J. Colburn

State of New Hampshire

HOUSE OF REPRESENTATIVES

CONCORD

The Public Water Rights in New Hampshire Study Committee is pleased to submit a report on Public Water Rights — a result of four years' work. The issue of Public Trust is very complex. The committee members struggled over a long period of time to develop a report which is clear and concise. This concerted effort of all groups concerned is a step in resolving a long-standing problem of water rights.

The committee members appreciated the opportunity to work together on this most important issue and the legislation evolving from the study.

Representative Leonard A. Smith, Chairperson
Representative Janet M. Conroy, Clerk
Representative Gregory Jauas
Senator Richard L. Russman
Senator Wayne D. King
Ralph H. Goodno, Governor's Appointee
Pierre C. Lavoie, Governor's Appointee
Thomas M. Caughey, Governor's Appointee

Assistance was provided to the Committee by Jim MacCartney, Merrimack River Watershed Council; John Dabuliewicz, Assistant Commissioner, and Ken Stern, Division of Water Resources, both from the Department of Environmental Services; House Secretarial Services; Sue Bielski and Jeff Kovalik, Legal Interns, Franklin Pierce Law Center; and Don Hunter, Research Director, Office of Legislative Services.

Respectfully submitted,

Leonard A. Smith

Rep. Leonard A. Smith, Chairperson

REPORT OF THE
PUBLIC WATER RIGHTS STUDY COMMITTEE

Chapter 148, New Hampshire Laws of 1990
Chapter 356, New Hampshire Laws of 1991

December, 1992

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EXECUTIVE SUMMARY

PUBLIC WATER RIGHTS STUDY COMMITTEE

Increasing demands are being placed on New Hampshire's finite surface and groundwater resources. Future increases in demand and competition for these resources can be expected. Demands on water resources have led to points of potential conflict between public trust interests and private water rights. The State can expect increasing pressure to assert the public trust and provide water for various uses (refer to pages 3-4).

Public trust might be defined as "water of sufficient quantity and quality necessary to support those interests in the State's waters available, or of concern, to the people of the State irrespective of ownership of land abutting or overlying a water resource" (see page 7).

The State holds public trust interests in waters of all great ponds and navigable bodies such as rivers and streams (page 8). Public trust interests include: protected flows, environmental protection and ecological preservation, navigation, protection of water quality and public health, flood control, recreation, boating, fishing, swimming, protection of aquatic life, and consideration of scenic beauty or views (page 16).

The State has the duty of supervising, protecting, and maintaining the public trust (page 9). Riparian/littoral and private groundwater rights to use water are subject to a number of conditions including "reasonable use" (page 10). Some riparian/littoral and groundwater withdrawals may exceed the scope of reasonable water use and may thus infringe upon the State's public trust interests. In cases where a withdrawal would infringe upon public trust interests, conveyances can only be made by an act of the legislature (page 5).

The Public Water Rights Study Committee (PWRSC) considered a case study of the Souhegan River basin as a way of illuminating issues related to water rights and water use in New Hampshire. Testimony received during the case study displayed strong evidence of the interconnectedness of surface and groundwaters. Case study testimony also showed that both surface and

groundwater withdrawals diminish streamflow, resulting in a reduction of allowable permitted discharge of wastewater or degradation of receiving waters downstream (page 10).

The PWRSC finds that New Hampshire is approaching the point when it will become desirable to supplement the existing riparian/littoral and groundwater system with some type of water-use permit system. It is perceived that such a change will be needed in order to responsibly and adequately continue to conserve, manage and protect the State's waters (page 12).

The PWRSC finds that there is a need for a direct and comprehensive statutory statement of policy asserting the reach of the State's public trust interests and establishing clear directives for regulating withdrawals from public waters (page 13).

The PWRSC finds that there is a need to expand the body of information about New Hampshire's water resources through river-basin assessment, analysis and planning in order to evaluate proposed and existing withdrawals effectively. This would include systematic evaluation of the sustained yield of the major watersheds of the State (page 17).

The PWRSC recommends introduction of a bill in the next legislative session which would create a statement of policy as a preamble to Title L - Water Management and Protection, New Hampshire Revised Statutes Annotated (RSA). Such a preamble would:

* Reaffirm the role of the State as trustee of the waters of New Hampshire and declare that these waters are held in trust for the benefit of all people in the State;
* Declare that surface and groundwater are inherently interconnected and that all waters of the State, whether located above or below the surface, are a public resource and part of the public trust;
* Declare that nothing contained in the preamble denies any private riparian, littoral, or groundwater right to use water for any beneficial purpose if the use is "reasonable" (pages 19-20).

The PWRSC recommends introduction of a bill in the next legislative session to direct the Department of Environmental Services to design a river-basin planning approach and resource assessment and management strategy. This bill will require DES to consult with all affected interests and will also make an appropriation from the general fund to DES for this purpose (page 20).

The PWRSC recommends introduction of a bill in the next legislative session to direct the Department of Environmental Services to design and propose to the legislature a water-use permit program for future implementation. This bill will make an appropriation from the general fund to DES for this purpose (page 21).

The PWRSC recommends introduction of a bill in the next legislative sessions which addresses the status of the numerous historic legislative enactments that have authorized water use throughout New Hampshire (page 24).

INTRODUCTION

In New Hampshire as in many states, growth and development have placed increasing demands and pressures on water resources. By nature, these resources are finite and pressures on them are heightened during periods of naturally occurring low flows. With continued growth, New Hampshire can expect to face increasing and often competing demands for use of the State's limited surface and groundwater resources.

The combined effects of numerous surface or groundwater withdrawals within a river basin or cases where relatively large withdrawals have been proposed on relatively small streams, have led to points of potential conflict between the State's interests in public waters and riparian/littoral and private groundwater rights. Riparian and littoral rights are those which arise from ownership of land bordering watercourses or waterbodies such as streams or lakes, respectively. Across the State, the frequency and number of potential future conflicts can be expected to grow and competition for limited water resources to increase. Today's pressures are most apparent in the southern tier and along the seaboard.

These cases have drawn attention to the potential conflict between the "public trust doctrine" and riparian/littoral and private rights to use groundwater. In addition, they have highlighted the underlying lack of understanding about the boundaries of the State's interests in and authority over the waters of the State and riparian/littoral and private groundwater rights.

In the future the State can expect to receive increasing pressure from the public to defend the State's interests and assert its authority over the waters of the State. Furthermore, in asserting its public trust interests and authority, the State should anticipate and must prepare to defend against possible "taking" challenges.

Existing competition for water resources and the anticipation of increased future competition led the State to conduct an investigation of public water rights. By investigating public water rights, the State sought to determine the source of misunderstanding regarding water rights and to create a means to minimize competition between the various parties and individuals seeking use of the State's waters.

To this end, the New Hampshire General Court established a "public water rights study committee" under Chapter 148, New Hampshire Laws of 1990 (see Appendix A). Specifically, the Public Water Rights Study Committee (PWRSC) was established to:

> "discern the extent and content of the public rights; to determine whether a present or proposed private use of a public water body impacts or may impact the public rights; and to establish under what conditions conveyance of some portion of the public trust would serve the public interest."

The study initiated in 1990 under Chapter 148 has continued under authority of Chapter 356, NH Laws of 1991. In its investigations, numerous materials and information were provided to the PWRSC. A listing of these materials, copies of which are housed in the New Hampshire state library, is found in Appendix B (see Appendix B - Additional Information and Resources).

The investigations initiated under Chapter 148 and Chapter 356 culminated in this report to the General Court, which presents the findings and recommendations of the Public Water Rights Study Committee.

FINDINGS

Private Water Rights and the Public Trust

In its investigations the PWRSC found that considerable misunderstanding and competition exists in New Hampshire between riparian/littoral and private groundwater rights and public trust water rights or perhaps more appropriately, the State's public trust interests and authority over public waters. Much of the recent debate surfaced following publication and circulation of the New Hampshire Department of Justice's opinion on the proposed expansion of Loon Mountain's withdrawals from Loon Pond in August, 1989. The Department of Justice's opinion on the State's interests in Loon Pond and the effect of the proposed expansion was requested by the Department of Environmental Services.

In the Loon Mountain/Town of Lincoln opinion, the Department of Justice noted that the State holds public trust rights in surface waters that could be affected by the proposed expansion of Loon Mountain's withdrawals. The Department of Justice concluded that the proposed increase would exceed the scope of reasonable water use permitted to littoral and riparian landowners, and thus would infringe upon the State's public trust interests in those bodies of water. The Department of Justice further stated that the water withdrawal authorization requested could only be conveyed by an act of the Legislature. Specifically, the Department of Justice's opinion stated that:

> "the proposed withdrawals raise significant environmental concerns and may interfere with public use of these surface waters for fishing, recreation, wildlife habitat, and drinking water supplies. A riparian withdrawal of water which competes to this extent with public interests constitutes an unreasonable water use which infringes upon the State's public trust rights. It is in precisely these circumstances - when public waters may not be able to supply

all of the conflicting demands of public and private water users - that the public trust doctrine is triggered, permitting the legislature to make critical decisions about the disposition of the state's resources and the protection of the public's rights to those resources." (at page 22)

For many years the State's water resources have been sufficient to meet the needs of riparian/littoral/groundwater and public trust interests and there has been little interest in asserting the public trust. Publication of the Department of Justice's opinion focused renewed interest on the State's rights to public waters. It also precipitated a flurry of proposals to the General Court requesting legislative authorization from users who felt that the Department of Justice's opinion changed the landscape of water withdrawal rights in New Hampshire.

In addition, misunderstanding of water rights may be due in part to a half century hiatus in the legislature's exercise of its power to authorize water withdrawals, coupled with the misperception that riparian/littoral and private groundwater rights allow nearly unlimited use of these waters. Such a misperception may have been perpetuated by the large number of historic legislative grants which essentially authorized unlimited withdrawal. It should be noted that many of these historic grants gave authorization for municipalities or water utilities to withdraw water for public supply and thus established a precedent of legislative authorization for public water supply withdrawals.

Information that has been compiled regarding grants of water rights in New Hampshire from colonial times to the present is incomplete. The periods from 1623-1783 and 1850-1973 have been examined, but further work is needed to fill the gaps. The original circumstances and current status of these grants and other legislation authorizing water use are presented in Appendix C (see Appendix C - Legislative Enactments Authorizing Water Use). The PWRSC believes that there is a need to address the status of these historic authorizations in any future legislation concerning water withdrawals. (See Water-use Enactments - page 24). There is also a need to address the "public trust doctrine" in relation to water withdrawals.

The "Public Trust Doctrine"

Both the "public trust doctrine" and riparian/littoral rights have foundations in common law. It is important to understand that the "public trust doctrine", as judge-made (common) law, was designed and intended to be applied only on a case-by-case basis. It relies upon the existence of an actual case in controversy where a court is called upon to determine whether a use of water infringes upon the sovereign's (State's) paramount rights to those waters. The "public trust doctrine" is not a general policy instrument. Therefore, it is imperative that this doctrine not be identified as a jumping-off point for fashioning public policy of general applicability.

The "public trust doctrine" is usually perceived as a dynamic common law principle that remains sufficiently flexible to address the changing needs of society without impairing any of the traditional rights or interests.

A simple definition of "public trust" might be - water of sufficient quantity and quality necessary to support those interests in the State's waters available, or of concern, to the people of the State irrespective of ownership of land abutting or overlying a water resource.

An alternative to defining the public trust may be to identify the boundary beyond which riparian/littoral and private groundwater rights infringe upon the public interests. One approach would be to establish methodologies for identifying protected instream flows for individual river basins. Protected instream flow is a volume of flow maintained in a given reach to protect the resources and instream uses of that segment adequately.

The "public trust doctrine" does not supplant the riparian/littoral use doctrine or private rights to use groundwater. However, it does recognize the public's paramount interest in the State's waters when private uses of surface or groundwater infringe upon those State interests. The riparian/littoral use doctrine applies between private users, subject to reasonable use requirements. Likewise, private groundwater rights are subject to reasonable use requirements.

The source of the State's public trust interest in ponds and lakes is the principle that the State holds title to the bed and public trust rights in the waters of all great ponds of ten or more acres, in their natural state (see RSA 271:20). The State also holds public trust rights in the waters of navigable bodies that are capable of public use, such as rivers and streams. Any private use of public waters must be "reasonable" and must not interfere excessively with the protected interest of the State in the use and enjoyment of public waters.

Waters within the public trust are generally considered to include tidewaters, navigable freshwaters and in some states, groundwater. In New Hampshire, an official list of public waterbodies was published in August 1990 by the Department of Environmental Services. Pursuant to RSA 271:20, this publication lists a total of 738 waterbodies of 10 acres or more in area identified as natural lakes or natural lakes raised by damming. The list does not include navigable streams and rivers or groundwaters within New Hampshire. Chapter 148:3, NH Laws of 1990, defines public waters as "great ponds, navigable waterways, and tidal waters of the state."

Historically, the "public trust doctrine" primarily protected the common right to use public waters for navigation and fishing. However, it has been expanded to include activities and interests such as swimming and recreation, and the control of waters for the purposes of water storage and protecting water quality. Public trust interests also extend to the preservation of waters within their natural state to promote wildlife habitat, scenic beauty, and scientific study. These assertions of public trust interests are mentioned in the Department of Justice's opinion at page 11.

Public trust interests are measured not only in terms of present demands, but also in light of future needs. As long as there is a public trust interest in surface waters, the State acts as trustee of these interests and can impose certain limits on withdrawals from these waters for riparian/littoral and private groundwater uses.

A riparian/littoral or private groundwater use that interferes with the State's interests in its waters for fishing, recreation, wildlife habitat, or others may constitute an unreasonable water use which infringes on the State's public trust rights. The "public trust doctrine" may be triggered in those instances when the available volume of public waters may not be adequate to satisfy all of the conflicting demands of public interests and private water users.

Under the "public trust doctrine" states have the duty of protecting public trust resources. This includes supervising the trust, preserving the uses protected by the trust, and protecting and maintaining the trust by devoting its use to actual public interests.

Riparian/Littoral and Private Groundwater Rights

Riparian/littoral can be defined as relating to, living, or located on the bank of a watercourse or a waterbody. Riparian/littoral rights are the rights of riparian/littoral landowners to have access to and use of the shore and water flowing over, through, or abutting that property.

In New Hampshire, the right to use water derives from the English Common Law concept of riparian rights; that is, the right of a stream bank owner to use, but not alter the flow of, a stream passing his property. This doctrine has been modified by the acceptance of "reasonable use". Reasonable use is a test applied by the courts on a case-by-case basis. A reasonable use is one which does not interfere with the reasonable use of downstream riparian/littoral owners, whose right is neither more nor less than all other riparian/littoral owners.

The perception of rights to groundwater have a more complicated history. For limited use, such as household or farm use, the right to develop wells and withdraw reasonable quantities for beneficial use is long accepted under the definition of reasonable use. The courts have been ambivalent about such rights, with a distinction between so called "percolating waters" and those flowing in underground streams. The latter interpretation of rights has been considered appurtenant to the real estate overlying them.

We now know that the above distinction is not scientifically valid and that all groundwater moves without regard to property boundaries.

The State of New Hampshire has never conceived of water in its natural state as private property. Rights to use of waters of the State are subject to a number of conditions including reasonable use and, especially, the requirement that waters shall not be diminished in quantity or quality. The State of New Hampshire, as successor to the sovereign right of the crown, has full power to exercise stewardship over the waters of the State.

Pressures on Water Resources

The PWRSC found that pressures are being placed on water resources throughout New Hampshire. Pressures are generally greatest where there is a combined effect of substantial water use and naturally occurring low flows. The amount of available water is significantly reduced during periods of low flow or drought.

The PWRSC considered a case study of the Souhegan River basin as a way of illuminating issues related to water rights and water use in New Hampshire. Testimony received during the case study displayed strong evidence of the interconnectedness of surface and groundwaters. Case study testimony also showed that both surface and groundwater withdrawals diminish streamflow, resulting in a reduction of allowable permitted discharge of wastewater or degradation of receiving waters downstream.

The Souhegan basin case study displayed the limited nature of its water resources, the diversity and abundance of water uses within the basin, and the resulting pressures placed on water resources. Other basins identified as possibly experiencing significant pressures include: the Contoocook, Lamprey, and Salmon Falls. However, it should be understood that a systematic scientific evaluation might reveal other basins with equal or greater pressures.

In addition to the generally acknowledged public trust interests such as navigation, recreation, environmental protection and others, the diversity of water use within the Souhegan basin was found to include: municipal water supply, irrigation, aquaculture, hydropower production, industrial, mining, snowmaking, gravel washing, and sewage treatment. The diversity of water use within the Souhegan basin is representative of water uses across the State.

Across New Hampshire, there are more than 500 registered water users using more than 20,000 gallons per day (GPD) during any week of the year from surface or groundwaters on a continuing basis. As charged in Chapter 148:2, NH Laws of 1990, an inventory of these users is presented in Appendix D (see Appendix D - WRD Registered Water Users). The inventory includes the names of the users, the location of the withdrawal, and the type of the use.

Chapter 148:2 further charged the PWRSC with determining the extent to which groundwater appropriation or use may impact the public rights in surface waters. The hydrologic connection between surface and groundwater was considered as part of the Souhegan Basin case study. The case study investigations showed that groundwater flows contribute significantly to streamflows and displayed strong evidence of the inherent interconnectedness of surface and groundwaters. Case study testimony showed that groundwater withdrawals from wells capture water that would otherwise go to surface waters such as rivers and streams. Testimony also showed that in cases where a well is located close to a stream, withdrawals may induce infiltration through the stream bed. For these reasons it was noted that it is important to understand that groundwater withdrawals constitute water use within a river basin even if they do not withdraw directly from the stream.

In light of the evidence presented, the PWRSC finds that groundwater withdrawals should be considered in a manner similar to withdrawals from surface waters and that groundwater use and resources should be included in basin planning and assessments.

Chapter 148:2 also charged the PWRSC with determining the effect of significant withdrawals on wastewater assimilation. This was a central focus of the Souhegan Basin case study. Wastewater treatment facilities are designed to assure that their effluent will meet water quality standards based on predicted low flow values (known as 7Q10). The case study showed that the capacity of a waterbody to assimilate wastewater is directly tied to available flows. A significant upstream withdrawal, or the combined effects of several smaller withdrawals will diminish streamflow resulting in a reduction of allowable permitted discharge of wastewater or degradation of the quality of receiving waters downstream.

Thus, the PWRSC finds that consideration of the relationship between existing or proposed withdrawals of water, and the ability of the affected waterbody to assimilate wastewater discharges while maintaining water quality standards is critical. In addition to a review of withdrawals and discharges provided through basin planning, requests to withdraw water may appropriately be tied to a user's wastewater discharge allocation in applicable cases.

At the present time, under normal flows, there appears to be sufficient water to meet the needs of most existing uses within most New Hampshire river basins, including the Souhegan. However, the impact of a future authorization for a particularly large withdrawal, or the combined effect of several smaller withdrawals during low flow periods when water is most in demand, could potentially change the present situation and endanger the existing balance.

Supplementation of the Existing System

The PWRSC finds that New Hampshire is approaching the point when it will become desirable to supplement the existing riparian/littoral and groundwater system with some type of water-use permit system. Because of existing competition, an expected increase in use and demand for water resources, and problems associated with the present approach to water-use authorizations, it is perceived that such a change will be needed in order to continue to responsibly and adequately conserve, manage and protect the State's waters.

It is reasonable to believe that continued growth and development will occur throughout New Hampshire. With future growth and development, a corresponding increase in water use can be expected to occur. In the absence of adequate data, planning, and resource management, the present balance between available resources and their use may be threatened. The PWRSC believes that there is a need to address this issue before a crisis situation arises.

