

Water Allocation Program Development

Committee Missions, Deliverables and Recommendations for Phase I

Water Allocation Program Advisory Committee (WAPAC)

Statement of Purpose: Develop a set of recommendations for a comprehensive, statewide water allocation program through the subcommittee process for consideration of the Rhode Island Water Resources Board, consistent with the following overall mission and guiding principles.

Deliverable: Final Report to the RI Water Resources Board that prioritizes recommendations for short, intermediate and long term program development and implementation. (December 2003)

Water Use Reporting Committee

Mission: Review water use data, identify gaps in the two pilot basins and recommend methods for addressing those gaps.

Deliverables:

- ❖ An evaluation of programs in other states and their relation to an overall allocation approach
- ❖ A written proposal for a water use reporting system, or other approaches which:
 - Evaluate program need, the menu of options and the preferred approach
 - Assess the sufficiency of existing data
 - Estimate the costs and timing associated with program development, implementation and maintenance

Recommendations:

1. Require “major” public suppliers (those required to submit WSSMPs) to report monthly water withdrawal data annually on a calendar year basis. The committee felt that this could be accomplished in the short term and that these data are available now.
2. Require “major” public suppliers to breakdown and report water use by category (domestic, commercial, industrial, institutional, agricultural, “nonaccount”) quarterly, based on a calendar year. There was recognition that this may take time to implement as systems update software/capacity for reporting. The Committee recommends implementation by 2010.
3. Require water-use reporting for use above the “major user” threshold of 3 million gallons per year (>8,200 gallons/day or >740,000 gallons over a three month period) for all self supplied users as well as “minor” suppliers statewide. Voluntary reporting of metered data or other accurate methods of measurement accepted by the Water Resources Board would commence in January 2005 and would become mandatory by January 2007.
4. Conduct research to develop a range of domestic coefficients for water use that reflect seasonal variability, domestic irrigation systems (sprinklers), lawn size, age (vegetation), to

assist local land use decisions on water availability for future subdivisions. Public water system studies and data as well as a “metered study” for self-supply with/without sprinklers, with varying lot sizes were offered as potential approaches to improving data and establishing a range of coefficients.

Stream Flow Standards Committee

Mission: Develop instream flow standards, including site-specific standards that allow for maximum sustainable use of the State’s waters and are protective of the biological, chemical and physical integrity of those waters.

Objectives:

- Establish an interim instream flow standard applicable to new withdrawals and for planning purposes.
- Determine acceptable methodologies for measurement and estimation of instream flows to establish site-specific standards.
- Identify data gaps in stream flow gaging.
- Establish scientific framework to create long-term watershed specific instream flow protocols.
- Identify funding needs and sources
- Develop recommendations on implementation of instream flow standards.

Deliverables:

- ❖ A proposal for an interim Rhode Island instream flow standard(s) along with an assessment of need and proposed application.
- ❖ Recommendations for developing long-term site-specific standards, an identification of data, priority areas, and funding needs for implementation.

Recommendations: *(Full text available)*

1. Watershed specific instream flow protocol is the preferred approach for establishing instream flow standards in Rhode Island. The Subcommittee recognizes that this will take several years to develop and implement. Consequently, the Subcommittee recommends the use of a simplified reconnaissance level method in the interim. The interim method would only be used for new withdrawals and planning purposes.
2. As watershed specific standards are being developed, the subcommittee recommends use of an interim standard for new withdrawals and planning purposes. The subcommittee has considered a wide range of alternatives, and has found none substantially superior to the RIABF interim standard proposed by DEM. The subcommittee wants to further evaluate the RIABF as the interim standard.
3. Site-specific empirical stream flow methodologies should continue to be accepted as an alternative to the interim method. The R2 Cross and Wetted Stream Perimeter Methods appear to be acceptable methodologies however, the subcommittee recommends the establishment of guidance in application of these methodologies.

