State of Alaska

Department of Natural Resources

Division of Mining, Land, and Water

Russian River Reservation of Water; LAS 28751

From its mouth with the Kenai River upstream approximately 5.0 river miles (RM) to the Lower Russian Lake

Application by the Alaska Department of Fish and Game for the Reservation of Water under AS 46.15, the Alaska Water Use Act

Finding of Facts, Conclusions of Law, and Decision

INTRODUCTION

On October 24, 2012, the Alaska Department of Natural Resources (ADNR, Department) accepted an application from the Alaska Department of Fish and Game (ADF&G) under AS 46.15.145 and 11 AAC 93.141, to reserve a specified portion of the stream flows within Russian River, near Cooper Landing, Alaska from its mouth with the Kenai River upstream approximately 5.0 river miles (RM) to the Lower Russian Lake.

A reservation of water, sometimes referred to as a reservation in this document, is an appropriation of water that remains within the stream for any one, or a combination of four purposes authorized by statute. These purposes include the protection of fish and wildlife habitat, migration, and propagation; recreation and park purposes; navigation and transportation purposes; or sanitary and water quality purposes. The reservation of water requested here is for the purpose of protecting fish and wildlife habitat, migration, and propagation for which the Commissioner of Natural Resources may "reserve sufficient water to maintain a specified instream flow... in a specified part of a stream, throughout a year or for specified times..." under AS 46.15.145 (a)(1).

Under 11 AAC 93.141 (1), "protection of fish and wildlife habitat, migration, and propagation...means the quantity of level of water necessary to maintain suitable habitat conditions for the various life stages of fish, other aquatic organisms, and wildlife, including waterfowl and mammals, and their habitat, including water quality, depth, velocity, and temperature, substrate, or streamside vegetation."

Holders of water rights junior to an established reservation of water as well as other users may be unable to divert or withdraw significant amounts of water when stream flows fall below those required by the reservation. Senior water right holders will remain unaffected by a junior reservation.

The reservation application adequately described and quantified the requested flows. Public and agency notice of the application was given consistent with the requirements of 11 AAC 93.145, 11 AAC 93.080, and AS 46.15.133. Below, the proposed reservation is summarized, and specific findings of fact and conclusions of law are described.

DESCRIPTION OF PROPOSED RESERVATION LAS 28751

Proposed Reach Description: Russian River and its floodplain from its mouth with the Kenai River upstream approximately 5.0 river miles to the Lower Russian Lake. Said portion of Russian River is located within:

Township	Range	Sections
5 North	4 West	33, 34
4 North	4 West	4, 9

All within the Seward Meridian (Map 1).

Requested Reservation Flows:

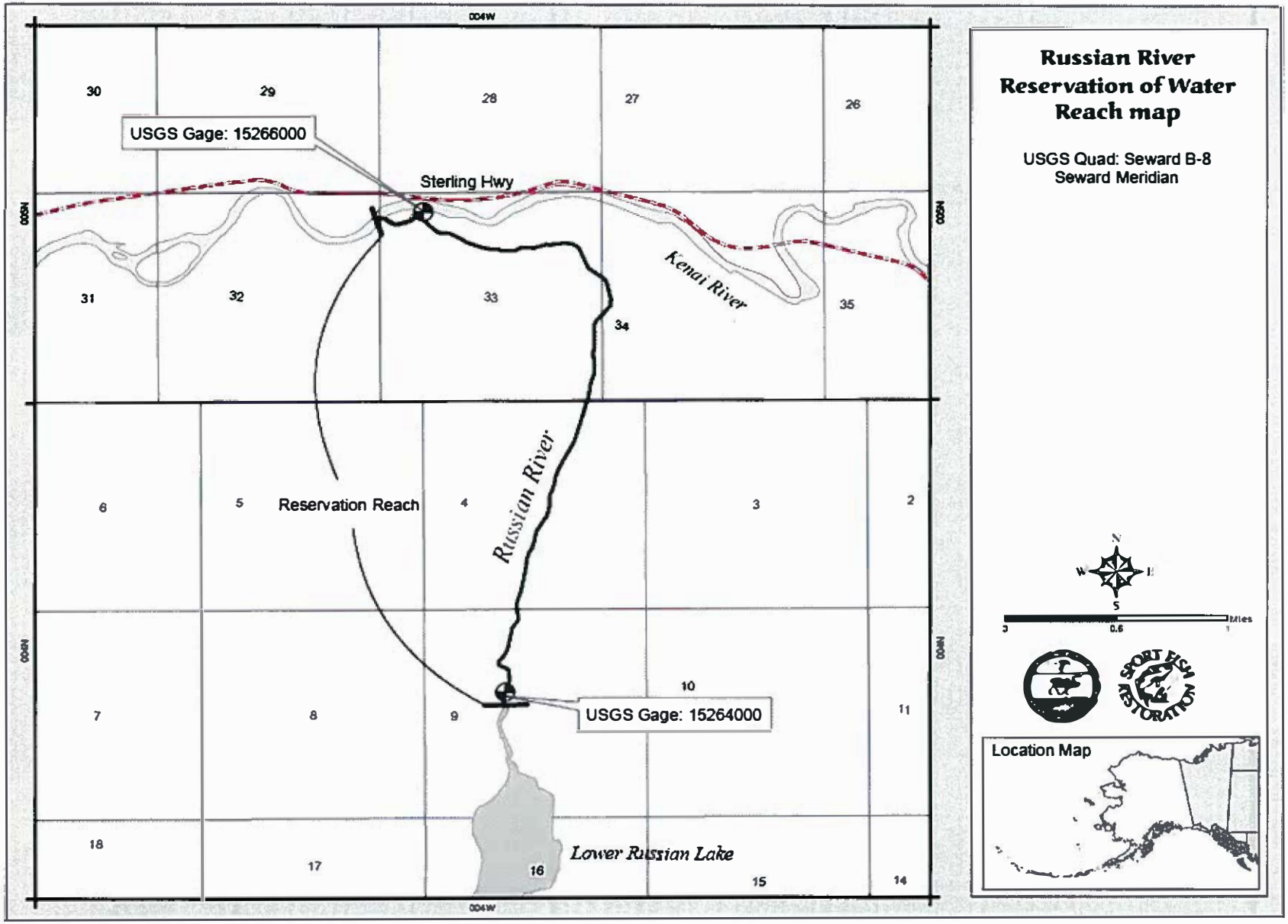
Time Period	Flow Rate (cfs)
January	29
February	23
March	26
April 1-15	26
April 16-23	33
April 24-30	56
May 1-7	70
May 8-15	142
May 16-23	173
May 24-31	190
June	209
July 1-15	176
July 16-13	127
August 1-15	100
August 16-31	82
September	82
October	110
November	85
December	43
cfs = cubic feet per second	

