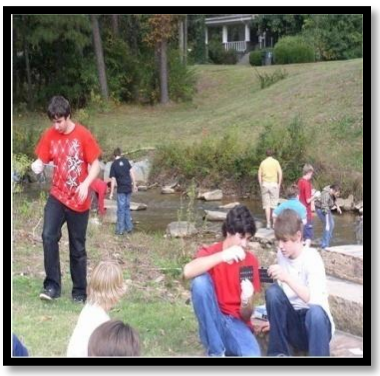
APPENDIX G

ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

EDUCATION AND OUTREACH



APPENDIX G
Education and Outreach

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APPENDIX G

EDUCATION AND OUTREACH (E&O)

Section G.1 Introduction

The AL NPS Management Program is an ardent proponent of a strong statewide nonpoint source education and outreach program. Stakeholders must be provided with relevant and sound information to make informed water quality protection and restoration decisions. Emphasis for E&O in Alabama is placed on making people aware of the contributions of their personal sources of pollution on environmental and human health. Efforts in Alabama continue to facilitate successful national, statewide, and local learning opportunities; promote activities and materials that teach and explore basic concepts or re-examine concepts that were once learned but forgotten; and reinforce and expand upon concepts that have been learned but are not incorporated into daily living patterns.

A basic NPS program E&O precept is: if people hear about watersheds, water quality, and NPS pollution often enough, prevention and mitigation eventually becomes part of their daily life, mindset, and habits. People must be aware of what the problems are and how they can effectively deal with them. Anthropogenic activities are the primary causes of NPS water quality problems in Alabama. People are the problem - but they are also the solution. Although most people do not willfully want to contribute to NPS pollution problems, many unwittingly do so because of a lack of information. The primary key to long-term water quality improvements and NPS pollutant load reduction success in Alabama is implementation of an effective E&O program to enhance citizen awareness and knowledge.

Project-specific Strategies and Action Items are essential and fundamental NPS pollution management tools to demonstrate reasonable CWA Section 319 grant progress toward achieving Programmatic Goals and Objectives of the Alabama NPS Management Program. An *adaptive management* approach is implemented in Alabama to plan and implement local "focus area" Education and Outreach activities in a collaborative, cooperative, and coherent manner. Statewide Education and Outreach (E&O) efforts presented herein:

- Are outcome-based as applicable and practicable
- Places an emphasis on achieving priority S. 319 grant and Total Maximum Daily Load (TMDL) pollutants of concern load reductions
- Support programmatic efforts to expeditiously meet state water quality standards and beneficial uses
- Integrates and leverages resources of national, regional, state and local programs and projects
- Enhances public and private sector partnerships
- Supports a flexible, targeted, and iterative approach to reach a consensus for desired environmental outcomes

Section G.2 Strategies to Enhance Statewide NPS Education and Outreach

Efficient implementation of statewide E&O in Alabama is addressed by broadly-inclusive partnerships in a cooperative and timely manner; such as involvement by the Alabama Clean Water Partnership. Section 319 watershed project coordinators may also seek strategy corrections from ADEM and EPA during project implementation to better focus E&O resources. These efforts help to ensure that federal/state E&O resources are leveraged and well integrated with changing statewide and watershed management-level environmental, economic, social and culturally-based water quality protection goals.

The AL NPS Management Program implements a variety of formal and informal E&O mechanisms to address water quality and environmental health protection and restoration. Examples include:

- Memoranda of Understanding /Memoranda of Agreement
- Letters of Support
- Cooperative Projects
- Sharing and Combining of Funds

- Meetings/Conferences to Share Information and Ideas
- Training Sessions
- Interagency Collaborative Teams
- Representative Advisory Groups
- Site Visits

Project-level E&O strategies and action items support the goals and objectives of the AL NPS Management Program. The AL NPS Management Program gains insight as to E&O planning, needs, incentives, and targeting of resources from a variety of sources, including:

- Local, regional, state, interstate, and federal agencies
- Non-governmental organizations
- Academic institutions
- Landowners
- Commodity producers
- Concerned citizens
- Others as appropriate

Involvement from the diverse entities listed above helps to ensure the public that NPS programmatic E&O objectives are well integrated with those for economic stability and other social and cultural goals. Examples of programmatic E&O information exchange partners include:

