities by others in the Bull Run River Watershed not specifically mentioned above. For these activities, the City would comply with applicable ESA regulations on a project-by-project basis.

2.6 Protection Measures and Conservation Strategies

Habitat conservation measures are divided into two primary categories: the lower Bull Run River and the greater Sandy River Basin. In addition, habitat conservation measures are included for the two Bull Run reservoirs, water system operations, and terrestrial wildlife, and provides for a Habitat Fund. The conservation strategy for each category is described below.

2.6.1 Lower Bull Run River Habitat Conservation Measures

Impacts to the lower Bull Run River occur in three general categories: river flow, water temperature, and aquatic/riparian habitat. The City developed conservation measures to avoid or minimize flow and temperature impacts, and to protect and improve instream and riparian habitat. The major elements of the conservation measures are listed below.

Instream Flow Measures

The City developed a normal water year regime (Measure F-1) and a critical water year regime (Measure F-2) to regulate the amount and timing of flow releases from Bull Run Dam 2. Measure F-1 would be expected to occur 90 percent of the time, and Measure F-2 would be expected to occur 10 percent of the time, based on a 60-year record of flows in the Bull Run River. Measure F-1 (Table 2) includes guaranteed minimum flow amounts and other criteria to maintain flow levels for spawning, rearing, and migrating salmonids and other aquatic species. Measure F-2 (Table 3) includes guaranteed minimum flows for critical water year regimes. These flows are the same as normal water years except during periods declared as "critical" based on spring conditions (affecting June flow requirements) and/or fall conditions (affecting October through November flow requirements).

In addition to the flow releases, the City developed measures to protect against large decreases in the river level that could trap small salmonids (Measure F-3) and maintain natural instream flows in the Little Sandy River (Measure F-4). Because the Little Sandy is a tributary to the Bull Run River, Little Sandy flows would contribute to increasing lower Bull Run River flows. Measures F-1 through F-4 would be implemented in HCP years 1 through 50.

TABLE 2
Flow commitments under the Proposed Action for the Lower Bull Run River during normal water years, measured at USGS Gauge 14140000, RM 4.7

Time Period	Guaranteed Minimum Flow (cfs)*	Required Percent of Inflow (%)	Maximum Required Flow (cfs)
January 1 – May 31	120	Not applicable	Not applicable
June 1 – June 15	120	Not applicable	Not applicable
June 16 – June 30	Gradually decrease flows over 15 days from minimum of 120 cfs to a minimum of 35 cfs.		
July 1-September 30	Optimize use of cold water in the reservoirs. Vary flow from 20 cfs to 40 cfs to manage downstream water temperature based on weather conditions. Average summer flow expected to be 35 cfs.		
October 1 – October 15	70	50	400
October 16 – October 31	70	50	400
November 1 – November 15	150	40	400
November 16 – November 30	150	40	400
December 1 – December 31	120	Not applicable	Not applicable

*cubic feet per second

TABLE 3
Flow commitments under the Proposed Action for the Lower Bull Run River during critical water years, measured at USGS Gauge 14140000, RM 4.7

Time Period	Guaranteed Minimum Flow (cfs)*	Required Percent of Inflow (%)	Maximum Required Flow (cfs)
January 1 – May 31	120	Not applicable	Not applicable
June 1 – June 15	30	Not applicable	Not applicable
June 16 – June 30	30	Not applicable	Not applicable
July 1-September 30	Optimize use of cold water in the reservoirs. Vary flow from 20 cfs to 40 cfs to manage downstream water temperature based on weather conditions. Average summer flow expected to be 35 cfs.		
October 1 – October 15	20	Continue to vary flow from 20-40 cfs to manage downstream water temperature	
October 16 – October 31	30	50	250
November 1 – November 15	30	40	400
November 16 – November 30	70	40	350
December 1 – December 31	120	Not applicable	Not applicable

*cubic feet per second

Water Temperature Measures

The City would manage temperature to maintain a 7-day moving average of the maximum daily water temperature of the lower Bull Run River below 69.8°F (21°C) for salmon/trout rearing. Numeric criteria will apply when the estimated natural condition temperatures of the Bull Run River are at or below the numeric criteria – 60.8°F (16°C) for salmonid rearing and 55.4°F (13°C) for salmonid spawning. When the estimated natural condition temperatures of the Bull Run River are above the numeric criteria, the natural condition temperature criteria apply – the 7-day moving average of the daily maximum temperature of the Little Sandy River. There are exceptions to the natural condition temperature criteria that allow temperatures to rise between 1.8 and 2.7°F (1 to 1.5°C) above the temperature of the Little Sandy River.

The City proposes modifications to the Dam 2 intake towers for selective withdrawal to control temperatures in the lower river and in the water distribution system. The completion of design and construction of the tower modifications would occur within the first 5 years of the Bull Run HCP (Measure T-2). Until the modifications are in place, Measure T-1 would be implemented to manage temperature. Under Measure T-1, flow releases from the Headworks would be managed to maintain the 7-day moving average water temperature of the daily maximums at equal to or less than 69.8°F (21.0 °C). After the modifications are in place, flows would be managed in accordance with Measure T-2 to comply fully with the TMDL[2] requirements.

[2] Federal water quality standards for the lower Bull Run River designate the river as core cold-water habitat. The lower Bull Run River currently does not meet cold water temperature standards and it is included on the State of Oregon's list of impaired waters (ODEQ 2005). ODEQ developed a TMDL and Water Quality Management Plan for the Sandy River Basin, including the lower Bull Run River. The TMDL established numeric temperature and natural condition temperature criteria for the lower Bull Run River.

Instream and Riparian Habitat Measures

The City developed conservation measures for gravel augmentation, fish passage, and riparian forest protection in or along the lower Bull Run River.

