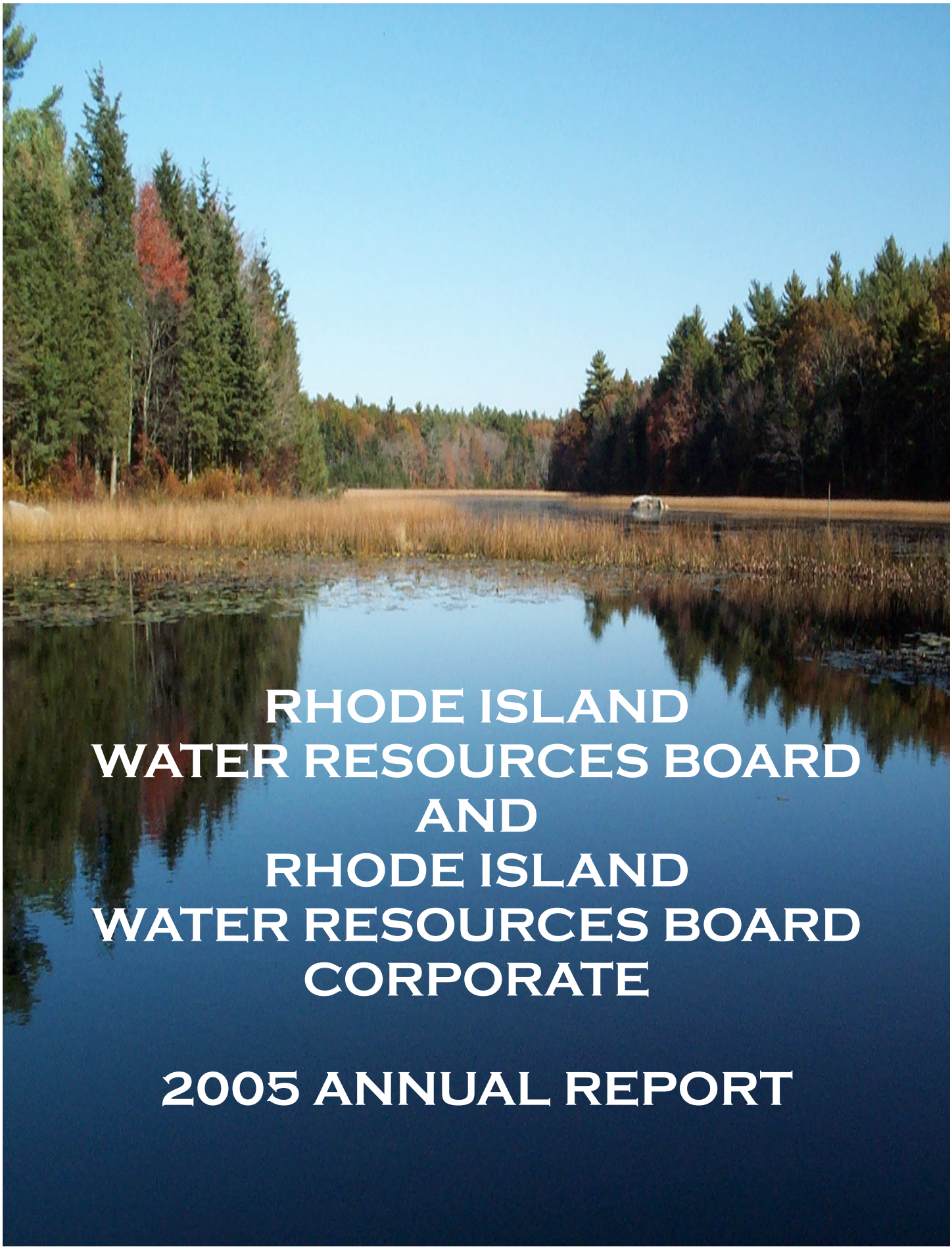


RHODE ISLAND WATER RESOURCES BOARD AND RHODE ISLAND WATER RESOURCES BOARD CORPORATE

2005 ANNUAL REPORT

Powers, Duties and Regulatory Authority

Rhode Island General Laws §46-15 *et seq.*

The Rhode Island Water Resources Board (WRB) has overall responsibility for management of the state's water resources. The primary mission is to plan for, protect and develop the state's water supply. The Rhode Island Water Resources Board Corporate (WRB/C) has the power to issue revenue bonds to protect ground and water resources, finance upgrading infrastructure, and to make grants to water suppliers for acquisition of land or interests therein and other actions that protect the quality of ground and surface water. The duties and responsibilities of the WRB/C are primarily defined in Rhode Island General Laws 46-15-1.

History

1964 - Rhode Island Water Resources Coordinating Board was established to acquire and protect 8400 acres primarily in West Greenwich and Coventry for the proposed Big River Reservoir Water Supply Project.

1967 – Rhode Island Water Resources Board Coordinating Board was renamed the "Rhode Island Water Resources Board" and empowered with broad legislative authority over statewide water supply.

1970 – Rhode Island Water Resources Board Corporate was established as a public corporation to develop, finance, lease, and construct water facilities and related infrastructure.

1990 – Concerns raised by the US Environmental Protection Agency, and environmental organizations placed the development of the Big River Reservoir project on indefinite hold.

1991 – Legislation (RIGL 46-15.3-5) established a water quality protection charge levied on water sales for the purpose of protecting the quality and safety of the public supply of water.

1993 - General Assembly enacts legislation stating the Big River Management Area could not be sold or developed. The property was designated as "Open Space" to maintain protection of this area for future water supply (RIGL 45- 37.20.1.and 45-36.1).

1996 - Big River Management Area Land Use Study is completed outlining a procedure to evaluate proposed uses of the land area (Revisions to land use study initiated in 2005).

1997 – The WRB assumed water supply system management planning duties previously carried out by the Rhode Island Department of Environmental Management.

1998 – The WRB contracts with the United States Geological Survey to conduct four scientific studies of the Big River Management Area to investigate ground water availability.

1999 - Legislation (RIGL 46-15.7) was passed clarifying the powers and duties of the WRB regarding withdrawal and use of water in the state. The WRB began investigating ground water sources for a future water supply.

