State of Alaska

Department of Natural Resources

Division of Mining, Land, and Water

Upper and Lower Fish Creek Reservations of Water

LAS 11974 (Reach A), LAS 11976 (Reach B), LAS 30213 (Reach A2), & LAS 30214 (Reach B2)

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

Findings of Fact, Conclusions of Law, and Decision

INTRODUCTION

On July 14, 1988, the Alaska Department of Natural Resources (ADNR, Department) accepted two applications from the Alaska Department of Fish and Game (ADF&G) under AS 46.15.145 and 11 AAC 93.141, to reserve specified portions of the stream flows within Upper and Lower Fish Creek, near Big Lake, Alaska. These applications [known as Reach A (Lower) and Reach B (Upper)] proposes two reservations of water for stream flows within Fish Creek, Reach A beginning approximately at River Mile (RM) 0.0, including its floodplain, upstream to approximately RM 4.75. Reach B begins at approximate RM 4.75 to approximate RM 14.25.

On April 20, 2015, ADF&G submitted two additional Fish Creek applications for additional flows on Reach A (known as Reach A2) and Reach B (known as Reach B2). Since there was an update of data for Reach A and B, ADF&G requested flow increases, creating a need for a second application on each reach (Reach A2/B2). Reach A2 proposes the stream flows within Fish Creek and its floodplain from the mouth where it enters Knik Arm to a point upstream, approximately 5.5 miles, to the confluence of Threemile Creek. The proposed reach description for Reach B2 includes stream flows within Fish Creek and its floodplain from the confluence of Threemile Creek upstream approximately 5.3 miles to the outlet of Big Lake.

The reservations of water requested here are for the purpose of protecting fish and wildlife habitat, migration, and propagation. Under 11 AAC 93.141 (1), "protection of fish and wildlife habitat, migration and propagation...means the quantity or 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.

These reservation applications 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 reservations are summarized and specific findings of fact and conclusions of law are described.

DESCRIPTION OF PROPOSED RESERVATIONS

LAS 11974 – Lower Fish Creek, Reach A

Proposed Reach Description: Lower Fish Creek – Reach A stream flows and its floodplain from approximately RM 0.0 upstream to approximately RM 4.75 (Map 1). Said portion of Lower Fish Creek – Reach A is located within:

Township	Range	Sections
16 North	3 West	16, 21, 27, 28, 34, 35

All within the Seward Meridian (See Map 1).

Requested Reservation Flows:

Time Period	Flow Rate (cfs)
January	21
February	21
March	21
April	21
May	31
June	52
July	52
August	52
September	52
October	52
November	31
December	21

cfs = cubic feet per second

LAS 30213 – Lower Fish Creek, Reach A2

Proposed Reach Description: Lower Fish Creek – Reach A2, stream flow including the floodplain from the mouth where it enters Knik Arm to a point upstream, approximately 5.5 miles, to the confluence of Threemile Creek (Map 1). Said portion of Lower Fish Creek – Reach A2 is located within:

Township	Range	Sections
16 North	3 West	16, 21, 27, 28, 34, 35

All within the Seward Meridian (See Map 1).

Requested Reservation Flows:

Time Period	Flow Rate (cfs)
January	20
February	20
March	20
April	70
May	70
June	40
July	30
August	40
September	45
October	35
November	25
December	20

cfs = cubic feet per second

LAS 11976 – Upper Fish Creek, Reach B

Proposed Reach Description: Upper Fish Creek – Reach B stream flows and its floodplain from approximate RM 4.75 to approximate RM 14.25 (Map 1). Said portion of Upper Fish Creek – Reach B is located within:

Township	Range	Sections
16 North	3 West	4, 8, 9, 16, 17
17 North	3 West	27, 28, 33, 34

All within the Seward Meridian (See Map 1).

Requested Reservation Flows:

Time Period	Flow Rate (cfs)
January	15
February	15
March	15
April	15
May	23
June	38
July	38
August	38
September	38
October	38
November	23
December	15

cfs = cubic feet per second

LAS 30214 – Upper Fish Creek, Reach B2

Proposed Reach Description: Upper Fish Creek – Reach B2 includes stream flows within Fish Creek and its floodplain from the confluence of Threemile Creek upstream approximately 5.3 miles to the outlet of Big Lake (Map 1). Said portion of Upper Fish Creek – Reach B2 is located within:

Township	Range	Sections
16 North	3 West	4, 8, 9, 16, 17
17 North	3 West	27, 28, 33, 34

All within the Seward Meridian (See Map 1).

Requested Reservation Flows:

Time Period	Flow Rate (cfs)
January	15
February	15
March	15
April	40
May	45
June	30