Discussion: Time periods and reservation flows have been requested by ADF&G based on their review and analysis of the data regarding the life cycles of the many species of fish in the area and the affects of that flow level on fish and wildlife, their migration, and propagation. According to the Instream Flow Councils 'Instream Flows for Riverine Resource Stewardship'[1],

> Typically, providing a healthy aquatic community involves attention to the magnitude and duration of the natural flow regime's seasonal patterns (Poff et al. 1997). Flow conditions that vary in a manner similar to natural conditions will establish a variety of habitats and diverse fish communities, Different flow needs can be met by providing them all-separated by time. Variable conditions allow different species to flourish at different times. A temporal and spatial mosaic is a necessary component of riverine ecosystem integrity.
>
> River ecosystems are complex and require variable flows. For example, high flows form and maintain the shape and characteristics of the river channel and floodplain, flush sediment from spawning gravels, maintain riparian vegetation and stream bank stability, provide habitat critical to the life history of certain fishes, and provide cues that initiate fish migration and spawning. The life history of all aquatic organisms have adapted to naturally occurring seasonal flow regimes.
>
> Providing suitable hydraulic habitat for aquatic organisms is a necessary part of any instream flow prescription...Habitat defined through hydraulic characteristics (such as water depth and velocity) and channel characteristics (such as substrate, cover, stream width) is sometimes referred to as hydraulic habitat. Aquatic organisms select habitat based, in part, on the physical characteristics of their surroundings. To evaluate existing hydraulic conditions as they relate to aquatic organisms, the relation of streamflow to habitat must be quantified over time.
>
> The objective of an instream flow prescription should be to sustain, rehabilitate, or restore ecosystem processes through inter- and intraannual variable flow regimes to the greatest extent possible. Instream flow prescriptions should provide inter- and intraannual variable flow patterns that mimic the natural hydrograph (magnitude, frequency, duration, timing, rate of change) to maintain or restore processes that sustain natural riverine characteristics.

[1] Annear, T., I. Chisholm, H. Beecher, A. Locke, and 12 other authors. 2004. Instream flows for riverine resource stewardship, revised edition. Instream Flow Council, Cheyenne, WY. Pp. 9,22, 23,101

Map 1. Reservation of water application reach map (See 'Reach Description' on page 2 for specific reach location)



AREA BACKGROUND[2]

River: The Russian River is a tributary to the Kenai River in south central Alaska. Located approximately 60 29' 15" N, 149 58' 50". [3]

River Basin Area: At USGS gaging station #15264000 [Russian R NR Cooper Landing AK], the basin area is 61.8 mi^2, and at the confluence of the Russian River with the Kenai River the basin area is 63 mi^2.

Lakes: The Russian River watershed contains approximately 60 lakes that cover a total of 2.6 square miles. The largest of these lakes are Upper and Lower Russian Lakes.

Map Coverage: USGS 1:63,000 Seward B-8 and B-1.

General Area Description: The Russian River watershed is located on the Kenai Peninsula near the town of Cooper Landing in south central Alaska. It is known for its excellent sport fishing opportunities and prolific sockeye salmon runs. The watershed runs from south to north and is confined by Russian Mountain to the west, Cooper Mountain to the east and the Kenai Mountains to the south, with Cooper Mountain being the tallest at 5,270 feet. The basin encompass' many different ecological regions, including conifer and deciduous forest, shrub land, wetlands, and alpine and sub alpine meadows[4].

Channel Description: The Russian River heads in Upper Russian Lake and flows north 15.75 miles into the Kenai River. The average width and depth of the river at USGS gage #15264000 is 75 feet wide and 1.3 feet deep, respectively. The average gradient of the river between Upper Russian Lake and the confluence of the Kenai River is 21 feet per mile. The stretch of river between Upper and Lower Russian Lakes is single channel and sinuous, whereas the channel between Lower Russian Lake and the Kenai is single channel and relatively straight.

Reach Description: Russian River, from the Ordinary High Water Mark (OHWM) of the outer bank (of the outside braid, where braided) of the left bank up to the OHWM of the outer bank (of the braid of the right bank, where braided), including all sloughs, braids, or channels which carry water and are an integral part of Russian River, from its mouth with the Kenai River, upstream approximately 5.0 RM to the Lower Russian Lake (Map 1). This description does not limit the quantities of water (flow rate) reserved by this decision and certificate to quantities (flow rates) within said OHWM boundaries.

Climate: The Russian River falls within the maritime climatic zone which is regulated by the Gulf of Alaska and characterized by cool and wet weather. There are two historic weather stations adjacent to the Russian River watershed, Cooper Lake Project (502144) and Cooper Landing 6 W (502149).