- Alabama Clean Water Partnership
- Alabama Water Watch and Association
- Nonpoint Education for Municipal Officials (NEMO-Alabama)
- Nonpoint Source Agricultural Water Quality Education and Outreach Specialist (established in partnership between ADEM and the State SWCC using Section 319 funds)
- Federal and State Agencies (e.g. if agencies have a website, and most everyone involved in NPS pollution does, then they consider E&O an important component of the programs and services they offer).
- Academic Institutions
- Alabama Cooperative Extension System
- Non-governmental organizations (NGOs): While most environmental groups and organizations are committed and active long-term, others may tend to wane over time. A "current" listing of E&O interests, levels of activity, and delivery mechanisms can be ambiguous. A suggested reference resource is the Alabama Grassroots Clearinghouse website.

Successful or potentially successful E&O approaches are implemented statewide or in different locations to indicate widespread utility in a variety of settings and to varied audiences. For example, Section 319 funded basin facilitators and watershed project coordinators often exchange education, information, and outreach so that others may avail themselves of successful approaches used in their projects.

Section G.3 Strategies Directed At Section 319 Grant Project-level Awareness

Several mechanisms are in-place to distribute Section 319 grant information to the public (e.g. ensure that grant funding, technical support and other resources are directed in an effective and efficient manner) such as:

- The Alabama NPS / Section 319 Annual Report illustrates progress, provides case studies of particular projects, and conveys information on the E&O activities being conducted in the state to broad audiences. Information may be provided in hardcopy, but generally is available from ADEM in electronic format to save on printing costs and paper use.

- Each Section 319 Grant-funded project workplan is required by ADEM to incorporate an E&O component. Activities must relate to watershed health, water quality protection restoration (e.g. Section 319 priority NPS and TMDL pollutant load reductions) or pollution prevention. Specifically, an E&O component targets:
  - ✓ Nonpoint source / water quality restoration education, technology transfer, and technical assistance presentations (e.g., targeted pollutant cause and source; number and diversity of audiences, etc.,)

- ✓ Change in stakeholder actions, awareness, knowledge, or attitudes over time (e.g., surveys, qualitative and quantitative scores/responses; sign-ups, self-reporting, water quality monitoring and/or social science analyses, sustained/increased volunteers public interest or input, etc.)
- ✓ Integration of public and private sector communication resources (e.g. variety and number of programs and activities, audience reached, etc.)
- ✓ Many and varied audiences (e.g., number of participants, meetings, events, field tours, etc.)
- ✓ Pollution prevention as a NPS pollution management outreach practice (e.g., reductions reported in tons or lbs; implementation of a new or enhancement of on-going initiative, number of groups an activities, etc.)
- ✓ Distribution of NPS and water quality data and information (e.g., statewide, watershed-specific, community-based, landowner-specific, etc.; number, targeted audiences)
- ✓ Priority actions driven by a TMDL, watershed-based management plan, or state public health goals and objectives (e.g. water quality contact and fish/shellfish consumption advisories)

- The EPA Grants Reporting and Tracking System (GRTS) is an online database used to track Section 319 program activity and information and enhance the understanding of NPS projects and programs by the public and private sector. This database is useful in increasing public awareness and knowledge relative to program accountability and transparency of the funds being awarded and leveraged.

- To measure and track progress on a national basis, EPA's NPS program currently relies on two quantitative national program measures. These national water quality-based outreach measures are important to illustrate the achievements by Alabama to mitigate NPS pollution through investments of Section 319 grant funds and include:
  - ✓ WQ-9 a, b, c: tracks the estimated annual load reductions of nitrogen, phosphorus, and sediment achieved by Section 319-funded projects.
  - ✓ WQ-10: tracks the number of waterbodies identified as being primarily NPS-impaired that have been partially or fully restored as a result of restoration efforts. This measure is often referred to as the "success stories" measure
  - ✓ SP-12 - tracks improved waters in impaired watersheds using the watershed approach

- The Annual NPS Cooperators Conference provides an opportunity for all nonpoint source stakeholders to come together to discuss priorities, project status, opportunities and future direction.

