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Western State's Water Laws: A Summary for the Bureau of Land Management

By

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Abstract

Water rights is a very complex issue that is a critical component of the Bureau of Land Management's (BLM) water program. This complexity is due to the fact that water rights are managed to a great extent under state law. Therefore, it is critical to have a good understanding of the water right laws of each individual state and how they apply to BLM.. This document reviews the water laws of eleven western states (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Wyoming). Special attention is paid to the states' water rights systems, the application processes, ground water regulations, the general adjudication processes, and the states' instream flow programs. Where information was available, comment is made on how the states handle federal reserved water rights and on other BLM specific information. This document is designed to serve as an overview of western state's water laws, and be readily accessible to water rights specialists and other interested individuals.

BLM Water Rights Policy

As Outlined in:
United States Department of the Interior, Bureau of Land Management
Manual Transmittal Sheet
7250 - Water Rights
3/19/1984

The water policy of the BLM is that the States have the primary authority and responsibility for the allocation and management of water resources within their own boundaries, except as otherwise specified by Congress. The objectives of the BLM water rights program are to:

1. Cooperate with State Governments - Cooperate with State governments under the umbrella of state law to protect all water uses identified for public land management purposes.
2. Conform to Applicable State Water Rights Laws - Conform to applicable state water laws and administrative claims procedures in managing and administering all BLM programs and projects, except as otherwise specifically mandated by Congress
3. Protect Water Rights - Protect the existing Federal reserved water rights and State appropriative water rights of the United States
4. Acquire and/or Perfect Water Rights - Acquire and perfect the water rights necessary to carry out public land management purposes through state law and administrative claims procedures unless a Federal reserved water right is otherwise available, and a determination is made that the primary purpose of the reservation can be served more effectively through assertion of the available Federal reserved water right.



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Water Appropriation Systems

Riparian:

The doctrine of riparian rights in the United States has its basis in case law which first involved *Tyler v Wilkinson* in 1827. This case arose out of a dispute between mill owners and the rights to use the flow of a river for mill power. The opinion in the case stated that all riparians had equal rights to the water in the river and that an upper proprietor could not diminish the quantity that would naturally flow to the lower proprietor. However, the case opinion also recognized that such an absolute right would not be practical and held that an upper proprietor could make “reasonable use” of the water, including consumptive withdrawals.

Riparian water rights, therefore, occur as a result of landownership. A landowner who owns land that physically touches a river, stream, pond, or lake has an equal right to the use of water from that source. This water right, however, is only a usufructuary right and not a property right in the water. The water may be used as it passes through the property of the land owner, but it cannot be unreasonably detained or diverted, and it must be returned to the stream from which it was obtained. The use of riparian water rights is generally regulated by “reasonable use”. Reasonable use allows the consumptive use of water, but what actually constitutes reasonable use has varied widely from state to state and continues to evolve.

Only certain waters are subject to riparian rights. Riparian rights only attach to water in watercourses and not to diffuse surface waters. Diffuse waters are waters that are spread over the surface, whereas a watercourse has a definite natural channel and a bed with banks. Diffuse waters are generally storm or flood drainage, and these do not constitute riparian rights.

Riparian water rights cannot be lost through non-use and are indefinite in duration. Therefore, a riparian landowner does not lose their riparian right by not putting the water to use. However, the courts tend to provide greater protection for existing uses, than for potential future uses. Riparian rights can however, be lost through prescription. Prescription is a process of involuntary transfer from one party to another. Under prescription, a party making open use of water for the proper time period (usually 20 years) gains title to the water right superior to that of the original holder.

Riparian water rights are generally considered “part and parcel” to the land and are included if the property is sold. The law in most cases forbids transfers of riparian rights for use on non-riparian lands. This rule, however, has been amended in some instances to allow non-riparians to use the water so long as the use is “reasonable” with regards to other riparians.

The general characteristics of riparian rights can be summarized as follows:

- Riparian rights are of equal priority.
- Unless adjudicated, the right is not quantified, rather it extends to the amount of water which can be reasonably and beneficially used on the riparian parcel.
- Riparian rights are correlative. During times of water shortage, the riparian proprietors share the shortage.
- Water may be used only upon that portion of the riparian parcel which is within the watershed of the water source.
- The riparian right does not extend to seasonal storage of water.
- The riparian right is part of the riparian land and cannot be transferred for use on other lands.
- The riparian rights remains with the land when riparian lands are sold.
- When riparian lands are subdivided, parcels which are severed from the adjacent water source lose their riparian rights unless the rights are reserved.
- A riparian right is not lost by non-use.

Prior Appropriation:

The prior appropriation doctrine, or “first in time - first in right”, developed in the western United States in response to the scarcity of water in the region. The doctrine evolved during the California gold rush when miners in California needed to divert water from the stream to locations where it was needed to process ore. Customs and principles relating to water diversion developed in the mining camps, and disputes were resolved by simple priority rule. According to the rules of prior appropriation, the right to the full volume of water “related back” or had the priority date as of the time of first diverting the water and putting it to beneficial use. In other words, those with earliest priority dates have the right to the use of that amount of water over others with later priority dates.

Unlike a riparian right, an appropriative right exists without regard to the relationship between the land and water. An appropriative right is generally based upon physical control and beneficial use of the water. These rights are entitlements to a specific amount of water, for a specified use, at a specific location with a definite date of priority. An appropriative right depends upon continued use of the water and may be lost through non-use. Unlike riparian rights, these rights can generally be sold or transferred, and long-term storage is not only permissible but common.

Historically, there are four essential elements of the prior appropriation doctrine: Intent, Diversion, Beneficial Use, and Priority. In all states with the prior appropriation doctrine, the acquisition of water requires that the appropriator demonstrate an intent to appropriate the water, divert the water, and apply it to beneficial use. Historically, intent was indicated by on-the-ground acts such as site surveys, land clearing, preparation of diversion points, and most importantly posting of notice. Today, however, intent is generally indicated by the application for a permit.

Another essential component of a prior appropriation water right is diversion. Historically, a physical diversion of water was required in order to acquire a water right. This requirement has diminished as states have implemented various instream flow programs. A point of diversion, however, is still an essential element of a consumptive use water right.

Beneficial use is perhaps the most important characteristic in defining a prior appropriation water right. Beneficial use is used to determine whether a certain use of water will be recognized and protected by law against later appropriations. The justification for beneficial use criteria is to prevent waste. Since water is a scarce resource in the west, states must determine what uses of water are acceptable. Beneficial uses of water have been the subject of great debate, and each western state has an evolving system for evaluating what uses of water are considered “beneficial”.

The final essential feature of the prior appropriation doctrine is the priority of a water right. As described above, the first appropriator on a water source has the right to use all the water in the system necessary to fulfill his water right. A junior appropriator cannot use water to satisfy his water right if it will injure the senior appropriator. A senior appropriator may “place a call” on the river. A call requires that the institution which manages the water source shut down a junior diverter in order to satisfy the senior right. Senior appropriators, however, cannot *change* any component of the water right if it will injure a junior appropriator. Therefore, if a senior wants to change his place of use and this change will adversely affect a junior’s interest, the junior can stop the senior from changing the water right. Any change of a water right (time of use, place of use, purpose of use, point of diversion, etc.) cannot cause harm to another water user regardless of priority.

In western states, there are few restrictions on who can hold an appropriative water right, therefore both private and public entities hold rights. An appropriative right does not depend on land ownership, but some states do require that the water is appurtenant to the land on which it is used. In general, appropriative water rights are transferable property. There are, however, three major requirements which inhibit the transfer of an appropriative water right: one, rules prohibiting the severance of water right from the land on which the water is appurtenant to; two, showing that there will be no injury to other appropriators; and three, establishing the extent of the water right for transfer.

The traditional means of losing appropriative water rights are non-use or abandonment. Loss through abandonment is a consequence of the essential role that “use” plays in the definition of the right. The right does not come into existence without application of water to beneficial use and cannot continue to exist without the continuance of beneficial use. Non-use in itself, however, does not always constitute abandonment. A finding of abandonment often requires a determination of an intent to relinquish the water right. A statutorily specified period of non-use can, in most states, serve as proof of intent to abandon. In other words, an appropriative right can be lost through non-use when intent to abandon can be demonstrated, or when the water right has not been used for a specified number of years.

Hybrid Doctrine:

The hybrid doctrine recognizes both riparian and appropriative water rights. Generally, states have this dual system because riparian rights were historically recognized, but the state has changed to an appropriative system. Hybrid states have integrated riparian rights into the doctrine of prior appropriation by converting riparian rights to appropriative rights. Generally, states have allowed riparian land owners to claim a water right by a certain time and incorporate it into the state’s prior appropriation system. The riparian rights tend to be superior to the prior appropriative rights even if the water was not put to beneficial use until much later. Riparian rights are not recognized, however, if they are not claimed by a certain date (usually the date the state adopted the prior appropriation doctrine), or are not put to use within a certain number of years. States that have a hybrid system include California, Kansas, Nebraska, North and South Dakota, Oklahoma, Oregon, Texas, and Washington.

The following is a list of the names of the persons who have been appointed to the various positions in the organization of the American Society of International Law, for the year 1924.

President: Mr. Charles H. Johnson, New York

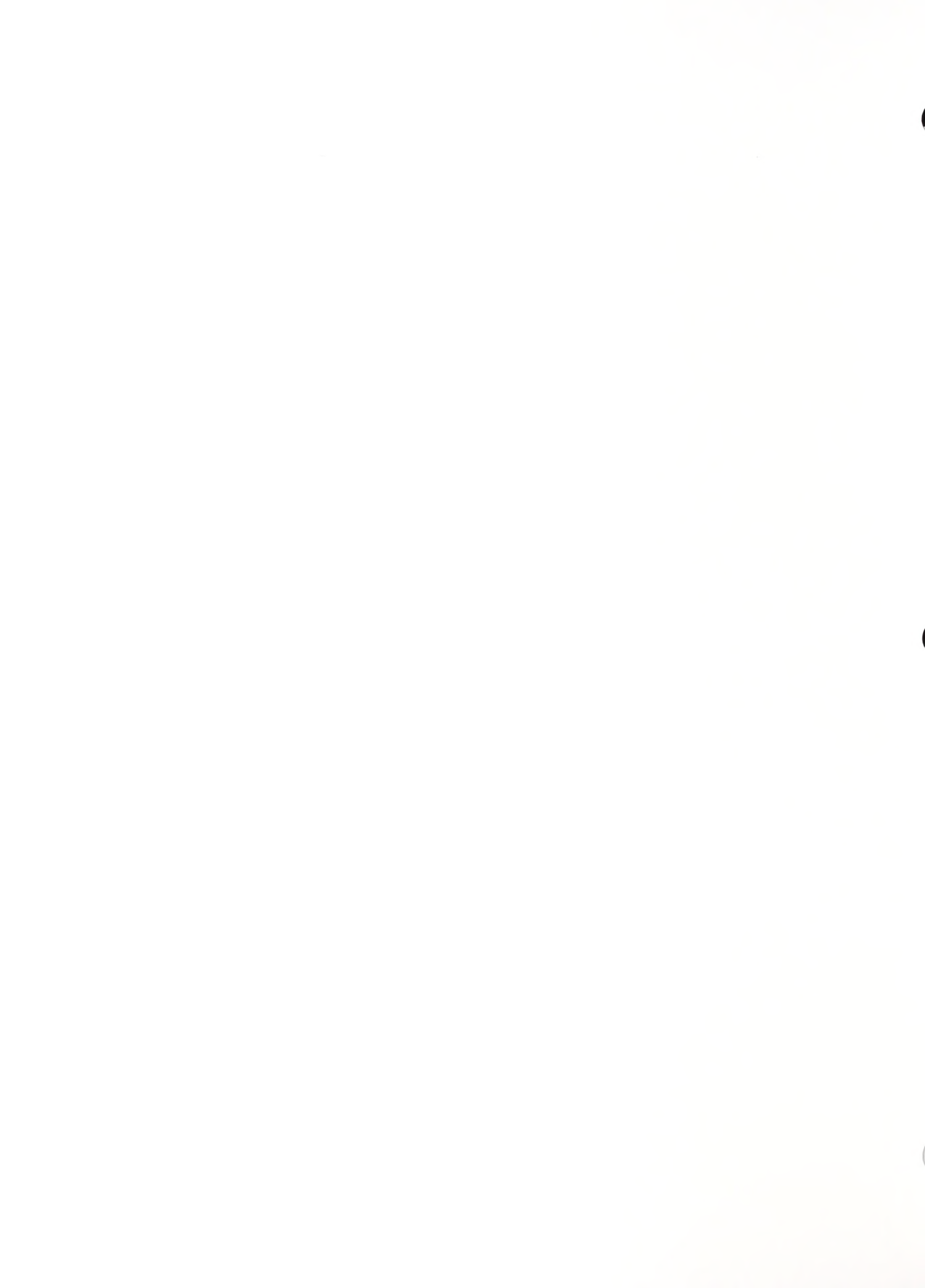
Vice-Presidents: Mr. John H. Garvey, New York; Mr. Charles H. Johnson, New York

Secretary: Mr. Charles H. Johnson, New York

Treasurer: Mr. Charles H. Johnson, New York

Members: Mr. Charles H. Johnson, New York; Mr. John H. Garvey, New York; Mr. Charles H. Johnson, New York

**Western States
Instream Flow Summary**



Western States Instream Flow Summary

State	Ownership	Authorization and Date	New Appropriation	Transfers	Beneficial Uses
Alaska	Public or Private	Statute - 1980	Yes, by reservation	Yes	Protection of Fish and Wildlife habitat; Recreation and parks; Navigation; Sanitation and water quality
Arizona	Public or Limited Private ¹	Statute - 1941 ²	Yes	Yes ³	Wildlife; Fish; Recreation
California	Public or Private	Statute - 1991	No ⁴	Yes	Wetland habitat; Fish and Wildlife; Recreation; Water Quality
Colorado	Colorado Water Conservation Board	Statute - 1973	Yes	Yes	“To preserve the natural environment”, but to date only streams supporting fisheries have been protected
Idaho	Public or Limited Private ⁵	Statute - 1974	Yes, by reservation	Yes, temporary ⁶	Fish and Wildlife habitat; Aquatic life; Recreation; Aesthetic beauty; Navigation; Transportation; Water Quality
Montana	Public or Limited Private ⁷	Statute - 1969	Yes, by reservation	Yes	Fisheries; Water Quality; Other uses that benefit the appropriator, other persons, or the public ⁸
Nevada	Public or Private	Case Law - 1988	Yes	Yes	Wildlife; Recreation ⁹
New Mexico ¹⁰	Public or Private	Case Law - 1998	No	Yes	Fish and Wildlife Habitat; Recreation; (note: instream flow in itself is not a recognized beneficial use)
Oregon	Oregon Water Resource Department	Statute - 1915	Yes ¹¹	Yes	Recreation; Conservation; Fish and Wildlife; Ecological Values; Pollution Abatement; Navigation
Utah	Divisions of Wildlife Resources and Parks and Recreation	Statute - 1986	No	Yes	Propagation of Fish; Public Recreation; Preservation or Enhancement of the Natural Stream Environment
Wyoming	State of Wyoming	Statute - 1986	Yes	Yes	Only Fisheries

Notes:

1. Ownership in the private sector is limited to public interest groups
2. Legislation in 1941 and 1962 established wildlife and fish and then recreation as beneficial uses, but case law in 1976 actually established instream flow appropriations
3. Transfers are legally allowed, but have not yet occurred. However, there have been temporary leases
4. The State Water Board can require bypass flows for new consumptive uses, but these conditions do not constitute instream flow rights
5. Private ownership is only possible on a temporary basis through the water banks or other leases
6. Transfers are limited to temporary transfers of storage rights through water banks (see text)
7. Private holdership can only be established through transfers
8. Beneficial use is at the discretion of the DNRC. To date instream flows have been for fisheries and water quality, but the law does not limit the program to these uses
9. Beneficial use is determined on a case-by-case basis so instream flow uses are not necessarily limited to wildlife and recreation
10. New Mexico does not have a legislated instream flow program and instream flow is not a recognized beneficial use. Case law has begun their instream flow program (see text)
11. Only the Department of Fish and Wildlife, the Department of Environmental Quality, and the Department of Parks and Recreation may apply for new appropriations for instream flow. Although these departments apply, the right is held in trust by the Water Resources Department

**Federal Reserved
Water Rights**

Federal Reserved Water Rights

Development and Status of Federal Reserved Water Right:

When the United States reserves public land for uses such as Indian reservations, military reservations, national parks, forest, or monuments, it also implicitly reserves sufficient water to satisfy the purposes for which the reservation was created. Both reservations made by presidential executive order or those made by an act of Congress have implied reserved rights. Federal reserved water rights often are senior in priority to water rights established under state law. The date of priority of a federal reserved right is the date the reservation was established. Because of the size of federal reservations throughout the West, the potential impact of federal reserved rights on state water rights holders could be significant.

The federal reserved water rights doctrine was established by the U.S. Supreme Court in 1908 in *Winters v. United States*. In this case, the U.S. Supreme Court found that an Indian reservation (in the case, the Fort Belknap Indian Reservation) may reserve water (of the Milk River in Montana) for future use in an amount necessary to fulfill their purpose, with a priority dating from the treaty that established the reservation. This doctrine establishes that when the federal government reserved public land, water rights were reserved in sufficient quantity to meet the purposes for which the reservation was established.

The Winters Doctrine was a land mark case, for it was the first time the federal government deviated from the established convention that water law was purely a state matter. In 1952, however, Congress passed the McCarren Amendment which returns substantial power to the states with respect to the management of water. The McCarren Amendment requires that the Federal government waive its sovereign immunity in cases involving the general adjudication of water rights. Prior to this legislation, the federal government had reserved the right not to be included in general basin adjudications conducted under state law. The McCarren Amendment, however, recognized that the exemption of the federal government from these adjudications would undermine the state's water allocation systems. Therefore, any federal agency claiming a federal reserved water right must participate in the state's adjudication process.

Federal court decisions since the McCarren Amendment have further limited federal reserved water rights. In 1976 in *Cappaert v. United States of America*, the Court ruled that a federal reserved water right quantification was limited to the primary purpose of the reservation and only to the minimum amount of water necessary to fulfill the purpose of the reservation. In 1978 in *United State of America v. New Mexico*, the Court found that the reserved water rights on national forests apply only to the preservation of timber resources and water flows. All other claimed needs were to be considered secondary purposes and the federal government would have to obtain rights like any other appropriator under state law. These rulings have narrowed the scope of the Winter's doctrine. Federal reserved water rights may only include quantities of water necessary to meet the primary purpose for which the reservation was established ("primary purpose" requirement) and only in the minimum amounts necessary to meet those purposes ("minimal needs" requirement).

The Winters Doctrine originally applied to Indian reservations but has since been applied to other federal land reservations. A variety of court decisions have extended the reserved right doctrine to encompass not only Indian reservations, but water uses in national forests, national

parks and monuments, military reservations, and lands administered by the Bureau of Land Management. In the 1963 *Arizona v. California* decision, the U.S. Supreme Court found the Winters doctrine equally applicable to other federal establishments and affirmed an allocation of water for non-Indian federal uses.

Today, federal reserved water rights can be asserted on most lands managed by the federal government. Reserved rights are for the most part immune from state water laws and therefore are not subject to diversion and beneficial use requirements and cannot be lost by non-use. The federal government, however, is required to submit all reserved water rights claims to the state's adjudication process, and are limited by the "primary purpose" and "minimal needs" requirements. In addition, federal reserved water rights are nontransferable. By law, these rights can only exist on lands owned by the Federal government. If a land transfer occurs, any existing federal reserved water right becomes invalid.

Because federal reserved water rights must meet the "primary purpose" and "minimal needs" requirements, it is important to quantify any federal reserved right. Generally, quantifying a federal reserved right requires specifying the amount of water claimed, the water sources, the primary purpose of the reservation for which the water is needed, and the priority date of the claim (the date the reservation was created). The most contentious issue is often the amount of water claimed. The quantification of a federal reserved water right often involves the sophisticated integration of ecological models with surface and ground water flow models. The data necessary for accurate modeling is often unavailable or needs to be collected, and there are often discrepancies over appropriate modeling techniques and interpretation of the results. As a result, much of the current controversy is not centered around asserting a federal reserved right, but in the quantification of that assertion.

Federal Reserved Water Rights and the Bureau of Land Management:

The following types of Federal reserved water rights can occur on BLM lands: Public Water Holes and Springs; Mineral Hot Springs; Stock Driveways; Public Oil Shale Withdrawals; Wild and Scenic Rivers; National Monuments and Conservation Areas; and Wilderness Areas.

Probably the most common federal reserved water right for BLM is for public water holes and springs. These rights were created by executive order's called Public Water Reserves (PWR). Until 1926, PWRs were created on an ad hoc and sight specific basis. Federal agencies would identify the springs they wanted reserved and these would be incorporated (by executive order) into a chronologically numbered Public Water Reserve. Therefore PWRs with early numbers refer to sight specific reservation. In 1926, a cart blank Public Water Reserve was created through an executive order by President Coolidge entitled "Public Water Reserves No. 107". PWR 107 ended the sight specific system of reserving springs and water holes. The purpose of PWR 107 was to reserve natural springs and water holes yielding amounts in excess of homesteading requirements. This order states that "legal subdivision(s) of public land surveys which is vacant, unappropriated, unreserved public land and contains a spring or water hole, and all land within one quarter of a mile of every spring or water be reserved for public use". There was no intent to reserve the entire yield of each public spring or water hole, rather reserved water was limited to domestic human consumption and stockwatering. All waters from these sources in excess of the minimum amount necessary for these limited public watering purposes is available for appropriation through State water law. To date, many of these Public Water

Reserves have not been registered with the State and/or are not adjudicated.

Wilderness designations can be considered the most restrictive of the federal land management designation. Reserved water rights are set aside pursuant to the Wilderness Act of 1964 (16 USC section 1131). Development within wilderness areas are restricted, and these restrictions extend to the development of water supplies. The Wilderness Act reserves the amount of water within the wilderness area which is necessary to preserve and protect the specific values responsible for designation of the area, and to provide for public enjoyment of these values. Only the minimum amount of water necessary to fulfill the primary purpose of the reservation may be asserted as a reserved right.

Wild and Scenic River designations are derived from the Wild and Scenic Rivers Act of 1968 (16 USC section 1271). This legislation states that "certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations". Designation of a stream or river segment as "wild and scenic" prevents construction of flow modifying structures and other facilities on the designated stretch. The area of restricted development can vary, but generally includes at least the area within one-quarter mile of the ordinary high water mark on either side of the river. The act also reserved to the United States the amount of unappropriated water flowing through the public lands necessary to preserve and protect in free-flowing condition the specific values which were responsible for designation of the watercourse. The act, however, does not automatically reserve the entire unappropriated flow of the river.

Stock Driveways are reserved pursuant to Section 10 of the Stock-Raising Homestead Act of 1916. This Act was repealed by Section 704(a) of the FLPMA, but reservations made prior to 1976 remain in effect until changed in accordance with the act. Through this act, Congress authorized establishment of stock driveways by withdraw of public lands containing water holes needed for watering stock during their movement to seasonal ranges or to shipping points. The priority date for each water hole is the date when the application for the land withdrawal was approved.

Mineral Hot Springs with medicinal or curative properties located on vacant, unappropriated, and unreserved public lands constitute federal reserved water rights. BLM is authorized to lease these springs for public purposes.

Public oil shale withdrawals reserve that quantity of water which can be used for investigating, examining, and classifying oil shale, but only to waters needed for assessment of the oil shale resources. Federal reserved rights do not apply to waters necessary to develop the oil shale. Waters for development must come through State law and allocation procedures.

Alaska

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Alaska water law is based on the doctrine of prior appropriation. Historically, there have been riparian rights in Alaska, but when the Alaska Water Use act was enacted in 1966 all riparian rights were converted to prior appropriation rights. Water for public water supplies may be granted as a preferred use in Alaska. This means that a prior appropriation water right is not absolute, but may be subject to changes to meet public needs for domestic water use. If this occurs, the water right holder must be compensated for the loss. The state's water law is contained in the Alaska Water Use Act, Alaska Statute 46.15, and can be found at: <http://www.touchngo.com/lglcntr/akstats/Statutes/Title46/Chapter15.htm>. Water rights are regulated by Alaska Administrative Code (11 AC 93), which can be found at: <http://www.touchngo.com/lglcntr/akstats/AAC/Title11/Chapter093.htm>.

Responsible Agency:

The Alaska Department of Natural Resources, Division of Mining, Land, and Water (the Division) administers water rights in Alaska. This agency is responsible for the appropriation and distribution of surface and ground water in the state.

Application Process:

The only way to establish a new water right in Alaska is to file an application to appropriate water. The types of applications which can be filed in Alaska can be seen in Appendix One. The applicant is required to submit the application along with a filing fee to the Division of Mining, Land, and Water at which time the application is indexed into a tracking system. The date when the application is filed is the priority date for the water right. Pending applications in Alaska are adjudicated in the order in which they are received. Public notice of an application is required in the following instances: if the proposed appropriation is over 5,000 gallons per day; if it comes from an anadromous fish stream (one in which fish migrate upstream from the sea to breed). or if the water source has a high level of competition. If notice is required, certified mailings are sent to current appropriators that may be affected by the new application, and to the Departments of Fish and Game and Environmental Conservation. In addition, legal notices are published in a local newspaper or post office for 15 days. Objections to the proposed appropriation can be directed to the Division, and all objections are addressed in writing prior to the issuance of a permit.

When approving or rejecting an application, the Division considers whether: rights of other appropriators will be affected; the proposed means of diversion are adequate; the proposed use of water is beneficial; and if the proposed appropriation is in the public interest (see Appendix Two for Criteria to Assess the Public Interest). After these considerations, the Division

issues a decision. If the applicant or objecting parties disagrees with the decision an appeal can be requested. The appeal must be received within thirty days from the receipt of notification, and the Division then holds a hearing on the objection(s).

When a permit is approved a specific time period (usually two to five years) is granted within which to develop the project. Once the system is fully developed, the total amount of beneficially used water is established, and all permit conditions have been met, a Certificate of Appropriation is granted.

Point of Diversion and Change of Use Procedures:

A Certificate of Appropriation can be changed to amend the quantity of water, change the legal description for the point of diversion, change the type of use, change the depth of taking, or to add take points. The Division reviews the proposed change to determine the impact on other water users. If approved, a one-year permit is issued to make the change. If no objections to the change are filed within that year, the change becomes final.