July	20
August	25
September	30
October	25
November	20
December	17

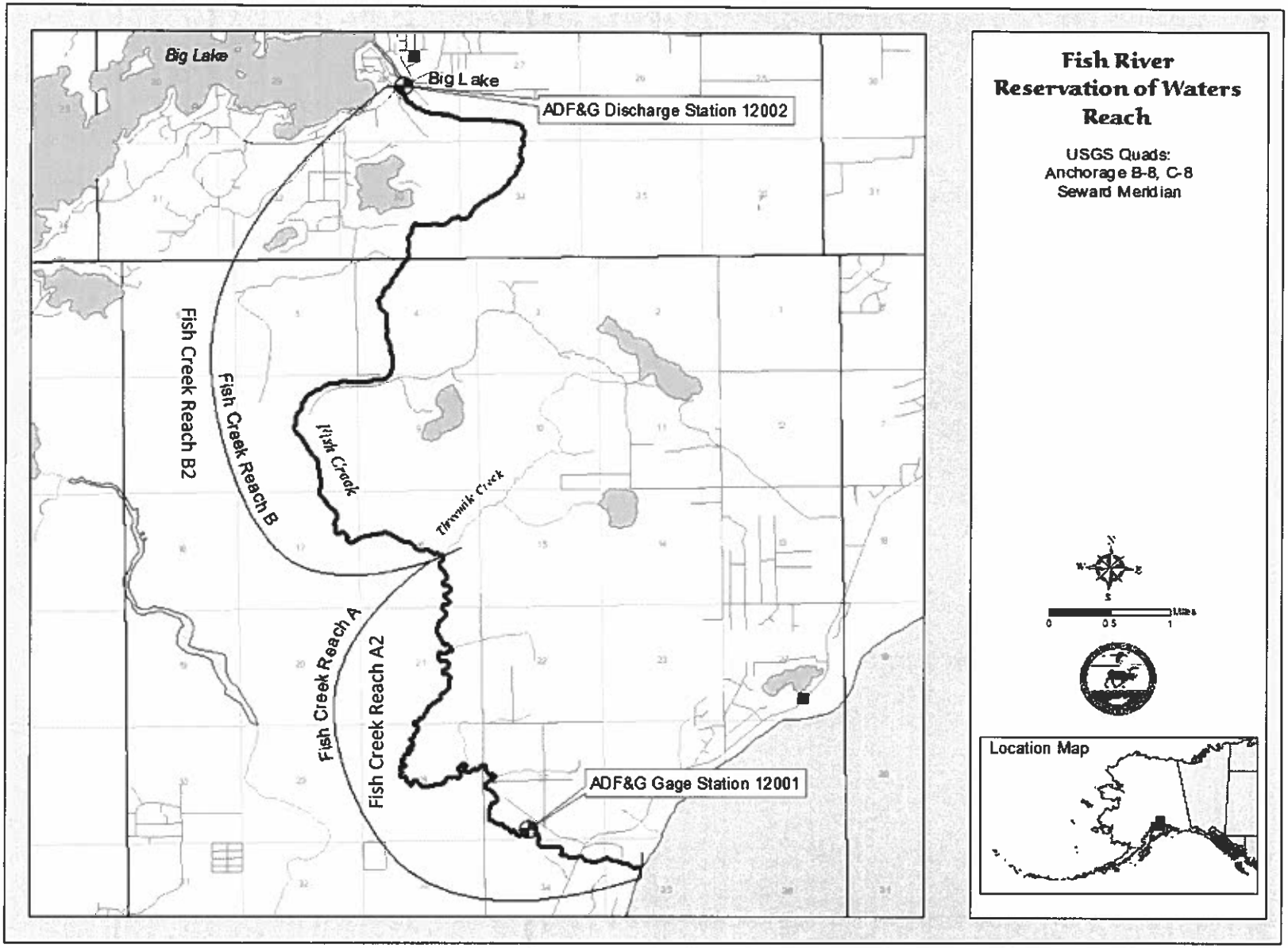
cfs = cubic feet per second

Discussion: The applicants' requested reservation flows and corresponding time periods are based on their review and analysis of data pertaining to the periodicity of the many species of fish in the area and the effects of that flow level on fish and wildlife habitat, 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 stream flow 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' for specific reach location) Reach A, A2, B, and B2.



HYDROLOGIC BACKGROUND

Stream: Fish Creek (*var. None known*)

Stream Basin Area: The Fish Creek watershed area is 206.19 mi^2. Its headwaters drain from Little Meadow, Meadow and Lucille Creeks which drain into Big Lake in the Matanuska-Susitna Valley. The mainstem of Fish Creek originates at the southeastern shore of Big Lake and flows approximately 12.5 miles before draining into Knik Arm. The Alaska Department of Fish and Game operated two gages on Fish Creek (See below).

Fish Creek Gage location and watershed details:

Gage and Station ID	Latitude, Longitude (NAD27)	Elevation (ft)	Drainage Area (mi^2)	Period of operation
Fish Creek Lower (A) ADFG 12001 Full Record	61.44749 N -149.82350 W	Approx. 74 ft	119.5 mi^2 (76,446 acres) (Total area HUC 10 1902040105)	ADFG (7/16/2008 to 9/30/13)
Fish Creek Upper (B) ADFG 12002 Partial Record	61.53442 N -149.82700 W	Approx. 141 ft	86.69 mi^2 (55,481 acres) (USGS StreamStats delineation tool) vers. 3.0	ADFG (7/25/2008 to 8/23/13)

Map Coverage: USGS 1:25,000: Anchorage B-8 NW, B-8 NE, C-8 SW

General Basin Description: Fish Creek runs approximately 12.5 miles from its headwaters which drain from the southeastern edge of Big Lake to the tidal mud flats of Knik Arm. Fish Creek receives flow indirectly from Meadow and Lucille Creeks which flow into Big Lake, and includes tributary Threemile Creek which drains Threemile Lake. The Fish Creek watershed lies between the Goose Creek drainage to the west, the Little Susitna River to the north, and Cottonwood Creek to the east.

Channel Description: Fish Creek drains a low-lying basin at the southern edge of the Matanuska Valley formed by repeated glacier advances and retreats during the Pleistocene epoch. The mainstem Fish Creek and its tributaries are low-gradient and wind through a watershed dominated by numerous lakes and wetlands. Brocker Lake and Threemile Lake are connected to Fish Creek via first-order stream channels, whereas Homestead Lake, Echo Lake, Bolo Lake and Whale Lake do not appear to be directly connected by surface flow. Lakes connected by streams to the drainage system are likely connected to the local groundwater system. Disconnected lakes may also be connected to the local aquifer, but in some cases may also be supported by perched water tables underlain with a layer of low-permeability such as silt or clay.[2]

[2] Jokela et al. 1991, Groundwater resources of the Palmer-Big Lake Area, Alaska: A conceptual model, Alaska Department of Natural Resources Division of Geological and Geophysical Surveys, Report of Investigations 90-4

This proposed reservation of water application includes two reaches. The stream gradient in reach A2 is approximately 15.3 ft/mile while the gradient of reach B2 is approximately 7.9 ft/mile.

Reach Description: Upper and Lower Fish Creek (all reaches) 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 braid, where braided) of the right bank, including any sloughs, braids, or channels which carry water and are an integral part of Fish Creek:

Reach A/A2 – beginning from the mouth where it enters Knik Arm to a point upstream, approximately 5.5 river miles, to the confluence of Threemile Creek.

Reach B/B2 – beginning from its confluence with Threemile Creek upstream, approximately 5.3 river miles, to the outlet of Big Lake.

These descriptions do not limit the quantity of water (flow rate) reserved by this decision and certificates to quantities (flow rates) within said OHWM boundaries.

Climate: The climate of the Fish Creek watershed and southcentral Alaska is characterized as a subarctic climate zone with Dfc classification (D=Cold, f=Without dry season, c=Cold Summer)[3] with moderate winter temperatures and cool summers. The Chugach Mountains to the south and east effectively block much of the Pacific maritime weather systems aside from air masses that penetrate from the Cook Inlet to the Southwest. Winter conditions are dominated by northeasterly flow of continental air known as "Matanuska" winds.[4] Occasional strong Pacific air flow is associated with downsloping "Chinook" winds from the Chugach Mountains. Consequently, above-freezing temperatures and occasional rain are observed during the winter months. Summer conditions are generally cool with air flow from the southwest associated with increased cloudiness and precipitation.