- The ADEM Coastal Area Management Program ADEM Coastal NPS Management Program continues to implement a multitude of E&O and training activities to help gain final federal approval of the CZARA 6217 program. Although some projects are uniquely suited to the coastal area and conditions, many activities are conducted using statewide program mechanisms and products. Multi-state and multi-agency coastal NPS management program E&O partners include EPA's Healthy Watersheds Initiative (within the framework as coordinated by the Mobile Bay National Estuary Program),the Gulf of Mexico Alliance, and the Gulf of Mexico Initiative.

- In order for the public to make educated NPS project planning and implementation decisions, they must have access to appropriate data. Water quality data is publically available in the CWA Section 305(b) Integrated Report to Congress and CWA Section 303(d) List of Impaired Waters**.** These biennial information sources provide scientifically-valid water quality data to help evaluate the:
  - ✓ Extent of state waters that support healthy biological, physical, and chemical aquatic habitats; and/or recreational, drinking water, and fish/shellfish consumption conditions
  - ✓ Status of whether state waters are healthy or are incrementally achieving state water quality standards
  - ✓ Trends or changes in water quality over time including "water quality limited segments" under Section 303(d)
  - ✓ Scope and scale of the impacts of NPS pollution on watersheds, and surface water and groundwater quality

Education and outreach activities funded by a Section 319 grant represent the stakeholder's best intentions and expectations for restoring watershed health and water quality; however, stated depictions may be tenuous or over-estimate ultimate project success outcome reality. The inherently complex and convoluted nature of anthropogenic attributions and other factors (e.g. funding, incentives, manpower, etc.) does influence E&O processes and may have

unintended consequences. In addition, the capricious nature of human behaviors, mindsets, or lifestyles can also result in challenging measures of quantifiable increases in knowledge and awareness. Therefore, Alabama's nonpoint E&O programmatic strategies are designed to be flexible, targeted, and iterative to achieve E&O goals and objectives as expeditiously as practicable.

Section G.4 Programmatic Watershed-based E&O Measures and Indicator Elements

The AL NPS Management Program incorporates E&O activities that equitably protect watershed health and water quality while concurrently enhancing social and economic priorities. Economic conditions relative to available state NPS resources dictates that the state can ill afford wasteful expenditures of human and financial capital. To meet this challenge, implementation of a comprehensive nonpoint source E&O management strategy with practicable outcomes is essential. Education and outreach is an important component of all phases of watershed-based plan development and implementation. Planning activities are designed to:

- *Enhance awareness* about the causes and sources of pollution, the environmental and socio-economic impacts of degraded water quality, and potential solutions
- *Provide relevant data and information* about the issues of concern, to generate a sense of local ownership and shared responsibility, and identify potential solutions
- *Encourage* the public and private sector to originate and implement project goals and objectives to mitigate problems and to maintain involvement in the process (ensure early and continued buy-in)

Watershed-based E&O measures and indicators in (**Table G.4**) embrace personal responsibility while emphasizing collaboration, coordination, cooperation, and communication.

Table G.4 Watershed-based E&O Planning Elements

1) Communication
- Increase knowledge and awareness of NPS pollution, water quality impacts and waters protection
- Develop and position messages to give people a compelling reason to change NPS pollution behaviors, mindsets and lifestyles
- Focus on the desired environmental outcome and align program resources to meet the desired outcome

1a Communication Strategy
- Provide support and promote development and coordination of local watershed groups through workshops and advertising campaigned
- Express the connection between planning, implementation, and maintenance
- Ensure broad audience access to information

1b Communication Action Items
- Identify and help sustain local watershed groups
- Facilitate meetings and workshops though print and electronic media
- Publicize local watershed activities and provide a calendar of events

1c Communication Outcomes
- Number of workshops conducted
- Number of stakeholders participating in workshops
- Number of watershed groups established
- Amount of leveraged funding

2) Education and Outreach
- Provide citizens with opportunities to acquire knowledge, values, attitudes, commitments, and skills needed to protect and improve NPS pollution issues
- Facilitate statewide leadership and community collaboration to holistically resolve problems on a watershed basis

2a Education Strategy
- Enhance statewide efforts to institutionalize the nonpoint source program by building long-term capacity to implement local programs and project-level mitigation efforts
- Leverage E&O program resources
- Monitor and track efforts and outcomes

2b Education Action Items
- Initiate
- Initiate volunteer programs

2c Education Outcomes

- Number of watershed groups with certified volunteer monitoring programs
- Number of water sampling events
- Increased quality and reliability of data