4. The Subcommittee recommends development of a watershed specific standard that quantifies the relationship between instream flow and critical stream resources and acknowledges existing uses. The subcommittee recognizes that these recommendations are costly and recommends that funding should be made available for this process.
5. The Subcommittee recognizes that the stream gaging network needs to be improved and that stream gaging is a vital part of managing stream flow. The subcommittee recommends a statewide stream gaging network that has at least one long-term continuous gage for each 12-digit HUC delineation.
6. The Subcommittee recommends that during periods of drought or water emergency, use of water, normally within protected minimum flows or levels, be allowed as necessary to protect public health and safety and to prevent widespread economic harm, provided every precaution has been taken to prevent permanent impairment of the biological, chemical, or physical integrity of the water source

Priority Uses Committee

Mission: The mission of the Water Allocation Priority Uses Subcommittee is to produce a set of dynamic criteria that may be used by the Water Resources Board in developing standards for uses of waters of the state. The criteria should be informed by existing state policy and federal and state law and shall be tailored to the degree supportable by existing data as well as to the unique characteristics of watersheds and basins.

The subcommittee shall develop these criteria based upon a review of:

- Existing laws, regulations and policies of the State of Rhode Island that pertain to priorities for all uses of water in the State, including but not limited to: drinking water supply, fire protection, agriculture, aquaculture, industry, preservation of the environment, and recreational use; and
- Existing and projected needs for all uses of the State's waters.

Deliverables

- ❖ Compilation and assessment of relevant statutes, WSSMP content related to tiered restrictions and an analysis of current uses by basin beginning with the two available basin studies.
- ❖ Proposed criteria and hierarchy for priority uses

Recommendations: *(Full text available)*

The Subcommittee on Priority Uses recommends that the Water Resources Board adopt the following guidance:

1. Preference, but not exclusive use, should be given to allocation up to the safe yield as currently defined in § 46-15.7-2(3) and further defined in State Guide Plan Element 722 *Water Supply Plan for Rhode Island* according to the following priorities:
 - a. Direct human consumption, sanitation or fire suppression insofar as necessary for human survival and health;
 - b. Uses necessary for the survival or health of livestock and to preserve crops or physical plant and equipment from physical damage or loss in so far as it is reasonable to continue such activities in relation to particular water sources; and
 - c. Other uses in such a manner as to maximize employment and economic benefits within the overall goal of sustainable development as set forth in the comprehensive water plan.
2. Within each preference category, uses are to be preferred that optimize the reasonable and efficient use of water.
3. Applications to renew a permit (should permits be required) should be evaluated by the same criteria applicable to an original application, except that renewals shall be favored over competing applications for new withdrawals if the public interest is served equally by the competing water uses after giving consideration to the prior investment pursuant to a valid water right in related facilities as a factor in determining the public interest.
4. When the waters available from a particular water source are insufficient to satisfy all lawful demands upon that water source, permits shall be revoked according to the reverse order of priority set for granting of permits and in accord with existing policy and procedures.
5. The guidance on priorities was developed based upon the current legal definition of “safe yield.” However, it must be noted that the subcommittee’s discussions reflected a concern that the current definition does not adequately address the biological, chemical and physical integrity of the water resource. The subcommittee recommends that the Water Resources Board further refine the definition of safe yield in light of these concerns. Any such refinements may necessitate additional refinements to the guidance on priority uses.

Water Rights/Regulatory Authority Committee

Mission: Review existing water rights doctrine in the United States, particularly in Rhode Island and recommend a suitable rights structure for Rhode Island. Clarify the existing regulatory framework of water management in Rhode Island by depicting organizational authority with water use.

Deliverables:

- ❖ A summary of riparian legal history and application in Rhode Island and recommendations for a *suitable* rights structure.
- ❖ A matrix of water use categories and jurisdictional authorities, an assessment of potential

user conflict and jurisdictional gaps, if any and recommendations regarding authority and conflict resolution.