State Recognized Beneficial Uses:

Alaska defines “beneficial use” to mean a use of water for the benefit of the appropriator, other persons, or the public, that is reasonable and consistent with the public interest, including, but not limited to:

- Agriculture
- Domestic
- Fish and Wildlife
- Fish and Shellfish Processing
- Industrial
- Irrigation
- Manufacturing
- Mining
- Navigation and Transportation
- Power
- Public
- Recreation Uses
- Water Quality

Ground Water:

Ground water and surface water in Alaska are treated the same. They are considered conjunctive and the administration and regulation of ground water does not differ from surface water. There is one Critical Water Management Area in Alaska where there are additional regulations on ground water use. This area is around Juneau and relates to salt water intrusion in the aquifer.

Water Rights:

There are no restrictions in Alaska as to who can hold a water right. State law says any “person” can hold a water right and “person” is defined as “an individual, partnership, association, public or private corporation, state agency, political subdivision of the state, and the United States”. A water right in Alaska is attached to the land where the water is being used. If

the land is sold, the water right transfers with the land, unless a severance application is approved by the Division. Water rights in Alaska can be transferred from one owner to another by being bought and sold or traded. The transfer of a water right, however, must be approved through the filing of a change application with the Division of Mining, Land, and Water. The approval criteria for a change application is that the change cannot harm another water user and it must be in the public interest.

A water right in Alaska can be lost by abandonment or forfeiture. Abandonment occurs when a water right holder voluntarily relinquishes his/her water right by submitting a notarized statement to the Division. A water right is lost by forfeiture if it is not used for five consecutive years. Water lost through abandonment or forfeiture reverts back to the state and is subject to future appropriation.

Adjudications:

In 1986, the Alaska Water Use Act was amended to establish procedures for basin wide adjudications in order to clarify water rights. Procedures were established for both administrative and judicial adjudications. Administrative adjudications are conducted by the Division of Mining, Land, and Water and results in a judicial decree which is then submitted to the courts. A judicial adjudication involves Federal Reserved Water Rights. Although procedures for these adjudications have been established (and can be found in 11AC 93 0400), they have never been used. Alaska has yet to have a basin wide adjudication.

Number of Ongoing Adjudications:

There has never been a basin wide adjudication in Alaska.

Instream Flows:

An instream flow amendment was added to Alaska's Water Use Act in 1980. This amendment allowed for the new appropriation of instream flows through reservations. An instream flow reservation may be established on any stream or body of water in Alaska that is not fully appropriated. Upon receiving an Application for Reservation of Water, the Division establishes that there is a need for the reservation, that there will be no adverse impacts on other water right holders, and that the right is in the public interest. An assessment is also made to confirm that water is available for the reservation. Instream flow reservations differ from consumptive water rights, because they are subject to additional burdens of proof of beneficial use. An instream flow right is reviewed every ten years to determine if the reservation is providing a beneficial use. Depending upon the findings of the review, the instream flow reservation may be extended, restricted, or revoked.

The 1980 amendment also established a means for transferring a water right to an instream flow reservation. In order to do this, an application must be filed with the State Water Commission. A one year permit is granted to allow other water users to object to the transfer to instream flow. If approved, the reservation retains the priority date of the original water right and becomes an established instream flow reservation subject to review every ten years.

Recognized Beneficial Uses for Instream Flow:

In Alaska, permissible instream uses include:

- Protection of fish and wildlife habitat, migration, and propagation
- Recreation and parks
- Navigation and transportation
- Sanitation and water quality

Holdership of Instream Flow Water Rights:

Any “person” may apply for and hold an instream flow reservation. A “person” refers to any private individual, organization, or government agency as defined above.

Quantification Requirements and Procedures:

In Alaska, there are no standard quantification requirements or procedures for the establishment of an instream flow right. In order to establish an instream flow there must be a justifiable quantification based upon the particular beneficial use. There is not, however, a standard method or procedure that must be used.

Federal Reserved Water Rights:

Federal reserved water rights are included in basin wide adjudications if the federal government consents to have its federal reserved water rights administratively adjudicated by the state. Forty-nine percent of Alaska are federal lands (of which 26.1 million acres are BLM Reserved Land) and may have extensive federal reserved water rights.

Federal reserved water rights in Alaska are different from state appropriated water rights. They:

- May apply to both instream and out-of-stream water uses
- May be created without actual diversion or beneficial use
- Are not lost by non-use
- Have priority dates established as the date the land was withdrawn
- Are for the minimum amount of water reasonably necessary to satisfy both existing and foreseeable future uses of water for the primary purposes for which the land is withdrawn.

Because most federal reserved water rights are not quantified, the Division does not know how much water is needed or used for the primary purposes of federal land withdrawals in Alaska. Although procedures have been established for the adjudication of federal reserved water rights, this process has not yet taken place. Because of the controversy surrounding the Alaska National Wildlife Refuge (ANWR) a temporary moratorium was placed on the processing of federal reserved water rights. That moratorium has been lifted, but no federal reserved water rights application have been processed since the lifting.

BLM Specific Information:

The Division of Mining, Land, and Water does not require water rights applicants to have the necessary rights-of-way from BLM approved prior to approving an application.

BLM is required to pay filing fees in Alaska. The fee for an instream flow application is \$500 per application.

The Bureau of Land Management in Alaska is applying for and holds federal reserved water rights for Wild and Scenic Rivers. The state office has submitted eight applications of which one is perfected and seven are pending. Apart from Wild and Scenic Rivers, BLM does not have (and cannot apply for at this time) any other federal reserved water rights.

The relationship between the BLM and the state of Alaska (Division of Mining, Land, and Water) regarding water rights is tenuous at best. There is a good working relationship between individuals in both offices, but policy differences frustrate meaningful cooperation. Alaska is a strong proponent of state's rights and has conflicted with federal agencies over federal reserved water rights. In some cases they do not recognize reserved rights which federal agencies feel they are entitled to, and the state has delayed in processing federal applications. These circumstances have effected BLM to some extent, but are mainly being played out between the state and the National Fish and Wildlife Service.

Official Contact:

Division of Mining, Land and Water
Water Resources Section
550 West 7th Avenue, Suite 900A
Anchorage, AK 99501-3577
907-269-8503

Website:

http://www.dnr.state.ak.us/mine_wat/index.htm

AZ

Arizona

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Arizona's water law is based on the doctrine of prior appropriation, but it is administered based on a bifurcated system where surface water is regulated separately from ground water. There are basically four categories of water supplies available in Arizona: Colorado River water, surface water other than Colorado River water, Ground water, and Effluent. Each water supply is managed in a different manor. Surface water rights are based on "first in time, first in right", Colorado River water is allocated through the law of the river and Arizona's water banking program, and the allocation of Ground water rights varies depending on location. The Arizona water code is located in Title 45 of the Arizona Revised Statutes, and can be found at: <http://www.azleg.state.az.us/ars/45/title45.htm>.

Responsible Agency:

The Arizona Department of Water Resources (ADWR) is responsible for ensuring that dependable, long-term water supplies are available for Arizona. The ADWR oversees the use of surface and ground water resources, administers state water laws (except those related to water quality), explores methods of augmenting water supplies to meet future demands, and works to develop public policies that promote conservation and distribution of water.

Application Process:

In order to appropriate surface water, one must file an application with the Department of Water Resources (The types of applications available can be found in Appendix One). The application must describe the source of the water, the location of the proposed diversion, the proposed place of use, the beneficial use, and the proposed quantity and periods of use. Upon confirmation of completeness and correctness, ADWR provides a public notice and there is an opportunity for public protest. Protests must allege that the proposed allocation will impair a prior water right, will be contrary to public interest, or will pose a threat to public safety. If the application is protested, ADWR can hold a public hearing (but is not required to). After the protest period and any hearing, the ADWR may either grant or reject the application. If the application is approved, a permit is granted. In general a permit is granted if the application does not conflict with vested rights, is not a threat to public safety, and is not contrary to the interests and welfare of the public. The issuance of a permit allows the permittee five years to complete the necessary construction and to put the water to beneficial use. Upon putting the water to beneficial use, the water right is perfected and the permittee is granted a Certificate of Water Right.

In order to withdrawal ground water inside an active management area (see below ground water discussion), an application must be filed with the ADWR. The permit process is the same for ground water as it is for surface water. Once a permit is issued, the permittee can withdraw a specific amount of water, from a specific location, for a specified purpose. The ground water withdrawal permit is limited in the duration of use, but the applicant may apply to renew the permit.

Point of Diversion and Change of Use Procedures:

A point of diversion is required for all consumptive uses in Arizona, but may be changed through an application to ADWR. A water right holder may also change the use of surface water, and this can be done in two ways. A new use may be added to the certificate while retaining the existing use, or the existing use can be changed to a new use. In order to add a new use, a permit must be applied for and obtained to appropriate the water for the new use. The application will be processed in the same manner as any other permit to appropriate surface water and the priority date of the new water right will be the date the application was filed. In order to change the existing use to a new use the requirements depend upon on the use. If the existing use is for irrigation, domestic, or municipal use, the use may not be changed without the approval of the ADWR. If the existing use is for any other use, the ADWR must be notified of the change in use, but approval is not required. When a change in use has been effected, the new use retains the same priority date as the old use.

State Recognized Beneficial Uses:

The following beneficial uses are recognized in Arizona:

- Domestic
- Municipal
- Irrigation
- Stockwatering
- Power
- Mining
- Recreation
- Wildlife and fish
- Ground water Recharge

Ground Water:

The separate administration of surface water and ground water is a defining characteristic of water management in Arizona. The legal separation of these two types of waters requires a water manager to determine what type of water is at issue before it can be determined which law is applicable. Historically, Arizonans have been pumping ground water faster than it is replaced naturally - a situation called overdraft. Because of the significant problems due to overdraft, the Arizona Ground Water Management Code (Code) was passed in 1980. The Code has three primary goals. The first is to control the severe overdraft currently occurring in many parts of the state. The second goal is to provide a means to allocate the state's limited ground water resources. The third goal is to augment Arizona's ground water through water supply

development.

To accomplish these goals, a comprehensive management framework was established within the Arizona Department of Water Resources. This management framework consists of three levels of water management to respond to different ground water conditions. The lowest level of management includes general provisions that apply statewide. The next level applies to Irrigation Non-Expansion Areas (INAs). The highest level of management, with the most extensive provisions, is applied to Active Management Areas (AMAs) where ground water overdraft is most severe. The boundaries of AMAs and INAs are generally defined by ground water basins. There are currently five designated AMAs in Arizona and they are the areas surrounding Phoenix, Tucson, Pinal, Santa Cruz, and Prescott (see Appendix Two for the location of AMAs). INAs were established in rural farming areas where the ground water overdraft problems are less severe. There are currently three INAs, Douglas, Joseph City, and the Harquahala INA. New AMAs and INAs can be designated by the ADWR if necessary to protect the water supply or on the basis of a public vote held by local residents of an area.

Outside of AMAs and INAs, ground water may be withdrawn and used for reasonable and beneficial use without a permit. Use of this Ground water, however, does require the filing of a notice of intent to drill with ADWR. Within AMAs, ground water use requires a permit. Ground water withdrawal permits (which allow for new use of water) are limited to certain specified activities. Arizona ground water law requires certain criteria to be met for each type of withdrawal before a permit can be issued. In addition to rights granted through permits, three other types of ground water withdrawal rights exist within AMAs. The first are grandfathered ground water rights. These rights are based on historic use of ground water for five years prior to the designation of the AMA. Most grandfathered rights are appurtenant to the land, but some are not and may be purchased or leased from the owner. Second, withdrawal rights are granted to municipal water providers, private water companies, and irrigation districts within AMAs, enabling them to provide service to their customers. Third, small domestic wells are exempt from the regulations within an AMA. Users of small domestic wells may withdraw ground water for non-irrigation purposes without a permit.

Ground water use and management in each AMA is coordinated by a Ground Water Users Advisory Council appointed by the governor. These councils develop water conservation strategies within the AMA. The restrictions placed on each AMA is to achieve a "safe yield" which occurs when the amount water consumed from the aquifer equals the amount of water recharged to the aquifer. For further information on Arizona's ground water rights, see Appendix Three.

Water Rights:

Water rights in Arizona can be held by any legal entity. There are no restrictions on who can hold water rights, thus the owner can be an individual, group of individuals (related or not), corporations, government agencies, etc. A surface water right is considered to be attached to the land, and therefore they may not be transferred without approval. The owner of a right must apply to the ADWR to sever and transfer the use of a water right to a new location. If the water right was granted for domestic, municipal, or irrigation use, the holder must be granted approval from the ADWR before changing the use of the water.

An owner of a water right may voluntarily abandon the right, or the right may be found to have been forfeited if no use is made of the water for five consecutive years. Water that is abandoned or forfeited reverts to the public and becomes available for new appropriation.

Adjudications:

General stream adjudications in Arizona are State Superior Court determinations of the status of all rights to surface water based upon state law and all claims to surface water based upon federal law within the river system. The Department of Water Resources serves as the technical advisor to the State Superior Court and provides administrative assistance. Adjudications quantify and prioritize surface water rights within the watersheds. The goals of the adjudications are to assess all uses in priority and quantity for improved water management and to integrate federal reserved rights in the state allocation system.

Ongoing Adjudications:

There are currently two adjudications pending in Arizona, the Gila River and the Little Colorado River. These two watersheds comprise almost two-thirds of the state.

Instream Flows:

In 1941 the Arizona Legislature amended its water codes to add wildlife and fish and in 1962 recreation as uses for which “any person” could appropriate water. In 1976 the Arizona Court of Appeals in *McClellan v. Jantzen* found that these amendments constituted instream appropriation and these rights could be held without a diversion.

Rights for instream flow can be obtained through new appropriation. The state has developed a process for instream flow appropriations that requires an applicant to collect at least one year of flow data in order to submit an application. In addition, the applicant must submit a report of the flow measurements and conclusions of expected benefits. Upon submitting this data, a temporary permit is issued with the requirement that an additional four years of flow data is collected. Once this data is collected, an instream flow right is issued. The filing date of the application establishes the priority date as it does for other appropriation applications.

It is still unclear whether existing water rights can be transferred to instream flow rights. The law states that water rights may be “transferred for use for ... wildlife purposes, including fish” (ARS 45-172). But, no instream flow transfers have been attempted. There have been several temporary leases of stored water to augment stream flows, but these leases occurred outside of the transfer process.

Recognized Beneficial Uses for Instream Flow:

Arizona recognizes stream flow maintenance to support wildlife, fish, and recreation as appropriate beneficial uses for instream flow.

Holdership of Instream Flow Water Rights:

Both public agencies and private organizations may hold instream flow rights. Although not legislatively bound to do so, the Arizona Department of Water Resources has so far limited the ownership of instream flow rights in the private sector to public interest groups such as the Nature Conservancy.

Quantification Requirements and Procedures:

See Appendix Four: A Guide to Filing Applications for Instream Flow Water Rights in Arizona for a more detailed description of Arizona's instream flow program as well as the quantification and monitoring methods and procedures.

Official Contact:

Arizona Department of Water Resources
500 North Third Street.
Phoenix, Arizona 85004
602-417-2400

Website:

www.water.az.gov

CA

California

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

California's system of water rights is referred to as a "dual system" because both the riparian doctrine and the prior appropriation doctrine apply to water rights. There is also a separate doctrinal basis for ground water as well as Pueblo Rights, so a more accurate classification of California's system would be a "plural system". Water rights in California are use rights. All waters are the property of the state. A water right in California is a property right allowing the use of water, but it does not involve ownership of the water. California's water law is contained in the California Code of Regulations, Title 23, and can found at:

<http://www.calregs.com/>.

Riparian rights result from the ownership of land bordering a surface water source (a stream, lake, or pond). As a class, these rights are senior to most appropriative rights, and riparian landowners may use natural flows directly for beneficial purposes on riparian lands without applying for a permit. (See Appendix One for Attributes of Riparian Rights).

Appropriative rights are acquired by putting surface water to beneficial use. Prior to 1914, appropriative rights could be claimed by simply diverting and using the water, posting a notice of appropriation at the point of diversion, and recording a copy of the notice with the County Recorder. Since 1914, the acquisition of appropriative rights has required an application through the State Water Board.

In addition to riparian and appropriative rights, California recognizes pueblo rights. These rights are derived from Spanish law whereby Spanish or Mexican pueblos could claim water rights. As a result, pueblo rights are paramount to the beneficial use of all needed, naturally occurring surface and subsurface water from the entire watershed of the stream flowing through the original pueblo. Water use under a pueblo right must occur within the modern city limits, and excess water may not be sold outside the city. The quantity of water available for use under a pueblo right increases with population and with extensions of city limits. In general pueblo rights are limited to use of water for ordinary municipal purposes.

Responsible agency:

Responsibility for water in California is shared among several agencies. The State Water Resources Control Board (State Water Board) is responsible for the water rights and water quality functions of the state. They have the jurisdiction to issue permits and licenses for appropriation from surface and underground streams. The Board also has the authority to declare watercourses fully appropriated. The California courts have jurisdiction over the use of percolating ground water, riparian use of surface waters, and the appropriate use of surface waters initiated prior to 1914. The Department of Water Resources is responsible for planning the use of state water supplies, and develops, in consultation with the California Water

Commission rules and regulations for this purpose.

Application Process:

Any entity intending to appropriate water is required to file an application for a water right permit (or a use registration for small scale domestic use) with the State Water Board. A list of available applications can be seen in Appendix Two. A permit is not required from riparian right holders, ground water users, users of purchased waters, or those who use water from a spring or standing pool lacking a natural outlet on the land they are located. Once the application or registration has been accepted, a priority is established in relation to other appropriators. For domestic registration, the State Water Board provides a certificate of registration which establishes general conditions under which the diversion may be made. When an application for a water right permit is filed, public notice is given to interested parties. This indicates an opportunity to file protests against the proposed application. If differences cannot be resolved, either a field investigation (for small applications requesting 3cf or 200 acre-feet per year) or a State Water Board hearing is conducted.

An application for a new water appropriation is approved if it is determined to be for a useful or beneficial purpose and if water is available for appropriation. In evaluating an application, the board considers the relative benefits derived from the beneficial uses, possible water pollution, and water quality. If a permit is approved, it may be approved in full or it may be subject to specified conditions. A decision or order from the State Water Board is reviewable by the Superior Court. Once the State Water Board issues a permit, the use and diversion of water is authorized (see Appendix Three for a summery of the steps to obtain a permit).

Once the permittee completes the necessary works, the water is put to full beneficial use, and all terms and conditions are met, a license is issued. The license is the final confirmation of an appropriative right and it remains in effect as long as the license conditions are met and the water is put to beneficial use.

The time frame involved in obtaining a license in California is highly variable. Permit decisions are required to be reached within six months on accepted applications for non-protested projects which do not require extensive environmental review. Applications with unique requirements for environmental review and/or require protest resolution, may extend the time frame by months and even years.

Point of Diversion and Change of Use Procedures:

In 1928, the California Constitution was amended to require reasonable diversion and use in the exercise of all water rights. The only exception to the point of diversion requirement is for instream flow rights. The State Water Board and the Courts have concurrent jurisdiction to apply and enforce diversion and use requirements. The holder of an appropriative right may change the point of diversion, place of use, or purpose of use, so long as other rights are not injured by the change. In order to change an attribute of a water right in California, a change application must be filed with and approved by the State Water Board. Change applications follow the application process described above.

State Recognized Beneficial Uses:

Beneficial uses in California include the following:

- Aquaculture - Raising fish or other aquatic organisms not for release to other waters
- Domestic - Water used by homes, resorts, or campgrounds, including water for household animals, lawns, and shrubs
- Fire Protection - Water to extinguish fires
- Fish and Wildlife - Enhancement of fish and wildlife resources, including raising fish or other organisms for scientific study or release to other waters of the state.
- Frost Protection - Sprinkling to protect crops from frost damage
- Heat Control - Sprinkling to protect crops from heat
- Industrial Use - Water needs of commerce, trade, or industry
- Irrigation - Agricultural water needs
- Mining - Hydraulicking, drilling, and concentrator table use.
- Municipal - City and town water supplies
- Power - Generating hydroelectric and hydro mechanical power
- Recreation - Boating, swimming, and fishing
- Stockwatering - Commercial livestock water needs
- Water Quality Control - Protecting and improving waters which are put to beneficial use

Ground Water:

The vast majority of California's ground water is unregulated. The state does not have a comprehensive ground water permit process to regulate ground water withdrawal. There are three legally recognized classifications of ground water in California: subterranean streams, underflow of surface waters, and percolating ground water. Subterranean streams and underflow of surface waters are subject to the laws of surface waters and are regulated by the State Water Board. Percolating ground water on the other hand has little regulation requirements.

Percolating ground water has two subclassifications: overlying land use, and surplus ground water. Land owners overlying percolating ground water may use it on an equal and correlative basis. This means that all property owners above a common aquifer possess a shared right to reasonable use of the ground water aquifer. These rights are similar to riparian rights and since they are correlative, a user cannot take unlimited quantities without regard to the needs of other users. Surplus ground water may be appropriated for use on non-overlying lands, provided such use will not create overdraft conditions. A permit is not required to use percolating ground water of either classification, but the appropriation of surplus ground water is subordinate to the correlative rights of overlying users.

Water Rights:

Water rights in California can be held by any legal entity. There are no restrictions on who can hold water rights, thus the owner can be an individual, related individuals, non-related individuals, trusts, corporations, government agencies, etc. Water rights are considered real property (they can be owned separately from the land on which it is used or diverted) and can be transferred from one owner to another both temporarily or permanently. Any transfer (sale, lease, or exchange) is subject to approval by the State Water Board through the application process discussed above. Approval is granted upon finding that the transfer would not result in injury to any other water right and would not unreasonably affect fish, wildlife, or other instream beneficial use.

An appropriative water right in California can be maintained only by continuous beneficial use, and they can be lost by five or more continuous years of non-use. Riparian rights on the other hand cannot be lost through non-use. Appropriative rights can also be lost through abandonment, but to constitute abandonment of an appropriative right, there must be the intent not to resume the beneficial use of the water right. As a result, abandonment is always voluntary. The rights to waters lost through abandonment or non-use reverts to the public, but only after notice has been given and a public hearing is held.

Adjudications:

In California, adjudication can be initiated through the court or through statutory procedures. Court initiated adjudication occurs when a water right lawsuit is filed in court (all surface and ground water rights may be included in this procedure). In the case of a court initiated adjudication, the court often asks the State Water Board to act a referee and to conduct and investigation and report back. Statutory adjudications result when one or more entity claims a right from a specific source and files a petition with the State Water Board. The statutory procedure can be used to determine all rights to any body of water including percolating ground water. The result of a statutory adjudication is a decree that integrates all rights on the water source, and sets quantity, season, priority, etc.

Ongoing Adjudications:

As of 2000, sixteen basins in California had been adjudicated.

Instream flows:

In 1991, California adopted changes to its water laws which permitted the transfer of existing consumptive water rights to the purpose of instream flow. These transfers can be made for the purposes of enhancing wetlands habitat, enhancing fish and wildlife resources, or increasing recreation on the water. California law allows transfers to be either permanent or temporary changes in use; therefore instream flow rights can be both purchased and leased. New instream flow rights retain the priority date of the original right.

California state law does not permit new appropriations of water for instream flow. The State Water Board may attach conditions requiring bypass flows to new consumptive use appropriations, but these conditions do not constitute newly appropriated instream flow rights. When a new water use permit is applied for, the State Water Board must notify the Department of Game and Fish, which has the authority to recommend amounts of water necessary to preserve fish, wildlife, and recreation in the affected stream. The board then considers these recommendations and may set instream flow requirements as conditions for the new permit. In this way, current flows can be protected even though new appropriations for instream flow rights are prohibited.

Recognized Beneficial Uses for Instream Flow:

Recognized beneficial use of instream flow in California include enhancing wetlands habitat, enhancing fish and wildlife resources, increasing recreation on the water, and protecting water quality.

Holderness of Instream Flow Water Rights:

Under California law, any “person” (public or private) may hold an instream flow right, as long as that right was established through a legal transfer.

BLM Specific Information:

The application process in California has proven to be expensive for BLM. For the appropriation process, BLM pays \$1050 total: \$100 application fee, \$850 environmental filing fee, and \$100 upon issuance of the permit. Since 1991, water right applicants have been required to pay an \$850 environmental filing fee to the California Department of Fish and Game (CDFG) with each application. This is a concern for BLM because the CDFG’s review is redundant to BLM’s NEPA process. The 1991 memo introducing the fee states that “these fees are not intended to reimburse costs specifically identifiable to individual projects, but rather to offset a relative portion of the cumulative effect of all projects”. Therefore BLM cannot request of waiver of this fee. In terms of other water rights applicants, BLM is required to approve the necessary right-of-ways prior to the approval of the application by the State.

BLM is not currently involved in any of California’s adjudications. In the past, however, BLM has been involved in the Eagle Lake and Alturas adjudications.

Regarding federal reserved water rights, California holds a number of PWRs. In order to assert a PWR 107 or other PWR, BLM provides notice to the State of California. In the past 15 years there have been relatively few PWR assertions in California and the extent of unasserted PWRs is unknown. There are a number of PWRs that are included in the Master Title Plans on BLM lands, and these probably originated from assertions made before the early 1980's. BLM does not have any federal reserved water rights on Wild and Scenic Rivers or on wilderness areas in California.

The relationship between BLM and the State of California is very close and cooperative. The staff of the Division of Water Rights have been especially helpful to BLM in interpreting the

details involved in each particular water right decision. The staff has a practical mind set and helps BLM achieve their goals. BLM also commonly assists the State in their capacity surveys for BLM reservoirs which are moving from permit to licence. This has expedited the process. The state has also been quite receptive to suggestions from BLM on how to streamline some of the water right reporting requirements.

Official Contact:

State Water Resources Control Board
Division of Water Rights
1001 I Street
Sacramento, CA 95814
916-341-5300

Website

<http://www.waterrights.ca.gov/>

Colorado

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Colorado water law is based upon the doctrine of prior appropriation or “first in time - first in right”, and the priority date is established by the date the water was first put to a beneficial use. Colorado water law is contained in the State Constitution Article XVI sections 5 and 6 and in the Colorado Revised Statutes sections 37 which can be found at:

<http://64.78.178.125/cgi-dos/stattocp.exe?A&ttl=37>. Water rights are specifically dealt with in articles 80 through 92.

Responsible Agency:

There is not a single state agency in Colorado responsible for issuing water rights. Water rights in Colorado are established through a water court system. There are seven water courts, one for each major river basin, which adjudicate water rights throughout the state. Each water court has an appointed water judge and water referee who hears all water related matters within their jurisdiction. The State Engineer administers and distributes the state’s waters. The State Engineer is also responsible for issuing and denying permits to construct wells and divert groundwater, but these permits do not constitute rights to groundwater. The Groundwater Commission is a regulatory and an adjudicatory body authorized to manage and control designated ground water resources. Finally, the Colorado Water Conservation Board oversees conservation in the state and is responsible for the state’s instream flow program.