- The Bull Run reservoirs trap bedload and sediment, thereby reducing gravel input to the lower river. Implementation of Measure H-1 of the HCP would replenish spawning gravel to mimic natural supply and accumulation. Measure H-1 would be implemented in HCP years 1 through 50.

- Walker Creek is the only tributary to the lower Bull Run River where a City culvert has blocked fish passage. Implementation of Measure P-1 would provide volitional fish passage into Walker Creek within the first 5 years of the HCP. Measure P-1 would be implemented in HCP years 1 through 5.

- City-owned lands along the lower Bull Run River remain capable of providing riparian habitat at a level comparable to unmanaged later-seral forest. In accordance with Measure H-2, the City would continue managing these lands to maintain and improve their condition for the duration of the Bull Run HCP. Measure H-2 would be implemented in HCP years 1 through 50.

2.6.2 Bull Run Reservoir Habitat Conservation Measures

Three habitat conservation measures would improve habitat conditions in Bull Run Reservoir 2. Measure R-1 includes specific operating criteria to avoid or minimize mortality of cutthroat and rainbow trout. Measure R-2 includes removing cutthroat trout from the Dam 2 spillway approach canal to prevent mortality caused by temperature. Measure R-3 includes removing reed canarygrass from three areas along the north bank of the upper end of Bull Run Reservoir 1 to improve habitat for amphibians. This area occurs on Mt. Hood National Forest Lands. Measures R-1 through R-3 would be implemented in HCP years 1 to 50.

2.6.3 Water System Operations and Maintenance Conservation Measures

Implementation of two conservation measures would address potential impacts associated with operation and maintenance (O&M) of the water supply system: Bull Run Infrastructure Operations and Maintenance (O&M-1) and Bull Run Spill Prevention (O&M-2). Under conservation measure O&M-1, paint and debris would be prevented from falling in the river during bridge and conduit maintenance at all active stream crossings (other than the mainstem Sandy River); erosion would be avoided or minimized during repair and maintenance of all water supply infrastructure; and water drained from conduits would be dechlorinated before it is discharged to a waterway. In addition, under Measure O&M-1, the City would remove trees in riparian areas if they threaten City facilities or pose a significant health risk to human safety (the City would plant replacement trees if trees of greater than 12 inches diameter at breast height are removed). Under conservation measure O&M-2, the City would implement a series of measures to avoid or minimize spill effects at the Headworks facility below Bull Run Dam 2 and at the Sandy River Station, a 5.5-acre maintenance facility located next to the mainstem Sandy River. The City would implement Measures O&M-1 and O&M-2 in HCP years 1 to 50.

2.6.4 Sandy River Basin Habitat Conservation Measures

The City proposes 31 offsite conservation measures to improve fish habitat in the greater Sandy River Basin. The measures include placement of large wood and boulders to create habitat; purchase of approximately 425 acres of riparian easements in the Lower Sandy River Watershed, the Middle Sandy River Watershed, the Upper Sandy River Watershed, the Salmon River Watershed, and the Zigzag River Watershed; fish passage for 5.5 miles of Alder Creek and 12 miles of Cedar Creek; and channel restoration in the Salmon River Watershed.

2.6.5 Terrestrial Wildlife Habitat Conservation Measures

In addition to conservation measures targeting the covered species, the City proposes three additional conservation measures to minimize impacts to spotted owls, bald eagles, and fishers.

2.6.6 Habitat Fund

The City would use a portion of the Bull Run Water Supply HCP funding to contribute to projects implemented in coordination with the Sandy River Basin Partners (Partners), thereby contributing to larger-scale restoration in the Sandy River Basin. The Habitat Fund (H-30) would total $9 million. A $5 million portion of the Habitat Fund would be available in four increments prior to year 20 of the permit term and would be dedicated to partnership projects. Of the $5 million, $1.7 million would be specifically dedicated toward habitat enhancement projects on the Salmon River to be implemented jointly by the Partners, and with additional funds from the Partners and/or from grants. If partnership funds cannot be obtained to implement these projects, the funds would be used for other projects in the Sandy River Basin. The remaining $4 million would be dedicated to adaptive management. If the $4 million were not needed for adaptive management, it would be used for partnership projects. Projects would be selected in consultation with the HCP Implementation Committee and would be guided by the Sandy River Basin Restoration Strategy. The City and NMFS would make the final project selection decisions.

2.6.7 Monitoring, Research, and Adaptive Management Programs

Compliance would be monitored and documented for all the conservation measures. In addition, effectiveness monitoring would be undertaken for those measures that present some degree of uncertainty about their biological effectiveness, such as gravel placement and instream habitat enhancement. In the Bull Run River, placement of spawning gravel, degree of Chinook spawning gravel scour, concentrations of total dissolved gases, and abundance of spawning Chinook adults would be studied. In the Sandy River Basin, the City would collaborate with the ODFW, Mt. Hood National Forest, Bureau of Land Management (BLM), and Oregon Department of Environmental Quality (ODEQ) to measure the number of juvenile salmonid outmigrants. The Bull Run Water Supply HCP includes provisions to select, fund, and implement additional conservation measures if the prescribed conservation measures do not achieve the results necessary to maintain compliance with ESA Section 10 requirements.

2.6.8 Changed Circumstances

Chapter 10 of the Bull Run Water Supply HCP contains provisions for changed circumstances – conditions that substantially change during the permit term that might warrant changes in the conservation strategy. It is expected that, with implementation of the response measures, incidental take coverage would continue to be provided for the covered activities.