2002 - The WRB convened a statewide committee to develop a comprehensive water management program to guide local management decisions—the Water Allocation Program Advisory Committee.

2004 – Legislation (RIGL 46-28) makes the Rhode Island Rivers Council as an "associated function" of the WRB.

2005 – USGS completed its series of four technical reports on groundwater availability in the Big River Watershed.

Chairman's & General Manager's Message

Dear Governor Carcieri, Members of the General Assembly, and Citizens of Rhode Island:

The Rhode Island Water Resources Board (WRB), the Rhode Island Water Resources Board Corporate (WRB/C) members and staff are pleased to submit our 2005 Annual Report. The report highlights the WRB's many accomplishments over the past year and presents a summary of our financial status. It also presents water-related issues that will challenge the State of Rhode Island into the future. Our goal as an agency and a state is to anticipate and invest in our public water supply needs and to strategically conduct scientific investigations required to make sound management decisions that will preserve our water resources for future generations.

Managing water supply to meet these important goals will require new actions combining innovative thinking and the WRB's comprehensive water inventory data to provide guidance for local development decisions, an activity that the WRB has embraced as one of its highest priorities. This will require new levels of regional cooperation between municipalities and water suppliers. This process will begin with the adoption of *Land Use 2025,* Rhode Island's State Land Use Policies and Plan (State Guide Plan Element 152) and subsequent updates of local Comprehensive Land Use Plans. With the State Land Use Plan, the WRB's watershed inventory and other management and technical tools, we will work to ensure that future development decisions are based on the availability of water and the need to conserve, protect and efficiently use the state's water resources.

To further our ability to monitor long-term trends in our water resources, and evaluate environmental issues we must invest in a long term network of stream gages and groundwater observation wells. We will continue to evaluate and invest in the future of the state's drinking water infrastructure. Our highest priority in this regard is the development of new a groundwater supply in the Big River Management Area. Also of paramount importance is engaging state, municipal and business leaders and the general public to build awareness of and to adopt long term water use efficiency programs and conservation education efforts to connect every Rhode Islander to their water resources. This effort will involve strong partnerships with many capable organizations including the WRB's *associated function,* The Rhode Island Rivers Council.

Beyond the boundaries of the state and into the future we will be challenged to anticipate and respond to the impacts of global climate changes, drought, and interstate land use and water issues.

We look forward to continuing to work with you in a new year to conserve, protect, develop and efficiently use the State's water resources to guarantee healthy watersheds and sufficient drinking water for future Rhode Islanders.

Daniel W. Varin, Chairman

Juan Mariscal, P.E., General Manager
Secretary-Treasurer

Rhode Island Water Management System

Management of the water resources in Rhode Island for current and future needs requires planning, knowledge of how much water is available, and policies to guide and manage the available resources. In addition to the facts and science, effective water resource management must include the community and regional utilities and related infrastructure necessary for treating and distributing water for use by Rhode Island's homes, agriculture, businesses, industries, and governmental facilities and for fire protection. These responsibilities of the WRB are supported by scientific, strategic, technical, and educational activities.

Science: Statewide Inventory of Water Use and Availability

In 2005, in cooperation with and predominately funded by the WRB, the US Geological Survey and the University of Rhode Island has completed an inventory and compiled statistics on the total quantity of water available in each major watershed and each municipality. Usage information has been quantified for each major purpose and the amount available to support new uses and users has been determined. In addition, water use coefficients that estimate the quantity used for housing, business, and agriculture have been identified. In the future, municipalities and water suppliers will be required to use these data in modifying their comprehensive plans and land use regulations so as to match water use with water availability in the state's ground water aquifers and surface water reservoirs. This will be done through the Comprehensive Planning and Land Use Regulation Act and its consistency provisions.

Planning and Policy: Statewide Water Management Planning

The WRB works with the Statewide Planning program to formulate policies and plans for water resources management. Land use, water supply, and transportation interact to exert a major influence on development. Water management decisions are guided by State Guide Plan (SGP) elements:

- SGP 721 Rhode Island Water Supply Policies (1997)
- SGP 722 Water Supply Plan for Rhode Island (1991)
- SGP 723 Water Emergency Response Plan (1993)
- SGP 724 Rhode Island Drought Management Plan (2002)

In addition, there are several other elements of the State Guide Plan such as the State Land Use Policies and Plan Element and the Rivers Classification and Policy Plan that relate to water management. Statewide Planning has scheduled review and update of these plans in 2006.

Water Conservation: Budgeting Our Water

Rhode Island receives an average of 39—54 inches of rainfall annually. While rainfall is plentiful, recharge is seasonal and thus only a portion of this is available for human use. It is important to remember that Rhode Island is one of the most densely populated states with over one million people living on slightly more than 1,045 square miles of land. Many water suppliers are finding it increasingly hard to meet essential public water supply needs for drinking, bathing, cooking, landscaping, and fire protection during peak summer periods. The economy of the state is inextricably linked to its resources, water being a critical resource. Thus, the management of Rhode Island's water resources is a priority for future growth and development.

"Water is life's matter and matrix, mother and medium. There is no life without water."
Albert Szent-Gyorgyi, Hungarian Biochemist, 1937 Nobel Prize for Medicine

Public Water Supply Systems

There are more than 56,000 community water systems providing water to the public in the United States. In Rhode Island there are 482 community water systems (as defined by the RI Department of Health (DOH)) that deliver 90 percent of the 136 million gallons per day (mgd) of the water used in the State. The other 10 percent is drawn from private wells and, in a few cases, directly from water bodies. Surface water sources supply 85 percent while ground water provides 15 percent.

The WRB, per Rhode Island General Law 46-15.3, requires all public and institutional water suppliers which obtain, transport, purchase, or sell more than 50,000,000 gallons per year to prepare, maintain, and implement Water Supply Systems Management Plans that describe the goals, operation and management of the water supply system. Plans are required to be updated every five years.

Planning and Management

The WRB evaluates water use and resources statewide focusing attention on the 28 largest public water supply systems. These systems range from the Providence Water Supply Board, currently averaging 69.3 mgd (to nearly 70% of the state's population) to the Jamestown system, currently averaging 0.20 mgd.

Public water supply system management plans are required to be coordinated with the municipal comprehensive community planning process per RIGL 46-15.3. As required, the WRB reviews local comprehensive plans, updates, and amendments to ensure proper water resource management for these plans.