Application Process:

Water rights in Colorado are established through a water courts system. Every water right application must go through the water courts, and must be handled by an attorney. Therefore, Colorado has a very large attorney workload relating to water rights.

In order to obtain a right to either surface of ground water, an application must be filed with one of the seven water courts in the state. A list of applications can be seen in Appendix One. The application must be filed in the division in which the diversion is located. Once an application is filed with the appropriate court, a summary (or the application in full) is published in “the resume” (publication in the resume is considered proper notice to all water rights holders). The resume contains all applications filed with a particular court each month. All applications are also published in a local newspaper.

Upon publication in the resume and paper, a statement of opposition can be filed by any person. Oppositions may be filed within a forty-five day period following publication. Any statement of opposition must outline the reasons why an application should not be granted or should be amended. At the end of the month following the month of publication of the application, the water referee examines the application and the statements of opposition. The

referee consults with the division engineer and within thirty days, the engineer files a written report containing the recommendations. This report is sent to the applicant, who must then mail copies to all parties in the case. The referee can then make a ruling on the case, and either approve or disapprove (in whole or in part) the application. If no protest is filed before the twentieth day following the mailing of the referee's ruling, then the ruling is signed by the judge and entered as a decree of the court.

Protests to the referee's ruling, however, can be filed with the court. If a protest is filed a hearing is held before the water judge. Applications can also be referred to the water judge directly by the referee and engineer. When a matter goes to the water judge, a trial is set and the case proceeds before the water judge who either grants or denies the water right based upon factual issues in the case and how they relate to statutory and case law criteria. A granted water right is considered a "decreed water right".

Water rights in Colorado (both surface and ground water) can be either absolute or conditional. An absolute right is water that has been diverted and put to beneficial use. A conditional right is a right that will be developed in the future. A conditional right maintains its priority until the project is complete. In order to maintain a conditional water right, the owner must file an application for a finding of reasonable diligence every six years with the Water Court. The applicant must prove that he or she has been diligently pursuing completion of the project. Upon completion, the owner of a conditional right may file for an absolute water right, and that absolute water right contains the appropriation date for which the conditional right was awarded.

The time frame to obtain a water right in Colorado varies depending upon the case load of the specific water court.

Point of Diversion and Change of Use Procedures:

Appropriations of water are made when an individual physically takes the water from a stream and transports it to another location for beneficial use. The use of water directly from a stream, such as by wildlife or livestock drinking, is considered a diversion in Colorado. A point of diversion is required for all water rights in Colorado except for instream flow. Instream flow rights, however, can only be held by the Colorado Conservation Board.

The point of diversion, location of use, and type of use of a water right can be changed through an application with the appropriate water court. In order to change a water right, the applicant must provide evidence that the change will not injure the vested water rights of other users.

State Recognized Beneficial Uses:

Beneficial use in Colorado is statutorily defined as “the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made”. Specific uses are not described but previous categories have included:

- Aesthetics and Preservation of Natural Environments
- Augmentation
- Commercial
- Domestic
- Fire Protection
- Fishery
- Geothermal
- Groundwater Recharge
- Industrial
- Irrigation
- Livestock
- Minimum Flow
- Municipal
- Power
- Recreation
- Silvicultural
- Snowmaking
- Wildlife Watering
- Wildlife Habitat

Ground Water:

A modified form of prior appropriation governs the establishment and administration of ground water rights in Colorado. Colorado ground water use is governed by the Ground Water Management Act of 1965, which was adopted to allow the full economic development of water resources while protecting the rights of senior appropriators. Colorado considers all water within the state to be tributary to a surface stream, unless the water applicant can prove otherwise in water court. The test for establishing a non-tributary source of water is very rigorous. The proposed diversion cannot deplete surface streams more than 1/10 of 1% of the proposed diversion volume in any single year for up to 100 years. When a non-tributary aquifer is established by law, the water in the aquifer is allocated based on the percentage of land owned on the surface above the aquifer. If the applicant cannot establish non-tributary ground water, then the use of ground water falls under the prior appropriation system and water rights must be obtained through the court system described above.

In addition to the application process through the courts, ground water in Colorado is subject to further restrictions administered by the State Engineer. By law, every new well in the state that diverts ground water must have a well permit. “Exempt Well Permits”, however, can be obtained for wells that pump less than 15 gallons per minute. For these wells, the state will give well permits that are exempt from the priority system. In order to obtain a permit, a person must file an application for approval of a permit with the state engineer. A permit must be obtained from the State Engineer prior to any utilization of ground water, but the permit does not constitute a water right to the ground water. A ground water right can only be obtained through the formal application to a water court. The water court, however, cannot grant a ground water right until the State Engineer has issued a permit.

In addition to issuing permits, the State Engineer also provides staff assistance and

technical support to the Colorado Ground Water Commission. The Commission is responsible for the management of Designated Basins located primarily in the eastern plains. The commission's duties are to administer groundwater rights, work towards water conservation, and to protect vested water rights. The commission also establishes pumping levels in designated basin that will not deplete ground water supplies at an excessive rate. Currently, the Ground Water Commission has established eight designated basins (Kiowa-Bijou, Southern High Plains, Upper Black Squirrel Creek, Lost Creek, Camp Creek, Upper Big Sandy, Upper Crow Creek, and Northern High Plains). Within each basin, Ground Water Management Districts (GWMDs) can be formed. The GWMDs are authorized to adopt additional rules and regulations to help administer ground water within their district. There are currently 13 Ground Water Management Districts within the basins. A map of these Designated Basins and GWMD can be found at: <http://www.cgwc.state.co.us/images/DesBasinsDrawing.gif>.

Water Rights:

A water right in Colorado can be held by any legal entity. In other words, a water right can be held by an individual, group of individuals, organization, corporation, government agency, etc. The only restriction to who can hold a water right concerns instream flow rights which can only be held by the Colorado Conservation Board.

Water rights in Colorado are considered real property and they can be bought, sold, and leased to other entities. Although water is considered to be the property of the state, a property right exists in the priority to the use of water. The transfer of a water requires filing a change of water right application with the appropriate water court. As with a change of use or point of diversion application, the applicant must provide evidence that the transfer will not injure the vested water rights of other users.

A conditional water right can be considered abandoned if the holder fails to show diligence to complete the necessary project. Any water right can be considered abandoned if it is not used for a period of ten years. Abandonment, however, must include the finding of an intent to abandon, as a result, water rights in Colorado cannot be forfeited without proof of intent.

Adjudications:

Water rights in Colorado are adjudicated by the district water courts. Colorado has a process of individual adjudications where each right is adjudicated as it is approved. There are no general or basin wide adjudications in Colorado.

Ongoing Adjudications:

Colorado does not have any ongoing general adjudications. Each of the seven Water Courts, however, have ongoing adjudications for all water rights within their jurisdiction.

Instream Flows:

In 1973, Colorado adopted legislation that recognized the maintenance of instream flows as a beneficial use of water. This legislation said that instream flow could be used “to preserve the natural environment to a reasonable degree”, and it removed the requirement of a diversion to appropriate water. This established Colorado’s instream flow program, and the Colorado Water Conservation Board has the exclusive responsibility for the protection of instream flows. In 1986, the instream flow legislation was amended to authorize the Colorado Water Conservation Board to acquire water rights for instream flows by methods other than appropriation. The Board is now allowed to acquire senior water rights through lease, purchase, or donation.

The Board is the only entity that may hold instream flow rights. They can apply for new appropriations through the state water courts. In order to do this, the Board must ensure that a natural environment exists and will be preserved by the water available for appropriation. They must analyze the extent of the benefits of the water. The public has an opportunity to review and comment on the recommendations. The board then submits an application the state water court, and the priority date for the instream right is the application date.

In addition to new appropriations, the Water Conservation Board can acquire water rights from other entities for instream flow. An existing consumptive right can be obtained by the board (through purchase, lease, or donation) and changed to an instream flow right. The Board is required to request recommendations for instream flow from the state Division of Wildlife, the Division of Parks and Outdoor Recreation, and from the U.S. Departments of Agriculture and Interior.

Recognized Beneficial Uses for Instream Flow:

Instream flows in Colorado must be used to preserve the natural environment. Although the law authorizes a wide range of uses for instream flow, to date the Colorado Water Conservation Board has acted only to protect streams that support fisheries.

Holderhip of Instream Flow Water Rights:

The Colorado Water Conservation Board is the only entity that can hold an instream flow right. Other entities, however, can acquire an existing right and transfer it to the board for instream flow.

Quantification Requirements and Procedures:

In order to quantify an instream flow water right, the Colorado Water Conservation Board requires a multiple cross-section survey using the R2Cross methodology, averaging the survey results, and providing a written quantification recommendation to the Board.

BLM Specific Information:

A water right applicant in Colorado does not have to have an approved right-of-way from BLM in order to obtain an approved application. BLM can challenge the applicant on land access issues in water court, and they can argue in court that the applicant does not have land access. If the applicant cannot prove that land access is available, the water court will dismiss the case.

The BLM is required to pay filing fees in Colorado. Filing fees are \$45 for opposition, \$91 for water rights application, and \$150 for change of water right. In addition, the BLM must pay to have an application published in a local newspaper. This cost can range from \$30 to \$900, depending upon the size of the water right application and the number of newspapers.

Besides Colorado's instream flow program, BLM can deny or condition rights-of-way in order to protect instream flows. BLM establishes agreements with the owners of water diversions and reservoirs to protect stream flows. In addition, BLM can designate areas as "Areas of Critical Environmental Concern" which makes the process for opposing water usage applications easier.

With regard to federal reserved water rights, the BLM has no designated Wild and Scenic Rivers in Colorado. Several rivers on BLM land have been studied and determined to be suitable, but no designations have been made. BLM has some designated wilderness areas in Colorado, but the legislation that created them expressly stated that no reserved water rights were created. The BLM has completed the adjudication of all of its Public Water Reserves and holds approximately 1,400.

The BLM has an excellent relationship with the Colorado State government on water rights issues. However, the BLM is very disappointed with the implementation of the state's instream flow program. The legislation that authorizes the program is very broad, and enables the Colorado Water Conservation Board to protect a wide range of water-dependent values. The Board to date, however, has acted only to protect cold-water fisheries, and in a few cases warm water fisheries and riparian values (but only when the Board was placed under extreme pressure to do so). Colorado's Governor Owens is appointing increasingly conservative members to the board, meaning that BLM's disappointment with the board is likely to increase.

Official Contact:

Colorado Division of Water Resources
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Website:

<http://water.state.co.us/>

ID

Idaho

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

The doctrine of prior appropriation or “first in time - first in right” is the basis for administering water rights in Idaho. The constitution and statutes of Idaho declare all the waters of the state, when flowing in their natural channels, including the waters of all natural springs and lakes within the boundaries of the state, and ground waters of the state, to be public waters. A water right is the right to divert the public waters and put them to a beneficial use, in accordance with one's priority date. Idaho's water laws are contained in the Idaho Code, Title 42 and can be found at: <http://www3.state.id.us/idstat/TOC/42FTOC.html>

Responsible Agency:

The Idaho Department of Water Resources (IDWR) is the agency responsible for the allocation of surface and ground water within the state. The IDWR is also responsible for assisting the courts in the adjudication of water rights, processing change applications, and enforcing the state's water laws. In order to accomplish these tasks as well as coordinate the management of the state's water, the IDWR has divided the state into administrative basins (see Appendix One for a map of these basins). In addition to the IDWR the Idaho Water Resource Board, an eight member board appointed by the governor and confirmed by the state senate, assists in the management of the state's water. The board provides guidance to the IDWR, is responsible for administering certain water programs, and is responsible for applying for and holding new appropriations for instream flow rights.

Application Process:

Since May 20, 1971, the only one way to establish a water right is by following the application/permit/license procedure discussed below. Prior to May 20, 1971, rights to surface waters were established simply diverting water and applying it to beneficial use. These water rights are called “beneficial use”, “historic use” or “constitutional” water rights. The priority date for a water right established by this method is the date water was first put to beneficial use.

Today a new water right must be established by filing an application with the IDWR. Small domestic uses of ground water and instream livestock water, however, are exempt from the permit application process. The application, which must quantify and describe the new use, is to be filed with IDWR, and the filing date establishes the priority date of the water right. Upon receipt of the application, IDWR provides notice to the public by publishing a notice in a local newspaper for two consecutive weeks. For large applications, a notice is also published in a major newspaper in each region of the state. Protests can be filed against the application for a period of thirty days after the final legal notice appears. Protests are accepted from water users and any other entity concerned about the application. Efforts are made to resolve the dispute informally, but if this cannot be achieved a hearing is scheduled. Hearings are held in

State Recognized Beneficial Uses:

Recognized beneficial uses in Idaho include:

- Aesthetics
- Aquatic Life
- Commercial
- Cooling
- Domestic
- Fire Protection
- Fish Propagation
- Ground water Recharge
- Industrial
- Irrigation
- Manufacturing
- Mining
- Municipal
- Navigation and Transportation
- Power
- Recreational Use
- Stockwatering
- Water Quality Control
- Wildlife

Ground Water:

The application for a ground water right follows the same application/ permit/ license process as that for surface water. Prior to March 25, 1963 rights to ground water could be established simply by putting the water to beneficial use. Today the only exception to the application process for ground water is a “beneficial use” right to ground water can be established for domestic purposes. "Domestic purpose" is limited mainly to single-family domestic purposes, but is defined by statute as "water for homes, organization camps, public campgrounds, livestock and for any other purpose in connection therewith, including irrigation of up to one-half acre of land, if the total use is not in excess of 13,000 gallons per day, or any other uses if the total use does not exceed a diversion rate of 0.04 cubic feet per second and a diversion volume of 2,500 gallons per day." The exemption from the application process for domestic purposes does not include water for "multiple ownership subdivisions, mobile home parks, commercial or business establishments."

Idaho policy states that ground water is to be managed to allow full economic development while protecting prior right holders. The pumpage from an aquifer is to be limited by IDWR to prevent the mining of an aquifer. Low-temperature geothermal water (85 to 212 degrees F) is classified as ground water and managed accordingly. Geothermal sources greater than 212 degrees F are managed under the geothermal statutes.

Water Rights:

Any entity can hold a water right in Idaho. The water right can be in the name of an individual, group of individuals, organization, corporation, government agency, etc. The only exception is the Idaho Water Board is the only entity which may apply for and hold instream flow water rights. The holder of a water right in Idaho is considered to have established a real property right to that water, much like property rights in land. The constitution and statutes of the state of Idaho protect water rights as private property rights, and those rights can be bought and sold. Idaho has a thriving water market. Water rights can be transferred directly between

accordance with the Idaho's Administrative Procedure Act. An application can only be approved if it meets the following criteria:

- The new use will not damage existing water rights
- The water supply is sufficient for the purpose of the new use
- The application is made in good faith and is not speculative
- The applicant has sufficient resources to complete the project
- The new use does not conflict with local public interests
- The project is consistent with the conservation of water in Idaho.

A portion of the Snake River Basin is held in trust by the State for the Idaho Power Co. Applications in this area are subject to additional criteria (see Appendix Two).

Once a decision on the application is made by the director of IDWR, any dissatisfied party may appeal the decision. Appeals are handled by a Judicial review and the review is based on the record created in the administrative hearing. Once an application is approved it is called a "permit". Upon receipt of a permit, the permittee has up to five years to submit proof of beneficial water use. Upon receipt of proof, the IDWR conducts an investigation and then issues a license. A license issued by the state is evidence of a water right. The types of applications which can be filed in Idaho can be seen in Appendix Three.

The time frame to obtain a water right in Idaho is extremely variable. In the best case scenario, the minimum time it could take for an application to be approved and a permit to be issued is forty-five days. If the application is protested or there are other complications, however, then it can take much longer. Once a permit is issued, a licensed water right is not obtained until the permittee submits proof of beneficial use. This time frame depends upon the work involved, but must be completed within five years.

Point of Diversion and Change of Use Procedures:

A diversion is generally required to establish a water right. The State Water Board, however, is authorized to acquire water rights without diversions for instream flow. A water right may also be acquired without a diversion to water livestock directly from the stream. These rights are called "instream livestock" water rights.

The place of use, period of use, purpose of use, or the point of diversion can be changed by filing a change application with the IDWR. The change procedures are similar to those for an application for new appropriation, but the decision criteria are different. IDWR may approve a proposed change if it:

- Will not result in injury to the rights of other water users;
- Does not constitute an enlargement of the original water right;
- Is in the local public interest
- Is consistent with the conservation of water resources within Idaho.

IDWR may deny the application or approve the change in whole, in part, or approve it subject to conditions necessary to meet the four criteria described above.

individual buyers on a permanent basis. This requires filing change of owner and change of use application with the IDWR. Water rights can also be transferred on a temporary basis through Idaho's water banking program. Idaho water banks are operated by the Water Resource Board and help to facilitate temporary water transfers. If a water right holder has excess water, that water can be deposited in the water bank. An entity that needs water may then rent that water on a one year basis paying the water right holder a fixed price depending upon the purpose and location of use. The water banks are set up according to water districts, and priority is given to irrigation.

A water right can be lost in Idaho by abandonment or forfeiture. Abandonment requires proof in intent, where as forfeiture occurs if the water right is not used for five consecutive years. Water rights lost through abandonment or forfeiture reverts back to the state for further appropriation.

Adjudications:

The state district court is responsible for the general adjudication of Idaho's watersheds. An adjudication is a court action for the determination of existing water rights, which results in a decree that confirms and defines each water right. The application/permit/ and license procedure described above is for purposes of establishing new water rights. Adjudications in Idaho involve both surface and ground water.

When an adjudication of a particular source is commenced, IDWR is required to notify the water users of the commencement of the adjudication, and notify them that they are required to file a "notice of claim" to a water right with IDWR. IDWR then investigates the notices of claims and prepares a report that is filed with the court. Claimants of water rights are notified of the filing of the report, and objections to the report may be filed with the court by anyone who disagrees with the findings in the report. If no objection is filed to a water right described in the report, then the court decrees the water right as described in the report. If an objection is filed to a water right, then the court determines the right after a hearing and then decrees the water right. Because water rights in Idaho could be establish without a permit until 1971, there are many unrecorded, yet valid water rights in the state. A general adjudication of the Snake River Basin in Idaho is currently ongoing.

Although a "notice of claim" is required in an adjudication, there is another type of claim that may be filed with IDWR. A "statutory claim" is filed with IDWR to make a record of an existing beneficial use right. In 1978, a statute was enacted requiring persons with beneficial use rights (other than water rights used solely for domestic purposes as defined above) to record their water rights with IDWR. The purpose of the statute was to provide some means to make records of water rights for which there were previously no records. However, these records are merely affidavits of the water users, and do not result in a license, decree, or other confirmation of the water right.

Ongoing adjudications:

The Snake River Basin Adjudication is the only general adjudication currently being conducted in Idaho. This adjudication began in 1987, and is one of the largest general adjudications in the country. Geographically it involves thirty-eight of the forty-four counties in Idaho and accounts for about 87% of the state's water rights.

Instream Flows:

The instream flow program in Idaho is complex and evolving. Instream flows were first recognized in the state in 1974 through legislation that established instream flow as a beneficial use. In that same year the Idaho Supreme Court (in *State Department of Parks v. Idaho Water Resources Department*) confirmed that an appropriation of water does not require a physical diversion. Idaho's instream flow program was further developed in 1978 when the state legislature adopted the Minimum Stream Flow Act. This act allows the Idaho Water Resources Board to apply for and hold minimum stream flow rights through new appropriation. Idaho law is clear in the establishment of instream flow through new appropriation. The Water Resource Board is responsible for filing an application with the IDWR. The application and processing procedures are similar to that for other appropriations except that a hearing must always be held. The decision criteria used by the IDWR are as follows: one, is the requested flow the minimum needed for the purpose requested; two, will the requested flow interfere with any existing water right; three, is it in the public as opposed to a private interest; four, is it necessary for the purpose requested (does it meet the beneficial use); five, can the flow be maintained. All instream right applications must be reviewed by the state legislature and they have the authority to accept, reject, or amend the approved application.

The law regarding the establishment of instream flow rights through transfers is less clear. Instream flows can be established through water right transfers, but are limited to temporary transfers of storage rights. Storage water rights can be leased on an annual basis through the state's water banking program. This method has been used effectively in the past by the federal government to augment stream flows for salmon. The depositor of the water, however, cannot specify their preferred intended use. In other words an individual cannot deposit water in a water bank and state that the use is to be for instream flow. The renter of the water determines the use and water banks give preference to irrigation. The one exception to this is in the Lenhi River Basin. In this basin an entity can deposit water in the water bank for the express purpose of instream flow. This exception is legislatively stipulated and resulted from endangered species concerns in the basin. Entities also cannot transfer water rights to the water board to be held in trust for instream flow. In theory a water right could be gifted to the board and the board could then apply to have it transferred to an instream flow right. Although permissible, this has not been attempted and it is not certain that the Board would have the political will to change the use to instream flow or that the process would not be challenged in court.

Recognized Beneficial Uses for Instream Flow:

State law requires that instream flow rights be the “minimum flow of water required to protect the fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation, transportation, or water quality of a stream in the public interest” (Idaho Code 42-1502(f))

Holdership of Instream Flow Water Rights:

The Idaho Water Resources board is the only entity that can apply for and hold new appropriations for instream flow water rights. Private ownership is possible on a temporary basis through the water banks.

Quantification Requirements and Procedures:

As with any water right in Idaho, the holder is limited to the minimum amount necessary for the beneficial use. When applying for a new instream flow right, the Board must quantify the minimum amount necessary for the beneficial use they indicate. In practice, however, the Board most often applies for all unappropriated water in a stream segment in order to protect aesthetic beauty and preserve the natural habitat.

Federal Reserved Water Rights:

Federal reserved water rights in Idaho are handled through the general adjudication process. The federal government must make a claim during adjudication and participate in the adjudication process. Only federal reserved rights in the Snake River Basin are currently being adjudicated. Federal reserved rights outside of this basin will not be adjudicated until the Snake River Basin is completed.

Official Contact:

State of Idaho
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Website:

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Montana

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Water rights in Montana are guided by the prior appropriation doctrine. Montana law establishes that the state's water resources are the property of the State of Montana and are to be used for the benefit of the people. Montana has closed some of its river basins to certain types of new water appropriations due to water availability problems, over appropriation, and a concern for protecting existing water rights. Montana water law authorizes the closure of basins to certain new appropriations through the adoption of administrative rules and the negotiation of reserved water right compacts (See Appendix One: Montana's Basin Closures and Controlled Ground Water Areas).

Montana water law is contained in the Montana Water Use Act (Title 85, Chapter 2, MCA) of 1973 and can be found at: <http://leg.state.mt.us/services/legal/laws.htm>. The act (effective July 1, 1973) changed the water rights administration significantly in the following ways. All water rights existing prior to July 1, 1973, are to be finalized through a statewide adjudication process in state courts. A permit system was established for obtaining water rights for new or additional water developments. An authorization system was established for changing water rights. A centralized records system was established (prior to 1973, water rights were recorded, but not consistently, in county courthouses throughout the state). A system was provided to reserve water for future consumptive uses and to maintain minimum instream flows for water quality, fish, and wildlife.

Responsible Agency:

Authority for water rights decisions is shared by the district court (including the water court) and the Water Resources Division of the Montana Department of Natural Resources and Conservation (DNRC). The Montana Water Court, a division of the district court, is in charge of general stream adjudications for all pre July 1, 1973 water rights. The Water Resources Division within the DNRC is responsible for the administration, control, and regulation of water appropriated after June 30, 1973.

Application Process:

New appropriation of water or a new diversion, withdrawal, impoundment, or distribution requires the filing of an Application for Beneficial Water Use Permit. This form requests information describing the intended use, place of use, point of diversion, source of supply, amount of water to be used, diversion facilities, and other particulars of the proposed appropriation. A beneficial water use permit is also required before appropriating ground water of more than 35 gallons per minute and 10 acre-feet per year. Permits are not required, however, for ground water uses of less than thirty-five gallons per minute, but a Notice of Completion must be filed in order to acquire the water right.

Upon receipt of an application, the regional office reviews and investigates the application. Upon completion of the review, the DNRC publishes a notice in a newspaper and contacts directly any potentially affected water users. Objections to the application can then be made, and if they cannot be resolved, a hearing examiner considers the case through an administrative hearing. An environmental review is also made to determine whether the proposed project will have significant environmental impacts and whether an environmental impact statement is needed.

The following criteria are considered when a new appropriation of water is requested in Montana:

- Is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate.
- Can water reasonably be considered legally available during the period in which the applicant seeks to appropriate and in the amount requested.
- Will the water rights of a prior appropriator under an existing water right, a certificate, a permit, or state water reservation be adversely affected.
- Are the proposed means of diversion, construction, and operation of the appropriation works adequate.
- Is the proposed use of water a beneficial use.
- Does the applicant have possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use.

If a valid objection pertaining to water quality is received, an applicant must also prove that:

- The water quality of a prior appropriator will not be adversely affected,
- The proposed use will be substantially in accordance with the classification of water set for the source of supply pursuant to 75-5-301(1), MCA, or
- The proposed use will not adversely affect the ability of a discharge permit holder to satisfy effluent limitations in accordance with Title 75, Chapter 5, Part 4.

If the application is approved by the DNRC, the applicant receives a permit. A summary of the permit application process can be seen in Appendix Two. Once a permit is received, the permittee then must construct the project, divert the water, and put the water to the intended use as outlined in the permit. When this is finished, the permittee must provide DNRC with a

certified statement describing how the appropriation has been completed. This includes submitting a Project Completion Notice for Permitted Water Development to DNRC before the deadline specified in the permit or any authorized extension of time. After the project is completed, DNRC will review the project completion notice and determine whether the project was completed in accordance with the permit. DNRC will then issue a Certificate of Water Right as long as: the project has been completed, the water has been used according to the terms of the permit, and the basin in which the permit lies has been adjudicated and the final decree issued. The priority date of a certificate is the same as on the original permit. The types of applications that can be filed in Montana can be seen in Appendix Three.

The estimated processing time for an application that is correct and complete is 210 days.

Point of Diversion and Change of Use Procedures:

A holder of a water right, permit, certificate, or water reservation may change the point of diversion, place of use, purpose of use, and place of storage by obtaining prior approval from DNRC. In order to do this, a person must submit an Application for Change of Appropriation Water Right to DNRC and include information on the water right to be changed and the proposed change. An application for change follows the same general process for notice and hearing as outlined above. Upon completion of the change, the appropriator must file a Project Completion Notice for Change of a Water Right notifying DNRC that the authorized change is completed.

