United States Society on Dams (USSD)

“Water Rights and Hydropower”

An Alaskan Perspective

September 20, 2017
- 586,412 Square Miles of Land Area
- 43% of the Alaska is wetlands
- Over 3 Million Lakes > 1 acre
- 167,000 “rivers” in Alaska
- More Coastline than the rest of the Continental US. Almost 34,000 miles
- With the extension of the Aleutian Islands into the eastern hemisphere, it is technically both the westernmost and easternmost state in the United States, as well as also being the northernmost
• Land Area 586,412 Square Miles or 375 Million Acres
  • Alaska State Land - 103 million acres
  • National Wildlife Refuges - 76 million acres
  • National Parks - 52 million acres
  • BLM other - 49 million acres
  • Native Corporation Land - 44 million acres
  • BLM – NPRA - 23 million acres
  • National Forests - 22 million acres
  • Private - 4 million acres
  • Military - 2 million acres

Note: This does not include 60 million acres of submerged lands, tidelands, and shorelands
Water Resource Management Staff

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Water Resources:

• Staff of 20: Responsible for all Water Quantity Studies and Management of Use Statewide / Dam Safety of all non Federal owned/regulated Dams

• Water Management:
  • Anchorage office leads Reservation of Water, Oil and Gas Water Issues.
  • Fairbanks Office leads Mining Water Related Issues.
  • Juneau Office leads Hydro-power related issues.

• Alaska Hydro Survey in all three offices.
  • Anchorage has lead in groundwater issues.
  • Fairbanks office has lead in water chemistry issues.
  • Juneau has lead in surface water issues.

• Dam Safety Program in Anchorage Office.

• Reservation of Water Program in the Anchorage Office.
WATER RESOURCES SECTION UNITS

ALASKA HYDROLOGIC SURVEY: Responsible for the collection, storage, and dissemination of hydrologic information and data.

DAM SAFETY & CONSTRUCTION: Responsible for the safe construction and operation of jurisdictional dams.

WATER MANAGEMENT: Responsible for the management of the State’s water resources and the enforcement of the Alaska Water Use Act. Adjudication of water rights and temporary water use authorizations.

RESERVATION OF WATER: Responsible for accepting and adjudicating Reservation of Water Applications for in-stream flows and lake levels.
Under AS 41.08 the Alaska Hydrologic Survey is charged with the systemic collection, recording, evaluation, and distribution of data on the quantity, location, and quality of water of the state.
Dam Safety & Construction

Under AS 46.17 this unit is charged with the safe construction and operation of jurisdictional dams. Any non-federal (owned or operated) dams or non-FERC regulated dam that impounds 50 acre-feet of water and is 10 feet high; or any dam 20 feet high; or any dam that would threaten lives and property if it fails.
Lake of the Hills Dam in Anchorage

Failed in 1972
1 killed

Why dam safety is important.
Lake Connell Dam in Ketchikan

Dams in Alaska
§ 1. Statement of Policy
It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest.

§ 2. General Authority
The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people.

§ 3. Common Use
Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.
§ 13. Water Rights

All surface and subsurface waters reserved to the people for common use, except mineral and medicinal waters, are subject to appropriation. Priority of appropriation shall give prior right. Except for public water supply, an appropriation of water shall be limited to stated purposes and subject to preferences among beneficial uses, concurrent or otherwise, as prescribed by law, and to the general reservation of fish and wildlife.
Sec. 46.15.010. Determination of water rights. The Department of Natural Resources shall determine and adjudicate rights in the water of the state, and in its appropriation and distribution.

Sec. 46.15.030. Water reserved to the people. Wherever occurring in a natural state, the water is reserved to the people for common use and is subject to appropriation and beneficial use and to reservation of instream flows and levels of water, as provided in this chapter.
Sec. 46.15.050. Priority.

(a) **Priority of appropriation gives prior right.** Priority of appropriation does not include the right to prevent changes in the condition of water occurrence, such as the increase or decrease of stream flow, or the lowering of a water table, artesian pressure, or water level, by later appropriators, if the prior appropriator can reasonably acquire the appropriator's water under the changed conditions.

(b) **Priority of appropriation made under this chapter dates from the filing of an application** with the commissioner.

(c) Priority of appropriation perfected before July 1, 1966, shall be determined as provided in [AS 46.15.065](#).
Sec. 46.15.080. Criteria for issuance of permit.

(a) The commissioner shall issue a permit if the commissioner finds that:

(1) *rights of a prior appropriator will not be unduly affected*;

(2) *the proposed means of diversion or construction are adequate*;

(3) *the proposed use of water is beneficial*; and

(4) the proposed *appropriation is in the public interest*. 
Sec. 46.15.080. Criteria for issuance of permit.
(b) In determining the public interest, the commissioner shall consider

(1) the benefit to the applicant resulting from the proposed appropriation;
(2) the effect of the economic activity resulting from the proposed appropriation;
(3) the effect on fish and game resources and on public recreational opportunities;
(4) the effect on public health;
(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 appropriation;
(6) harm to other persons resulting from the proposed appropriation;
(7) the intent and ability of the applicant to complete the appropriation; and
(8) the effect upon access to navigable or public water.
Sec. 46.15.145. Reservation of water.