Monthly average temperature and precipitation is summarized in Table 1.[5] Most precipitation occurs in late fall and winter (max in September = 2.45) while less precipitation occurs in spring (min in April = 0.47). Annual average temperature ranges from a minimum of 13.0 F in January to a maximum of 58.2 F in July. A spatial interpolation and estimate of the average annual precipitation and temperature from the PRISM[6] dataset are presented in Figure 1. Estimated average annual temperature is 35.9 F across the watershed (Figure 1).

[3] Peel MT et al. 2007 Updated world map of the Koppen-Geiger climate classification. Hydrol. Earth Syst. Sci., 11, 1633–1644
[4] Dale, RF, 1956, The Climate of the Matanuska Valley, Technical Paper #27, US Department of Commerce and Weather Bureau, 26 p.
[5] Alaska Climate Database http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak6870 accessed 09/02/2015.
[6] Daly C et al. 2008. Physiographically sensitive mapping of climatological temperature and precipitation across the conterminous United States. International Journal of Climatology 28: 2031–2064.

Table 1. Average daily climate summary for the Palmer Job Corps Climate Station (ID =506870) approximately 3 miles east of the Fish Creek watershed (61.6 N, -149.1 W). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak6870

Palmer (1948 to 2015)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg/ Total
Average Maximum Temperature (F)	20.6	27	34.7	46.7	58.3	65	67.1	64.7	56.6	41.9	27.5	22.5	44.4
Average Temperature (F)	13.0	18.8	25.7	37.5	48.1	55.4	58.2	56	48.3	34.5	20.3	15.3	35.9
Average Minimum Temperature (F)	5.5	10.4	16.2	28.4	38	45.7	49.2	47.2	40	27	13.1	8.1	27.4
Average Total Precipitation (in.)	0.91	0.83	0.72	0.47	0.67	1.31	2.06	2.36	2.45	1.52	1.26	1.15	15.73
Average Total Snowfall (in.)	8.7	9.5	7.4	2.9	0.1	0	0	0	0	5.3	9.5	12.8	56.1
Average Snow Depth (in.)	6.0	6	4	1	0	0	0	0	0	1	3	5	2

Available Streamflow Data: The Alaska Department of Fish and Game operated a gage at the lower Fish Creek location from July 16, 2008 to September 30, 2013. A discharge measurement station was also established on upper Fish Creek to determine the streamflow for reach B2 by correlation with the gage data from the lower Fish Creek station. Periodic discharge measurements (48 total) were taken in the upper Fish Creek discharge location between July 25, 2008 and August 23, 2013. Instantaneous discharge measurements from the upper Fish Creek discharge station (12002) were regressed against same-day discharge measurements at the lower Fish Creek gage station (12001). The estimated regression equation was used to convert the mean daily flow at the gage to mean daily flows for reach B2.

The daily summaries reported here are for the lower Fish Creek gage (12001) location only. Discharge summary shows a bimodal flow distribution with high monthly average flows in April (mean = 123 cfs) during snowmelt as well as September (mean = 96 cfs) in response to fall rain events (Table 2). Average daily flow was lowest in February (mean = 22 cfs). Minimum daily flows were highest in May (min = 28 cfs) and lowest in March (min = 7 cfs) while maximum flows were highest in September (max = 652 cfs) and lowest in July (min = 52 cfs) (Table 2).

Table 2. Monthly discharge data summary for the ADF&G gage located on the Fish Creek (Station No. 12001). This summary table includes complete water years only from October 1 2008 to September 30, 2013. Monthly means are calculated from daily mean discharge records. Minimum and maximum monthly flows are based on daily discharge records for the entire period of record. [Monthly mean in ft^3/s = cfs = cubic feet per second]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Months	5	5	5	5	5	5	5	5	5	5	5	5	-
Minimum (cfs)	9	9	7	22	28	15	10	12	11	14	12	14	7
Mean (cfs)	29	22	26	123	109	47	28	39	96	75	36	27	55
Maximum (cfs)	86	55	115	497	350	141	52	104	652	428	95	62	652

Data Adequacy: The streamflow record of 5 years for Fish Creek is considered adequate to adjudicate a reservation of water application.