[2] Completed by Terry Schwarz, Alaska Hydrologic Survey, DNR, 1/2/2014
[3] Orth, Donald J., (1967) *Dictionary of Alaska Place Names*, USGS Professional Paper 567
[4] USDA, USFS, Chugach National Forest, (2004) Russian River Landscape Assessment,

Table 1. Weather Station Summaries[5]

	Cooper Lake Project Station; 502144								12/02/1958 to 03/31/2004				
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Max. Temp. (F)	26.3	30	35.5	44.2	53.7	61.8	65.4	63.1	54.3	42	33.6	29	44.9
Avg. Min. Temp. (F)	13.5	15.1	18.3	27.8	35.3	42.1	47.9	46.9	40.8	30.4	22.8	17.6	29.9
Avg. Total Precip (in)	2.7	2.38	1.31	1.02	0.87	1.07	1.4	2.86	5.1	4.77	3.26	3.72	30.46
Avg. Total Snowfall (in)	13.2	15.4	10.8	3.4	0.1	0	0	0	0	4.6	12.3	19.4	79.3
Avg. Snow Depth (in)	9	12	13	6	0	0	0	0	0	1	2	7	4

	Cooper Landing 6 W Station; 502149								02/01/1975 to 07/31/2012				
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Max. Temp. (F)	25.3	30.1	36.9	47.1	57.9	65.6	68.1	66.2	56.8	42.8	29.8	26.5	46.1
Avg. Min. Temp. (F)	9.1	11.9	14.7	25.5	32.9	40.5	45.8	43.4	36.3	25.9	13.6	11.3	25.9
Avg. Total Precip (in)	2.10	2.29	0.68	0.62	0.65	0.84	1.66	2.35	2.83	2.70	2.17	2.16	21.07
Avg. Total Snowfall (in)	7.0	7.3	8.0	3.0	0.1	0.0	0.0	0.0	0.1	4.2	7.2	10.1	47.0
Avg. Snow Depth (in)	10	11	10	3	0	0	0	0	0	1	3	7	4

Available Streamflow Data: Discharge data for USGS station #15264000 [Russian R NR Cooper Landing AK] operated from May 1, 1947 to September 30, 1954.[6]

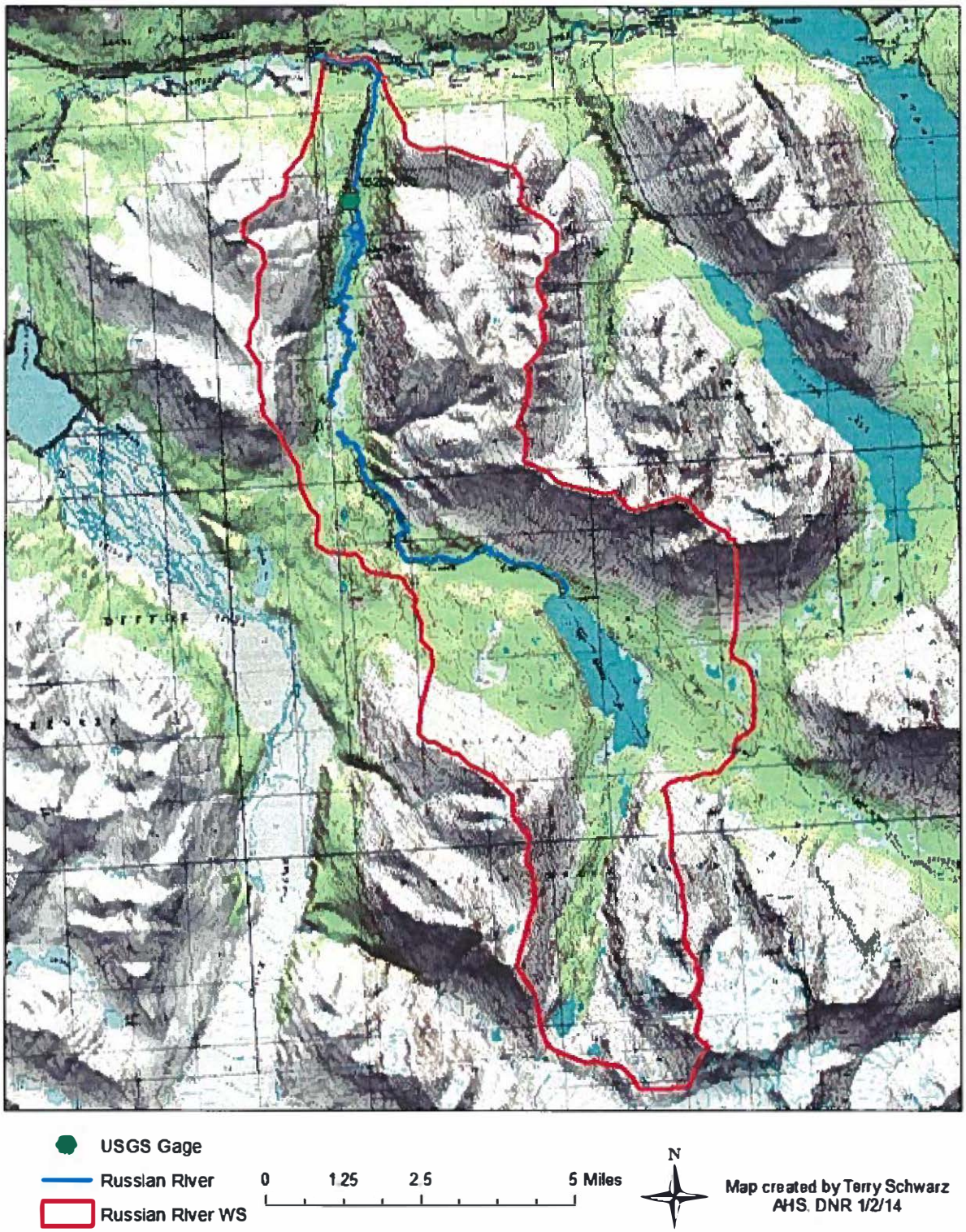
Table 2. USGS discharge data for gage #15264000 (Russian R NR Cooper Landing AK)

USGS Discharge Data (15264000; Russian R NR Cooper Landing AK)												
YEAR	Monthly mean in ft3/s (Calculation Period: 1947-05-01 -> 1954-09-30)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1947					190.9	216.0	137.6	98.3	80.0	137.1	281.2	171.9
1948	59.9	51.2	35.6	51.2	223.2	223.9	166.1	91.4	47.1	110.3	80.6	40.2
1949	25.4	19.8	26.1	36.2	115.7	205.7	155.6	93.0	103.9	130.8	275.0	110.1
1950	45.6	30.2	28.7	30.8	135.0	256.0	157.1	92.7	166.5	83.9	40.1	27.0
1951	25.4	21.1	18.0	40.3	153.0	173.9	122.1	62.8	169.6	84.6	98.5	36.3
1952	24.0	23.0	21.8	20.5	62.2	213.7	188.5	96.7	69.8	349.1	464.6	231.0
1953	123.0	84.7	54.7	81.9	357.8	542.9	346.7	238.7	167.5	235.9	79.8	49.1
1954	37.5	38.6	26.0	32.9	339.8	267.4	155.5	150.2	86.1			
Mean of monthly Discharge	49	38	30	42	197	262	179	115	111	162	189	95