Many states experiencing similar existing and potential future pressures have developed and instituted some type of water-use permit system. There is considerable variation in such programs from state to state but most share several central components. These components include: what is regulated and what is exempted, information considered in issuing permits, water conservation, hearings and notifications, duration of permits, priorities, and fees. In its investigations, the PWRSC considered a variety of water-use permit systems in use in the eastern United States (see Appendix E - MRWC Summary of Selected State Programs).

Modifications to the existing system of administering water use would benefit all interests by reducing potential conflict between private water rights and public trust interests. In addition, supplementing the existing common law system with a water-use permit system would minimize pressure on the State to assert the public trust and deter challenges on "takings". Under a water-use permit system, decisions would be made on the basis of adequate information and data with guidelines that provide equal treatment for everyone.

Water-Related Law and Policy

The PWRSC finds that there is a need for a direct and comprehensive statutory statement of policy asserting the reach of the State's public trust interests and establishing clear directives for regulating withdrawals from public waters. The gaps created by the need for a comprehensive statement of policy targeted specifically to public trust, public water rights, and water withdrawals contribute to the lack of understanding of these issues and increase the potential for future conflict. The PWRSC finds it desirable to be proactive in addressing this situation.

Although all of New Hampshire's water laws were recodified into a single title in 1989, State statutes provide neither a direct and comprehensive statement of policy asserting the reach of public trust water interests, nor clear directives to the executive branch to regulate withdrawals from public waters in order to avoid or minimize impacts upon such interests.

In RSA 481:1 the State declared its role as trustee of the waters of New Hampshire and the need to assure adequate supply for the people of the State and its environment. The General Court found that:

> "an adequate supply of water is indispensable to the health, welfare and safety of the people of the state and is essential to the balance of the natural environment of the state. Further, the water resources of the state are subject to an ever increasing demand for new and competing uses. The general court declares and determines that the water of New Hampshire whether located above or below ground constitutes a limited and therefore, precious and invaluable public resource which should be protected, conserved and managed in the interest of present and future generations. The state as trustee of this resource for the public benefit declares that it has the authority and responsibility to provide careful stewardship over all the water lying in its boundaries. The maximum public benefit shall be sought, including the assurance of health and safety, the enhancement of ecological and aesthetic values, and the overall economic, recreational and social well-being of the people of the state. All levels of government within the state, all departments, agencies, boards and commissions, and all other entities, public or private, having authority over the use, disposition or diversion of water resources, or over the use of the land overlying, or adjacent to, the water resources of the state, shall comply with this policy and with the state's comprehensive plan and program for water resources management and protection."

Despite this language, the PWRSC found that existing law and the present system of legislative authorization for withdrawals do not sufficiently empower the State to discharge its duty as trustee of the water resources of New Hampshire properly and adequately.

A number of laws passed over the years dealing with a variety of water issues have, indirectly, formed a partial outline of public water rights and the public trust in New Hampshire. These laws include but are not limited to those listed on the following page.

Selected New Hampshire Water Laws

RSA 21-O:3, Duties of Commissioner.
RSA 271:20, State Water Jurisdiction; Published List of Public Waters; Rule-making.
RSA 477:33, Waters.
RSA 481:1, Declaration of Policy.
RSA 481:2, Definitions.
RSA 481:6, Powers.
RSA 482:1, Purpose.
RSA 482:4, Investigation of High and Low Levels.
RSA 482:31, Hearing; Permit.
RSA 482:48, Acquisition Authorized.
RSA 482:79, Investigation of Levels of Inland Waters.
RSA 483:1, Statement of Policy.
RSA 483:2, Program Established; Intent.
RSA 483:4, Definitions.
RSA 483:6, Nominations; Criteria.
RSA 483:9-c, Establishment of Protected Instream Flows.
RSA 483:10, River Corridor Management Plans.
RSA 483-A:1, Statement of Policy.
RSA 483-A:2, Definitions.
RSA 483-A:3, Program Established; Intent.
RSA 483-A:7, Lakes Management and Protection Plans.
RSA 483-B:1, Purpose.
RSA 485:1, Statement of Purpose.
RSA 485-A:1, Declaration of Purpose.
RSA 485-A:2, Definitions.
RSA 485-A:3, Policies.
RSA 485-C:1, Statement of Purpose.
RSA 485-C:2, Definitions.
RSA 498:6, Water Rights.

While each of these laws touch upon public water rights and the public trust, none address it directly.

The situation is compounded by the lack of sufficient resources to assess the nature and extent of New Hampshire's water resources, evaluate existing and proposed withdrawals, and plan for future use.

A comprehensive statutory policy would reaffirm and clearly establish the State as trustee of the waters of New Hampshire, define and reaffirm the reach of the public trust, and list those interests of the State considered to be within the realm of the public trust. It would also dedicate resources to conduct basin planning and resource assessments across the State and to evaluate and administer water withdrawals for all existing and future uses.

Balancing use of water depends upon a clear identification of how the waters of New Hampshire should be maintained and utilized for the benefit of the people of the State. Arguably, there is probably no use of water that does not provide some kind of public benefit either directly or indirectly. Public benefit can be served by protecting public trust interests such as navigation and recreation while providing for socioeconomic uses such as those identified below. A comprehensive water-use policy would distinguish between public trust interests and socioeconomic uses and recognize the importance of encouraging protection of both.

Public trust interests are those interests in the State's waters available, or of concern, to the people of the State irrespective of ownership of land abutting or overlying a water resource. These interests have an intrinsic relationship to the resource and are distinguished as those inherently tied to the presence of some body of water such as a lake or stream. Public trust interests identified by the PWRSC include: protected flows, environmental protection and ecological preservation, navigation, protection of water quality and public health, flood control, recreation, boating, fishing, swimming, protection of aquatic life, and consideration of scenic beauty or views.

Socioeconomic uses are those relying on a source of water but not necessarily dependent on the presence of a body of water such as a lake or stream. In general, these uses are distinguished by their "out-of-stream" utilization of water. Socioeconomic uses identified by the PWRSC include: water supply, hydroelectric energy production, agricultural and industrial use, tourism, snowmaking, transportation, government services and infrastructure, fire protection and prevention, wastewater discharge, riparian/littoral and private groundwater interests, flowage rights, and interstate water use. The PWRSC finds public water supply to be the socioeconomic use of the greatest public benefit.

The PWRSC finds that conveyances of the public trust should be evaluated on a case-by-case basis to determine the impact to the State's public trust interests. Criteria for making such evaluations are discussed below.

Information Needs

The PWRSC finds that there is a need to expand the body of information about New Hampshire's water resources through systematic river-basin assessment, analysis, and planning. Such an expansion is needed in order to evaluate proposed and existing withdrawals effectively. This would include systematic evaluation of the sustained yield of the major watersheds of the State as mentioned in Chapter 148:2, NH Laws of 1990.

There is also a need to develop methodologies for identifying protected instream flows for each river basin. New Hampshire needs expanded river-basin planning and resource assessments and instream flow standards to understand and evaluate the full impacts of a withdrawal on the source or its relationship to existing and potential future uses.

Chapter 148:2 also charged the PWRSC with identifying procedures and criteria that the General Court or its delegate might use to determine the public interests in a given water body, when those interests are being impacted, and under what circumstances conveyance of those interests would be in the interest of the citizens of the State. The PWRSC believes that such determinations are dependent upon the availability of expanded information and may vary between river basins.

Responsible decisions involving authorization of water withdrawals are dependent upon meaningful assessments based on two kinds of information. One is information about the resources, including water availability, hydrology, and the flow requirements of passive uses, ecological resources, and existing and potential public trust interests. The other is information about withdrawals, including the extent of existing and appropriated uses and the need for and impact of withdrawals.

The PWRSC finds that under the present system of legislative authorization, there are significant obstacles to making such meaningful assessments and determining instream flow requirements. As noted in the Department of Justice's opinion on Loon Mountain, "Historically, the legislature has faced these difficult issues on an ad hoc basis, often without

the benefit of sufficient background information on the general environment and policy implications of granting public trust rights to private water users." Presently, the legislature and state agencies lack the support of scientific and technical staff funded and assigned to make such assessments. They also lack instream flow standards to guide the process.

Information about the resources that is needed to assess the impacts of a withdrawal has been identified by the Department of Environmental Services as including water availability/hydrology, active water use/riparian and appropriated uses, and passive water use/instream uses (see Appendix F - Information Needs for Resource Evaluation).

Ideally, resource evaluations would provide an inventory of public trust interests and ecological resources in the reach potentially impacted by a withdrawal. They should also provide a hydrologic analysis of the quantity and timing of streamflow. The State should fund resource evaluations of river basins.

The river-basin approach to planning and resource assessment would systematically evaluate the State's surface and groundwater resources basin-by-basin as the need arises or as financial resources become available. In the process, the information identified above would be gathered for each of the major river basins of the State. The approach recognizes that the extent and nature of New Hampshire's water resources varies across the State and within each basin. There is a further recognition that each basin may experience more or less pressure on its particular resources than other basins throughout the State. For these reasons the PWRSC believes that a river-basin approach is the best for planning, analysis, and resource assessment.

Information about existing and proposed withdrawals that is needed to make meaningful assessments has been summarized by the Department of Environmental Services (see Appendix G - Withdrawal Authorization Information Requirements). Seven areas of information requirements identified by the department are included in the following list.

Required Water Withdrawal Information

1. Need for Withdrawal
2. Description of Withdrawal
3. History of Withdrawal
4. Inventory of Water Users
5. Impact Assessment
6. Water Quality Information
7. Alternatives

The PWRSC finds that a description of the withdrawal should include information describing the consumption or return of water including the amount, quality, timing, and mode of return. The PWRSC finds that the cost of site-specific studies on water uses should be borne by water users.

RECOMMENDATIONS

Having considered the testimony and material received in the course of its study and in light of its findings, the Public Water Rights Study Committee makes the following recommendations.

Public Trust Legislation

The PWRSC recommends introduction of a bill in the next legislative session which would create a statement of policy as a preamble to Title L - Water Management and Protection, New Hampshire Revised Statutes Annotated (RSA).

As part of such a preamble, the PWRSC recommends that the State declare that surface and groundwater are inherently interconnected and reaffirm that all waters of the State whether located above or below the surface are a public resource and part of the public trust.

It is also recommended that the State reaffirm its role as trustee of the waters of New Hampshire, above and below the surface. These waters are held in trust for the benefit of all people of New Hampshire to provide for their health, welfare and safety and to assure the balance of the natural environment. The PWRSC considers public water supply to be the socioeconomic use of the greatest public benefit.

The PWRSC recommends that the statement of policy declare that nothing contained therein denies any private riparian, littoral or groundwater right to use water for any beneficial purpose if the use is reasonable with respect to needs of the public trust as well as other riparian, littoral and private groundwater interests, and does not interfere with their legitimate needs and water uses.

This preamble would establish clear and comprehensive statutory policy regarding public trust interests and water withdrawals in the State of New Hampshire. The PWRSC recommends that the preamble be developed in such a way as to be consistent with existing policy while unifying existing water-related law which indirectly addresses public trust and water use.

River-Basin Planning and Assessment

The PWRSC recommends introduction of a bill in the next legislative session to direct the Department of Environmental Services to design a river-basin planning approach and resource assessment and management strategy. This bill will require DES to consult with all affected interests and will also make an appropriation from the general fund for this purpose.

To facilitate evaluation of water withdrawals and enhance existing information, the PWRSC recommends that the State provide funds for and undertake expanded river-basin planning and resource assessment across the State. The PWRSC suggests that development of basin plans be phased in over a 10 year period beginning with those basins to be identified as most stressed by the Department of Environmental Services. As part of the planning process, criteria should be developed for identifying these basins.

The PWRSC recommends that a basin plan and resource assessment be developed for each of the 22 fifth and higher order river basins in New Hampshire (see Appendix H - Fifth and Higher Order Streams).

One of the benefits of a 10-year-phased approach to planning is that it enables resources to be targeted initially to those basins which are experiencing the greatest pressures. Another advantage of a river-basin approach is that it can best address the specific resources and accompanying demands unique to each watershed.

Within the basin planning process, the PWRSC recommends that methodologies be developed for identifying protected instream flows for each river basin.

The PWRSC urges the State to undertake basin planning and assessment in cooperation with the US Geological Survey to defray the cost of such an effort. Investment in such an effort would be valuable to the State for years to come. Much of the work would be a one-time effort and would provide unchanging background information that could be utilized again and again.

Basin management plans would include at least the five following components: hydrologic data, natural resource assessment, information on current use, information on projected use, and management recommendations. The Department of Environmental Services will establish an individual time-frame for periodic review of each basin plan as part of the development of each initial basin plan.

<u>System of Administering Water Use</u>

The PWRSC recommends introduction of a bill in the next legislative session to direct the Department of Environmental Services to design and propose to the legislature a water-use permit program for future implementation. This bill will make an appropriation from the general fund to DES for this purpose. Revision of the present system of water-use authorization is recommended. The PWRSC has found that New Hampshire will reach a threshold where a water-use permit program is desirable to supplement

the existing common law riparian/littoral and groundwater system. Recommendations listed below suggest guidelines for its implementation.

Statutory guidelines for a water-use permit system should include provisions establishing river-basin planning programs and standards for identifying protected instream flows, a use volume threshold, continued reporting on annual use, permit application contents, application processing guidelines and requirements, issuance of permits, an appeals process, compliance and enforcement, exemptions, and provisions for water conservation and managing water shortages.

Administration of a water-use permit program could be addressed on one of several different levels. An outline of administrative options was considered by the PWRSC (see Appendix I - Administrative Options). The PWRSC recommends that a water-use permit program be administered by the Department of Environmental Services with advisory and appellate bodies of water-use experts and interests. The size, responsibilities and makeup of those bodies will need to be determined.

The PWRSC recommends that a water-use permit system regulate only those withdrawals above a certain threshold. Below this threshold, all water withdrawals would be exempt from review and regulation. The committee recommends a threshold of 20,000 gallons per day (GPD) averaged daily. The 20,000 GPD threshold is reflective of the current DES water-use registration and reporting system. The PWRSC believes that the issue of the threshold should be readdressed in the future as information is expanded and science improved. The PWRSC suggests that a more appropriate threshold might be one that varies in relation to the volume of water available such as a withdrawal threshold based on percentage of flow. The PWRSC believes that this type of threshold should eventually be incorporated into a water-use permit system. However, such a threshold would be more complex to administer and is dependent upon advanced scientific analytical methodologies and additional information gathered as part of basin planning and assessment. In the meantime, the PWRSC recommends using the 20,000 GPD figure now employed in the State's water-use registration program.

The 20,000 GPD threshold would pertain to the cumulative withdrawals of a single user from a given source. Above this threshold the PWRSC recommends that withdrawals be considered to have the potential to infringe upon the public interests and other legitimate uses in the waters remaining and recommends that reasonableness be determined on a case-by-case basis.

However, the PWRSC recognizes that the cumulative impact of small withdrawals below this threshold may be significant and thus should be considered in a water-use permit system. The 20,000 GPD threshold would not deny any private riparian, littoral or groundwater right to use water for any beneficial purpose if the use is reasonable with respect to needs of the public trust as well as other riparian, littoral and private groundwater interests, and does not interfere with their legitimate needs and water uses.

As part of the design of a proposed permitting system, the Department of Environmental Services will establish information requirements and criteria which will be used to assess the need for and impact of the withdrawal. Information developed as part of a river-basin planning process would be used in evaluating proposed withdrawals. Evaluations of withdrawals would be carried out by the appropriate agencies irrespective of the existence of basin plans.

Permits could include provisions fixing the term of the permit. Water-use permits would be valid for a fixed number of years. One factor for consideration in fixing the term of the permit would be economic issues such as project financing. Permits could have some sort of presumption in favor of the permittee, placing the burden of proof on the State not to renew the permit. Permits would be reviewed as conditions warrant and could be modified on the basis of the review.

Grandfathering

The PWRSC recommends that withdrawals of 20,000 GPD or more presently registered with DES - Water Resource Division (WRD) be grandfathered for a specific volume if and when a water-use permit system is implemented (see Appendix D - WRD Registered Water Users). The specific volume to be

grandfathered would initially equal existing usage. Any additional expansion of grandfathered use beyond existing amounts may be grandfathered up to the design capacity of the existing facility not requiring additional capital improvement. Criteria for individually determining the specific additional amount to be grandfathered will consider current usage, the design capacity of the facility, the resource availability and the reasonableness of the use in relation to other water uses.

Some members of the committee feel that registered withdrawals should be grandfathered for a fixed number of years. Others feel that these withdrawals should be grandfathered in perpetuity. If registered withdrawals are grandfathered for a fixed number of years, they would be evaluated by DES and incorporated into the water-use permit system at the end of the established period. Evaluation would rely on a meaningful assessment of the need for and impact of a withdrawal. Information gathered as part of a river-basin resource assessment and planning process and any other pertinent information would be utilized in making such evaluations. Evaluations would be carried out by the appropriate agencies irrespective of the existence of basin plans.

Water-Use Enactments

The PWRSC recommends introduction of a bill in the next legislative session which addresses the status of the numerous historic legislative enactments that have authorized water use throughout New Hampshire (see Appendix C - Legislative Enactments Authorizing Water Use). As noted on page 6 of this report, these historic enactments authorized virtually unlimited withdrawals of water. Because of inactivity and the historical nature of these enactments, some but not all of the legislatively authorized withdrawals are registered with DES - WRD.

One approach to addressing these historic enactments might be to attempt to contact the entities named in the authorizations (or their successors in interest) either directly or through the media. For entities which do not respond by a certain date, the legislature could then repeal their legislative authorizations. Those which do respond could receive the same grandfathering treatment as registered water users. Whatever the decision, these historic legislatively authorized withdrawals need to be reviewed and addressed by the legislature.

APPENDICES

Appendix A

Members of the Public Water Rights Study Committee

This report owes its thorough completion to the continuing interest of the committee members and all the resources available for their use.

Committee Members

Chairperson - Representative Leonard A. Smith - House Resources, Recreation and Development Committee - appointed by the Speaker of the House

Representative Janet M. Conroy - House Resources, Recreation and Development Committee - appointed by the Speaker of the House

Representative Gregory Janas - House Resources, Recreation and Development Committee - appointed by the Speaker of the House

Senator Richard L. Russman - Senate Environment Committee - appointed by the President of the Senate

Senator Wayne D. King - Senate Environment Committee - appointed by the President of the Senate

Ralph H. Goodno - President, Merrimack River Watershed Council - appointed by the Governor

Pierre C. Lavoie - Superintendent, Water and Public Works, Dover, N.H. - appointed by the Governor

Thomas M. Caughey - Operations Manager, Mt. Attitash Lift Corp., Bartlett, N.H. - appointed by the Governor

Assistance was provided to the Committee by Jim MacCartney, Merrimack River Watershed Council; John Dabuliewicz, Assistant Commissioner, and Ken Stern, Division of Water Resources, both from the Department of Environmental Services; House Secretarial Services; Sue Bielski and Jeff Kovalik, Legal Interns, Franklin Pierce Law Center; and Don Hunter, Research Director, Office of Legislative Services.

PUBLIC WATER RIGHTS STUDY COMMITTEE

Chp. 148 (HB 1376), NH Laws of 1990
and Chp. 356 (HB 104), NH Laws of 1991

148:1 Statement of Policy. The citizens of New Hampshire hold, in common, rights in the public waters for purposes of navigation; fisheries maintenance; preservation of environmental integrity, habitat, and aesthetic quality; recreation; scientific study; and all other common public purposes, the contours of such rights being governed by the New Hampshire common law. The general court, as trustee of the public rights, recognizes and affirms its duty to protect and administer these rights for the benefit of all citizens, present and future.

