

Chapter 4

Information and Education Nonpoint Source Management Program

by

**Colorado Department of Public Health and Environment
Water Quality Control Division**

**Prepared in Cooperation with the
Colorado Nonpoint Source Council
Information and Education Committee**

January 10, 2000

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I. Planning

A. Problem identification

The *Colorado Nonpoint Assessment Report* (January 1990) delineates approximately 2,200 miles of stream affected by agriculture/silviculture as well as 16,000 acres of surface water bodies, 1,300 miles of stream affected by mining activities, 150 miles of stream affected by urban/construction activities, and 16 miles affected by hydrologic modifications. In addition the state's 1998 305(b) report "*Status of Water Quality in Colorado*", and the 1998 303(d) list of *Water Quality Limited Segments still requiring TMDL's*," reinforce that NPS is a problem that threatens the future quality of Colorado's water. Technology alone will not reclaim all of these river miles or surface acres. In many cases, technology is not the issue at all. This issue is getting the right people the right information at the right time and the problem is reduced or eliminated. This type of effort can be labeled as providing information and education.

This Information and Education Management Program was prepared by the Information and Education Committee of the Colorado NPS Council, to fulfill the requirements of Section 319 of the Federal Clean Water Act. The goal of the Clean Water Act, Section 319, is to restore to full use those waters, both surface and groundwater, impaired by NPS and to prevent future impairments of Colorado's waters. The Colorado NPS Program achieves this goal by administering a program that brings together regulatory and non-regulatory authorities, agencies and programs, through an open process that involves the public. An Information and Education Program is an essential component to implementing an effective and efficient NPS program because this effort requires communication and transfer of information across diverse political, social and economic backgrounds.

The NPS Council recognized the need for an I & E program as early as 1989. This group had the foresight to understand that people in their daily use of water resources are the catalysts to restoring full use of surface and ground waters and preventing future impairments of Colorado's waters. The NPS program has to be able to transfer general and technical information from

- 1) project sponsors to the specific resource user groups (like mining companies, construction companies, city planners, and farmers)
- 2) other NPS efforts outside of Colorado's NPS Program and projects back to Colorado resource and program managers and the public
- 3) regulatory authorities to resource users and from resource users to regulatory authorities so that the information can be put to practical use.

Concurrent to information transfer, the NPS program also must strategically educate all possible ages, cultures, socioeconomic and geographic users of Colorado's water resources about NPS. The best BMP in the world will only make a small difference unless the technology and information is transferred to others who can implement that BMP. NPS projects focus on a specific problem and specific project goals, they must to succeed. NPS projects are not designed to inform and educate, that is a consciously added component. Without an overall information and education strategy, vision or plan, information from projects most often never get beyond a small group of individuals.

A pro-active information and education strategy or plan from a program level gathers and process information in a meaningful, directed and consistent manner to the public and target audiences. A program perspective also includes gathering NPS information outside of Colorado for use inside of Colorado, which would occur ad hoc if at all without a plan. In addition, NPS Program Staff, NPS Council members, categorical committee chairs and watershed coordinators are not trained in the area of information and education, they are professionals with expertise in other areas. A Information and Education program provides access to expertise for these entities. The key to successful I & E efforts is to provide the right information in the right manner at the right time.

The results of a pre-survey NPS media campaign of 618 Colorado citizens regarding urban nonpoint sources, completed by the League of Women Voters, summarizes the need for an NPS I & E program. Less than one half of survey respondents knew that storm water runs into local waterways without being treated. One quarter of respondents thought that polluted runoff was not a problem in their community. More than one quarter of respondents felt that house-hold generated polluted runoff did not reduce their quality of life at all. Many did not associate pet waste or disposal of automobile products with potential decreases in water quality. A significant number of individuals do feel they can have positive impact on polluted runoff. This is just one sub-population of citizens. These are the individuals that need to be targeted with the correct information at the right time and that is precisely what a I & E Program can provide.

If the public is not educated about NPS, the regulatory authorities and water resource managers will always be treating the symptoms of the problem and not the source. Treating polluted water is much more expensive than the cost of prevention. Without the I & E Program, there are no formal mechanisms, processes, requirements, resources, protocols, or programs to achieve any effective and efficient transfer of NPS information or education from the NPS Program to the public (outside of grant requirements the EPA has of the CDPHE). The I & E NPS Program is about changing our perspectives, attitudes, behaviors, practices and use of land and water in order reduce nonpoint pollution sources or constituents. This will not be achieved without a pro-active education and information outreach.