State Recognized Beneficial Uses:

Beneficial use in Montana means “a use of water for the benefit of the appropriator, other persons, or the public”. Recognized uses have previously included, but are not limited to:

- Agriculture
- Commercial
- Domestic
- De-watering
- Erosion Control
- Fire Protection
- Fish
- Fish Raceways
- Geothermal
- Industrial
- Irrigation
- Mining
- Municipal
- Navigation
- Power
- Pollution Abatement
- Recreation Uses
- Sediment Control
- Storage
- Stock water
- Waterfowl
- Water Leased
- Wildlife

Ground Water:

Ground water use regulations are different within Controlled Ground Water Areas than outside of these designated areas. Controlled Ground Water Areas may be proposed by DNRC on its own motion, by petition of a state or local public health agency, or by a petition signed by at least 20 or one-fourth (whichever is less) of ground water users where the petitioners feel a Controlled Ground Water Area is necessary. One or more of the following criteria must be met in order for DNRC to declare an area a Controlled Ground Water Area:

- Ground water withdrawals are in excess of recharge to the aquifer.
- Excessive ground water withdrawals are very likely to occur in the near future because withdrawals have consistently increased in the area.
- There are significant disputes within the area concerning priority of rights, amounts of water being used, or priority of type of use.
- Ground water levels or pressures are declining or have declined excessively.
- Excessive ground water withdrawals would cause contaminant migration.
- Ground water withdrawals adversely affecting ground water quality are occurring or are likely to occur.
- Water quality within the ground water area is not suited for a specific beneficial use

When the DNRC is considering the designation of a Controlled Ground Water Area, they will notify concerned parties and hold public hearings to gather comments and information. After notice and public hearing, DNRC will issue an order. If the order declares a permanent or temporary Controlled Ground Water Area, the order will contain the specific control provisions. See Appendix One for more information on Montana's Controlled Ground Water Areas

Nine Controlled Ground Water Areas have been designated in Montana:

- The South Pine Controlled Ground water Area
- The Larson Creek Controlled Ground water Area
- The Hayes Creek Controlled Ground water Area
- The Warm Springs Ponds Controlled Ground water Area
- The Rocker Controlled Ground water Area
- The Bozeman Solvent Site Controlled Ground water Area
- The Old Butte Landfill/Clark Tailings Controlled Ground water Area
- U.S. National Park Service - Montana Compact Yellowstone Controlled Ground water Area
- The Powder River Basin Controlled Ground water Area

Outside of Controlled Ground Water Areas, a permit to Appropriate Water is required before any development can begin, and obtaining this permit involves the application process described above. A person does not, however, need to apply for a permit to develop a well or a ground water spring with an anticipated use of 35 gallons per minute or less, not to exceed 10 acre-feet per year. In this instance, the first step is to drill the well or develop the spring. A Well Log Report is completed by the driller and sent to DNRC within 60 days. After the development is put to use, the owner submits a Notice of Completion of Ground water Development DNRC.

The priority date of the water right is the date DNRC receives the Notice of Completion. A person must have exclusive property rights in the ground water development works or written consent from the person with the property rights. A Certificate of Water Right will then be issued to the owner for the specified use.

Water Rights:

A water right in Montana can be held by an individual, group of individuals, organization, corporation, government agency, etc. In Montana, water rights are attached to the piece of land on which they are used. If a piece of land is transferred, any water right attached to that land passes along with it unless specifically stated otherwise. A water right may be severed from the land and sold or retained independently from the land. If the land is sold but the water right is retained, DNRC does not need to be notified. If, however, the water right alone is transferred to a new owner, an ownership update must be filed with the department. In either case, for the water right to be used again elsewhere, the owner must file an Application for Change to change the water right's place of use.

A water right under a permit can be abandoned if it is not used and there is an intent to abandon. If an appropriator ceases to use all or part of an appropriation, with the intention to abandon, the right is considered abandoned. In addition, a right is considered to be abandoned if it is not used for ten consecutive years (even if there is not evidence of intent to abandon).

Adjudications:

In 1979, the Montana legislature passed a bill amending the adjudication procedures originally established by the Montana Water Use Act. Rather than adjudicating existing water rights one basin at a time, the legislature opted for a comprehensive general adjudication of the entire state's 85 drainage basins. Existing water rights are those that originated before July 1, 1973.

Montana is divided into four water divisions, and the Water Court presides over each division for the purpose of adjudicating existing water rights. The Reserved Water Rights Compact Commission (RWRCC) was created to negotiate compacts with federal agencies and Indian tribes to quantify their reserved water rights in Montana. These negotiated compacts are incorporated into Montana's adjudications.

The Montana Supreme Court has issued an order requiring every person claiming ownership of an existing water right to have filed a statement of claim for that right with the DNRC by January 1, 1982. Stockwater and domestic claims for ground water or instream flow, however, were exempted from this process, though such claims could be filed voluntarily. Existing water rights that were not filed by the deadline are considered to have been abandoned.

DNRC's role in the adjudication process is to provide technical assistance to the Water Court. Prior to the issuance of a decree, DNRC examines each claim for completeness, accuracy, and reasonableness. After all claims in a basin are examined, DNRC issues a Summary Report to the Water Court which is available to the public. The court uses this report in preparing the decree for the basin.

Notice of issuance of every temporary preliminary or preliminary decree is given to all parties who may be affected by the decree, along with notice of the time period for objecting to the rights or compacts, or both, in the decree. Water users are encouraged to review the decree and file objections if they feel their claims, or claims belonging to others in the basin, are in error or contain incorrect information. Following the expiration of a decree's objection period, each party whose claim received an objection must be given notice of the filing of that objection. This notice triggers a 60-day counter objection period. A water judge or water master hears all objections and counter objections. After all objections are resolved, the water judge issues a final decree. On the basis of the final decree, DNRC will issue a Certificate of Water Right to each person decreed an existing water right.

Existing water right claims for livestock and domestic uses from instream flows or ground water sources are exempt from the adjudication process. If claims were not filed, exempt rights were placed in DNRC's central records for notice purposes. The owner must submit a completed Notice of Water Right. The filing of this notice does not constitute recognition of a water right. The burden of proof of these water rights remains with the owners. Once the water right is entered into the records, the owner will receive notice of any actions on the source of supply that may affect the water right.

Number of Ongoing Adjudications:

The status of adjudications on Montana's basins can be seen in Appendix Four and a map of Montana's adjudications can be seen at <ftp://flathead.dnrc.state.mt.us/water/data/adjweb3.jpg>.

Instream Flows:

Montana's instream flow program began in 1969 when the state enacted legislation allowing the Department of Fish, Wildlife, and Parks the right to appropriate water on twelve trout streams. In 1973 the state replaced this legislation with a reservation system which allowed state and federal agencies to request a reservation for minimum flows on any stream. In 1989 further legislation was enacted which allowed the Department of Fish, Wildlife, and Parks to lease water rights for instream flows (but on a limited number of stream reaches). The legislation has been modified several times changing the number of stream reaches upon which leases could be held. In 1995, the water leasing program was expanded to allow individuals and private groups to lease water rights for instream use.

Today, instream flow rights in Montana can be established through new appropriations or through water transfers. New appropriations for instream flow can be established through the water reservations system. Under the reservation statute, the state, any sub-division of the state (including municipalities, conservation districts, and any other state agency), or a federal agency may apply to the DNRC for instream flow use. These applications for minimum flow reservation go through the same application process described above, but the DNRC reviews the right every ten years and may extend, condition, or revoke the reservation. Priority dates for the reservations, as with other applications, are determined by the application date.

Instream flows can also be maintained in Montana through water transfers. There are three ways to convert an existing consumptive use water right to instream use. A person may

lease all or a portion of a water right to Montana Fish, Wildlife & Parks (FWP), lease the water right to another party interested in holding the right for the fishery, or convert the water right to an instream use. Any conversion to an instream use requires a temporary change authorization from DNRC and must benefit fisheries.

Recognized Beneficial Uses for Instream Flow:

Beneficial uses for instream flows are vaguely defined in Montana. State law indicates that a beneficial use can be any use that benefits the appropriator, other persons, or the public. This leaves the decision of what constitutes a beneficial instream flow use to the discretion of the DNRC. Most instream flow uses to date have been to benefit fisheries and to maintain water quality, but instream flow uses are not necessarily limited to these uses.

Holdship of Instream Flow Water Rights:

Federal agencies and any political subdivision of the state may apply for and hold instream flow reservations (from new appropriations). With some restrictions, private or public entities may lease water rights for instream flow. "Any person" may lease a water right for instream flow. Montana statute defines "person" as "an individual, association, partnership, corporation, state agency, political subdivision, the United States or any agency of the United States, or any other entity". The Montana Department of Fish, Wildlife, and Parks is authorized to lease rights for instream flow, but only on a certain number of stream reaches (the Department is currently authorized to hold leases on 40 reaches).

Federal Reserved Water Rights:

A Reserved Water Rights Compact Commission has been established in Montana to negotiate compacts with federal agencies and Native American tribes in an effort to quantify federal reserved rights. Negotiated compacts will be incorporated into the statewide general stream adjudications. When negotiations fail to produce compacts, federal reserved water rights will then be determined through the state adjudication process.

To date, the RWRCC has negotiated and the Montana Legislature has ratified these compacts:

- Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation-State of Montana
- Northern Cheyenne Tribe-State of Montana
- United States National Park Service-State of Montana (Big Hole National Battlefield, Glacier National Park, Yellowstone National Park, Bighorn Canyon National Recreation Area, and Little Bighorn Battlefield National Monument)
- Chippewa Cree Tribe of the Rocky Boy's Reservation-State of Montana
- United States Bureau of Land Management-State of Montana (2 Units - Bear Trap Canyon Public Recreation Site and Upper Missouri National Wild and Scenic River)
- United States Fish and Wildlife Service-State of Montana (2 Units - Benton Lake National Wildlife Refuge and Black Coulee National Wildlife Refuge)
- Crow Tribe-State of Montana

BLM Specific Information:

There are several aspects of the application process that are particularly relevant to BLM's work in Montana. The capability to proceed with the construction of small stockwater ponds without first applying for a permit has greatly facilitated BLM's ability to meet the need for flexibility within the range improvement program. The twenty-one month average processing time for a regular water permit can sometimes frustrate projects. In cases where objections are received to BLM permit applications, it is becoming more difficult for BLM to provide the expert testimony required to support the application because BLM in Montana has fewer hydrologists and soil scientists and engineers available to provide such testimony. Additionally, many of the BLM specialists do not have sufficient training in appearing as an expert witness to allow them to adequately prepare for this role.

Regarding right-of-way approvals by BLM and BLM filing fees, the following applies in Montana. The water right application form requires a signature by the landowner if different from the applicant. This signature is accepted by the State as proof that the necessary permissions have been secured. There has never been any request for proof of final right-of-way approval. BLM pays the same filing fees for new appropriations (post-1973) as all other applicants. In the statewide general adjudication legislation, the legislature set the filing fees at \$40.00 per claim up to a maximum of \$400.00 per claimant per water division. BLM also paid these fees at the maximum per division. New appropriation fees generally amount to less than \$2000.00 per year in recent years. This is mostly due to the decrease in number of applications due to basin closures, increased difficulty in securing new permits, and decrease in project dollars for range improvements.

BLM is very active in Montana's general statewide adjudications. Montana is adjudicating all water rights that existed prior to July 1, 1973, and BLM has filed more than 22,000 claims. The BLM state office in Montana routinely defends these claims, as well as objects to other claims which adversely impacts BLM's water uses and programs.

BLM has been active in protecting natural flows in Montana. Besides the state's instream flow program (discussed above), BLM has used several other methods to protect natural flows. Protection of instream flows was a critical issue in the compact negotiations for the Upper Missouri National Wild and Scenic River and the Bear Trap Canyon Recreation Site. Montana also has initiated several state-based reservation proceedings to allow users to reserve instream flows. BLM has secured these instream flow reservations on 31 stream reaches in the Upper Missouri River basin to protect riparian habitat and flows for threatened and endangered species (west slope cutthroat and/or arctic grayling). BLM has also held discussions with the Bureau of Reclamation concerning their ability to augment instream flows from storage facilities in Montana.

Negotiations over BLM's federal reserved water rights are progressing in Montana. BLM has reached a compact with the State of Montana for the Upper Missouri National Wild and Scenic River and the Bear Trap Canyon Recreation Site. The State has declined to attempt a compact for the various PWR107 water sources, but will handle them through the adjudication process. BLM is currently working through BLM and USDI approvals to begin negotiations for the Upper Missouri River Breaks National Monument reserved water rights.

BLM and the State of Montana have enjoyed a good and cooperative working relationship regarding water rights. BLM is an active participants on many water related joint working groups to deal with water rights and water quality issues in Montana. Montana is in the early stages of a new state administration resulting from the last election and BLM has yet to see whether that will change this relationship (although no problems are expected).

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NV

Nevada

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Nevada water law is founded on the doctrine of prior appropriation, or “first in time - first in right”. State law explicitly states that all waters of Nevada are public property, and a water right is a right to put that water to beneficial use. Beneficial use is the basis of a water right in Nevada. Nevada water law is set forth in the Nevada Revised Statutes, Chapters 532 through 538 and can be found at: <http://ndwr.state.nv.us/Home/nrs.htm>.

Responsible Agency:

The Nevada Division of Water Resources, headed by the State Engineer, is responsible for the administration and enforcement of Nevada’s water law. This includes overseeing the appropriation, distribution, and management of the state’s surface and ground water.

Application Process:

The only way to establish a new water right in Nevada is to file an application to appropriate water with the State Engineer (an application to change existing rights requires a similar process). A list of applications that can be filed in Nevada can be seen in Appendix One. An applicant initiates the process by filing an application form with the State Engineer. Following the filing, the application is reviewed for completeness and compliance with required procedures. A legal notice including the point of diversion (if applicable) is then prepared and advertized in a local newspaper for four consecutive weeks. Following the advertisement, there is a thirty day protest period. Any interested person may file a protest with the State Engineer. The protest should set forth the grounds on which the protest is being submitted and whether the protestant seeks denial of the application or conditional approval. If an application is protested, a formal hearing may be held in which the applicant and protestant presents their evidence to the State Engineer. The hearings are formal and all testimony is sworn and recorded.

The State Engineer considers the following three criteria when approving or rejecting an application. One, is there unappropriated water in the source, two, will the proposed use impair existing rights, and three, is the proposed use detrimental to the public interest. The State Engineer may also consider water quality issues, and he may place conditions upon the approved application to protect any interests.

Approved applications are granted a specific time period within which to develop the beneficial use of the water. Once the water has been placed to beneficial use, the applicant is required to file proof with the State Engineer. The proof must detail the quantity of water used, the extent of uses, the exact location of the point of diversion, and other related information. Once proof has been filed, the State Engineer issues a certificate of appropriation and the water

right is “certified” or “perfected”. Any party disagreeing with the decision of the State Engineer may appeal to the District Court of the county in which the decision applies.

Vested rights are rights that do not have to go through the application process. Vested rights to surface water are those rights for which the work to establish beneficial use was initiated prior to March 1, 1905 (the date of adoption of Nevada’s Water Law). Vested rights from underground sources are those rights initiated prior to March 22, 1913 for artesian water and prior to March 22, 1939 for percolating water. The extent of all vested rights on a water source is determined through the adjudication process (see below). For further details on the application process and the associated filing fees, see Appendix Two.

Obtaining a water right in Nevada can take as little as a few month and as much as many years. It takes a minimum of two month to provide notice and allow for protest of an application. If there are no complication, the State Engineer can approve the application. However, if the application is protested or contains complications that need investigating, the State Engineer can take much longer to approve the application. Once the application has been approved, it is up to the permittee to complete the necessary work and file proofs which will result in the perfected water right. The time frame to obtain a perfected right once the application has been approved is dependant upon the work involved.

Point of Diversion and Change of Use Procedures:

In Nevada, a diversion is not a necessary component of a water right. The basis of a water right is beneficial use, and if the requested beneficial use necessitates a point of diversion, then it is required and must be specified in the application. Beneficial uses which do not necessitate a point of diversion may be granted, as in the case for instream flow rights.

The point of diversion, place of use, and purpose of use on a water right may be changed by filing a change application with the State Engineer. The statutory criteria for approval includes the proposed change may not impair existing rights or be detrimental to the public interest. The process for approving a change application is similar to the application process discussed above.

State Recognized Beneficial Uses:

Beneficial use is the basis, the measure, and the limit of the right to use water. In Nevada, beneficial uses are determined on a case-by-case basis. The following have been accepted as a beneficial use, but recognized beneficial uses are not limited to these categories:

- Commercial
- Construction
- Drilling
- Industrial
- Irrigation
- Milling
- Mining
- Municipal
- Power
- Recreation
- Stockwatering
- Storage
- Wildlife

Ground Water:

The processes for obtaining a ground water right is similar to that for surface water (see above). New ground water rights, however, may be restricted in Nevada if they will cause interference with preexisting wells. The State Engineer also has the authority to designate certain preferred uses when making ground water appropriations, thus prior appropriation is not the strict doctrine for ground water use. In addition, domestic uses of ground water (defined as water for one house), is exempt from the permitting process.

The general ground water policy of the State Engineer is to limit water withdrawals from a basin to the average annual recharge for that basin. However, in basins where an outside source of supply is assured, the State Engineer may allow withdraws in excess of the annual recharge. To do this, the State Engineer designates the basin and issues temporary permits subject to revocation at a later date when water becomes available from an outside source. There are currently two designated basins in Nevada, the Las Vegas Artesian Basin and the Colorado River Basin. In these basins, “temporary revocable permits” have been issued, and they may be revoked when Colorado River water becomes available.

Water Rights:

Nevada law states that any “person” may appropriate water for beneficial use. A “person” may be an individual, group of individuals, organization, corporation, government agency, etc. Water rights in Nevada are considered real property and are protected as such. As a result, a water right can be conveyed or transferred. Water rights, however, are appurtenant to the land and are conveyed by deed with the land unless the seller specifically reserves the water right in the deed. When transferring ownership of a water right, a Report of Conveyance must be filed with the State Engineer.

A water right in Nevada can be lost only by abandonment. Abandonment is determined by the intent of the water user to stop using a water right and it does not have a statutory time period. Until recently, water rights could be lost by forfeiture which occurred if a right was not used for five consecutive years. This, however, has changed and water rights can currently only be lost through voluntary abandonment. Water lost through abandonment reverts back to the public and is available for future appropriation.

Adjudications:

The adjudication process in Nevada focuses on verifying and quantifying pre-statutory water rights, Native American Indian water rights, and federal reserved water rights. An adjudication of surface water claims, other than claims of Native American Indian or federal reserved rights, involves vested rights established before the enactment of Nevada’s statutory water law in 1905. An adjudication of ground water claims involves vested rights established before 1913 for artesian ground water and 1939 for claims to percolating ground water. An adjudication is initiated by the State Engineer, either upon petition by a water user or by his own initiative. Claimants in an adjudication must file a proof of claims and pay a filing fee. The

State Engineer determines the validity of claims through hearings and field investigations. A notice that an adjudication is proceeding must be published for a period of four consecutive weeks in a newspaper of general circulation within the boundaries of the stream system. Upon completion of the adjudication, the State Engineer produces an Order of Determination. The order is submitted to the court where it goes through further hearings and is subject to objections at the judicial level. After the judicial review, the court enters the final decree affirming or modifying the Order of Determination. This Decree is final and conclusive and describes the limit and extent of all rights. The adjudication process can be summarized in the following ten steps:

1. One or more water users on a stream system may petition the State Engineer to begin adjudication proceedings. In the absence of a petition, the State Engineer may initiate the proceedings.
2. The State Engineer investigates facts and conditions concerning the stream system and determines if he will enter an Order granting the petition.
3. If the petition is granted the State Engineer notifies all claimants and has a Notice of Order and Proceedings published for four weeks in a newspaper nearest the stream system.
4. The next step in the process is filing the proofs and title reports by the claimants according to the schedule published in the Notice of Order for taking proofs.
5. From the evidence submitted during the period for taking Proofs, a Preliminary Order of Determination is prepared by the State Engineer. The Preliminary Order allocates the waters of the stream system to claimants having valid vested rights.
6. All evidence submitted during the period for taking Proofs and used in preparing the Preliminary Order is subject to inspection in the office of the State Engineer by any claimant, for a period of 20 days or more.
7. The Preliminary Order of Determination is subject to objections by any of the claimants, and if objections are filed a hearing is held before the State Engineer.
8. Next, an Order of Determination is prepared by the State Engineer and is submitted to all claimants and to the District Court having jurisdiction. All evidence and maps are also forwarded to the District Court.
9. Any claimant may file an exception to the Order of Determination and be heard before the District Judge at a hearing.
10. The District Judge then enters Findings of Fact, Conclusions of Law and the Decree, which determines the water rights on the stream system.

Ongoing Adjudications:

Decreed and ongoing adjudications are listed in Appendix Three.

Instream Flows:

Although no statutory law protects instream flows in Nevada, judicial determination has recognized it as a beneficial use. Nevada's instream flow program is based on a court decree in 1988 involving the Bureau of Land Management. The dispute in the case (*Nevada v. Morros*) was whether or not BLM could apply for and hold a water right for recreational and wildlife purposes on a lake within their jurisdiction. Opponents argued that a right could not be granted because the use did not involve a physical diversion. The Nevada Supreme Court found that a physical diversion was not necessary to establish a water right. The decision upheld the right to appropriate water for instream flow under state law for fish, wildlife, and recreation.

Instream flow rights in Nevada can be established either through new appropriation or through a water right transfer. Transfers can be a temporary or permanent change from the original use to an instream flow right. Historically transfers have been commonly used in Nevada to establish instream flow through the purchase of existing rights to provide water for state and federal wildlife refuges. Applications to establish an instream flow water right, either from a transfer or through a new appropriation, must go through the application process discussed above.

Recognized Beneficial Uses for Instream Flow:

Nevada has recognized wildlife (including fish) and recreation as beneficial uses for instream flow. Since beneficial uses are determined on a case by case basis, however, uses for instream flow are not necessarily limited to these categories.

Holdership of Instream Flow Water Rights:

According to state law "any person" may appropriate water for beneficial use. Any person includes individuals, private organizations, and government agencies. It appears that any entity which can hold a water right in Nevada is permitted hold an instream flow right.

BLM Specific Information:

BLM in Nevada is currently involved in the Walker River Adjudication. This process is just beginning and the state office will be working on this issue in the future. BLM has filed the paper work to assert the federal claims in this basin, but no further progress has been made on the issue.

Federal reserved water rights for BLM in Nevada are primarily limited to Public Water Reserves (PWR). There are no Wild and Scenic Rivers on BLM land in Nevada. In addition, the ten new wilderness areas in Nevada explicitly excluded federal reserved water rights. BLM has a large number of PWR 107s. In order to assert these rights BLM files a notification with the state engineer's office and pays a notification fee of \$50. PWRs other than 107s are sight specific and Nevada has approximately 110 of these.

The relationship between BLM and the state of Nevada can be characterized as strained. After years of threatening, BLM is enforcing trespassing laws related to grazing fees. This has

angered state's rights advocates and has increased tensions between the Bureau and the state. In addition, BLM has been involved in a state supreme court case over BLM's right to hold stockwater rights. This case was recently decided in BLM's favor. BLM can now hold stockwater rights solely or jointly. This decision has settled the case, but has further served to stress the relationship. As BLM asserts their right to hold stockwater rights and to enforce the payment of grazing fees the relationship between the state of Nevada and BLM could further deteriorate.

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NM

New Mexico

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

New Mexico's water law is based on the doctrine of prior appropriation or "first in time - first in right". All waters in New Mexico are declared to be public and subject to appropriation for beneficial use. There are five basic components of a water right in New Mexico: Point of diversion (or Constructed work), Place of use, Purpose of use, Owner, and Quantity. Although these factors are statutorily required, past court decisions, legal opinions, and the discretion of the State Engineer allow flexibility in the interpretation of these basic requirements. The state's water law is presently in force in New Mexico Statutes Chapter 72 and can be found at: <http://198.187.128.12/newmexico/lpext.dll?f=templates&fn=main-h.htm&2.0>.

Responsible Agency and Law:

The State Engineer, appointed by the governor and confirmed by the state senate, has broad authority over the supervision, appropriation and distribution of New Mexico's surface and ground water. This office is responsible for supervision, measurement, appropriation, and distribution of the state's water. The State Engineer performs these duties according to state statute and according to the adjudication of the courts.

Application Process:

Apart from water rights acquired before 1907 and small scale stockwatering (10 acre-feet or less), a permit from the State Engineer is required to appropriate water, change the point of diversion, change the location of wells in declared basins, divert or store water, or change the place or purpose of water use. The types of applications and their associated fees can be seen in Appendix One. An application for a new appropriation or a change in an existing water right must be advertised once a week for three consecutive weeks in a local newspaper. Those believing that their water rights would be impaired by the granting of the application may file a protest. Protests may also be filed on the basis that granting the application will adversely effect public welfare, or would be contrary to the conservation of water within the state. The protest must be filed within ten days after the last publication notice of the application. If a settlement cannot be reached, the applicant can request a hearing before the State Engineer (or the appointed Hearing Examiner). The burden of proof in the hearing is on the applicant, and appeals go to the district court.

When considering an application for permit, the State Engineer considers: the existence of unappropriated waters; if the application will impair existing water right; whether granting the application would be contrary to the conservation of water within the state; and if the application will be detrimental to the public welfare. The State Engineer can then issue a permit either in whole, in part, or conditioned to ensure non-impairment of water rights.

Once a permit is approved, the permittee must complete the work necessary to apply the water to the intended use. Upon completion of the work, the State Engineer issues a certificate which quantifies the right and describes the point(s) of diversion, place of use, and purpose of use. After full use of the water is made, the permittee must file proof of application of water to beneficial use, and upon inspection the State Engineer issues a license to appropriate water. The license defines the extent and conditions of the use. The steps in the application process are outlined in Appendix Two.

There is a new requirement in New Mexico that prior to someone obtaining a water right involving the use of public lands, they must prove they actually have a permit to use the public lands. This requirement is described in section 72-12-1 of New Mexico's water right's code.

The time frame involved in obtaining a water right in New Mexico is extremely variable. If an application is not complex and is not protested, it takes a minimum of 3 months to obtain an approval. If, however, the application is protested, hearings are held, and complexities are involved, the State Engineer can take much longer (in some cases decades) to reach a decision.