During 2005, the WRB coordinated & reviewed local comprehensive plans, affordable housing plans & Infrastructure Replacement Plans in conjunction with the Statewide Planning Program, DEM, & DOH, & the Public Utilities Commission to ensure consistency between plans and programs. The WRB ensured implementation of WSSM plans and monitored supply systems through consistent communications, standard rules, regulations, & on-site visits. In addition, public information was assembled and distributed on residential water rates charged by major public water suppliers.

Water supply and demand are the most important factors in growth and development of Rhode Island's 39 cities and towns. More effective management and control of supply and demand can effectively establish a "new" source of water for the state's growing needs. Additional and more comprehensive efforts are needed by the major water suppliers and the WRB. These expanded efforts should address: statewide leak detection program, reuse and recycling of water and wastewater, statewide water conservation public education program, and expansion of the major user and residential use technical assistance programs.

Increased water use by residential users during peak demand periods, particularly in the summertime, is the biggest statewide water usage demand issue. Outdoor water use is particularly problematic to water suppliers. The residential demand objective is 65 gallons per person per day. Some water suppliers experience true residential use of more than 100 gallons per person per day.

"You never miss the water until the well runs dry."
Traditional Blues

Water Allocation Program

The RI General Assembly granted the WRB sole authority in 1999 to devise a fair and equitable allocation of water resources among users and uses to ensure that long-range considerations of water supply prevail over short-term considerations. RIGL 46-15.7 *Management of the Withdrawal and Use of the Waters of the State* defines the Water Allocation Program. Federal Funds, Rhode Island Capital Funds and General Revenue Funds support the program.

Based on recommendations submitted by the Water Allocation Program Advisory Committee, the WRB adopted six priority recommendations in 2004. Throughout 2005, the WRB worked to implement these primary recommendations:

Recommendation	Accomplishments
Water Use Policy	• Policy Adopted;
Watershed-based Approach	• Usquepaug/Queen, Big River water modeling studies completed; • Pawcatuck and Blackstone water modeling projects continued; • Big River wellhead protection & well site data assessment report ongoing through 2005 & scheduled for completion Spring 2006;
Expand Water Use Reporting	• Six of nine basin studies (an inventory of water use/ availability by watershed) published (all studies have been completed); • Design of a statewide water/wastewater database system completed; • Three water use and availability studies (West Bay, East Bay, Pawtuxet/ Quinnebaug) are scheduled for publication in 2006; • Statewide water use and availability summary completed Spring 2006; • Collected 2004 water use data;
Implementation Team	• Prepared draft reports (Technical, Guidance, & Watershed Primer);
Establish Streamflow Work Group	• Funded nine streamflow gages, and 20 groundwater observation wells; • Provided short-term annual funding for Pawtuxet River Gage after gage had been taken off line due to withdrawal of funds by another agency; • Streamflow gage information posted on USGS website with comprehensive data on stream flow; • Ongoing work with stakeholder groups to fund additional stream gages; • Continue a flow statistics program, assessment of low/high flow, and establish estimation techniques for ungaged river and stream sites during 2006;
Education & Outreach	• Completed public presentations of Blackstone, Pawcatuck, & Pawtuxet studies; • Water use and availability training for municipalities & water suppliers under design; • Under contract with USGS to complete water use and availability digital atlas; • Applied for EPA funding to conduct a statewide water education and conservation summit.

"In an age when man has forgotten his origins and is blind even to his most essential needs for survival water along with other resources has become the victim of his indifference."
Rachel Carson

Drought Conditions Monitoring

In 2005, Rhode Island experienced a wet spring followed by an abrupt decrease in precipitation during the summer months throughout the state. This created increased demands for water in all sectors, but most especially for agriculture. The WRB convened the Rhode Island Drought Management Steering Committee in August due to the low precipitation and other signals from key indicators of a possible near-term drought situation. The Committee met through October to review conditions, and to determine necessary actions and responses to the ongoing lack of precipitation. Water suppliers throughout the state reported increasing water usage restrictions as demand increased. Late September and early October rains brought relief and an over-abundance of water to Rhode Island, recharging both ground and surface water supplies. These rains also increased runoff and overflow of streams, rivers, and storm drains. Stream gage monitoring of rivers which had recorded new lows in August now spiked new highs in October with localized flooding recorded throughout many areas of the state.

While historical weather conditions in southern New England remain variable, the projected global climate change theorists project wider variations in the weather – increasing seasonal droughts and flooding conditions. Rhode Island must be ready for these weather extremes which have such a strong and direct effect on the available water supply.

Water Use Reporting and Management Information Systems

Management Information Systems supports the mission and programs of the WRB and the WRB—Corporate. The agency has made a substantial investment in core data systems and Geographic Information Systems (GIS) for both its water and property management programs.

A water resources and use inventory is basic to a water management system (RIGL 46-15). The WRB is engaged in an effort to quantify the capacity of water sources, water used and water disposed of within each watershed, basin, and subbasin within Rhode Island. This long-term, collaborative effort will inform water decisions at all levels. The WRB will work with suppliers to improve, maintain and distribute the data into the future.

2005 Accomplishments

- Entry of Rhode Island water use and availability data (1995-1999) into the US Geological Survey New England Water Use Database (NEWUDS);
- Completed design of the Water Supply System Management Plan database template
- Published water use and availability reports for six of nine watersheds;
- Contracted USGS to update 2004 water use and disposal data, develop water data and mapping tools for municipal use;
- Designed data entry form for monthly water data reporting;
- Contracted with URI to update the GIS coverage for water district boundaries;
- Expanded GIS capacity;
- Assisted RI Rivers Council with the design of their website;
- Maintained internal computer environment, i.e. network administration, hardware maintenance, tech support for users, and integration of software applications;
- Maintained the WRB Website.

Typically, households consume at least 50% of their water by lawn watering.
Inside, toilets use the most water, with an average of 27 gallons per person per day.
During the summer months, Rhode Island, water consumption more than doubles.