[5] Western Regional Climate Center, *Historic Climate Records*, Retrieved 12/23/2013, http://www.wrcc.dri.edu/
[6] USGS, *National Water Information System: Web Interface*, Retrieved 12/23/2013, http://waterdata.usgs.gov/ak/nwis/inventory

Data Adequacy: A total of 7 years of USGS discharge data is an adequate amount of flow data upon which to base flow determinations and to adjudicate a reservation of water application.

Map 2. Map of the Russian River watershed.



Navigability: Russian River is considered unknown for navigability according to the State of Alaska (for title purposes).[7] Please contact the Public Access, Assertion, and Defense Unit Manager for more information ((907) 269-5515; scott.ogan@alaska.gov).

EXISTING LAND USE PLANS, VALUES, AND USES

Discussion: Staff reviewed area plans, management plans, comprehensive plans, and other related documents. Recommendations provided in the document were considered in determining if the flows and time periods for the reservation of water requested are in the public's best interest. ADNR uses the criteria in AS 46.15.080 and AS 46.15.145 to help determine the appropriate balance of the proposed reservation with those of other existing and potential users. These plans help ADNR have a better understanding of potential future water needs.

There are seven plans used in the Russian River watershed to better assess the needs of current and future plans. They are:

1. Kenai National Wildlife Refuge Land Management Plan (USFWS, 2004)
2. Revised Land and Resource Management Plan, Chugach National Forest (USDA, FS, 2002)
3. Kenai Area Plan (ADNR, 2001)
4. Kenai Peninsula Borough Comprehensive Plan (KPB 2005)
5. Kenai Peninsula Borough Comprehensive Economic Development Strategy (KPB, 2010)
6. Upper Kenai River Cooperative Plan (May 1997)
7. Briefing Paper: Coordinated Interagency Management, Kenai Russian River Complex (USFS, June 2013)

The Kenai Peninsula in Alaska has been recognized for its outstanding wildlife resources since 1941 when President Franklin D. Roosevelt set aside approximately two million acres of land there to protect the feeding and breeding habitats of the Kenai moose. With the passage of the Alaska National Interest Lands Conservation Act (ANILCA) in 1980, the mission changed to reflect the importance of a wide variety of wildlife and fisheries resources and habitats on the Kenai Peninsula.[8]

Section 303.4 of ANILCA set forth the following major purposes for which Kenai Refuge was established and is to be managed:

(i) To conserve fish and wildlife populations and habitat in their natural diversity;
(ii) To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;
(iii) To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i) water quality and necessary water quantity within the refuge;

[7] Alaska DNR division of Mining, Land & Wather, *Navigable Waters Web Map,* Retrieved 5/29/12, http://www.navmaps.alaska.gov/navwatersmap/

[8] Kenai National Wildlife Refuge Land Management Plan 10-1994, pg 1

(iv) To provide in a manner consistent with subparagraphs (i) and (ii) opportunities for scientific research, interpretation, environmental education and land management training; and

(v) To provide in a manner compatible with these purposes, opportunities for fish and wildlife oriented recreation.

The purposes of the Kenai Refuge, as stated in ANILCA, is unique among Alaska refuges in two aspects: Kenai is the only refuge for which providing opportunities for compatible fish and wildlife oriented recreation is a major purpose; Kenai is also the only refuge for which provision of opportunities for subsistence use is not a major purpose.[9]

Under the Chugach National Forest – Revised Land and Resource Management Plan (RLRMP), the Forestwide Direction goals under the 'Water, Wetland, and Riparian Areas' is to "Provide for the proper functioning of streams, riparian areas, lakes, and wetlands", "Provide instream flows to maintain and support aquatic life and habitat, recreation and aesthetics, the natural conveyance of water and sediment, and other resources that depend on such flows on National Forest System lands.", and "Maintain and restore water quality". One of the goals under the 'Management of Fish and Wildlife Habitat' is to "Maintain habitat to produce viable and sustainable wildlife populations that support the use of fish and wildlife resources for subsistence and sport hunting and fishing, watching wildlife, conservation, and other values".

Additionally, the RLRMP directly addresses the Russian River under the 'Special Designations' section within the US Forest Services category of 'Wild and Scenic Rivers'. The goal of 'Wild and Scenic Rivers' is to "Manage rivers recommended for Wild and Scenic River designation to maintain their outstandingly remarkable values pending congressional designation". The objective is to "Manage recommended river segments consistent with Forest management area direction to protect their free flowing characteristics, tentative classification and outstandingly remarkable values as follow: ... g. Russian River (Recreational, Wild) for fisheries and heritage resource (prehistoric) values."

According to the Briefing Paper on Coordinated Interagency Management Kenai Russian River Complex, the Russian River area is a "multi-jurisdictional area managed for high use sportfishing and recreation that boasts a rich cultural heritage and one of the State's most popular sockeye salmon sport fisheries."

[9] Conservation Planning and Policy (Refuge Purpose & Plans)

FINDINGS OF FACT AND CONCLUSIONS OF LAW

Under Article VIII of the Alaska Constitution and Alaska Statute 46.15.030, naturally occurring water, except mineral and medicinal waters, is reserved to the people for common use and is subject to appropriation and beneficial use; AS 46.15.030 and AS 46.15.145 further provide for the reservation of instream flows in rivers and water levels in lakes. The Alaska Water Use Act, AS 46.15, and Title 11, Chapter 93 of the Alaska Administrative Code contains the statutes and regulations under which ADNR manages the State's water resources.

