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Report On An Education Strategy for Public Water Supply Protection Aimed at Municipalities and the General Public

Presented to the Joint Standing Committee on Natural Resources of the 120th Maine Legislature

pursuant to 1999 PL chapter 761, section 12

Prepared by

LAND AND WATER RESOURCES COUNCIL

March 2001

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I. EXECUTIVE SUMMARY

In 1999, the Maine State Legislature enacted LD 2597, an "Act to Improve Public Water Supply Protection". Section 12 of this bill (Public Law 1999 c. 761) charges the Land and Water Resources Council to prepare a report containing ***an education strategy for public water supply protection aimed at municipalities and the general public.*** The report is to include recommendations for a position and budget within the Department of Environmental Protection to implement the proposed strategy. It is due to the joint standing committee of the Legislature having jurisdiction over natural resource matters by March 15, 2001.

The Legislative and Executive branches of Maine state government are clearly and rightly concerned about protecting Maine's public drinking water at the source. Contaminated drinking water supplies are difficult and costly if not impossible to repair to their original state. Education can prevent contamination and is crucial to avoid costly clean up or higher costs for water treatment.

This report seeks to be responsive to the Legislative charge, yet is by necessity cursory in nature. Due to budget and timing constraints, a thorough analysis of existing programs and comprehensive development of necessary messages and tools was not possible. To meet the requirements of c.761, P.L. 1999, Section 12, which were significantly less extensive than originally recommended by the 1999 Task Force, the Land and Water Resources Council hired a project coordinator within the State Planning Office to coordinate the project.

The coordinator of the project assembled a "Drinking Water Education Strategy Advisory Committee" composed of representatives from the State Planning Office, and the Departments of Conservation, Agriculture, Inland Fisheries and Wildlife, Environmental Protection, and Human Services. Organizations from outside of state government also served on the Advisory Committee including the Maine Rural Water Association, U.S. Environmental Protection Agency, Portland Water District, Maine Municipal Association and the University of Maine George Mitchell Center.

The strategy was developed by:

- choosing target *audiences*,
- determining current drinking water education *programs* offered to these audiences,
- analyzing the *effectiveness* of these programs,
- *prioritizing the gaps and needs* beyond existing programs, information and services,
- developing limited recommendations regarding *messages and tools* for the audiences, and
- recommending *staff* and support *to* further develop and *implement* the strategy.

In addition to its drinking water education recommendations, a 19 member Task Force to Study the Improvement of Public Water Supply Protection (Resolves1999, chapter 80) recommended development of a Public Water Supply Protection Act that articulates the importance of protecting public drinking water supplies. Such an Act or a clearly articulated statewide policy would provide a critical foundation for the implementation of an education strategy and protection of the resource itself.

The need for such a policy has been raised frequently, first by an inter-departmental work group that led to the above-mentioned Task Force, then by the Task Force itself and finally by the current Advisory Committee for this report. All have strongly recommended the need for statewide policy on the protection of drinking water supplies *and* the creation of a position to coordinate statewide drinking water education efforts.

It was observed that if a Drinking Water Education Coordinator position stops one contamination incident every four to five years, the avoided costs would pay for the position.

Analysis of Existing Programs

The programs offered to the two primary audiences, *general public and municipal*, were analyzed according to whether they are offered by:

- State Agencies;
- Municipal and Planning Organizations;
- Water Utilities and Utility Associations; and
- Conservation, Environmental, Federal Agency and Water Related Organizations.

1. General Public Audience

State Agency Program Analysis: Printed materials, provided by State Agencies to the general public such as the "Safe Home Program," and "Safe Drinking Water" packets are widely distributed and used, however they primarily address the portion of the public that have private wells, not the public water supply users. There are additional brochures and newsletter articles but many, as well, are geared to private well owners, dated, out of print or not directly related to drinking water. Public service announcements with the oil dealers association were successful based on inquiries about specific tank safety issues received afterwards but the program is no longer operating, although brochures are still available.

Towns with contamination problems receive adequate response but obviously this is after the contamination has occurred. There are many drinking water related programs that present

methods to protect overall water quality. They may improve drinking water sources, however, public drinking water protection in most cases is not the priority.

Water Utility and Utility Association Program Analysis: Of the water utility and utility association programs aimed at the general public, some are very comprehensive and reach large numbers of people, particularly children. The problem is that these programs are only offered in a few regions and there is a need for statewide education. Many of the programs could be used as models throughout the state.

The United States Environmental Protection Agency (EPA) mandated Consumer Confidence Report is a good tool for public education. Its current presentation varies and can be merely technical. However, because of its distribution, it could be an effective vehicle to reach many people.

Conservation, Environmental, Federal Agency and Water Related Organization Program Analysis: Programs offered by these federal and private organizations to the general public are good but limited in distribution. For instance the Maine Water Conference, while extremely well received, occurs once per year, many brochures are out of print, web resources are increasing but not accessible to all and signs at state parks reach a limited audience.

The Public Education Access to Resources (PEARL) database website documenting citizen monitoring of lakes and ponds, is being expanded to make it clearer to users when a water body is a source of drinking water.

2. Municipal Audience

State Agency Program Analysis: Among existing state programs, the Department of Human Services (DHS) Drinking Water Program's Maine Public Drinking Water Source Water Assessment Program (SWAP) is one of the most extensive municipal outreach programs currently available and will provide data and maps on source water protection areas for all municipalities. Its continued success will require ongoing educational efforts, i.e. educating new municipal officials once they take office. In addition, the education and outreach services formerly provided in the Wellhead Protection Program need to be coordinated with SWAP.

The "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies" provides a useful model for municipal/water utility cooperation. However, continued funding for this program is uncertain and as a result broader training may not take place.

The recent Department of Environmental Protection (DEP) Ground Water Survey for municipal officials contains many questions directly related to drinking water use and will help determine and refine the educational needs of municipal officials and the general public.

The Growth Management program, administered by the State Planning Office (SPO), provides technical assistance to implement the Planning and Land Use Regulation Act (PLURA) and requires inter-agency coordination by statute and rule. Program coordination is, however, under-funded and needs greater staff support. SPO provides some important materials for

municipalities including a Comprehensive Planning Manual and Technical Bulletins on groundwater and development review. However, officials do not always know about these resources. A Technical Bulletin on groundwater has been targeted to municipalities with a population greater than 5000, but could be used by smaller communities.

Thus, there are numerous State Agency programs targeting the municipal audience, however no single agency takes a lead on public drinking water education for municipalities and there is little coordination across agencies. In addition, there is no single source of information provided to municipalities that describes all of the various regulations that apply to surface and groundwater sources of drinking water. And finally, in the absence of any statewide policy on the need to protect drinking water, there is insufficient direction to municipalities on how to weigh the importance of local development pressures and regional source water protection needs.

Municipal and Planning Organization Program Analysis: Municipal planning organizations provide some support to municipalities for drinking water education but could provide more. The Maine Municipal Association minimally addresses environmental concerns in general and aside from the occasional Maine Townsman article they do not provide education on source water protection. They are, however, willing to make materials available through their mailing and other distribution networks. The Regional Planning Councils offer Planning Board and Board of Appeal training, general technical assistance on growth management, comprehensive plans, ordinance review and development review. They primarily help member towns when there is a specific need but do not have the capacity to provide a coordinated drinking water education program. With financial support, they could provide an important network to distribute information and training to municipalities.

Water Utility and Utility Association Program Analysis: Utilities and utility associations provide programs for the municipal audience with some definite success. In varying degrees they coordinate land acquisition and management, limit use of fire suppression chemicals, facilitate municipal-utility communication and provide direct technical assistance for municipal boards and officials. These services are not offered throughout the state but could provide good models for other regions to replicate.

Conservation, Environmental, Federal Agency and Water Related Organization Program Analysis: Programs offered by federal and private organizations for education of municipalities include cooperative agreements such as the "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies" which is working to improve municipal – utility dialog. Low-income community technical assistance on drinking water systems is focused primarily toward water utilities but is available when requested to municipalities themselves. Thus, technical assistance may be available but the overall municipal education needs are not being met.

The Drinking Water Program has enlisted the assistance of a variety of organizations within this category to help with education and outreach for the SWAP program (see state agency programs for more details). These organizations welcome this relationship and can be effective liaisons with municipalities.

Priority Gaps and Needs

The analysis found that while there are many good drinking water education and technical assistance programs available, many are only offered in one town or region. These programs could be models for other regions. With such patchy systems of service delivery there are extensive gaps and needs in the educational programs available to the public and municipalities for public drinking water education.

There are also programs that do not have a strong educational emphasis but are services that could be expanded to include an educational component. A critical missing link is a coordinated effort that would fill in the gaps with expanded or new programs, assure quality programming statewide, and regularly evaluate their effectiveness.