Point of Diversion and Change Procedures:

Statutory law states that beneficial use in New Mexico requires a diversion of water from its natural path to a place where that water produces revenue or sustains human life. Court rulings, however, have found that this requirement does not apply to all beneficial uses. As we will see below in the instream flow discussion, recreational use, for example, does not require a point of diversion.

One attribute of a water right in New Mexico is the right to change the point of diversion, the place of use, and the purpose of use. These changes, however, may not impair any other water right, may not be contrary to the conservation of water, and may not be detrimental to the public welfare. In addition, a change in diversion, place, or purpose may not increase consumptive use. Any such changes in surface or ground water requires the filing of an appropriate application with and the approval by the State Engineer.

State Recognized Beneficial Uses:

The State of New Mexico does not have an official list of approved beneficial uses. The recognition of a beneficial use is at the discretion of the State Engineer. According to state statute, a beneficial use in New Mexico requires a diversion of water from its natural path to a place where that water will produce revenue or sustain human life. Recent court decisions, however, have changed this allowing for beneficial uses without a diversion requirement. Therefore, the State Engineer has broad authority in considering what constitutes beneficial use in New Mexico. Recognized beneficial uses in the past have included:

- Agriculture
- Commercial
- Domestic
- Industrial
- Recreational Uses
- State Conservation Goals
- Stockwatering

Ground Water:

The New Mexico ground water code was enacted in 1931. Ground water procedures closely parallel those for surface water, with several important differences. A permit to drill a well and appropriate water is not required in areas outside of declared “underground water basins”. Within underground water basins, however, use is regulated by the State Engineer. The State Engineer has the authority to establish these basins when regulation is necessary to protect prior appropriations, ensure water is put to beneficial use, and to maintain orderly development of the state’s water resources. There are currently 33 declared underground water basins throughout New Mexico (see Appendix Three).

Under New Mexico ground water law, only well drillers licensed by the state may drill or alter wells (with a diameter larger than 2 3/8 inches) within the boundaries of declared underground water basins. The State Engineer is required to issue permits within declared underground water basins in certain instances (see Appendix Four).

Water Rights:

Water rights in New Mexico can be held by any entity except by the State Engineer. In other words, rights can be held solely, jointly, collectively, or in the name of a corporation, organization, or government agency. All water appropriated for irrigation (unless otherwise stated) is appurtenant to the land upon which it is used and it cannot be transferred to other lands or used for other beneficial purposes unless the water right is separated from the land. A water right can be severed from the land through an application to the State Engineer.

Water rights in New Mexico can be transferred from one entity to another, but a change application must be filed and approved by the State Engineer. Water rights in New Mexico are considered real property and they may be bought or sold. A water right can be conveyed as part of a piece of property or separate (as long as that water right has been severed from the land by an approved application through the State Engineer).

A water right in New Mexico can be lost by forfeiture. When all or any part of appropriated water is not put to beneficial use for a period of four consecutive years, the State Engineer issues a notice of non-use. If the failure to beneficially use the water persists for one more year, the unused water is forfeited and becomes part of the public domain. Forfeiture does not occur, however, if the reason for non-use are beyond the control of the owner.

Adjudications:

New Mexico has adjudicated water rights since 1907. Adjudication is through a program of hydrographic surveys and suits. The State Engineer is required to conduct surveys of every stream system in the state. During a survey, data is collected to help the court determine the amount of water to be awarded to each claimant. In an adjudication suit, each claimant has an opportunity to present evidence of water right to the court. The completion of adjudication results in a court decree outlining the priority, amount, purpose (determination of use), periods, and place of water use.

Ongoing adjudications:

Currently there are ten ongoing adjudications in New Mexico.

Instream flows:

New Mexico's instream flow program is complex, unclear, and continues evolving. New Mexico does not have a legislated instream flow program, and instream flow is not a recognized beneficial use. Recent case law, however, has allowed the development of an instream flow program in New Mexico. In 1998, the New Mexico Attorney General issued a legal opinion concluding that the transfer of a consumptive water right to an instream flow right is allowable under state law. The legal opinion determined that instream uses such as recreation and fish and wildlife habitat are beneficial uses, and that transfers of existing water rights to instream flows are not expressly prohibited. Prior to this opinion, New Mexico was the only state that did not recognize instream flow as a beneficial use.

The Attorney General's opinion is based upon case law. The New Mexico Supreme Court first recognized instream flows as a beneficial use in *State Game Commission v. Red River Valley Co.* in 1945. In that decision, the court ruled that "beneficial use", in relationship to unappropriated water included recreation and fishing. In 1972, the court further held that a diversion was necessary to establish agricultural water rights (*Reynolds v. Miranda*). Based upon these rulings the Attorney General found that recreational use is a beneficial use and that a diversion was not necessary to establish a water right other than for agricultural use.

The 1998 Attorney General's opinion is limited to the context of transferring existing water rights. The opinion notes that new appropriations of water for instream flow are not subject to this precedent. Although the opinion concludes that there are no legal barriers to the transfer of existing water rights to an instream flow right, the State Engineer still has the responsibility for approving such a transfer. Transfers are subject to the application process outlined above, and the State Engineer Office has further indicated that it will require any instream flow right to be conditioned upon gauging throughout the protected stream reach.

Recognized Beneficial Uses for Instream Flow:

Instream flow in itself is not recognized as a beneficial use. It appears, however, that water can be dedicated to instream flow for the purpose of recreation and fish and wildlife habitat.

Holdership of Instream Flow Water Rights:

The Attorney General's opinion does not explicitly address the issue of ownership of instream flow rights. It may be assumed that since ownership of other types of water rights are not limited, instream flow rights could be held by a public or private entity. Current law, however, is unclear and continues to develop in this area.

Quantification Requirements and Procedures:

Since instream flow is not statutorily regulated, there are no explicit quantification requirements in New Mexico. Approval of water transfers to instream flow is subject to the approval of the State Engineer. The State Engineer has the authority to place restrictions on the approval of an instream flow, therefore quantification requirements are currently at the discretion of the State Engineer.

BLM Specific Information:

The New Mexico State Engineer Office has not required a water applicant to have the necessary right-of-way approved from BLM prior to the approval of the application. The new requirements that an applicant prove they have a permit to use public lands prior to obtaining a water right for use on that land, however, changes this precedent.

The BLM is required to pay any applicable fees. A list of these fees can be seen in Appendix One.

BLM is involved in all ten of New Mexico's ongoing adjudications.

With regard to federal reserved water rights, BLM holds reserved rights on the Red River Wild and Scenic River. This reserved right was acquired through the adjudication of the Red River Basin. The BLM has also applied for reserved rights on the Rio Chama Wild and Scenic River, but that adjudication is ongoing. In addition to Wild and Scenic River reserved rights, the BLM holds numerous Public Water Reserve 107 reserved water rights.

The New Mexico State Engineer Office has recently threatened to deny federal agencies any claim to stockwater rights. The rationale is the agencies do not own livestock and therefore do not put the water to beneficial use. There is, however, a history of federal agencies being granted stockwater claims in New Mexico.

The relationship between the New Mexico State Engineer Office and the Bureau of Land Management can be characterized as business like. With the recent requirement for proof of permits on public lands, there stands to be more interaction between the two agencies. In the past, however, interaction has been limited to the BLM's proposed applications and to the BLM's protest of other applications. The new requirement for proof of permit could potentially lead to more cooperative interaction. The BLM is in the process of coordinating action within the agency for the approval of these permits and there is consideration of making the State Engineer Office a cooperative partner.

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OR

Oregon

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Although Oregon's water rights system is based primarily on the doctrine of prior appropriation, remnants of riparian water rights still exist. Oregon can therefore be said to have a dual system of water rights. Riparian rights exist because until the enactment of Oregon's water code in 1909, the state recognized riparian water rights, and a few vestiges of these rights remain. Water uses that were established prior to 1909, have not been abandoned or forfeited, and are verified and quantified through an adjudication process in the circuit court are said to be vested rights.

The dominant system in Oregon, however, is prior appropriation or "first in time - first in right". Under Oregon law, all water is publicly owned and users must obtain a permit from the Water Resources Department to use water from any source. The four fundamental provisions of Oregon's water code are:

- Beneficial purpose without waste - Surface or ground water may be legally diverted for use only if it is for a beneficial purpose without waste
- Priority - The water right priority date determines who gets water in a time of shortage. The more senior the water right, the longer water is available in a time of shortage.
- Appurtenancy - A water right is attached to the land where use was established. If the land is sold, the water right goes with the land to the new owner.
- Must be used - Once established, a water right must be used as provided in the water right at least once every five years. With some exceptions established in the law, after five years of non-use, the right is considered forfeited and is subject to cancellation.

Oregon has established basin programs in which all the land area, surface water bodies, aquifers, and tributaries that drain into the major river are managed together. The basin program includes water use "classifications" that describe the types of new water right applications that may be considered by the Water Resources Department. The Water Resources Commission has adopted basin programs for all but two of the state's 20 major river basins. Within a basin, action by the state legislature or administrative procedures by the Commission can close an area to new appropriations. These restrictions on new uses from streams and aquifers are adopted to assure sustained supplies for existing water users and to protect important natural resources. Except in the case of "critical ground water areas" (see below), these restrictions do not affect existing water uses.

Oregon's water laws are contained in Oregon Revised Statutes, Chapters 536 through 541 and can be found at: <http://www.wrd.state.or.us/law/ors1999.shtml> or <http://www.leg.state.or.us/ors/home.html>

Responsible Agency:

Water use in Oregon (both surface and ground water) is administered by the Water Resources Department which is responsible for implementing Oregon's water policy. This general water policy is set by the seven-member Water Resources Commission which is appointed by the governor. The Commission also acts as the board of directors for the Department.

Application Process:

The development of a new surface or ground water right in Oregon requires the submission of a permit application to the Water Resources Department, although certain uses are "exempt uses" (see Appendix One). Upon receipt of an application, the Water Resources Department reviews the application and verifies its completeness. Once completion is verified, the application is given a tentative priority date and then reviewed according to statutory criteria. Public notice of the application is then given and a Proposed Final Order is prepared and distributed for public comment. A protest period is then open for the next forty-five days. If a protest is filed, it must be accompanied by a \$200 protest fee. If a protest is filed against the application, the director of the Water Resources Department may or may not hold a hearing before making a final determination. The applicant has the right to protest the Proposed Final Order in which case the director is required to hold a hearing. Following a hearing, a Proposed Order is issued by the hearings officer. Final Orders are issued by the director of the Water Resources Department. An appeal of the Final Order goes to the Water Resources Commission. A flow chart of the permit application process can be seen in Appendix Two.

When a Final Order is issued, development of the water must be initiated within one year. Deadlines for completion of the development are further specified on the permit, but generally must be completed within five years. Upon completion of the development (or "proving up" the water use), a final proof survey is submitted to the Water Resources Department. This involves having a Certified Water Rights Examiner (CWRE) conduct a survey and prepare a map and claim of beneficial use. Assuming all conditions of the permit have been met, a certificate of water right is granted. A summary of the entire application process can be seen in Appendix Three, and the types of applications that can be filed in Oregon can be seen in Appendix Four.

Assuming there are no complications with a water right application it takes a minimum of 190 days to obtain a final order or a water right permit. The time frame to obtain a certificate of water right depends upon the work involved in "proving up" the water use.

Point of Diversion and Change of Use Procedures:

A point of diversion is required for consumptive uses of water, but not when establishing instream flows. Changes in the point of diversion, point of appropriation, place of use, and nature of use can be done, but must have approval from the Water Resources Department. If an applicant wants to change one of these specifications on the permit, a transfer application must be filed with the Department. Both temporary and permanent transfers are allowed.

In order to approve a permanent transfer application, the Department must determine that

the proposed change will not injure other water rights. The public is offered a chance to comment and protest if an existing water right would be injured. Only protests which claim injury to another water can be accepted. The Department may attach conditions to an approval order to eliminate potential injury to other water rights. Once the transfer application is approved, the permittee, must submit proof of completion of the change, at which time a new certificate is issued which confirms the modified water right.

Temporary transfers are allowed for a change in the place of use and may not exceed a period of five years. The application for a temporary transfer is the same as for a permanent transfer except the proof of completion is not as rigorous.

State Recognized Beneficial Uses:

Recognized beneficial uses of water in Oregon include:

- Aquatic Life
- Commercial
- Domestic
- Fire Protection
- Fish
- Groundwater Recharge
- Industrial
- Instream Flow
- Irrigation
- Mining
- Municipal
- Pollution Abatement
- Power
- Recreation Uses
- Wildlife

Ground Water:

Ground water in Oregon is declared to part of the public waters of the state and must be appropriated by the application/ permit/ certificate process described above. Due to the basin program, ground water and surface water are managed conjunctively within basins. Applications for ground water use are examined for their interference with existing wells as well as surface water claims. The permit process is not required for certain uses of ground water (see Appendix One).

In order to regulate the use of ground water (besides the regulation on new appropriation which result from the basin program), the Water Resources Commission may declare certain areas as “Critical Ground Water Areas”. The law in Oregon requires that when pumping of ground water exceeds the long-term natural replenishment of the aquifer, the Water Resources Commission must declare the source a Critical Ground Water Area and restrict water use. The purpose of this designation is to prevent excessive decline in ground water levels and to stop quality degradation. Within Critical Ground Water Areas, certain users of water have preference over other users, regardless of established water right priority dates. There are currently six critical ground water areas in Oregon: The Dalles in Wasco County; Cooper Mountain - Bull Mountain southwest of Beaverton and Tigard; Butter Creek; Ordnanace, and Stage Gulch.

Water Rights:

A water right in Oregon can be held by any legal entity. In other words, a water right can be held by an individual, group of individuals, organization, corporation, government agency, etc. Although the name on a water right can be any entity, a water right in Oregon is specific to the place of use. The owner of the land to which the water right is attached has the authority to make decisions and modifications concerning the water right.

Water rights in Oregon can be transferred from one owner to another. There are two types of transfers allowed in Oregon: permanent and temporary. The approval process for a transfer application is that same as described above for a change in use or change in point of diversion. The transfer of water rights can occur through the buying and selling of rights. The Oregon law states, however, that a profit cannot be made off of the sale of a water right; the sale can only recover the costs incurred regarding the operation and sale of the water right. This provision, however, is not strictly enforced.

Water rights in Oregon can be lost through abandonment or forfeiture. Abandonment is voluntary by the owner, where as forfeiture occurs through five consecutive years of non-use. Once a water right has been unused for five or more years, it is subject to cancellation. Cancellation requires a legal proceeding to determine whether or not the period of non-use has occurred. A water right is subject to cancellation even if the property owner begins to use the water again after a period of non-use. This is true even if the current owner did not own the property when use was discontinued. However, if more than 15 years have passed since the period of non-use, the water right is not subject to cancellation under the law.

Adjudications:

General adjudications in Oregon are used to determine all pre-1909 and Federal Reserved water rights. The general adjudication of a river basin is initiated by the local circuit court or the director the Water Resources Department. In order to claim a right during adjudication, a “proof of claim” must be filed with the department. Claims are reviewed and may be contested. The department issues an order of determination, and the circuit court reviews the order and affirms or modifies it. The final judgement by the circuit court is called a decree. The decree is the final determination of all pre-1909 and Federal Reserved water rights in that river basin. Individual certificates are then issued to water claimants according to the terms of the decree.

Ongoing Adjudications:

Pre-1909 rights have been adjudicated in approximately two-thirds of Oregon. Adjudication proceedings have been completed for most of the major stream systems in eastern and southern Oregon and a few of the larger tributaries to the Willamette River. A major adjudication proceeding involving federal agencies and the Klamath Tribe is underway in the Klamath Basin.

Instream Flows:

Instream flows in Oregon can be acquired through new appropriation or through transfers. Oregon was one of the first western states to recognize instream flow as a beneficial use. In 1915 the legislature prohibited the appropriation of creeks that form waterfalls in the Columbi River Gorge. In 1955 they expanded their instream flow program by adopting minimum stream flows to support aquatic life, minimize pollution, and maintain recreational opportunities. These minimum flows were administrative rules and were not full water rights. In 1983, amendments were adopted that authorized the Department of Fish and Wildlife, the Department of Environmental Quality, and the Department of Parks and Recreation to apply for minimum instream flow rights. In 1987 and again in 1993, further amendments were made to the water code strengthening instream flow rights, allowing for transfers, and allowing for the use of water markets to acquire instream flow rights.

Currently, only the Departments of Fish and Wildlife, Environmental Quality, and Parks and Recreation may apply for new appropriations for water for instream flow. Although these Departments apply for instream flow rights, the rights are not issues to the agencies, but are held in trust by the Water Resources Department. Instream flow rights can also be established through water right transfers (either permanent or temporary). Oregon water law allows any entity (public or private) to purchase, lease, or receive as a gift any water right for instream use. The converted rights, however, must be held in trust by the Water Resources Department.

Recognized Beneficial Uses for Instream Flow:

Instream flow rights must be held in trust by the Water Resources Department for “public use”. Public uses include recreation, conservation, fish and wildlife maintenance and habitat, other ecological values, pollution abatement, and navigation.

Holdership of Instream Flow Water Rights:

The Oregon Water Resources Department is the only entity that may hold instream flow rights. The Departments of Fish and Wildlife, Environmental Quality, and Parks and Recreation can request new appropriations of instream flow rights. Individuals and other entities may acquire existing rights and take responsibility for changing the use to instream flow, but then they must turn the right over to the Department to be held in trust.

Quantification Requirements and Procedures:

In Oregon, the amount of water reserved for an instream water right cannot exceed the amount needed to provide increased public benefits. When natural stream flows are the source for meeting instream water rights, the amount allowed for the water right cannot exceed the estimated average natural flow. Applications to establish instream water rights must include the requested amount by month and year in cubic feet per second or acre-feet, and a description of the technical data and methods used to determine the requested amounts.

All the required procedures for establishing an instream flow right can be found in Oregon Administrative Rules Chapter 690, Division 77.

Federal Reserved Water Rights:

Adjudication proceedings are used to determine the water rights for federal reservations of land including Indian reservations. Legislation passed in 1987 and amended in 1993, allows the director of the Department to act on behalf of the state of Oregon to negotiate settlements for federal reserved water rights. These negotiations allow the director to include claimants, state and federal agencies, other water users, and public interest groups in discussions to resolve and quantify the use of water on federal and Indian reservations.

BLM Specific Information:

The requirement under Oregon State law that a Certified Water Rights Examiner (CWRE) conduct a survey and prepare a map and claim of beneficial use has been somewhat problematic for BLM. BLM has a large number of water rights claims and therefore has a backlog of water rights filings. It has been a priority to have Districts eliminate their backlog, but funding has often hindered this. There are several employees in the Oregon State Office Cadastral Survey branch who are CWREs. In the past, the State Office Soil, Water and Air program provided funding to the Cadastral Survey branch. This funding covered the expenses of having these BLM CWREs travel to the Districts to assist them with their water rights workload. Unfortunately, budget restrictions have reduced the amount of funding available. The need for CWREs now exceeds what the State Office can provide and thus the remaining CWRE need is passed to the District. Some Districts have invested in training their own CWREs. Others have not, and these Districts must contract with a local engineering firm to obtain CWRE services. In this latter case, the expense can be high which means that fewer water rights applications get filed.

Water applicants in Oregon must have the necessary right-of-way approved from BLM prior to approval by the state. The applicant must provide proof that an easement or other authorization exists for a water right application on land that is not owned by the applicant.

BLM is required to pay filing fees and the amount depends on the type of application.

When BLM seeks to obtain a water right for use on BLM land, the applicant must first determine if the proposed use qualifies as a federal reserved right. If it qualifies as a federal reserved right, the applicant should determine if the purpose of the reservation would be best served through the assertion of the federal reserved right. If the assertion is the best way to obtain a right, the applicant must follow a certain set of requirements depending upon whether or not the area has been adjudicated. If a federal reserved right cannot be asserted, or if the purpose would be more effectively served through the state application process, the applicant must follow a different set of requirements. The decision criteria and list of requirements for obtaining water for BLM purposes in Oregon is outlined in Appendix Five.

Adjudications in Oregon have not given BLM the opportunity to assert federal reserved water rights for wilderness areas. Another situation facing the BLM is that many of the basins in Oregon have already been adjudicated for pre-1909 water rights (back in the 60s-70s). In those adjudications, federal reserved water rights were not addressed. Therefore, federal reserved water rights exist in these basins that have not been quantified and asserted and they will not be

unless the State initiates a new adjudication or the federal government brings suit against the state to have its claims quantified. BLM is currently participating in the Klamath adjudication in Oregon.

To date, the BLM has worked well with the State. However, recent tensions in the Upper Klamath Basin over water issues (a partial denial of the BLM's instream flow claim for the Upper Klamath River in the Klamath Basin Adjudication) and a recent bill in the Oregon Legislature (HB 3343) could signal change. House Bill (HB) 3343 attempted to prohibit the Oregon Water Resources Department from granting a water right or other control over waters of the state to the federal government, United Nations or other entity acting on behalf of the federal government or the United Nations. This prohibition would retroactively affect applications submitted by the BLM and other federal agencies that have not received a permit from the state before the effective date of the measure. The Vale District would be particularly affected, as it has hundreds of such applications pending permits. The bill was referred to the House Water and Environment Committee on March 13, 2001. Public hearings were held March 16, 2001 and May 18, 2001. The bill, which was introduced at the request of the Oregon Cattlemen's Association, died in Committee. Another potential issue surrounds the measurement of water use and water use reporting. HB 3623 was a recently introduced bill that would have required all water users to measure the amount of water withdrawn or stored. Oregon water law currently requires that annual water use reports be submitted for all reservoirs and large dams (those over 9.2 acre feet or over 10 feet in height). These are to be monitored monthly, and the use is to be reported by month for the year. The current approach being used by the BLM is to submit this type of information to the Water Resources Department as a matter of comity. Districts vary in their adherence to this requirement; some only submit a blank water use form. The BLM has thousands of water developments on the public lands in Oregon; therefore, the cost of installing measuring devices and recording measurements would be prohibitive. This bill did not pass this legislative session. If it had, the Oregon State Office BLM would likely have sought to obtain a waiver of this requirement or would have consulted with legal counsel about having to submit this information.

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Utah

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

The prior appropriation doctrine is the basis of water appropriation in Utah. State statutes provide that all water is the property of the public, and a water right is the right to the use of water based upon quantity, source, priority date, nature of use, point of diversion, and physically putting water to beneficial use. The basis of all water rights in Utah is beneficial use, and a water right is defined by the point of diversion, place of use, amount diverted, purpose of use, and period of use. A complete "water code" was enacted in 1903 and was revised and reenacted in 1919. This law, as amended, is presently in force as Utah Code, Title 73 which can be seen at: <http://www.le.state.ut.us/~code/TITLE73/TITLE73.htm>. Today, much of the State of Utah is closed to new appropriations of water, so new projects and allocations will require obtaining existing rights and amending them for new purposes.

Responsible Agency:

The State Engineer through the Division of Water Rights is responsible for the administration of water rights, including the appropriation, distribution, and management of the state's surface and ground water. This office has broad discretionary powers to implement the duties required by the office. The Utah State Engineer's Office was created in 1897, and the State Engineer is the chief water rights administrative officer.

Application Process:

The establishment of a new water right or changing an existing right requires the filing of an application with the State Engineer. The types of applications which can be filed in Utah can be seen in Appendix One. To initiate an application, the applicant must describe the proposed development through the application. The application is reviewed and upon verification of its completeness and adherence to existing policies, a legal notice is prepared and advertised for two consecutive weeks in a local newspaper. Applications can either be processed under formal or informal administrative procedures (this determination must be made by the applicant prior to advertising). The predominant difference between the two procedures relates to the appeal process. Under the formal procedures, an appeal is reviewed based upon the existing record, where as under the informal proceedings, the appeal is handled as a new trial. Following the legal advertisement there is a 20 day protest period during which time protests can be filed against the application. Protests are not limited to water right holders; anyone who has an interest can file a protest. If an application is protested, a hearing is held to allow the applicant and protestant to present information to the State Engineer (these considerations can be seen in Appendix Three). The status of an application which has not been acted upon is referred to as

“unapproved”.

In approving or rejecting an application, the State Engineer considers items outlined in UCA section 73-3-8 as well as water quality issues (see Appendix Two - Assessing an Application). In approving the application, the State Engineer can impose conditions to protect prior water rights, better define the extent of the application, or address other issues such as required permits by other regulatory agencies or requiring minimum stream flow bypasses. The status of an application which has been approved is referred to as “approved”, and the approval of an application takes a minimum of three months.

When applications are approved they are granted for specific time period (usually 3 years) in which to develop the project. Once the project is complete and the water has been placed to beneficial use, the applicant is required to file proof of appropriation with the State Engineer. This file of proof affirms the quantity of water that has been developed, the extent of use, exact location of the point of diversion, and other related information. Upon filing of proof, the State Engineer then issues the “certificate of appropriation” and the status of the application is referred to as “perfected”. Appendix Four provides a summary of the water right acquisition process.

Point of Diversion and Change of Use Procedures:

In most cases, a point of diversion is required in order to obtain a water right. Certain beneficial uses (such as instream flow), however, do not require diversion. Both the point of diversion and the purpose and place of use can be changed. To change the point of diversion, purpose of use, or place of use, a change application describing the proposed change must be filed with the State Engineer. The change application is processed in the same manor as an application to appropriate water and is evaluated using the same criteria. In addition to the criteria used to evaluate an application, the State Engineer also considers if the proposed change will exceed historical levels, and if intervening rights will be impaired due to the proposed change.

State Recognized Beneficial Uses:

Utah recognizes the following beneficial uses:

- Agriculture
- Culinary
- Domestic
- Industrial
- Irrigation
- Manufacturing
- Milling
- Mining
- Municipal
- Power
- Stock watering
- Instream flow - fish, recreation and the reasonable preservation or enhancement of the natural stream environment
- Storage - irrigation, power generation, water supply, aquatic culture and recreation.

See Appendix Five for Beneficial Use Quantification.

Ground Water:

The State Engineer, through the Division of Water Rights, is responsible for administering both surface and ground water. The process for obtaining a ground water permit (either a new application or a change application) requires the same forms and process as that for surface water. Ground water policy, however, is different than surface water, therefore the criteria used to evaluate the ground water application may be different. Utah is divided into Ground water areas and policy is determined by area. In general, however, ground water policy in Utah consists of “open”, “restricted”, and “closed” designations. A map of these designations can be seen in Appendix Six.

Utah also regulates the drilling of wells. Any well drilled to a depth of thirty feet or greater must be constructed by a licensed Utah Water Well Driller. The State Engineer, through the Division of Water Rights, is responsible for licensing requirements and well construction criteria, and the development and publication of the Administrative Rules for Water Well Drillers.