NMFS might list additional species as threatened or endangered under the ESA, delist species that are currently listed, or declare a listed species extinct. If one of these changed circumstances occurs, the City would take various response actions leading to the addition of species and conservation measures to the HCP, or deletion of species and conservation measures from the HCP. The City and NMFS would enter into good faith discussions to develop the appropriate response actions.

SECTION 3

Alternatives

NMFS analyzed three alternatives in the EIS, including one no action alternative and two action alternatives. The alternatives included the following: 1) Alternative 1 (No Action Alternative); 2) Alternative 2 (Proposed Action – Issuance of Incidental Take Permit and Implementation of the Bull Run Water Supply HCP); and 3) Alternative 3 (Fish Passage). Following is a brief description of the three alternatives that were analyzed in detail.

3.1 Alternative 1: No Action Alternative

Under the No Action Alternative, NMFS would not issue authorization for the incidental take of ESA-listed species to the City for the Bull Run Water Supply HCP. However, the City would comply with the TMDL. The City would operate the Bull Run water supply system as described in the following subsections.

3.1.1 Flow

Flow management under the No Action Alternative is intended to facilitate implementation of the temperature standards. The flow requirements are summarized in Table 4.

TABLE 4
Flow commitments under the No Action Alternative for the Lower Bull Run River during all water year types (measured at USGS Gauge 14140000, RM 4.7)

Time Period	Guaranteed Minimum Flow (cfs)*	Required Percent of Inflow (%)	Maximum Required Flow (cfs)
January 1 – May 31	None	Not applicable	Not applicable
June 1 – June 15	None	Not applicable	Not applicable
June 16 – June 30	Optimize use of cold water in the reservoirs. Vary flow from 20 cfs to 40 cfs to manage downstream water temperature based on weather conditions. Average summer flow expected to be 35 cfs.		
July 1-September 30	Optimize use of cold water in the reservoirs. Vary flow from 20 cfs to 40 cfs to manage downstream water temperature based on weather conditions. Average summer flow expected to be 35 cfs.		
October 1 – October 15	Varies 30 to 70 cfs, depending if it is a normal or critical flow year		
October 16 – October 31	Varies 30 to 70 cfs, depending if it is a normal or critical flow year		
November 1 – November 15	None	Not applicable	Not applicable
November 16 – November 30	None	Not applicable	Not applicable
December 1 – December 31	None	Not applicable	Not applicable

*cubic feet per second

3.1.2 Temperature

Full compliance with the TMDL would not be possible without modification to the existing infrastructure. Under the No Action Alternative, the Dam 2 intake towers would be modified for selective withdrawal of cold water and the Dam 2 stilling pool and its rock weir would be modified. Both of these changes would allow more effective use of cold water stored in the reservoirs and would enable the City to meet TMDL requirements. Temperature management after the modifications are in place would be the same as described in Measure T-2 (post-infrastructure temperature management) under the Proposed Action.

3.2 Alternative 2: Issuance of Incidental Take Permit and Implementation of an HCP (Proposed Action)

Under Alternative 2 (Proposed Action), NMFS would issue an ITP to the City, based on implementation of the Bull Run Water Supply HCP. The City is seeking an ITP from NMFS for the term of 50 years. The Proposed Action is described in detail in Section 2, Project Description, of this ROD.

3.3 Alternative 3: Fish Passage Alternative

Under Alternative 3, the City would provide upstream and downstream fish passage facilities at Bull Run Dam 1 and Bull Run Dam 2. This alternative also includes the lower Bull Run River conservation measures for temperature and flow; the terrestrial wildlife conservation measures; and the Bull Run habitat measures to address potential impacts associated with operation and maintenance of the water supply system.

The City would install the first upstream fish passage facility, the Rock Weir Fish Collection and Transportation Facility, at the rock weir located below the spillway stilling basin of Dam 2. It would include a fishway and trap located at the existing 15-foot-high rock weir structure. Fish would enter the fishway, ascend to the trap, be crowded into a hopper, and then be placed into a truck for transportation past Dam 2. The water supply necessary to operate the facility would flow by gravity from the stilling basin.

The City would install the second upstream fish passage facility, Bull Run Dam 1 Fish Collection and Transportation Facility, on the right bank of the river immediately downstream of the powerhouse tailrace. The facility would operate similar to the proposed Rock Weir Facility described above. An estimated 10 pools would be required to enable migrating adults to ascend high enough to be trapped above the flood stage. A gravity water supply is not available to run this facility, so all of the necessary water would be pumped from the tailrace. A tailrace barrier may be required to prevent fish from being falsely attracted to the powerhouse tailrace or outlet works on the left bank.

The City would install downstream fish passage facilities in Bull Run Reservoir 1. The facility would include a floating surface collector with guide nets mounted on a floating barge in the reservoir, using low-head pumps to create attraction flows. The fish would then be routed into a pipe to a fish transfer facility moored to the face of the dam. A crane on the deck of the dam would be used to load fish into trucks, and collected fish would be placed

back into the river downstream of Bull Run Dam 2. The City also would install a downstream fish passage facility at Dam 2. This facility would be similar to the Dam 1 facility described above.

3.4 Alternatives Not Considered in Detail

The process of developing a reasonable range of alternatives generated a broad range of ideas for meeting the purpose and need for this project. During the scoping process for the EIS, three other alternatives were considered but eliminated from further analysis as independent alternatives because they did not meet the purpose and need identified for the project. These alternatives are briefly described in the following subsections, including the reasons they were eliminated from further consideration.