- ❖ A taxonomy of reasonableness (coordinate with priority use committee)

Summary of Recommendations: *(Full text available)*

- 1) Establish WRB as arbiter of “reasonable use”.
- 2) Establish legislative link between water quality and water quantity; grant power to WRB to consider both in making decisions.
- 3) Establish legislative link between surface water and groundwater; grant power to WRB to consider both in making decisions.
- 4) Develop policies that will enable predictable responses during a drought.
- 5) Continue to collect data as widely as possible to aid in current and future water use decisions.
- 6) Develop a new rights structure as a combination of Voluntary, Market, and Regulatory Approaches during droughts, Registration of certain users, and Full-time Permitting of certain uses.

Out-of-Basin Transfer Committee

Mission: Develop criteria for out-of basin transfers that protect the reasonable needs of water basins.

Deliverables:

- ❖ GIS based assessment of “interbasin movement of water” and an analysis of where such movement creates issues.
- ❖ Recommended actions to address transfers where needed
- ❖ A working definition of “interbasin transfer”

Recommendations: *(Under review)*

1. Establish a water withdrawal permit system that considers OOBT, stream flow and conservation among other criteria.
 - Assess impacts that would impair the sustainable development of the basin of origin with stream flow as the controlling factor.
 - Determine the impact on established minimum flows from the point in the basin where the withdrawal occurs.
2. Create a new, statewide governance structure to administer permit systems for water withdrawal/use; or suggest adoption of certain portions of the Regulated Riparian Model Water Code which would enable existing agencies to modify their policies, procedures and regulations to support the objectives of the WAPAC.
3. Establish a statewide "pre-application review process" for development projects that are deemed "significant" from a basin standpoint.
 - Establish formal, multi-disciplinary teams to provide review.

4. Create a water use reporting system
5. Discourage future OOBT, especially, but not exclusively of, groundwater-except during emergencies
 - Encourage emergency interconnections
 - Review existing written agreements between public water suppliers that provide for OOBT, whether instate or interstate; provide for new agreements where none exist.
6. Using NEWUDS, determine an accurate method to calculate OOBT for each basin considering future water demand.

Fees/Water Rates/Alternatives Committee

Mission: Using economic analysis and other means, identify ways that water and wastewater rate structures can be modified to better reflect the cost of using water and preserving the resource. Proposed rate structures would encourage conservation, efficient water management, and consider affordability and equity implications. Investigate the use of fees and other alternative strategies to reduce, reuse, or recycle water.

Deliverables:

- ❖ An assessment of current fee structures and rates (water and wastewater).
- ❖ Recommendations for water pricing strategies which consider the full cycle of water and future supply needs.

Recommendations: *(Under Review)*

1. Fair and reasonable rates

- Eliminate flat or fixed water and sewer rates and tie rates to volume of water used; use preferred (lower) rates for those using less water or reusing water; use seasonal (higher) rates or temporary drought surcharges during periods of water scarcity;
- Establish a “consumption per capita” standard which considers household size; consider an excess use rate over the standard rate.

2. Fees

- Consider a Water Allocation fee for all water users, public and private; prepare a list of WAP initiatives that the fee would pay for; conduct a feasibility analysis regarding program implementation (user groups, fee collection process, administering authority, restricted receipts, etc.)
- Consider other fees, such as impact fees, system development fees, pump fees.

3. Alternatives

- Billing Standardization: encourage suppliers to increase frequency of billing, depict # of days in the billing cycle, show consumption history, and reserve space for conservation messages; encourage suppliers to convert HCF to gallons on bills; encourage suppliers to follow national accounting standards for the industry; investigate combined water and wastewater billing or education

- Revise state plumbing and building codes and/or local ordinances to require water efficient fixtures and appliances and water meter installation. Equip irrigation meters with sensors for automatic shut off
- Encourage communities and suppliers to standardize response to drought (water restrictions, drought surcharges, etc.)
- Conservation Education: encourage a conservation mindset among water suppliers and the public

Education and Public Relations Committee

Mission: Carry out an education, outreach and public relations program promoting long-range conservation and use of the water resources of the state. Pay particular attention to the needs of local municipalities, water supply districts, and constituencies most likely to be affected by a water allocation program.