Water Supply System Assistance Program

Since 1983, the WRB has administered a program to finance up to 50% of design and construction costs for new public water supply facilities. This has benefited 14 water districts and funded 20 major system improvements. The program is a cooperative model between state government and local water suppliers. The program includes funds for projects to meet the standards of the Safe Drinking Water Act, for other infrastructure needs and for emergency interconnections between water systems. For example, in Providence, the program provided funding to address distribution problems, construct storage and pumping facilities and modify the distribution system for the new Fruit Hill Extra High Service System, located in the Towns of North Providence and Smithfield.

Funding for this program has been provided through periodic general obligation bonds passed by statewide voter referendum. In 2004, voters authorized the State of Rhode Island to issue general obligation bonds in an amount not to exceed $10 million dollars. These funds were to provide up to $5 million for emergency interconnections and up to $5million for the Bristol County Water Authority projects.

Bristol County Water Authority (BCWA)

Several years ago, using state general obligation bond funds, the WRB—Corporate funded the East Bay Bristol County Pipeline to provide water to the East Bay. This interconnection to the Providence and East Providence water systems has provided relief for the supply problems for Towns of Barrington, Bristol and Warren.

In accordance with RIGL 46-15.5, the WRB has continued to work with BCWA on the rehabilitation of the aging supply, transmission, and treatment facilities. The 2004 General Obligation Bond funds are being used to rebuild the Shad Factory pipeline thus allowing Rhode Island to preserve water rights to BCWA reservoirs located in Massachusetts.

BCWA Shad Factory Pipeline

Emergency Interconnection Program

The basic purpose of the Emergency Interconnection program is to establish a statewide system of emergency water system interconnections to provide redundancy of supply and the ability to address water emergencies rapidly and efficiently across water supply districts. In 2000, the WRB completed a study to asses risk statewide and to establish much needed emergency interconnections between systems.

The program provides matching funds (50% for a two way connection and 25% for a one way connection). As

"If the grass is greener on the other side of the fence, you can bet the water bill is higher."
Unknown

noted, the program is funded with general obligation bonds funds. The goal is to continue until all water supply systems in the state have secondary water supply sources available should an emergency occur.

2005 Accomplishments

- Three connections are under construction or under agreement representing grants of $5 million dollars:
    - North Tiverton Fire District completed the interconnection with Fall River, Massachusetts providing the ability to supply redundancy to water from the Stone Bridge Fire District treatment plant at Stafford Pond:
    - South Kingstown - United Water of Rhode Island are working on an interconnection: and
    - The Martin Street project connecting Lincoln and Cumberland is scheduled for completion in 2006.

Rhode Island Public Drinking Water Protection Program—Phase III

Protecting the quality and safety of the public drinking water supply—not only for today but for future generations— is an on-going challenge.

The state levies a surcharge on water that is collected by the major water suppliers. A portion of the funds are used by Providence Water Supply Board for protection of the Scituate Watershed. The remainder of the funds are redistributed by the WRB proportionately to their collection to the other 17 suppliers which are in the program.

The primary protection activity requires participating water suppliers to spend a minimum of 55% of their funds for land acquisition. Eligible water quality improvements include: non-point source pollution or runoff prevention measures, treatment facility upgrades, water main cleaning or relining, and the purchase of water conservation kits or watershed signage. During Phase I & II of the program: over $18,343,382 was disbursed to protect 2,410 watershed acres and fund 49 water quality improvement projects. Phase III of the Public Drinking Water Protection Program began in November 2002 and ends on June 30, 2006. To date, for Phase III over $3.6 million have been used to protect 174 watershed acres and fund 15 water quality improvement projects. A popular aspect of the program is the delivering of the monies to the communities by staging check presentation events with local dignitaries. All Phase III funds should be expected to be committed by June 30, 2006.

2005 Accomplishments:

- $842,266 was used for protection of 34 acres of watershed lands through land acquisition or purchase of development rights by four water suppliers (Harrisville Fire District, Town of North Kingstown Water Department, Stone Bridge Fire District and United Water—Rhode Island);
- $891,431 was used for water quality improvement projects for four water supply districts (Kent County Water Authority, City of Newport Water Department, Pawtucket Water Supply Board and Town of Westerly Water Department);

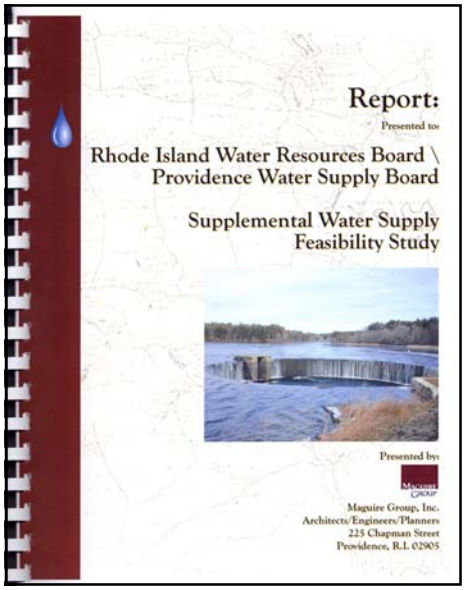
"High quality water is more than the dream of the conservationists, more than a political slogan; high quality water, in the right quantity at the right place at the right time, is essential to health, recreation, and economic growth."
Richard Bangs and Christian Kallen, Rivergods, 1985

Former water supply lines at Carr Pond

A Great Egret Along the Chipuxet River

Statewide Risk Assessment: Supplemental Water Study

The Supplemental Water Supplies and Feasibility Assessment program identifies and evaluates the risks to major water suppliers in the event of a catastrophic failure resulting in the need for a supplemental water supply. The evaluation determines the quantity of water required from the supplemental or alternate water source and identifies potential methods for getting the water to where it is needed. This information is also used to support the Emergency Interconnection, Water Allocation, and the Water Supply Systems Management Plan programs.



Phase I focused on those systems served by the Providence Water Supply Board. This study has been completed and has identified sources and systems capable of augmenting up to 40 million gallons of water per day in an emergency situation. The study also identified a combination of nearby water system interconnections and new or abandoned groundwater sources to sustain emergency water demand for over 600,000 people served within the central portion of the state in case of failure in the Providence Water Supply Board Reservoir system. Phase II of the study, initiated in FY2005 extends to the state's remaining water supply service areas.