The Council has identified the highest priority gaps and needs for each audience. Priorities include those gaps and needs that were pervasive throughout the state and/or repeated by numerous interviewees. Priorities were also persistent issues previously identified by earlier work groups and task forces that, if addressed, could significantly improve protection of the resource.

1. General Public Audience – Priority Gaps and Needs

The Council recommends that the following topics have equal educational importance across the state:

- Basic Resource Information: Clear information explaining what groundwater is, how it provides drinking water, and source water protection techniques. Also needed is well presented information on surface waters that provide drinking water, how watershed protection enhances drinking water quality and, for surface *and* groundwater sources of drinking water, an understanding of contaminants and how to prevent them from reaching drinking water.
- Prevention: Landowners need information and technical assistance prior to planning for development. They often do not follow regulations and these violations are discovered after development when changes are difficult and the harm has already occurred.
- Home heating oil and septic system education: Home heating oil leakage and septic system contamination is an extensive problem particularly with transient and non-community non-transient water supplies. In some cases the heating oil and septic contamination threatens municipal well fields. Preventative education is needed as well as clean-up procedures.
- Private sector education: Currently limited programs reach this segment of the general public and significant benefit is expected from increased outreach. Improved protection could be facilitated through targeting individuals and businesses such as contractors, architects, engineers, gas stations, agriculture, manufacturing and other businesses identified as "potential threats" to public drinking water supplies through SWAP.

2. Municipal Audience – Priority Gaps and Needs

Municipal decisions regarding development within or near a water resource area have a tremendous impact on the health and quality of the state's drinking water supplies. The Council recognizes that there is a strong need for education, technical assistance and easily accessible

resources to assist municipalities in making these decisions. Without this education we will likely see an increase in contamination incidents in the state.

The Council identifies the following education needs as highest priority:

Printed Information including:

- Clear, summarized information on state regulations, licensing requirements, unregulated contamination sources and direction to additional contacts and resources.
- Model legislation and clear regulations. Many potentially threatening activities are still approvable with current regulations
- Sample comprehensive plan policies including information on the link between the identification of critical areas in the comprehensive plan and the adoption of defensible regulations to protect these critical areas.
- Sample model town ordinances for land uses within source water protection areas. Ordinances need to deal with issue of towns approving contaminant sources near water systems.

Training and Technical Assistance including:

- Help with how to apply sample comprehensive plan policies and town ordinances to specific towns and how to enforce the ordinances.
- Coordinated municipal education on source water protection. This includes ground water information, wellhead protection, information about fund sources for land conservation and preservation near water supplies and ongoing education related to SWAP.
- Municipal board training on contamination issues and methods for avoiding them.
- Code Enforcement Officer training on topics such as underground storage tanks.

Communication and Linkage including:

- Better access and financial support to regional planning commissions to provide education through their existing networks and training programs.
- Stronger linkage between water suppliers and municipalities to support communication regarding land use, including specific development proposals, and comprehensive planning.
- Municipalities need an understanding of the impact of land use on water quality and the ability to assess the relative risks of development so that appropriate responses can be developed. These include, but are not limited to, modifying project scope or location on a site, requiring specific mitigation measures, and outright protection.
- Water suppliers need to better understand the municipal process and take advantage of their opportunities to be involved.
- Municipalities within the water supply watershed or recharge area need to be incorporated into decision-making processes, including adjoining towns affecting the supply though not served by it

3. Other Audience – Priority Gaps and Needs

The state itself - Agencies and personnel - emerged as an important "other audience" with gaps and needs. The Council recommends that the following needs be addressed:

- A point person within state government to coordinate education efforts.
- Consistent messages and education across state agencies and departments.
- Ongoing measurement for success of educational messages.
- Increased coordination among state agencies and with organizations outside of state government.
- Reconciling drinking water protection and other environmental issues with smart growth initiatives.

Staff and Policy Recommendations

The Task Force to Study the Improvement of Public Water Supply, established by Chapter 80, Resolves 1999, suggested that a Drinking Water Education Coordinator position be established as the second Phase of their first recommendation regarding drinking water education. This report was recommended as the first Phase. In addition, a recommendation for a full time Drinking Water Education Coordinator position came from the original 1989-99 Work Group that led to the above-mentioned task force. Thus, this report provides, for the third time since 1998, a strong recommendation for a Drinking Water Education Coordinator position. All fifty-two professionals interviewed for this report saw the need for a coordinator/educator position. The analysis of that research contained herein, supports this need as well.

Another significant conclusion reached in the program analyses and the identification of the gaps was also reached for the third time. It is the absence of a guiding state policy or law on the importance of protecting drinking water. The second recommendation from The Task Force to Study the Improvement of Public Water Supply was to create a new "Public Water Supply Protection Act" that articulates the importance of protecting public drinking water supplies. This need has not been fully addressed. Such a law or clearly articulated state policy would provide the basis for the education and outreach needed to protect drinking water. The Drinking Water Education Coordinator could play a role in developing this policy.

Position Responsibilities:

A Drinking Water Education Coordinator would ***primarily coordinate*** statewide education and outreach by addressing the gaps and needs stated above. This person, while providing few direct educational services, would serve as a resource and clearinghouse for existing services, expand successful regional educational activities throughout the state and coordinate implementation of new initiatives.

The Drinking Water Education Coordinator would identify key opportunities for professionals within state government to present their expertise and, when necessary, would outsource services to organizations beyond state government. Such coordination would make more efficient use of existing resources, build on strong existing programs, and eliminate duplicative activities. A critical role for this position is to facilitate communication and collaboration across state

agencies. This will allow development of policy that is both representative and informed. It will also ensure delivery of consistent messages to the public.

Another critical role for the Drinking Water Education Coordinator, drawn from the highest priority gaps and needs, is to ***help municipalities with land use decision-making*** that affects sources of drinking water. While municipalities have some basic technical education needs (watershed involvement, groundwater hydrology, contaminant sources and movement) the vast majority of their needs concern understanding existing regulations, developing and applying local ordinances, training (and re-training new) municipal officials, incorporating drinking water protection into Comprehensive Planning processes, integrating the decision-making of utilities and municipal boards and incorporating input from the reviews of comprehensive plans and ordinances by state agencies.

The research herein has analyzed the available programs to protect dinking water, i.e. the "producers" and their "products". An analysis is still needed of the effectiveness of these particular "products" to the audiences who "consume" them. As recommended by the original Task Force, one of the first tasks for this position should be a ***market analysis*** to determine the most effective messages to protect drinking water and the best means to deliver them. Based on that research the Drinking Water Education Coordinator would coordinate preparation of targeted materials to reach the gaps and needs. At a later date, the Coordinator would follow-up with an evaluation to determine the success of the educational efforts.

Position Qualifications

The Drinking Water Education Coordinator needs strong organizational, facilitation and communication skills. Experience and/or training in municipal or regional planning and government processes is essential and could be derived from professional or extensive volunteer/community service experience in Maine. A background in education is important but an understanding of market research and public relations is critical. Some background in science, especially hydrogeology, is desirable but a general willingness or capacity to understand and sort through complex problems would suffice. Public speaking abilities would also be desirable.

Position Location, Funding Sources and Budget

The legislative initiative that requested this report (P.L 1999 c. 761) stated that the Council would "recommend a position and budget within the Department of Environmental Protection to implement this strategy." The same bill requested an investigation into the possibility of moving the Drinking Water Program from the Department of Human Services to the Department of Environmental Protection. Both agency budgets were submitted in August of 2000 prior to the start of either of these studies. There was thus a lack of certainty about where the position would be housed. The Council and the Advisory Committee therefore kept an open mind about the location of the position and reviewed several alternatives.

The alternative locations considered for the position included the Department of Environmental Protection, the Drinking Water Program at the Department of Human Services, the State Planning Office and the University of Maine George Mitchell Center (GMC).

The Council concludes that the greatest benefits for the protection of drinking water are likely to accrue from housing the Drinking Water Education Coordinator Position in the Drinking Water Program at DHS. Regardless of where the position is located, it is essential that the Coordinator have very strong links to other State agencies, particularly DEP and SPO.

Funding Sources

All three potential agencies (SPO, DEP, DHS) that could house this position have examined their existing staff resources and concluded that shifting responsibilities is not possible and that they do not have the funds or staff to implement the strategy contained herein.

Therefore, consistent with the recommendation of the last three years, a new position is proposed in addition to others currently proposed for other purposes, within the Drinking Water Program of the Department of Human Services.