3.4.1 Bull Run Groundwater

This concept included developing a groundwater supply below the Headworks facility at Dam 2, and discharging the pumped groundwater into the Bull Run River in the summer months to lower water temperatures. The Portland Utility Review Board proposed this concept in their July 11, 2006 scoping comments. The Portland Utility Review Board's concept was studied in detail in the Bull Run Groundwater-based Alternative Technical Memorandum. Based on the evaluation, the groundwater concept was not carried forward in the EIS. Groundwater temperatures are not sufficiently cold to achieve the required river temperatures. Groundwater at approximately 55.4 to 57.2°F (13 to 14°C) would create river temperatures above the required conditions at the measurement point (Larson's Bridge) under most conditions (approximately 75 percent of the time). Therefore, this alternative was not carried forward because it did not meet the purpose and need of the project. Specifically, this alternative would not comply with state water quality standards and TMDL designations for the Bull Run River and Sandy River Basin.

3.4.2 Dam Removal

Access to habitat above the dams could be provided by removal of Bull Run Dams 1 and 2. This alternative would require demolition of the two dams, as well as programs to manage sediment and construction debris. Extensive habitat restoration to recreate the prior riparian and instream habitat values in the reservoir areas would also be included. This concept was not carried forward for detailed evaluation because of the limited benefit for fish and the requirement to develop alternative water sources to provide public water supply. This would be contrary to the purpose and need of ensuring an adequate long-term water supply.

3.4.3 Fish Ladders

Access to habitat above the two Bull Run dams could potentially be achieved through the installation of fish ladders, which would provide volitional passage for upstream migrating adult fish. However, it is anticipated that fish ladders would be much less effective than the trap-and-haul concept proposed in Alternative 3, Fish Passage Alternative. This assessment is attributed to the height of the existing dams, the large fluctuations in the reservoir forebay water surface elevations, and water quality concerns.

The heights of Bull Run Dams No. 1 and No. 2 (180 and 145 feet, respectively), are well above the maximum effective height for fish ladders of approximately 80 to 100 feet. The fishway for Bull Run Dam No. 2 would be approximately 4,000 feet in length, and the fishway for Bull Run Dam No. 2 would be approximately 2,000 feet in length, assuming a 1-foot vertical drop per pool. High and long fish ladders can have limited success as fish often become delayed and/or fall back in fishways of this magnitude, resulting in reduced fish passage.

Water quality concerns, such as temperature and dissolved oxygen, would also limit the effectiveness of the fish ladder alternative. Special provisions would be needed to ensure adequate temperature and dissolved oxygen profiles, including intakes that utilize existing temperature towers, new deep water intakes, and packed aeration columns. In addition to their high costs, these facilities may also deplete the cold water supply in the reservoirs, impacting downstream water quality and making it difficult to meet downstream temperature requirements.

In addition, the applicant has indicated to NMFS that the high cost of fish ladders is prohibitive (the provision of volitional fish ladders and gulpers at Bull Run No. 1 and Bull Run No. 2 would cost approximately $150 million). This high cost is due to both the length and height of the required ladders, as well as the additional facilities required to make them operate successfully. This cost does not include monitoring and evaluation facilities.

The NOAA Fisheries 2004 Anadromous Salmonid Passage Facility Guidelines and Criteria states that "*In general, NOAA Fisheries requires volitional passage, as opposed to trap and haul, for all passage facilities. This is primarily due to the risks associated with the handling and transport of migrant salmonids, in combination with the long term uncertainty of funding, maintenance and operation of the trap and haul program. However, there are instances in which trap and haul may be the only viable option for upstream and/or downstream fish passage at a particular site.*" As such, the volitional fish ladder alternative was not carried forward because it does not meet the purpose and need for the project. Specifically, this alternative would not provide cost-effective minimization and mitigation measures for the incidental take of species listed by NMFS. Upon review of the impacts addressed in this EIS and the ESA determination, NMFS concludes that the Sandy River Basin Habitat Conservation Measures will provide more success, in terms of fish production, than fish ladders.

SECTION 4

Public Involvement

NMFS published a Notice of Intent (NOI) in the *Federal Register* on March 27, 2006 (Vol. 71, No. 58) to solicit participation of responsible and coordinating federal, state, and local agencies and of the public in determining the scope of this EIS. Publication of the NOI initiated the process of public scoping for this EIS. NMFS held two public scoping meetings in June 2006, in the City of Portland, to solicit input on the potential topics to be addressed in this EIS, the range of project alternatives, and possible mitigation measures. Prior to these two scoping meetings, the City distributed a news release to local news agencies describing when and where each scoping meeting would be held. Notice was also posted on the City web site and the NMFS website. In addition, NMFS mailed an interested-parties letter to individuals or agencies that were identified as possible stakeholders, including local tribal leaders and environmental groups. The scoping process revealed several key items of concern to the interested parties who provided comments. The scoping process is documented in the NMFS Scoping Report for this project, which is included as part of the administrative record.

NMFS published the Notice of Availability (NOA) for the Draft Environmental Impact Statement (DEIS) in the *Federal Register* on March 21, 2008, (Vol. 73, No. 56) and again on April 11, 2008, (Vol. 73, No. 71). The City issued a news release on April 21, 2008. Public meetings were held on April 28 and 29, 2008, to allow for public comments on the DEIS. The DEIS public comment period closed May 26, 2008. During the comment period, 14 comment letters were received from federal and local agencies, environmental organizations, and the general public. Primary issues raised in the comments related to the Bull Run Water Supply HCP. NMFS responded to comments on the DEIS and the Bull Run HCP in Appendix E of the FEIS.

The FEIS and Final Bull Run Water Supply HCP were subsequently produced, and they were made available for a 30-day public review period announced in the *Federal Register* on January 23, 2009 (Vol. 74, No. 14). During the review period, one comment letter was received and is included as Appendix A of this ROD. A review of the comment letter revealed that the issues had already been described in the DEIS or had been raised in public comments on the DEIS and Draft Bull Run Water Supply HCP. As such, they were addressed in the preparation of the FEIS and Final HCP.