Water Rights:

Water rights in Utah can be held by any legal entity. In other words, they can be held solely, jointly, collectively, or in the name of a corporation, organization, or government agency. Regardless of how the right is held, any change application must be titled in that entities name. Water rights can be transferred from one entity to another, but a change application must be filed and approved by the State Engineer. Water rights can be bought and sold as means for transfer, but approval by the State Engineer is still required. An unapproved or approved application is considered personal property, where as a certificated application or “perfected”water right is considered real property. Since applications for a new water right are considered personal property, they may be bought and sold using a conveyance or assignment. When water rights are perfected, they are considered real property, therefore they must be conveyed by deed to the new owner.

A water right in Utah can be lost by either abandonment or forfeiture. Abandonment is determined by the intent of the water user and does not require a statutory time period. A water right is lost by forfeiture if the right is not used for five year. Water lost through abandonment or forfeiture revers back to the public and is subject to future appropriation.

Adjudications:

An adjudication of water rights is a state action addressed in district court to determine the water rights on the source or in the area involved in the action. The State Engineer is a party to the action with the statutory responsibility to prepare a “proposed determination of water rights” (PDET) which serves as the basis for the court's decree on the water rights in the area.

A thorough search is made of the division's records, files and databases which relate to the adjudication area. Further research is required at the County Recorder and Clerk Offices to identify land ownership where necessary and to obtain information or legal documents that help

establish water rights that are not on the divisions records or that help clarify or define water rights that are part of the divisions records.

Maps of the area are created using digital aerial imagery and location coordinates gathered by GPS methods. A hydrographic survey of the area is conducted and field investigations are made with the water user or water provider to verify his sources of water, points of diversion, and specific places and nature of use. An evaluation is made of the water right based on the current use of water or the use of water within the recent past (five years).

When the various aspects of the water rights are gathered and evaluated, the staff assists the water user in preparing a Statement of Water Users Claim for each perfected water right, or group of water rights, and requests the water user to review and sign the claim form. When all of the perfected water rights in the adjudication area have been defined by a Statement of Water Users Claim, a PDET book is compiled and published. A copy of the book is distributed to each water user that is listed in the book. The PDET is the State Engineer's recommendation to the court regarding the status and Quantification of the water rights. A copy of the PDET, the hydrographic survey maps, the original Statements of Water Users Claims, and other required supporting documentation are filed with the district court.

After the PDET book has been distributed, the statute provides for a 90 day protest period within which protests may be filed objecting to a particular water right listed in the PDET, or an attribute of a water right, or the omission of a water right. Objections are filed with the appropriate district court.

Following the protest period, the division staff works with the Attorney General's Office to resolve the protests that were filed. This effort often involves additional field work and discussions with the protestant and the water user (if the protestant is not the water user). Once this effort is completed, a Pre-Trial Order is prepared for the courts signature. The Pre-Trial Order essentially decrees those rights listed in the PDET which were not protested and those which were protested but resolved. The Pre-Trial Order sets forth those protests which could not be resolved and which must be determined by the court. Once the remaining protests have been settled or determined by the court, an Interlocutory Decree is prepared and signed by the court. This Decree supersedes all prior findings or Decrees.

Ongoing Adjudications:

All of the hydrologic areas of the state are currently involved in a court ordered adjudication of water rights except the Weber River and Sevier River drainages. The water rights on the Sevier and Weber Rivers were adjudicated and decreed in the 1920's and 1930's. The adjudications in most of the other areas of the state were started in the 1950's through the early 1970's. The adjudication status of Utah's drainage basin can be seen in Appendix Seven.

Instream flows:

In 1986, Utah enacted an amendment to its water code recognizing instream flows as a beneficial use not subject to diversion requirements (UC 73-3-3-11). Utah's instream flow laws allow The Utah Division of Wildlife Resources or the Division of Parks and Recreation to file for temporary or permanent changes for instream flow rights. The law specifically states that unappropriated water cannot be appropriated for instream purposes. Change application can be filed on rights presently owned by either division; on perfected water rights purchased by either division through funding provided for that purpose, or acquired by lease, agreement, gift, exchange, or contribution; or on water rights acquired by either division with the acquisition of real property. Legislative approval, however, is required before either Division can purchase water rights specifically for instream flow purposes. Instream flow rights held by either Division retain the priority date of the original right.

Change applications for instream flow must go through the normal application process through the State Engineer, and are subject to the same assessment criteria. Change applications must identify the points on the stream between which the instream flow will be provided, and must document the public benefits derived from the instream flow. The State Engineer retains the right to request additional information for the purpose of evaluating the application. There are few restrictions on the change of use of a water right apart from the criteria used to assess the change application (see Appendix Three).

Although the above mentioned Divisions are the only entities allowed to hold instream flow rights, the State Engineer has the legal power through the application approval process to preserve water for natural flows. Utah water law empowers the State Engineer to withhold approval or reject applications that would unreasonably affect public recreation or the natural stream environment.

Recognized Beneficial Uses for Instream Flow:

Either Division may file applications for permanent or temporary changes for the purpose of providing water for instream flows within a designated section of a natural stream channel or altered natural stream channel for: the propagation of fish, public recreation, or the reasonable preservation or enhancement of the natural stream environment.

Holdership of Instream Flow Water Rights:

Although the Division of Wildlife Resources and the Division of Parks and Recreation are the only two entities that may hold instream flow rights, individuals may acquire an existing right and transfer it to these agencies to hold as an instream flow right.

Quantification requirements and procedures:

There are no specific quantification requirements for an instream flow right in Utah. Since instream flow rights can only be obtained through transfer, the quantification requirements depend upon the underlying right and how it was originally established.

BLM Specific Information:

The only federal reserved water rights that BLM holds in Utah result from Public Water Reserve 107 (PWR 107s).

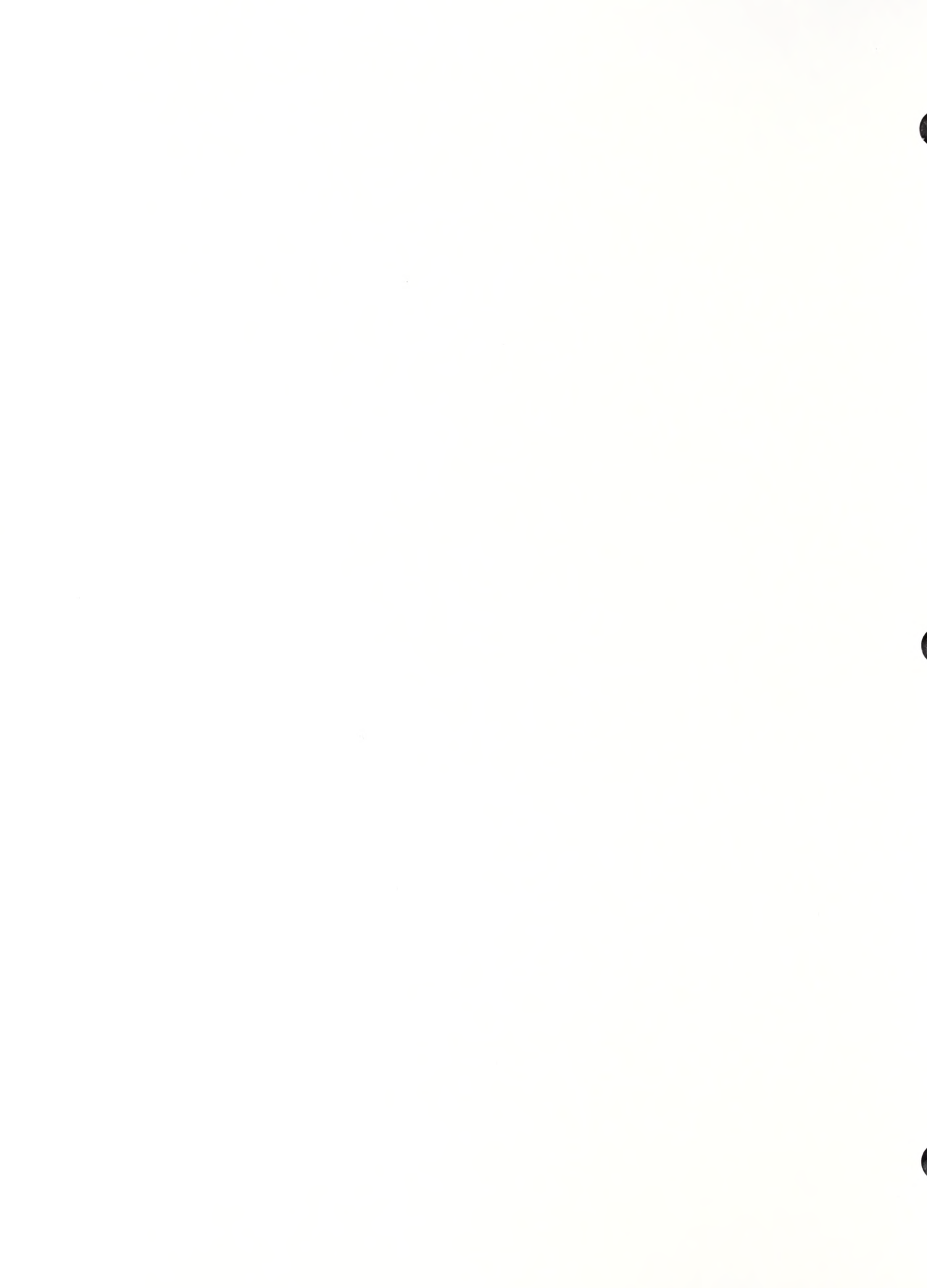
Utah BLM has a very good working relationship with the State Engineer's office. BLM receives careful consideration of water right requests. One of the keys to maintaining this relationship is to work through the process set up in the Utah Law of Water Rights.

Official Contact:

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Wyoming

WATER RIGHTS FACT SHEET

August 15, 2001

Water Rights System:

Wyoming water law is founded on the doctrine of prior appropriation, or “first in time, first in right”. The Wyoming constitution states that all natural waters within the boundaries of the state are property of the state. The State Engineer is charged with the regulation and administration of the state’s water resources. Wyoming’s water law is contained in Title 41, Wyoming Statutes Annotated, 1977, and can be found at: <http://legisweb.state.wy.us/statutes/sub41.htm>.

Responsible Agency:

The State Engineer’s Office is the water rights administrator and is responsible for the appropriation, distribution, and management of the surface and ground water throughout the state. Wyoming is divided into four water Divisions for administration purposes (see Appendix One). Each of these Divisions is headed by a Superintendent who administers the waters of each water division. These four Superintendents and the State Engineer comprise the Wyoming Board of Control. The Board of Control meets quarterly to adjudicate water rights and to consider other matters pertaining to water rights and water appropriation. The Board of Control is also responsible for any requests for changes in point of diversion, change in use, change in the area of use, or abandonment of a water right pertaining to adjudicated rights.

Application Process:

Prior to statehood in 1890, a water right could be established by the use of water and the filing of a claim with the territorial officials. Water rights with priority dates before 1890 are termed “territorial” rights. Since statehood, however, the only way to obtain a surface or a ground water rights, is by filing an application with the State Engineer. The types of applications that can be filed in Wyoming can be seen in Appendix Two. The date the application is filed establishes the water right’s priority date. The application is then reviewed and evaluated to insure that the proposed use does not interfere with any existing rights or harm the public welfare. In addition to this review, ground water applications (for projects over 25 gallons per minute) within a ground water control area, must be approved by the control area’s advisory board. In these control areas, an application also must be advertised in a local newspaper.

For both surface and ground water, the State Engineer has the authority to approve or reject the application. In approving an application, the State Engineer can impose conditions or limitations on the application to protect existing water rights, further define the extent of the application, and address any other issue deemed necessary. The applicant may appeal the State Engineer’s final decision to the Board of Control if the applicant disputes the findings.

If an application is approved by the State Engineer, the application achieves the status of “permit”. The permittee is then given a specified time period (usually one year) within which to commence any necessary construction, and an additional time period (usually five years) within which to complete the project and put the water to beneficial use. The permittee is required to submit a notice of commencement and a notice of completion with the State Engineer’s Office. When the notice of completion is received, a proof of completion is prepared. The proof is sent to the appropriate Water Division Superintendent for field inspection and advertised for public comment. For ground water rights, the State Engineer not the Superintendent, verifies the information through field inspections. Protests can be brought against the permit, and these protests can lead to public hearings. Once proof of beneficial use is verified and any disputes are settled, the Board of Control is notified and they issue a “Certificate of Appropriation” (or a “Certificate of Construction” for reservoirs). It normally takes about three months to get an approved water right application back from the State Engineer’s Office. Therefore, the typical time frame for a permit is three months, but the final approval of the water right does not occur until the project has been constructed.

Once a certificate is issued, the water right is referred to as having “adjudicated status”, and the right is listed in the tabulation of adjudicated rights. A water right that is not adjudicated (a water right that is going through the application process) is often referred to as an “inchoate right”. Once adjudicated, the water right is permanently attached to the specific land or place of use described on the certificate, and it cannot be removed except by action of the Board of Control. Any disputes with the Board of Control can be appealed to District Court.

Point of Diversion and Change of Use Procedures:

A point of diversion is required for all water rights (except for instream flow rights which require the identification of the appropriate stream segment). Changes in the point of diversion requires the filing of a petition with the State Engineer’s Office for unadjudicated rights and with the Board of Control for adjudicated rights. Although a point of diversion is required for all water rights, the water right is attached to and defined by the place of use, not the point of diversion.

Any changes in point of diversion, conveyance, or use is done through a petition. The petition goes to the Board of Control for adjudicated rights or to the State Engineer if the water right is inchoate. Changes of use are only granted if the quantity of transferred water does not exceed historic consumptive use or diversion rates, does not decrease the amount of historic runoff, and does not impair other existing rights.

State Recognized Beneficial Uses:

Wyoming recognizes the following beneficial uses. Although these categories apply to both surface and ground water, the definition may be different when pertaining to surface as opposed to ground water. In addition, water rights holders are limited to withdrawals necessary for the beneficial purpose, and these limits are established for each use (for example, irrigators are allowed to divert up to 1 cfs for each 70 acres under irrigation).

- Irrigation
- Municipal
- Industrial
- Power generation
- Recreational
- Stock
- Domestic
- Pollution control
- Instream flows
- Miscellaneous

Ground Water:

The application process for ground water is quite similar to that for surface water (see above). In Wyoming, however, surface and ground water are treated as hydrologically separate. If, however, a user protests that ground and surface water appear to be part of the same source, the State will investigate (using monitoring wells). If a hydrologic connection is found between the two sources, the water use is treated as one source. Until this hydrologic connection is established ground water and surface water are assumed to be separate. In addition, springs producing more than 25 gallons per minute are treated as surface water, and those producing less than 25 gallons per minute are treated as ground water.

Prior to 1947, the Ground Water Division was responsible for maintaining a registration of ground water rights for all uses except stock and domestic. In 1955, legislation was passed requiring that a permit be obtained from the State Engineer's Office prior to the drilling of all wells, except stock and domestic wells. In 1969 the law was amended requiring a permit for the drilling of any water well. As a result ground water rights can only be obtained through the State Engineer. Ground water rights are issued for the same beneficial uses as for surface water rights.

Due to the large scale development of ground water for irrigation use in some areas of Wyoming, three ground water management districts called Control Areas have been established. An Advisory Group is elected in each of the Control Areas to review new permit applications, review requests for water right changes, and advise the State Engineer's Office regarding such items.

Water Rights:

There are no restrictions in Wyoming as to who can hold a water right (with the exception of instream flows which can only be held by the state). Any entity including a federal agency, state board, corporation, district, or individual may hold a water right. In addition, water rights can be held jointly by a group of individuals where each individual is listed as a co-owner.

A water right in Wyoming is considered a property right, but it is a right which is attached to the lands or to the place of use specified in the permit. Water rights can be transferred to a new place of use through a petition to the State Engineer (or to the Board of Controls for adjudicated rights). Wyoming water law, however, expressly prohibits the sale of water rights. Since water rights are attached to the land they cannot be sold separately from that land, but can be included in the sale of land.

A water right in Wyoming can be lost by abandonment. There are three ways in which abandonment can be initiated. The first is voluntary abandonment by the water right holder. The

second is another water user can claim that the reactivation of an allegedly abandoned water right would injure their right. This occurs if a right has not been used for a period of five consecutive years, and a junior (in some case a senior) appropriator brings a declaration of abandonment to the Board of Control. The third way abandonment can occur is the State Engineer can initiate it if it is felt water has not been put to beneficial use for five consecutive years and a reallocation would be in the public interest. Water lost through abandonment reverts back to the public and is subject to future appropriation.

Adjudications:

Adjudications are conducted for both surface and ground water in Wyoming, and adjudicated rights can be obtain both through the administrative process and through court order. The application process discussed above results in an adjudicated right through the administrative procedures. Once a certificate is issued by the Board of Control, the water right is adjudicated it is listed in the tabulation of adjudicated rights. General adjudications through the courts also result in adjudicated rights. The primary reason for general adjudications in Wyoming is the determination and integration of tribal and federal water rights.

Once a water right is adjudicated, any action on the that right (change of use, place of diversion, etc.) must go through the Board of Control. When an entity holds an adjudicated water right, no further inspection is required and the owner is not required to continually submit proof of beneficial use. An adjudicated right exists in perpetuity and can only be lost through abandonment (see above).

Ongoing Adjudications:

The adjudication of water rights in Wyoming is part of the ongoing application process. In addition to these administrative adjudications, general adjudications can take place through the courts. The only general adjudication taking place is in Division Three (the Big Horn Basin). This adjudication is almost complete and no other general adjudications are currently occurring.

Instream Flows:

Instream flow legislation was enacted in Wyoming in 1986. Only the State of Wyoming may hold a right for instream flow, but no single agency has sole responsibility for the instream flow program. The Game and Fish Department identifies priority streams, prepares biological assessments, and makes instream flow recommendations to the Water Development Commission. The Commission prepares hydrologic analysis and then applies to the State Engineer for an instream flow water right. The State Engineer studies the feasibility of the instream flow segment and has the authority to approve the application. A public hearing is required at which information is presented and there is an opportunity for public comment. If approved by the State Engineer, an instream flow right is established. Water for instream flow can come from new appropriation or through the transfer of existing rights. The transfer of existing water rights, however, can only be done by voluntary transfer or gift. In order to ensure

“voluntary” transfers, Wyoming law expressly denies any power of condemnation or the purchase of existing rights for instream flow.

Recognized Beneficial Uses for Instream Flow:

Instream flow rights in Wyoming may only be used to establish or maintain new or existing fisheries. Other uses commonly associated with instream flow (recreation, aesthetics, water quality, etc.) are not defined as beneficial use under Wyoming water law.

Holdership of Instream Flow Water Rights:

Only the State of Wyoming may apply for and hold an instream flow right. Other entities, however, may request that an instream flow right be applied for. In addition, the State of Wyoming can accept water rights as a gift and convert it to instream flow (as long as the purpose is to support fisheries).

Quantification Requirements and Procedures:

Wyoming requires an assessment of the entire reach of the stream covered by the proposed instream flow right. The Game and Fish Department must analyze the stream and determine that the proposed flows are adequate to support fisheries.

BLM Specific Information:

The state of Wyoming does not require a right-of-way approval by BLM prior to approving an application. There is a statement on the water right permit form which states that the granting of a water right does not grant an easement and that the applicant is responsible for obtaining any rights-of-way needed to perfect the permit.

BLM pays filing fees for water rights applications. The fee for stock reservoirs, wells, and springs are \$25, and the fee for any dam over twenty feet high or impounding more than twenty acre-fee is \$100.

Official Contact:

Wyoming State Engineer
4th Floor East
Herschler Building
Cheyenne, Wyoming 82002-0370
307-777-6150

Website:

<http://seo.state.wv.us/about/about.html>

Alaska

Appendix One: Types of Applications

- Application for Reservation of Water
- Application for Water Rights
- Application for Temporary Water Use
- Change of Address for Water Rights
- Change of Property Ownership for Water Rights
- Notice of Relinquishment of Water Rights Form
- Request for Water Right Permit Extension
- Statement of Beneficial Use of Water

Appendix Two: Criteria to Assess the Public Interest

In determining the public interest, the Division of Mining, Land, and Water shall consider:

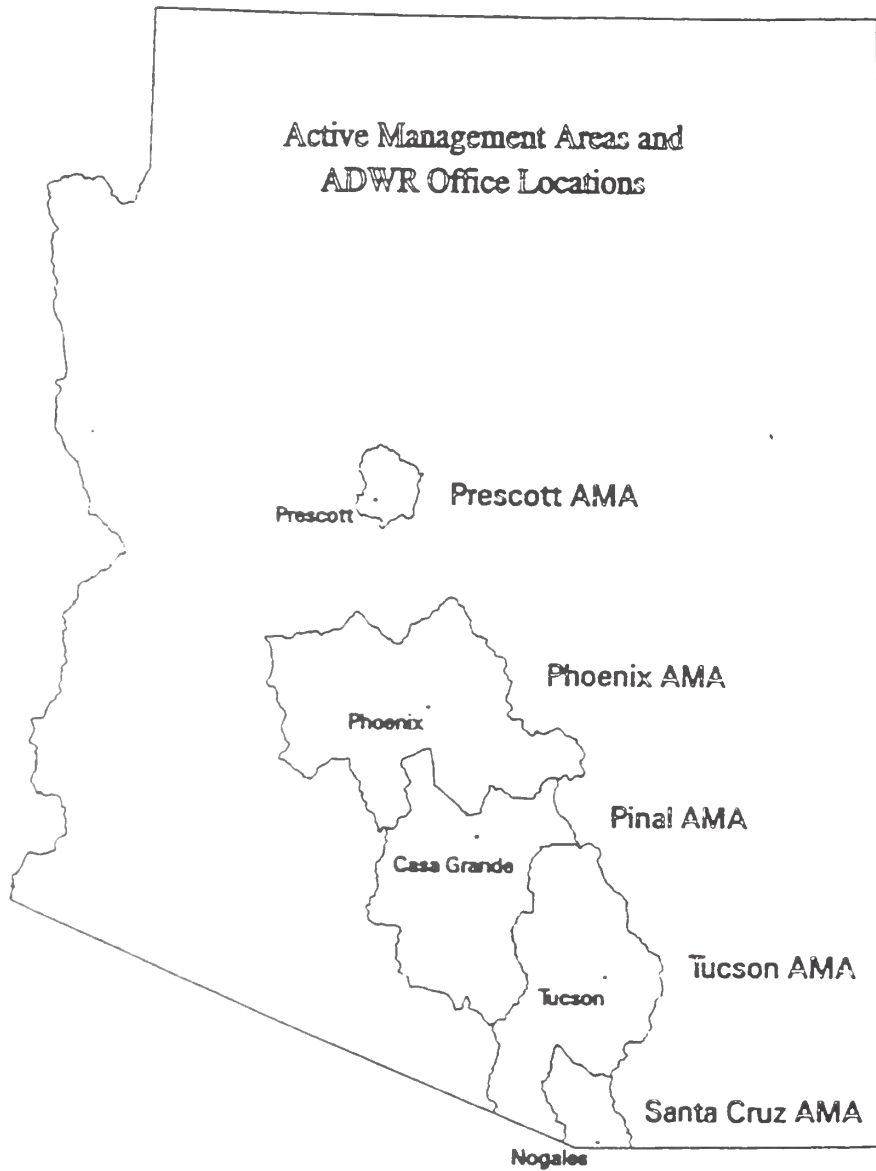
- The benefit to the applicant resulting from the proposed appropriation
- The effect of the economic activity resulting from the proposed appropriation
- The effect on fish and game resources and on public recreational opportunities
- The effect on public health
- The effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation
- Harm to other persons resulting from the proposed appropriation
- The intent and ability of the applicant to complete the appropriation
- The effect upon access to navigable or public water

Arizona

Appendix One: Types of Applications

- Flex Transfer Form - (In District)
- Flex Transfer Form - (Out of District)
- Arizona Department of Water Resources Report on the Final Decision and Order That the Prescott Active Management Area Is No Longer at Safe-Yield
- Arizona Water Banking Authority Study Commission Interim Report
- Application for a certificate of assured water supply. (Revised 04/20/2001).
- Notification of change of ownership of an irrigation grandfathered right
- Notification of change of ownership of a type 1 non-irrigation grandfathered right
- Notification of change of ownership or point of withdrawal for a type 2 non-irrigation grandfathered right
- Notification of lease of a type 2 non-irrigation grandfathered right
- Notification of change of ownership of an irrigation authority
- Notification of extinguishment of a grandfathered Ground water right for assured water supply credits
- Notification of purchase or sale of flexibility account credit

Appendix Two: Arizona's Active Management Areas



Appendix Three: Ground Water Rights in Arizona

In many areas of Arizona, a groundwater user must have a legal right or permit to withdraw groundwater. This brochure explains the different groundwater rights and permits contained in the Arizona Groundwater Management Code.

Arizona's Groundwater Management Code

Groundwater is a precious resource to all Arizonans. For many years, good quality groundwater has been available to serve our farms, industries and growing cities. Comprising over 60% of the state's water supply, groundwater resources have enabled us to prosper and develop in a desert environment. We all recognize the contribution of these resources to our continued prosperity and well-being.

In developing the vast potential of our state, Arizonans have been pumping groundwater faster than it is replaced naturally - a situation called overdraft. Just as groundwater use benefits all of Arizona's citizens, the problems associated with overdrafting affect everyone as well. Years of overdrafting have led to groundwater level declines - as much as 600 feet in some areas. This decline has increased well drilling and pumping costs. Water quality also suffers because groundwater pumped from greater depths contains more salts and minerals. In areas of severe groundwater depletion, the earth's surface may subside, causing cracks or fissures that can damage roads or building foundations and other underground structures. Arizonans recognize the consequences of groundwater overdraft and have decided to take strong measures to control it.

After three years of study and negotiations, the state legislature passed the Arizona Groundwater Management Code in 1980. The Department of Water Resources (DWR) was established as the state agency responsible for administering the Code. Recognized as the most comprehensive groundwater law in the nation, the Code's primary objectives are:

- to control the severe overdraft occurring in some parts of the state
- to provide the means for allocating Arizona's limited groundwater resources to effectively meet the state's changing water needs
- to increase Arizona's water supplies by developing supplemental sources

It is important to remember that no one actually owns Arizona's groundwater. Groundwater is managed by the state for the good of all Arizonans - farmers, city governments, industries, and urban and rural residents. In certain areas of the state, landowners must obtain rights or permits to withdraw groundwater.

How Does The Code Work?