(a) The state, an agency or a political subdivision of the state, an agency of the United States or a person may apply to the commissioner to reserve sufficient water to maintain a specified instream flow or level of water at a specified point on a stream or body of water, or in a specified part of a stream, throughout a year or for specified times, for

(1) protection of fish and wildlife habitat, migration, and propagation;
(2) recreation and park purposes;
(3) navigation and transportation purposes; and
(4) sanitary and water quality purposes.

(b) Upon receiving an application for a reservation under this section, the commissioner shall proceed in accordance with AS 46.15.133.
Sec. 46.15.145. Reservation of water.

(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 the 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*. 
11 AAC 93.035. Requirement to apply for the use of a significant amount of water

(a) A significant amount of water is that amount of water for which an application for a water right or an application for a temporary water use authorization is required, as described in (b) of this section.

(b) A person shall file an application for a water right under 11 AAC 93.040 or for a temporary water use authorization under 11 AAC 93.220 before

1. the consumptive use of more than 5,000 gallons of water from a single source in a single day;

2. the regular daily or recurring consumptive use of more than 500 gpd from a single source for more than 10 days per calendar year;

3. the non-consumptive use of more than 30,000 gpd (0.05 cubic feet per second) from a single source; or

4. any water use that may adversely affect the water rights of other appropriators or the public interest.
11 AAC 93.040. Application for a water right

(a) A person may not lawfully appropriate a significant amount of water of the state without first obtaining a permit to appropriate, a certificate of appropriation, or a temporary water use authorization under this chapter.

(b) An application for a water right must be made on a form provided by the department. The form must be completed in accordance with the instructions furnished to the applicant.

(c) An application must include the following items:

   (1) the applicable application fee prescribed in 11 AAC 05.010;

   (2) evidence that the applicant has a present possessory interest in the property where the water is to be beneficially used, as shown by a copy of the deed, patent, license, leasehold agreement, mining location certificate, or other instrument, or a copy of a completed application that has been filed with the appropriate agency to acquire permission for the use of federal, state, or municipal property;

   (3) a map identifying
       (A) the section, township, range, and meridian, and showing the property boundary, for the point of water withdrawal, impoundment, or diversion;
       (B) the route of water transmission;
       (C) the point of water use; and
       (D) if water is to be returned to a stream or water body, the point of return flow;

   (4) evidence that the applicant has obtained or is in the process of obtaining a right of access to the property where water is to be withdrawn, impounded, or diverted, and over which water is to be transported both to the point of use and to the point of return flow;

   (5) repealed 8/20/2004;
11 AAC 93.040. Application for a water right: continued

(6) a legal description of the point of withdrawal, diversion, or impoundment; the point of water use; and, if water is to be returned to a stream or water body, the point of return flow; the legal description must include meridian, township, range, section, and aliquot parts, or the lot, block, and subdivision, or survey number, as appropriate;

(7) a description of the source as being either surface or ground water; the description must identify the name of the surface water source or the supply well log or well data for ground water, if available;

(8) a description of any impoundment, diversion, or withdrawal structures, including dimensions, construction materials, plans and specifications, and operation plans, and an application to construct or modify a dam, as defined in AS 46.17.900, if 11 AAC 93.171 requires an application;

(9) a description of the nature of the water use and times of the year during which water is to be used;

(10) a statement of the dates water use is expected to begin and when the maximum amount will be beneficially used;

(11) a statement of beneficial use, signed before a notary or postmaster, if water is already in use at the time of application;

(12) an application for a right-of-way, filed in accordance with AS 38.05.850, if access to or across state land is needed;
11 AAC 93.040. Application for a water right: continued

(13) a **statement of the quantity of water requested**, with documentation and calculations justifying the request if either the use or quantity is different from those listed in (d) of this section; and

(14) **for a water use of more than 100,000 gpd (0.15 cfs) from a stream, a description of the mean annual flow, or mean monthly flow if available**, using the best available data, or, if data are not available, an estimate of mean annual flow using hydrologic methods that the department determines to be reasonably accurate.

(15) repealed.

• **NOTE:** For any Dam related project, there must be an application for the desired storage right; and additionally, an application for a use right(s).

• For in-stream “run of the river systems” where the water is not impounded by the system, then a water use right is only needed.
...the best available data, or, if data are not available, an estimate of mean annual flow using hydrologic methods that the department determines to be reasonably accurate.

What does this mean for a hydro project?