SECTION 5

Decision, Rationale, and Conditions

5.1 Decision and Rationale

NMFS' decision is to issue an ITP to the City and to sign an Implementation Agreement based on implementation of the City's Bull Run Water Supply HCP (Alternative 2). Issuance of the ITP to the City authorizes the incidental take of the covered species listed in Subsection 2.4, Covered Species. One species (Pacific eulachon) not currently listed under the ESA will be included in the ITP and permit coverage will become effective in the event that the species becomes listed as threatened or endangered under the ESA during the 50-year permit, pursuant to NMFS' No Surprises Rule (50 CFR Parts 17 and 22).

NMFS is authorized to issue permits authorizing incidental take of federally-listed species under Section 10 of the ESA. The applicant for such a permit must submit a conservation plan in accordance with Section 10(a)(2)(A) of the ESA. NMFS issues the permit if it finds the permit application and conservation plan satisfy requirements of Section 10(a)(2)(B) of the ESA. NMFS has concluded in its Section 10(a)(2)(B) Statement of Findings and its Section 7(a)(2) Biological Opinion, all of which are incorporated here by reference, that the City's Bull Run Water Supply HCP meets the criteria for permit issuance in accordance with Section 10(a)(2)(B) of the ESA. In making this decision, NMFS has also considered its trust responsibilities to Native American Tribes and has concluded that issuance of the permit is consistent with its trust responsibilities.

5.2 Environmentally Preferred Alternative

The environmentally preferred alternative (40 CFR 1505.2[b]) is that which promotes the national environmental policy as expressed in Section 101 of NEPA. This is often characterized as the alternative that causes the least damage to the physical and biological environment and is the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. The proposed HCP and other alternatives have been described and evaluated in the FEIS. Based upon the review of the alternatives and their environmental consequences described in the FEIS as required under NEPA, and satisfaction of requirements under the ESA, NMFS has decided to issue an ITP for the City's Bull Run water supply and to adopt Alternative 2, Proposed Action, as the environmentally preferred alternative. In this case, the Proposed Action is considered the environmentally preferred alternative because implementation of the Bull Run HCP will provide greater environmental protection and the greatest degree of improvement in habitat conditions in relation to what is expected to occur over time under the No-action Alternative or the Fish Passage Alternative (Alternative 3).

SECTION 6

Signatures

Barry A. Thom, Acting Regional Administrator
Northwest Region
National Marine Fisheries Service

Appendix A
Public Comment Pertaining to the HCP and EIS

Public Comment – Scott Fernandez

February 21, 2009

Cost saving and public health alternative solutions to increased drinking water consumption of the toxically contaminated and polluted Columbia South Shore Well Field (CSSW), based on implementation of the Habitat Conservation Plan.

The biological premise of the Portland Water Bureau (PWB) Habitat Conservation Plan (HCP) is noble. It is supported by the community as it helps to encourage recovery of endangered species in the Sandy River Basin.

Columbia South Shore Well Field (CSSW) drinking water is toxically contaminated with chemicals and other pollutants such as: radioactive materials, pharmaceuticals, organic solvents, sewage contaminants, antibiotics, caffeine, etc. We are told this toxically contaminated drinking water is *safe* because it meets EPA drinking water regulation standards. Portland Water Bureau sampling and subsequent lab analysis represents only a snapshot of a handful of contaminants, providing a false sense of water quality safety. Thousands of toxic chemicals and many combinations of pollutants can go unrecognized and unacknowledged.

The solution to the Habitat Conservation Plan's negative impact on public health and ratepayer cost is simple and would save ~$40 million, most in the next few years. Approximately 3 billion gallons of water from Bull Run Dam 2 are discharged for fish each summer into Bull Run River. The solution: cool, clean, fresh, artesian drinking water wells located in the area outside of Bull Run Dam 2. Artesian water could be piped into the diversion dam area at Dam 2, preceding the transmission conduits, to be used for drinking water consumption in lieu of the toxically contaminated and polluted CSSW water added at Powell Butte. This Bull Run artesian water would also augment increased flow for the fish in the Bull Run River. The wells are already drilled in the Dam 2 area and artesian temperature would not be an issue because it is ~13C, well below the PWB target temperature goal of 21C and DEQ goal of 16C. (1)(2) The Bull Run Dam 2 artesian wells promote sustainability needing no electrical energy. Electricity / energy intensive well pumps are currently used at CSSW. This saves precious resources and money ~ $500,000-$950,000/ year in electrical energy costs alone (PWB data) giving the artesian wells a zero-carbon footprint unlike the CSSW.

Slowly drawing down Bull Run drinking water reservoirs, "banking" cooler water for fish, saving $40 million for ratepayers, and providing drinking water that is not toxically contaminated is the common sense and responsible solution. It is a win-win-win for fish, the ratepayer, and public health. The direct 'variable level intake' the Portland Water Bureau proposes in the Habitat Conservation Plan has never been used before in an unfiltered drinking water utility. Its multi-level direct intake of Bull Run drinking water would introduce algae and other organic debris generating additional unwanted disinfectant by-products from increased disinfection. Chlorine readily combines with microorganisms, plant materials, and other organic material "using up" chlorine. These materials increase "chlorine demand", off odors, and off tastes. (3)(4) The current intake pulls in drinking water below the level of this debris, resulting in lower disinfectant by-products. The new PWB proposal will also kill ~11% of Bull Run Dam 2 fish because of screen removal at intake, sucking in fish, adding even more unwanted organic debris. (5)

$40 million is a lot to pay for CSSW drinking water that is radioactive and toxically contaminated with industrial pollutants. We have viable alternatives. The Bull Run environmentally sustainable artesian wells can supply cool, pure, water to meet our drinking water and fish needs.