B. Mission or Purpose of I & E Program

To provide a proactive leadership role informing and educating citizens of Colorado, increasing their knowledge and awareness regarding the understanding and/or prevention of nonpoint source water pollution and related issues.

The I & E NPS program has five components:

- I & E efforts for the State NPS program (including training)
- I & E efforts for specific I & E NPS projects brought to the Council by independent sponsors
- I & E efforts for specific I & E NPS projects the State Program, Council or committee seeks
- I & E components of other projects from other categorical committees or watershed groups.
- I & E efforts associated with the NPS Program Contingency Funds.

Information and education from the NPS program perspective looks beyond political boundaries to other states and programs that can assist our program and NPS efforts. Information and education with the sole purpose of informing and educating about NPS issues will occur with projects that come to our committee as well as projects that are pro-actively developed. Information and education components of other committee projects or priorities within a watershed keeps the I & E Program efforts reaching out to the grass roots level. The I & E program handles a small, “first come first serve” Contingency Fund for the NPS Council. As determined by the Council and described in the NPS Program, the Contingency Funds are to be “allocated to projects that provide information and education to citizens of Colorado related to NPS water resources, with first priority to education institutions.” I & E Program goals may cross over any one or more of the program components, while some goals remain specific to one component.

C. Authorities for managing this segment of NPS, legislative or administrative mandate

Please refer back to *Chapter 1, Overview of the NPS Program* for the legislative and administrative mandate for the NPS Program. The Colorado Department of Public Health and Environment, Water Quality Control Division and Commission have legal responsibilities to implement and 319 NPS Program. The I & E Program within the NPS Program is a tool, a means, in part, to achieve the goals of the Clean Water Act, Section 319. There is no designated authority in the state, regulatory or nonregulatory, assigned to provide NPS information and education, hence another reason for an I & E Program.

The USEPA does require the administrators of the NPS Program, the CDPHE, to complete the necessary documentation associated with administering 319 grants and projects. These grant project reporting requirements provide a mechanism of documenting project information and one mechanism of outreach via the EPA's website. However, there is no formal mechanism to strategically provide NPS I & E to the public and from NPS activities outside of Colorado back to entities within the state.

There are entities in the state whose mission is to provide education, such as the Cooperative Extension and Universities or Colleges. These institutions and other entities with similar educational missions have been utilized as partners in that past, and will be in the future, to accomplish I & E program goals.

D. Water Quality Priorities and Targets

Information and Education efforts must infiltrate all layers of NPS issues. For NPS Program success, NPS I & E efforts must occur both from the top (for example regulatory authorities) to the bottom (the water resource user, for instance the farmer) and from the bottom to the top. There are various layers, subcultures, identifiable audiences on this top-bottom, bottom-top continuum. A different strategy and sometimes mechanism is necessary to reach each audience in a meaningful manner.

The NPS I & E Program targets as many of these identifiable audiences as possible. Targets that might represent the top are not limited to but include regulatory authorities, water resource managers (like Conservancy Districts, Municipalities, and Ditch Companies), land use managers (governmental and private, small and large, urban and rural), and categorical targets like the agricultural and mining industries. Programs for agriculture, mining, urban and hydro-modification have identified, and in some cases prioritized, key target audiences to inform and educate. The NPS I & E Program must also include and infiltrate other processes that are associated with the top and surround watershed management and priorities developed via the 303(d) list, Unified Watershed Assessments, and others yet to come.

Targets that might represent the bottom are not limited to but include, local watershed initiatives, schools, educational institutions and non profit organizations, local groups like soil conservation districts, League of Women Voter Chapters and grass roots groups. The NPS I & E program has to reach people: People who use the land and water directly and indirectly. People who could prevent NPS pollution, demonstrate a NPS technology or reclaim a waterway from NPS impacts. Everyone has an ecological address. There is no place on land or on earth that doesn't drain into a watershed of some size. The I & E program identifies the common ground in the needs of the regulatory, land and water user and citizens to achieve the NPS and I & E Program goals.

E. Categorical Goals and Objectives, Short and Long Term

Some objectives will never be fully achieved due to changing issues and directions and population dynamics. Some objectives will be achieved via projects brought to the 319 Program and others will only be achieved if the I & E Program develops the project.

GOAL 1. **Technology Transfer:** Pro-actively engage in the general and technical transformation of NPS Information and Education.