The Council is sensitive to the Governors desire to maintain the budget at its current projected set of expenditures. We therefore recommend that the budget presented below be proposed in the supplemental budget of 120th legislature or, if not possible, in the next biennium.

Budget

Senior staff position	$38,000.00	
Fringe (benefits, retirement etc.)	$15,200.00	(40%)
Outsourcing - market research	$50,000.00	(surveys and focus groups[1])
Outsourcing - materials prep. etc.	$25,000.00	
Total - year 1	**$128,200.00**	

Senior staff position	$38,000.00	
Fringe (benefits, retirement etc.)	$15,200.00	(40%)
Outsourcing-market research	$3,600.00	(3 questions[2])
Outsourcing – other	To be determined	
Total – succeeding years	**$56,800.00**	(depending on outsourcing needs)

[1] This estimate was provided by Market Decisions and is includes $20,000 for a statewide survey of the general public, $15,000 for focus groups and $15,000 for a municipal officials survey. The research will document current awareness and provide information for message formation.

[2] This estimate from Market Decisions covers the cost, at $1,200 per question, for three survey questions on "The Maine Survey" to track awareness over time.

II. INTRODUCTION

Background

In 1999, the Maine State Legislature enacted LD 2597, an "Act to Improve Public Water Supply Protection". Section 12 of this bill (Public Law 1999 c. 761) charges the Land and Water Resources Council (LWRC) to submit a report to the joint standing committee of the Legislature having jurisdiction over natural resource matters by March 15, 2001 with ***an education strategy for public water supply protection aimed at municipalities and the general public***.

The Legislative and Executive branches of Maine state government are clearly and rightly concerned about protecting Maine's public drinking water at the source. Drinking water supplies, once contaminated, are difficult and costly if not impossible to repair to their original state. Education can prevent contamination and is crucial to avoid costly clean up or higher costs for water treatment.

Chapter 761, Public Law 1999 takes important steps to improve public water supply protection by now requiring, for instance, notification to public water suppliers when development is proposed in their source water protection areas. The legislation also acknowledges the need for a state education strategy and program to reach various audiences who affect public drinking water supplies. This legislation embodies the principle that public water supplies need to be protected to ensure public health and that as a society we need to be educated to take appropriate actions to keep them free of contaminants.

The legislation builds on existing initiatives such as the Source Water Assessment Program (SWAP) and the Growth Management Program (GMP) pursuant to the Planning and Land Use Regulation Act (PLURA). SWAP is currently mapping source water protection areas, and providing this information to municipalities. The GMP is providing data to towns so that comprehensive plans and ordinances can be consistent with the Planning and Land Use Regulation Act. The inclusion of Section 12 in the bill demonstrates that education plays an important role in the protection of water supplies.

Several incidents of contaminated drinking water supplies in Maine raised the awareness of the need to protect sources of drinking water. These contamination incidents provided the impetus to establish a 19 member Task Force to Study the Improvement of Public Water Supply Protection (Resolves1999, chapter 80) in October of 1999. This Task Force set education of the public and municipal officials as their priority recommendation to be carried out in two phases. Phase I resulted in the legislation (c. 761, P.L. 1999) that funded the project position to develop the education strategy contained herein. Phase II recommended hiring a full time staff person to carry out the education strategy.

In addition to education, the Task Force recommended development of a Public Water Supply Protection Act that articulates the importance of protecting public drinking water supplies. The absence of such an Act or of a clearly articulated statewide policy is a significant impediment to the implementation of an education strategy or protection of the resource itself. This issue has been raised on numerous occasions, first by an inter-departmental work group that led to the above-mentioned Task Force, then by the Task Force itself and finally by the current advisory

committee for this report. All have strongly recommended the need for statewide policy on the protection of drinking water supplies *and* the creation of a position to coordinate statewide drinking water education efforts.

This report provides an inventory and analysis of existing programs that deal directly and indirectly with protection of drinking water supplies. The analysis directs policy makers and legislators to the gaps and needs beyond existing programs. The report also provides a strategy and framework for how to protect drinking water sources from contamination through education and prevention. But, in addition to specific program needs the analysis points out, once again, the need for statewide policy on this issue. Clear policy or law is needed in order to have a more significant impact on a) the resource itself or b) the numerous individuals, Councils, Boards, organizations and agencies whose actions, individually and collectively affect its quality.

Related Legislative Activity

Two related bills on the issue of drinking water protection have been before the legislature for the past two sessions and another is pending. The first bill, Resolves 1999, Chapter 80, led to the creation of the Task Force that led to adoption of c.761, P.L. 1999 (LD 2597) that requested this report. The third bill is currently pending.

Resolves 1999, Chapter 80 (LD 1550), *to Establish a Task Force to Study the Improvement of Public Water Supply Protection* established the Task Force by the same name which convened in October 1999 and met 8 times. Prior to this bill, an inter-departmental Work Group met between July and November 1998 to recommend improvements in the protection of public water supply areas. This Work Group was part of Governor King's five-point plan of action in response to MBTE contamination in public and private water supplies. LD 1550 grew out of the original Work Group's recommendations.

In the next legislative session Chapter 761, P.L. 1999 (LD 2597) included a variety of other initiatives along with the education strategy. Those most related to this project include Section 10 and Section 13.

Section 10 on *Source Water Protection Areas* states that a municipality must notify a public drinking water supplier of proposed land use projects in their source water protection area.

Section 13 on the *Integration of Maine Drinking Water Program into Department of Environmental Protection* calls for a review of the drinking water and plumbing control programs in the Department of Human Services and a recommendation for their placement. The report for section 13 was sent to the Legislature on February 1, 2001 and is awaiting their review. The consultant hired by the Land and Water Resources Council to prepare the report concluded that there is no net benefit to moving the drinking water and plumbing control programs to DEP and recommended that the programs stay at DHS.

Finally, a bill proposed for the 120th legislative session, entitled An Act to Protect Sensitive Natural Resources from Oil Contamination, would authorize the Department of Environmental Protection to adopt rules regarding the siting of underground storage tanks.

Pending Opinion Surveys

The inter-departmental work group of 1998-99 and the 1999 Task Force that studied improvements to public water supply protection recommended a professional evaluation of public perception about drinking water protection, market research to identify messages that would motivate individual behavior and an evaluation of their success. The budget that was recommended for this set of tasks was approximately four times greater than the budget that was appropriated to develop the strategy contained herein. Thus, due to funding limitations the market research was not done. However, as this report will propose, this kind of research is still needed and could be coordinated by the proposed Drinking Water Education Coordinator.

There are two public opinion surveys pending that will provide useful information toward this research. They include:

a. The Maine Drinking Water Program Newsletter (Winter, 2001) "Service Connection", that is sent to all public water system operators, contains a survey to determine if there is enough education and outreach regarding drinking water supplies. Comments were due by January 31, 2001 and information was due for compilation by February 16, 2001.
b. The DEP Bureau of Land and Water Quality and the Maine Municipal Association are currently surveying all municipalities in the state with a "Questionnaire for Municipal Officials on Ground Water Issues". The deadline for response to the questionnaire was February 2, 2001. They plan to have responses compiled by mid-March.

The results of both of these surveys could not be incorporated into this report. They should be used in the further refinement of the strategy developed herein and any additional market research that is attempted.

As described in more detail in the next section, the information used to prepare this report was based on extensive interviews with individuals and organizations in the public and private sectors. This data is documented in interview notes (see Appendix C for list of interviewees) and in tabular form (see Appendix D). The original interview notes are stored at the Drinking Water Program in the Department of Human Services.

Process and Scope

This report seeks to be responsive to the Legislative charge, yet is by necessity cursory in nature. As noted above, due to budget and timing constraints, a thorough analysis of existing programs and comprehensive development of necessary messages and tools was not possible to accomplish. To meet the requirements of c.761, P.L. 1999, Section 12, which were significantly less extensive than originally recommended by the 1999 Task Force, the Land and Water Resources Council (LWRC) hired a project coordinator within the State Planning Office to coordinate the project.

The coordinator of the project assembled a "Drinking Water Education Strategy Advisory Committee" composed of representatives from the State Planning Office, and the Departments of Conservation, Agriculture, Inland Fisheries and Wildlife, Environmental Protection, and Human Services. Organizations from outside of state government also served on the Advisory Committee including the Maine Rural Water Association, Environmental Protection Agency,

Portland Water District, Maine Municipal Association and the University of Maine George Mitchell Center. Appendix B provides a list of individuals from each department and organization. The Advisory Committee met twice to clarify the scope of the project and review draft material submitted by the project coordinator. They also reviewed a draft copy of this report prior to submission to the LWRC.