Map 2. Map of Fish Creek watershed

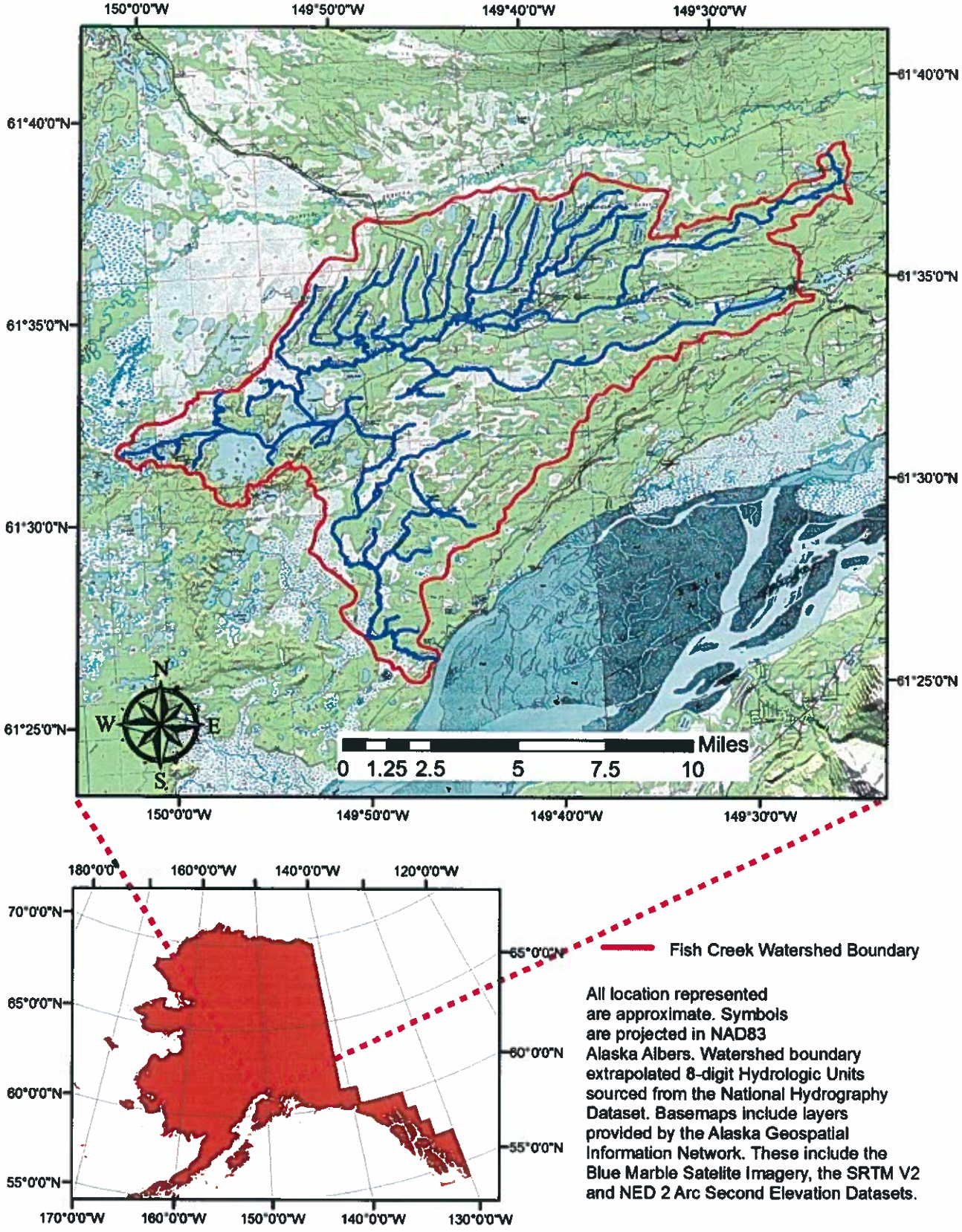


Figure 1. Estimates of average monthly and annual mean temperature (1971-2000) for the Fish Creek watershed using the PRISM model (Daly et al. 1998)

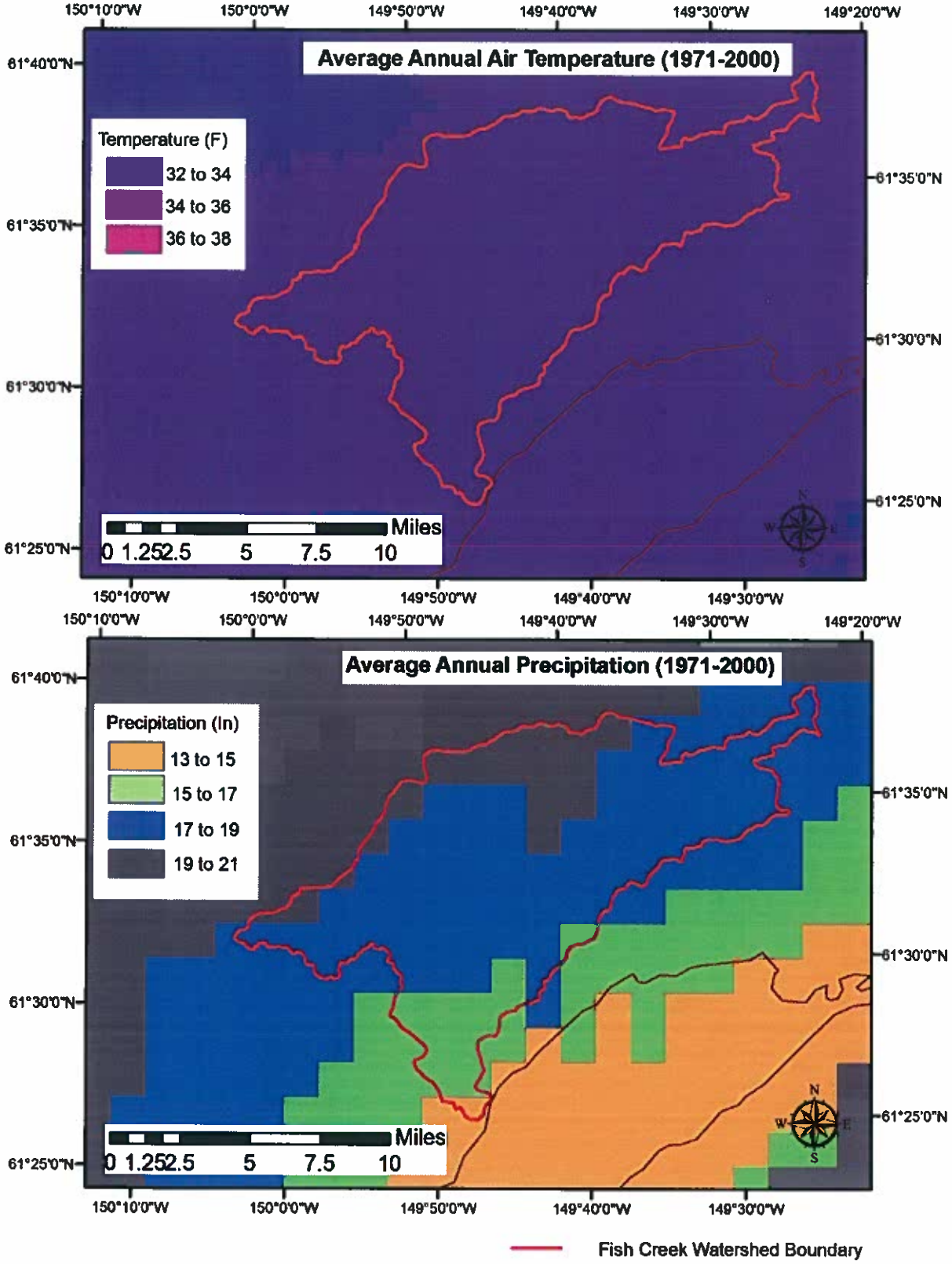
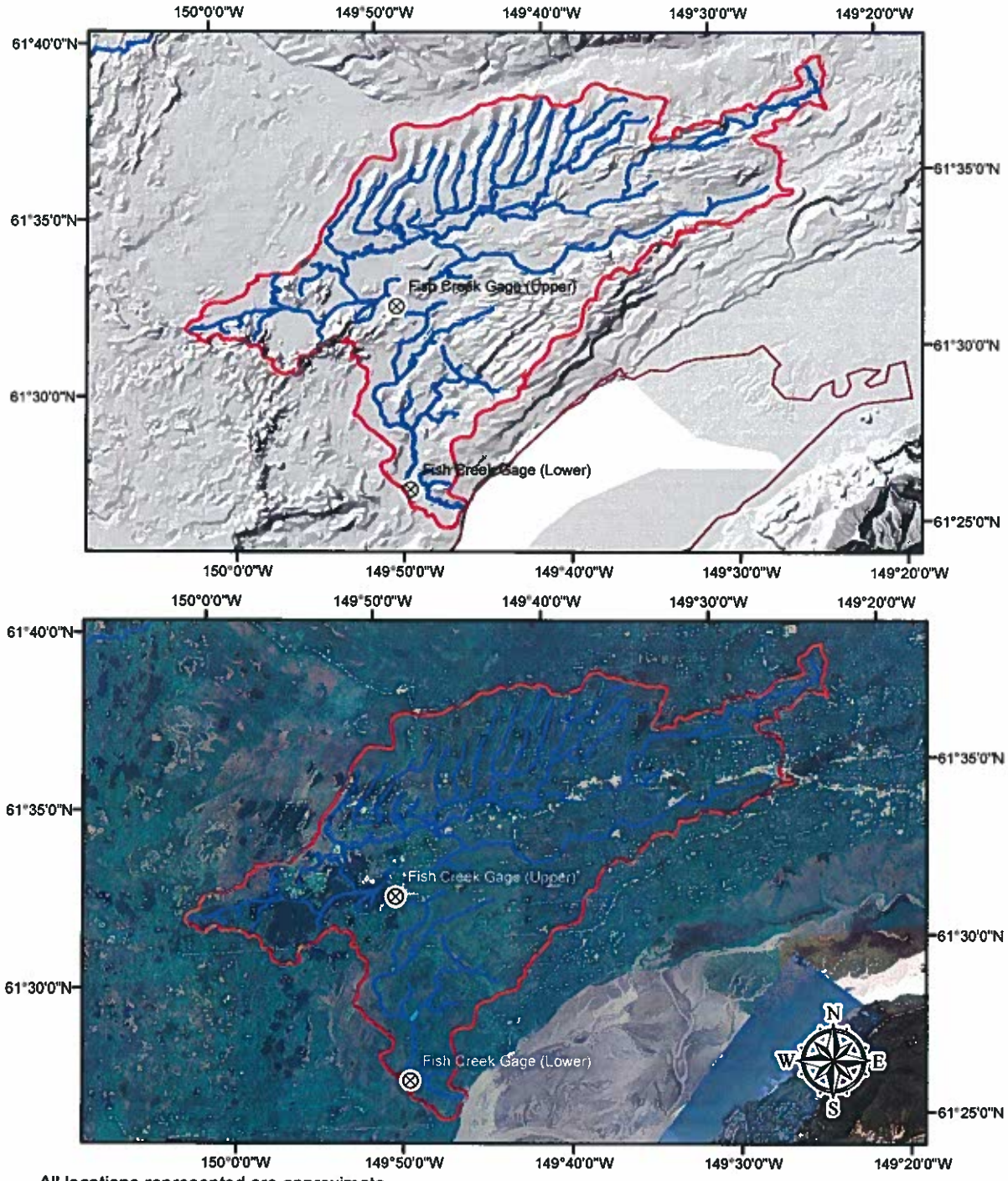