3) Problem Solving

- Create new patterns of positive attitudes and behaviors towards water quality protection
- Enhance investigations, decision-making, and civic responsibility using knowledge, skills and science-based environmental assessment data as the basis for problem solving

3a Problem Solving Strategies

- Leverage local agency resources and involvement
- Encourage local mechanisms and advertising campaigns
- Adaptive Management Adjustments
- Target specific priorities using consensus
- Develop and implement MOUs /MOAs

3b Problem Solving Action Items

- Support and encourage regulatory and voluntary mechanism
- Collaboration with other programs, agencies and organizations
- Target a specific "focus area" (audience, priority pollutant, NPS concern)

3c Problem Solving Outcomes

- Number of agencies involved
- Number of audiences reached
- Number of communities enhancing E&O programs or adopting new or innovative practices

4) Section 319 Water Quality Success Measures and Indicators

4a Self-Evaluation

- Monitoring for effectiveness
- Water quality trends

4b Resource and Policy Measures of Success

- Development of nutrient and biological criteria
- Development of TMDLs
- Acres of wetlands protected and restored or shoreline buffers installed
- Number of projects addressing state lake and coastal degradation and pollution causes

4c EPA Strategic Targets

- Number of waterbodies partially (SP-12) or fully restored (WQ-10)
- Number of EPA 9 key element watershed-based plans supported by Section 319
- Estimated pounds of Nitrogen reduced from Section 319 projects in an impaired watershed
- Estimated pounds of Phosphorus reduced from Section 319 projects in an impaired watershed
- Estimated tons of Nitrogen reduced from Section 319 projects in an impaired watershed
- Trends in water quality toward meeting state water quality standards and beneficial uses

4d Mechanisms and Tools

- Pre- and post-evaluations
- Interviews
- Focus groups
- Questionnaire/ Survey
- Observation
- GIS mapping and analyses
- Website hits
- 5-year (or interim) NPS Management Program update
- Increased pollution prevention efforts
- Increased impaired watershed low impact development efforts

Section G.5 Water Quality Protection and Restoration Framework

Education and outreach activities are designed to increase stakeholder capacity to identify and mitigate the causes of NPS water quality impairments. Statewide strategies presented in **Table G.5** below are designed to enhance public and private sector efforts to (1) prevent the availability (2) transport of, and /or (3) the delivery of NPS pollutants to receiving water resources by:

- Minimizing pollutant availability (source reduction)

- Reducing the flow rate and/or timing of runoff to allow for attenuation of pollutants
- Remediating or intercepting the pollutant using chemical, physical, and biological processes and practices

The following iterative E&O strategies will help achieve state water quality standards and beneficial uses as expeditiously as possible and as resources are available.