As adopted by the LWRC in a memorandum dated October 6, 2000 (see Appendix F), the budget for the original assignment was reduced from $120,000.00 to $30,000.00. It will therefore focus on an overall strategy rather than market research or development of specific tools and messages. The strategy was developed by:

- choosing target *audiences*, (General Public, Municipalities, Other)
- determining current drinking water education *programs* offered to these audiences,
- analyzing the *effectiveness* of these programs,
- *prioritizing the gaps and needs* beyond existing programs, information and services,
- developing limited recommendations regarding *messages and tools* for the audiences, and
- recommending *staff* and support *to* further develop and *implement* the strategy.

Fifty-two people from within and outside of state government were interviewed (see appendix C for list of interviewees). Four tables were created to summarize these interviews and document existing programs and the gaps and needs within them. Each of four tables describe education efforts that are provided by State Agencies, Municipal and Planning Organizations, Water Utilities and Utility Associations and, a miscellaneous category, Conservation, Environmental, Federal and other Water Related Organizations. The tables are provided in Appendix D. Extensive interview notes are also available for the Drinking Water Education Coordinator or any future researcher. These notes are not included in this report but are stored at the Drinking Water Program of the Department of Human Services.

Given that many current programs only address drinking water issues if the need arises, the analysis of existing programs divides them into two categories: Drinking Water Focused programs and Drinking Water Related programs.

The identified program gaps and needs were prioritized for each audience – General Public, Municipalities and Other Audiences. Priorities were established from issues that were most frequently mentioned in interviews and issues that could make a significant difference if addressed.

The Council then focuses on the qualifications and role of the Drinking Water Education Coordinator and recommends where the position should be located within State government along with a preliminary budget.

III. SURVEY OF EXISTING PROGRAMS / IDENTIFIED NEEDS

Existing and Recent Programs

Existing and recent programs are analyzed in this section according to the audience they are intended to reach – General Public, Municipal, Other. The programs described here and delivered to each of these audiences come from numerous sources. These sources are grouped in the detailed tables of Appendix D and in this section as follows:

- State Agencies;
- Municipal and Planning Organizations;
- Water Utilities and Utility Associations; and
- Conservation, Environmental, Federal Agency and Water Related Organizations.

The programs provided by these various sources are summarized separately. Those that focus on drinking water or have a strong drinking water component are grouped as "Drinking water focused." Other programs that have a limited drinking water component or that deal with drinking water only if the need arises are grouped as "Drinking water related."

This was done as a way of organizing a large amount of material but also to illustrate the diffuse and, in many ways, unfocussed attention that is paid to drinking water education in the State.

1. General Public Audience

In this report the general public includes private sector groups and the adult public. School programs are included in the section on Other Audiences.

A. State Agency Programs

Drinking water focused: Printed materials include the "Safe Home Program" and "Safe Drinking Water" Packets, brochures and newsletter articles on topics such as lead in drinking water, home heating oil tanks and ground water facts for Maine residents. Web-site information provides source water protection resources, field service listings and private well information. Other programs include Public Service Announcements in conjunction with oil dealers, presentations in towns that have had contamination problems, providing materials for citizen groups and coupons for septic pumping.

Drinking water related: There are several available programs on land use issues including soil erosion as a pollutant, garden center information on pesticide options, integrated pest management and the Nutrient Management Program with farmers, and septic system installer training. The Coastal Zone Management/DEP collaborative did a social marketing strategy including a statewide survey on non-point run-off and partnered with watershed groups to deliver the message.

Available State publications range from stewardship theme calendars to a Ground Water Handbook. State personnel also meet with storm water and camp road stakeholder groups, offer the Friends of Casco Bay Safe Gardens Program, training for Lakes Associations and ask a water quality related question through a private market research company every year.

Analysis: Interviewees report that the "Safe Home Materials," and the "Safe Drinking Water" packets are widely distributed and used, however they address the portion of the public that have private wells, not the public water supply users. The additional brochures and newsletter articles are also primarily focused for private well owners and many are dated, out of print or not directly related to drinking water. Public service announcements with the oil dealers association were successful based on inquiries about specific tank safety issues received afterwards but the program is no longer operating, although a brochure is still available. Towns with contamination problems receive adequate response but obviously this is after the contamination has occurred.

By definition the drinking water related programs are presented in the context of overall water quality and may improve drinking water sources. However, public drinking water in most cases is not the priority.

B. Municipal and Planning Organization Programs

There are no reports of any education for the General Public by Municipal and Planning Organizations unless the water utility is part of the municipality (see Water Utility Programs).

Analysis: Municipalities only appear to educate on drinking water if they need to respond to a contamination incident or through their comprehensive plans. There are definitely other opportunities for education and outreach.

C. Water Utility and Utility Association Programs

Drinking water focused: All utilities are required to print a yearly Consumer Confidence Report, which they send to customers. Utilities will provide public education when a contamination issue requires it. The Maine Water Utilities Association Public Awareness Committee focuses on sustainable water use and heightened awareness of water issues. The Maine Rural Water Association assists utilities with public education programs.

Some of the larger water utilities offer programs including water quality seminars at the Auburn Land Lab, Drinking Water Week Open House, watershed property consultations, community water quality monitoring, and a lecture series. Many utilities offer printed materials including newspaper articles, signage around lakes, bill stuffers on topics such as lead and copper, newsletters, and brochures available at stores and realtor offices.

Analysis: All of the water utility programs are, of course, drinking water focused. Some of them are very comprehensive and reach large numbers of people, particularly children, including the Auburn Water District programs at the Auburn Land Lab and the Portland Water District's Ecology Center. The problem however is that these and other programs listed above are only offered locally and there is a need for statewide education. Many of the programs could be used as models and opportunities to network throughout the state.

The Consumer Confidence Report is a good tool for public education. Its current presentation varies and can be merely technical. However, because of its distribution, it could be an effective vehicle to reach many people.

D. Conservation, Environmental, Federal Agency and Water Related Organizations Programs

Drinking water focused: Printed materials include Safe Home Materials (produced through a state - university partnership), a variety of brochures (some out of print) and a variety of web-site resources. Public education signs are maintained in state parks on well water quality. Grant funds support wellhead protection education and newsletters ("Safe Drinking Water") produced by private organizations.

Drinking water related: There are various programs offered around the state including The George Mitchell Center's yearly "Maine Water Conference", conservation technical assistance for private landowners, integrated pest management with blueberry growers, presentations to Lake Associations, volunteer stewardship associated with the Maine Rivers Program and Lake Associations and the George Mitchell Center's coordination of citizen monitoring of lakes and ponds with data displayed as a web resource: the Public Education Access to Resources (PEARL) database.

Analysis: While there are several education activities listed above that serve to educate the public, they have limitations. The Maine Water Conference, while extremely well received, occurs once per year, many brochures are out of print, web resources are increasing but not accessible to all and signs reach a limited audience.

As above, the "Safe Home Materials" packet was well received, as was the "Safe Drinking Water" Newsletter although these are primarily for the private well owner and rarely deal with public water supplies. The PEARL program is being expanded to identify drinking water sources, which will make it clearer to users when a water body is a source of drinking water.

If specific to drinking water the technical assistance provided to private landowners can be very successful. As well, so can the other drinking water related programs. However, as this is not the primary focus of these programs, their impact is diluted.

2. Municipal Audience

A. State Agency Programs

Drinking water focused: The Drinking Water Program (DWP) is currently completing maps for the Source Water Assessment Program (SWAP) under mandate to EPA. Education efforts associated with the former (1993 - 1999) Wellhead Protection Program are on hold until SWAP maps are complete and distributed. In a cooperative project with the Maine Water Utilities Association and the George Mitchell Center the DWP has funded a "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies." This pilot (in Boothbay) will provide an example of how to improve the links between municipal officials and the water utilities. When complete it could also provide regional training opportunities.

The Department of Environmental Protection (DEP) is seeking municipal input through a questionnaire on ground water issues. They also coordinate 319 (Non-point source pollution abatement) grants and have a flyer on ground water facts for municipal officials. Their Priority Watershed Program has increased protection efforts through identifying surface drinking water systems as priorities.

The State Planning Office (SPO) administers the Planning and Land Use Regulation Act (PLURA), also described as the Growth Management Program (GMP). The GMP necessitates inter-agency coordination in the provision of data to municipalities for Comprehensive Plan preparation. The GMP also requires inter-agency review of the Comprehensive Plans and Ordinances for consistency with the PLURA. The State goal in PLURA that must be incorporated into Comprehensive Plans for the municipalities to be consistent with PLURA is: "To protect the quality and manage the quantity of the State's water sources, including lakes, aquifers, great ponds, estuaries, rivers and coastal areas." SPO offers (or refers municipalities to other resources for) growth management technical assistance in four arenas of land use decision-making that could impact their drinking water supply. They include: comprehensive plan preparation; implementation of comprehensive plans through development of laws and regulations including zoning, subdivision, phosphorus control, aquifer protection, erosion control and impervious surfaces; development review; and enforcement.