A Reservation of Water is issued pursuant to the following authorities, including but not limited to:

Under AS 46.15.145 (c),

> "The commissioner shall issue a certificate reserving the water applied for under this section if the commission finds that,
>
> (1) The rights of prior appropriators will not be affected by this reservation;
> (2) The applicant has demonstrated that a need exists for the reservation;
> (3) There is unappropriated water in the stream or body of water sufficient for the reservation; and
> (4) The proposed reservation is in the public interest."

Under 11 AAC 93.146 (a),

> "The commissioner will issue a certificate of reservation of water if the commissioner finds that the reservation meets the requirements of AS 46.15.145."

Under 11 AAC 93.145 (d),

> "The commissioner's decision to grant, conditionally grant, or deny an application for a reservation of water will be summarized by written findings of fact and conclusions of law, including justification of any special conditions to which the reservation is subject. In determining whether the proposed appropriation is in the public interest, the commissioner will consider the criteria set out in AS 46.15.080 (b)."

ADNR makes the following findings of fact and conclusions of law in response to the above requirements.

AS 46.15.145 (c)(1): The rights of prior appropriators will not be affected by this reservation.

Based on a search of ADNR's water rights records, there are no prior appropriators within the specified reach of the Russian River.

The reservation of water established by the Department's decision and certification does not affect other valid water rights with a senior priority date including water rights with a senior priority date that may be issued after the date the certificate reserving water is issued.

AS 46.15.145 (c)(2): The applicant has demonstrated that a need exists for the reservation.

Discussion: Under Title 16 of the Alaska Statutes, ADF&G is the state agency charged with managing Alaska's fish and wildlife. The primary purpose of ADF&G's reservation application is the protection of fish and wildlife habitat, migration, and propagation. The application states that this reservation of water is needed to protect and maintain fish production within the Russian River. The Russian River serves as a fish passage corridor between the marine environment and other portions of its watershed utilized for fish production.

The Russian River supports Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), sockeye salmon (*O. nerka*), Dolly Varden (*Salvelinus malma*), and rainbow trout (*O. mykiss*) for a portion of, or all of their spawning, incubating, rearing, and passage life phases.

The Russian River is cataloged within the Anadromous Waters Catalog as #244-30-10010-2158.

The Russian River, along with other watershed rivers, is considered an important source for fishes, which contributes to commercial, subsistence, and sport fish users. In the judgment of the State's fish and wildlife management agency, the proposed reservation is needed to maintain the fish production within the Russian River and will aid ADF&G in carrying out it's duty of managing and protecting the State's fish and wildlife. A reservation of water can protect fish production while still allowing for other appropriations of river flows in excess of the reservation amounts.

Additionally, the experience of other western states suggests that it is prudent to protect necessary instream flows as early as possible, in order that these flows and the uses that depend upon them are fully considered later when available water may be more scarce. [10] "Fish and wildlife agencies face several critical underlying challenges to effectively manage water for fish and wildlife. The primary challenge is the fact that in the majority of situations (except Alaska and parts of Canada) most stream and lake water has already been committed to uses other than fish and wildlife. This situation has come about because most water laws were crafted by (and for) consumptive user groups over a century ago."[11]

In the International Instream Flow Program Initiative's (IIFPI) 'Protecting and Restoring Rivers and Lakes in North America' Summary, C. Estes states:

> Alaska is at a stage of development where the rest of America was approximately 170 years ago. When water was initially extracted from mighty rivers like the Colorado, dammed on the Columbia, and confined between levees on the Mississippi, our predecessors had little idea what was going to happen to fish and wildlife. But just as development pressures have taken and continue to take their toll on rivers and lakes in the lower 48 states, Alaska is in danger of moving along a similar path if preventative actions aren't taken.[12]

[10] Annear, T., I. Chisholm, H. Beecher, A. Locke, and 12 other authors. 2004. Instream Flows for Riverine Resource Stewardship, revised edition. Instream Flow Council, Cheyenne, WY.

[11] Annear, T., D. Lobb, C. Coomer, M. Woythal, C. Hendry, C. Estes, and K. Williams. 2009. International Instream Flow Program Initiative, A status Report of State and Provincial Fish and Wildlife Agency Instream Flow Activities and Strategies for the Future, Final Report for Mulit-State Conservation Grant Project WY M-7-T. Instream Flow Council, Cheyenne, WY.

[12] Madson, C., T. Annear, and D. Lobb. Protecting and Restoring Rivers and Lakes in North America: Trends, challenges, and opportunities for doing a better job. http://www.instreamflowcouncil.org/node/65. Retrieved 04/25/2013

Determination: In light of the above factors, it is determined that ADF&G, as applicant, has demonstrated that a need exists for the proposed reservation of water to assist ADF&G in fulfilling its duties as State of Alaska's manager of the fish and wildlife resources.

AS 46.15.145 (c)(3): There exists unappropriated water within the stream sufficient for the reservation.

Discussion: USGS records for the Russian River, stream gage #15264000, have been analyzed to help determine whether there are sufficient unappropriated stream flows in the Russian River to accommodate the proposed reservation.

The following table shows the flows available after the propose reservation flows are met for the specified reach, during each listed period of the year, based on USGS flow data:

Table 3. Flow Table* (cfs = cubic feet per second; gpd = gallons per day)

Time Period	Mean Time Period Discharge (cfs)	ADF&G Reservation Flow Requests (cfs)	Granted Reservation Flows (cfs)	Granted Reservation Flows (gpd)	Remaining Flows (cfs)	Remaining Flows (gpd)
January	49	29	28	18,095,616	21	13,571,712
February	38	23	23	14,864,256	15	9,694,080
March	30	26	24	15,510,528	6	3,877,632
April 1-15	29	26	25	16,156,800	4	2,585,088
April 16-23	46	33	32	20,680,704	14	9,047,808
April 24-30	66	56	49	31,667,328	17	10,986,624
May 1-7	100	70	68	43,946,496	32	20,680,704
May 8-15	189	142	136	87,892,992	53	34,252,416
May 16-23	235	173	166	107,281,152	69	44,592,768
May 24-31	252	190	177	114,390,144	75	48,470,400
June	262	209	200	129,254,400	62	40,068,864
July 1-15	209	176	171	110,512,512	38	24,558,336
July 16-31	150	127	124	80,137,728	26	16,803,072
August 1-15	132	100	98	63,334,656	34	21,973,248
August 16-31	100	82	81	52,348,032	19	12,279,168
September	111	82	80	51,701,760	31	20,034,432
October	162	110	103	66,566,016	59	38,130,048
November	189	85	80	51,701,760	109	70,443,648
December	95	43	42	27,143,424	53	34,252,416

* For perspective, 1 cubic foot per second is equal to 646,272 gallons per day. An average family of four (for domestic use) is allotted 500 gallons per day.