Table G.5 Education and Outreach Processes and Expected Results

Programmatic E&O Strategies	Outputs	Outcomes
Develop, enhance, and use/demonstrate various tools, templates, and other mechanisms to measure learning success and to evaluate efficacy of management and training approaches used to achieve environmental results. Communicate clearly and often. Identify targeted audiences (demographics, knowledge base, perceptions/attitudes, values, etc.) Develop, enhance, and use/demonstrate various tools, templates, and mechanisms to communicate program implementation success toward meeting goals and objectives including tracking of interim progress Align federal, state, and local agency initiatives to achieve consensus (decisions everyone can live with) Develop and publish "success-stories" that characterize individual and corporate E&O accomplishments Recognize exemplary E&O efforts (e.g., awards, publicity) Enhance minority, low income, and/or non-English E&O Enhance computer programs, training, and Internet-based learning approaches to communicate to broad audiences Facilitate data, results and trends, and quality assurance processes and procedures aimed at providing timely and accurate information (e.g. pollutant load reductions, full or partial WQ improvements/delisting, BMP effectiveness, success stories, etc.,) Establish and maintain topical or issue-based problem identification and response stakeholder groups (facilitate websites, "white papers", conferences, training, capacity building, etc.,) to transfer information Coordinate targeted-audience E&O with Extension and other academic institution personnel, including higher education students (Land Grant; Water Resources Research, etc.) Facilitate or enhance academic institution watershed/water management efforts (e.g. produce BMP manuals, fact sheets, student stipends for research and extension efforts; professional development; watershed plan development courses and training materials, etc.) Formulate and communicate environmentally-protective and cost-effective steps to protect water quality and human health including science-based programs, policies, TMDL implementation, watershed-based management planning and implementation, etc., Coordinate and leverage financial resources, technical resources, practices, standards, guidelines, and other support to facilitate delivery of water quality and NPS pollution E&O to interregional, regional, state, and local audiences Implement "Showcase Projects" that demonstrate how local	Number or changes in numbers and participation rates of the following: Advertising campaign, pre- and post-project evaluations, questionnaires, verbal or written surveys and responses, observations, GIS mapping analyses, website hits (meaningful to stakeholders and easy to understand). Using clear visuals (charts, graphs, photos and illustrations) to help explain complex watershed concepts or data. Incorporate public and private sector interests and concerns. Questionnaires and verbal feedback to ascertain whether stakeholders receive, understand, and learn from E&O activities. Insure that E&O activities provide feedback and response opportunities. Establishing new and sustain partnerships with federal, state and local agencies; municipalities, industry, businesses and other public institutions Coordination with NGO's such as environmental and civic groups, commodity and trade groups, volunteer monitors, and others Facilitating focus groups, forums, conferences, meetings, workshops, field trips, signage, sign-in sheets, or phone/letter/e-mail requests for information Produced, enhanced, presented, and delivered E&O materials (news print, television, radio, CDs, DVDs, photographs, videos, posters, displays, websites, newsletters, curriculum, mailed / e-mailed materials, teleconference, other "social media" etc.) Programs, services, and incentives are made accessible to a diverse mix of citizens and targeted audiences Project proposals watershed plans received and dollars/resources matched Investment of staff, volunteers, time, funding, materials, and equipment	Issue identification and response leads to changes in behaviors, perceptions, knowledge, awareness and understanding including: Strong and effective partnerships facilitated key programs and project level resources to produce positive social, economic, civic, and environmental protection results Multi-level linkages, partnerships and coordination result in overall NPS program efficiencies and accountability Capacity building through increased access to E&O resources and programs (e.g. teachers and students; communities, landowners) Increased motivation to become good stewards of surface water and groundwater resources, wetlands, coastal area waters, etc., (public and private sector environmental literacy, knowledge and awareness is enhanced as reflected in a valid survey Delivery of resources and tools enhance (sustainable) environmental, social, and financial benefits of clean and healthy surface waters and groundwaters Increased stewardship leads to civic responsibility for water quality restoration, habitat protection, and pollution prevention Environmentally-protective and cost-effective steps are implemented to address water resource infrastructure Awareness and understanding of regulations and voluntary approaches as indicated by verbal or written responses; self audits; or implementation of management systems is increased Increasing numbers of WQ-10 and SP-12 compliant waters over time Number of "success stories" where E&O played a role in achieving the desired outcome Participation numbers of volunteers (conferences, training, festivals,

governments can integrate green infrastructure restoration and protection and maintenance into capital improvement programs, road maintenance programs, flood plain management, and other programs. Establish and maintain environmental education facilities, academic courses, demonstration sites, and training sessions Facilitate watershed and project-level E&O opportunities such as septic tank maintenance pump outs; storm drain stenciling, rain gardens, rain barrels, grade/streambank, shoreline stabilization structures and pollutant filters, recycling, lawn care/yard waste disposal; soil testing, proper pet waste management, littering, vegetative roofs, etc. Facilitate research, studies and inventories and communicate to the public (e.g. NPS causes and sources and water quality impacts; streambank stabilization, hydrologic and hydraulics, stormwater runoff, watershed health /water quality relationships, wetlands, coastal areas/estuaries, T&E species / other biota protection, recreational water and food supply human health risks, benefits of open spaces, land acquisition to protect and restore water quality, etc.) Develop, coordinate, or implement and communicate appropriate ordinances and polices (e.g. phosphorus reduction in lawn fertilizers, riparian areas and setbacks, LID/ green design, pervious surfaces		monitoring, etc) Statistically-based social monitoring documents positive changes in social indicator scores and responses is provided Measured local audience interest, diversity and actions in resolving particular NPS pollution problems (e.g. flooding, land use, permits, etc) is provided Inclusion of all stakeholders in NPS pollution and water quality planning and implementation processes