During 2005 a risk and needs assessment for residential and commercial/ industrial build-out analyses as well as GIS mapping were developed. The Statewide Supplemental Water Study is scheduled to be completed in FY2006.

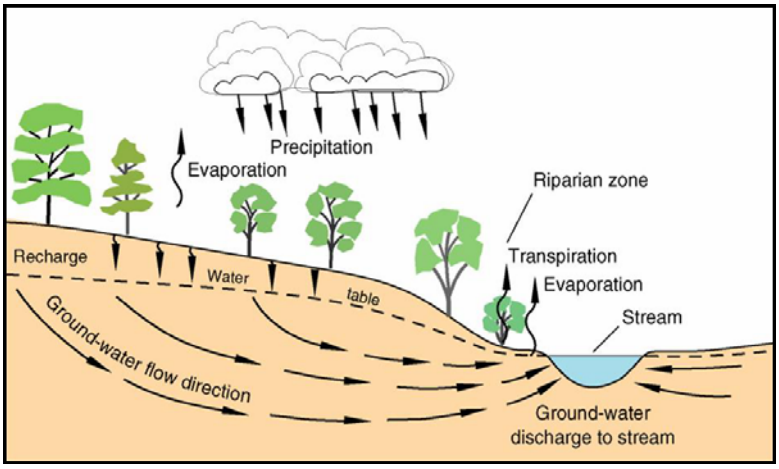
"All the water that will ever be is, right now."
National Geographic, October 1993

Groundwater Resources

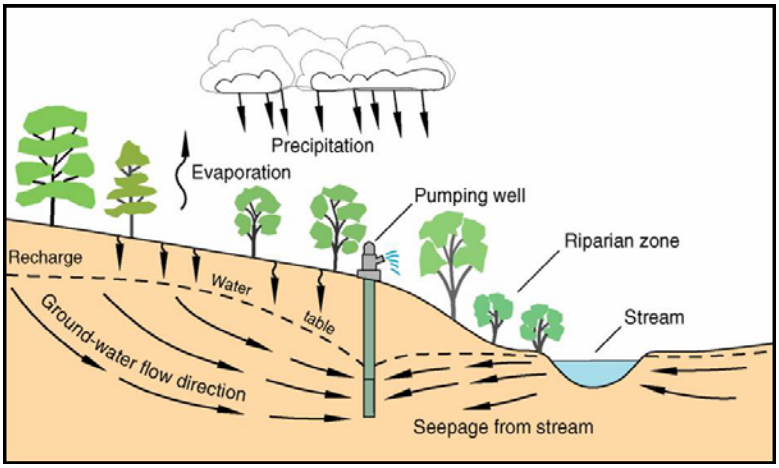
As early as the 1970's, the WRB recognized the need to provide redundant, alternative and/or additional supply in those areas of the state that are groundwater dependent and growing rapidly. The two main purposes of the Groundwater Resources Protection Program are to preserve and protect groundwater resources to ensure safe quality drinking water will be available as needed for future generations.

In cooperation with the US Geological Survey, the WRB has identified 33 potential high yield wells. Each well is capable of producing at least one million gallons of water per day. These well sites are located in the Wood-Pawcatuck watershed, a sole source aquifer in Washington County.

The Open Space, Recreation, Bay and Watershed Bond approved by the voters in November 2004 provides $8 million for the WRB's program to acquire land in South County for protecting future groundwater well sites. In 2005, the WRB continued well site research and investigations, coordinated site appraisals with the State Property Committee on proposed actions, conducted preliminary negotiations with site owners, and processed approvals with State Properties Committee for seven sites. The WRB intends to enter into purchase and sales agreements for several sites in the next twelve months.



Relationship Between Groundwater and Surface Water: Natural Conditions

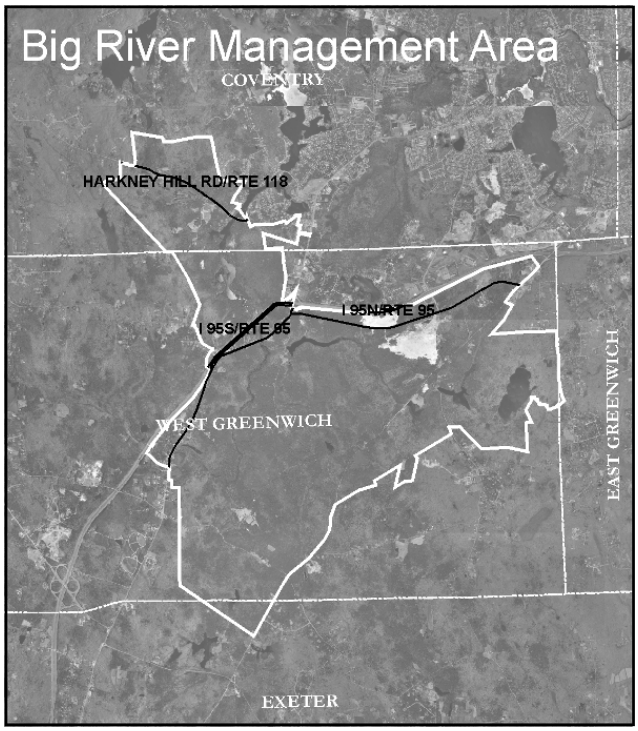


Relationship Between Groundwater and Surface Water With Well

"Unless we practice conservation, those who come after us will have to pay the price of misery, degradation, and failure for the progress and prosperity of our day."
Gifford Pinchot (1865 – 1946), America's first professionally trained forester

Big River Management Area

The 8,400-acre Big River Management Area (BRMA) is the one of the largest, publicly owned, land parcel in Rhode Island with borders extending through portions of West Greenwich, East Greenwich, Coventry, and Exeter. Mostly undeveloped, the land was originally obtained in the 1960s for public water supply purposes. By statute, the BRMA is presently managed as "open space" to protect the land and ground and surface waters for use as a future water supply.



The 1996 Big River Management Area Land Use Study (presently being revised) guides activities on the property. This report established policies and regulations for uses (such as wildlife management, sustainable forestry, historic preservation, environmental education, and passive recreation) to avoid any adverse impacts on the quality and quantity of a future water supply developed in the BRMA.