148:2 Intent; Report of Study Committee. To properly discharge its duty, the general court finds it desirable to establish a means to discern the extent and content of the public rights; to determine whether a present or proposed private use of a public water body impacts or may impact the public rights; and to establish under what conditions conveyance of some portion of the public rights would serve the public interest. To this end, the public water rights study committee established in section 4 of this act shall report its findings and recommendations to the senate president and the speaker of the house of representatives on or before December 31, 1992. The report shall address the following:

I. The original circumstances and current status of legislative enactments authorizing water use, including but not limited to the date, purpose, and extent of the original enactment, and the status of current use.

II. Scientific or other methods that may be used to evaluate, characterize and, where appropriate, quantify the public rights in a given water body.

III. Procedures and criteria that the general court itself or by delegation might follow to determine the public rights in a given water body; to determine when the public rights are being or may be impacted; and to evaluate the conditions under which conveyance of such rights from the public domain would be in the interest of present and future citizens of the state.

IV. An inventory of water users withdrawing more than 20,000 gallons per day during any week of the year from surface or groundwaters, including the amount of the withdrawal, purpose of the withdrawal, and claimed authority for the withdrawal.

V. The extent to which groundwater appropriation or use may be impacting or may have the potential to impact the public rights in surface waters.

VI. Procedures for systemically evaluating the sustained yield of the major watersheds of the state.

VII. The authorization for registered water users to continue their present water withdrawal.

VIII. The effect of major water withdrawals on waste water assimilation.

IX. Recommended legislation for the 1993 legislative session.

148:3 Definitions. In this act:

I. "Study committee" means the public water rights study committee established in section 4 of this act.

II. "Public waters" means great ponds, navigable waterways, and tidal waters of the state.

148:4 Study Committee Established; Public Water Rights.

I. A study committee is established to study the issues surrounding public water rights in New Hampshire. The committee shall consist of the following:

(a) Three house members from the house resources, recreation and development committee, appointed by the speaker of the house.

(b) Three senators from the senate environment committee, with no designees allowed, appointed by the president of the senate.

(c) One member representing the conservation community from a list of nominees submitted by the Society for the Protection of New Hampshire Forests, the New Hampshire Association of Conservation Commissions and the Merrimack River Watershed Council, to be appointed by the governor.

(d) One member representing the New Hampshire Waterworks Association selected from a list of nominees submitted by such association, to be appointed by the governor.

(e) One member representing recreational interests, nominated by the New Hampshire Business and Industry Association and appointed by the governor.

I-a. The first-named house member shall call the first meeting of the study committee within 30 days of the effective date of this paragraph.

II. The committee members shall be entitled to legislative mileage while performing duties for the committee.

III. The study committee is hereby authorized to utilize the assistance of the office of the legislative services staff and the office of the legislative budget assistant staff. The legislative study committee may request the senate president and the speaker of the house to jointly assign additional general court staff to assist the committee.

148:4-a Usage by Registered Water Users.

I. Except as provided in paragraph III, for purposes of the public trust doctrine, water users registered with and reporting use or withdrawal with the water resources division of the department of environmental services, pursuant to 1983, 402:1, V, as recodified to RSA 482:3, III, as amended, and their successors and assigns, are authorized to take water for the duration of the study.

II. If the commissioner of the department of environmental services determines that a cessation, reduction, or other modification of such withdrawal is necessary in pursuit or exercise of the doctrine of public trust as set forth by the opinion of the attorney general dated August 2, 1989, any registered water user shall, pursuant to written notice and order, cease, reduce, or modify its withdrawal as directed, provided that such order shall expire after 10 days unless during such 10-day period a public hearing is held by the department of environmental services and a decision is made to extend such order. The commissioner shall adopt rules, under RSA 541-A, relative to establishing criteria and procedures for issuing such orders, for such special hearings, and for making such decisions.

III. This section shall not affect any private rights of registered water users, or any riparian or littoral rights in water bodies, or the rights of water users operating pursuant to specific grants of legislative authority for water use or withdrawal, and shall not relieve registered water users, or their successors and assigns, from compliance with laws or rules under the state's police power.

IV. All registered hydro-electric facilities which continue operations consistent with available water volumes shall be deemed to be operating in a manner which is consistent with the provisions of paragraph II provided that they continue to report their usage to the division of water resources, department of environmental services, pursuant to 1983, 402:1 and RSA 482:3, for the duration of the public water rights study.

V. The provisions of this section shall in no way affect the authority of the department of environmental services regarding any use or withdrawal authorized before the effective date of this section by the legislature or within segments of rivers designated by the rivers management and protection program established under RSA 483:2.

Appendix B

Summary Listing of Information and Materials
Presented to Public Water Rights Study Committee

Presented at August 6, 1991 Meeting
- Table of Contents of information collected by 1990 public water rights study committee
- Summary of Attorney General's Opinion on water rights
- Glossary of terms
- DES memo regarding water withdrawals

Presented at September 24, 1991 Meeting
- Minutes of August 6 meeting
- Summary of testimony presented to 1990 water rights study committee
- Memo regarding grants of water rights during colonial period
- Summaries of NH Supreme Court cases involving water rights
- Examples of Water Uses - Ed Schmidt, DES
- Info sheet on wastewater assimilation - Dick Flanders, DES
- Basic Data form the Water User Registration and Reporting Program - Ken Stern, DES
- Analysis of Hydrology Variability through Streamflow Measurement - Ken Stern, DES
- Options for Instream Flow Analysis, Parts A & B - Ken Stern, DES

Presented at October 9, 1991 Meeting
- Minutes of September 24 meeting
- Stream flow rating table for Mascoma River at West Canaan, 10/22/86

Presented at October 23, 1991 meeting
- Minutes of October 9 meeting

Presented at November 6, 1991 meeting
- Minutes of October 23 meeting
- Letter from Ralph Goodno to Steve Maviglio regarding objectives
- Summary of Allocating Consumptive Water Rights in a Riparian Jurisdiction: Defining the Relationship Between Public and Private Interests, Lynda L. Butler, 1985
- Summary of Replacing Riparianism in the 21st Century (also see Additional Materials list below)
- Summary of Water Allocation by Comprehensive Permit Systems in the East (Robert H. Abram, 9 Virginia Environmental Law Journal 255 (1990))

Presented at November 20, 1991 meeting
- Notes and consensus of Nov. 6 meeting, prepared by Ralph Goodno
- Water Rights Legislation in the East: A Program for Reform, Richard Ausness, 24 William and Mary Law Review 547 (1983)
- Summaries of selected state programs, from Public Water Rights information package prepared for 1990 water rights study committee, by Merrimack River Watershed Council
- Memo on stream flow level monitoring by Hampton Water Works Company, Southern NH Water Company, & Pennichuck Corporation, from Dom S. D'Ambruso, 9/24/91

Presented at December 4, 1991 meeting

- Minutes of November 6 meeting
- Proposed well siting rules
- Information on instream flow working group

Mailed out January 9, 1992

- Memo from Rep. Conroy
- Minutes of November 20 meeting
- Minutes of December 4 meeting

Presented at June 16, 1992 meeting

- Information packet from Ski Area Association
- Copy of RSA 483:9-c, Establishment of Protected Instream Flows
- Instream Flow Protection Program Outline
- Graph of stream guage #1076500, 1968-1987
- Brief explanation of unregulated river
- NH Flow Evaluation and Prediction Methodology for Unregulated Flows
- Brief summary of laws in riparian rights states

Presented at June 30, 1992 meeting

- minutes of June 16 meeting
- Schedule - Souhegan River Case Study
- Competing Water Demands & Methodologies for Analysis of Competing Water Demands
- Map of Souhegan River watershed
- Souhegan Watershed info packet
  - Watershed Characteristics
  - Water Use/Withdrawals/Discharges
  - Hydrograph @ Merrimack, NH
  - Hydrograph of monthly flows
  - Flow Duration
  - Tabulated flow duration data
  - Low flow frequency
  - Table of low flow frequency statistics
  - Definition of water use codes
  - Source/destination information
- Water Supply & Pollution Control Division info packet
  - Souhegan River Wasteload Allocation Study
  - Legislative Classification of Surface Waters
  - Chapter 371, NH Laws of 1991
  - Surface Water Quality Regulations (8/1/90) - Env-Ws 430 through 438
  - Water quality discussion - R. Flanders (6/30/92)
  - Water rights outline memo - J. Dabuliewicz (6/30/92)
  - DES list of permits/certificates/licenses affecting water use
  - Out of Stream Uses - Water Supply - Pennichuck Water Works
  - Canoeing on the Souhegan River
  - Amherst Conservation Commission
  - Souhegan River Hydro Issues
  - Pine Valley Hydroelectric Project Overview

Presented at July 14, 1992 meeting

From Riparianism to Permitting: Issues Confronting State Government

Presented at August 11, 1992 meeting

Minutes of June 30 meeting
Minutes of July 14 meeting
Minutes of July 22 meeting
Listing of New Hampshire Fifth Order Streams and Higher - DES
Listing of New Hampshire Fourth Order Streams and Higher - DES
Handout discussing public trust and riparian rights

Presented at August 25, 1992 meeting

Minutes of August 11 meeting
copy of Vermont groundwater/correlative rights law (10 VSA 1410)
table of contents from "Putting the Public Trust Doctrine to Work"
(from NH State Library - 346.046/S631, c. 1)
1990 "Public Water Rights" - summary of laws - prepared by MRWC
summaries of state laws prepared by interns
memo on "Administration of Water Use" by Jim MacCartney, MWRC Intern

Presented at September 1, 1992 Meeting

Minutes from August 25, 1992 meeting
Volumes I & II, Charles River Basin study
draft Vermont legislation on public trust doctrine (not passed)
RSA handout on NH Water Use Evaluation Factors and Priorities (from DRH)

Presented at September 24, 1992 Meeting

Minutes from Sept. 1, 1992 meeting
Public Benefit-Public Trust info & listing of uses
Ken Stern memo
Summary of Proposed Recommendations (MWRC)
Draft Report - Findings and Recommendations (MWRC)

Presented at October 6, 1992 Meeting

Minutes from September 24, 1992 meeting
Summary of Proposed Recommendations (MWRC) - Draft 2
Draft Report - Findings and Recommendations (MWRC) - Draft 2
Letter to Mr. Harold Clough
Repsonse from Mr. Harold Clough

Presented at October 20, 1992 Meeting

Minutes from October 6, 1992 meeting
Letter from New Hampshire Water Works Association
Summary of Proposed Recommendations (MWRC) - Draft 3
Draft Report - Findings and Recommendations (MWRC) - Draft 3

Presented at October 26, 1992 Meeting

Letter from New Hampshire Municipal Association
Summary of Proposed Recommendations (MWRC) - Draft 4
Draft Report - Findings and Recommendations (MWRC) - Draft 4
Draft language and ideas for possible water rights legislation

Presented at October 26, 1992 Meeting

Minutes from October 20, 1992 meeting
Letter from Robert Winship to RWRSC
Draft Report - Findings and Recommendations (MWRC) - Draft 5

Additional materials

Replacing Riparianism in the Twent-First Century, Robert H. Abrams, 36 Wayne Law Review 93 (1989)
Eastern Water Law: Trends in State Legislation, George William Sherk, 9 Virginia Environmental Law Journal 287 (1990)
Draft Proposed Souhegan River Case Study Outline, by Jim MacCartney, MWRC Intern
Draft Summary of Questions: Public Water Rights Study Committee, by Jim MacCartney, MWRC Intern
Public Water Rights (State Issues & Permit Systems), prepared by the Merrimack River Watershed Council, September, 1990 (includes all backup materials collected by the MRWC for this report)
Opinion of the Attorney General Re: Loon Mountain Ski Area South Mountain Expansion Project, August 2, 1989
Official List of Public Waters in New Hampshire, New Hampshire Department of Environmental Services, August, 1990
Putting the Public Trust Doctrine to Work, David C. Slade, November, 1990

Copies of all these materials considered by the Public Water Rights Study Committee are available at the New Hampshire State Library.

Appendix C

PARTIAL LISTING OF APPROPRIATED WATER RIGHTS IN NEW HAMPSHIRE @ 1850 - 1990

YEAR	CHAPTER	GRANTED TO *	WATER FROM
1797	41	Portsmouth	General
1801	20	Exeter	General
1805	38	Hanover	Mink Brook, or from any spring not more than 3 miles from Dartmouth College
1808	51	Exeter, No. 2	General
1850	1054	Lebannon A C	Mascoma River
1851	1190	Belknap A C	General
1852	1367	Manchester A C	General
1863	2817	Belknap A C	General
1865	4184	City A C (Manchester)	General
1866	4360	Peterborough R C	Dam across Goose Brook River
1869	103	Torrent A C (Haverhill Corner)	Merrill Spring (Haverhill)
	125	Piscataquog R C	Piscataquog Reservoir
1870	83	Pittsfield A C	General
	84	Union A C	General
	85	Wilton A C	General
1871	69	Concord WW	General
	70	Manchester WW	General
	94	Farmington A C	General
1872	95	Laconia WW	General
1877	52	Rochester A & W C	General
	175	North Conway A&WC	General
1878	141	Crystal Springs WC	General
1879	105	Apthorp C	General

YEAR	CHAPTER	GRANTED TO*	WATER FROM
1881	175	Concord WW	General
	188	Plymouth A & W C	General
	242	Rochester WW	General
	256	Dover WW	purchase rights held by Dover Aqueduct Company, Cocheco Aqueduct Company & Dover Landing Aqueduct
1883	191	Ammonoosuc A C	General
	237	Pennichuck WW	Pennichuck Brook
	240	Laconia & Lake Village WW	General
1885	179	Exeter WW	General
	181	Keene WW	construct & maintain reservoir ponds in Roxbury or Chesterfield
	202	Woodsville A C	General
1887	165	Tilton & Northfield A C	General
	166	Hillsborough WW	General
	177	Wolfeboro A & W C	General
	178	Claremont WW C	General
	222	Newport WW C	General
	223	Lebanon Centre Village Fire	any stream in Lebanon not including Lake Mascoma
	241	Hanover WW	any stream in Hanover
	273	Milford WW C	General
	278	Somersworth & Rollinsford W C	General
	279	Lisbon WW C	General
	290	Lisbon Village Fire Precinct WW	any stream or pond in Lisbon
	293	Berlin W C	General
	300	Portsmouth W C	General
	310	Weirs WW C	General
1889	170	Dover WW	Dover, Rollinsford, Somersworth, & Madbury
	202	Wolfeboro WW	General
	211	Franklin WW	General
	220	Derry WW C	General
	243	Berlin A C	General
	247	Hampton WW C	General
	251	Boscawen & Penacook WW C	General
	281	Crystal Lake W C	General
1891	139	Salem WW	General
	142	Berlin WW	General
	143	Somersworth WW	Salmon Falls River
	149	Peterborough WW C	General
	150	Northwood A C	General

YEAR	CHAPTER	GRANTED TO*	WATER FROM
1891 (cont.)			
	152	Northwood A C	General
	157	North Strafford WWC	General
	158	Suncook WW C	General
	185	Milford WW	General
	193	Lancaster W C	General
	196	North Conway W & Improvement C	General
	209	Portsmouth WW	General
	261	Concord WW	General
	269	Goffstown Fire Precinct WW	any stream, spring, or pond in Goffstown
	279	Connecticut Valley W C	any waters in Lebanon except Mascoma River
	292	Salem WW C	Corbett's Pond and Policy Pond
1893	138	Raymond WW C	any stream, spring, or pond in Raymond
	148	Wolfeboro Junction W C	any stream, pond or spring in Brookfield and Wakefield
1893	167	Whitefield A C	any stream, spring, or pond in Whitefield and Jefferson
	183	Manchester WW	General
	209	Hudson WW C	any spring, stream, or pond in Hudson
	220	Exeter WW	any stream, spring, or pond in Exeter or Stratham
	228	Plymouth Village Fire District WW	any stream or pond in Plymouth
	231	Meredith Village Fire District WW	any stream, spring or pond in Meredith
	244	Ashland WW C	any spring, stream or pond in Ashland and New Hampton
	270	Belmont A C	any stream, spring, river, or pond in Belmont
	272	Bennington WW C	any spring, stream or pond in Bennington
	275	Francestown W C	any spring, stream, or pond in Francestown
	278	Bartlett W C	any stream, pond, or spring in Bartlett
	289	Newmarket WW	General
	290	Hanover WW C	General
	292	North Walpole Fire District WW	any stream, spring, or pond in Walpole
	299	South Newmarket WW	General
	302	Northumberland WC	any pond, stream, spring or artesian well in Northumberland and Stark
	303	Mascot W C	any spring, pond, or stream in Gorham
1895	164	Littleton Village District WW	any stream, pond, or spring in Littleton
	169	Newport WW	General
	177	Peterborough WW	General
	180	Concord WW	removed Boscawen
	195	Ashland WW	any stream, pond, or spring in Ashland and New Hampton
	204	Chester WW C	any stream, pond, or spring in Chester
	206	Alton WW	General

YEAR	CHAPTER	GRANTED TO*	WATER FROM
1895 (cont.)			
	217	Haverhill W C	any stream, pond, or spring in Haverhill and Piermont
	259	Contoocook WW C	any stream, pond, or spring in Hopkinton, Warner, and Henniker
1897	139	Bartlett Village Fire Precinct WW	General
	155	Colebrook W C	General
	176	North Woodstock WC	any stream, pond, or spring in Woodstock
	180	Silver Lake R C	any stream, pond, or spring in Warner
1899	180	Claremont WW	General
	187	Troy W C	General
	198	Coos and Essex W C	any stream, pond, or spring or artesian well in Stratford
	204	Whitefiel[illegible] Village Fire Di[illegible]rict WW	added Carroll
	205	Portsmouth WW	any stream, pond, or spring in Newington, Greenland, and Newcastle
	216	Epping W C	any stream, pond, or spring or artesian well in Epping and Nottingham
1901	183	Plymouth Village Fire District	added Plymouth, Holderness, Campton, Rumney, and Ellsworth
	197	Sunapee WW	General
	265	Jaffrey WW	Bullet Pond in Rindge and any stream, spring, or pond in Jaffrey
	272	Milton WW C	any spring, stream, river, or pond in Milton or Middleton
	289	Durham WW C	General
	290	North Shore W C	any stream, pond, or spring in North Hampton and Rye
	291	East Conway W C	any stream, pond, or spring in East Conway
	292	Berlin W Supply C	General
1903	207	Walpole W & Sewer C	any pond, spring, stream, or well or of any filter gallery or well that may be constructed upon the shore of any pond, or near to any spring or stream, and any other water rights in Walpole
	221	Enfield Village Fire District WW	General
	229	Hudson WW	General
	255	Littleton WW	any stream, spring, or pond in Littleton, Lisbon, Lyman, Bethlehem, Franconia, Carroll, Whitefield, or Dalton
	259	Ossipee W & Electric C	General
	272	Jackson WW C	any stream, brook, or spring in Jackson
	286	Warren W & Light C	General
	328	Greenville WW	General