SPO provides several technical assistance materials including a Comprehensive Planning Manual with a water quality section, a Site Design Review Guidebook, a Technical Assistance Bulletin on Groundwater that includes review procedures for municipal boards to use to incorporate source water protection into their local ordinances, and a Technical Assistance Bulletin, prepared in conjunction with DEP, to aid in development review. SPO has also put together a tabular summary on funding sources for technical assistance and drinking water protection that is posted to the SPO web site and linked to several drinking water related web sites.

Many agencies will respond to requests for presentations from municipal groups, and provide technical assistance on certain issues, for example surface water turbidity or ordinance development. In the past some did work with planning boards on ground water issues in relation to comprehensive plan development.

Drinking water related: Programs include direct education with local groups and individuals such as Non-point Education for Municipal Officials (NEMO) and Stream Teams, Code Enforcement Officer training, and septic system training for installers, designers and inspectors. Technical assistance efforts include preparation (by Department of Conservation) of sand and gravel aquifer maps that can help with siting of drinking water supplies and review of Land Use Regulation Commission permits for surface and ground water impact.

Analysis: SWAP is one of the most extensive municipal outreach programs available to date and will provide data and maps on source water protection areas for all municipalities. Its continued success will require ongoing educational efforts, i.e. educating new municipal officials once they take office**.** In addition, the education and outreach services formerly provided in the wellhead protection program need to be coordinated with SWAP.

The "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies" can provide a useful model for municipal/water utility cooperation. However, continued funding for this program is uncertain and as a result broader training may not take place.

The recent DEP Ground Water Survey for municipal officials contains many questions directly related to drinking water use and will help determine and refine the educational needs of municipal officials and the general public.

The Growth Management program, administered by SPO, requires inter-agency coordination by statute and rule. Program coordination is, however, under-funded and needs greater staff support. SPO provides some important materials for municipalities including a Comprehensive Planning Manual and Technical Bulletins on groundwater and development review. However, officials do not always know about these resources. The Technical Bulletin on groundwater has been targeted to municipalities with a population greater than 5000, but could be used by smaller communities.

There are numerous programs targeting the municipal audience, however no single agency takes a lead on public drinking water education for municipalities and there is little coordination across agencies. In addition, there is no single source of information provided to municipalities that describes all of the various regulations that apply to surface and groundwater sources of drinking water. And finally, in the absence of any statewide policy on the need to protect drinking water, there is insufficient direction to municipalities on how to weigh the importance of local development pressures and regional source water protection needs.

B. Municipal and Planning Organization Programs

Drinking water focused: Most Regional Planning Councils offer Planning Board and Board of Appeal training, general technical assistance on growth management (they are familiar with PLURA), comprehensive plans, ordinance review and development review. A few specific towns interviewed have reported having an ordinance on pesticide use in resource protection zones and contracting for a ground water resource evaluation. Printed materials include occasional Maine Townsman articles, a wellhead protection brochure and library information. The Maine Municipal Association provided their mailing list to DEP for the municipal official Ground Water Questionnaire and will provide it for other mailings.

Analysis: Municipalities, particularly small ones, are not likely to provide information on drinking water protection for themselves. The pesticide ordinance and ground water resource evaluation listed above are efforts by the towns to increase water protection but are not education efforts.

Municipal planning organizations provide some support to municipalities for drinking water education but could provide more. The Maine Municipal Association minimally addresses environmental concerns in general and aside from the occasional Maine Townsman article they do not provide education on source water protection. They are, however, willing to make materials available through their mailing and other distribution networks.

The Regional Planning Councils offer a variety of services listed above. However, they primarily help member towns when there is a specific need but do not have the capacity to provide a coordinated drinking water education program. With financial assistance, they could provide an important network to distribute information and training to municipalities.

Thus, through the Maine Municipal Association and the Regional Councils a potential network exists to distribute information. In fact they do so now, however sporadic and response driven, but they currently do not cover the need for drinking water education for municipalities.

C. Water Utility and Utility Association Programs

Drinking water focused: In Lewiston-Auburn municipal officials participate in source water area protection efforts through the efforts of the Lake Auburn Watershed Protection Commission. The Sebago Lake Keepers Round Table involves municipal officials and meets twice a year. One utility offers education for firefighters responding to fires in their water resource area and another utility produces phosphorus issue posters to town offices. The "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies" described above is coordinated by the Maine Water Utilities Association. The Maine Rural Water Association provides direct technical assistance on ordinance creation, comprehensive planning and development review.

Analysis: All of the programs listed above are successful for a variety of reasons. In varying degrees they coordinate land acquisition and management, limit use of fire suppression chemicals, facilitate municipal-utility communication and provide direct technical assistance for municipal boards and officials. They are not offered throughout the state but could provide good models for other regions to replicate.

D. Conservation, Environmental, Federal Agency and Water Related Organizations Programs

Drinking water focused: The "Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies" described above includes the George Mitchell Center as a participant and so is noted here. One organization offers assistance for low-income communities with drinking water and waste water systems.

The regional Environmental Protection Agency oversees the SWAP program. A variety of organizations assist with outreach associated with the SWAP program.

Drinking water related: DEP has provided a grant to the Cumberland County Soil & Water Conservation District (CCSWCD) to administer the Non-point Education for Municipal Officials (NEMO) program as a pilot project. Through this program, the effects of development in the towns have been examined using build-out analyses. DEP, SPO, CCSWCD and other partner organizations are looking for resources to expand this program beyond the pilot towns. Soil and Water Conservation Districts and University of Maine Cooperative extension provide project specific water quality protection education and technical assistance.

Analysis: As noted earlier the Pilot Project to Assist Small Water Utilities in Protecting Maine Surface Waters Used as Drinking Water Supplies is working to improve municipal – utility dialog. Low-income community technical assistance on drinking water systems is focused primarily toward water utilities but is available when requested to municipalities themselves**.** Thus, technical assistance may be available but the overall municipal education needs are not being met.

The Drinking Water Program has enlisted the assistance of a variety of organizations within this category to help with education and outreach for the SWAP program (see state agency programs

for more details). These organizations welcome this relationship and can be effective liaisons with municipalities.

3. Other Audiences
In addition to the general public and municipalities, interviewees noted that programs for the school age public and water utility audiences can have a significant impact on drinking water protection. These two audiences are therefore analyzed separately below.

A. State Agency Programs

For School Age Public
Drinking water related: A variety of presentations to school classes and teacher training focus on topics such as lake quality and ground water, e.g. Children's Water Festivals. Drinking Water Week programs are also offered in conjunction with the Environmental Protection Agency.

For Water Utilities
Drinking water focused: Programs include utility operator certification training, the newsletter on drinking water protection, and a web posted tabular summary of funding sources and technical assistance for drinking water protection.

Analysis: Teacher training and classroom presentations provide a good variety of age appropriate information and this kind of program is relatively well covered.
.
The programs offered for water utilities are relatively comprehensive as well. Operator certification requires continuous training. Given that the focus is on operation of the utility, several noted a need for more training on watershed issues and source water protection.

B. Municipal and Planning Organization Programs
Theses organizations do not provide educational programs to the school age public or water utility audiences.

C. Water Utility and Utility Association Programs

For School Age Public
Drinking Water focused: Several utilities and utility associations offer a variety of school programs and some teacher training. They also provide the Environmental Education Exchange, Sebago Lake Summer Camp and Auburn Land Lab programs.

For Water Utilities
Drinking water focused: Maine Rural Water Association provides technical assistance to utilities on source water, watershed and wellhead protection. The Maine Public Utilities Commission provides limited technical assistance to utilities with contamination or technical problems.

Analysis: The teacher training and school-based presentations expand the programs provided by State agencies. While this expansion allows them to reach a larger audience it does so only on a regional basis.

Water utilities have opportunities for technical assistance in both rural and urban settings. However, there are not enough services to reach all utilities in need**.**

D. Conservation, Environmental, Federal Agency and Water Related Organization Programs

For School Age Public

Drinking water focused: School based education programs and materials are offered by a variety of agencies and organizations. Many professionals will present for a classroom if asked but have insufficient capacity to respond to all requests. Website information with educational materials is available at a number of organizations.

Drinking water related: There are many school based education programs and materials offered by a variety of agencies and organizations focused on water quality, watersheds and ground water such as the Project WET curriculum. Many programs, such as the KIDS Consortium that promotes service learning, have a water quality component and could be expanded to include drinking water.