Figure 2. Shaded relief (top panel) and hydrography (bottom panel) for the Fish Creek watershed.



Navigability: Fish Creek is considered navigable according to the State of Alaska (for Title purposes). Please contact the Alaska Department of Natural Resources, Division of Mining, Land, and Water's Public Access, Assertion, and Defense Unit for more information.[7]

EXISTING LAND USE PLANS, VALUES, AND USES

Discussion: Staff reviewed available area plans and development plans. Recommendations provided in these documents 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 two documents used in the Fish Creek watershed to better assess the needs of current and future plans. They are:

1. Southeast Susitna Area Plan – *Alaska Department of Natural Resources (April 2008)*
2. *Matanuska-Susitna Borough Comprehensive Development Plan (Updated)* – Matanuska-Susitna Borough Planning and Land Use Department (2005)

The lands surrounding Fish Creek are owned by numerous different groups, including the State of Alaska, Alaska Mental Health Trust, Matanuska Susitna Borough, and private parties. According to the Southeast Susitna Area Plan (SSAP), the portions of state land that Fish Creek run through are designated as "Rp" (Dispersed Public Recreation).

Additionally, the SSAP continues on to directly address "Instream Flow" goals as:

> "*Instream Flow.* Maintain water quantity and quality sufficient to protect the human, fish, and wildlife resources and uses of the region."[8]

SSAP additionally addresses priorities from the land management perspective,

> "*B. Priorities.* Instream flow reservations should be established over the planning period for Kashwitna, Sheep, Montana, Little Willow, Lily, Fish, Meadow, Wasilla, Spring, Threemile, Lucille, and Goose creeks, as well as the inlet stream of Nancy Lake."

Area plans usually cover large areas and establish goals, management intent, and guidelines for the Department's management of the use of state land. However, even though an area plan for state lands may make general statements regarding the need for reservations of water, the Alaska Water Use Act and its implementing regulations authorize any person to apply for a reservation of water at any time. ADNR will review and adjudicate those applications as required by law.

[7] Alaska Department of Natural Resources, Navigable Waters Web Map. http://navmaps.alaska.gov/navwatersmap/
[8] Southeast Susitna Area Plan (April 2008); P. 2-19

While the Matanuska-Susitna Borough Comprehensive Plan (MSBCP) covers a wide range of plans, it undertakes planning in several ways, including participating in state and federal plans, community based plans, borough-wide and regional plans, and functional plans. The Borough purposefully left the MSBCP more generalized to accommodate the varying plans. No specific requirements are made for Fish Creek.

FINDINGS OF FACTS AND CONCLUSIONS OF LAW

Under Article VIII of the Alaska Constitution and Alaska Statute AS 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 commissioner 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.

Discussion and Determination: Based on a search of ADNR's water rights records, there are two prior appropriators within the specified reaches of Fish Creek.

ADL 215201	Botens, David	Priority Date:	June 14, 1982
		Use:	Commercial Livestock/Lawn and Garden
		Quantity:	350 Gallons Per Day / Jan 1 – Dec 31
			0.1 Acre Feet Per Year / May 1 – Sept 30
LAS 325	Gleason, Carl	Priority Date:	March 14, 1983
		Use:	Domestic Livestock/Lawn and Garden
		Quantity:	1.5 Acre Feet Per Year / April 1 – Nov 30
			50 Gallons per Day / April 1 – Nov 30

The reservations 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 senior priority date that may be issued after the date the certificates reserving water are 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 these reservation applications is the protection of fish and wildlife habitat, migration, and propagation. ADF&G has staff who are dedicated to the research, development and implementation of priority applications for Reservation of Water. As part of this process, ADF&G staff identified Fish Creek as a priority for establishment of an instream flow reservation. Further, the applications have provided credible information that demonstrates the granting of these reservations of water is needed to help protect and maintain fish production within Fish Creek. Fish Creek serves as a fish passage corridor between the marine environment and other portions of its watershed utilized for fish production.