Deliverables:

- ❖ A public relations and outreach strategy for the allocation program effort
- ❖ A recommended conservation education strategy

Recommendations: *(Full Text Available)*

1. Pending findings of WAPAC committees, the Education Committee will make recommendations regarding education, training, technical assistance or public relations initiatives to promote long-range conservation and use of the states' water resources. Recommendations will be particular to the needs of local municipalities, water supply districts, and constituencies most likely to be affected by a water allocation program. Financial resources must be made available over the long term for education to be successful
2. Hire a public relations professional to prepare a comprehensive media strategy
3. Pending findings of the WAPAC, the Education Committee will prepare and package materials for the Governor and the RI General Assembly
4. Promote, establish and coordinate conservation programs regarding efficient use of water. Ideally, efforts will be timed with significant, statewide, environmental observances
 - Ex: provide discounted rain barrels, rain gauges, and automatic sprinkler sensors to the public
 - Work with vendors regarding price incentives for water efficient fixtures and appliances
5. In addition to public presentations, continue to use list serves, linked web pages and other electronic and print media to keep the public informed

Integrated Water/Wastewater and Technical Assistance Committee

Mission: Develop a marketing plan for wastewater to maximize the efficiency of water use, and wastewater and storm water reuse to meet present and future needs.

Focus areas include:

1. Wastewater reuse
2. Educational programs
3. Replumbing & other possibilities for increased water efficiency
4. Demonstration projects
5. Conservation from financial incentives (identify the carrots and the sticks).

Deliverables:

- ❖ Recommendations for implementation of selected best management practices and strategies for related technical assistance efforts and demonstration projects.
- ❖ An assessment of potential reuse opportunities and recommendation for a phase I implementation program

Recommendations: *(Full Text Available)*

Priority Recommendations:

1. A preliminary outreach project should be established that educates the general public, public and regulatory officials, developers and existing water users of the importance and benefits of reclaiming wastewater for beneficial reuse. Public perception is a vital component of a successful reuse program. Many excellent resources exist that detail the promotion of reuse programs that can be tailored for use and distribution in Rhode Island to address possible public health concerns. (An initial allocation of \$50,000 for program development and a two-year trial implementation)
2. The RI Department of Environmental Management (DEM) draft Guidelines for Wastewater Reclamation and Reuse should be finalized. All public agencies should work together with DEM to coordinate their activities to determine which agencies have specific authority over such projects and what approvals would be required from each agency. The intent of this coordinated effort is to define the lead agency in permitting such projects and to eliminate any “disincentives” that may exist for these projects to be permitted and implemented. These guidelines and the development of a framework for the coordinated review and approval of future reuse proposals should be implemented by appropriate state agencies such as the RI Department of Health (DOH), the Water Resources Board, and Statewide Planning, in conjunction with DEM. (No financial impact for finalizing guidelines and coordination between staff agencies other than staff time. However, for implementation, additional resources will be required to ensure compliance with minimum requirements through inspection and monitoring. The extent of the effort and the cost will depend on the scope and number of reuse projects that are approved and implemented.)
3. Legislation and/or regulations should be considered for all new residential, commercial and industrial projects in the State exceeding a certain water use or wastewater treatment

threshold. This legislation and/or regulations would require a developer to submit a water use plan that evaluates and determines the feasibility of reuse and recycle systems for the proposed project. The development proposal/plan should evaluate the feasibility of wastewater reclamation and reuse as part of a water conservation plan to reduce or offset the impact of the development. In addition, this requirement should be incorporated into the Rhode Island Comprehensive Planning provisions and into local planning and zoning ordinances. Individual projects would be reviewed for consistency by the appropriate local officials. (No financial impact other than staff time to draft legislation; unknown impact for amendment to local comprehensive plans and the review and approval of plans at the local level).