Objective 1.1: To obtain and retain a NPS I & E Program specialist to coordinate NPS and I & E Program goals and objectives.

Action 1.1.1: By 9/15/99, secure mechanism, partnerships and processes to obtain and retain a person to coordinate the transfer of NPS information. This includes working with the media, marketing entities, grass roots groups, project sponsors for all 319 NPS projects, all categorical committees, watershed coordinators, NPS Program manager and staff, NPS Council, NPS programs outside of Colorado, and regulatory authorities. Examples of responsibilities associated with this position includes marketing and reviewing Contingency fund projects, giving presentations on Colorado NPS Program, developing marketing and public relation NPS strategies, developing partnerships, creating and maintaining avenues of communication between groups regarding NPS issues, and training relevant entities on I & E related to NPS.

Note: Once the I&E Coordinator position is filled, that individual will develop a specific work plan, based on the goals, objectives, and actions listed here, and developed with significant input from the I&E partners. Consequently, the I&E program, while providing a number of fairly specific actions, provides more of the conceptual framework in which is accomplish the I&E goals for the program.

Objective 1.2: To annually share all Colorado 319 project information (general to technical) for the purpose of prevention, restoration, education, further demonstration and/or project development.

Action 1.2.1: To develop, document and implement a sustainable process that will provide accurate, consistent, and reliable technical and general documentation of all completed Colorado 319 Projects. (*This includes but is not limited to evaluating existing processes, collection of project information, determination of what project information is relevant (technical and general, recording, storage and access of that information, determining what products to be created from that information, process to create product and dissemination plan for those products).*)

Action 1.2.2: Develop a two report formats, one general and one technical, "what did we learn from this project?", each project sponsor must complete at end of project, in order to compile necessary information for annual report.

General information would include project information, location, purpose/goal, time period, cost, methods, partnerships, match, statement of benefit, recommendations, etc. Technical information would include engineering designs/goals, cleanup targets, data, etc.

Action 1.2.3: Develop Information and Education BMP guidelines for project sponsors, committees, watershed groups and the Council. Some BMP's are listed in section III (C).

Action 1.2.4 Assist in coordination of training for project sponsors, target audiences, committees, watershed groups, and the Council for topics prioritized by Council, for example TMDL's, BMP's, Monitoring, Evaluation, Watershed Planning. etc.

Objective 1.3: To assess, coordinate, filter existing NPS information outside of Colorado 319 projects for the use of the NPS Program and NPS Council and to develop or discover a mechanism to share Colorado NPS information outside of Colorado.

Action 1.3.1: Research and/or develop known mechanisms and connections to other NPS programs, authorities and entities. Formalize communication with these identified entities and a mechanism to share new information with NPS Council, potential project sponsor and the public.

Action 1.3.2: Develop two program "packages", one general and one technical, for publicizing the NPS program, to go with traveling display, be at professional conferences, etc.

Objective 1.4: To assure all 319 NPS projects have an information and education component, that is technically and feasibly sound, demonstrates accountability, and that reflect the goals and missions of the I & E program, other NPS Categorical Programs, watershed priorities, NPS Council, NPS Program and the 9 Key Elements.

Action 1.4.1: Become a clearinghouse of Colorado 319 NPS Project information and to the degree possible NPS information from other State 319 NPS programs. The purpose for this is to decrease duplication, increase the quality of projects with the best information possible,

connect the people with ideas to the best resources, and to maximize the available grant dollars. The information would be categorized for example by type of information, like BMP's. A library or directory would be created and a process for updating and dissemination would be developed.

Action 1.4.2: Participate in project review processes and evaluate and update "guideline criteria" to use in combination with report card for all or each role the I & E Program serves. This includes reviewing projects with I & E components, statewide I & E projects and developing I & E projects. This also includes providing guidelines to project sponsors.

Action 1.4.3: Develop mini training session for watershed coordinators, categorical committee chairs, NPS Council members, NPS Program staff and other relevant entities regarding information and education BMP's.

Action 1.4.4: Evaluate I & E Program goals, objectives and procedures annually, make necessary changes, and disseminate changes as needed.

Action 1.4.5: Evaluate funded I & E projects annually. Answer questions such as what is the status of the project, what has been learned, what are project pros/cons, recommendations, etc. Utilize information in evaluation I & E Program direction and goal setting and forward to NPS Council.

GOAL 2. **Partnerships:** Pro-actively increase involvement in the I & E Program to create partnerships, collaboration to achieve goals and mission and decrease duplication, in advance of project proposals if possible.