YEAR	CHAPTER	GRANTED TO*	WATER FROM
1905	169	Wilton WW	any stream, pond, or spring in Wilton
	170	North Conway W Precinct	General
	172	Hudson W C	any spring, pond, and other source of water supply in Hudson
	188	Gorham WW	any stream, pond, or spring in Gorham
	191	Charlestown W & Sewer C	any pond, spring, or stream or well or of any filter galleries or wells that may be constructed upon the shore of any pond, or near to any spring or stream, and any other rights in Charlestown
1907	231	Hancock WW	Eaton's Brook (Hancock) and any stream, spring, pond, lake, or water rights in Hancock
	235	Mt. Crescent W C (Randolph)	any stream, brook, or spring in Randolph
1909	231	Whitefield Village Fire District WW	added Carroll
	238	Duncan Lake (Ossipee)	private springs
	277	Woodstock WW	any stream, pond, or spring in Woodstock
	293	New Hampton Village Fire Precinct WW	Mountain Pond (Sanbornton), Spectacle Pond (New Hampton - Meredith) and any stream, spring, or water rights in New Hampton
1911	290	Nashville A & Pennichuck WW	added Hudson
	319	Ossipee W & Electric C	Dan Hole Pond and Dan Hole tributary thereto, except that such appropriation shall not be permitted at any point distant more than 2 miles from said Dan Hole River
	335	Salem W Supply C	Hitty-Titty Pond, Captain's Pond, and Island Pond
1913	289	Somersworth	Cole's (or Lily) Pond in Somersworth
	306	Pembroke WW	General
	380	Amherst WW	any stream, pond, or spring in Amherst or Mont Vernon
	383	Claremont WW	any stream, pond, or spring or rights in Claremont
	392	New Hampshire Supply	Merrymeeting Lake and Perkins Brook (for Portsmouth, Dover, Somersworth, Rochester, Exeter, and Farmington)
	394	Plainfield Supply C	Echo Farm Spring (Sullivan County)

YEAR	CHAPTER	PAGE	GRANTED TO*	WATER FROM
1915	258		Carroll WW	any pond or stream or of any ground sources of supply by means of driven, artesian, or other wells within the limits of the town of Carroll, or water from Little River, Zealand River, or Tuttle Brook in the town of Bethlehem, and any stream, spring, or pond in Carroll and Bethlehem.
	269		Troy WW	any stream, pond, or spring in Troy, Jaffrey, Swanzey, and Marlborough
	285		Amherst W C	water, springs, and subterranean water upon the William Rhodes place, on the Nashua Road
	303		Lower Bartlett & Intervale W C	east branch of the Saco River
	306		Dublin WW	any stream, pond, or spring in Dublin
1917	357	937	Marlborough WW C	Stone Pond in Marlborough and Dublin
	368	965	Union Village WW C (Union and Wakefield)	any spring, stream, river, or pond in the southerly part of Wakefield or in Middleton; also to bore for subterranean waters
1919	275	343	Errol W C	any spring, stream, river or pond in Errol; also to bore for subterranean waters
	278	346	Salem WW C	delete reference to Corbett's Pond
1923	231	261	Hooksett WW	General
1933	321	383	Hinsdale WW	any stream, spring, or pond in Hinsdale, or in Chesterfield and Winchester at a distance not exceeding 3 miles from the town line of Hinsdale
1947	365	613	Marlborough WW	Stone Pond in Marlborough and Dublin
	384	634	Concord WW	reservoir on Turkey River in Concord and Bow

YEAR	CHAPTER	PAGE	GRANTED TO*	WATER FROM
1950	16 (sec. 22)	137	Marlborough WW	Stone Pond in Marlborough and Dublin
1961	344	644	Manchester WW	Black Brook in Goffstown and Dunbarton and from the north branch of the Lamprey River in Candia and Deerfield
1963	415	772	Greenville WW	may purchase water rights within the limits of the town contiguous to Greenville
1965	457	781	Deerfield	Pleasant Pond, Deerfield
1973	478	785	Dover	Isinglass River (Rochester)
1990	124		Dept. of Resources & Economic Development	Lake Sunapee (Newbury) & Echo Lake (Franconia)
	144		Gunstock Area	Lake Winnipesaukee (Gilford)
	239		Lincoln	Loon Pond, Boyce Brook, Pemigewasset River & East Branch Pemigewasset River
			Loon Mountain Recreation Corp.	East Branch Pemigewasset River, Boyle Brook & Loon Pond

* - Abbreviations
A C - Aqueduct Company
R C - Reservoir Company
WW - Water Works
W C - Water Company
A & W C - Aqueduct and Water Company

@ - Note that this listing was compiled from information contained in the unofficial public acts index, a copy of which is located at the New Hampshire State Library. This is not intended to be an exhaustive listing of water rights granted during this period.

(Prepared by the Research Division, Office of Legislative Services)

Appendix D

SUMMARY OF REGISTERED WATER USERS AS OF 11/30/92 — 10:33:51
NEW HAMPSHIRE DEPT OF ENVIRONMENTAL SERVICES — 12/07/92
WATER RESOURCES DIVISION

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20339	AG	Elliott Rose Co Madbury		Madbury
20291	AG	Elliott Rose Co of Dover		Dover
20484	AQ	Five Acre Trout Farm		Sullivan
20224	AQ	Gordon or Fern Wilder	Hy-On-A Hill Trout Hatch.	Plainfield
20251	AQ	Milford Fish Hatchery	Ossipee	Ossipee
20250	AQ	N.E. Fish Farming Ent Inc	Bristol	Bristol
20219	AQ	NH Fish & Game Dept	Berlin Fish Hatchery	Berlin
20218	AQ	NH Fish & Game Dept	Milford Fish Hatchery	Milford
20220	AQ	NH Fish & Game Dept	New Hampton Fish Hatchery	New Hampton
20221	AQ	NH Fish & Game Dept	Powder Mill Hatchery	New Durham
20284	AQ	NH Fish & Game Dept	Twin Mtn Fish Hatchery	Carroll
20340	CO	Bretton Woods	Rosebrook Water Company	Carroll
20388	CO	C.H. Sprague & Son Co.	Dock Meter	Newington
20568	CO	Castle Springs Bottling		
20239	CO	Coastal-Concrete Corp.	Concrete Recycler	Concord
20415	CO	Crystal Laundry & Dry Cln	Crystal Laundry	Manchester
20235	CO	Jack O'Lantern, Inc	Domestic Water Station F1	Woodstock
20127	CO	Tillotson Corporation	Balsams Hotel	Dixville
20161	IN	A P C Paper Company	Claremont Paper Mill	Claremont
20396	IN	Aavid Engineering Inc		Laconia
20166	IN	Advanced Circuit Tech		Nashua
20413	IN	Alltex	Standard Uniform Division	Manchester
20308	IN	Anheuser-Busch, Inc.	Merrimack Brewery	Merrimack
20167	IN	Ashuelot Paper Company		Hinsdale
20168	IN	Bailey Corporation		Seabrook
20169	IN	Barrett Paving Materials		Hooksett
20537	IN	Beaman Lumber, Inc		Winchester
20417	IN	Beebe Rubber Company		Nashua
20421	IN	Blaktop, Inc.		Lebanon
20551	IN	Burndy Corporation	Lincoln Plant	Lincoln
20558	IN	C B Cummings & Sons Co	Groveton Sawmill	Northumberla
20158	IN	C.H. Sprague & Son Co.		Newington
20553	IN	Cersosimo Lumber Co. Inc.	Rumney Mill	Rumney
20533	IN	City Concrete Company	Exeter Plant	Exeter
20535	IN	City Concrete Company	Rochester Plant	Rochester
20555	IN	Coastal Concrete Co of NH	Brox Concrete, Hudson	Hudson
20556	IN	Coastal Concrete Co of NH	Brox Concrete, Rochester	Rochester
20267	IN	Coca-Cola USA		Nashua
20472	IN	Control Molding, Inc		Franklin
20395	IN	Coy Paper Company		Claremont
20123	IN	Crowley Foods, Inc		Concord
20397	IN	Diceon Electronics Inc	Plant 6	Nashua
20105	IN	Digital Equipment Corp	Merrimack	Merrimack
20343	IN	Digital Equipment Corp.	Nashua Plant	Nashua
20164	IN	Dorr Woolen Company		Newport
20382	IN	Electro Circuits, Inc.		Laconia
20428	IN	Electropac Inc.		Manchester
20531	IN	F & S Transit Mix Co Inc	Londonderry Plant	Londonderry
20534	IN	F & S Transit Mix Co Inc	Merrimack Plant	Merrimack
20532	IN	F & S Transit Mix Co Inc	Pump Station	Manchester

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20416	IN	Facemate Pl/Gf Inc		Somersworth
20557	IN	Fernald Lumber, Inc.	Sawmill	Nottingham
20405	IN	Fletcher Granite Co Inc	Mason Quarry	Mason
20140	IN	Freudenberg/NOK	Manufacturing Facility	Bristol
20176	IN	General Electric Company	Dover Plant	Dover
20177	IN	General Electric Company	Hooksett Plant I	Hooksett
20178	IN	General Electric Company	Hooksett Plant II	Hooksett
20174	IN	General Electric Company	Somersworth Plant	Somersworth
20418	IN	Granite State Packing Co		Manchester
20376	IN	GTE Products Corporation	Exeter Plant	Exeter
20170	IN	GTE Products Corporation	Hillsboro	Hillsborough
20171	IN	Hadco Tech Center 1		Salem
20424	IN	Hendrix Wire & Cable		Milford
20173	IN	Hitchiner MFG Co. Inc.		Milford
20162	IN	Homestead Industries Inc.	Homestead Industries Inc.	Claremont
20450	IN	Ingersoll-Rand Company		Nashua
20457	IN	J Tronics, Inc.		Nashua
20179	IN	James River Corp.	Berlin/Gorham	Berlin
20118	IN	James River Corp.	Groveton Division	Northumberland
20159	IN	Janco P/C Incorporated		Somersworth
20403	IN	John Iafolla Company Inc	Exeter Plant	Brentwood
20402	IN	John Iafolla Company Inc	Portsmouth Facility	Portsmouth
20156	IN	Jones Chemicals, Inc.	Merrimack Plant	Merrimack
20303	IN	K.W. Thompson Tool Co	Thompson Tool Company	Rochester
20180	IN	Kayem Foods	North Drive Plant	Bedford
20160	IN	Kayem Foods Inc.	Blaine Street Plant	Manchester
20201	IN	Kingsbury Corporation		Keene
20430	IN	Kollsman		Merrimack
20401	IN	L.W. Packard & Co Inc	Mill	Ashland
20134	IN	Lockheed Finance	Lockheed Sanders	Manchester
20373	IN	Lockheed Sanders	Merrimack Facility	Merrimack
20369	IN	Lockheed Sanders, Inc.	Canal Street Facility	Nashua
20374	IN	Lockheed Sanders, Inc.	Pope Technical Park (1&2)	Nashua
20496	IN	Londonderry Prod. Center	Londonderry Production Cr	Londonderry
20412	IN	Manchester Knittd Fashion		Manchester
20550	IN	Manchester Redimix Inc.		Manchester
20406	IN	Markem Corporation		Keene
20141	IN	Millipore Corp.		Jaffrey
20324	IN	Monadnock Paper Mills Inc	Paper Mill	Bennington
20139	IN	MPB Corporation	Split BallBearing Div.	Lebanon
20276	IN	Nashua Corporation	Graphic Products Division	Merrimack
20390	IN	Nashua Corporation	Nashua Corp/Franklin St.	Nashua
20393	IN	NH Ball Bearings Inc	ASTRO Division/Laconia	Laconia
20414	IN	NH Ball Bearings Inc	Peterborough	Peterborough
20138	IN	Nylon Corp of America		Manchester
20137	IN	Paper Service LTD		Hinsdale
20546	IN	Persons Concrete, Inc.	Campton Plant	Campton
20542	IN	Persons Concrete, Inc.	Columbia Plant	Columbia
20543	IN	Persons Concrete, Inc.	Gorham Plant	Gorham
20544	IN	Persons Concrete, Inc.	Littleton Plant	Littleton
20547	IN	Persons Concrete, Inc.	Madison Plant	Madison
20545	IN	Persons Concrete, Inc.	Ossipee Plant	Ossipee
20548	IN	Persons Concrete, Inc.	Winnisquam Plant	Sanbornton
20552	IN	Precision Lumber Inc.		Wentworth
20394	IN	Precision Valley Ctr Trst		Claremont
20136	IN	Quin-T Corporation-NH		Tilton
20409	IN	Raytheon Company	Raytheon Company (MSD)	Manchester

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20135	IN	Red Ball Incorporated		Nashua
20549	IN	Redimix Concrete Serv Inc		Nashua
20372	IN	Sanders Associates, Inc	NHQ + MEC FACILITY	Nashua
20538	IN	Saunders Brothers	Saunders Brothers	Dalton
20392	IN	Simplex Wire & Cable Co		Newington
20133	IN	Sprague Electric Co	Concord Plant	Concord
20119	IN	Sturm, Ruger & Co Inc	Pine Tree Castings	Newport
20407	IN	Teradyne Circuits Div.	Circuits Division	Nashua
20163	IN	Textron Inc	Davidson Interior Trim	Dover
20404	IN	Thomas Hodgson & Sons,Inc	China Mills Dam	Allenstown
20536	IN	Timco, Inc.	Sawmill	Barnstead
20111	IN	Troy Mills Incorporated		Troy
20478	IN	U.S. Army	Cold Regions Res Eng Lab	Hanover
20433	IN	Velcro USA Inc		Manchester
20125	IN	W.R. Grace & Company	Hampshire Chemical	Nashua
20124	IN	Watts Reg/Webster Valve	Franklin Plant	Franklin
20122	IN	Wyman-Gordon Invst Cast'g	Franklin Plant	Franklin
20121	IN	Wyman-Gordon Invst Cast'g	Tilton Plant	Tilton
20187	IR	Abenaqui Country Club		Rye
20190	IR	Amherst Country Club		Amherst
20019	IR	Bald Peak Land Company	Bald Peak Colony Club	Moultonboroug
20206	IR	Buckmeadow Golf Club		Amherst
20207	IR	Candia Woods Golf Links		Candia
20529	IR	City of Concord, Rec & Pk	Beaver Meadow Golf Course	Concord
20209	IR	Cocheco Country Club		Dover
20226	IR	Country Club of NH	Country Club of NH/Sutton	Sutton
20381	IR	Gem Evergreen Company		Hooksett
20506	IR	Glazier Hollow Nursery	Nursery	Haverhill
20378	IR	Gold Star Sod Farms Inc.	Canterbury	Canterbury
20379	IR	Gold Star Sod Farms Inc.	Concord	Concord
20227	IR	Green Meadow Golf Club In	Green Meadow Golf Club	Hudson
20231	IR	Hanover Country Club		Hanover
20232	IR	Haverhill Golf & Ctry Clb		Plaistow
20234	IR	Jack O'Lantern, Inc	Golf Course Pump Station	Woodstock
20117	IR	Kent D. Locke Sr		Barnstead
20236	IR	Kingswood Golf Club Inc.		Wolfeboro
20459	IR	L A Brochu & Son Nursery	Concord	Concord
20237	IR	Lake Sunapee Country Club		New London
20240	IR	Londonderry Country Club		Londonderry
20243	IR	Manchester Country Club		Bedford
20567	IR	Mojalaki Golf Course	Mojalaki Golf Course	Franklin
20248	IR	Moose Hill Orchards, Inc		Londonderry
20341	IR	Mt. Washington Hotel	Golf Course	Carroll
20254	IR	North Conway Country Club		Conway
20526	IR	Overlook Golf Club		Hollis
20476	IR	Passaconaway Country Club	Golf Course	Litchfield
20259	IR	Pine Grove Springs C. C.		Chesterfield
20522	IR	Plymouth State College	Physical Education Center	Holderness
20292	IR	R. Craig Williams	Canney Brook Farm	Dover
20282	IR	Rochester Country Club		Rochester
20528	IR	Shattuck Inn Associates	Golf Course	Jaffrey
20114	IR	Sky Meadow Country Club	Golf Course	Nashua
20523	IR	Souhegan Woods Golf Club		Amherst
20130	IR	Tillotson Corporation	Coashaukee Golf Course	Dixville
20129	IR	Tillotson Corporation	Panoramic Golf Course	Colebrook
20383	IR	Tuckahoe Turf Farms, Inc	Amherst Fields	Amherst

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20384	IR	Tuckahoe Turf Farms, Inc.	Hudson	Hudson
20387	IR	Tuckahoe Turf Farms, Inc.	Litchfield	Litchfield
20386	IR	Tuckahoe Turf Farms, Inc.	Merrimack	Merrimack
20385	IR	Tuckahoe Turf Farms, Inc.	Milford	Milford
20519	IR	Tuckahoe Turf Farms, Inc.	Waterman Farm Fields	Amherst
20304	IR	Valley View Country Club		Dunbarton
20225	IR	Wentworth By-the-Sea Inc.	Wentworth By-the-Sea Golf	Rye
20306	IR	White Mtn Country Club		Ashland
20307	IR	Wilson Farm of N.H.	Wilson Farm	Litchfield
20454	IT	Catholic Medical Center		Manchester
20017	IT	Cheshire Medical Center		Keene
20514	IT	Concord Hospital		Concord
20564	IT	Crotched Mtn Rehab Center		Greenfield
20453	IT	Elliot Hospital		Manchester
20471	IT	Exeter Hospital Inc.		Exeter
20517	IT	Hesser College		Manchester
20494	IT	Keene State College		Keene
20452	IT	Mary Hitchcock Memorial		Hanover
20277	IT	Merrimack County Complex	Merrimack County Complex	Boscawen
20455	IT	Nashua Memorial Hospital		Nashua
20512	IT	New Hampshire College	North Campus	Hooksett
20217	IT	NH Dept of Corrections	NH State Prison	Concord
20200	IT	NH Div of Mental Health	Glencliff Home F/Elderly	Benton
20115	IT	Phillips Exeter Academy		Exeter
20474	IT	Portsmouth Regional Hosp		Portsmouth
20157	IT	Rockingham Cnty Mntc Dept		Brentwood
20479	IT	Sisters of Charity	St. Joseph Hospital	Nashua
20509	IT	St. Pauls School	St. Pauls School	Concord
20515	IT	Sullivan Cnty Nursing Hm	Sullivan Cnty Nursing Hm	Unity
20539	MI	Alvin J Coleman & Son Inc	Madison Pit	Madison
20192	MI	Arthur Whitcomb, Inc.	Campton Sand & Gravel	Campton
20193	MI	Arthur Whitcomb, Inc.	Conway Sand & Gravel	Madison
20196	MI	Arthur Whitcomb, Inc.	Gorham Sand & Gravel	Gorham
20197	MI	Arthur Whitcomb, Inc.	Keene Sand & Gravel	Swanzey
20195	MI	Arthur Whitcomb, Inc.	Lebanon Crushed Stone	Lebanon
20198	MI	Arthur Whitcomb, Inc.	Tilton Sand & Gravel	Tilton
20194	MI	Arthur Whitcomb, Inc.	Twin Mtn Sand & Gravel	Carroll
20205	MI	Brox Industries Inc.	Hudson Plant	Hudson
20204	MI	Brox Industries Inc.	Nashua Plant	Nashua
20203	MI	Brox Paving Materials Inc	Rochester Plant	Rochester
20530	MI	Coastal Materials Corp.	Farmington Plant	Farmington
20473	MI	Coastal Materials Corp.	Manchester Plant	Manchester
20211	MI	Construction Aggregates		Henniker
20212	MI	Dover Sand & Gravel Inc		Dover
20216	MI	F. W. Whitcomb Const Corp	Whitcomb Const Sand Plant	Walpole
20215	MI	Fillmore Industries, Inc		Loudon
20172	MI	Harris Construction Co		Peterborough
20238	MI	Litchfield Sand & Gravel		Litchfield
20244	MI	Manchester Sand & Gravel		Hooksett
20524	MI	Midway Excavators Inc.	Brentwood Crusher	Brentwood
20525	MI	Midway Excavators Inc.	Rochester Crusher	Rochester
20253	MI	Newport Sand & Gravel Co		Newport
20255	MI	Ossipee Aggregates Corp		Ossipee
20258	MI	Pike Industries, Inc	C-607	Hooksett
20263	MI	Plourde Sand & Gravel Co		Hooksett

