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Senator Dave Wanzonreid, Chair
Environmental Quality Council
State Capitol
Helena, MT 59620

Montana is notable among the 48 co-terminus states in the widespread distribution of its natural water flows. Astride the Continental Divide, Montana holds a treasure of watersheds that provide water to three continental river systems, the Columbia system flowing to the Pacific Ocean, the Missouri system flowing to the Gulf of Mexico and the Atlantic Ocean and from Triple Divide Peak in Glacier National Park into the Saskatchewan River system flowing into Hudson Bay. It is the seasonal snowpack accumulated on the dispersed mountain peaks of The Land of the Shining Mountains that provides this treasure.

It is this same treasure of snowcapped mountain ranges seen on the horizon that lifts the spirit of two-thirds of those fortunate Montanans who see it every year. Not only the massive ranges of the Rockies, but also the "island ranges" punctuating the prairie province offer this spectacle of scenic delight. Beyond scenery, these snowcapped mountains provide the invaluable water for irrigating Montana's hayfields, thereby underwriting the Montana cattle industry.

Montana people are principally congregated along the major "river cities," Billings, Great Falls, Missoula and Bozeman, and in the keystone towns of Miles City, Glendive, Sidney, and Kalispell, Whitefish and Columbia Falls that rely upon their rivers for municipal water supplies and urban manufacturing. Their residents also benefit from their rivers providing a living background and riparian amenities.

Whenever it was naturally encountered, Montana's water was quickly appropriated, harnessed and industrially utilized as if it were also an everlasting gift. Among Western States, Montana has been blessed with a relative abundance of water. A million Montanans take pride in living in the state with the most Blue Ribbon trout streams in the nation. Ten million annual visitors are attracted by the opportunity to camp beside and dip a line in these sparkling waters where you can count the colors of the pebbles in the streambed.

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WATER POLICY INTERIM COMM.
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EXHIBIT 12

In the summer of 2007 this anticipated abundance abruptly ended. The sustained flow from melting mountain snowbanks dwindled to a trickle by early summer, and the growing bite of a multi-year drought came home. Sparkling streams dried up. Streambeds shrunk into reaches of sunbaked pebbles. Where a shriveled flow of water still persisted, its elevated temperature exceeded the habitat requirements of its resident fish families. Urban residents, irrigators, and flyfishing visitors alike were forced to retreat into the remnants of a diminished Montana.

We speculate whether we are in the grip of a 5-year drought or a 50-year disaster. Snow gauges recorded by early 2008 are encouraging. The evidence for prolonged changes in climate are weighed and debated. Whether Montana can continue to be the place we have known or whether a shrinking future must be confronted requires the urgent attention and consideration of all Montanans. Now.

We are suddenly confronted by the implacable measurement of what might be called the "Snowbank Index" as the root of our water resource well being. How much snow with how much water content accumulates over the winter is the basic measurement. These were once the drifts that never melted and the enduring glaciers that delighted sightseers. The composite factor is how quickly does it melt or how enduring is the meltwater flow as moderated by the variable strength of summer's warmth. Our over appropriation of the assumed availability of a constant waterflow has now been reined in hard against the limits of our natural "Snowbank Watersheds" - our Mountain Water Towers. Unfortunately, there is no ready technology to alter the limits of variability imposed by nature's regime.

Huge new power plants and manufacturing ventures are now being proposed. In every instance massive amounts of water will be needed for the processes they will utilize. Coal to liquid technology, for instance, requires 5 to 15 gallons of water per gallon of liquid coal. Suddenly we confront the economic circumstance of a limited availability of water. A finite amount of water must be allocated in competition with a multiplicity of existing uses. Fuel in the form of coal, oil, or natural gas and its quality and cost has been the only resource given attention in evaluation. *Water is assumed to be a free good when in fact it is a contributing fuel with its own limitations, economic cost and competing demands. It is truly an element of incalculable cosmic value that was born of the nearly indissoluble union of two atoms of hydrogen and one atom of oxygen. In Montana, water is in fact a priceless resource.*

There is no consideration given to what is the best economic use of Montana's limited water. Circumscribed in reality by the availability of a finite water resource, how should this water be used to the best advantage and greatest benefit to Montana people and Montana's sustainable economy? What yields the greatest public return for a given amount of available water in each watershed? Would it be in fisherman days, urban household use, or irrigation? In a particular manufacturing process how many jobs are created? In what power generating enterprise, in what kind of real estate development? Each of these economic activities requires water as a process fuel. It yields a measurable income, incurs measurable costs, offers quantifiable benefit and

requires predictable sustainability. Such evaluations and quantifiable factors are not presently considered. They cannot any longer be ignored.