Table 4. Exceedance chart showing the percent of time streamflows are equaled or exceeded and the mean monthly flow in cfs.

% Time exceeded	Jan	Feb	Mar	Apr 1-15	Apr 16-23	Apr 24-30	May 1-7	May 8-15	May 16-23	May 24-31	Jun	Jul 1-15	Jul 16-31	Aug 1-15	Aug 16-31	Sep	Oct	Nov	Dec
0	166	90	67	62	132	229	311	527	471	470	992	740	339	353	231	370	743	1,200	640
5	130	88	52	39	128	164	300	494	450	420	520	395	276	288	202	241	453	650	260
10	88	79	46	38	74	136	271	363	440	410	430	312	261	246	177	191	334	495	240
15	70	62	41	38	70	73	130	295	418	400	354	253	192	174	139	172	233	356	190
20	60	54	36	36	64	72	110	280	408	390	291	215	181	167	135	160	190	310	180
25	58	46	33	32	57	69	100	265	355	367	271	203	157	151	103	140	174	250	110
30	53	40	30	31	54	65	92	229	320	306	256	198	150	128	96	130	157	185	89
35	48	40	29	28	39	60	86	210	282	290	250	194	144	119	93	109	140	150	82
40	44	37	28	28	36	58	80	190	221	270	242	190	140	113	90	98	132	120	65
45	38	33	27	27	36	57	74	164	205	258	234	185	138	111	88	92	130	109	51
50	36	30	27	26	36	57	73	159	183	240	228	181	133	107	86	89	120	96	49
55	32	28	26	26	35	57	71	150	175	230	220	180	130	104	84	85	116	88	48
60	29	23	26	26	33	56	70	142	173	190	209	176	127	100	82	82	110	85	43
65	28	23	26	25	32	49	68	136	166	177	200	171	124	98	81	80	103	80	42
70	26	23	23	24	28	43	64	120	159	166	196	167	122	98	79	76	98	73	41
75	25	22	23	24	27	42	62	74	158	163	190	163	119	95	77	74	93	68	37
80	23	22	21	24	24	40	57	61	110	144	177	156	114	92	71	65	82	60	30
85	23	20	21	24	24	36	49	59	97	140	170	150	114	90	66	57	72	54	30
90	23	20	18	20	21	21	30	56	73	97	165	141	102	70	61	53	71	46	28
95	22	19	18	20	21	21	30	56	56	97	156	135	87	65	60	46	60	36	26
100	20	18	18	20	21	21	30	30	56	97	132	126	75	62	53	34	45	36	26
Mean	49	38	30	29	46	66	100	189	235	252	262	209	150	132	100	111	162	189	95

The data described in Table 4 shows flows which support the amount of water in this reservation application. While almost any allocation of water may experience periods of time during which the natural variability in flow will result in unavailability of water, there will be a reasonable proportion of time when Russian River flows will be sufficient for the proposed reservation.

Determination: It is determined that there exists unappropriated water within Russian River sufficient for this reservation. Further, the granted reservation flows stated in Table 3, is a reasonable amount of reservation. Based on ADF&G's application and professional judgment,

> 'Sufficient flows are needed to support riverine habitats used by fish and to provide fluvial processes that maintain these habitats. To maintain seasonal uses of habitats by each life history state,' ADF&G recommends 'maintaining a flow regime that mimics the magnitude and timing of the natural flow regime. This approach is necessary to meet the needs of species life history stages that have coevolved and exhibited biological adaptations to the rivers flow regime.'

Reserved flows leave water available for ADNR to allocate to new applicants, and are set at an amount that will contribute to maintenance of the fish and wildlife habitat based on available information, as described by ADF&G in their application.

For the adjudication process, ADF&G submitted flow recommendations that as stated previously, mimic the natural hydrologic variability to meet the needs of species life history stages. ADNR reviewed these flows and took into consideration the requested flows along with current and future impacts. This included senior water appropriations and potential near future uses that may benefit the people of the state. ADNR then adjusted flows that account for prior appropriators and maintain necessary flow for habitat maintenance and passage. If a future water use is of a significant quantity and competes with an existing reservation, then a review of the purpose and finding for the reservation of water can be performed. Lower flows, which would be available a greater percent of the time (see Table 4), are considered by ADF&G to be inadequate, but would be subject to review.

AS 46.15.145 (c)(4) and 11 AAC 93.145 (d): The proposed reservation is in the public interest considering the criteria set out in AS 46.15.080 (b).

AS 46.15.080 (b)(1): The benefit to the applicant resulting from the proposed reservation.

Discussion: ADF&G has the statutory responsibility of managing the fish and wildlife resources of the State of Alaska. ADF&G has applied for the reservation for the primary purpose of sustaining fish habitat, migration, and propagation in Russian River. ADF&G indicates that a reservation will also assist in the management of fish resources in Russian River. The proposed reservation of water would contribute significantly to ensuring the continued viability of this resource.

ADF&G selected Russian River as a candidate water body for a reservation in a process that involved gathering and evaluating potential resources and risks within the region. Establishing this reservation will further benefit ADF&G by implementing the applicant's priority reservation strategy.

Determination: The proposed reservation will benefit the applicant in the fulfillment of its statutory responsibility to protect and manage Russian River fish populations, a resource reserved to the people under the Alaska Constitution. The proposed reservation will contribute to the maintenance of Russian River fish populations by providing the appropriate quantities of water needed for fish habitat, migration, and propagation.