For Water Utilities

Drinking water focused: Some agencies and organizations offer technical assistance such as stream gages and ground water monitoring to utilities when requested and utility operator training is offered regularly. Agencies will contract with utilities to do land and water survey work to justify a waiving of filtration requirements.

Analysis: There are a variety of materials and training for teachers on drinking water and related topics. Some indicated that more Maine specific materials are needed. Many professionals will go out to classes if asked. In comparison to the other audiences described above there are more resources available for school age. However, delivery is highly dependent on teacher interest.

Utility audiences are also well reached in comparison with the other audiences. They have many opportunities for operator training but could use more training on source water protection.

Priority Gaps and Needs

The programs described above provide a landscape of what is happening throughout the state in relation to drinking water education and technical assistance. While there are many good programs available, many are only offered in one town or region. They could be models for other regions but with patchy systems of program delivery there are extensive gaps and needs in the educational programs available to the public and municipalities for drinking water education.

There are also programs that do not have a strong educational emphasis but are services that could be expanded to include an educational component. A critical missing link is a coordinated effort that would fill in the gaps with expanded or new programs, assure quality programming statewide, and regularly evaluate their effectiveness.

A detailed listing of current gaps and needs is provided in the tables in Appendix D and an analysis of the most significant problems arising from the gaps is provided above. This section groups the highest priority gaps and needs for drinking water education within the same three

audience categories covered in the previous section – General Public, Municipalities and Other Audiences (School Age Public, Water Utilities and State Agencies and Personnel).

The gaps and needs that ranked at the highest priority were those that were pervasive throughout the state and/or repeated by numerous interviewees. Priorities were also persistent issues previously identified by earlier work groups and task forces and/or, if addressed, could significantly improve protection of the resource.

1. General Public Audience

The Council recommends that the following topics have equal educational importance across the state:

- Basic Resource Information: need clear information explaining what groundwater is, how it provides drinking water and source water protection techniques. Also needed is well presented information on surface waters that provide drinking water, how watershed protection enhances drinking water quality and, for surface *and* groundwater sources of drinking water, an understanding of contaminants and how to prevent them from reaching drinking water.
- Prevention: Landowners need information and technical assistance prior to planning for development. They often do not follow regulations and it is discovered after development when changes are difficult.
- Home heating oil and septic system education: Home heating oil leakage and septic system contamination is an extensive problem particularly with transient and non-community non-transient water supplies. In some cases the heating oil and septic systems threaten municipal well fields. Preventative education is needed as well as clean-up procedures.
- Private sector education: There are currently limited programs to reach this segment of the general public and significant benefit is expected from doing so. Improved protection could be facilitated through targeting individuals and businesses such as contractors, architects, engineers, gas stations, agriculture, manufacturing and other businesses identified as "potential threats" to public drinking water supplies through the State Source Water Assessment Program.

2. Municipal Audience

Municipal decisions regarding development within or near water resource areas have a tremendous impact on the health and quality of the states drinking water supplies. The Council recognizes that there is a strong need for education, technical assistance and easily accessible resources to assist municipalities in making these decisions. Without this education we will likely see an increase in contamination incidents in the state.

The Council recommends that the following education needs are of highest priority:

Printed Information including:

- Clear, summarized information on state regulations, licensing requirements, unregulated contamination sources and direction to additional contacts and resources.
- Model legislation and clear regulations. Many potentially threatening activities are still approvable with current regulations.
- Sample comprehensive plan policies including information on the link between the identification of critical areas in the comprehensive plan and the adoption of defensible regulations to protect these critical areas.
- Sample model town ordinances for land uses within source water protection areas. Ordinances need to deal with issue of towns approving contaminant sources near water systems.

Training and Technical Assistance including:

- Help with how to apply sample comprehensive plan policies and town ordinances to specific towns and how to enforce the ordinances.
- Coordinated municipal education on source water protection. This includes ground water information, wellhead protection, information about fund sources for land conservation and preservation near water supplies and ongoing education related to SWAP.
- Municipal board training on contamination issues and methods for avoiding them.
- Code Enforcement Officer training on topics such as underground storage tanks.

Communication and Linkage including:

- Better access and financial support to regional planning commissions to provide education through their existing networks and training programs.
- Stronger linkage between water suppliers and municipalities to support communication regarding land use, including specific development proposals, and comprehensive planning.
- Municipalities need an understanding, especially in the "gray" areas, of the impact of land use on water quality and the ability to assess the relative risks of development so that appropriate responses can be developed. These include, but are not limited to, modifying project scope or location on a site, requiring specific mitigation measures, and outright protection.
- Water suppliers need to better understand the municipal process and take advantage of their opportunities to be involved.
- Municipalities within the water supply watershed or recharge area need to be incorporated into decision-making processes, including those that are not in towns served by the supply.

3. Other Audiences

The water utilities and school age population appear to be relatively well served by existing programs. There is, of course, more that could be done with both of these audience groups and suggestions are in the tables in Appendix D.

The state itself - Agencies and personnel - emerged as an important "other audience" with gaps and needs. The Council recommends that the following needs be addressed as well:

- ❖ A point person within state government to coordinate education efforts.
- ❖ Development of consistent messages and education across state agencies and departments.
- ❖ Ongoing measurement for effectiveness of educational messages.
- ❖ Increased coordination among state agencies and with organizations outside of state government.
- ❖ Reconciling drinking water protection and other environmental issues with smart growth initiatives.

Recommended Messages and Tools

The Council, in their October, 2000 meeting (see Appendix F), observed that the budget for development of a strategy for public education for drinking water protection was reduced from $120,000.00 to $30,000.00. We therefore concluded that this report would focus on an overall strategy rather than market research or development of specific tools and messages. Although messages and tools were not the focus of the research, recommendations did surface during the interviews and so they are reported below. Ideas from the original 1998-99 Work Group are also included. It is recommended that the Drinking Water Education Coordinator conduct market research to determine the appropriateness and effectiveness of tools and messages with the following information as a starting point.

Some of the messages and tools can be used in current regional programs, others will require new program design. Due to the limited budget and scope of this research, these ways and means are only touched on in the next section.

1. General Public

Messages:

- Source water protection for drinking water needs to be the highest priority of all land uses;
- Since safe drinking water is a universal issue that impacts each person, everyone needs to be involved in it's protection;
- Ground water is very expensive to clean up so we need to understand what it is, how it gets contaminated and how to protect it;
- Surface water resource is fragile and all individuals have a role to play in its protection;
- All individuals share the responsibility for source water protection and need home evaluation techniques;
- Risks of possible disease outbreaks;
- Watershed understanding is essential.

Tools: The following tools were identified by interviewees as effective but are presented in no particular order. They include: public service announcements; local press opinion editorials, articles and responses to articles to convey drinking water protection perspective; web-based education; posting printed materials on the web so they are available after publications run out; public meetings on specific topics; mobilizing volunteer activity such as starting Groundwater Guardian Program in Maine; helping water utilities relay information to customers; expanding

Children's Water Festivals to include the northern part of the state; forming a committee to oversee education and outreach in the state.

General conclusions that were reached, by necessity not conclusive, include that the messages need to emphasize personal responsibility and cumulative impact and be linked with ideas for action to be successful. A variety of tools should be used to portray each message. There is greater success with targeted audiences, such as brochures through oil distributors, and a single message about a theme has the most success.

2. Municipal

Messages:

- Source water protection for drinking water needs to be the highest priority of all land uses;
- Ground water is very expensive to clean up so we need to understand what it is, how it gets contaminated and how to protect it;
- Surface water resource is fragile and municipalities have a role to play in protection;
- The entire watershed needs to be protected;
- Human activities are necessary but need to keep them and drinking water supplies as far apart as possible.

Tools: First and foremost, municipalities need assistance with the progression of thought from comprehensive plan development, to an ordinance that implements the plan, and finally to development review using the regulations so created. Additional tools, identified by interviewees, include: a State regulations and resources booklet; interagency and inter-sector coordination and cooperation; a State information clearing house; simple check-the-box questions for municipal officials to identify potential contamination sources on regulatory forms; videos for training municipal officials; articles in town newsletters; and workshops at professional conferences.

A variety of existing programs were recommended for expansion or to be used as models. These include: the NEMO[3] at DEP as a model that could be expanded to include drinking water; the Regional Wetlands Conservation Plan at SPO that could be a model for SWAP education; the objectives and goals of the Wellhead Protection Program at DHS that could be used as a foundation for education efforts; and The Growth Management Program that could be used as a framework for interagency involvement and statewide delivery of technical assistance.

Other ideas include combining land trust and drinking water protection efforts when their goals overlap and the update and use of existing wellhead protection libraries at the Greater Portland Council of Governments and the Maine Rural Water Association.