The Arizona Groundwater Management Code sets limits on who can use groundwater, where it can be used, and how much of it can be withdrawn. DWR administers and enforces Arizona's groundwater law.

The restriction governing groundwater use vary depending on where the groundwater is located. The Code established Irrigation Non-expansion Areas (INAs) and Active Management Areas (AMAs) where water management programs are most needed. Within INAs, where irrigation uses threaten to exceed limited water supplies, irrigated acreage is restricted but specific water conservation measures are not required. There are three INAs in the state - Douglas, Joseph City and Harquahala.

(SEE AMAS AND INAS IN ARIZONA MAP)

The Code designates four AMAs where excessive groundwater overdraft is occurring - Phoenix, Pinal, Tucson, and Prescott. Eighty percent of the state's population resides within the AMAs. Because of the overdraft problems within the AMAs, more rigorous water management requirements are needed.

Water Rights Or Permits Allow Groundwater Withdrawal Within AMAs?

A land owner within an AMA is not automatically granted the right to withdraw groundwater. Within AMAs, groundwater users must have one of the following rights or permits to withdraw groundwater legally, unless the well qualifies as an exempt well:

- grandfathered rights
- withdrawal permits
- service area rights
- storage and recovery permits

**USING ARIZONA'S GROUNDWATER:
RIGHTS, PERMITS AND WHERE THEY APPLY**

Type of Rights and Permits	Within AMAs	Within INAs	In Other Parts of the State
Irrigation Grandfathered Right	✓		
Type 1 Non-Irrigation Grandfathered Right	✓		
Type 2 Non-Irrigation Grandfathered Right	✓		
Service Area Right	✓		
Withdrawal Permits	✓		
Storage and Recovery Permit	✓	✓	✓
Exempt Well (Notice of Intent)	✓	✓	✓
Notice of Irrigation Authority		✓	

Exempt Wells

An exempt well is a well that has a maximum pump capacity of 35 gallons per minute and is used to withdraw groundwater only for non-irrigation purposes, including watering less than two acres of grass or garden.

Only one exempt well is allowed to serve the same use at the same location. In other words, an individual cannot drill a second exempt well to serve the same purpose.

A person wishing to have an exempt well drilled must file a Notice of Intent with DWR and receive approval before drilling. Exempt well owners are not required to measure groundwater pumpage, file annual water use reports, or pay withdrawal fees.

Grandfathered Rights

Under the Arizona Groundwater Management Code, a grandfathered right is the right to use groundwater based on historic

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Type 2 Non-Irrigation Grandfathered Right	✓		
Service Area Right	✓		
Withdrawal Permits	✓		
Storage and Recovery Permit	✓	✓	✓
Exempt Well (Notice of Intent)	✓	✓	✓
Notice of Irrigation Authority		✓	

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A person wishing to have an exempt well drilled must file a Notice of Intent with DWR and receive approval before drilling. Exempt well owners are not required to measure groundwater pumpage, file annual water use reports, or pay withdrawal fees.

Grandfathered Rights

Under the Arizona Groundwater Management Code, a grandfathered right is the right to use groundwater based on historic

withdrawals. For example, a farmer who historically used groundwater for the irrigation of specific acres within an AMA can continue to withdraw groundwater for the irrigation of those acres.

There are three types of grandfathered rights:

- Irrigation grandfathered right
- Type 1 non-irrigation right
- Type 2 non-irrigation right

These grandfathered rights differ in how they are used and in the rules governing how the rights may be sold.

Whenever a grandfathered right is sold, both the buyer and seller must notify DWR. Forms are available from DWR for this purpose. The new owner will receive a new Certificate of Grandfathered Right.

Irrigation Grandfathered Right

An Irrigation grandfathered right is the right to use groundwater to irrigate specific acres of land. That land must have been irrigated with groundwater between 1975 and 1980. Land without an Irrigation grandfathered right may not be irrigated with groundwater. An Irrigation grandfathered right may not be sold apart from the associated land. When irrigated land is sold, the Irrigation grandfathered right goes with it.

Under the Code, "irrigate" means to apply water to two or more acres of land to produce plants for sale, human consumption, or as feed for livestock. This means that the watering of grass on a lawn or a golf course is not irrigation; nor is the watering of a commercial orchard that is less than two acres in size. An Irrigation grandfathered right does not specify how much groundwater can be pumped; that amount will vary over time according to a formula established in management plans developed by DWR for each AMA.

If the irrigated land is located outside the service area of a water company, the landowner may apply to DWR to have the Irrigation grandfathered right retired and converted to a Type 1 non-irrigation grandfathered right.

Type 1 Non-Irrigation Grandfathered Right

The Type 1 non-irrigation grandfathered right (Type 1 right) is a right to use groundwater for non-irrigation purposes. It is associated with farmland that has been retired from cultivation for a non-agricultural use. Examples of non-irrigation uses of Type 1 rights include golf courses or

industrial plants. With few exceptions, the irrigated land being retired must be located outside the service area of a city, town or private water company. (A service area is the area of land being served water by a city, town or private water company.) Once an Irrigation grandfathered right has been converted to a Type 1 right, the retired farmland can never be irrigated to grown crops again.

The maximum amount of groundwater that may be pumped each year using a Type 1 right is three acre-feet per acre; in some cases the amount is less. (An acre-foot of water covers one acre of land to a depth of one foot; it equals 325,851 gallons.)

The owner of irrigated land must file with DWR in order to convert an Irrigation grandfathered right into a Type 1 right. The rules governing Type 1 rights are complicated. The original owner of a Type 1 right may either withdraw the groundwater from the retired farmland associated with the right or use groundwater from elsewhere on that retired farmland. However, if the groundwater is withdrawn from a well that is not located on retired farmland, the water must be used on the retired farmland.

Like the Irrigation grandfathered right, the Type 1 right may be sold only with the land with which it is associated. The new owner of a Type 1 right is more restricted than the original owner. The new owner may only withdraw groundwater from the retired farmland associated with the right. Additional restriction may apply to where the water may be withdrawn and where it may be used.

Type 2 Non-Irrigation Grandfathered Right

The Type 2 non-irrigation grandfathered right (Type 2 right) is another right to pump groundwater from a well for non-irrigation purposes. The right is based on historical pumping of groundwater for a non-irrigation use and equals the maximum amount pumped in any one year between 1975 and 1980. Examples of non-irrigation uses include industry, livestock watering and golf courses.

The owner of a Type 2 right may only withdraw water from the specific wells listed on the Certificate. An owner wishing to add or delete wells from the Certificate must apply to DWR. Any wells added to the Certificate, however, must be located in the same AMA in which the historical pumping of groundwater occurred.

Unlike Type 1 and Irrigation grandfathered rights, Type 2 rights can be sold separately from the land or well. People needing groundwater for non-irrigation use may wish to consider buying a Type 2 right. The owner of a Type 2 right

may, with DWR approval, withdraw groundwater from a new location within the same AMA. It is possible to lease a portion of a Type 2 right, but if the right is sold, it cannot be split. Instead, the entire right must be sold.

Withdrawal Permits

Although the Code prohibit using groundwater for new irrigation within the AMAs, withdrawal permits allow new withdrawals of groundwater for non-irrigation uses. Permits are available for almost any non-irrigation use, but certain conditions must be met. As shown in the list below, there are eight types of withdrawal permits.

A General Industrial Use Permit is the mostly commonly used type of permit. It allows the withdrawal of groundwater for industrial or commercial uses outside the service area of a city, town, or private water company. This permit can be used to pump groundwater for almost all non-irrigation uses, including shopping centers, parks, golf courses, livestock production, and industries other than mining and power generation. However, it cannot be obtained to pump domestic water for subdivisions.

TYPES OF GROUNDWATER WITHDRAWAL PERMITS
- Dewatering
- Mineral Entraction and Metallurgical Processing
- General Industrial Use
- Poor Quality Groundwater Withdrawal
- Temporary Electrical Energy Generation
- Temporary Dewatering
- Drainage
- Hydrologic Testing

Applicants for General Industrial Use Permits must show that:

- groundwater will be withdrawn and use outside the service area of a city, town, or private water company
- if the location of the proposed use is within three miles of the service area of a city, town or water company, the water provider has refused to supply water for the use at the customary terms
- Central Arizona Project water is not available at comparable cost
- other reasonably priced surface water or effluent (treated waste water) is not

- available
- Irrigation grandfathered rights are not available for purchase and retirement, and the applicant does not own or lease non-irrigation grandfathered rights that can be used for the intended purpose
- a sufficient amount of water is available for the proposed use
- a proposed industrial use is consistent with the goals of the management plan for the AMA

Restrictions also apply to the other type of groundwater withdrawal permits. Information on obtaining withdrawal permits is available from DWR.

Service Area Rights

Service area rights allow cities, towns, private water companies, and irrigation districts to withdraw groundwater to serve their customers. The service area is primarily the area of land actually being served water by a municipality or private water company. Homeowners and industries served water by a city, town or water company do not need a separate right from DWR.

Storage And Recovery Permits

In 1986, the Arizona Legislature passed House Bill 2209 which regulates the underground storage of water and establishes a permit system for wells used to retrieve the stored water. This bill also amends the Groundwater Code to allow projects intended to recharge Arizona's groundwater aquifers. Recharge projects are usually designed and operated by government agencies and large industries.

Anyone wishing to undertake a storage/recovery project or a recharge project should contact DWR for more information regarding permits and requirements.

What Provisions Of The Code Regulate Groundwater Use?

Groundwater use is regulated according to its location in the state. Requirements are most stringent within AMAs. Some specific provisions of the Code apply within INAs. Outside AMAs and INAs, landowners can withdraw groundwater simply by filing a Notice of Intent with DWR. Because the need for water conservation is concern throughout the state, the Code requires that groundwater use outside AMAs and INAs must be "reasonable and beneficial."

Some of the major provisions of the Code that regulate groundwater are described in the following sections.

Limiting Irrigated Acreage

The Code prohibits new irrigated acres within AMAs and INAs. Within AMAs, persons who irrigated land with groundwater between 1975 and 1980 may continue to irrigate those acres with groundwater if they have filed for and obtained an Irrigation grandfathered right. Acres of land that were not irrigated between 1975 and 1980 cannot be irrigated.

Irrigation is allowed only on land that was irrigated during the years 1975 through 1980 within the Douglas and Joseph City INAs and the years 1976 through 1981 within the Harquahala INA. A farmer within an INA who wishes to continue irrigating must obtain a "Notice of Irrigation Authority" from DWR.

Groundwater Management Plans

DWR is required by the Code to develop a series of five successive management plans for each AMA. The plans contain specific water conservation requirements aimed at achieving the management goals established for the AMAs. The management goal for the three urban AMAs - Phoenix, Tucson and Prescott - is safe-yield by the year 2025. Safe-yield means that annual groundwater withdrawals do not exceed groundwater recharge. For the Pinal AMA where a predominantly agricultural economy exists, the management goal is to preserve the economy for as long as feasibly while recognizing the need to preserve groundwater for future non-irrigation uses. With each successive period, water conservation and management requirements will be adjusted to meet the management goals in each AMA.

Measuring And Reporting Groundwater Use

Owners of non-exempt wells within AMAs and INAs must be approved measuring devices and submit annual groundwater pumpage reports to DWR. (A non-exempt well has a pump capacity greater than 35 gallons per minute.)

Persons withdrawing water from non-exempt wells within AMAs must also pay an annual withdrawal fee for each acre-foot pumped. The withdrawal fee may vary from year to year but cannot exceed five dollars per acre-foot of groundwater withdrawn. The withdrawal fee is used by DWR to finance three activities:

- Administration and enforcement of the Code. This portion of the fee cannot be more than one dollar per acre-foot; it is deposited in the State general fund to help pay water management program costs.
- Development of water augmentation programs. This fee

will be based on funds needed within the AMAs for specific augmentation programs, such as groundwater recharge. While the amount collected may vary among the AMAs, the fee cannot exceed two dollars per acre-foot.

- Retirement of irrigated land. Beginning in the year 2006 or later, up to two dollars per acre-foot can be collected purchase and retire irrigated land.

Assured And Adequate Water Supply Requirements

Depending on the property's location in Arizona, a developer must prove either an assured water supply or an adequate water supply.

Within an AMA, developers must demonstrate to DWR that sufficient water of adequate quality will be continuously available to satisfy the needs of the proposed development for at least 100 years. This is called an "assured water supply." A developer within an AMA may not offer land for sale until and unless an assured water supply is demonstrated.

Outside an AMA, a developer must demonstrate what is called an "adequate water supply." The requirements for demonstrating an adequate water supply are somewhat less rigorous than those that apply within AMAs. A developer who cannot demonstrate an adequate water supply may still market the property, but the lack of an adequate water supply must be disclosed in all advertising and promotional material.

Well Drilling And Registration

Anyone wishing to drill a well anywhere in the state must file either a Notice of Intent or an Application for a Well Drilling Permit. The chart below indicates what needs to be filed in different areas of the state to drill an exempt, non-exempt, recharge and recovery or replacement well. A replacement well is one that is redrilled in the same location or drilled within 660 feet of a well that has been taken out of service. A non-exempt well cannot be drilled within an AMA without first having a legal right to withdraw groundwater. (see pages 3-7.) DWR should be contacted for more specific information on well drilling.

When contracting to have a well installed, a well driller licensed by DWR must be used. The driller must also have the appropriate license from the State Registrar of Contractors.

**WHAT YOU NEED TO FILE
BEFORE DRILLING A WELL IN ARIZONA**

Type of Well	Well Location		
	Within AMAs	Within INAs	In other Parts of the State
Exempt or Replacement	Notice of Intent	Notice of Intent	Notice of Intent
Non-Exempt	Well Drilling Permit Application	Notice of Intent	Notice of Intent
Recharge and Recovery	Well Drilling Permit Application	Well Drilling Permit Application	Well Drilling Permit Application

All wells in Arizona, regardless of size, use, or location, must be registered with DWR. Filing a Notice of Intent or an Application for a Well Drilling Permit automatically registers a well. Well registration is a critical component of the Code: In order to manage groundwater effectively, DWR must know where groundwater is withdrawn.

Well registration also benefits the well owner by:

- serving as evidence of a historical claim in groundwater
- providing an easy way to notify area well owners if groundwater becomes contaminated.
- allowing DWR to consider potential effects on existing wells when granting permits for new wells in the area

How Is The Code Enforced?

The purpose of DWR's compliance program is to achieve the goals of the Arizona Groundwater Management Code. Most violations result from a misunderstanding of the requirements rather than deliberate non-compliance. The compliance program is structured to help water users understand and meet the Code's requirements and application procedures rather than to simply collect fines from violators.

However, DWR is required to enforce the provisions of the Code. The agency uses annual pumpage reports, satellite photography, and on-site inspections to monitor compliance. Deliberate violations will receive prompt and strict corrective action. The Code allows DWR to seek civil

penalties of up to \$10,000 per day.

The Arizona Groundwater Management Code resulted from the efforts of Arizonans working together. By keeping this same cooperative spirit, we can all look forward to a prosperous future for Arizona.

Frequently Asked Questions

Following are answers to frequently asked questions about groundwater rights. Contact DWR if you have additional questions.

How can I obtain water for a non-irrigation use within an AMA?

Depending upon your circumstances, you may be able to obtain groundwater in one of the following ways:

- You can be served by a city, town, or private water company.
- You can purchase a Type 2 non-irrigated grandfathered right within the AMA where you propose to use the water.
- You can acquire a Type 1 non-irrigation grandfathered right. However, you must retain the right, and the water must be withdrawn from or used on the retired farm land.
- In non-urban areas, you can apply to DWR for a general industrial use permit. Specialized withdrawal permits may also be available.
- For household water uses, you can apply to DWR for permission to drill an exempt well, which can pump up to 35 gallons per minute.

Can I still apply for a grandfathered right?

The initial deadline for applying for a grandfathered right within the four AMAs has passed. However, an amendment to the Arizona Groundwater Management Code re-opened the application process for those who qualify for a right but failed to apply on time. Contact your AMA office for more information.

How do I change ownership of my exempt well?

You must notify DWR. The new owner must indicate that the well remains exempt and the use has not changed.

If I don't pump groundwater for several years, will I lose my groundwater right?

No. Groundwater rights are not dependent of periodic use.

Do I endanger the amount of my total annual farm allotment by not using all of my allotted groundwater?

No. The allotment will not be reduced if you use less groundwater than you're entitled to under your AMAs management plan.

I'm selling my land. What should I do about my grandfathered right?

You must file a conveyance form with DWR. The new owner will receive a new Certificate of Grandfathered Right. For more information about changing ownership of water rights, see pages 3-7.

Are there any circumstances under which I may substitute the irrigated acres covered by an Irrigation grandfathered right?

Grandfathered irrigation rights are legally attached to the acres designated on the Certificate of Grandfathered Right. It is not possible to transfer this right to a new location except in the following special cases, which require prior approval from DWR.

- to compensate for flood-damaged property
- to "square off" or fill in an irregularly-shaped parcel of land
- to allow for more efficient distribution of Central Arizona Project water by an irrigation district

Can I transport my water?

The restrictions governing the transportation of water apply statewide. Groundwater may be transported within the same sub-basin without payment of damages. (A sub-basin is a distinct body of groundwater located within a larger groundwater basin.)

When groundwater is transported across sub-basin or basin boundaries, the transporter may run the risk of being sued by a landowner for economic damages.

Contact DWR for detailed maps of basin and sub-basin boundaries.

Who must submit an annual pumpage report?

Within an AMA, anyone who owns a right to withdraw water from a non-exempt well must submit an annual report regardless of whether any water was pumped during that year. Within an INA, only those who actually pumped water from a non-exempt well are required to submit a report. However, those who did not pump any water are encouraged to submit a "zero water use" report.

How do I measure water withdrawals?

Water from operating non-exempt wells with the AMAs and INAs must be measured by an approved measuring device. Exempt wells must be registered with DWR but are not required to have measuring devices. DWR maintains a list of water measuring devices that meet the accuracy requirements.

A broken measuring device must be reported to DWR - in writing - within seven days after you learn of the malfunction. Include the reason for the failure and the estimated repair date. The measuring device must be returned to service within 30 days after reporting to DWR that it has malfunctioned. Notify DWR when the device is fixed and include estimates of water withdrawals made during the time the device was broken. Also include these estimates on your annual report.

Where can I obtain records on water rights?

DWR maintains records of water rights issued since the Arizona Groundwater Management Code was passed in 1980, and records regarding well drilling dating back to 1945. People interested in these records should contact the Operations Division of DWR. These records may be important in providing evidence of groundwater withdrawal and proving ownership of withdrawal rights.

FOR MORE INFORMATION

For more information about groundwater rights or any aspect of the Groundwater Management Code, contact your local AMA office or DWR's Operations Division. Phone numbers are listed on the back inside cover of this brochure. Additional brochures on the Arizona Groundwater Management Code are available, including:

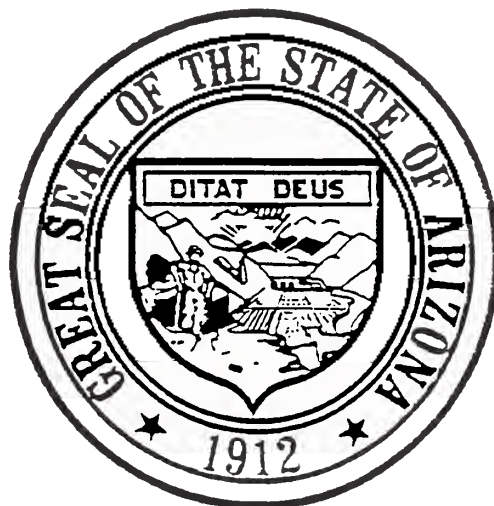
- Overview of Arizona's Groundwater Management Code
- Arizona Water Conservation Requirements
- Demonstrating Water Availability for New Developments
- Drilling a Well in Arizona

Arizona Department of Water Resources
500 North 3rd Street
Phoenix, Arizona 85004
(602) 417-2400

Phoenix AMA
500 North 3rd Street
Phoenix, Arizona 85004

A GUIDE TO FILING APPLICATIONS
FOR INSTREAM FLOW WATER RIGHTS IN
ARIZONA

DRAFT



Rita Pearson, Director

ARIZONA DEPARTMENT OF WATER RESOURCES

500 N. 3rd Street
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I. INTRODUCTION

Due to the increasing demands placed on Arizona's limited water resources along with legal mandates to protect and preserve natural resources, the preservation of instream flows for the maintenance of fish, wildlife, and recreational uses has become critical. **Instream flow**, as defined in this guide, is the maintenance flow necessary to preserve instream values such as aquatic and **riparian** habitats, fish and wildlife and riparian-based recreation related to a particular stream or stream segment(s).

Rates of impoundment, diversion and groundwater use threaten to adversely reduce streamflows or even de-water streams to the present and future detriment of aquatic and terrestrial resources. As a result of the high demand for water by various competing interests, the value placed upon water has increased markedly. Although the value of water withdrawn from a stream for agricultural, industrial, mining or municipal use has been commonly recognized, instream uses have only recently begun to be recognized for their importance.

Instream flows are inherently linked to riparian areas and their associated resources. In addition to adequate available flows, fish, wildlife and many recreational activities depend on or are enhanced by the maintenance of these areas. On February 14, 1991, Governor Rose Mofford issued Executive Order NO. 91-6 dealing with the importance of riparian areas in Arizona. The Executive Order includes the following statement of policy: **The State of Arizona shall encourage the preservation, maintenance and restoration of instream flows throughout the State.**

This guide provides assistance to applicants applying for a Permits to Appropriate Public Water for instream flow purposes (**permit**). Applicants will be required to collect and analyze data in a manner sufficient to support the requested **appropriation**. The methods used to evaluate the data are dependent upon several factors that vary for each application. Despite this variability, ADWR provides, in this guide, the minimum criteria for substantiating instream flow requests. Additionally, the report describes some of the many methodologies available to assess instream flows in Arizona.

Applicants are encouraged to meet with the Arizona Department of Water Resources (ADWR) personnel at the earliest possible stages of an instream flow evaluation process in order to formulate a program of study that will best assess an individual instream flow request by determining:

- The amount of water necessary for instream fish, wildlife or recreational uses and,
- The availability of the requested flows during claimed periods of **beneficial use**.

II. INSTREAM FLOW APPROPRIATION PROCESS AND REQUIREMENTS

The appropriation of public water for the purpose of maintaining instream flows requires the assessment and the measurement of the availability of the streamflow requested for the stated purpose. Each instream flow appropriation may vary considerably in stream characteristics, morphology, the amount of streamflow required for the beneficial use, the availability of water supply, and legal aspects. Therefore, the methodologies used to assess streamflow availability and instream flow needs may also differ.

Despite the variability in instream flow appropriations, ADWR has identified certain minimum requirements for assessing the need and available supply for the proposed appropriation. The requirements are divided into the following 7 steps and are presented in accordance with ADWR's basic surface water appropriation process. This process includes *application*, *permit* and *certification* phases.

STEP 1. Pre-application conference with ADWR

The applicant is encouraged to contact the Surface Water Rights Section Manager to set an appointment to meet with ADWR technical and administrative staff to discuss the proposed instream flow appropriation. The purpose of the meeting is to make the applicant aware of ADWR requirements for appropriating public water for this type of beneficial use, to answer any questions, and to avoid potential problems during the application process. The applicant may review applications on file to determine how other applicants in similar circumstances designed their data collection and analysis programs.

The meeting should preferably occur prior to any data collection, but should occur before the submittal of a minimum of one year of streamflow measurements required to obtain a permit. There are several methodologies available for assessing instream flow requirements and the availability of the water supply. Meeting with ADWR's staff early in the appropriation process will provide the applicant with needed direction.

STEP 2. Begin or continue data collection

The collection of streamflow measurements should be one of the first steps of the assessment process. This data provides the applicant and ADWR with information regarding the availability of the water supply during a given time period. In addition, the measure of any permitted beneficial use is stated in terms of the rate of flow.

STEP 3. File the appropriations application

The Application for Permit to Appropriate Public Water must be filed with the ADWR's Surface Water Management Division, located at 500 North 3rd Street, Phoenix. The application must be submitted on a form provided by ADWR. A blank copy of the application form is included in the back folder of this document for use by the applicant.

The submitted application is subject to review for acceptance. Therefore, all questions on the form must be answered as completely as possible. If a submitted application is found to be in error or deficient, the applicant will be required to correct the application, or it may be subject to rejection. The filing date of the application is the ***priority date*** of the appropriation. If an application is found to be deficient and the applicant fails to resubmit the correct application within 60 days of notice of the error or omission, ADWR may void the original priority date. Additional time may be granted if for good cause and if requested in writing.

Monthly or seasonal streamflow rates originally claimed on an application to appropriate may be amended based on the results of the study described in Step 4. This is not considered a deficiency in the original application and can be accomplished without the loss of the priority date. **The total volume (in acre-feet per year) must also be stated in the application and can only be amended to a lower volume from the amount listed in the public notice(See Step 5).**

STEP 4. Conduct data analysis and submit report

Prior to this step, the applicant should have met with ADWR's staff to formulate a proposed method of study to determine instream flow requirements for the proposed beneficial use and the availability of the water supply to meet those requirements.

A minimum of one year of streamflow measurement data is required to be submitted by the applicant before ADWR will issue a Permit to Appropriate Public Water. In addition, the applicant is required to submit a report of the results and conclusions of data analysis based on the methodology developed in the prior meeting with ADWR's staff.

The report may be submitted at the time of filing of the appropriation application, but can be submitted after the filing date. If the required report is not submitted, the application may be rejected. The report must, at a minimum, include:

- 1) A description of both the streamflow data-collection method used in the study and method of assessment of streamflow requirements for the proposed appropriation.
- 2) A description of the beneficial use intended for the instream appropriation. This must describe the relationship between the required streamflow and the benefits received by fish, wildlife and/or recreation activities.
- 3) The analysis including the raw data of actual streamflow measurements collected for a minimum of one year, with **at least one on-site measurement taken each month of claimed**

beneficial use or at least three random on-site measurements taken during each primary flow season (e.g., during spring runoff, prior to onset of monsoonal rains) of claimed beneficial use. Separate flow rates must be requested for each month or each flow season.

- 4) A description of the streamflow, stream morphology and the resources associated with the instream flow. This includes fish and wildlife species, riparian vegetation and stream channel and flow characteristics.
- 5) An assessment of the streamflow historically available at the location of the proposed instream appropriation.