AS 46.15.080 (b)(2): The effect of the economic activities resulting from the proposed reservation.

Discussion: The Russian River supports commercial, sport fishing, and subsistence uses.

Sport fishing provides significant economic benefits to Alaska. The American Sport Fishing Association estimated that the expenditures for sport fishing in Alaska in 2007 generated 15,879 jobs, and $545 million in wages and salaries. Anglers in Alaska spent nearly $1.4 billion on fishing trips, fishing equipment, and development and maintenance of land uses primarily for the pursuit of sport fishing in Alaska. Anglers in the Southcentral region, which includes Prince William Sound, Cook Inlet, Anchorage area, Kodiak Island, and the Bristol Bay area to the west of Cook Inlet, spent $989 million in 2007, supported 11,535 jobs, and created $91 million in state and local taxes.[13]

The Russian River provides the basis for subsistence, sport, and commercial fishing harvest in the watershed. As reported by the plans and studies, this enables area residents to sustain their subsistence activities as well as stimulate elements of the local and regional economy.

Determination: While no detailed breakdown of the economic impacts of the Russian River fishery has been submitted by ADF&G, the protection of this fishery is of significant economic importance to the region. The proposed reservation will help protect this resource.

AS 46.15.080 (b)(3): The effect on fish and game resources and on public recreational opportunities.

Discussion: As previously described, Russian River supports three Pacific salmon along with resident fish as well.

The primary purpose of this reservation is to protect the habitat, migration, and propagation of these fish. Reservation flows were allocated specifically to provide for the needs of fish populations at the times those populations utilized the river for their various life stage activities of spawning, incubating, rearing, and passage (See Table 5).

[13] Economic Impacts and Contributions of Sportfishing in Alaska (ADF&G, 2007)

Table 5. Russian River Fish Periodicity Chart[14]

Chinook Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage					XXXX	XXXX						
Adult Passage							XXXX	XXXX				
Spawning								XXXX	X			
Incubation	XXXX	XXXX	XXXX	XX				XXXX	XXXX	XXXX	XXXX	XXXX
Rearing	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

Coho Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage					XXXX	XXXX						
Adult Passage								XXXX	XXXX	XXXX		
Spawning									XX	XXXX	XXXX	
Incubation	XXXX	XXXX	XXXX	XXXX					XX	XXXX	XXXX	XXXX
Rearing	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

Sockeye Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage					XXXX	XXXX						
Adult Passage						XXXX	XXXX	XXXX	XXXX			
Spawning							XXXX	XXXX	XXXX	XXXX		
Incubation	XXXX	XXXX	XXXX				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Rearing												

Rainbow Trout	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage												
Adult Passage												
Spawning					XXXX	XXXX						
Incubation					XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
Rearing	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

Dolly Varden	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage												
Adult Passage												
Spawning									XXXX	XXXX	XXXX	
Incubation	XXXX	XXXX	XXXX	XXXX					XXXX	XXXX	XXXX	XXXX
Rearing	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX

[14] Russian River Reservation of Water Application; ADF&G

Based upon professional judgment of ADF&G biologists

Smolt passage is for juvenile emigration to estuarine/marine environment

Adult passage: for salmon is immigration: for steelhead and resident fish species, immigration and emigration.

Incubation life phase includes time of egg deposition to fry emergence
? = Data not available or timing is incomplete

Specific reservation quantities were requested and recommended by ADF&G. They were subsequently adjusted to better mimic the natural hydrologic and biologic requirements for Russian River by combining the statistical analyses of hydrologic variability and fish species periodicity (See Table 5). Adjustments were made based on these analyses and were reviewed and discussed by both the applicant and ADNR. ADNR's decision to grant the specific water quantities and time periods provided for in this decision is based on and consistent with the current level of hydrologic and biologic knowledge, as well as consideration of current water right appropriations and potential near future uses. The reservation flows granted will contribute to fish habitat, migration, and propagation within the reservation reach.

While the primary purpose of the proposed reservation is to protect fish habitat, migration, and propagation, a reservation of these flows will help preserve quantities necessary for boating, sport fishing, hunting, and other recreational opportunities as well.

Determination: The proposed reservation will benefit the protection of fish resources and will enhance public recreational activities.

AS 46.15.080 (b)(4): The effect on public health.

Discussion: Maintaining flow quantities will help retain high water quality and has a positive health impact. There are no permitted surface water withdrawals from Russian River for drinking water purposes, but significant use of the water and waterway of Russian River occurs, by residents who live in and around the requested reservation reach area.

This reservation of water will help the quality of water in Russian River, and may provide a positive public health impacts in the future. Maintaining these flows will also regulate water temperature and dilute contaminates in the system. [15]

Determination: The proposed reservation will generally contribute to the maintenance and protection of water quality by helping to ensure the instream flows of a volume of water that can buffer extreme temperature changes and dilute concentrations and thus reduce impacts of any pollutants or contaminants that may enter the creek. Therefore, there should be a positive impact on public health attributable to granting the reservation.

[15] Annear, T., I. Chisholm, H. Beecher, A. Locke, and 12 other authors. 2004. Instream flows for riverine resource stewardship, revised edition. Instream Flow Council, Cheyenne, WY.

AS 46.15.080 (b)(5): The effect or loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed reservation.

Discussion: At this time, research by ADNR has not identified any imminent proposed alternative uses of water or alternative uses which may be made within a reasonable amount of time. By establishing this reservation of water, the amounts described will be withdrawn from the amount available for appropriation or for temporary water use authorizations. Further, while the reservation allows for economic and recreational development activities compatible with the primary uses, any future development that depends upon water withdrawals may be limited if the amount of water available is not sufficient to meet reservation flows and any other senior water right holders during specified time periods. Future water right applicants may need to consider other options such as off-river storage and/or development of alternative water sources, in order to bridge the periods of flow equal to or less than reservation flows.