Objective 2.1: Pro-actively seek relationship with private industry to assist with funding and project development. A strategy and time line and potential specific products needs to be developed.

Action 2.1.1: Develop "what we need to be doing list" from 319 NPS Council goals and committee goals - "what could we do if someone wanted our product?". Prioritize list.

Action 2.1.2: Develop a list of potential partners who could be targeted to achieve program goals. Start by interviewing current industry involved in NPS and find out why they got involved, use as initial framework to build from general to specific.

Action 2.1.3: Once a product is developed, partner or hire an entity to market our product to the relevant industry.

GOAL 3. **Public Information:** Pro-actively engage in public education regarding NPS issues.

Objective 3.1: Deliver consistent but powerful message of the inseparableness of NPS causes and related issue by;

Action 3.1.1: Develop basic message of all nonpoint pollution sources and their interconnectedness to each other, other resources, people, land uses, behavior, etc.

Action 3.1.2: Develop means to utilize this message in all of I & E Program goals and projects. For example in use in a public media campaign, materials developed for students/teachers, in annual reports, in project fact sheets, on websites, in handouts at displays and so forth.

Action 3.1.3: Increase our knowledge, beliefs and values about the citizens current knowledge regarding NPS issues. Utilizing several mechanisms, continue to assess and identify the common ground between what the I & E program needs to know and what our target audiences want to learn. It is this common ground that successful projects will emerge. Review and evaluate results of two DRCOG surveys, one to construction industry and other to public works offices as a place to start.

Objective 3.2: Assure that I & E developed and disseminated products under the I & E Program addresses the needs of Colorado's culturally diverse population.

Action 3.2.1: Develop and prioritize a functional list of different potential target cultures, including the makeup, distribution and best means to reach.

Action 3.2.2: Translate all potential products into appropriate languages.

Action 3.2.3: Research available training and develop strategy to educate NPS Program staff, Council, Categorical committees, watershed coordinators and relevant entities to help individuals begin to understand and address cultural differences and needs.

Objective 3.3: Develop, seek or support vehicles that would increase either knowledge and/or awareness of a specific group regarding nonpoint pollution sources, connections and/or issues.

Action 3.3.1: List potential target audiences that could benefit Colorado waterways with some form of functional guidance (for example water users, geographic areas like watersheds, soil types, etc., cultural groups, ages, and land uses).

Action 3.3.2: Develop media campaign for target audience building from process and framework utilized by the League of Women Voter's media campaign. This includes defining the goal of the campaign, the message, the user groups, and ideas on how, what, where, when vehicles to employ. Pro-actively seek sponsor or partners to implement.

Action 3.3.3: Develop a web page and relevant links, determine format, message, and then how advertise and evaluate, change, maintain, etc.

Action 3.3.4: Establish NPS speakers bureau, develop marketing strategy, content, and associated handouts, slides, etc.

GOAL 4. **Public Education:** Increase interest, participation, and knowledge of formal educators and students and non-formal educators and students regarding NPS and associated water quality issues.

Objective 4.1: Increase interest, participation, and knowledge of formal educators and students and non-formal educators and students regarding NPS and associated water quality issues.

Action 4.1.1: Assessing to date knowledge of existing programs or projects that are either doing this outreach or could be a vehicle for NPS outreach. Document this knowledge as part of NPS resources.

Action 4.1.2: Assess the needs of formal/non-formal educators, what do they need, how do they need it, when do they need it and what part of those needs can this program fill, develop product, relationship, etc. Develop strategy to fulfill the common I & E program and educators needs (start by listing categories of formal and non-formal educators, programs, etc.). Seek potential project sponsor or partners to implement.

Action 4.1.3: Support projects that demonstrate a thorough needs assessment or documented need, projects with strong NPS components, projects that directly achieve a program goal, collaboration, and non-duplication of effort.

Action 4.1.4: Identify existing programs, projects or entities conducting water, water quality and/or NPS education and develop a NPS product to add to their material. Some examples of these include Project Wet, Water Wise, Water festivals, Children Museum exhibits, and soil or water districts materials.

Action 4.1.5: Develop NPS category for Science Fairs and develop award for best NPS or water quality project.

GOAL 5. **Other:** To provide for items we cannot foresee but may help us achieve our mission.