Water Resources Section Policy:
5 years of water flow data; or,
1 year of water flow data, which can be used to develop a synthetic 5 years record.

The Data will be reviewed and is not acceptable unless determined valid by the Hydrologists at the Alaska Hydrologic Survey.

We recommend consultation regarding any proposed data collection methods or reporting.
11 AAC 93.070. Departmental investigations

(a) Upon receipt of or while adjudicating an application for water use, the department may investigate or inspect the proposed diversion, withdrawal, or impoundment structures, the source of the water, meter records, gage data, well logs, and other competing uses for water within the area, to determine whether there is a possibility that existing water rights of other persons or the public interest will be adversely affected or impaired by the proposed appropriation. Failure of the applicant to cooperate in the investigation will result in rejection of the application.

(b) The commissioner will, in his or her discretion, require the applicant to

   (1) submit water well information, including well depth, pump setting, and current static water level;

   (2) drill test wells and observation wells;

   (3) conduct pump and aquifer tests;

   (4) provide test results or other hydrologic data and information necessary to better determine the effects of proposed appropriation on prior appropriators and the public interest;

   (5) provide any other information necessary to make a finding under AS 46.15.080.
When the department begins adjudicating a water right application, the department will provide notice of the application as follows:

(1) the department will publish notice under AS 46.15.133 in a newspaper of general circulation in the vicinity in which the water is to be appropriated.

(2) the department will post the notice on the Alaska Online Public Notice System as required under AS 44.62.175; in addition, if there is no newspaper of general circulation in the vicinity, the department will post the notice during the public comment period prescribed by AS 46.15.133 in a public place near the site of the proposed appropriation.

(3) the department will serve individual notice by certified mail on prior appropriators who may be taking water from the same source.

(4) repealed 8/20/2004;

(5) the department will provide written notice to any person known to the department to own land where the water is to be withdrawn or used, or over which the water is to be transported, or whose request to receive notice is on file with the department.

(6) the public comment period set by AS 46.15.133(c) begins the first day the newspaper publication appears, or the first day of posting, or upon receipt of the notice as evidenced by the certified mail receipt, date stamp, or other evidence of actual service;

(7) the department may extend the notice and public comment period.
(a) The commissioner will issue a permit to appropriate water if he or she finds that the appropriation meets the requirements of AS 46.15.080.

(b) The permit will be issued for a period of time that the commissioner considers to be consistent with the public interest and adequate to finish construction and establish the full use of water. The following time periods are the maximum time periods for which a permit will be issued unless the applicant proves to the satisfaction of the commissioner, or unless the commissioner independently determines, that a longer time period is required to establish the full use of water:

1. domestic water use: two years;
2. commercial irrigation: five years;
3. public water supply (i) use of 250,000 gpd or less: five years; (ii) use of over 250,000 gpd: 10 years;
4. industrial and commercial water use: five years;
5. mining water use: 10 years;
6. small-scale hydroelectric facilities that generate 100 kilowatts or less: five years;
7. large-scale hydroelectric facilities that generate over 100 kilowatts: 10 years.

(c) The permit time period begins on the date the department issues the permit.
Sec. 46.15.120. Certificates.

*Upon completion* of construction of the works and commencement of use of water, *the permit holder shall notify the commissioner* that the appropriator has perfected the appropriation. *If* the commissioner determines that *the appropriation has been perfected* in substantial accordance with the permit, *the commissioner shall issue the permit holder a certificate of appropriation*. The *certificate shall set out any condition* that the commissioner may prescribe by regulation, including conditions that are necessary to protect the prior rights of other persons and the public interest.
Sec. 46.15.180. Crimes.

(a) A person may not

(1) construct works for an appropriation, or divert, impound, withdraw, or use a significant amount of water from any source without a permit, certificate of appropriation, or authorization issued under this chapter;

(2) violate an order of the commissioner to cease and desist from preventing any water from moving to a person having a prior right to use it;

(3) disobey an order of the commissioner requiring the person to take steps to cause the water to move to a person having a prior right to use it;

(4) fail or refuse to install meters, gauges, or other measuring devices or control works;

(5) violate an order establishing corrective controls for an area or for a source of water;

(6) knowingly make a false or misleading statement in a declaration of existing right.

(b) A person who violates this section is guilty of a misdemeanor.

(c) Crimes under this section are in addition to any other crimes provided by law.
Sec. 46.15.255. Enforcement and costs.

(a) In addition to a penalty imposed under AS 46.15.180 for violation of an order issued under this chapter, the commissioner may

(1) remove or abate unpermitted works of appropriation, diversion, impoundment, or withdrawal;

(2) install corrective controls or control works; and

(3) seek enforcement of the order by filing an action in the superior court.

(b) A person who violates an order issued under AS 46.15.180 is liable for all costs of removal, abatement, or installation and for court costs and attorney fees incurred by the state in seeking enforcement of the order.