Nevertheless, if a project applies for a new, competing, water right for waters from Russian River, the law provides for a review of the water system usage, and allows an applicant to present additional information for a review of the reservation.[16] The intent of a reservation is not to prevent future developments requiring a water right, but rather to give the necessary quantities of water for protection of the purpose given, in this case, habitat, migration, and propagation of fish. Once a reservation is certificated, it is subject to AS 46.15.145 (f) and 11 AAC 93.147 (a) and (b), which provide for review and "a finding that the purpose, or part or all of the findings no longer apply to the reservation." ADNR may issue a revocation or amendment of a certificate of reservation in appropriate circumstances, after public notice and a hearing if appropriate, and a written determination that the revocation or amendment is in the best interest of the state.

Determination: Based on reservation amounts and remaining amounts of water for appropriation, the reservation quantities granted here leave a quantity of unappropriated Russian River flows throughout the year, shown in Table 3, that ADNR believes is adequate for other uses that currently can be anticipated. Further, if the amounts of unappropriated water were to be found inadequate for any future uses of water, statutory provisions for review of this reservation could be implemented per 11 AAC 93.147. Therefore, it is determined that, at this time there are no existing or planned alternative uses of water that might be precluded or hindered by the proposed reservation.

AS 46.15.080 (b)(6): Harm to other persons resulting from the proposed reservation.

Discussion: ADNR received four comments in support of and/or with concerns about the reservation within the commenting period during public and agency notice. There were no comments received which alleged harm to other persons, and from the review of the water records, it was determined that there should not be any potential harm as a result of the proposed reservation.

Reservations of water for instream flow purposes do not preclude the simultaneous use of that water for other purpose compatible with the reservation, and the proposed reservation is likely to reinforce the current uses of Russian River. Under 11 AAC 93.920 (b), reserved water may be used in an emergency for the protection of life and property.

[16] Should such a development alternative arise, 11 AAC 93.147 provides authority for review of a reservation of water if circumstances warrant.

Determination: The proposed reservation thus is not expected to harm other persons.

AS 46.15.080 (b)(7): The intent and ability of the applicant to complete the reservation.

Discussion and Determination: The applicant has adequately described, justified, and quantified the proposed reservation and no further action on the part of the applicant is required to complete the reservation.

AS 46.15.080 (b)(8): The effect upon access to navigable or public water.

Discussion and Determination: The proposed reservation is not expected to have any negative effect on access to navigable or public water. However, the granted reservation flows can be expected to have beneficial effects of assuring that water remains for navigation and for boating and rafting opportunities available on Russian River.

AS 46.15.080: Public interest determination.

As shown by the discussion and record described herein, there is evidence of public benefits and support, and at this time, there is unappropriated water available. Therefore, in light of the entire record, the proposed Russian River reservation of water is determined to be in the overall public interest of the state. Water rights are subject to preferences among beneficial uses, and where there are applications for competing uses of water and there is not enough water for all uses, ADNR is required to balance the interests involved and give preference to the most beneficial use under AS 46.15.090 and the Alaska Constitution as described in the following regulatory language in 11 AAC 147.

RESPONSE TO AGENCY AND PUBLIC NOTICE

Public and agency notice was provided as required by 11 AAC 93.145, 11 AAC 93.080, and AS 46.15.133. Public notice was published in the Peninsula Clarion on June 14, 2013 as well as ADNR's public online website. Notice was also sent to Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, Alaska Department of Natural Resources – Division of Parks & Outdoor Recreation, US Fish and Wildlife Service, US Forest Service, Kenaitze Indian Tribe, Chugach Alaska Corporation, CIRI, Kenai Peninsula Borough, Post Office's of Cooper Landing and Sterling, and all interested parties that requested notification.

Comments were received in support of and of with concerns about the proposed Russian River Reservation of Water. The Department acknowledges the comments and further states that the comments have not changed the basis of this decision.

DECISION

The case file has been found to be complete and the requirements of all applicable statutes have been satisfied. Further, upon recommendation of the Natural Resource Specialist who has adjudicated this file, and after consideration of the above analysis, by authority delegated from the Commissioner of the Alaska Department of Natural Resources, I hereby find that the Alaska Department of Fish and Game has satisfied the requirements of AS 46.15.145 with respect to the application for reservation of water within Russian River (LAS 28751). Therefore, pursuant to 11 AAC 93.145 (a), ADNR will issue a Certificate of Reservation in the amount, for the time periods, and for the reach description as described in the following table:

Granted Reservation of Water Flows:

Time Period	Flow Rate (cfs)
January	28
February	23
March	24
April 1-15	25
April 16-23	32
April 24-30	49
May 1-7	68
May 8-15	136
May 16-23	166
May 24-31	177
June	200
July 1-15	171
July 16-31	124
August 1-15	98
August 16-31	81
September	80
October	103
November	80
December	42
cfs = cubic feet per second	

Priority Date: October 24, 2012

Reservation of Water Reach Description: Russian River, from the Ordinary High Water Mark (OHWM) of the outer bank (of the outside braid, where braided) of the left bank up to the OHWM of the outer bank (of the outside, where braided) of the right bank, including all connected sloughs, braids, or channels which carry water and are an integral part of Russian River, from its mouth with the Kenai River, upstream approximately 5.0 river mile to the Lower Russian Lake. This description does not limit the quantities of water (flow rate) reserved by this decision and certificate to quantities (flow rates) within said OHWM boundaries. Said portion of Russian River is located within:

Township	Range	Sections
5 North	4 West	33, 34
4 North	4 West	4, 9

All within the Seward Meridian.

This application is recommend for approval as described in the decision:

Kimberly Sager
Natural Resource Specialist III
Reservation of Water Program
Alaska Department of Natural Resources

Date January 31, 2014

Application Approved; Certificate to be issued forthwith:

David W. Schade, MPA
Chief, Water Resources Section
Division of Mining, Land, and Water
Alaska Department of Natural Resources

Date 1/31/14

A person affected by this decision may appeal it, in accordance with 11 AAC 01. Any appeal must be received within 20 calendar days after the date of issuance of this decision, as defined in 11 AAC 02.040 (c) and (d), and may be mailed or delivered to Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska, 99501; faxed to 907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. If no appeal is filed by the appeal deadline, this decision becomes a final administrative order and decision of the department on the 31st day after issuance. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to superior court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.