Additional Recommendations

- Pilot or demonstration projects can be used to showcase and monitor reuse and recycle systems. The State should assert leadership in this regard and install water/wastewater reuse systems at public lands and projects including high profile public-private partnerships. Where state and/or federal funding is provided for a public or private project, a feasibility study to incorporate water reuse concepts, designs and projects should be required as part of the funding application. Joint projects by state, federal, private and academic groups should be encouraged. (Possibly implementation through an Executive Order and/or legislation)
- Water Suppliers should promote wastewater reclamation and reuse as a guaranteed water source for all new and existing users. Water Suppliers should also concentrate promotion of reuse through the Major Users Technical Assistance Program (MUTAP) required by the Water Resources Board. A "Strategies for Wastewater Reuse" section exists in the State Guide Plan that can be enhanced through the MUTAP process. Reuse efforts should be concentrated at the state-owned and/or managed properties. These agencies, for example, have considerable land at which opportunities could be explored: Department of Administration, Department of Environmental Management, Economic Development Corporation and the Department of Mental Health, Retardation and Hospitals. (Presently required by MUTAP; additional efforts to be encouraged by RIWRB)
- In addition to mandating a reuse feasibility study, the legislation recommended earlier may provide incentives (via sales tax credits, expedited permit reviews, etc.) for reuse projects. Existing pollution control and/or prevention sales tax credit legislation may already address this need. These incentives would serve the dual purpose of encouraging water conservation through reuse as well as informing stakeholders that reuse is an accepted practice in Rhode Island. (The model water code addresses this as well) (Review of existing legislation needed)
- A centralized information and education source to both private developers and to the cities and towns in RI on water reuse and recycle systems will be necessary to ensure that information on reuse is standardized and consistent. Educational brochures, workshops, and marketing of reuse systems should be part of the agency's responsibilities.

- Further research into wastewater reclamation and reuse is necessary to address possible public and environmental health concerns. Reuse projects should be monitored and inspected for compliance and a database of reuse projects should be maintained by the responsible agency. (Additional resources will be required to ensure compliance with minimum requirements through inspection and monitoring. The extent of the effort and the cost will depend on the scope and number of reuse projects that are approved and implemented.)

Impact Analysis Committee

Mission: Evaluate the social, economic, and environmental impacts of current water supply and use issues in Rhode Island and assess the impacts of proposed actions.

Deliverables:

- ❖ An identification and assessment of the economic and environmental impacts of a “no action” scenario in the Pawcatuck and the Blackstone basins including analysis of projected land use and population trends.
- ❖ An evaluation of the water use and supply issues associated with projected trends.

Recommendations: *(Full text Available)*

To support the recommendations below, we advocate several kinds of information gathering and analysis to determine the environmental, social, and economic impacts of water withdrawal.

- Water Resources Board – USGS Basin Studies
 - Enhanced Stream Flow Monitoring
 - Recalculation of Safe Yield
 - Build-out Analysis & Evaluation of Alternative Regulatory Scenarios
 - US Army Corp of Engineers type Impact Modeling
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- Establish standards, priorities, and protocols to protect the natural environment. The state must establish a process that prioritizes natural resources including habitats, wetlands, and waterways. Stream flow standards need to be adopted, with special consideration given to priority areas. Priorities must come from a participatory planning process that combines ecological knowledge and community values. Public authority to manage water demand must extend to all users.
 - State leadership in support of municipal planning. All the recommended studies above are statewide in scope and will require leadership and funding at a state level. We feel it is important to emphasize that the recommended build out analysis also should be spearheaded and supported financially at the state-level with municipalities and regional planning organizations as partners. The Comprehensive Planning statutes and State Guide Plan already require municipalities to consider water resource issues, but the complexity of water and growth issues exceed the planning resources of many communities.

- Demand Management.

The demand management tools available to suppliers need to be expanded to avoid scarcity. There are technologies and development practices that can significantly reduce water demand. Both large and small consumers are unlikely to adopt best practices on a large scale in the absence of a sophisticated education and technical assistance program. The demand management programs required of electric utilities are a model. Conservation pricing is a potentially effective demand management tool as well as a source of revenue for demand management programs.

Joint Advocacy and Funding Committee

Mission: Evaluate and recommend legislative strategies and cooperative funding to implement water allocation initiatives.

Deliverables

- ❖ An analysis of water resource management spending by entity and category
- ❖ Recommended strategies for funding, and pooling resources

Recommendations: (Pending)