The WRB works cooperatively with local, regional, and state agencies to control land use within the watershed and groundwater recharge areas. Today, the WRB maintains leases on 37 residential properties and four commercial properties.

Trash dumping at BRMA continues to be a major problem. Recent annual cleanups have yielded 70 to 80 tons of trash and thousands of tires.

The USGS, as part of its cooperative agreement with the WRB, has completed its four reports on the groundwater availability in the Big River Management Area. That information provides the basis for the WRB to define the groundwater development program for the BRMA. Additional activities in 2006 by the WRB are expected to be initiated to further the establishment of a public water supply from these groundwater resources.

2005 Accomplishments

- Completed BRMA property boundary survey;
- Through a cooperative agreement with the US Geological Survey, completed groundwater studies to support supplemental water supply strategic planning initiatives;
- Initiated Phase VI selective forest cutting program on the north side of Hopkins Hill Road;
- As part of the Land Management Plan Update, Brown University completed an inventory of the natural communities;
- Continued law enforcement, fire, and military training exercises and presence;
- Completed annual residential code inspections and state-mandated lead assessment training and inspections;
- Completed third five-year fair market appraisal and executed new leases with tenants in existing houses in the BRMA;
- Received a $200,638 Natural Resources Conservation Service grant for the restoration of fields & grasslands;
- During the annual BRMA Cleanup, volunteers removed 70—80 tons of garbage and three flatbeds of tires;
- Executed a lease with the Town of Coventry for their construction of a softball field & permitted two Town road race events;
- Continued to work with AMGEN, a bio-tech manufacturer in West Greenwich, to restore the temporary leased parking lot area;
- Continued to work with local towns to maintain roads and bridges located within the BRMA property.

"The frog does not drink up the pond in which he lives. "
Native American Saying

Education and Outreach

Education and outreach activities translate and provide scientific water resource information to decision-makers and the general public. Water resource development, use, conservation and protection education is fundamental to sustain our drinking water resources for future generations. Formal and informal education to youth and adults on the availability and use of the state's water resources is needed. Outreach activities to municipalities, water suppliers, and citizens must occur to provide the factual information provided by statute, scientific studies, and state policy, rules and regulations. For example, the relationship between ground and surface water must be understood so well pumping does not deplete surface water streamflow causing harm to aquatic life.

2005 Accomplishments:

- Held Public Drinking Water Protection Award Ceremonies with municipal officials;
- Participated in Rhode Island Water Works Association Drinking Water Week education activities (May 2-6, 2005); member of Planning Group ;
- Nominated Wakefield Elementary School teacher for EPA Environmental Educator Award and attended award ceremony;
- Staffed Rhode Island League of Cities and Towns Annual Conference Statewide Planning Exhibit Booth;
- Partnered with the Rhode Island Economic Policy Council to deliver "Balancing Water Availability and Land Use Planning in the Lower Blackstone River Valley workshop" April 28, 2005,
- Collaborated with the University of Rhode Island Master Gardener program:
    - Authored *Water and Sustainable Gardening,* University of Rhode Island Cooperative Extension Master Gardener Training Manual, 2005; (WRB staff: Beverly O'Keefe*);*
    - Designed and delivered "Rainwater Harvesting and How to Build a Rain Garden" conservation workshop, (WRB staff: Beverly O'Keefe);
    - Developed and delivered "Linking Water Use to Local Decisions" workshop at the Rhode Island Land and Water Summit, March 12, 2005, (WRB staff: Kathleen Crawley and Beverly O'Keefe).
- Reviewed environmental education proposals:
    - Reviewed NOAA Office of Education and Sustainable Development Environmental Literacy Proposals, Member of Review Panel, Silver Spring MD, June 13-16, 2005;
    - Reviewed North American Association for Environmental Education and NOAA Bay Watershed Education and Training Project WET program proposals;
- Mentored Brown University Master's Degree Candidates on water supply system management plan studies;
- Generated press releases, conservation education and website materials on an ongoing basis.

Rhode Island Rivers Council

The Rivers Council (RIRC), established in 1991 by statute 46-28, became an *associated function* of the WRB in 2004. RIRC was established to coordinate, oversee, and review efforts to improve and preserve the quality of rivers and to develop plans to increase the use of river areas and to support and strengthen grassroots watershed organizations as local implementers of the plans. With the RI Land Trust Council the RIRC hosts events such as the annual Land and Water Conservation Summit and the Watershed Stewards Program that provides citizens watershed management training. In 2005, the RIRC began working with the National Park Service Rivers and Trails program on a water trail project to promote recreational uses of rivers and connect the rivers to Narragansett Bay. The RIRC publishes a separate annual report and additional information can be found at www.ririvers.org. Formally recognized watershed councils include:

- Blackstone River Watershed Council
- Buckeye Brook Coalition
- Friends of the Moshassuck
- Kickemuit River Watershed Council
- Narrow River Preservation Association

- Pawtuxet River Authority & Watershed Council
- Salt Ponds Coalition
- Saugatucket River Heritage Corridor Coalition
- Wood-Pawcatuck Watershed Association
- Woonasquatucket River Watershed Council

"If there is magic on this planet, it is contained in water."
Loran Eisely, The Immense Journey, 1957

Rhode Island Water Resources Board
Detailed Listing of Expenditures as of June 30, 2005