F. Relationships

1. To the NPS Council, State's NPS Program, State objectives and 9 Key Elements.

The I & E program assists the State and Council to achieve the goals of Section 319 by providing an entity with expertise to assume responsibility and accountability for informing and educating the public regarding NPS. Without the designation of a responsible and accountable entity with some expertise information and education would happen ad hoc, without direction or purpose and be fairly unmeasurable.

This program provides the mechanisms, tools, processes and partnerships to facilitate and direct the transfer and flow of NPS information for effective education. The transfer of information and education is necessary within the NPS Program and outside of Colorado's NPS program. Internally, information must be transferred among project sponsors, Categorical committees, watershed coordinators and groups, the Council, NPS Program staff and regulatory authorities. Externally, information must be transferred to the CDPHE and EPA staff, other non NPS associated regulatory authorities, the public, potential project sponsors, water resource managers and users, land use managers and entities that can assist in further transfer of NPS information and education independent of the NPS Program.

An effective and efficient I & E Program will increase ability of the NPS Council to provide the best recommendations, determine appropriate programs and direction, develop and recommend BMP's, develop strategies for protection of ground and surface waters, establish partnerships and maintain a balanced approach. The NPS Council makes recommendations to the NPS Program Staff. The I & E Program will then increase the ability of the NPS Program Staff to achieve their mission and goals,

albeit regulatory or non-regulatory, horizontally with the CDPHE or vertically with the WQCC, EPA and non-regulatory community. This then, is the connection of the I & E NPS Program to assisting in achieving the States objectives and the EPA's 9 key elements. The I & E program must infiltrate all layers from the individual resident to the top bureaucrat.

2. To NPS Categorical Committees and Watershed Coordinators or Groups.

The I & E program assists the latter groups in providing expertise, responsibility and accountability in the area of NPS information and education as a program. This program provides expertise by working with project sponsors, committees and watershed groups offering feedback, training, ideas, support and the like. This program benefits the latter by working with grass roots groups, regulatory and non-regulatory entities and other parties not directly associated with NPS. Our program provides a presence of NPS information and education in arenas that otherwise would not be reached. The combination of these efforts assists committees and watershed groups effectively and efficiently reach their goals and measure that success.

3. To 305(b), 303(d), Unified Watershed Assessments and Public Involvement.

As described in the NPS State Program umbrella document, the 305(b), 303(d) and Unified Watershed Assessments (UWA) are all by products of the Clean Water Act as is the 319 amendment. As part of the Clean Water Act, all states are required to list stream segments that are not meeting water quality standards employed. States review the physical, chemical and biological health of a stream segment and determine where technology based effluents in discharge permits alone are not stringent enough to assure that water quality standards are achieved. These stream segments are put on a list called the 303(d) list and are designated "water quality limited" because they are not able to support the designated use. The constituent(s) of concern in these 303(d) listed segments are identified and a total daily maximum load (TMDL) is required to be developed and implemented for those constituent. The 305(b) list is similar. Unified Watershed Assessments are a product of the Clean Water Action Plan and categorize watersheds across the United States as to the degree of water quality impairment. All of these lists are targeting tools to focus NPS efforts.

Public Involvement is the result of successful I & E efforts. The I & E Program stays informed of and participates in the processes with prioritizing waterways via different water quality processes, legislation and regulation. Waterways that make it on such lists as the 305(b), 303(d) and UWA will only be removed from that list by working with people. People on the ground must be brought together with the right resources to preserve or restore their waterways and be removed from such lists. This will not be achieved to any sustainable degree without public involvement. To achieve meaningful public involvement requires and information and education outreach, hence the need for the I & E NPS Program. It is the goals and objectives of this program to make the described above connections.

4. Key existing partners outside the NPS Program and staff.

The task of identifying and developing relationships with key partners is never fully achieved because the issues change. As one problem is solved another problem develops. One of the goals of the I & E Program is to pro-actively seek partners. To date the following partners include but are not exclusively:

Cooperative Extension - time, expertise, facilities, printing, project match, project sponsor, support, network, partnership.

League of Women Voters - time, expertise, printing, project match, project sponsor, support, network, NPS information and education outreach.

Children's Museum - expertise, project sponsor, match, NPS information and education, partnership.

Colorado Foundation for Agriculture - time, project sponsor and match, NPS products, ideas, support, network, partnership.

Teachers and Educational Institutions - time, project sponsor and match, network, on ground support and vehicle to achieve NPS education.

NRCS and individual SCD's - time, expertise, project sponsor and match, project ideas, on ground support and work, NPS information and education.