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20281	MI	Quinn Brothers Corp	Wilton Quarry	Wilton
20116	MI	St. Pierre Inc.		Charlestown
20299	MI	Tilcon Maine Inc		Farmington
20541	MI	Tilcon/Arthur Whitcomb	Loudon Quarry	Loudon
20540	MI	Tilcon/Arthur Whitcomb	Stark Sand and Gravel	Stark
20422	MI	Twin State Sand & Gravel		Lebanon
20188	PB	Alexandria Power Assoc.	Alexandria Power Plant	Alexandria
20199	PB	Bio-Energy Corp		Hopkinton
20516	PB	Bridgewater Power Co LP		Bridgewater
20210	PB	Concord Steam Corporation		Concord
20436	PB	Hemphill Power & Light Co		Springfield
20261	PB	Pinetree Power Tamworth	Tamworth	Tamworth
20260	PB	Pinetree Resource Syst.	Bethlehem	Bethlehem
20301	PB	Tillotson Corporation	Tillotson Rubber Co.	Dixville
20302	PB	Timco, Inc.	Cogeneration Plant	Barnstead
20294	PB	Wheelabrator Claremont Co		Claremont
20480	PB	Wheelabrator Concord Co.		Concord
20375	PB	Whitefield Pwr & Light Co		Whitefield
20151	PF	Public Service Co of N.H.	Merrimack Generating Sta.	Bow
20152	PF	Public Service Co of N.H.	Newington Generating Sta.	Newington
20153	PF	Public Service Co of N.H.	Schiller Generating Sta.	Portsmouth
20229	PH	Alden T. Greenwood	Otis Falls	Greenville
20228	PH	Alden T. Greenwood	Water Loom Falls Hydro	New Ipswich
20380	PH	Allen-Rogers Ltd.	Allen Rogers,Laconia	Laconia
20191	PH	Bath Electric Power Co		Bath
20202	PH	Boston Felt Company	Hydro Dam	Rochester
20487	PH	Briar Hydro Associates	Rolfe Canal Hydro	Concord
20435	PH	Bruce P. Sloat	Sunnybrook Hydro #2	Northumberla
20465	PH	CHI Operations, Inc.	EHC Hoague-Sprauge Hydro	Hopkinton
20491	PH	CHI Operations, Inc.	Hillsborough Hydro Projec	Hillsborough
20464	PH	CHI Operations, Inc.	Kelley Falls Hydro Co	Manchester
20463	PH	CHI Operations, Inc.	Rollinsford Hydro Inc	Rollinsford
20461	PH	CHI Operations, Inc.	Salmon Falls Hydro Co	S. Berwick M
20466	PH	CHI Operations, Inc.	Somersworth Hydro Co Inc	Somersworth
20427	PH	Clement Dam	John T. Dimos Gen Station	Tilton
20565	PH	Cocheco Falls Association	Cocheco Falls Hydro Proj	Dover
20377	PH	Combustion Systems Serv.	Pontook Hydroelectric Fac	Dummer
20425	PH	D.D. Bean & Sons Co Inc	Hydropower Facility	Jaffrey
20371	PH	Don Smith/Margaret Evans	Celley Mill	Piermont
20370	PH	Don Smith/Margaret Evans	Eastman Brook Hydro	Piermont
20408	PH	Ellyson Co Inc/R.J.McHugh	Pettyboro Brook Hydro	Bath
20213	PH	Errol Hydro Power Proj LP	Errol Dam	Errol
20214	PH	Exeter River Hydro		Brentwood
20300	PH	Filtrine Manufacturing Co	Filtrine Hydro	Harrisville
20467	PH	Forsters' Mill Hydro	Forster's Mill	Sutton
20483	PH	Franklin Ind Complex Inc	Stevens Mill	Franklin
20223	PH	Freshwater Hydro., Inc.	Golden Pond Hydro Station	Ashland
20155	PH	Freudenberg/NOK	Lower Generator	Bristol
20154	PH	Freudenberg/NOK	Upper Generator	Bristol
20222	PH	Garland Mill Hydro	Garland Sawmill	Lancaster
20175	PH	General Electric Co	Somersworth Hydro	Somersworth
20477	PH	Greg Dales	Beech River Mill Co.	Ossipee
20559	PH	Gregg Falls Hydro Assoc	Gregg Falls Hydro	Goffstown
20561	PH	Hydro-Op One Associates	Milton Hydro	Milton

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20126	PH	James Kelsey	Nottingham Lake Dam	Nottingham
20184	PH	James River NH Electric	Cascade Hydro	Gorham
20181	PH	James River NH Electric	Crosspower Hydro	Berlin
20185	PH	James River NH Electric	Gorham Hydro	Gorham
20183	PH	James River NH Electric	Riverside Hydro	Berlin
20182	PH	James River NH Electric	Sawmill Hydro	Berlin
20186	PH	James River NH Electric	Shelburne Hydro	Shelburne
20283	PH	John P. Rogers	Sunnybrook Hydro #1	Northumberland
20400	PH	L.W. Packard & Co Inc	Hydro Plant	Ashland
20242	PH	Mad River Power Associate	Campton Dam	Campton
20245	PH	Margaret & Alexis Moser	Marden Brook Hydro	Lancaster
20246	PH	Marlow Power	Nash Dam	Marlow
20554	PH	Mine Falls Ltd Partnershp	Mine Falls Hydro	Nashua
20327	PH	Monadnock Paper Mills Inc	Hi-Gate Dam	Bennington
20325	PH	Monadnock Paper Mills Inc	Monadnock Power Station	Bennington
20326	PH	Monadnock Paper Mills Inc	Pierce Power Station	Bennington
20249	PH	Mt. Washington Summit Rd	Hydro Plant	Green's Grant
20488	PH	Nashua Hydro Associates	Jackson Mills Hydro	Nashua
20109	PH	New England Power Company	Comerford Station	Monroe
20108	PH	New England Power Company	McIndoes Station	Monroe
20110	PH	New England Power Company	Moore Station	Monroe
20106	PH	New England Power Company	Vernon Station	Vernon
20107	PH	New England Power Company	Wilder Station	Wilder
20252	PH	Newfound Hydroelectric Co		Bristol
20489	PH	NH Hydro Associates	Penacook Lower Falls	Boscawen
20368	PH	Northeast Hydrodevel Corp	McLane Dam	Milford
20520	PH	Paul T. Crane	Mt. Cabot Hydro #1	Lancaster
20521	PH	Paul T. Crane	Mt. Cabot Hydro #2	Lancaster
20560	PH	Pembroke Hydro Assoc	Pembroke Hydro	Pembroke
20490	PH	Penacook Hydro Assoc.	Penacook Upper Falls	Concord
20262	PH	Pittsfield Hydropower Co.	Pittsfield Dam	Pittsfield
20264	PH	Power House Systems	Weston Dam	Northumberland
20143	PH	Public Service Co of N.H.	Amoskeag Hydro	Manchester
20144	PH	Public Service Co of N.H.	Ayers Island Hydro	Bristol
20145	PH	Public Service Co of N.H.	Eastman Falls Hydro	Franklin
20146	PH	Public Service Co of N.H.	Garvins Falls Hydro	Bow
20147	PH	Public Service Co of N.H.	Gorham Hydro	Gorham
20148	PH	Public Service Co of N.H.	Hooksett Hydro	Hooksett
20149	PH	Public Service Co of N.H.	Jackman Hydro	Hillsborough
20150	PH	Public Service Co of N.H.	Smith Hydro	Berlin
20419	PH	River Street Associates	Bell Mill Dam	Peterborough
20420	PH	River Street Associates	Noone Falls Hydro	Peterborough
20230	PH	Robert A. Greenwood	Chamberlain Falls Hydro	Greenville
20399	PH	Simpson Paper Company	Gilman Hydro Plant	Dalton
20462	PH	Southern N H Hydro	Minnewawa Hydro Co. Inc.	Marlborough
20296	PH	Star Lake Properties Inc	Star Lake Farm	Springfield
20297	PH	Sunapee Hydro	Hydro/Electric Plant	Sunapee
20247	PH	Thomas Hodgson & Sons,Inc		Allenstown
20131	PH	Tillotson Corporation	Hydro Plant	Dixville
20460	PH	Town of Ashland	Squam Lake Hydro	Ashland
20189	PH	W. M. Lord Exelsior Co	Union Village Hydro Sta.	Wakefield
20566	PH	Watson Associates	Watson Dam Hydro	Dover
20285	PH	William B. Ruger, Jr.	Sugar River I, Hydro Sta.	Newport
20456	PH	Woodsville Hydro., Inc.	Hydro Plant	Haverhill
20470	PH	Woodsville/Rochester Hydr	Wyandotte Hydroelectric	Rochester
20142	PN	No. Atlantic Energy Serv.	Seabrook Station	Seabrook

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20410	SM	Black Mountain Dev Corp	Black Mountain Ski Area	Jackson
20342	SM	Bretton Woods Ski Area LP	Bretton Woods Ski Area	Carroll
20432	SM	Dartmouth College,Trustee	Dartmouth Skiway	Lyme
20423	SM	Gunstock Ski Area		Gilford
20233	SM	King Ridge, Inc	King Ridge Ski Area	Sutton
20241	SM	Loon Mountain Rec. Corp		Lincoln
20495	SM	Manchester Parks & Rec.	McIntyre Ski Area	Manchester
20497	SM	Meadow Green-Wildcat Corp	Wildcat Mtn. Ski Area	Pinkham's Gra
20438	SM	Mt. Attitash Lift Corp.	Mt. Attitash Ski Area	Bartlett
20501	SM	Mt. Cranmore, Inc.	Mt. Cranmore Ski Area	North Conway
20429	SM	NH DRED	Cannon Mountain Ski Area	Franconia
20411	SM	NH DRED	Mount Sunapee State Park	Sunapee
20256	SM	Pats Peak Ski Area Inc	Pats Peak Ski Area	Henniker
20265	SM	Purity Spring Resort Inc	King Pine Ski Area	Madison
20513	SM	Ragged Mountain Ski Area		Danbury
20527	SM	Shattuck Inn Associates	Nordic Ski Trails	Jaffrey
20431	SM	Ski Crotched Inc	Crotched Mtn Ski Area	Bennington
20298	SM	Temple Mountain Ski Corp	Temple Mountain	Peterborough
20507	SM	Tenney Village Co. Inc.	Tenney Mtn Ski Area	Plymouth
20128	SM	Tillotson Corporation	Wilderness Ski Area	Dixville
20305	SM	Waterville Company Inc	Waterville Val Ski Area	Waterville Vl
20505	SM	Whaleback Ski Area		Enfield
20280	ST	Allenstown Sewer Comm	Waste Water Treat. Plant	Allenstown
20069	ST	Bay Dist of Moultonboro	Waste Water Treat. Plant	Moultonborou
20441	ST	Bethlehem Village Dist	Waste Water Treat. Plant	Bethlehem
20070	ST	City of Berlin	Waste Water Treat. Plant	Berlin
20071	ST	City of Claremont	Waste Water Treat. Plant	Claremont
20072	ST	City of Concord	Concord WWTP	Concord
20073	ST	City of Concord	Penacook WWTP	Concord
20442	ST	City of Dover	Waste Water Treat Plant	Dover
20074	ST	City of Keene	Waste Water Treat. Plant	Swanzey
20075	ST	City of Lebanon	Waste Water Treat. Plant	Lebanon
20076	ST	City of Manchester	Waste Water Treat. Plant	Manchester
20077	ST	City of Nashua	Waste Water Treat. Plant	Nashua
20093	ST	City of Newport	Waste Water Treat. Plant	Newport
20078	ST	City of Portsmouth	Waste Water Treat. Plant	Portsmouth
20079	ST	City of Rochester	Waste Water Treat. Plant	Rochester
20080	ST	City of Somersworth	Waste Water Treat. Plant	Somersworth
20208	ST	Conway Village Fire Dist	Waste Water Treat. Plant	Conway
20364	ST	Meriden Village Wtr Dist	Waste Water Treat. Plant	Plainfield
20443	ST	New Hampton Vil Prec	Sewer Dept	New Hampton
20081	ST	NH WSPC Div.	Franklin WWTP	Franklin
20095	ST	Plymouth Village W&S Dist	Waste Water Treat. Plant	Plymouth
20082	ST	Tillotson Corporation	Dixville W/W Lagoons	Dixville
20315	ST	Town of Antrim	Waste Water Treat. Plant	Antrim
20083	ST	Town of Ashland	Waste Water Treat. Plant	Ashland
20286	ST	Town of Bristol	Waste Water Treat. Plant	Bristol
20103	ST	Town of Charlestown	Waste Water Treat. Plant	Charlestown
20287	ST	Town of Colebrook	Waste Water Treat. Plant	Colebrook
20101	ST	Town of Derry	Waste Water Treat. Plant	Litchfield
20354	ST	Town of Durham	Waste Water Treat. Plant	Durham
20389	ST	Town of Epping	Waste Water Treat. Plant	Epping
20084	ST	Town of Exeter	Waste Water Treat. Plant	Exeter
20317	ST	Town of Farmington	Waste Water Treat. Plant	Farmington
20085	ST	Town of Goffstown	Waste Water Treat. Plant	Goffstown

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20334	ST	Town of Gorham	Waste Water Treat. Plant	Gorham
20086	ST	Town of Greenville	Waste Water Treat. Plant	Greenville
20087	ST	Town of Hampton	Waste Water Treat. Plant	Hampton
20332	ST	Town of Hanover	Waste Water Treat. Plant	Hanover
20088	ST	Town of Henniker	Waste Water Treat. Plant	Henniker
20289	ST	Town of Hillsborough	Waste Water Treat. Plant	Hillsborough
20089	ST	Town of Hinsdale	Waste Water Treat. Plant	Hinsdale
20331	ST	Town of Hooksett	Waste Water Treat. Plant	Hooksett
20090	ST	Town of Hopkinton	Contoocook WWTP	Hopkinton
20266	ST	Town of Jaffrey	Waste Water Treat. Plant	Jaffrey
20319	ST	Town of Lancaster	Waste Water Treat. Plant	Lancaster
20102	ST	Town of Lincoln	Waste Water Treat. Plant	Lincoln
20322	ST	Town of Lisbon	Waste Water Treat. Plant	Lisbon
20356	ST	Town of Littleton	Waste Water Treat. Plant	Littleton
20091	ST	Town of Merrimack	Waste Water Treat. Plant	Merrimack
20092	ST	Town of Milford	Waste Water Treat. Plant	Milford
20493	ST	Town of Milton	Waste Water Treat. Plant	Milton
20112	ST	Town of New London	Sewage Pumping Station	New London
20328	ST	Town of Newington	Waste Water Treat. Plant	Newington
20323	ST	Town of Newmarket	Waste Water Treat. Plant	Newmarket
20439	ST	Town of Northumberland	Groveton Sewage Plant	Northumberland
20440	ST	Town of Northumberland	Northumberland Sewage Pl	Northumberland
20290	ST	Town of Peterborough	Waste Water Treat. Plant	Peterborough
20094	ST	Town of Pittsfield	Waste Water Treat. Plant	Pittsfield
20335	ST	Town of Salem	Waste Water Transfer Sta	Salem
20096	ST	Town of Sunapee	Waste Water Treat. Plant	Sunapee
20120	ST	Town of Swanzey	West Swanzey WWTP	Swanzey
20449	ST	Town of Troy	Waste Water Treat. Plant	Troy
20448	ST	Town of Walpole	Waste Water Transfer Sta	Walpole
20321	ST	Town of Whitefield	Waste Water Treat. Plant	Whitefield
20426	ST	Town of Wilton	Waste Water Treat. Plant	Wilton
20314	ST	Town of Winchester	Waste Water Treat. Plant	Winchester
20268	ST	Town of Woodstock	Rte 175 Waste Water Plant	Woodstock
20271	ST	Town of Woodstock	South Waste Water Plant	Woodstock
20274	ST	Warner Village Fire Dist	Waste Water Treat. Plant	Warner
20437	ST	Woodsville Precinct	Waste Water Treat. Plant	Haverhill
20000	WS	Amherst Village District		Amherst
20001	WS	Andover Village District	Water Works	Andover
20330	WS	Bartlett Vil Water Prec	Water Works	Bartlett
20043	WS	Bennington Water Dept.	Water Works	Bennington
20002	WS	Bethlehem Village Dist	Water Works	Bethlehem
20361	WS	Boscawen/Penacook Prec	Water Works	Boscawen
20044	WS	Bristol Water Works	Water Works	Bristol
20272	WS	Campton Precinct	Water Works	Campton
20278	WS	Central Hooksett Wtr Prec	Water Works	Hooksett
20518	WS	Century Vil. Comm. Assn.	Century Village	Londonderry
20003	WS	City of Berlin	Water Works	Berlin
20004	WS	City of Claremont	Water Works	Claremont
20005	WS	City of Concord	Water Works	Concord
20357	WS	City of Franklin	Water Works	Franklin
20338	WS	City of Keene	Water Works	Keene
20007	WS	City of Laconia	Laconia Water Works	Laconia
20498	WS	City of Laconia	Weirs Water Works	Laconia
20008	WS	City of Lebanon	Water Works	Lebanon
20009	WS	City of Manchester	Water Works	Manchester
20010	WS	City of Portsmouth	Water Works	Madbury