Account	BOC	FY 2001 Actual	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual
2835-10000						
Classified Permanent	210	395,230	422,764	468,348	397,502	430,136
Classified Permanent Overtime	215	5,000	82			
Unclassified Permanent	230	88,895	99,042	111,225	114,832	18,479
Employees Retirement	280	38,554	29,169	44,555	46,277	47,748
FICA	281	36,591	38,886	43,045	37,521	34,101
WC Self Ins. Employer Assess.	283	18,772	19,828	22,024	19,469	17,785
Employee Cost Retire Health	294	4,808	4,524	6,067	6,298	7,998
Medical	295	48,755	48,079	57,775	69,221	64,091
Dental	297	4,178	3,995	4,497	4,815	4,673
Vision	298	550	541	1,305	1,208	1,011
Salaries and Benefits		**641,333**	**666,910**	**758,841**	**697,143**	**626,021**
Architect/Engineering Services	262	40,550	75,000			
Bldg & Grounds Maint.	264	7,200	7,271	7,200	7200	6,600
Security Services	265		2,858	2,541	2,826	889
Management/Audit	267	20739	63,674	8,721	31,660	156,563
Contractual Services		**68,489**	**148,803**	**18,462**	**41,687**	**164,052**
Personnel Services		**709,822**	**815,713**	**777,303**	**738,829**	**790,072**
Postage	321	1,538	1,522	1,093	1,343	1,129
Telephone	322	707	1,133	230	825	
Supplies	323	7,123	3,884	4,448	4,818	2,302
Dues and Subscriptions	324	2,139	3,019	1,216	319	279
Insurance	326	81,939	96,622	93,440	1,663	96,364
Centrex Telephone	327	6,716	6,730	6,589	5,823	5,604
Printing	331	2,009	1,167	1,513	1,611	1,137
Advertising	332	982	939	484	332	1,671
Mileage In	341	6,067	5,905	5,073	5,014	5,042
Out of State Travel	342	2,046		1,787		
Other Travel	343	495	446	832	416	416
Repair - Buildings and Structures	361	769	(5,451)	3,528		
Repair Highways	362	10,000	10,000	7,000	7,000	7,000
Other Repairs	363	2,926	1,458	2,414	1,384	1,499
Replace Office Equipment	378					
Rental Property	381	58,894	59,859	61,027	80,099	73,302
Rental Equipment	382	2,172	3,579	15	2,112	2,323
Fuel Oil	402	1,074	579	1,421	881	1,313
Electricity	409		10			
Highway & Landscaping Exp.	436	356	15		46	
Central Services	438	3,816	6,389	8,565	5,506	2,822
Education	441	1,830	55			1,220
Computer Supplies	442	2,738	4,818	2,968	1,044	37
Computer Software	445	892	24	285	374	2,130
Other	455	1,638	2,073	1,441	1,882	1,976
Other Equipment	659	745				
Computer Equipment	660	5,949	1,200	1,272	1,418	4,963
Total Operating Expenses		**205,560**	**205,975**	**206,641**	**123,910**	**212,529**
Education Grant	582	40,939	45,156	44,453	43,123	35,036
Grants	589	5,276	5,253	3,461	4,960	3,512
Supp Pension	477	612	51			
Grants and Benefits		**46,827**	**50,460**	**47,914**	**48,083**	**38,548**
Total 2835-10000		**962,209**	**1,072,148**	**1,031,858**	**910,822**	**1,041,150**
Capital Development Funds						
BRMA Maintenance		89,958	82,425	49,208	92,447	92,241
BRMA Water Survey		112,261				
Water Allocation Plan		464,867	266,304	97,405	69,782	
Ground Water Protection		83,334	14,441			
Supplemental Water			54,487		39,316	
Total Capital Development		**750,420**	**417,657**	**146,613**	**201,545**	**92,241**
Restricted Receipts						
Water Allocation Plan			79,334	504,519	161,635	633,947
Supplemental Water			16,970	92,036	194,771	180,712
Water Development				172,500		
Operating Support					181,570	33,614
Total Restricted Receipts		**0**	**96,304**	**769,055**	**537,975**	**848,273**
Federal Funds						
Water Development					553,805	606,874
Total Federal Funds		**0**	**0**	**0**	**553,805**	**606,874**
Agency Total		**1,712,629**	**1,586,109**	**1,947,526**	**2,204,147**	**2,588,538**

Rhode Island Water Resources Board Corporate
Balance Sheets - June 30, 2005, 2004, 2003, and 2002

	FY 2005	FY 2004	FY 2003	FY 2002
Assets				
Cash and Cash Equivalents	1,222,136 $	1,024,841 $	918,308 $	2,258,222
Cash - allocated to Phase III	4,894,926	6,097,850	7,184,836	
Cash - allocated to Phase II			320,000	
Investments	1,852,933	1,836,643	10,007,891	5,626,373
Office Equipment	4,166	5,555		
Accounts Receivable	194,983	155,828	217,454	254,390
Lease Receivable	4,730,000	5,555,000	6,345,000	7,100,000
Accrued Interest Receivable	18,137	22,581	74,294	63,641
Due from Water Resources Board		8,221	8,221	75,964
Bond Issuance (net of amortization)	284,763	319,648	636,615	431,691
Total Assets	$ 13,202,044 $	15,026,167 $	25,712,619 $	15,810,281
Liabilities and Fund Equity				
Liabilities:				
Due to State of Rhode Island	$ $	$	$	1,500,000
Accounts Payable	2,366	3,167	10,294	1,587
Lease Payable	3,981	5,671		
Deferred Revenue	715,286	723,229	721,545	796,684
Deferred Watershed Grant			320,000	
Accrued Interest Payable	186,476	203,796	373,454	262,107
Bonds Payable	14,530,000	16,070,000	25,265,000	15,345,000
Excess Cost of Refunding	(382,898)	(459,477)	(536,057)	(612,637)
Refunding Premium	81,313	91,817	102,320	43,372
Total Liabilities	15,136,524	16,638,203	26,256,556	17,336,113
Fund Equity:				
Retained Earnings:				
Reserved	(2,301,316)	(2,037,070)	(1,061,970)	(2,120,566)
Unreserved	366,836	425,034	518,034	594,734
Total Fund Equity	(1,934,480)	(1,612,036)	(543,936)	(1,525,832)
Total Liabilities and Fund Equity	$ 13,202,044 $	15,026,167 $	25,712,619 $	15,810,281

Rhode Island Water Resources Board Corporate
Statement of Revenues, Expenses and Changes in Retained Earnings
For the Fiscal Years ended June 30, 2005, 2004, 2003, and 2002