As above, general conclusions that were reached, by necessity not conclusive, include the following. A single approach will not work because towns have different issues and knowledge bases. Towns should be surveyed to assess their specific needs and trainings customized

[3] NEMO (Non-point Education for Municipal Officials) is an educational program for land use decision makers that addresses the relationship between land use and natural resource protection with a focus on water resources.

accordingly. Education needs to be linked to comprehensive planning, ordinance review, site plan review and watershed protection.

3. Other Audiences

One message was developed that is specific to this section, however, many of the messages listed above would also apply.

- For State Agencies – This week's missed interconnection is a missed opportunity to prevent next week's crisis and clean up strategy.

The State personnel audience needs to know and deliver a consistent message about drinking water protection. Specific tools would include facilitation of inter-agency communication, a State regulations and resources booklet and a State information-clearing house.

IV. IMPLEMENTATION STRATEGY

Staff Needs and Qualifications

The Task Force to Study the Improvement of Public Water Supply, established by Chapter 80, Resolves 1999, suggested that a Drinking Water Education Coordinator position be established as the second phase of their first recommendation regarding drinking water education. This report was the first phase requested. In addition, a recommendation for a full time Drinking Water Education Coordinator position came from the original 1998-99 Work Group that led to the above-mentioned task force. This report provides, for the third time since 1998, a strong recommendation for a Drinking Water Education Coordinator position. All fifty-two people interviewed for this report saw the need for a coordinator/educator position and the analysis of that research contained herein, supports it as well. Thus this report supports an already identified need within state government.

Another significant conclusion reached in the program analyses and the identification of the gaps was also reached for the third time. It is, the absence of a guiding state policy or law on the importance of protecting drinking water. The second recommendation from The Task Force to Study the Improvement of Public Water Supply was to create a new "Public Water Supply Protection Act" that articulates the importance of protecting public drinking water supplies. This need has not been fully addressed. Such a law or clearly articulated state policy would provide the basis for the education and outreach needed to protect drinking water. The Drinking Water Education Coordinator could play a role in developing this policy.

1. Drinking Water Education Coordinator Position Description and Responsibilities

A Drinking Water Education Coordinator would ***primarily coordinate*** statewide education and outreach by addressing the gaps and needs stated above. This person, while providing few direct educational services, would serve as a resource and clearinghouse for existing services, expand successful regional educational activities throughout the state and coordinate implementation of new initiatives.

The Drinking Water Education Coordinator would identify key opportunities for professionals within state government to present their expertise and, when necessary, would outsource services to organizations outside of state government. Such coordination would make more efficient use of existing resources, build on strong existing programs, and eliminate duplicative activities. A critical role for this position is to facilitate communication and collaboration across state agencies. This will allow development of policy that is both representative and informed. It will also ensure delivery of consistent messages to the public.

The Lakes Education Coordinator position in the DEP Bureau of Land and Water Quality has some similar components to the proposed Drinking Water Education Coordinator position. The Lakes Education Coordinator also primarily fills a coordination role and most direct services are outsourced through provision of funds to lake associations and other direct education service providers.

Another critical role for the Drinking Water Education Coordinator, drawn from the highest priority gaps and needs, is to ***help municipalities with land use decision-making*** that affects sources of drinking water. While municipalities have some basic technical education needs (watershed involvement, groundwater hydrology, contaminant sources and movement) the vast majority of their needs concern understanding existing regulations, developing and applying local ordinances, training (and re-training new) municipal officials, incorporating drinking water protection into comprehensive planning processes, integrating the decision-making of utilities and municipal boards and incorporating input from the reviews of comprehensive plans and ordinances by state agencies.

The research herein has analyzed the available programs to protect dinking water, i.e. the "producers" and their "products". An analysis is still needed of the effectiveness of these particular "products" to the audiences who "consume" them. As recommended by the original Task Force, one of the first tasks for this position should be a ***market analysis*** to determine the most effective messages to protect drinking water and the best means to deliver them. Based on that research the Drinking Water Education Coordinator would coordinate preparation of targeted materials to address the gaps and needs. The coordinator would then do an on-going evaluation to determine success of the messages and to guide project development.

2. Position Qualifications

The Drinking Water Education Coordinator needs strong organizational, facilitation and communication skills. Experiences and/or training in municipal or regional planning and government processes are essential and could be derived from professional or extensive volunteer/community service experience in Maine. A background in education is important but an understanding of market research and public relations is critical. Some background in science, especially hydrogeology, is desirable but a general willingness or capacity to understand and sort through complex problems would suffice. Public speaking abilities would also be desirable.

Outsourcing Recommendations

As the Drinking Water Education Coordinator will provide few direct education services or programs, specific materials need to be prepared by others. This outsourcing of materials is done regularly by state agencies.

Organizations that have expertise and/or have expressed a willingness to provide these outsourced services include:

The University of Maine George Mitchell Center,
Soil and Water Conservation Districts,
Regional Councils,
Maine Rural Water Association, and
Maine Water Utilities Association.

Types of things that could be outsourced include: Public service announcements, brochures, slide shows, videos, and training courses.

V. Position Location, Funding Sources and Budget

Position Location

The legislative initiative that requested this report (P.L 1999 c. 761) stated that the Land and Water Resources Council would "recommend a position and budget within the Department of Environmental Protection to implement this strategy". The same bill requested an investigation into the possibility of moving the Drinking Water Program from the Department of Human Services to the Department of Environmental Protection. Both agency budgets were submitted in August of 2000 prior to the start of these studies. There was thus a lack of certainty about where the position would be housed. The Council and the Advisory Committee therefore kept an open mind about the location of the position and reviewed several alternatives.

The alternative locations considered for the position included the Bureau of Land and Water Quality at the Department of Environmental Protection (DEP), the Drinking Water Program at the Department of Human Services (DHS), the Land Use Planning Team at the State Planning Office (SPO) and the University of Maine George Mitchell Center (GMC).

At DEP, in the Bureau of Land and Water Quality, the Coordinator would work with colleagues focused on other water quality issues, education and a developing set of municipal education efforts. However, DEP has a strong regulatory image with municipalities. This relationship can raise barriers to effective education and outreach. In addition, given that the Drinking Water Program is likely to remain within the Department of Human Service, a link to the Drinking Water Program would be weaker.

In the Drinking Water Program at DHS, the Coordinator could work in close coordination with SWAP and other drinking water programs. While the DWP has a limited network of contacts with municipalities, there is a need to develop this capacity to implement SWAP. In addition, if the coordinator brought this municipal expertise to the position, then the availability of technical support at the DWP could effectively round out the qualifications of the education effort.

At SPO, the Coordinator would benefit from an existing set of relationships and technical assistance links with municipalities, including the Community Planning and Investment Program, Maine Coastal Program, natural resources data provision and training of Code Enforcement Officers. The Coordinator would also build on the inter-agency linkages that SPO has and is seeking to strengthen. However, if housed at SPO, there would be a loss to the Coordinator in the form of daily contact with colleagues in the same substantive area, easy access to technical expertise, and spreading the delivery of services on drinking water protection across three agencies (SPO, DEP, DHS) rather than two.

At the GMC, the Coordinator would benefit from strong existing educational resources and an educational delivery network. GMC also does not suffer from the perception of being a regulatory agency. However, the stress in the strategy on a coordinating role within state government makes it very difficult for GMC to perform this function from the outside. GMC is highly recommended for outsourcing of education materials.

The Council concludes that the greatest benefits for the protection of drinking water are likely to accrue from housing the Drinking Water Education Coordinator Position in the Drinking Water Program at DHS. Regardless of where the position is located, it is essential that the Coordinator have very strong links to other State agencies, particularly DEP and SPO.

Funding Sources

All three potential agencies (SPO, DEP, DHS) that could house this position have examined their existing staff resources and concluded that shifting responsibilities is not possible and that they do not have the funds or staff to implement the strategy contained herein.

Therefore, consistent with the recommendation of the last three years, a new position is proposed in addition to others currently proposed for other purposes, within the Drinking Water Program of the Department of Human Services.

The Council is sensitive to the Governors desire to maintain the budget at its current projected set of expenditures. We therefore recommend that the budget presented below be proposed in the supplemental budget of 120th legislature or, if not possible, in the next biennium.