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20011	WS	City of Rochester	Water Works	Rochester
20012	WS	City of Somersworth	Water Works	Somersworth
20502	WS	Cogswell Spring Water Wrk	Water Works	Henniker
20013	WS	Contoocook Village Prec	Water Works	Hopkinton
20311	WS	Conway Village Fire Dist		Conway
20006	WS	Dover Water Department	Water Works	Dover
20014	WS	Dustin Homestead Condo's	Dustin Homestead Assn.	Rochester
20336	WS	Emerald Lake Village Dist	Water Works	Hillsborough
20312	WS	Epsom Vil Water Dist	Water Works	Epsom
20015	WS	Fieldstone Village Park		Rochester
20016	WS	Fryeburg Water Company		Fryeburg, Mair
20337	WS	Goffstown Village Prec	Water Works	Goffstown
20018	WS	Great Bay Water Company	Water Works	Newmarket
20020	WS	Hampton Water Works Co	Water Works	North Hampton
20021	WS	Hanover Water Works Co.	Water Works	Hanover
20022	WS	Holiday Acres Mobile Home		Allenstown
20310	WS	Hooksett Vil Water Prec	Water Works	Hooksett
20023	WS	Hopkinton Village Prec		Hopkinton
20510	WS	Jackson Water Precinct	Water Works	Jackson
20562	WS	Lake Shore Park Assoc.		Gilford
20024	WS	Lamplighter Estates VII		Conway
20309	WS	Lewis Bldrs Inc	Walnut Ridge Water Co	Atkinson
20320	WS	Littleton Water & Light	Water Works	Littleton
20391	WS	Lower Bartlett Wtr. Prec.	Water Works	Bartlett
20363	WS	Meriden Village Wtr Dist	Water Works	Plainfield
20504	WS	Merrimack Village Dist.	Water Works	Merrimack
20492	WS	Milton Water Precinct	Water Works	Milton
20279	WS	Mountains Lake District	Water Works	Haverhill
20358	WS	N. Conway Water Precinct	Water Works	Conway
20458	WS	N. Haverhill Water & Lght	N. Haverhill Water Works	Haverhill
20025	WS	N.Swanzey Water/Fire Prec	Water Works	Keene
20360	WS	New Hampton Vil Prec	Water Works	New Hampton
20275	WS	New London Springfld Prct	Water Works	New London
20165	WS	Newport Water Department	Water Works	Unity
20026	WS	NH Water Resources Div	Greenville Water Works	Temple
20293	WS	North Walpole Vil Dist	Water Works	Walpole
20027	WS	Oak Creek Development Inc	Millstream & Oak Creek	Concord
20028	WS	Oak Creek Realty Trust	Maplewood Lane	Concord
20482	WS	Pennichuck Water Works	Glen Ridge Water System	Derry
20475	WS	Pennichuck Water Works	Hubbard Hill Pumping Sta	Derry
20030	WS	Pennichuck Water Works	Water Works	Nashua
20257	WS	Penrich Inc	Bear Brook Villa MHP	Allenstown
20481	WS	Pittsfield Aqueduct Co.	Water Works	Pittsfield
20359	WS	Plainfield Vil Water Dist	Water Works	Plainfield
20031	WS	Plymouth Village W&S Dist	Water Works	Plymouth
20032	WS	Ponderosa Mobile Home Pk.		Charlestown
20033	WS	Precinct of Haverhill Cnr	Water Works	Haverhill
20034	WS	Rancourt Estates MHV I		Merrimack
20035	WS	Rancourt Estates MHV III		Charlestown
20036	WS	Rancourt Estates MHV V		Rochester
20061	WS	Raymond Water Department	Water Works	Raymond
20563	WS	Redfield Estates Assoc.		Derry
20037	WS	Royal Crest MHV I		Rochester
20038	WS	Rye Water District	Water Works	Rye
20486	WS	Salmon Falls Vil Prec	Rollinsford	Rollinsford
20468	WS	Sherwood Forest Mble Home		Exeter
20349	WS	Southern NH Water Co Inc	Birchville Comm. W.S.	Londonderry

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20350	WS	Southern NH Water Co Inc	Brook Park Comm. W.S.	Londonderry
20346	WS	Southern NH Water Co Inc	Goldenbrook Comm W.S.	Windham
20351	WS	Southern NH Water Co Inc	Green Hills Comm. W.S.	Raymond
20344	WS	Southern NH Water Co Inc	Hudson/Litchfield Systems	Litchfield
20352	WS	Southern NH Water Co Inc	Liberty Tree Comm W.S.	Raymond
20348	WS	Southern NH Water Co Inc	Londonderry Dist. System	Londonderry
20353	WS	Southern NH Water Co Inc	Maple Hills Comm. W.S.	Derry
20347	WS	Southern NH Water Co Inc	W & E Community W.S.	Windham
20345	WS	Southern NH Water Co Inc	Williamsburg Comm W.S.	Pelham
20039	WS	Tara Mfg Housing Park		Rochester
20040	WS	Tillotson Corporation	Potable Water Supply	Dixville
20365	WS	Tilton-Northfield Aqueduc	Water Works	Northfield
20445	WS	Town of Alton	Water Works	Alton
20316	WS	Town of Antrim	Water Works	Antrim
20041	WS	Town of Ashland	Water Works	Ashland
20042	WS	Town of Belmont	Belmont Vil. Water Dist.	Belmont
20508	WS	Town of Canaan	Water Works	Canaan
20313	WS	Town of Carroll	Water Works	Bethlehem
20500	WS	Town of Charlestown	Charlestown Water Works	Charlestown
20499	WS	Town of Charlestown	N Charlestown Water Works	Charlestown
20288	WS	Town of Colebrook	Water Works	Colebrook
20098	WS	Town of Derry	Water Works	Derry
20113	WS	Town of Durham	Durham Water Works	Durham
20485	WS	Town of Enfield	Water Works	Enfield
20045	WS	Town of Epping	Water Works	Epping
20099	WS	Town of Exeter	Water Works	Exeter
20329	WS	Town of Farmington	Water Works	Farmington
20367	WS	Town of Franconia	Mittersill Water Works	Franconia
20362	WS	Town of Franconia	Village Water Works	Franconia
20046	WS	Town of Gorham	Water Works	Gorham
20047	WS	Town of Greenville	Water Works	Greenville
20447	WS	Town of Hancock	Water Works	Hancock
20355	WS	Town of Hillsborough	Water Works	Hillsborough
20050	WS	Town of Hinsdale	Water Works	Hinsdale
20051	WS	Town of Jaffrey	Water Works	Jaffrey
20318	WS	Town of Lancaster	Water Works	Lancaster
20097	WS	Town of Lincoln	Water Works	Lincoln
20052	WS	Town of Lisbon,Water Dept	Water Works	Lisbon
20053	WS	Town of Marlborough	Water Works	Marlborough
20054	WS	Town of Meredith	Water Works	Meredith
20100	WS	Town of Milford	Water Works	Milford
20055	WS	Town of Monroe	Water Works	Monroe
20269	WS	Town of New Castle	Water Works	New Castle
20056	WS	Town of Newfields	Newfield Water Dept.	Newfields
20057	WS	Town of Newmarket	Water Works	Newmarket
20048	WS	Town of Northumberland	Groveton Village Precinct	Northumberland
20049	WS	Town of Northumberland	Northumberland Water Prec	Northumberland
20132	WS	Town of Ossipee	Ossipee Water Department	Ossipee
20058	WS	Town of Pembroke	Water Works	Pembroke
20059	WS	Town of Peterborough	Water Works	Peterborough
20060	WS	Town of Pittsburg	Water Works	Pittsburg
20062	WS	Town of Salem	Water Works	Salem
20503	WS	Town of Seabrook	Water Works	Seabrook
20511	WS	Town of Stratford	No Stratford Water Works	Stratford
20063	WS	Town of Sunapee	Lake Sunapee WW	Sunapee
20104	WS	Town of Sunapee	Ledge Pond Water Works	Sunapee
20451	WS	Town of Troy	Water Works	Troy

USERID	NWUDS	USERNAME	FACILITY	USERTOWN
20333	WS	Town of Walpole	Water Works	Walpole
20064	WS	Town of Waterville Valley	Water Works	Waterville Vl
20065	WS	Town of Wilton	Water Works	Wilton
20434	WS	Town of Winchester	Water Works	Winchester
20444	WS	Town of Wolfeboro	Water Works	Wolfeboro
20270	WS	Town of Woodstock	Water Works	Woodstock
20029	WS	U.S. Air Force	Pease Air Force Base	Portsmouth
20066	WS	University of N.H.	Water Works	Durham
20067	WS	Vil Dist of Eidelweiss	Water Works	Madison
20273	WS	Village Dist of Eastman		Springfield
20366	WS	W. Stewartstown Wtr Prec	Water Works	Stewartstown
20068	WS	Warner Village Water Dist	Water Works	Warner
20469	WS	Whispering Pines MHP	Water Works	Londonderry
20295	WS	Woodsville Precinct	Water Department	Haverhill

Appendix E

September 13, 1990

Rep. Janet Conroy, Chair
Rep. Howard Dickinson
Rep. Mary Ann Blanchard
Sen. Edward Dupont
Sen. Roger Heath
Sen. Wayne King
c/o Office of the Speaker of the House
Room 312, State House
Concord, New Hampshire 03301

Re: Public Water Rights Study Committee
Research on state issues and permitting system

From: Ralph H. Goodno
Executive Director

Dear Members of the Legislative Study Committee on Public Water Rights:

The Merrimack River Watershed Council is pleased to provide you with the enclosed information on how other states address the question of public water rights. The enclosed information includes:

1. An Executive Summary of our research findings;
2. A more thorough review of how each state researched and addressed the issues of water rights, permitting systems, etc.
3. Copy of our July comments to your committee.
4. Background information received from each state.

In our work throughout the Merrimack Valley, we have noted an increasing amount of interest in the use of the river. This interest is not only for water supply, the river's major use, but also for recreation, hydropower development, visual protection, waste assimilation and many other legitimate uses. We have also noted that many communities in both New Hampshire and Massachusetts believe that they have the right to withdraw as much water as they need to serve their own purposes. Many also believe that they can draw water from the rivers and streams to serve the

needs of out-of-basin and within basin communities as regional water suppliers.

The Merrimack River Watershed Council is in favor of the river's use for water supply, and all these other legitimate uses. However, we are concerned that decisions to withdraw water from our rivers be made with a clear understanding of the withdrawal's impacts on other public uses. It is also important to protect the integrity of the river in the process. Our rivers are clearly an important amenity, contributing to our quality of life and the desirability of our region. This desirability will continue to be reflected in increased growth of our businesses and communities.

It is important to establish that New Hampshire's surface and groundwater resources are a part of the public trust. In addition, without a technically justifiable process, continued allocation of water may risk the viability of other public uses and the health of the resource.

We believe that such a recognition is imperative and urge that you recommend seeking a ruling by the New Hampshire Supreme Court on the public trust. Further, that you recommend the next steps leading to the adoption of a process for future allocations. The attached research illustrates how other states address this question. You should also note that many states have moved to some type of system.

Clearly, many ideas used by other states will not suit the needs of New Hampshire. However, our hope is that from this research you will be convinced that development of such a system is clearly in the state's long term interest.

Finally, attached is a copy of our comments which were submitted to you at the hearing in July. We hope that these recommendations will be reviewed in the constructive way in which they were presented.

We realize the difficulty of your task, and offer any further assistance we can. Thank you for your consideration of our comments.

Sincerely,

Ralph H. Goodno
Executive Director

EXECUTIVE SUMMARY

With increasing demand placed on water supplies it is becoming more important for states to develop uniform regulations regarding the allocation of water. Presently some states (eg. Maine) approach this process on a case by case basis, with the legislature granting "charters" to individuals, allowing them to withdraw water from state waters. Unfortunately, in order to change the charter another legislative action is required. Increasing demand makes this type of system inefficient.

North Carolina regulates diversions and withdrawals only in specified areas of concern. Because these areas are apt to change through time, this approach is also not completely efficient.

In the 1980s many Eastern states began to realize that they would benefit from the implementation of uniform registration and/or permitting systems. A registration system allows a state to document water use and to predict future needs. Permits give the state the ability to protect the resources of the state from becoming overstressed, and allow it to impose conditions on use (such as the implementation of conservation practices or priorities of use during periods of inadequate supply). Fees payed by the permittee either annually or when the permit is issued usually finance the program.

The states the MRWC has researched have various approaches and philosophies on the issues of water rights, regulations versus permitting, exemptions from regulations, term of permits, requirements for conservation, and prioritization of uses.

WATER RIGHTS

Most of the states surveyed consider water to be the property of the people with the state as their trustee. Delaware struggled with this issue in the mid 1970s. When their Water Resources Management Committee submitted a set of policies for comment there was protest from the private sector because of their statement that "the responsibility for management and regulation of these assets rests in the State as trustee of its water resources for the public benefit" (Water Management Policies p.3). A year later this philosophy became law despite the initial protests. The New Jersey Legislature issued a similar statement declaring that "water resources of the State are public assets of the State held in trust for its citizens" (N.J.S.A. 58:1A-2). In Maryland it "is the policy of the State to control, so far as feasible, appropriation or use of surface waters and ground waters of the State".

WHAT IS REGULATED AND EXEMPT

Although several states have separate regulations for the withdrawal of surface and ground water, there are a number that require allocation permits for the use of any fresh water (Massachusetts, California, Connecticut, New Jersey, Maryland, Iowa, Delaware). This policy is preferrable because it takes into account the interconnectedness of ground and surface water supplies.

Of the states that do require permits for the withdrawal of water, there are several different categories of users who are exempt. Many states exempt users of small amounts of water. The amount that is considered to be small varies: 10,000 gallons per day for Virginia ground water, 25,000 gpd in Iowa, 50,000 gpd in Delaware and Connecticut, 100,000 gpd in Massachusetts and New Jersey.

California requires a permit for any nonriparian use. In Pennsylvania all water suppliers must obtain a permit (all other users are exempt). In New York a permit is necessary to acquire, develop or distribute water for "potable purposes" (municipal suppliers are exempt). Maryland requires a permit for the appropriation or the building of facilities to appropriate surface or ground waters of the state regardless of the amount.

In most states there are specific uses which are exempted. Domestic and agricultural uses, or agricultural uses below a limit, generally fall into this category (often agricultural users must report their use) Agriculture is not exempt in Iowa or in the Great Lakes Basin. New Jersey exempts "emergency diversions" of less than 31 days. Maryland exempts appropriation for extinguishing a fire, but does not exempt domestic use for heating and cooling. Users who obtain use permits through other agencies (eg. FERC) in the Great Lakes Basin are exempt from permit requirements.

INFORMATION CONSIDERED IN ISSUING PERMITS

The issuing agency generally considers several factors before granting the right of use to an applicant. The applicant is expected to provide any information required. Delaware, Maryland, and New Jersey consider the effect that the withdrawal will have on other users or permit holders. The effect on instream flows are a factor in South Carolina interbasin transfers and New York and Massachusetts permits. The water body's needs for navigation, hydropower, fisheries, wildlife, and recreation are considered in Maryland, New York, Massachusetts, Connecticut, South Carolina (interbasin) and Delaware. The suitability of the source for the use (will it be able to provide for the needs of the applicant) are considered in Maryland and

Massachusetts. The availability of water from other sources in a factor in New York and South Carolina (interbasin).

The permittee also must supply information such as the location of the withdrawal and any discharges. The geology of the area and the location of other permitted withdrawals within a defined distance are also often required. The use for which the water is needed and the location of use (location, acreage and crops to be irrigated for agricultural permits) is often necessary information.

CONSERVATION

Conservation measures are often included either in the consideration of applications for permits or in the conditions placed on the permits. New Jersey, Delaware, and Arkansas all require applicants to either adhere to a conservation plan or to submit a plan of their own (NJ). New York and South Carolina look at conservation measures which will be taken by the applicant during consideration of an application. Iowa and Maryland write conservation conditions into the permits which they grant. Conservation is an important aspect of water management, and as such should be considered in any permitting process.

HEARINGS AND NOTIFICATION

Before the permit is granted other persons with an interest in the area are usually given a chance to comment on the application. Notification may be posted in local papers (New Jersey, Arkansas-use by nonriparians) or distributed by other means. New Jersey requires that the applicant, town and county officials (within one mile), other water allocation permit holders (within one mile), and officials of existing public water supply sustems (within five miles) all be notified in writing about the Commission hearing. Iowa mails a notice of the application to people on its mailing list and provides a comment period before considering the application. In Delaware the applicant must notify all adjacent property owners of the pending application. Any expenses for these procedures are paid by the applicant or included in the application fee.

DURATION OF PERMIT

The duration of the permit affects both the amount of security that the permittee has and the amount of control that the state has in managing its water resources. If the term of the permit is short the applicant may hesitate to make capital investments in a project which would be beneficial to the state. If the term of the permit is very long the state will have little opportunity to use the system to manage its resources.

Permit durations range from four to seven years in New Jersey (lengths depend on amount of use, with larger withdrawal permits having greater durations) to a limit of 50 years for nonriparian use in Arkansas. California allocations do not expire, but are revoked if unused for five years. The duration of permits in other states includes 10 years (Iowa), 12 years (Maryland), 20 years (Massachusetts), 30 years (Delaware). Iowa and Delaware have the right to make ground water permits lengths shorter in areas of hydrologic complexity. Most states also review the permits and permit conditions every three to five years.

PRIORITIES

During a water supply emergency many states reserve the right to implement emergency water supply plans. A few states state their water use priorities within their permitting legislation. In Arkansas the priorities are life, then health, then wealth; specifically, domestic and municipal domestic are of primary importance, followed by minimum instream flow, federal water rights, agricultural uses, industrial uses, hydropower generation, and finally recreation. Uses are priorized with riparian being primary, then nonriparian intrabasin, nonriparian interbasin, and out of state. During a water emergency in Iowa uses are suspended in the following order: out of state exports, recreational and aesthetic uses, irrigation, manufacturing, power for public consuption, watering of livestock, municipal domestic water, private domestic water. It is advisable to establish such a system of priorities before the need arises.

FEES

Permitting systems are generally funded by application fees. These fees can either be administered either at the time of application or annually (or both). If an annual report of water use is required from each use (which is advisable because it aids in tracking use trends) it may not be difficult to charge an annual fee. Arkansas charges a "reasonable fee" to defray the cost of gaging stations, the Great Lakes Basin regulations charge $200 per year. New Jersey has an initial fee of $1300 - $6400 and an annual fee of $460 - $6500 (depending on size of withdrawal). In New York "major permits" carry a one-time fee of $50 and "minor permits" are $10.

RECOMMENDATIONS

The MRWC respectfully suggests that the New Hampshire Legislature authorize a uniform permitting system for the withdrawals of water from any water (surface or ground) of the State. The impact on other users and permittees should be considered along with the effects of the withdrawal on

the instream flow and public water rights (navigation, fisheries, wildlife, recreation, etc.). Measures to be taken by the applicant to conserve water should also be considered or imposed on the permit. Fees paid by the applicant would finance the program. Exemptions for specific uses, such as domestic or agricultural, could be made. We advise that permits be required for water users who withdraw more than 50,000 gallons of water per day averaged over one month. In case of conflict, hearings should be held for the applicant amd other users injured, or potentially injured, by the applicant's use. This system would allow the State to manage its resource for the benefit of the people of the State.

ARKANSAS

Ground Water: All withdrawals of underground water must be reported annually to the Soil and Water Conservation Commission. Domestic users are exempt. (Act 1 05 1 1985)

Surface Water: All persons who divert surface waters must register the diversion annually with the state. The report must state the location of the diversion, the volume of the diversion, the purpose of the diversion, the location of use, and the amount of water stored.

Exemptions from Registration Requirement:

* Diversions of less than 325,900 gallons per year (1 acre-foot)
* Water diverted from natural lakes or ponds in the exclusive ownership of one person
* Diffused surface water

In addition to the registration program there is a permitting system for intrabasin use by nonriparians, interbasin use by nonriparians, and out of state transfers. The water permitted must be for a "reasonable and beneficial use of excess water" (25% of the average annual stream yield above the amount reported used in the previous year, needed in federal water projects, needed for firm yield of reservoirs, and need to maintain minimum stream flows for specified interstate streams.

When determining the reasonability of these permit applications the Commission considers

* The availability of alternative sources at reasonable cost;
* The environmental impact of the transfer;
* The effect of the transfer on other water users.

In addition, for interstate transfers the Commission must consider

* Present and future water demands and supply within the state;
* Whether the water could feasibly be transported to areas with water shortages within Arkansas.

Fees: A "reasonable" permit fee is charged to cover the cost of maintaining gaging stations in the area of the withdrawal.

Priorities of Water Use:

1. Domestic and municipal domestic;
2. Federal water rights;
3. Agriculture;
4. Industry;
5. Hydropower;
6. Recreation.

Priorities of Water Diversions:

1. Riparian;
2. Non-riparian intrabasin transfer;
3. Non-riparian interbasin transfer;
4. Out of state transfer.

Conservation Plans:
As part of the allocation plan, the Commission requires diverters to develop and implement a water conservation plan.

(Rules for the Utilization of Surface Water [As Adopted December 20, 1989])

CALIFORNIA
California follows the common law doctrine of riparian rights. Each owner of lands bordering a watercourse

> "may have a right which is correlative with the right of each other riparian owner to share in the reasonable beneficial use of the natural flow of water which passes his land." (Information Pertaining to Water Rights in California, State Water Resources Control Board, 1989, p. 3).