Factors that negatively influence fish recovery in Bull Run River:

- Observed intense water discharge spikes in the Bull Run River water flow during fall / winter, scouring out river bed gravel as demonstrated by HCP need for yearly addition of river bed gravel.(6)(7). (See Figures 1 and 2).
- Oregon Department Environmental Quality temperature goal of Bull Run River at 16C v. Portland Water Bureau goal of ~21C (1)(2)
- Figure 4 right side graph depicts best-case scenario for Bull Run reservoir temperature influence because of the unusually deep snow pack. This supplied Bull Run River the coolest water temperature influence throughout summer. Snow pack was still visible in the Bull Run watershed in mid September with full reservoirs. Consistent coldest Bull Run reservoir water at lowest water intake still could not supply Bull Run River water that would not exceed ODEQ temperature standards. Artesian well water would add cooling effect.
- Embryonic and developmental sensitivities exist. Disturbing and jostling at fish egg incubation and alevin stages can be lethal: both stages are confined to gravel for several months. (8)(9)(10)(11) Against intense Bull Run water discharge forces there is little expectation they would be able to forage for food, and find a suitable nursery/rearing habitat. Additionally there would be little expectation their aquatic food would also be available/ able to withstand such river water current challenges of up to 13 billion gallons/day.(12)
- Bull Run River water chemistry has dramatically changed with the decommissioning of Marmot Dam. The unique chemistry of Sandy River water that was discharged through Roslyn Lake into Bull Run River has been removed, adding confusion to the imprinted fish. The fish will now stay in the Sandy River system following the “smell” of their imprinted spawning habitat.

Sincerely,
Scott Fernandez M.Sc. Biology
Portland

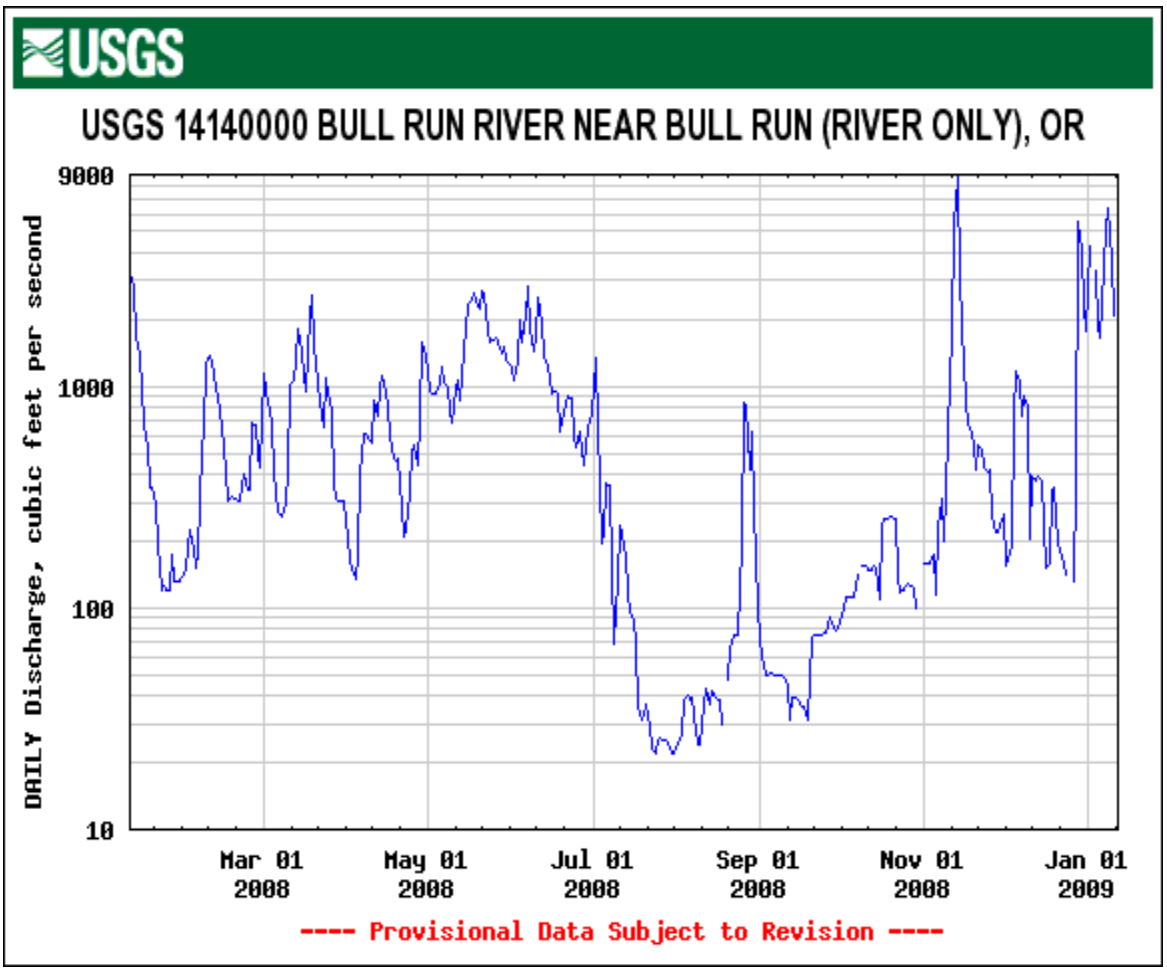

Figure 1 - Spike in water discharge in November 2008, scouring gravel, at a critical time in salmon egg incubation and alevin development.