Budget

Senior staff position	$38,000.00	
Fringe (benefits, retirement etc.)	$15,200.00	(40%)
Outsourcing - market research	$50,000.00	(surveys and focus groups[4])
Outsourcing - materials prep. etc.	$25,000.00	
Total - year 1	**$128,200.00**	
Senior staff position	$38,000.00	
Fringe (benefits, retirement etc.)	$15,200.00	(40%)
Outsourcing-market research	$3,600.00	(3 questions[5])
Outsourcing – other	To be determined	
Total – succeeding years	**$56,800.00**	(depending on outsourcing needs)

[4] This estimate was provided by Market Decisions and is includes $20,000 for a statewide survey of the general public, $15,000 for focus groups and $15,000 for a municipal officials survey. The research will document current awareness and provide information for message formation.

[5] This estimate from Market Decisions covers the cost, at $1,200 per question, for three survey questions on "The Maine Survey" to track awareness over time.

APPENDIX A

LEGISLATIVE CHARGE

Excerpted from C. 761, Section 12 PL 1999, "An Act to Improve Public Water Supply Protection".

Sec. 12. Education Strategy. By March 5, 2001, the Land and Water Resources Council shall hire a person in a temporary project position to develop an education strategy for public water supply protection aimed at municipalities and the general public. The strategy must include the messages and tools to reach various audiences tht affect the protection of public drinking water supplies. The Council must develop recommendations and a budget to implement its proposal and recommend a position and budget within the Department of Environmental Protection to implement this strategy. The council shall report to the joint standing committee of the Legislature having jurisdiction over natural resources matters by March15, 2001 and the joint standing committee may report out any legislation needed to implement these recommendations.

APPENDIX B

Members of Drinking Water Education Strategy Advisory Committee

State Agency Members	
Department of Agriculture	David Rocque
Department of Conservation	Robert Marvinney
Department of Environmental Protection	George Seel
	Donald Witherill
	Marianne DuBois
Department of Human Services	Andrews Tolman
	David Braley
	Joy Nadeau
Department of Inland Fisheries and Wildlife	Ken Elowe
State Planning Office	Judy Cooper
	Cynthia Krum
Non-State Agency Members	
Environmental Protection Agency	Ted Lavery
Senator George J. Mitchell Center	Steve Kahl
Maine Municipal Association	Geoff Herman
Maine Rural Water Association	Paula Thomson
Portland Water District	Phil Boissonneault

Appendix C
List of Individuals and Organizations Interviewed

I. State Agencies

Aroostook DEP - Kathy Hoppe
DEP, Bureau of Land and Water Quality – Barb Welch, Marianne DuBois, Christine Smith, Donald Witherill
DEP, Bureau of Remediation and Waste Management – George Seel, David McCaskill
DHS, Drinking Water Program – Nancy Beardsley, Andrews Tolman, David Braley, Joy Nadeau
DOC/MGS – Robert Marvinney, Tom Weddle
SPO, Coastal Program – Kathleen Leyden
SPO, Land Use Team – Judy Cooper
SPO, Code Enforcement Officer Training - Lana Clough
Dept. Of Ag. – David Rocque
IF&W – Ken Elowe

II. Municipal and Planning Organizations

Maine Municipal Association – Geoff Herman, Michael Starn
Greater Portland Council of Governments – Rick Seeley
Southern Maine Regional Planning Commission – Kate Albert
Northern Maine Development Commission – Steve McCulloch
Freeport Planning Board – Alan Caron
Harpswell Planning Board – Bob White
Windham Town Manager - Tony Plante
York Town Planner - Steve Burns

III. Water Utilities and Related Organizations

Auburn Water District - Mary Jane Dillingham
Bangor Water District - Kathy Moriarty
Lisbon Water Department - David Hale
Portland Water District - Phil Boissonneault, Paul Hunt and Roberta Hill
Maine Water Utilities Association – Jeff McNelly
Public Utilities Commission - Ray Hammond

IV. Conservation, Environmental, Federal and other Water Related Organizations

Natural Resources Conservation Service (USDA) – Bill Yamartino
Maine Association of Conservation Districts - Bill Bell
Cumberland County Soil and Water Conservation District - Betty McInnes
Oxford County Soil and Water Conservation District – Jim Chandler
Senator George J. Mitchell Center– John Peckenham, Steve Kahl
University of Maine Cooperative Extension Service – John Jemison
United States Geological Survey – Robert Lent, Lan Tornes, Gloria Morrill
United States Environmental Protection Agency – Ted Lavery
Maine Rural Water Association – Paula Thomson
Northeast Rural Community Assistance Program – Jodi Castallo
Maine Audubon Society – Bill Hancock
Natural Resources Council of Maine – Betsy Ham
Joint Environmental Training Coordinating Committee – Leeann Hanson
Southern Maine Technical College – Bob Good

Appendix D

Tables:

Public Education for Drinking Water Protection in Maine – Summary of Current Programs, Gaps and Needs
State Agencies

Public Education for Drinking Water Protection in Maine – Summary of Current Programs, Gaps and Needs
Municipal and Planning Organizations

Public Education for Drinking Water Protection in Maine – Summary of Current Programs, Gaps and Needs
Water Utilities and Utility Associations

Public Education for Drinking Water Protection in Maine – Summary of Current Programs, Gaps and Needs
Conservation, Environmental, Federal and Water Related Organizations

Acronyms used in the Tables:

DEP	Department of Environmental Protection (Maine)
DHS	Department of Human Services (Maine)
DOC	Department of Conservation (Maine)
IF&W	Inland Fisheries and Wildlife (Maine)
MGS	Maine Geological Survey
NEMO	Non-point Education for Municipal Officials
PSA's	Public Service Announcements
SPO	State Planning Office (Maine)
SMTC	Southern Maine Technical College
SWAP	Source Water Assessment Program
SWCD	Soil and Water Conservation District
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

Appendix E
Land and Water Resources Council Memo – Oct 6, 2000

TO: Land and Water Resources Council
FROM: Cynthia Krum, State Planning Office
DATE: October 6, 2000
SUBJECT: LWRC Report on the Public Education Strategy for Drinking Water Protection Required in PL 1999 c. 761

Background

Public Law 1999 c. 761 (LD 2597), an "Act to Improve Public Water Supply Protection," charges the Land and Water Resources Council (see Sec. 12) to prepare a report containing ***an education strategy for public water supply protection aimed at municipalities and the general public.*** The report is to include recommendations for a position and budget within the Department of Environmental Protection to implement the proposed strategy. It is due to the joint standing committee of the Legislature having jurisdiction over natural resource matters by March 15, 2001.

Development of an education strategy will allow coordination, expansion and elimination of duplicative efforts to educate the general public and municipal officials about protection of drinking water supplies. The scope of this effort refines the one originally suggested by the Final Report of the Task Force to Study the Improvement of Public Water Supply Protection: the budget for the assignment was reduced from $120,000.00 to $30,000.00 and will therefore focus on an overall strategy rather than market research or development of specific tools and messages.

Proposal

The Education Strategy for Public Water Supply Protection will identify areas that need expanded education efforts, determine the audiences who need to be reached, and make recommendations on how to serve their needs.
An Education Strategy Advisory Committee has been formed to provide information on existing public education strategies on drinking water supply protection, comments on education programs that are currently in place, identification of existing gaps, and suggestions for the overall education strategy.

Advisory committee members are as follows:
1. SPO
    a. Cynthia Krum - Senior Planner and Project Coordinator (will be responsible for preparing the final report)
    b. Judy Cooper - Senior Planner
2. DEP
    a. Bureau of Remediation and Waste Management

b. George Seel - Division Director, Technical Services
c. David McCaskill – Environmental Specialist, Pollution Prevention
d. Bureau of Land and Water Quality
e. Barb Welch – Biologist, Education and Outreach
f. Mary Ann DuBois – Geologist, Groundwater Education (unconfirmed)

3. DHS
   g. Division of Health Engineering, Drinking Water Program
   h. Andy Tolman - Hydrogeologist
   i. David Braley – Senior Geologist
   j. Joy Nadeau - Environmental Analyst
4. Maine Rural Water Association, Paula Thomson
5. Maine Water Utilities Association, Jeffrey McNelly
6. EPA, Ted Lavery
7. Portland Water District, Phil Boissonneault
8. Maine Municipal Association, Geoff Herman

Research will include contacting several agencies and organizations who play a role in public education with respect to drinking water including: USGS, Maine Geological Survey, Maine Association of Planners, Sierra Club, Maine Audubon Society, Soil and Water Conservation Districts, other water districts (in addition to Portland), League of Women Voters and the Public Utilities Commission. In addition to those on the Advisory committee there is considerable depth of experience available from ten other contacts within DEP, DHS and SPO.

Process

1. The Education Strategy Advisory Committee will meet periodically during the project period to provide information and feedback. They will review drafts of the strategy as well.
2. A draft legislative report will be prepared for the February 8, 2001 meeting of the LWRC with a final report to be endorsed no later than the March 8 meeting to allow for printing and delivery on March 15.