Sierra Club, Colorado Division of Wildlife, Northern Colorado Water Conservancy District, Individuals that represent the Cattle Industry, - time, expertise, project match, support, network, partnerships.

G. Geographic Perspective and Targeting.

The I & E Program targets every citizen in Colorado. The program also targets NPS information from around the world to bring into Colorado's program. In order to focus the targeting the I & E Program coordinates and works with existing and new prioritization entities. These entities include legislative and/or regulatory priorities such as the 303 lists or Unified Watershed Assessments. Other relevant groups include NPS Categorical committees, watershed groups, soil or water districts, federal and state land managers or other entities that know the resource and priorities. Whereas entities list above determine priority waterways, BMP's, technologies, land uses, and the like the I & E Program provides the tools, expertise and mechanism to transfer information and educate effectively and efficiently.

H. Evaluation and Monitoring of I & E Program

The I & E Program has several mechanisms in place for evaluation and monitoring. They include and are still being developed:

- Program guidelines (this paper) are reviewed annually and evaluated for relevance, priority shifts and to determine directional changes. Are I & E Program goals and objectives still aligned with State, NPS Program, NPS Council and 9 Key elements goals?
- Program effectiveness are evaluated annually. What projects moved what goals forward and what areas are still lacking. What has been achieved, what has failed and what needs to change.
- Program projects. What projects need to be implemented in the next fiscal round and what needs to be done to ensure priority projects are submitted.
- NPS Project evaluation against larger goals of I & E and NPS Program goals.
- Project review process. Evaluate annually to determine if transfer of information between project sponsors and NPS Program Staff, Categorical Committees, Watershed Coordinators, and NPS Council occurred as efficient and effectively as possible.
- Project Progress review process will be reviewed annually (it is being developed). Are reporting, storing, retrieving, and products generated and disseminated to transfer the information to the public working?

II. Program Implementation

A. Key milestones

There are several key tasks that are critical to the implementation of the NPS I & E Program. Without the achievement of these tasks no other objectives will likely be achieved and/or not in the time frame they are needed. These included:

- Resources to obtain and retain I & E professional support to coordinate I & E NPS efforts.
- Resources to sustain the transfer of project information from project sponsors back to the public and water resource users, managers and land use managers.
- Clearly defined roles and goals of the State NPS Program, NPS Council and Categorical Committees.
- Resources to support I & E projects.
- Opportunities and resources to keep expertise within I & E Program active, current, diverse, and relevant.

Key Milestone for NPS Information & Education Program Objectives

Please refer to the Objectives described in Section I (E) Categorical goals and objectives short and long term. The lead for most of these objectives will come from the NPS I & E Coordinator and Committee. Prioritization of objectives occurs via the NPS Council, NPS State Coordinator and Water Quality Control Division.

Milestone	Goal 1	Goal 2	<u>Goal 3</u>	<u>Goal 4</u>
Essential for Program Every Year (listed above)	1.1 (1.1.1)	2.0		
Ongoing annually	1.2 (when developed) 1.3 (when developed) 1.4 (1.4.2, 1.4.4, 1.4.5)		3.1.3 3.2	4.1, 4.1.3,4. 1.4
Year 1998-1999 (This year)	1.2.1 1.2.2		3.3.2 begun	
Year 1999-2000	1.2.3 1.3.1, 1.3.2 1.4.1, 1.4.3	2.1.1, 2.1.2	3.1.1 3.2.1, 3.2.2 as needed, 3.2.3 3.3.1	4.1.1

Year 2000-2001	1.2.4	2.1.3	3.1.2 3.3.3, 3.3.4	4.1.2
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B. Available Resources (technical, financial, legal) for program implementation

1. Technical resources are available through a variety of entities. These entities include categorical groups that represent agriculture, mining, urban, wildlife, education, media, etc. Other entities include land managers such as the Forest Service or Bureau of Land Management, Municipalities, Colorado Division of Wildlife, Corporations such as Coors and individual land owner. Water managers include municipalities, water and soil districts and the like.

2. Financial resources are available via some of the entities listed for technical resources. Partnering for financial purposes is a necessary mechanism for I & E Program success. Other grants are available for environmental education such as the EPA Environmental Education or Environmental Justice Grants. These grants as well as other environmental education grants have stiff competition and often need to be more well rounded than a specific NPS project would be. All of these grant sources require an entity to give the money too, which cannot be the I & E Program. Therefore, we need partners to implement and administer.

3. Legal resources are not relevant to this program area. However, when working with schools, projects and efforts must address the state content standards and sometimes individual district curriculum requirements.