Fish Creek supports sockeye salmon (*Oncorhynchus nerka*), coho salmon (*O. kisutch*), rainbow trout (*O. mykiss*), longnose sucker (*Catostomus catostomus*), and samprey (*Lampetra spp.*) for a portion of, or all of their spawning, incubation, rearing, and passage life phases.

Fish Creek is cataloged within the Anadromous Waters Catalog as #247-50-10330.

Fish Creek, along with other area watershed rivers, is considered an important source for fish and contributes to significant commercial, subsistence, and sport fish use. In the judgment of the state's fish and wildlife management agency, the proposed reservations are needed to maintain the fish production within Fish Creek and will aid ADF&G in carrying out its duty of managing and protecting the states fish and wildlife. The State of Alaska's policy for management of sustainable salmon fisheries provides that salmon spawning, rearing, and migratory habitats "should not be perturbed beyond natural boundaries of variation."[9] It further provides that "all essential salmon habitat in marine, estuarine, and freshwater ecosystems and access of salmon to these

[9] 5 AAC 39.222(c)(A)(i).

habitats should be protected."[10] A reservation of water can protect fish production while still allowing for other appropriation of river flows in excess of the reservation amounts.

Additionally, the experience of other western states demonstrates the importance of protecting necessary instream flows for fish production early to ensure that these flows – and the uses that depend on these flows – are fully considered later when available water may be more scarce.[11] "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."[12]

In the International Instream Flow Program Initiative's (IIFPI) 'Protecting and Restoring Rivers and Lakes in North America' Summary, Christopher Estes (an Alaskan co-author) 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.[13]

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

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

Discussion: The gage records for Fish Creek, ADF&G gage #12001 and 12002, have been analyzed to help determine whether there is sufficient unappropriated stream flows in Fish Creek to accommodate the proposed reservations.

The following tables show the flows available after the proposed reservation flows are met for each specified reach, during each listed period of the year, based on ADF&G flow data:

Table 3. Flow Table* [cfs = cubic feet per second; gpd = gallons per day]

Reach A/A2:

[10] 5 AAC 39.222(c)(a)(iv).
[11] 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.
[12] 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 Multi-State Conservation Grant Project WY M-7-T. Instream Flow Council, Cheyenne, WY
[13] 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/docs/IIFPIsum07-17-09.pdf .

Time Period	Mean Time Period Discharge (cfs)	Prior Appropriations (cfs)	7/14/88 Reach A Requested Flows (cfs)	04/20/2015 Reach A2 Requested Flows (cfs)	Combined Reach A & A2 Reservation Flows (cfs)	Remaining Flows For Future Appropriations (cfs)	Remaining Flows For Future Appropriations (gpd)
January	29	0.00054	21	20	17	12	7,755,264
February	22	0.00054	21	20	17	5	3,231,360
March	26	0.00054	21	20	19	7	4,523,904
April	123	0.00269	21	70	48	75	48,470,400
May	109	0.00283	31	70	57	52	33,606,144
June	47	0.00283	52	40	31	16	10,340,352
July	28	0.00283	52	30	21	7	4,523,904
August	41	0.00283	52	40	33	8	5,170,176
September	89	0.00283	52	45	33	56	36,191,232
October	75	0.00269	52	35	28	47	30,374,784
November	36	0.00269	31	25	20	16	10,340,352
December	27	0.00054	21	20	19	8	5,170,176

Reach B/B2:

Time Period	Mean Time Period Discharge (cfs)	Prior Appropriations (cfs)	7/14/88 Reach B Requested Flows (cfs)	04/20/2015 Reach B2 Requested Flows (cfs)	Combined Reach B & B2 Reservation Flows (cfs)	Remaining Flows For Future Appropriations (cfs)	Remaining Flows For Future Appropriations (gpd)
January	21	0.00054	15	15	14	7	4,523,904
February	17	0.00054	15	15	14	3	1,938,816
March	19	0.00054	15	15	15.5	3.5	2,261,952
April	73	0.00269	15	40	32	41	26,497,152
May	65	0.00283	23	45	36	29	18,741,888
June	31	0.00283	38	30	23	8	5,170,176
July	20	0.00283	38	20	17	3	1,938,816
August	28	0.00283	38	25	23	5	3,231,360
September	54	0.00283	38	30	23	31	20,034,432
October	46	0.00269	38	25	20	26	16,803,072
November	25	0.00269	23	20	16	9	5,816,448
December	20	0.00054	15	17	16	4	2,585,088

* 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.

Priority Date/Flow Breakout				
Time Period	Fish Creek, Lower (Reach A) 7/14/1988	Fish Creek, Reach A2 4/20/2015	Fish Creek, Upper (Reach B) 7/14/1988	Fish Creek, Reach B2 4/20/2015
January	17		14	
February	17		14	
March	19		15	0.5
April	21	27	15	17
May	31	26	23	13
June	31		23	
July	21		17	
August	33		23	
September	33		23	
October	28		20	
November	20		16	
December	19		15	1

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

Reach A/A2:

% Time exceeded	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	86	55	115	497	350	141	52	104	652	428	95	62
5	83	50	91	411	302	118	50	76	325	268	85	57
10	76	36	30	312	249	81	45	61	210	231	81	55
15	72	30	24	259	212	67	42	56	185	145	80	42
20	45	25	24	210	176	61	39	53	161	98	55	37
25	33	23	23	148	152	58	36	50	89	76	47	28
30	25	22	22	130	125	53	34	47	72	65	43	25
35	19	20	21	115	100	50	33	46	57	58	36	24
40	18	19	20	98	85	47	31	44	52	49	31	23
45	18	18	20	82	72	40	28	43	50	39	25	22
50	17	18	20	72	67	37	26	40	45	34	24	21
55	17	17	19	65	63	34	25	38	41	32	21	21
60	17	17	19	55	60	33	23	37	36	30	20	20
65	17	17	19	50	58	32	22	34	33	28	20	19
70	16	17	18	45	55	30	20	31	30	27	19	18
75	16	16	18	43	51	29	18	28	25	26	19	18
80	16	16	18	40	47	26	16	26	23	23	18	18
85	14	15	17	38	44	25	15	24	21	22	18	18
90	13	14	15	35	40	23	13	20	19	22	17	17
95	12	11	13	28	36	21	12	18	15	21	13	17
100	9.0	8.5	6.6	22	28	15	10	12	11	14	12	14
Mean	29	22	26	123	109	47	28	41	89	75	36	27

Reach B/B2:

% Time exceeded	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	52	35	68	277	197	82	33	62	362	240	57	39
5	51	33	55	230	171	69	32	47	183	152	52	36
10	47	25	22	176	141	50	30	39	120	132	49	35
15	45	22	18	147	121	42	28	36	106	85	49	28
20	29	19	18	120	102	38	27	34	93	59	35	25
25	23	18	18	86	89	37	25	33	54	47	31	20
30	19	17	17	76	74	34	24	31	45	41	29	19
35	16	16	17	68	60	32	23	30	37	37	25	18
40	15	16	16	59	52	31	22	29	34	32	22	18
45	15	15	16	50	45	27	20	28	32	26	19	17
50	14	15	16	44	42	26	19	27	30	24	18	17
55	14	14	16	41	40	24	19	26	28	23	17	17
60	14	14	16	35	38	23	18	25	25	22	16	16
65	14	14	16	33	37	23	17	24	23	20	16	16
70	14	14	15	30	35	22	16	22	21	20	16	15
75	14	14	15	29	33	21	15	21	19	20	16	15
80	14	14	15	27	31	19	14	19	18	18	15	15
85	13	13	14	26	29	19	13	18	17	17	15	15
90	12	13	13	24	27	18	12	16	16	17	14	14
95	12	11	12	20	25	17	12	15	14	16	12	14
100	10	9.7	8.7	17	21	14	11	12	11	13	12	13
Mean	21	17	19	73	65	31	20	28	54	46	25	20

The data described in Table 4 shows flows which support the amount of water in these reservation applications. 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 Fish Creek flows will be sufficient for the proposed reservations.

Determination: It is determined that there exists unappropriated water within Fish Creek sufficient for these reservation requests. Further, the granted reservation flows stated in Table 3 are reasonable amounts for these reservations. Based on the applications and ADF&G's 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,' the applicants recommend '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 applications.

For the adjudication process, the applicants 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 includes any senior water appropriations and potential near future uses that may benefit the people of the State. ADNR then adjusts flows that account for prior appropriators and maintains 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 the applicants and ADNR to be inadequate, but would be subject for review upon challenge of a competing applicant.

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. The applicant applied for these reservations for the primary purpose of protecting fish habitat, migration, and propagation in Fish Creek. ADF&G indicates that these reservations will also assist in the management of fish resources in Fish Creek. The proposed reservations of water would contribute significantly to ensuring the continued viability of this resource.

Determination: The proposed reservations will benefit ADF&G in the fulfillment of its statutory responsibility to protect and manage Fish Creek fish populations, a resource reserved to the people under the Alaska Constitution. The proposed reservations will contribute to the maintenance of Fish Creek 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: Fish Creek 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 used primarily for the pursuit of sport fishing in Alaska.[14]

Fish Creek provides the basis for subsistence, sport, and commercial fishing harvest in the watershed area. 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 Fish Creek fishery has been submitted by the applicants, the protection of this fishery is of economic importance to the region. The proposed reservations 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, Fish Creek supports Pacific salmon species as well as other resident fishes. The primary purpose of these reservations 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 utilize the river for their various life stage activities of spawning, incubating, rearing, and passage (See Table 5).

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

Table 5. Fish Creek Fish Periodicity Chart[15]

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

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

Lamprey ssp.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Smolt Passage												
Adult Passage				?	XXXX	XXXX	?					
Spawning					XXX	XXX						
Incubation					XXX	XXXX	XXXX					
Rearing	????	????	????	????	????	????	????	????	????	????	????	????

Longnose Sucker	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adult Passage				?	XXXX	XXXX	?					
Spawning					XXX	XXX						
Incubation					XXX	XXXX	XXXX					
Rearing	????	????	????	????	????	????	????	????	????	????	????	????

Smolt passage is for juvenile emigration to estuarine/marine environment

Adult passage for salmon is immigration; for trout, char, and other species, it is immigration and emigration.

Incubation life phase includes time of egg deposition to fry emergence

? = Data not available or timing is incomplete

[15] Reservation of Water Application

Specific reservation quantities were requested and recommended by ADF&G. They were subsequently adjusted to better mimic the natural hydrologic and biologic requirements for Fish Creek by combining statistical analyses of hydrologic variability and fish species periodicity (See Table 4, Table 5).

Adjustments were made based on these analyses and were reviewed and discussed by both the applicants 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. Reservation flows granted will contribute to fish habitat, migration, and propagation within each reservation reach.

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

Determination: These proposed reservations 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 Fish Creek for drinking water purposes, but significant use of the water and waterway of Fish Creek occurs by residents who live in and around the requested reservation areas.

These reservations of water will help the quality of water in Fish Creek, and may provide positive public health impacts in the future. Maintaining these flows will also regulate water temperature and dilute contaminates in the system. [16]

Determination: The proposed reservations 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 river. Therefore, there should be a positive impact on public health attributable to granting these reservations.

AS 46.15.080 (b)(5): The effect of 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 these reservations of water, the amounts described will be withdrawn from the amount available for appropriation or for temporary water use authorizations. Further, while the reservations allow for economic and recreational development activities compatible with the primary uses, any future development that depends

[16] 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.

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 Fish Creek, the law provides for a review of the water system usage, and allows an applicant to present additional information for a review of the reservations.[17] 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 Fish Creek 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 these 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 reservations.

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

Discussion: ADNR received three comments within the commenting period during public and agency notice. There were no comments received which alleged harm related to water use 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 reservations.

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

Determination: The proposed reservations are 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 applicants adequately described, justified, and quantified the proposed reservations and no further action on the part of the applicants is required to complete these reservations.

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

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

Discussion and Determination: The proposed reservations are not expected to have any negative effect on access to navigable or public water. However, the granted reservations can be expected to have some beneficial effects of assuring that sufficient water flow remains for navigation and access to the boating and rafting opportunities available on Fish Creek.

AS 46.15.080: Public interest determination.

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. Here, as shown by the discussion and record described herein, there is a preponderance of evidence of public benefits, and at the time of application, there was unappropriated water available.

The applicant will also be required to defend and indemnify the State against and hold it harmless from any and all claims, demands, legal actions, loss, liability and expense from injury to or death of persons and damages to or loss of property arising out of or connected with the exercise of any water right granted.

Therefore, in light of the entire record, the proposed Fish Creek reservations of water are determined to be in the overall public interest of the state.

11 AAC 93.146 Issuance of a certificate of reservation of water (Standard Conditions)

In accordance with 11 AAC 93.146 (c) and (d), the following standard conditions are applied to all certificates of reservation as of September 11, 1983 and any additional special conditions will be addressed:

1. This certificate may not be voluntarily abandoned, conveyed, transferred, assigned, or converted to another use, in whole or in part, unless required as a result of review under 11 AAC 93.147.