A nationally prominent scientist, Howard T. Odum, documented in 1971 that water was as much a chemical component of process fuel as is oil or coal. An excerpt from his book titled "Environment, Power and Society" revealed that water is a chemical reactant and makes an energy contribution in any process in which it is involved. The excerpt from Odum's book is attached.

For over 150 years water has been Montana's indispensable resource. For much of this history, Montana has been content with the free flowing seasonal bounty of our rivers and streams. Steamboat traffic on the Missouri from St. Louis to the inland port of Fort Benton provided our first commercial link to the national economy. Montana's gold, fur and hides were exchanged for the needed tools and supplies for hunting, mining, ranching and small town human needs. Water was the indispensable resource for hydraulic mining of placer gold.

With the arrival of the railroads that brought large numbers of newcomers came widespread farming and the transportation that made possible the marketing of their crops. Irrigation projects were quickly developed wherever river flows could be linked to suitable crop land. In the forest regions the rivers provided the commercial channels to move logs from mountainside to mill.

World class copper mining in Butte by the Anaconda Copper Mining Company at the turn of the 18th century required thousands of miners. Both the electrical needs of the mines and the requirements of an urban population required industrial scale electrical generating. Massive copper smelting and refining processing was developed in Anaconda and Great Falls. The Missouri River was dammed and large hydropower units were installed. A sister company, Montana Power, developed these hydropower sites on the upper Missouri. These dams and power sites are still a mainstay of Montana's contemporary electrical power needs.

In the 20th century, a new era of federal water appropriation was initiated with massive mainstem dams. The Army Corps of Engineers assumed authority over construction on the Missouri River drainage in eastern Montana. The immense Fort Peck dam was the first. Barge operations on the lower Missouri to St. Louis and beyond were the primary beneficiaries.

The Bureau of Reclamation, the Army Corps of Engineers, Bonneville Power Authority and private utilities were all involved in major dam construction on the rivers of Montana in the Columbia Basin west of the Continental Divide.

Power generation was managed by the Bonneville Power Authority. Hungry Horse Dam, on the South Fork of the Flathead River, was initially intended to supply a dependent aluminum plant in Columbia Falls. Libby Dam on the Kootenai River and Canyon Ferry on the upper Missouri followed. The significant river sites now appear to be fully utilized.

Today, with a strong interest in coal based power plants, water is recognized as a necessary economic component. Other competing economic interests have surged in the last several decades: center pivot irrigation, boating on rivers and lakes, outfitting developed for rafting and fly fishing, stream side camping dependent on summer flow has burgeoned. A booming real estate industry dependent on access to rivers and lakes has emerged. Land with water access is valued at many multiples of the adjoining land lacking this amenity. These contemporary uses are now a strong economic competitor for water rights. They are now a significant element in Montana's economic base, with the shape and character of Montana's economy now dependent on Montana's sustained environmental quality.

Fortunately, Montana has in place the legal framework and apportioning procedures to manage for our long term interest the potential conflicts between growing demand and dwindling supply. The Montana Legislature in 1967 enacted a Water Policy Act that is still robust but underutilized in coping with the emerging circumstances. The policy considerations of water use are defined in Sec. 85-1-101 of the Montana Codes. These provisions are reproduced in the attached exhibit.

Implementation of the Water Policy Act is detailed in the State Water Plan, Sec. 85-1-203, also reproduced in the attached exhibit. The Department of Natural Resources and Conservation is charged with the responsibility to "formulate and adopt" the State Water Plan and submit to the Environmental Quality Council and to the Legislature prior to each regular session all "amendments, additions or revisions" that the Department "has formulated and adopted."

Public recognition by state government of the accumulated appropriation of Montana's water, the emerging conflict of our water allocations and the impact of changing technology on a limited water resource needs to be documented. The Department *shall* "hold public hearings in affected areas" and "all interested parties must be given an opportunity to appear."

The statutory framework was provided forty years ago by the 1967 Legislature. Montana is obligated to demonstrate the progress that has been made in implementing the State Water Plan over the past four decades. It is urgent that the Legislature make public Montana's Plan to address the current water situation and address the Plan's recommendations for attaining and assuring a prospering economy dependent upon a sustained water resource.