	FY 2005	FY 2004	FY 2003	FY 2002
Operating Revenues				
Rental Income	$ 249,137 $	264,922 $	310,068 $	333,153
Water Quality Protection Charge	1,213,506	1,085,934	1,252,599	1,311,753
Total Operating Revenues	$ 1,462,643 $	1,350,856 $	1,562,667 $	1,644,906
Operating Expenses				
Administrative Expenses	$ 11,195 $	29,138 $	53,261 $	17,455
Depreciation Expense	1,389	1,389		
Amortization Expense	106,044	106,044	124,926	112,819
Total Operating Expenses	118,628	136,571	178,187	130,274
Operating Income	1,344,015	1,214,285	1,384,480	1,514,632
Non-Operating Revenues (Expenses)				
Watershed Protection Grants	(1,224,871)	(1,086,987)		(158,893)
Interest Income	168,960	222,342	288,640	330,477
Capital Gains		(95)	(6,095)	32,105
Interest Expense	(610,568)	(992,864)	(1,040,952)	(852,885)
Total Non-Operating Revenues (Expenses)	(1,666,459)	(1,857,604)	(758,407)	(649,196)
Net Income (Loss)	(322,444)	(643,319)	626,073	868,436
Retained Earnings (Deficit) July 1	(1,612,036)	(968,717)	(1,525,832)	(2,394,268)
Adjustments to Prior Year			355,823	
Retained Earnings June 30, 2005, 2004, 2003, and 2002	$ (1,934,480) $	(1,612,036) $	(543,936) $	(1,528,832)

Rhode Island Water Resources Board Corporate
Statement of Cash Flows
Increases (Decreases) in Cash and Cash Equivalents
For the Fiscal Years ended June 30, 2005, 2004, 2003, and 2002

	FY 2005	FY 2004	FY 2003	FY 2002
Cash Flows from operating activities				
Cash received for:				
Rents	1,074,137	1,056,606	990,229	879,057
Water Quality Protection	1,182,572	1,147,560	1,357,277	1,455,319
Cash Payments for Goods and Services	(11,996)	(36,265)	(44,553)	(26,874)
Net Cash provided by operating activities	2,244,713	2,167,901	2,302,953	2,307,502
Cash Flows from noncapital financing activities				
Due to State of Rhode Island	(8,221)		(1,144,177)	
Reallocated Watershed Grants	21,947			
Deferred Watershed Grants		(320,000)	320,000	
Watershed Protection Grants	(1,224,871)	(1,086,987)		(155,893)
Net Cash Used for Noncapital financing activities	(1,211,145)	(1,406,987)	(824,177)	(155,893)
Cash Flows from capital and related financing activities				
Acquisition and construction of capital assets				
Proceeds on bond issuance			11,193,837	
Principal paid on revenue bonds	(1,540,000)	(9,195,000)	(1,465,000)	(1,235,000)
Interest paid on revenue bonds	(627,888)	(1,145,535)	(929,604)	(871,365)
Lease payments	(1,692)	(1,273)		
Net Cash Used for capital and related financing activities	(2,169,580)	(10,341,808)	8,799,233	(2,106,365)
Cash Flows from investing activities				
(Purchase) sale of investment securities	1,163,081	9,561,248	(11,889,515)	(1,477,161)
Extraordinary loss on extinguishment		(142,700)		
Net (decrease) in fair value of investments		(95)	(6,095)	32,105
Interest on investments	170,226	268,974	277,687	318,934
Net cash provided by investing activities	1,333,307	9,687,427	(11,617,923)	(1,126,122)
Net increase in cash and cash equivalents	197,295	106,533	(1,339,914)	(1,080,878)
Cash and cash equivalents at beginning of year	1,024,841	918,308	2,258,222	3,339,100
Cash and cash equivalents at end of year	1,222,136 $	1,024,841 $	918,308 $	2,258,222
Reconciliation of operating income to net cash provided by (used for) operating activities				
Operating income	1,344,015 $	1,214,285 $	1,384,480 $	1,514,632
Items in net income not effecting cash and cash equivalents:				
Depreciation Expense	1,389	1,389		
Amortization expense	106,044	106,044	124,926	112,819
Increase (decrease) in cash and cash equivalents from changes in assets and liabilities:				
Accounts receivable	(39,155)	61,626	36,936	78,639
Due to State of Rhode Island				140,892
Due from Water Resources Board	8,221		67,743	(75,964)
Lease receivable	825,000	790,000	755,000	715,000
Accounts payable	(801)	(7,127)	8,707	(9,420)
Deferred revenue		1,684	(74,839)	(169,096)
Net cash provided by operating activities	2,244,713 $	2,167,901 $	2,302,953 $	2,307,502

Rhode Island Water Resources Board
Rhode Island Water Resources Board Corporate

Public Members

Daniel W. Varin, P.C.P. - Chair
William Penn - Vice Chair
Jon Schock
Francis Perry, P.E.
Timothy J. Brown, P.E.

Other Members

Rhode Island Agricultural Council
Designee: William M. Stamp III

Ex Officio Members

Beverly E. Najarian, Director, Rhode Island Department of Administration
Designee: Robert Griffith, Ph..D., Chief, Office of Strategic Planning, Monitoring & Evaluation.

David R. Gifford, M.D., M.P.H., Director,
Rhode Island Department of Health
Designee: June Swallow, P.E., Chief, Office of Drinking Water Quality.

W. Michael Sullivan, Ph.D., Director,
Rhode Island Department of Environmental Management
Designee: Alicia Good, P.E., Assistant Director, Office of Water Resources

Michael McMahon, Executive Director,
Rhode Island Economic Development Corporation

Water Resources Board members are also members of the Board Corporate.

Staff

Juan Mariscal, P.E., General Manager, Secretary/Treasurer
Kathleen M. Crawley, Staff Director
Thomas R. Walker, P.E., Supervising Engineer (Retired: October, 2005)
Brian J. Riggs, Chief Business Officer
Beverly O'Keefe, Supervising Planner
Connie McGreavy, Programming Services Officer (until April, 2005)
Elaine A. Maguire, Big River Management Area Property Manager
William D. Riverso, Programming Services Officer
Rob Christina, Information Services Officer
Tracy A. Shields, Personnel Aide

WRB Legal Counsel:	Rebecca Partington, Esq. Deputy Chief – Civil Division, Office of the Attorney General
WRB—Corporate Legal Counsel:	Armando O. Monaco, II, Esq.
Bond Counsel:	Normand G. Benoit, Esq., Partridge, Snow & Hahn Karen Grande, Esq. Tillinghast, Licht, Perkins, Smith & Cohen
Financial Advisor:	First Southwest Company
Trustee:	J. P, Morgan Trust Company
Auditor:	Casale, Caliri & Jaroma, LLP

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