STEP 5. Public notice of application and opportunity for protest

Once an application is judged to be complete and correct an official **public notice** of the proposed appropriation will be drafted by ADWR. This public notice will list the total annual volume (in acre-feet) and the location of the proposed appropriation and is to be posted by the applicant for 30 days in the locality to be affected by the proposed appropriation. An **affidavit of posting notice** must be submitted by the applicant after the period of public notice. A sample public notice and a blank Affidavit of Posting Notice are attached in the back folder. The proposed appropriation is subject to protest during a 60-day period from the date the public notice is issued. The proposed appropriation may be protested on the grounds that the appropriation: 1) impacts a prior-vested water right, 2) is not in the best interest of the public, or 3) presents a hazard to public safety.

If a protest is submitted against the proposed appropriation, the applicant should attempt resolution with the protestant. If a protest is not resolved within a reasonable amount of time, the Department will review the application and the submitted protest. The Department may then conduct a public hearing on the matter, dismiss the protest, or reject the application.

The process of resolution of any submitted protests may consume substantial amounts of time and delay issuance of a permit. It is therefore advantageous to the applicant to have determined valid flow-rate requests to support their claim. Strict control and attention to detail in conducting streamflow measurements may prevent unnecessary delays in both the review process and the administrative procedure (see Appendix A).

STEP 6. Issuance of a Permit to Appropriate Public Water

When ADWR's staff concludes from the analysis of the submitted report and data that the minimum requirements have been satisfied and a permit fee is received, a permit will be issued to the applicant.

The entitlement is usually allocated as a flow rate and apportioned on a monthly basis throughout the year. The permit will list required monthly flows, the total annual flow volume and may contain conditions or other stipulations concerning the perfecting of the appropriation. Based on subsequent data submitted by the applicant to obtain a **Certificate of Water Right**, monthly flows may be adjusted up or down, however, the total annual flow volume cannot exceed the amount listed on the permit.

STEP 7. Issuance of a Certificate of Water Right (CWR)

The permit holder is required to demonstrate that the instream flow water right is being used in a manner consistent with terms of the issued permit. **A minimum of four years of streamflow measurement data is required before ADWR may consider the proposed appropriation perfected.** Prior to the permit becoming a candidate for certification, the applicant must submit the following to the Department:

- 1) Proof of Appropriation (with total annual volume in acre-feet)
- 2) Affidavit of Appropriator
- 3) Minimum of 4 years of streamflow data
- 4) Analysis of streamflow data

If a total of 4 years of data is available at the time of permit issuance, it is possible to move directly to the certificate stage. When an analysis of the submitted ***Proof of Appropriation*** and supporting evidence concludes that the appropriation has been perfected and a processing fee received, ADWR will then issue the certificate. **It is important to note that the total annual volume certificated cannot exceed the amount permitted or the amount listed on the Proof of Appropriation.** A blank Proof of Appropriation and ***Affidavit of Appropriator*** are attached in the back folder.

While an instream flow water right holder is not required to submit streamflow information to ADWR following certification, continued streamflow measurement is strongly advised. Lack of adequate data may result in the inability of a right holder to prove infringement on an instream flow right from other surface water diversionary rights.

III. INSTREAM FLOW RESOURCE ASSESSMENT METHODS

An abundance of methodologies quantifying instream flow requirements of fish, and to a much lesser degree recreation and wildlife, have been proposed over the past 20 years. Some methodologies are species, habitat or activity specific; others require U.S. Geological Survey (USGS) flow records; some involve complex hydraulic simulation using comprehensive field data in conjunction with computer programs; while other methodologies attempt to predict species usage through evaluation of key habitat parameters.

Methodologies available to quantify instream flows for fish, wildlife and recreation vary in sophistication and precision. These range from simple visual judgements pertaining to the sufficiency of historical flows to elaborate computer models that can estimate flow requirements of specific fish, wildlife and recreational needs. The applicant should keep in mind that Arizona's Surface Water Code does not recognize riparian vegetation as a beneficial use for which surface water can be appropriated. However, ADWR recognizes the importance of a viable riparian ecosystem to fish, wildlife, and recreation. The presence of this direct relationship and the requirement of certain hydrologic conditions necessary for the survival of riparian vegetation are commonly evaluated in determining flow requirements of the beneficial uses.

The two basic categories of instream flow methodologies are the **Standard Setting** and **Incremental Methods**. Standard setting methods identify minimum flow standards required to protect a stated beneficial use, while incremental methods quantify flow-related trade-offs between various instream flow levels and the protection of instream flow values. While this guide does specify minimum criteria necessary for substantiating an instream flow request, it does not mandate the use of any particular methodology for any specific situation. Selection of the most appropriate instream flow methodology should be based on the following considerations:

- The legal challenge the application is likely to face
- The water requirement of the claimed beneficial uses
- The characteristics of the stream and historical flow records
- Presently used and accepted methods
- Time, money and labor constraints
- Capability of method to predict probable consequences of flow modifications
- Flexibility of method (i.e., ability to refine, modify method to meet specific needs)

Standard setting methods are generally applicable to streams where applications are not likely to be protested and/or water rights are unlikely to face legal action. Incremental methodologies are usually

recommended for streams in which applications may face significant protests by other water users or where water rights are likely to require resolution through legal action. The intensity of this methodology is commensurate with the perceived legal challenge and the need for detailed study.

Streams that require incremental methods are generally of critical importance to state or federal natural resource management agencies. In most instances, these surface waters support populations of either rare and endangered or economically valuable fish and/or wildlife species or are important for their recreational values. This could include high recreational use areas or areas suited for **wild and scenic** or riparian conservation area designations.

In Arizona, most of the streams where instream flow applications have been or may be filed in the future do not exhibit the controversial aspects mentioned above. Many streams are situated in headwater locations, in areas where springs allow for surface flow for very short distances, or where **baseflow** of the stream is usually very small. In these types of applications, ADWR will allow the resource assessment technique to be a *narrative description* which correlates the requested flow with the fish, wildlife, or recreation benefits expected from the appropriation (see Appendix B). This method may be used only in combination with requests for median monthly flows (excluding flood flows). To obtain an instream flow water right for streamflows greater than the median flow rate, an applicant must utilize a technique, such as an incremental methodology, that adequately quantifies the relationship between the claimed beneficial uses and streamflow.

This portion of the guide provides a summary of the various instream flow methodologies (along with selected references) most applicable to conditions in Arizona. For additional information on instream flow methodologies, please contact the Hydrology Division of ADWR. Methodologies should be evaluated on their strengths, weaknesses, adaptability and appropriateness.

A. STANDARD SETTING METHODS

Standard setting methods can be divided into "Non-field" and "Habitat Retention" methods (McKinney and Taylor, 1988). *Non-field methods* (including the Narrative Justification Method) support flow requirement decisions that are based on historical flow records rather than on field observations. Non-field methods are quick and easy to apply when data are available, but are inflexible and have limited accuracy. They are generally used to set interim instream flow standards or for reconnaissance-level projects. *Habitat Retention Methods*, on the other hand, examine relationships between **discharge**, fish habitat, wildlife habitat and recreational use indices to derive flow recommendations. The Habitat Retention Methods identify flow levels where desirable aquatic habitat characteristics are retained. Some of the techniques may be utilized in either a single or multiple transect scenario.

Another technique is the *Interdisciplinary Approach*. Unlike most standard setting techniques, this method incorporates a variety of evaluation methods that not only assess resource needs and streamflow availability, but also address associated habitat and legal conditions. This process may also be used in conjunction with higher level single and multiple transect methods or incorporated into an incremental evaluation technique. The intensity of this evaluation is determined by beneficial use needs, the perceived level of legal challenge and current and future management objectives. Of the

many standard setting methods, only the Narrative Justification, Habitat Retention and Interdisciplinary Approach are described below.

1) Narrative Justification Method

As mentioned above, many perennial **stream reaches** in Arizona are located in areas where little or no impact on other water users is likely. For these stream reaches ADWR will allow abbreviated studies which document the beneficial use aspects of the proposed instream flow. In many cases the relationship between a perennial stream and the benefits for fish, wildlife or recreation may have already been recognized in other ways such as designation of the area as a wilderness, a wildlife preserve, or as an area of **unique waters**.

The narrative justification will be allowed when the requested instream flow can rely primarily on streamflow records that demonstrate the beneficial use will occur at a rate of median monthly flows. With this method the applicant must describe the beneficial uses for which the instream flow right is sought. The physical setting should be described as well as any fish and wildlife resources whose existence depends directly or indirectly on the streamflow. If unique habitat is located along the stream reach or if threatened or endangered species are dependent on the flow, this information should be documented. If recreation is the beneficial use, the description should provide information on accessibility to the site, the type of recreational activity and the number of visitors. The key aspect of this method is to demonstrate that there is a relationship between the beneficial uses and the instream flow. Efforts should also be made to describe possible negative effects from decreased flow below the requested levels.

The Narrative Justification Method represents a low cost method which, when used in conjunction with supportable hydrologic data, documents the relationship between the beneficial uses and the instream flow. Because the method is based on the judgmental expertise of the applicant, it is obviously a difficult method to defend if challenged. The primary use of this method is for applications on streams where there will be little or no controversy and where no increase in **consumptive use** is anticipated.

However, because the method will save considerable time, effort, and money for the applicant, ADWR feels that this method is acceptable when used in the appropriate circumstances. A guide to preparing a narrative justification is presented in Appendix B. Copies of studies using the Narrative Justification Method are available for review by prospective applicants at ADWR.

2) Habitat Retention Methods

Some of these simple incremental techniques may be applied to information gathered from either a single transect or multiple transects. Decisions regarding the number of transects necessary to describe resource needs are dependent on whether resource needs for the claimed stream segment can be adequately described and met by flow requirements determined from a single location on the stream. Multiple transects may be necessary when more than one beneficial use is claimed.

In addition, the degree of controversy surrounding the instream flow application may aid in determination of the number of transects needed to determine beneficial use water requirements.

These methods may also serve to validate instream flow rate requests that are greater than median flow rates observed during periods of claimed beneficial use.

Transect methods are used to determine the flow which maintains the essential habitat requirements of a particular species or activity. A single transect is selected at a site considered critical to fish, wildlife or recreational uses. The assumption is that flows must be maintained at these critical sites for fisheries protection. Established criteria (depth, velocity and **wetted perimeter**) are used to determine the "limiting" factor for migration, spawning, and other life stage requirements.

Typically, multiple transect methods include selection of at least three sites, each representative of a different habitat type (e.g. **riffle, run, pool**). Average depth, velocity, and percent wetted perimeter are determined and minimum criteria are established for "limiting" factors. Methods allow for comparisons among cross-sections by averaging **hydraulic property** changes with flow or by selection of the most critical cross-section.

3) Interdisciplinary Approach

This approach advocates an interdisciplinary evaluation process, rather than the use of specific methods, to assess streamflow hydrology, beneficial use requirements and legal aspects. The flexibility inherent in this process can create an assessment that is specific to the stream channel and resource values being evaluated. This may involve no more than a qualitative description of the relationship of the claimed beneficial uses and associated values with available streamflow or it may require a quantitative description. This approach may be amenable to legal challenge depending on the techniques selected to evaluate flow dependent resources.

Initially, an interdisciplinary project team is selected to conduct preliminary field assessments and review literature to initiate plan development. Details assessed are identification of physical, biological and cultural values, project objectives, streamflow evaluation methods, time frame, budget needs and final products. Stream values associated with beneficial uses identified in the preliminary assessment are then evaluated for their dependence on flows or flow-related conditions. Of particular importance are time patterns of flow regimes and channel morphology associated with high flows and channel dynamics.

For instream flows likely to be challenged in court and for those applications requesting flow rates higher than the median, the data should be developed so that the relationship between required flows and resource needs are quantified or otherwise convincingly demonstrated.

The Interdisciplinary Approach can be utilized in a wide variety of instream flow situations. The level of effort needed to generate recommendations, based on this method, can vary considerably. Depending on circumstances, simple description and qualitative analysis of the beneficial uses dependent on instream flow maintenance may be adequate. Other circumstances may warrant the use of a standard setting, multiple transect or incremental technique to quantitatively determine necessary flow rates.

B. INCREMENTAL METHODS

The previous methods discussed involve the selection of *critical reaches* followed by the identification of minimum flows based on the needs of claimed beneficial uses. These methods assume that if flows are sufficient in these reaches they will be sufficient along the rest of the claimed stream segment.

Incremental methods, on the other hand, through the development of valuative judgements at a number of different flow levels, more completely document the relationships between flows and specified uses.

1) *Instream Flow Incremental Methodology (IFIM)*

The Instream Flow Incremental Methodology (IFIM) was developed by the Aquatic Systems Branch of the National Ecology Center (formerly the Cooperative Instream Flow Service Group) and the U.S. Fish and Wildlife Service. IFIM initially attempted to integrate the planning concepts of water supply, analytical models and empirically derived habitat versus flow functions. It has since evolved into a river network analysis that incorporates fish habitat, recreational opportunity and woody vegetation response to alternative water management schemes (Stalnaker and others, 1994).

An integral component of IFIM is PHABSIM (Physical Habitat Simulation), which includes the following components: 1) physical measurement of depth, velocity, substrate and cover; 2) computer simulation of stream hydraulics; 3) determination of species and life history *habitat suitability curves* and 4) calculation of *weighted useable area* (WUA) for each flow regime, fish species and life history stage.

The hydraulic simulation predicts depths, velocities, substrates habitat and legal conditions. This process may also be used in conjunction with higher level single and multiple transect methods or incorporated into an incremental evaluation technique. The hydraulic simulation predicts depths, velocities, substrates and the amount of preferred physical habitat (collective WUA) within a stream reach for a range of various discharges. From this simulation and knowledge of micro-habitat preferences of resident fish, the amount of suitable habitat for a given species and life stage can be determined. Instream flows can be recommended based on the effect of incremental stream flow changes on the amount of suitable habitat. Because of its ability to predict habitat availability at different flow rates, this methodology allows for negotiation of flows between parties involved.

Although inherent problems exist with this methodology, it provides the best information available on the effect of a given flow regime on fish habitat. In addition, it makes these predictions for each life history stage for several species of fish. The IFIM is the only methodology available which allows for negotiation of flows. For this reason this technique may prove valuable for those streamflow situations where maintaining *optimum flows*, rather than minimum flows, is desired.

2) *Incremental Approaches for Recreational Use*

Incremental approaches can also be used to evaluate recreation using qualitative assessment to determine flow levels that provide the best opportunity for use. Streamflow requirements vary for each

recreational activity and for different stream channel characteristics. The two recreation incremental approaches are *Probability-of-Use* and the *Recreational User Survey*.

The Probability-of-Use approach was developed by Hyra (1978) and utilizes an incremental method using a computer simulation model that utilizes similar techniques to those employed by fishery assessment models (e.g., depth/velocity combinations and resulting stream surface area; calculation of the weighted useable surface area). Probability of use curves must be calculated for each specific stream reach and should not be generalized to different reaches where primary recreational uses are different. In addition, Hyra states that in general no single valid optimal flow exists for recreational use.

The Recreational User Survey approach utilizes user surveys to obtain judgements about the relationship of flows to recreation-related variables. Participants in these studies may experience a single flow rate, a range of flow rates or be exposed to photographic and/or verbal descriptions. In a study conducted by Moore et. al. (1990) actual flows experienced by interviewed participants in Aravaipa Canyon Wilderness were recorded. User responses were then statistically related to measured flows.

The Probability-of-Use and Recreational User Survey approaches develop valiative judgements of the quality of specific recreational activities at different flow rates. The result is a more complete documentation of the relationships between flow rates and recreation.

IV. INSTREAM FLOW HYDROLOGIC ASSESSMENT

In order to support an instream flow request an applicant is required to develop a hydrologic assessment of streamflow specific to the location of the proposed instream flow appropriation. The hydrologic assessment has two primary functions:

- 1) to demonstrate the availability of requested flows, and
- 2) to establish an interrelationship between applied for beneficial uses and available streamflow.

An instream flow right is a non-diversionary (in-situ) surface water right. Instream flow rates (monthly and annual total) requested in the application, which are consistent with available streamflow, are the measure of the beneficial use. Instream flow applications cannot request an improbable quantity of streamflow to support the requested beneficial use, therefore, the applicant must establish the quantity of water required to accomplish the purpose of the appropriation. **Median** rather than **mean** flow rates should be used in hydrologic assessments due to the skewed distribution of daily flows resulting from infrequent high flows. Generally, the median flow rate, or middle value when flow data are ranked in order of magnitude, provides the most probable determination of flow available in a stream.

The goal of the hydrologic assessment is to characterize a flow regime which approximates streamflow conditions associated with the location and duration of beneficial use. A hydrologic assessment is usually easy to complete when gaging station data is available for the stream, however, many streams in Arizona are ungaged. Assessment of these ungaged streams in a manner consistent with streams for which gaging records are available may not be possible. In such streams, virtually any data is valuable even if developed from once monthly or bi-monthly random measurements of streamflow. For both gaged and ungaged streams, any streamflow data gathered can provide valuable insight to the flow regime of the stream and aid in assessment of water available to support an instream flow request. Before beginning the hydrologic assessment of a particular stream to develop an instream flow request, preliminary evaluation of data available for the stream is necessary.

Some of the various methodologies which can be used to construct a hydrologic assessment for both gaged and ungaged streams are described briefly below. These assessments range from determination of median flow rates derived from random **instantaneous flow measurements** obtained monthly to analysis of streamflow data obtained from gaged streams using **flow duration** and correlative techniques. Appendix A describes techniques used for measurement and determination of streamflow using a current meter. A data collection form for streamflow measurements that may be used by the applicant is included in the back folder.

In order to achieve specific resource objectives, such as requesting flows to meet optimum rather than minimum beneficial use needs, or if it is determined that a more intensive analysis of the data may provide evidence that a greater amount of flow is available for claimed instream flow use(s), the

applicant is encouraged to develop an assessment which exceeds the minimum technical requirements.

A. GAGED STREAMS

Assessment of stream flow available for an instream use is usually easy when an active gaging station with a significant long-term period of record is located nearby. A stream gage is considered suitably located if it is capable of providing a direct assessment of water quantity without resorting to indirect methods. Stream gage records for existing or discontinued gaging stations can be obtained from the U.S. Geological Survey. Flow data may also be available from the U.S. Bureau of Land Management, U.S. Forest Service, U.S. Bureau of Reclamation, or university libraries. The flow characteristics of a stream may be analyzed using various statistical techniques such as *flow duration analyses*, if adequate flow data is available. If a long-term record is not available, it may be possible to extend short-term records.

1) *Flow Duration Analysis*

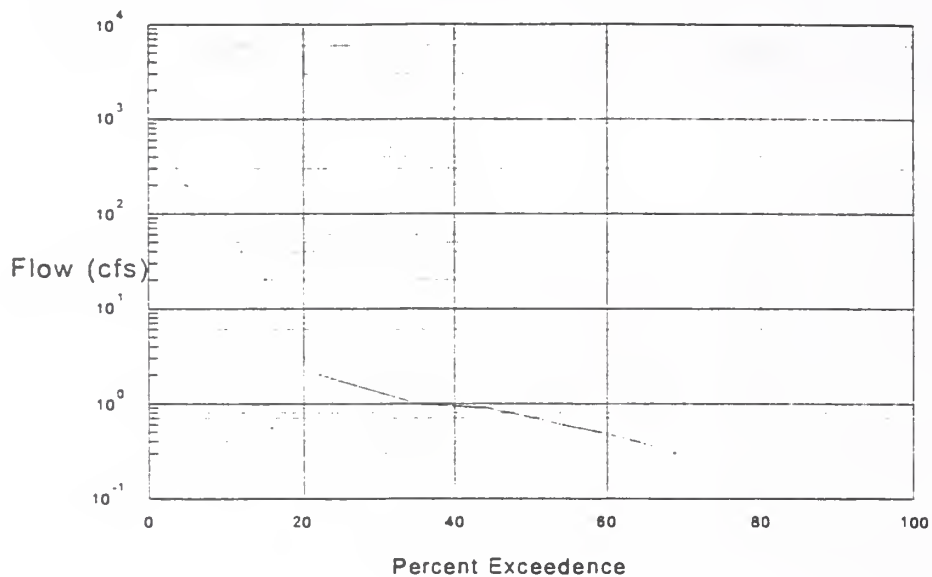
A flow duration curve can be used to assess the flow characteristics of a stream. Figure 1 is an example of a flow duration curve that shows the percent of time specified discharges were equaled or exceeded during the period of record.

To develop an assessment using a flow duration curve, monthly or daily flow volumes are arranged in a rank order tabulation and, for select values of flow exceedence, plotted month-by-month as mid-month values. Records of at least twenty years in length are usually required when an assessment is based on monthly flow volumes. If part of the most recent record is missing, and additional preceding years of data are available, then an extension of the record may be necessary to recover the last twenty years of supporting data for the analysis.

Some gaged streams, however, do not have twenty years of record. Where three to nineteen years of record are available, a flow duration analysis based on monthly flow volumes is not feasible. Confidence limits for such an analysis deteriorate with a smaller sample size. However, other correlative methods are available which may prove useful when preparing an assessment with records of short duration. Flow duration evaluations, based on mean daily flows, can provide a reasonable assessment where as little as three years of record are available. Where records provide less than three years of data, the average monthly flows for each calendar month are generally sufficient for an initial estimate. However, averages derived from short-term records can be biased by high or low flows.

Assessment of gaging station data should include an examination of the record for atypical effects. Operation of dams, diversion of streamflow or discharge of effluent can reduce or increase streamflow which, although not natural in their effect, may become important factors in developing an instream flow request.

Figure 1. Percent Exceedence Curve



The most recent twenty years of record is adequate to develop a water supply based on a flow duration analysis of monthly flow volumes. Periods of record less than twenty years in length may require a more intensive analysis such as examination of mean daily flows to complete a flow duration analysis, or alternative correlative methods.

In addition to flow duration analyses, streamflow hydrographs are also valuable tools in understanding a stream's flow regime. Hydrographs are typically constructed from mean daily flow values obtained at a gaging station. The data is graphically illustrated and can show both seasonal and long-term trends in flow.

2) Extending Short-Term Records

Some streams may have gaging station records of only a few years in length. Where a gaging station has substantially less than twenty years of continuous, current record, it may be more desirable to reconstruct a correlated record of monthly flows for the missing portion of the most recent record than to complete a more intensive analysis based on a shorter period of record. Use of a longer, continuous period of record provides greater data variation thus enabling a flow duration analysis to be completed for monthly flows. Since instream flow analyses may have beneficial use considerations which examine consistency in monthly flows distributed on a seasonal or annual basis, an extended period of record would also improve this assessment process by readily providing a month-by-month flow history.

Extension of streamflow records using linear regression techniques is well documented in the literature. Linear regression of two concurrent records (one of them being a record of interest) is used to estimate missing values in the record of interest by comparison with the base period of record of a similar nearby gage.

To reconstruct an extended period of record for a stream gage, the following criteria should be maintained:

1. Streamflow should be relatively free from intervening effects of extensive regulation, storage, or diversion.
2. A suitable primary station should be available for correlation.
3. The maximum standard error of estimate or spread of about two-thirds of the annual runoff values about the correlation line should be less than about 30%.
4. The coefficient of correlation should be at least 0.80 for data evaluated as fit-by-eye.

This and other similar correlative procedures possess value in extending some streamflow records. However, the amount of data necessary to obtain a satisfactory level of correlation between stream gages may limit the applicability and use of some of these techniques.

B. UNGAGED STREAMS

The vast majority of streams in Arizona have no gaging station records. Applicants must be prepared to measure streamflow where gaging station records are unusable or non-existent. To determine streamflow availability in these streams it is necessary to initiate a program of periodic, on-site *instantaneous measurement* of flows or to establish a continual flow measurement device. Selection of an appropriate measurement site and utilization of an applicable technique is important for acquiring streamflow information in an accurate manner. Streamflow measurement sites should be located in areas that provide both channel width and depth stability. Subsequent measurements should be taken at the same site(s), or in close proximity if morphological changes in the streambed render the original site unacceptable.

Quality of data is particularly important when collecting instantaneous flow information. When an instream flow assessment will be based on the minimum data standards, close attention should be given to activities or events that result in abnormally low or high flows. An applicant should limit data collection to streamflows that are "representative and typical" for the flow period of interest (month or season) which includes accounting for upstream diversion activities.

1) *Instantaneous Flow Measurement*

Instantaneous flow measurement techniques involve dividing stream width into portions or sub-divided segments of the cross-sectional area and measuring the velocity of flow through each segment using a current meter. For individual segments, the discharge is the product of the flow velocity and the

area. Summing the corresponding discharge calculations of all segments yields an instantaneous value of the streamflow for the total cross-sectional area. A step-by-step guide to conducting an instantaneous flow measurement is presented in Appendix A.

2) *In-Place Flow Measurement Devices*

Another way to accomplish streamflow measurement is to establish an in-place streamflow measurement device such as a stage gage. A recording stage gaging station produces a continuous time-stage graph. Stage is converted to discharge using a stage-discharge relationship developed specifically for the gaging station. These stations should be located in a cross-sectional area of the stream channel (as measured in a vertical plane perpendicular to the direction of streamflow) that is composed of more or less non-erodible streambed and banks. Sufficient data will need to be collected to establish a stage-discharge relationship at the location of the gage or recorder. Periodic review of the channel cross-section and discharge will be necessary to determine if any shift in the channel has significantly altered the stage-discharge relationship. Many Arizona streams experience frequent, significant cross-sectional changes. Where significant changes have occurred, appropriate adjustments must be made in subsequent discharge estimates.

Installation of streamflow measurement devices not only provides greater continuity of collected data, it also allows for a more thorough assessment of available water resources. Gaging stations, particularly those equipped with continual recording devices, can be expensive. On-site stream gage installation, while preferred, will usually not be required. However, when a program of periodic instantaneous flow measurements is undertaken, the applicant must be prepared to carry it out on schedule in order to avoid critical data gaps. Some gaps in data can be avoided by installing staff or crest gages when frequent high flows make streams inaccessible.

C. *HYDRAULIC SIMULATION*

The *hydraulic simulation* methodology has value in that it can be used to assess streamflow availability for a particular instream use or to develop a stage-discharge relationship. It can be applied to data collection from gaged or ungaged streams to assess instream flow use needs and/or streamflow availability.

After several site-specific flow measurements have been collected, a specified *minimum flow rate* is determined based on a simulation of the measured range of flows. This is done to determine flows required to maintain a certain desired instream flow use or to develop a stage-discharge relationship to estimate streamflow at a particular fixed location. Because hydraulic variables used in the determination of flow change with variations in depth and velocity, an appropriately calibrated simulation is required. To accomplish this, site-specific flow measurements must be collected from the full range of flows likely to occur. Calibration of the simulation is realized when hydraulic variables, taken as a function of depth, yield flows equal to the measured flows determined during field surveys.