George Darrow, President
Crown of the Continent Institute

Darrow was the chief sponsor of the Montana Water Policy Act in the 1967 Session.

Exhibit 1:

Environment, Power and Society
-Howard T. Odum, Wiley and Sons 1971

Exhibit 2:

Montana Water Policy Act, Sec. 85-1-101
Montana State Water Plan Sec. 85-1-203

cc:

Senator Jim Elliott, Chair
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Governor Brian Schweitzer
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Environment, Power and Society

Howard T. Odum

Wiley and Sons ...1971
pp. 45-46

“Water, fertilizer and air are fuel. They are as much chemical reactants as oil. Any inflowing reactant to a process has its energy contribution to that reaction. Many substances such as water and minerals have been regarded as free goods partly because their energy values were not realized and no dollar values were assigned until human work was involved.

We can obtain the potential energy value of each substance relative to the use that is to be made of it. We may multiply flow by kilocalories per gram to obtain the value of this material as a fuel to our usages.

The potential energy value of the water as a fuel [for instance] for washing processes is ten times the value of the water in hydroelectric purposes.

A municipality or an industry that uses public waters for some process with reactions, for cleaning or other usages that change its quality is using a public fuel. Public decision processes must require adequate payments or reimbursements for the former users, the sectors of the system who are now deprived, including the ecosystems as well as human sectors.

A reasonable plan of management of a system of man and nature requires that all flows be evaluated and paid for with return services and compatible inputs and outputs arranged. **Simular kinds of calculations need to be made for all the chemical inputs ... The concept of free good must be eliminated.”**

(7)

Part 1
General Provisions

85-1-101. Policy considerations. It is hereby declared as follows:

(1) The general welfare of the people of Montana, in view of the state's population growth and expanding economy, requires that water resources of the state be put to optimum beneficial use and not wasted.

(2) The public policy of the state is to promote the conservation, development, and beneficial use of the state's water resources to secure maximum economic and social prosperity for its citizens.

(3) The state, in the exercise of its sovereign power, acting through the department of natural resources and conservation, shall coordinate the development and use of the water resources of the state so as to effect full utilization, conservation, and protection of its water resources.

(4) The development and utilization of water resources and the efficient, economic distribution thereof are vital to the people in order to protect existing uses and to assure adequate future supplies for domestic, industrial, agricultural, and other beneficial uses.

(5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life.

(6) The public interest requires the construction, operation, and maintenance of a system of works for the conservation, development, storage, distribution, and utilization of water, which construction, operation, and maintenance is a single object and is in all respects for the welfare and benefit of the people of the state.

(7) It is necessary to coordinate local, state, and federal water resource development and utilization plans and projects through a single agency of state government, the department of natural resources and conservation.

(8) The greatest economic benefit to the people of Montana can be secured only by the sound coordination of development and utilization of water resources with the development and utilization of all other resources of the state.

(9) Any attempt to gain control of or speculate on large quantities of ground water of the state of Montana is not in the interest of the people and is to be restricted.

(10) To achieve these objectives and to protect the waters of Montana from diversion to other areas of the nation, it is essential that a comprehensive, coordinated multiple-use water resource plan be progressively formulated, to be known as the "state water plan".

History: En. Sec. 2, Ch. 158, L. 1967; amd. Sec. 119, Ch. 253, L. 1974; R.C.M. 1947, 89-101.2; amd. Sec. 1, Ch. 631, L. 1979.

Cross-References

Right to clean and healthful environment, Art. II, sec. 3, Mont. Const.

Protection and improvement of environment — prevention of unreasonable depletion and degradation of natural resources, Art. IX, sec. 1, Mont. Const.

Department of Natural Resources and Conservation, Title 2, ch. 15, part 33.

Recreation, Title 23, ch. 2.

Environmental protection — environmental policy, Title 75, ch. 1.

Water quality, Title 75, ch. 5.

Public water supplies, distribution, and treatment, Title 75, ch. 6.

Aquatic ecosystem protections, Title 75, ch. 7.

Control of state waters for propagation of fish, 87-1-223.

Wildlife protection — stream protection, Title 87, ch. 5, part 5.

85-1-203. State water plan. (1) The department shall gather from any source reliable information relating to Montana's water resources and prepare from the information a continuing comprehensive inventory of the water resources of the state. In preparing this inventory, the department may conduct studies; adopt studies made by other competent water resource groups, including federal, regional, state, or private agencies; perform research or