2. This certificate does not authorize the Certificate Holder or any other person to prevent access to, on, or through the water reserved by the certificate, or to prohibit the use of the reserved water for other compatible purposes set out in AS 46.15.145(a).

3. This certificate does not grant any inherent water management duties or authorities held by the Alaska Department of Natural Resources, through the Division of Mining, Land and Water, Water Resources Section (ADNR) to the Certificate Holder. To request ADNR to pursue curtailment, or take other administrative action, the Certificate Holder must formally request ADNR to curtail or otherwise impose limits on potentially conflicting uses and must provide ADNR with data or other proof that the reservation of water is not being met, and that the proximate cause is from conflicting uses. Whether ADNR will pursue any administrative or judicial proceedings against users of water is within the sole discretion of ADNR.

4. ADNR may require the Certificate Holder to install and maintain measuring devices of a type and at a location approved by ADNR to monitor and report on the reserved instream flow or level of water. ADNR is not responsible for monitoring the reserved instream flow or level of water.

5. The Certificate Holder may participate in any administrative or judicial proceedings pursued by ADNR that may impact this certificate.

6. This certificate shall be subject to review as required under AS 46.15.145(f) and 11 AAC 93.147.

7. Pursuant to AS 46.15.145(f) and 11 AAC 93.147, this certificate may be amended to reduce the flows and/or water level reserved under this reservation of water but this certificate cannot be amended to increase the reserved flows and/or water level.

8. The Certificate Holder shall comply with all the applicable requirements of AS 46.15.010 – 46.15.270 and 11 AAC 93.010 – 11 AAC 93.970, now effective or as they might in the future be amended.

9. The Certificate Holder shall notify ADNR of any change of address.

10. Except for claims or losses arising from the sole negligence of the State, the Certificate Holder shall defend and indemnify the State against and hold it harmless from any and all claims, demands, legal actions, loss, liability and expense from injury to or death of persons and damages to or loss of property arising out of or connected with the exercise of the water right granted by this certificate.

Special Conditions: No special conditions are required.

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. Notice was published in the Mat-Su Valley Frontiersman on February 24, 2016 as well as ADNR's public notice online website. Notice was also sent to Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, Big Lake Post Office, and all interested parties that requested notification.

Three comments were received on the proposed Fish Creek Reservations of Water. The Department acknowledges the comments and further states that the comments do not change the basis of this decision.

DECISION

The case files have 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 these files, 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 (LAS 11974 – Lower Reach/Reach A; LAS 30213 – Reach A2; LAS 11976 – Upper Reach/Reach B; LAS 30214 – Reach B2) have satisfied the requirements of AS 46.15.145 with respect to the applications for reservation of water within Fish Creek. Therefore, pursuant to 11 AAC 93.145 (a), ADNR will issue four Certificates of Reservation in the amounts, for the time periods, and for the reach descriptions as described below:

LAS 11974: Fish Creek – Lower Reach/Reach A

Applicant: Alaska Department of Fish and Game

Granted Reservation of Water Flows with a priority date of July 14, 1988:

Time Period	Granted Reservation Flows (cfs)
JANUARY	17
FEBRUARY	17
MARCH	19
APRIL	21
MAY	31
JUNE	31
JULY	21
AUGUST	33
SEPTEMBER	33
OCTOBER	28
NOVEMBER	20
DECEMBER	19

cfs = cubic feet per second

Reservation of Water Reach Description: Fish Creek – Lower Reach/Reach A, 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 braid, where braided) of the right bank, including any sloughs, braids, or channels which carry water and are an integral part of the creek beginning from the mouth where it enters Knik Arm to a point upstream, approximately 5.5 river miles, to the confluence of Threemile Creek. 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 Fish Creek is located within:

Township	Range	Sections
16 North	3 West	16, 21, 27, 28, 34, 35

All within the Seward Meridian.

LAS 30213: Fish Creek – Lower Reach/Reach A2

Applicant: Alaska Department of Fish and Game

Granted Reservation of Water Flows with a priority date of April 20, 2015:

Time Period	Granted Reservation Flows (cfs)
April	27
May	26

cfs = cubic feet per second

Reservation of Water Reach Description: Fish Creek – Reach A2, 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 braid, where braided) of the right bank, including any sloughs, braids, or channels which carry water and are an integral part of the creek beginning from the mouth where it enters Knik Arm to a point upstream, approximately 5.5 river miles, to the confluence of Threemile Creek. 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 Fish Creek is located within:

Township	Range	Sections
16 North	3 West	16, 21, 27, 28, 34, 35

All within the Seward Meridian.

LAS 11976: Fish Creek – Upper Reach/Reach B

Applicant: Alaska Department of Fish and Game

Granted Reservation of Water Flows with a priority date of July 14, 1988:

Time Period	Granted Reservation Flows (cfs)
January	14
February	14
March	15
April	15
May	23
June	23
July	17
August	23
September	23
October	20
November	16
December	15

cfs = cubic feet per second

Reservation of Water Reach Description: Fish Creek – Upper Reach/Reach B, 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 braid, where braided) of the right bank, including any sloughs, braids, or channels which carry water and are an integral part of the creek beginning from its confluence with Threemile Creek upstream, approximately 5.3 river miles, to the outlet of Big 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 Fish Creek is located within:

Township	Range	Sections
16 North	3 West	4, 8, 9, 16, 17
17 North	3 West	27, 28, 33, 34

All within the Seward Meridian.

LAS 30214: Fish Creek – Upper Reach/Reach B2

Applicant: Alaska Department of Fish and Game

Granted Reservation of Water Flows with a priority date of April 20, 2015:

Time Period	Granted Reservation Flows (cfs)
March	0.5
April	17
May	13

cfs = cubic feet per second

Reservation of Water Reach Description: Fish Creek – Reach B2, 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 braid, where braided) of the right bank, including any sloughs, braids, or channels which carry water and are an integral part of the creek beginning from its confluence with Threemile Creek upstream, approximately 5.3 river miles, to the outlet of Big 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 Fish Creek is located within:

Township	Range	Sections
16 North	3 West	4, 8, 9, 16, 17
17 North	3 West	27, 28, 33, 34

All within the Seward Meridian.

These applications are recommended for approval as described in the decision:

Kimberly Sager
Natural Resource Specialist, Water Resource Section
Reservation of Water Program
Division of Mining, Land, and Water
Alaska Department of Natural Resources

April 21, 2016
Date

Applications Approved for Fish Creek – Case File LAS 11974, 11976, 30213, & 30214. Certificates to be issued on the 31st day after the decision; or, if any, after completion of all appeals:

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

4-22-2016
Date

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. 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.