The diverter must use the water on riparian land.

All diverters of surface waters are required to file a statement of use with the Board. Diversions from springs which do not flow off of the property, and diversions or uses already filed with the Board or other state agencies are not required to be reported.

People who wish to take water from a surface or underground source must file an application to obtain appropriative water rights to unappropriated water. A permit is necessary for the diversion of water to use on nonriparian land, to store in a reservoir, or to use water which is not natural to the source. Underground water is only subject to these regulations if it is the underground flow of a surface stream. Filing an application for a permit establishes a record of right and provides a recognized status in case of a conflict with another user.

Applications are only approved if there is water available to supply the use. Permit holders may be required to divert limited amounts and/or at restricted times so as not to impair the "prior rights" of others. This can occur regardless of the conditions named in the permit.

Notice of applications is publicized and given a hearing if there are unresolvable protests. All permittees are obliged to respect the prior rights of others (when available water

is limited, permits needs are filled in the order that the permits were acquired).

The Board must be notified of any changes in ownership.

Duration of Permit: Permits do not expire, but appropriative rights can be lost through nonuse or abondonment. Nonuse is the failure to put water to beneficial use for a period of five years. Abandonment is the voluntary relinquishing of possession with the intent not to resume use.

(Information Pertaining to Water Rights in California, State Water Resources Control Board, 1989.)

CONNECTICUT

The legislature has declared that the "diversion of the waters of the state shall be permitted only when such diversion is found to be necessary" (Sec. 22a-364). Diversion is defined as any withdrawal or any action which alters the intantaneous flow of waters of the state. When the regulations were put into place existing diversions were required only to register their use with the state. Before beginning a new diversion a person must obtain a permit . Exemptions to this requirement are

* Withdrawals from surface water, a well, or a series of wells where the maximum withdrawal will not exceed 50,000 gallons of water in any 24 hour period;
* A storm drainage system which collects the surface water runoff of an area of less than 100 acres;
* Water for fire emergency purposes;
* Diversions for routine maintenance and emergency repair of dams;
* Roadway crossings or culverts allowing continuous flow or passage of an existing watercourse.

Information required on the permit application includes

1. The need for the diversion;
2. The use of the water;
3. A description of the existing water ysstem in the area of the proposed diversion;
4. The locations of the proposed withdrawals and discharges;
5. The quantity, frequency and rate of water the applicant proposes to divert;
6. The length of time for which the diversiqon permit is sought;
7. The effect of the proposed diversion on public water supplies, water quality, wastewater treatment needs. flood management, water-based recreation, wetland

habitats, agriculture, fish and wildlife and low flow requirements;

8. The alternatives to the proposed diversion, including cost and feasibility estimates;
9. Conservation measures implemented by the applicant prior to the application;
10. With an application for an interbasin transfer permit the applicant must file an environmental impact statement which contains a 25 year plan of needs and demands in the donor basin, considers the effect of the transfer on the donor basin, and analyzes alternatives.

The commissioner's decision is based on

* The effects of the diversion on public water supply needs, and future needs;
* Safe yields of the source;
* The effect of the diversion on existing and planned water uses in the area;
* Compatibility of the diversion with the policies and programs of the state,
* The relationship of the proposed development to economic development and the creation of jobs;
* The effect on fish and wildlife;
* The effect on navigation;
* The necessity of the diversion.

Permit conditions: The commissioner may grant or deny the application or put on provisions for monitoring of the diversion, scheduling of the diversion, duration of the permit, and reporting of use. Diversions may be periodically investigated and reviewed. Violations may be cause for revoking or suspending the permit.

Notice and hearing: Thirty days before the application is filed the applicant must notify the town in which the diversion will take place of the proposed project and publish a notice of intent in a local newpaper. The commissioner must hold a public hearing, which will be publicized in a local paper by the the applicant.

Water Supply Emergencies: If the governor declares a water supply emergency the commissioner has the power to temporarily supend a diversion permit or impose additional conditions on permit holders.

(Connecticut, C.G.S. Sec. 22a-365 - 22a-378.)

DELAWARE

The state declares that "The availablity of adequate water supplies is paramount to the health, safety and economic welfare of the people of the State of Delaware and its environment", and that "The responsibilty for management and

regulation of these assets rests in the State as trustee of its water resources for the public benefit" (Regulations Governing the Allocation of Water, Delaware Deptartment of Natural Resources and Envionmental Control, October 2, 1986).

Water allocation permits are required for all water withdrawals greater than 50,000 gallons in 24 hours.

Surface water withdrawal rates are limited to levels which
1. Do not interfere with other permitted withdrawals;
2. Allow dilution and flushing of discharges and maintain water quality standards;
3. Protect fish and wildlife;
4. Maintain adequate flow over downstream impoundments;
5. Prevent intrusion of saline waters;
6. Provide for ecological, recreational, aesthetic, and private benefits which depend on surface water flows.

Ground water withdrawal rates are limited to those which will not cause
1. Long-term, progressive lowering of water levels;
2. Significant interference with withdrawals of other permit holders;
3. Violation of water quality criteria;
4. Permanent damage to aquifer storage and recharge capacity;
5. Impact of the flow of perennial streams.

Applications must contain information including the supply source, type of use, location of withdrawal, rates and times of withdrawals, conservation measures, water shortage contingency plans, and manner and location of wastewater disposal.

Conservation: All applicants must submit a water conservation program and demonstrate its existence and their commitment to it.

Duration of Permits: Permits are issued for a thiry year duration except in cases of hydrologic complexity or where water quality considerations may require more frequent review. All permits are subject to review at 5 year intervals.

IOWA

The Department of Natural Resources
"has jurisdiction over the surface and groundwater of the state to establish and administer a comprehensive program to assure that the water resources of the state be put to beneficial use to the fullest extent possible, that the waste or unreasonable use , or unreasonable methods of use of water be prevented, and

that the conservation and protection of water resources be required with the view to their reasonable and beneficial use in the interest of the people" (Iowa Administrative Code, Chap. 50, Sec. 567-50.1(455B), 1987. p.1)

Iowa requires a permit for the permanent storage of more than 18 acre-feet of water (water water treatment or disposal structures, waste stablization lagoons, and waste storage basins are exempt).

A permit is required for the diversion of water from the surface directly into an aquifer.

A permit is required for the use of more than 25,000 gpd for any purpose. Nonrecurring minor uses do not need permits, but they must be reported to the Department.

Additional conditions are placed on withdrawals from streams; when the stream flow is below the designated "protected flow" plus the summation of all permitted flows the department may order a "temporary cessation or rotation of all consumptive uses to ensure that the protected flow is preserved". This applies to groundwater withdrawals within 660 feet of the stream, as well as surface water withdrawals. In streams draining less than 50 square miles there is a 200 gallon per minute limit for consumptive withdrawals (from surface water and groundwater sources within 1320 feet of the stream) (IAC, Chapter 52, pp.3-3a).

Information to be included with permit applications includes
* The source and effects of pumping of groundwater;
* Yields of wells;
* Well source;
* Information on surrounding wells.

Notice of the pending permit is published, and a 20 day comment period is provided.

Permit Duration:
Withdrawal or diversion of surface water is permitted for a term of 10 years. Withdrawal of groundwater is permitted for a term of ten years, or less if geologic data on the aquifer capacity and recharge rate are indeterminate.

Fee: There is a $25 application fee.

Conditions: Reports of water used, diverted,and stored must be submitted to the Department. Wells must contain an access port for measurement of well levels. Routine conservation practices are required.

Allocation Priorities: The Department may suspend or restrict water use locally or statewide in the following order:

1. Water conveyed across state boundries;
2. Water used primarily for recreational or aesthetic purposes;
3. Uses of water for irrigation;
4. Uses of water for manufacturing or other industrial processes;
5. Uses of water for generation of electrical power for public consumption;
6. Uses of water for livestock production;
7. Uses of water for human consumption and sanitation supplied by a public water supply;
8. Uses of water for human consumption and sanitation supplied by a private water supply.

MAINE

In Maine surface water withdrawals are governed by the branch of riparian common law known as the English Rule. In this system

1. All riparian land owners are entitled to unlimited withdrawal for domestic use.
2. Riparian landowners have equal rights of fair share for non-domestic uses on riparian land.
3. Riparian landowners may not use water for purposes not related to the riparian land.

Great ponds and tidal rivers are considered to be the waters of the people of the state. The State may grant permission to use water from these sources.

When groundwater is in the form of underground streams surface water regulations apply.

Percolating ground water may be removed by a landowner even if it interferes with the use of another landowner as long as the interference is not malicious or deliberate. This has been modified to protect beneficial domestic use.

Maine prohibits the transport of water from the municipality in which it occurs in containers larger than 10 gallons.

(Maine Legislature. Final Report of the Maine Water Supply Study Commission, Appendix 7, February 1, 1989)

MARYLAND

A person must obtain a permit from the Department of Natural Resources (Water Resources Administration) before appropriating or using waters of the State. Use of water for

* Farming;
* Domestic purposes;
* Extinguishing a fire

is exempt.
Withdrawals are also subject to the Susquehanna River Basin Commission requirements (see Pennsylvania). Consumptive use in the Potomac River Basin has further restrictions (see below). The project must meet the following criteria for a permit to be issued:

1. The amount of water permitted is reasonable in relation to the anticipated level of use
2. The appropriation will not have an unreasonable impact on the waters of the State or on other users of the waters of the State.

Reasonableness of a use or appropriation is based on the following:

1. The purpose of the use;
2. The suitablity of the use to the watercourse, lake or aquifer;
3. The extent and amount of the harm it may cause;
4. The practicality of avoiding the harm by adjusting the proposed use or method of use;
5. The practicality of adjusting the quantity of water used by each permittee;
6. The protection of existing water uses, land values, investments, and enterprises;
7. The protection of threatened or endangered species, archaeological artifacts and historical sites;
8. The financial hardship of requiring a new user to bear the loss for substantial harm;
9. Impact on the waters of the State.

Permit Duration: The permit period is 12 years. Permits are reviewed once every 3 years. All permits for more than 10,000 gpd (except for subdivisions) contain a condition requiring semi-annual reporting of use.

Consumptive Use of Surface Water in the Potomac River Basin: If the maximum consumptive water use of an appropriation can exceed 1,000,000 gpd the permittee will be required to provide low flow augmentation.

<u>MINNESOTA</u>
Permits are required for any appropriation of surface water or ground water in excess of 10,000 gallons per day or 1,000,000 gallons per year. Uses exempted from the permit system are
1. Appropriation for domestic use serving less than 25 people;

2. Test pumping of a ground water source;
3. Agricultural drainage to remove water from cropland;
4. Reuse of water already authorized by a permit.

Riparian rights are also recognized in Minnesota. Landowners are expected to make reasonable use of the supply and may be required to limit their use if the stress on the source makes that necessary.

To obtain a permit the applicant must own or rent the land abutting the surface water or overlying the groundwater. The effects of the appropriation on the environment and higher priority users are considered. State law also protects minimum instream flows for water quality, navigation, fish and wildlife, recreation and the needs of other users. In addition, safe yields of aquifers have been established in groundwater sources of degraded quality or where withdrawal rates exceed recharge. Applications are evaluated with these regulations in mind. Reasonableness, conservation practices and alternative sources are all considered in allocating water.

Permits require users to report their annual use to the Division of Waters. Permits can be modified to resolve conflicts.

The Minnesota Legislature has established a set of water use priorities. When water supply is limited riparian uses are prioritized as follows:
1. Domestic water supply (excluding industrial, commercial, and power production uses of municipal water supply);
2. Use of water consuming less than 10,000 gpd;
3. Agricultural irrigation and processing of agricultural products in excess of 10,000 gpd;
4. Power production:
5. Other consumptive uses in excess of 10,000 gpd and nonessential uses of public water supply.

An applicaiton fee of $75 is charged in addition to an annual processing fee ($50 minimum).

Minnesota's Water Appropriation Program, Minnesota Department of Natural Resources, Division of Waters, May 1990. This program was established by Minnesota Rules Part 6115.0620 and Minnesota Statues Chapter 103G).

NEW JERSEY

New Jersey requires a water supply allocation permit for the diversion of more than 100,000 gallons per day. Any person who has the capacity to withdraw 100,000 gpd but is presently not doing so is required to report their use to

the Department of Environmental Protection. These regulations do not apply to

1.. Diversions for agricultural or horticultural purposes;
2. Diversions of salt water except where diversion and usage may affect utilization of fresh water;
3. Emergency diversions for periods of less than 31 days.

The permit applicant must provide information establishing

1. The characteristics of the watershed (locations of other diversions, stream flow, water quality classification, size of drainage area at diversion point);
2. All diversions of more than 100,000 gpd withing one mile;
3. All public water supply sources within five miles;
4. The proposed withdrawal site;
5. All domestic wells in the same or a connected aquifer within one mile;
6. That the plan is in the public interest;
7. That the diversion will not unduly interfere with other existing supplies;
8. That groundwater withdrawals do not lie within a cone of depression where the aquifer is overstressed or threatened by saline invasion.

The Department must publish a notification of the permit hearing in a newspaper circulating in the affected area at least 14 days prior to the hearing. The applicant, municipal and county officials, and water allocation permit holders within one mile and officials of existing public water systems within five miles must be notified in writing.

Permit Conditions: The term of permits varies from four to seven years, depending on the volume of the allocation. Each permit specifies the maximum daily, monthly and/or annual allocation. Withdrawals must be metered and reported quarterly. The Department has the right to inspect the facilities and records at any time. The Department may modify or revoke the permit.

Fees: The initial application fee varies from $1,290 to $7,850, modification fees range between $600 and $4,150, and annual fees are $460 to $6500. The fees depend on the volume of the withdrawal and the source of the withdrawal.

(New Jersey Act of Congress [N.J.A.C.] 7:19-1,2,3,6,and 7: Schedules and Procedures for Establishing Privileges to Divert Water and for Obtaining Water Supply Allocation Permits, Water Supply Management Act Rules and Procedures for Contract Review and Approval)

NEW YORK

New York has three sets of regulations: general water supply regulations, Long Island well regulations, and Great Lakes Basin regulations.

Any person engaging in the acquisition, development, use or distribution of water for potable purposes must obtain a permit. County or municipal water authorities which are upgrading or extending their services are exempt.

Permit applications must contain the location and extent of the service area (map), locations and elevations of withdrawals, pipe lines, and street intersections, features of the proposed and existing supply facilities, and hydrologic information. To grant a permit the Department must determine that:

1. The project is justified by public necessity
2. The applicant has considered other sources of water supply
3. The water supply will be adequate to meet the needs of the proposed service area
4. There will be proper protection and treatment of the water supply and watershed
5. The project is just and equitable to all affected municipalities and their inhabitants;

Fees: $10 for minor projects; $50 for major projects

(Water Supply Permit Applicant's Handbook, NY State Department of Environmental Conservation, 1988 and Water Supply Applications, Exclusive of Long Island Wells, from Environmental Conservation Law, Article 15, Title 15, 3-0301.1(f); 3-0301.2(m))

LONG ISLAND WELLS:

A permit is required to install a well. The use of water for agricultural purposes or the intallation of a fire well is exempt. Applications must contain the intended use, the pumping capacity, the rate of pumping, annual use and number of wells presently on the applicants property, area of service, and effects of the withdrawal on domestic water supplies.

(Applications for Long Island Wells, Authority from Environmental Conservation Law - 15-1527, 3-0301.2(m))

GREAT LAKES BASIN WATER WITHDRAWAL:

Withdrawals greater than 100,000 gallons per day (averaged over 30 days) must register the withdrawal. Withdrawals of water resulting in a loss from the Basin of 2,000,000 gpd (averaged over 30 days), because of diversion to another basin or from consumptive loss, must be registered.

Municipal water suppliers permitted by the Department of Environmental Conservation (DEC) are exempt, as are people with FERC hydroelectric generation licenses and people with valid water lifting permits from DEC.

Uses must be reregistered every two years (every year if for agricultural purposes).

Registration information must include the place and source of withdrawal, location of return flow, monthly and annual volumes withdrawn and lost.

Fee: $200 (or $100 if registering annually)

(from Draft of Great Lakes Basin Water Withdrawal Registration Handbook, NY State Department of Environmental Conservation)

OHIO

All facilities which have the capacity to withdraw more than 100,000 gallons of water per day from all sources must be registered with the state (including information on the sources and locations of the supply, the withdrawal capacity per day, the use made of the water, place of use, and place of discharge). An annual report must be submitted listing the amount of water withdrawn per day and the return flow per day.

Streams are governed by riparian rights. Ohio has interpreted these rights liberally, allowing municipalities to use water which flows through their corporate boundaries (even if they do not own property abutting the water) for "proper purposes". These purposes include domestic use by the inhabitants.

Use of ground water is subject to the rule of "reasonable use". Reasonableness is determined by considering the interests of the proprietor making the use, the harm caused to any other riparian proprietor, and the interests of society as a whole. Factors considered include:

* The purpose of the use;
* The suitablity of the use to the water resource;
* The economic value of the use;
* The social value of the use;
* The extent and amount of harm the use causes;

* The practicality of avoiding the harm (the efficiency of the competing uses);
* The practicality of adjusting the quantity of water used by each proprietor;
* The protection of existing values of water uses, land investments, and enterprises;

* The justice of requiring the user causing the harm to bear the loss.

(Hanson, James R., etal. Water Rights: An Overview of Ohio Water Withdrawal Law, Second Edition, Ohio Department of Natural Resources, Divison of Water and the Water Management Association of Ohio, 1990)

PENNSYLVANIA

Public water supply agencies are required to obtain a "water allocation" to withdraw water from surface water sources (including springs). Applicants are required to supply information on

1. Reasons for the application;
2. Sources for which allocation is requested;
3. Amount of water requested;
4. Estimated future needs;
5. Minimum flows;
6. Safe yields of springs and reservoirs;
7. Existing instream uptakes;
8. Other existing sources of supply;
9. Treatment and disposal of wastewater;
10. Present water use;
11. Water conservation programs and contingency plans.

(From Penn. 1939, June 24, P.L. 842, 1)

Two of the major river basins in Pennsylvania are interstate systems. The Delaware and Susquehanna Rivers are both subject to the regulations promulgated by interstate Basin Commissions. These Commissions have commissioners from each state involved and from the federal government. The Susquehanna River Basin Commission has the following regulations for consumptive use of water:

1. Compensation is required for consumptive uses (including use of groundwater sources hydrologically related to the stream) during periods of low flow;
2. Consumptive uses not exceeding 20,000 gpd from a total withdrawal of less than 100,000 gpd from surface or groundwaters are exempt from (1).

The Delaware Basin Commission requires the metering and reporting of all withdrawals (from surface water, wells, or springs) exceeding 100,000 gpd during any 30 day period. Exemptions include:

* Agricultural irrigation
* Snowmaking
* Dewatering due to mining, quarring, or construction.

There is also a Southeastern Pennsylvania groundwater protection area. Within this area all withdrawals exceeding 10,000 gpd (during a 30 day period) from a well or group of wells must be metered and reported with the Department of Environmental Resources. Withdrawals for agricultural irrigation, snowmaking, space heating and cooling, and dewatering due to mining, quarring, or construction are exempt.

(Water Allocation Permit - Available from Pennsylvania Department of Environmental Resources)

SOUTH CAROLINA

South Carolina has regulations regarding interbasin transfers. A permit is required for the transfer of either 5% or more than the seven day, ten year low flow, or one million gallons of water a day (whichever is less) from one river basin and use or discharge all or any part of the water in a different river basin. The permits are divided into two class, Class I for transfers greater than 1,000,000 gpd and Class II for transfers of less than 1,000,000 gpd.