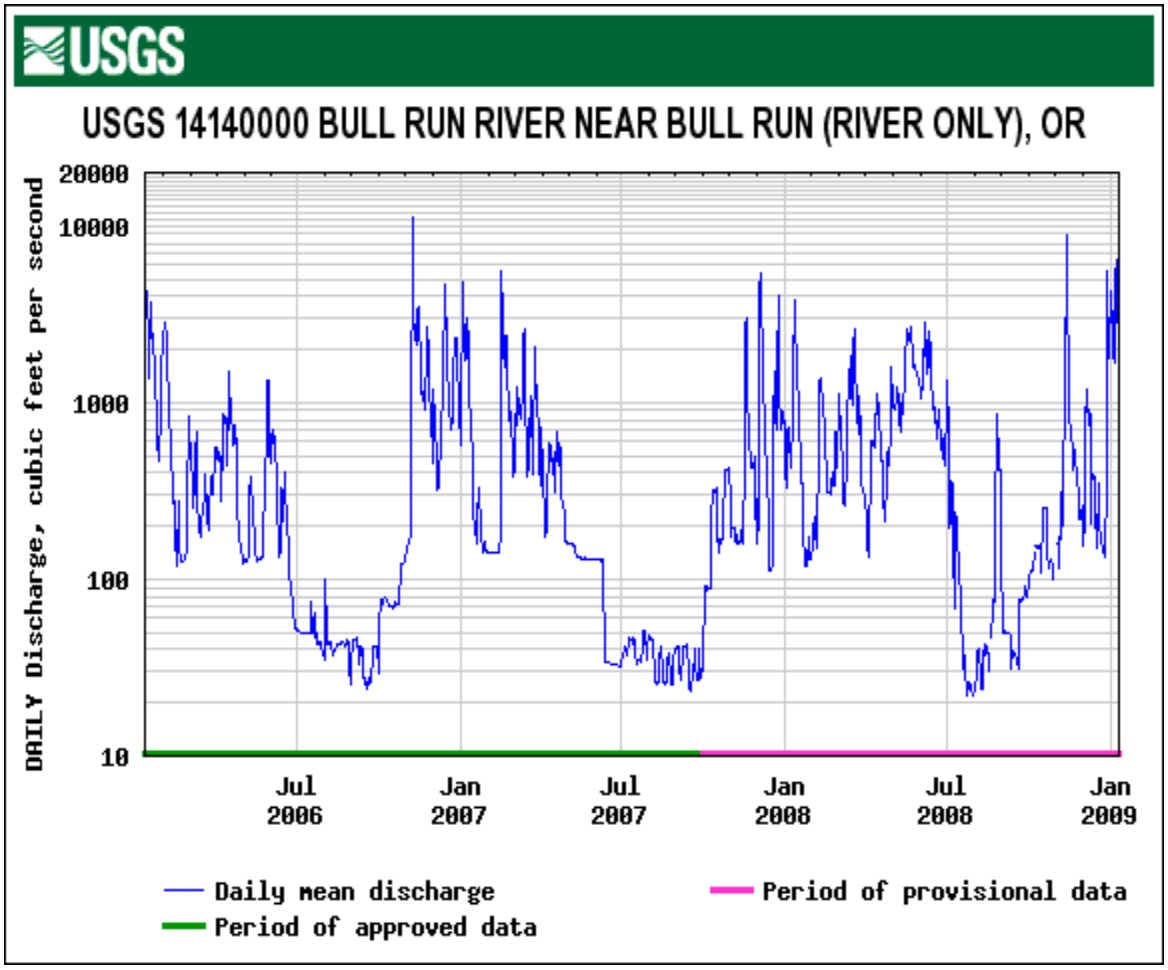

Figure 2 - Historical spikes in water discharge in November 2006 -2008, scouring gravel that endangers salmon egg incubation and alevin development.