C. Lessons Learned Information and Education

- Target and focus on quality projects that work, based upon current knowledge.
- Patience.
- Recognize transfer of information will not happen effectively or in a meaningful manner if there is not a strategy and resources to transfer that information.
- The better the information and communication is to project sponsors the better the project proposal.
- Although difficult and challenging, continue to require measurable evaluation of project and program success and failure.

- To achieve I & E program goals, a pro-active approach is necessary, we cannot wait for the perfect projects. We must market and seek partners.
- Challenging and takes time, but continue to connect projects, people and entities to reduce duplication and increase outreach effectiveness.
- Successful and not so successful mechanism to reach various audiences.
- Information transfer requires skills and expertise not traditionally found in the science and regulatory NPS arena.
- Recognize the need to educate and inform from a program perspective is more often than not the same need the target audience has - a common ground must be identified for meaningful information transfer and education.
- The more specific your target audience and the better you understand the needs of that audience the more measurable success you will have.
- It is difficult to achieve anything without clear roles and goals.
- The majority of the public does not know what NPS is nor whom many of our agencies and entities are.

III. Best Management Practices

A. BMP's for Information and Education

Moving dirt in the information and education arena is challenging and sometimes difficult to grasp. The very nature of transferring information and education requires people communicating to other people. Various vehicles can be used to transfer information and/or educate, including the computer, phone, mail, face to face, faxes, meetings, conferences, workshops, brochures, surveys, videos, and the list is endless. What vehicle is employed is very much a function of who the target audience is and identifying what their needs and interests. It is an art, a skill, an expertise and sometimes a gamble.

Thus, a best management practice in the I & E arena is what vehicle is the best to reach a target audience and determining the best timing to employ that vehicle. It is similar to deciding what method will decrease a water from flowing through a tailings pile and when is the best time to employ that method. Moving dirt and implementing BMP's in I & E requires people, people are the key resource and the vehicles are a secondary resource.

B. Current description of I & E project guidelines exist (enclosed as attachment A), but needs to more formalized. More formal guideline or process for project sponsors of I & E projects or I & E components of other projects needs to be developed. In addition a brief training, handout or tool needs to be developed on project I & E guidelines for NPS Council, Categorical committees, Watershed Coordinators and relevant other individuals.

C. To be developed are NPS I & E guidelines for the following vehicles which are not inclusive. Each guideline would include projects completed or in progress that have produce or are producing a similar product, project information (goal, frequency, dissemination, content, access, evaluation, etc.) and lessons learned and then guidelines for future NPS production.

1. Brochures.
2. Videos.
3. Curriculum, educational units, school activities.
4. Field Trips.
5. Workshops/retreats.
6. Media Campaigns.
7. Fact Sheets.
8. Displays.
9. How to documents.
10. Internet/web sites or links.
11. Speakers Bureau.
12. Pre/post surveys.
13. Other.

IV. References

A list of existing NPS curriculums, units, surveys, activities, brochures, videos, etc., are to be developed as part of the products of *Information Dissemination I & E Project*. This list will be updated annually as part of the reporting process developed from the same project. Some references at this time include:

A. List of Existing NPS Informational Products

1. Rural Living Handbook
2. Golf Course BMP Manual
3. League of Women Voters Urban NPS Survey
4. Children's Museum Display Material
5. Logan School Wetland Treatment results.
6. Clearing house for BMP's (To be developed)

B. List of Existing NPS Educational Products

1. Waterwise - Central Conservancy District
2. Riverwatch - Colorado Division of Wildlife
3. Children's Museum - Denver Children's Museum
4. Fort Collins Storm water pollution / prevention Curriculum
5. Kunzmilller School Harvey Lake Project curriculum
6. Colorado Foundation for Agriculture Water Readers
7. Colorado Conservator Issues

C. List of Resources to Produce Informational Products. To be developed.

D. List of Resources to Produce Educational Products. To be developed.

V. Summary of Projects including those funded with 319 dollars as well as those funded by other sources.

A. This needs to be developed, and is a product of a currently funded project. The product includes the following component descriptions for all 319 NPS Projects to date, including I & E projects, and establishes a process to continue documentation for future projects. The components for each project include a brief project description, time line, goals, dollar, partners, products, audience, evaluation, technical information available and lessons learned. Thus, this information is not available at this time. Please refer to the following table for summary of projects; it is not inclusive of all projects. In addition since many categorical projects like agriculture or mining have I & E components or focus, those projects are not listed here. Some projects overlap and are listed in both programs. In the future, projects will be categorized in the following areas:

1. I & E components of other committee projects. (Please note that none of these will be on the following table, they are not identified at this time and a format to summarize the I & E component will be developed as part of Shelly Anderson's project).