Permit applications must contain
1. A listing of projected uses greater than 100,000 gpd;
2. The estimated amount or percent of consumption for each use;
3. A listing of conservation programs or practices proposed for each use;
4. Peak capacity of the facilities;
5. An economic and engineering assessment of the feasibility of alternate water sources.

The Commission will review the protection of present and upstream uses of the using basin,
* Protection of water quality;
* Future water needs of the applicant and the losing basin;
* The beneficial impact on the State;
* The nature of the use (consideration of its reasonableness and beneficiality);
* Impact on fish, wildlife, navigation, and hydropower;
* The existance of feasible alternatives.

Permit Duration: Applicants may request a permit for less than 20 years. The Commission may issue a permit for a term of up to 40 years.

(South Carolina, Code of Laws 1976, Title 49, Chap. 21:Interbasin Transfers of Water, 1976.)

VERMONT

The Vermont Legislature has declared that "all persons have a right to the beneficial use and enjoyment of groundwater free from unreasonable interference by other persons", and abolished the common-law doctrine of absolute ownership of groundwater (Vermont Groundwater Rule and Strategy, Chapter 12, Sept. 29, 1988. Chapter 48: "Groundwater Protection" T.10 1390-1410). This legislation allows any person to maintain an action in tort to recover damages caused by another person's use of groundwater. People who damage water through agricultural and silvicltural activities are liable only if their actions are found to be negligent, reckless, or intentional. A determination of unreasonableness of harm is based on

1. The purpose of the respective uses or activities affected;
2. The economic, social and environmental value of the uses, including public health;
3. The nature and extent of harm;
4. The practicality of avoiding harm and of adjusting the quantity and/or quality of water used or affected each party;
5. The maintenance or improvement of groundwater and surrounding surface water quality;
6. The protection of existing values of land, investments, enterprises and productive uses;
7. The fairness of requiring the person causing the harm to bear the loss.

(Vermont Groundwater Rule and Strategy, Chapter 12, Sept. 29, 1988. Chapter 48: "Groundwater Protection" T.10 1390-1410)

Vermont is currently in the process of drafting more comprehensive legislation to cover both surface and ground water diversions. They are working on defining the term "Waters of the State" (personal communication, Aug. 1990).

SOURCES OF INFORMATION FOR "WATER ALLOCATION PROGRAMS IN DIFFERENT STATES"

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Delaware Department of Natural Resources and Environmental Control, Regulations Governing the Allocation of Water (based on 7 Del. Code, Section 6001 through Section 6010(F), Adopted October 2, 1986.

Delaware River Basin Commission, Resolution No. 86-12 (amending the Comprehensive Plan and Water Code of the Delaware River Basin in relation to source metering of large surface and ground water withdrawals, 1986.

Delaware River Basin Commission, Resolution No. 86-13 (amending the Commission's Ground Water Protected Area Regulations for Southeasten Pennnsylvania in relation to ground water withdrawal metering, recording and reporting), 1986.

Iowa, Iowa Administrative Code Chapter 50-52: Withdrawal, Diversion and Storage of Water: Water Rights Allocation, 1987.

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(Maine) Public Utilities Commission, Report to the Governor and the 113th Maine Legislature: Water Supply and Allocation Study, February 1, 1988.

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Maryland, Annotated Code of the Public General Laws, Natural Resources (Enacted by Ch. 4, Acts 1973 First Extraordinary Session): 1990 Replacement Volume, 8-806:Processing applications; hearings. (Charlottesville, VA: The Michie Company Law Publishers), 1990.

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New Jersey, N.J.F.A. 58:1A-1 to 58:1A-17.

New York, Applications for Long Island Wells, Statutory Authority: Environmental Conservation Law, 15-1527, 3-0301.2(m).

New York, Water Supply Applications (Exclusive of Long Island Wells), Statutory Authority: Environmental Conservation Law, Article 15, Title 15; 3-0301.1(f); 3-0301.2(m).

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New York Department of Environmental Conservation, Water Supply Permit Applicant's Handbook, 1988.

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Department of Natural Resources, Division of Water and the Water Management Association of Ohio, 1990.

Pennsylvania, 1939, June 24, Pamphlet Laws 842 1.

Pennsylvania Department of Environmental Resources, Bureau of Water Resources Management, Instructions for Completing Application for Water Allocation, May 2, 1990.

Sherk, George William,"Eastern Water Law: Trends in State Legislation" in Virginia Environmental Law Journal, Vol. 9, Number 2, Spring 1990.

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Vermont, Definitions, Groundwater Protection Rule and Strategy, Chapter 12, September 29, 1988.

Appendix F

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE September 17, 1992

FROM Kenneth Stern KS
Chief Engineer

AT (OFFICE)
Dept of Environmental Services
Water Resources Division

SUBJECT Information Needs for Resource Evaluation

TO Public Water Rights Advisory Committee

The following outline should help with the chapter in your final report on Resource Evaluation. I have offered some general comments on Hydrology and Active Water Use. Resolution of the policy issues will define the level of information needed. Please also refer to the DES memo dated 1/28/91 relative to data needs for water withdrawal.

RESOURCE EVALUATION

POLICY ISSUE -

The degree of intervention/regulation by the legislature and/or agency in water use management determines the level of detail and amount of data required.
ie. less intervention = less data
more regulation = more data

POLICY ISSUE -

Due to variability in hydrologic conditions, many years of data collection are needed to determine long term averages and reliable prediction of drought flows. Determining trends in water use requires several years of prior data.

POLICY ISSUE -

Should the State pursue a proactive approach to resource evaluation on a statewide or regional scale so that information to support decisions is available when a particular situation arises?

or

Should the State react to a project proposal and require the applicant to develop all needed resource data to support decision?

OUTLINE OF INFORMATION NEEDS FOR RESOURCE EVALUATION

A) WATER AVAILABILITY - HYDROLOGY

There must be a firm understanding of water availability including the magnitude and extent of low flows.

1) Flow Duration Statistics/Basin Yield.
The natural variability of flow throughout the year, between watersheds and even within a watershed should be characterized. Flow duration statistics describe this variability as well as the probability of sustaining certain flows for extended periods.

2) Actual Data vs Mathematical Modelling.
Actual data from a gage on the river in question is the most accurate and reliable approach. Mathematical modelling allows for the use of existing gage data to predict flows at ungaged locations. These predictions are essential tools given limited funding for gaging stations. The uncertainty of mathematical predictions must be considered when using the data for regulatory purposes.

3) Existing and Needed Stream Gages for Prediction, Monitoring and Compliance.
Predication of flow through regional characterization and mathematical modelling can be accommodated by analyzing data from a select set of gages distributed in different regions and hydrologic settings. The historic network has served well in this regard but would benefit from a few selected additions.

Monitoring and Compliance with a new water use management program would require more gages. Gages would be required at one or more locations on every major river and also in proximity to major water users if they are distant from the gages already present. Reactivation of gages which have been discontinued would help in this regard. A number of new gages would be required based upon hydrologic analysis and water use trends.

4) Lake Levels, Streamflow and Groundwater.
Hydrologic analysis must recognize the interrelationships between lake level management, riverine water use and groundwater use. The water resources are integrated and any program must account for the impact of one water management decision on the aspects of the resource and other water users.

B) ACTIVE WATER USE - RIPARIAN AND APPROPRIATED USES

All major water users must be accounted for in a comprehensive water management program.

1) Water User Registration.
All facilities using over 20,000 gpd should be registered with NH DES and reporting their usage. This data documents stresses on the resources as well as those users to be considered under a grandfathering provision. Determining the effect of one use upon another use and upon the resource is essential.

2) Non-Registered Users.
Some water users are unregistered either by non-compliance or by use less that the threshold. These issues should be addressed.

3) Consumptive/Non-consumptive/Seasonal Use.
Most water use is only partially consumptive, meaning that a great percent of the water withdrawn is returned. The percent returned varies with the particular use and users. Some uses are seasonal. Due to the range of consumption and return as well as seasonal variability in use, the hydrologic analysis must be dynamic in its view of the system.

4) Interstate Water Use.
Water users in Vermont, Maine and Massachusetts all affect our water resources. This issue should be addressed.

C) PASSIVE WATER USE - INSTREAM USES

The water need for the following non-consumptive instream uses must be considered in water management decisions.

1) Recreation.

Quantifying water needs for recreation is highly subjective. The quality of the experience can vary based upon the activity and the river characteristics. Quantifying level of use is also subjective with little inventory data available.

a) Boating.

Boating occurs in flat water, swift water and whitewater using boats on trailers with motors, canoes, kayaks and rafts. Generally restricted to the spring, summer and fall; some rivers support boating throughout the three seasons while some rivers are only navigable in the spring and early summer. Access and navigability are significant issue to boating activity. Information needs include type of condition (flat water, swiftwater, class 1,2,3,4 rapids), water needs for navigability, seasons of use, major hazards and portages.

b) Swimming/Bathing.

Swimming and bathing occur in everything from small pools in mountain streams to sandy beaches and deep water on major rivers. Water conditions affecting swimming include: temperature, depth, velocity and water quality. Access is a major controlling factor.

c) Fishing.

Fishing is identified as a recreational activity in addition to a biological need. Recreational fishing ranges from fly fishing for trout in small mountain streams, to bass and horned pout fishing in major rivers. The level of fishing pressure is dependent upon access, success rate and species present. These last four items are important information for assessing fishing demand.

2) Biology.

Biological integrity refers to an ecosystem which is healthy and sustainable. There are numerous elements which contribute to the general health of the ecosystem. The healthy ecosystem can adapt to various short term stress, such as drought, and successfully recover.

a) Biology Integrity.

A variety of chemical and biological measures can be assessed to determine the overall integrity of the ecosystem. This should include all life forms such as invertebrates and water quality parameter essential for sustaining biologic activity.

b) Fish Species and Habitat Present.

Data on the type of species present is indicative of the habitat type and associated water needs. General classes of species include warm water, cold water and anadramous fish. Different habitat types support various life stages of the various species. A combination of appropriate habitat, water quality, water quantity, and food supply contribute to the success of a particular species.

c) Survival Rate, Stocking Rate.

The measure of whether the fishery is self-sustaining or annually supported by stocking is useful in assessing water needs in time of drought. Naturally self-sustaining fisheries are relatively rare and of significant concern. Where stocking is the management approach, increased stocking can compensate for a previous year's loss. Data should be collected on where specific fisheries are self-sustaining or stocked.

d) Value of Fishery/Habitat.

Certain fisheries are highly valuable due to the combination of species, habitat, survival and fishing pressure. Those locations of highest value should be identified so that their priority can be recognized.

3) Scenic, Aesthetic Value.

This measure is totally subjective. The scenic value may be of great importance for recreational purposes. Areas of great scenic value should be identified.

4) Water Quality.

Water quality has tremendous bearing upon the ecological integrity, biologic activity, recreational use and off stream water uses.

a) Natural Water Quality.

The natural water quality should be quantified for all major rivers and river reaches. The existing water quality monitoring program has a tremendous amount of relevant and useful data.

b) Anthropogenic Pollution Sources.

These are sources of pollution caused by man. They include point discharges of effluent from wastewater treatment plants and industrial facilities as well as non-point pollution from erosion, urban runoff and other human activities. These collective pollution sources should be quantified to identify where the biological integrity of the river is jeopardized. Existing NHDES and federal programs gather much of this data.

c) Assimilative Capacity of River.

The assimilative capacity of the river is a measure of how much pollution can be discharged to the river without disrupting the biologic integrity, adversely affecting fish life or human related activity. The assimilative capacity is dependent upon the hydrologic and geomorphologic characteristics of the rivers. Rivers with a large flow and many water falls can assimilate more waste with fewer adverse effects than can smaller rivers with less flow and less aeration.

ATTACHMENT TO FINAL REPORT

List of Gaging Stations
List of Registered Water Users
List of Appropriated Water Rights
List of DES Permit Type
List of Watersheds (110)
List of 4th Order Streams (75)

KS/mg.29
CC: Delbert F. Downing
Robert W. Varney

Appendix G

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
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TDD Access: Relay NH 1-800-735-2964

MEMORANDUM

TO: Robert W. Varney
Commissioner

FROM: John Dabuliewicz
Assistant Commissioner

RE: Use and Preservation of Water

DATE: June 18, 1992

The entire spectrum of viewpoints, from strict preservationists to maximum exploiters for economic gain, must be given equal input if the tangled interests focused on water are ever to work together towards a sensible outcome. To accomplish such an outcome a number of things must happen, but foremost are understanding, consensus and a plan of action.

First, information on which to base decisions must be gathered. Inventories of water uses and biological, aesthetic, and even intangible, water resources are necessary to equip decision makers to proceed. In addition, the attached memo from Chris Simmers outlines the information DES staff believe necessary to implement a program involving authorization of water withdrawals. Clearly, the logical first step in any undertaking is to understand and define your subject.

Next, all affected users, protectors, appreciators and enjoyers of the physical and spiritual allure of water must be identified and involved in discussions aimed at striking an acceptable balance between use and preservation. This will be a difficult task, but the Instream Flow Technical Advisory Group to the Rivers Management Advisory Committee (RMAC), the RMAC itself and the Lakes Management Advisory Committee all offer promising beginnings. The natural values worthy of public concern must form the basis for an agreed upon jumping off point for any desired water management regulatory program.

Finally, fashioning of consensual regulatory measures must be undertaken. These should take into account broad, overarching values and management

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WATER RESOURCES DIV.
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WATER SUPPLY & POLLUTION CONTROL DIV.
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strategies, while recognizing that water bodies and watersheds must be viewed and analyzed on a site specific basis as well. Inclusive planning for balanced approaches to water use are vital to creating a program which will be viewed as fair and reasonable.

I will circulate this memo to spark dialogue among the Public Water Rights Study Committee and others interested in this topic.

JD/hyv
Attachment

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE January 28, 1991

FROM Chris Simmers Chris
Chief Environmental Planner
AT (OFFICE)
Dept. of Environmental Services

SUBJECT Data Needs re Water Withdrawals

TO John Dabuliewicz
Assistant Commissioner

In response to your request, I have prepared a list of the minimum information requirements for adequate consideration of any water withdrawal authorization requests. This list is based upon input from several different programs within the department, with an emphasis on the needs of the water supply, water quality, and Rivers programs. Input from the Attorney General's Office was also incorporated. The purpose of this list is to identify what information is necessary for a meaningful assessment of the need for and impact of a particular water withdrawal.

The information requirements can be summarized as follows:

1. Need for Withdrawal - A detailed explanation of the need for the water -- explanation of reason for requesting legislative authorization

2. Description of Withdrawal - Amount of proposed withdrawal, including typical withdrawal patterns over seasonal, monthly, and daily cycles -- location of intake and discharge, description of all facilities related to withdrawal, name(s) of impacted water body(ies), population to be served, category(ies) of use(s)

3. History of Withdrawal - If this is authorization request for continuing or expanding existing withdrawal, fully describe duration, minimum/average/maximum amounts, category(ies) of use(s), number, type, and location of users

4. Inventory of Water Users - Identify and describe all upstream and downstream water users and uses potentially impacted by proposed withdrawal -- distinguish between riparian and non-riparian users -- identify any uses previously authorized by General Court or otherwise officially recognized

5. Impact Assessment - Fully describe the projected impacts of the withdrawal on all upstream and downstream water users included in the inventory requested above -- also describe the projected impacts on the natural environment -- utilize all available information on river flows and lake levels, identify sources of information -- quantity amount of withdrawal that would be returned to source and explain methodology for making this calculation, also compare quality of water returning to source to quality of water when withdrawn

6. Water Quality Information - Provide all available information on existing water quality of source(s) of withdrawal, and water quality and classification (Class A, Class B, etc.) of receiving water(s) for discharge of withdrawn water

7. Alternatives - Identify and assess relative merits of all possible alternatives to proposed withdrawal, including the alternative of conservation — include estimates of the cost of the withdrawal and of each alternative — estimate impact of withdrawal either not being authorized or being restricted and explain rationale

Pending your review, an application-type form could be developed that would be filled out by the party requesting the withdrawal. This would help simplify and standardize the evaluation process.

I will be glad to provide additional information if necessary.

CS:bdm

Appendix H

New Hampshire Fifth Order Steams and Higher

Ammonoosuc River (5th)
Androscoggin River (5+)
Ashuelot River (5th)
Baker River (5th)
Beards Brook (5th)
Connecticut River (5th)
Connecticut River (6th)
Contoocook River (5th)
Contoocook River (6th)
Dead Diamond River (5th)
Lamprey River (5th)
Magalloway River (5+)
Merrimack River (7th)
Merrimack River (6th)
Nashua River (5+)
Ossipee River (5th)
Pemigewasset River (5th)
Pemigewasset River (6th)
Piscataquog River (5th)
Saco River (5th)
Souhegan River (5th)
Sugar River (5th)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Appendix I

MERRIMACK RIVER WATERSHED COUNCIL

MEMORANDUM

TO: Public Water Rights Study Committee

FROM: Jim MacCartney, MRWC Intern

RE: Administration of Water Use

DATE: August 24, 1992

The following outline seeks to encapsulate thoughts on some of the issues and questions which you may want to consider in investigating the appropriate framework for administering water use in New Hampshire. The outline was prepared to provide a foundation for discussion within the PWRSC regarding administrative options, and to stimulate further dialogue.

ADMINISTRATION

I. Authorizations and Appeals

A. Authorizations and/or appeals can be handled at different levels. It will be important to determine who decides what. Such decisions could be made by:

1. Legislature (now granting authorizations)

2. Executive branch
   a) board of interests
   b) agency commissioner (or designee)
   c) committee/commission (group of commissioners - e.g. DES, DRED, and F&G)

3. Governor and council.

B. A decision must be made as to what body, entity, or individual should authorize water use and withdrawals. To expedite the process, authorizations might be made by an individual such as a commissioner, division head or bureau chief.

C. A decision must also be made as to who should handle appeals. If one party is responsible for authorizing use,

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perhaps a second larger body e.g. a triad of commissioners might be responsible for appeals.

D. It will be important to consider what kind of support staff these decision making entities may require, whether it will be provided by an existing or a new agency, and how it will be funded. Some basin planning may be needed.

II. System of Administration

A. Components of the Existing System

1. Riparianism with legislative appropriation. Historically unconstrained. Presently, constrained.

2. No administrative rules

3. Water use reporting program (20,000+ GPD)

B. Options for a New System

1. Regulation without authorizations/permits, i.e., statute and administrative rules establishing standards, thresholds, and constraints.

2. Permitting system authorizing withdrawal/use of water in specified amounts. If a permitting system is chosen, then a decision must be made regarding its administration. The system could be administered by an existing agency. A possible alternative would be the creation of a new entity to oversee the program.

3. These two basic approaches assume that the broader policy decision has already been made to regulate water use in New Hampshire. Within each approach there are a wide range of alternatives - see MRWC summary of systems in other states (9/13/90).

4. Regardless of choice of regulatory system, a decision must be made as to whether a statewide, basin, site specific, or case by case approach should be used.

III. Level of Administration - Decision by Statute or Rule

A. A decision must be made as to which regulatory standards governing water use should be defined by statute and which by administrative rule.

B. A similar decision must be made with regard to implementation and enforcement of the regulatory system.

IV. Relationship to Existing Permits, Programs, and Decisions

A. It will be important to consider how a water use regulatory system will integrate with existing programs administered at the state level by DES, PUC, et al.

B. Consideration should be extended to include the relationship to permitting and licensing at the federal level by FERC, US Army Corps of Engineers, EPA, et al.