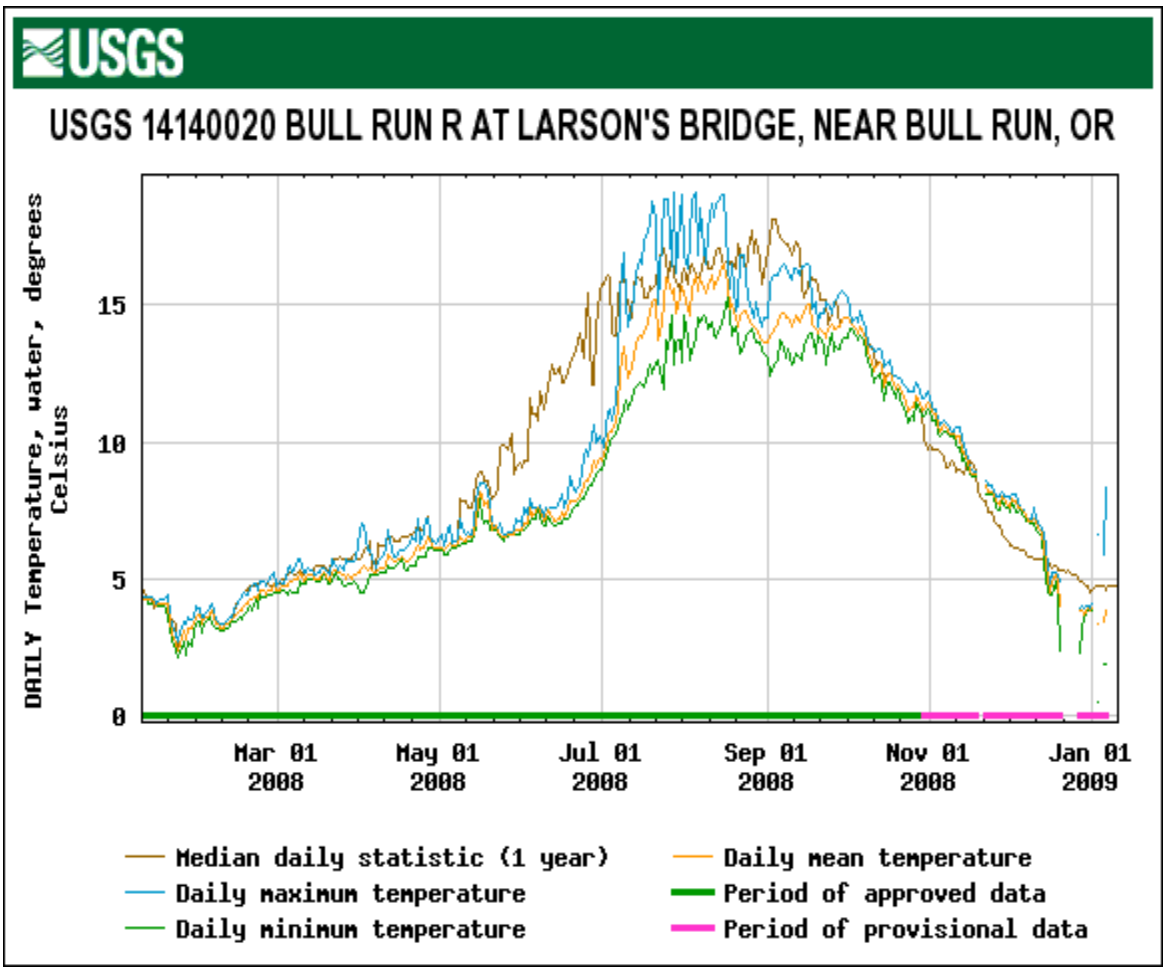

Figure 3 - Water temperature 2008, 13C from artesian wells would provide cooling effect.

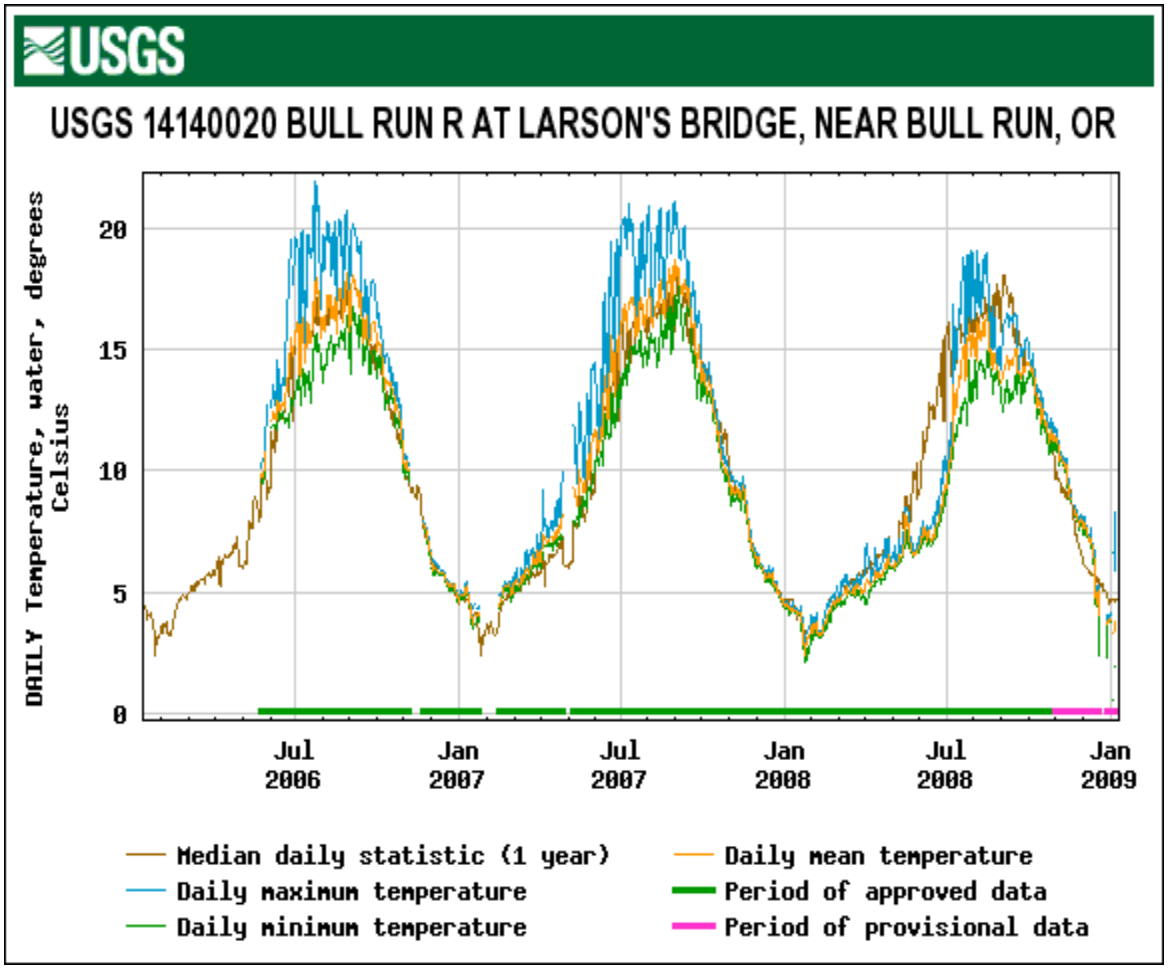

Figure 4 - 2006-2009 water temperatures, artesian well's 13C temperature provides cooling effect.

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