2. I & E projects in watersheds. (Please note that the projects are not broken down by watershed at this time because this is a new perspective, most projects are statewide).

3. Statewide I & E projects.

4. Contingency projects.

Project	C *	Project Date	Target Audience	Goal 1	Goal 2	Goal 3	Goal 4
BMP Golf Course		1996	Golf Courses Managers	1.1	2.0	3.0 3.3	
Colorado Conservator			State	1.1	2.0	3.0	
Children's Museum					2.0	3.0	4.1
LWV Media Campaign		1996-97	Adult - Urban		2.0	3.0 3.1 3.3	4.1
Ft. Collins Storm Water Pollution Prevention			Youth - Urban			3.0 3.3	4.1
Keenesburg School field trips and water testing	C	1995	MS			3.0	4.1
Overland Trail MS Wetland Restoration and Signage	C	1996	MS			3.0	4.1
Logan School Gamble Gulch constructed wetland for mine treatment	C	1996	MS	1.1	2.0	3.0	4.1
Kunzmilller Sch Harvey Lake curriculum project	C	1996	Elem	1.1		3.0	4.1
Youth Conservation Wkshp on WQ		1996				3.0	4.1
Colorado Fd for AG Colorado Readers			5th/6th			3.0	4.1
Colo Water Wise Curriculum			Elem, MS, HS			3.0	4.1
Colo Water Wise Curriculum dissemination training project	C		Elem, MS, HS			3.0	4.1
I & E Coordinator		1998	State	1.1.1 for 1 yr, all	all	all	all
Shelly Anderson, I & E Program project information transfer		1999	State	1.2.1 1.2.2	all		
W Greeley SCD Mobile River Unit	C	1998	NC Colo		2.0 2.1	3.0	4.1
Kendricks Lk and Sanctuary Pk Project	C	1998	Elem			3.0	4.1

Mesa SCD "Eco Rico" Teacher Cons Wkshp	C	1998	State-Adult	1.0		3.0	4.1
San Juan-Rio Grande NF, mining student field trip	C	1998	Rio Grande-HS	1.0		3.0	4.1
Place MS, Creek Crusaders	C	1998	MS, citizens Denver	1.0		3.0	4.1
The Rural Living Handbook	C	1995		1.0		3.1 3.3	
Teacher Conservation Wkshps		1995				3.0	4.1
PROGRAM OBJECTIVES ACHIEVED IN PART OR COMPLETE				1.1 1.2 1.4.2 1.4.4		3.1.1	
PROGRAM PRO-ACTIVE OBJECTIVES				1.1.1 1.1.2 1.2.2 1.3.1 1.3.2 1.4.1 1.4.5 1.4.3	2.1 all	3.1 all 3.2 all 3.3 all	4.1 all

C = Contingency Funded Project

Project list to date:

1. BMP Golf Course (\$2000- '96)
2. Colorado Conservator
3. Children's Museum
4. League of Women Voters media campaign, Phase 1 (1996-97), Phase II (1998-99)
5. Ft. Collins Storm water pollution/prevention
6. Teacher Conservation Workshops (\$4700-done '95)
7. Keenesburg School field trips and water testing (\$2000-done '95)-C
8. Overland Trail MS wetland restoration/signage (\$1500-'96)-C
9. Logan School, Gamble Gulch constructed wetland (\$2299-'96-C)
10. Kunzmilller School/Harvey Lake Project, curriculum (\$1500-'96)-C
11. Youth Conservation Workshop-water quality (\$1000-'96)
12. Colo Fd for Ag Colorado Readers
13. Colorado Waterwise Curriculum/project
14. Colorado Waterwise dissemination project
15. I & E Coordinator
16. Shelly Anderson's I & E Committee project information project.
17. West Greeley SCD, Mobile River Dynamics Laboratory-C
18. Kendricks Lake and Sanctuary Park project-C
19. Mesa SCD "Eco Rico Teacher Conservation Workshop"-C
20. San Juan-Rio Grande National Forest, one day mining student field trips.-C
21. Place MS, Creek Crusaders.-C
22. Abandoned Mine NPS Education Project (???)
23. Colorado Readers Continuation (???)