Section G.6 Education and Outreach Programmatic Challenges and Solutions

a) Overview

In order to achieve long-term results, watershed stakeholders must be provided information relative to how, when, where, and why nonpoint source pollution can and does impact their daily lives. Some public and private sector decision-makers have no, minimal, and different understandings of the myriad of environmental regulatory and voluntary processes, and usually less knowledge about how programs may impact their quality of life. Education and outreach is aimed at all segments of Alabama's citizenry, since everyone contributes to NPS problem. In some instances, there may an overlap of E&O actions from one group to another or from one watershed to another. This is appropriate and necessary since similar problems occur in various places and people everywhere may be unaware that a problem exists.

Rules and regulations can only go so far in addressing NPS pollution problems. To affect positive and significant environmental protection and restoration change; the daily behaviors, perceptions, knowledge, awareness, and actions of both individual and corporate realities must be recognized. The first step is to provide adequate resources for a strong and committed E&O program. In order realize lasting and measurable improvements, a primary E&O focus is placed on presenting topics and efforts that are most important to citizens in their everyday activities. An effective NPS management E&O program may not realize instantaneous results. It is a generally a long-term effort whose benefits are measured incrementally or in-full after many years.

Educational efforts targeting NPS pollution and water quality protection and restoration in Alabama are continually evolving to achieve the right mix of environmental health and socio-economic benefits. This is a primary reason why the AL NPS Management Program advocates a focused, targeted and iterative E&O implementation approach, i.e., encourage an informed voluntary citizenry "want to" and not "must" mind set.

Educational efforts may be derived from educational programs from other states as well as from in-state stakeholder input and surveys. Regardless of the source, NPS management program E&O will:

- Make clear the nature of NPS pollution and associated impacts on water quality

- Accurately express the effects on the individual or community if actions are taken and the consequences of inaction
- Ensure that E&O information adequately explains why citizens should be involved
- Make clear why they are being asked to address many and varied problems that they may not realize are a result of their personal actions and lifestyles
- Fully explain what actions they (individuals and groups) can take to protect and restore water quality (statewide or in local communities)
- Offer incentives (not necessarily monetary) for people to make positive changes in their daily routines
- Make clear the substantial and tangible benefits for improving water quality

b) Sustainability

A comprehensive statewide E&O program requires input from a variety of stakeholders. Effective implementation relies on the support all citizens of Alabama, ensures that those citizens understand the importance of effective management, and that they maintain a sustained interest in protecting high quality waters and restoring NPS impaired water quality.

➢ **Integration of Diverse Water Quality Restoration and Protection Viewpoints**

The citizens of Alabama have a vested interest in protecting and restoring watershed health and water quality. Restoration of waters impaired by nonpoint source pollution can be a complex and convoluted process. Mitigation may be complicated because of pre-conceived notions, diverse viewpoints, or advocacy of different approaches to achieve an outcome. Stakeholder E&O (communication) is fundamental to NPS program efforts to achieve long term water quality protection and restoration and beneficial use successes. The Alabama NPS Management Program strongly promotes a partnering approach to integrate divergent perceptions, processes and resources into a comprehensive E&O strategy to meet a consensus of program and project-level environmental goals and objectives. To help guide NPS program implementation success (and Section 319 grant funding) and to ensure that individuals and groups are delivered programmatic and project-level E&O assistance reflects targeted:

- **Deliberation**
  - ✓ The wide-range of viewpoints regarding water resources in Alabama
  - ✓ Some reluctance to participate in NPS, water quality or natural resource discussions in the presence of other stakeholders holding differing viewpoints
  - ✓ The impact water quality has so many different facets of people's lives
  - ✓ Up-front input and participation by many and varied audiences
- **Approaches**
  - ✓ Provide ample opportunities for the public and private sectors to participate in E&O processes
  - ✓ Allow for alternative E&O activities deemed pertinent and "acceptable' by local stakeholders for local needs and endeavors (i.e., to ensure "buy-in")
  - ✓ Effective and efficient communication (e.g. ensure cooperation, collaboration, and coordination)

➢ **Resource Targeting**

An effective E&O strategy should incorporate components to target the needs of multiple audiences. There is wide variation in what the public knows about NPS pollution, water quality, and watersheds. While the citizens of Alabama are very cognizant of sate water recreational benefits (e.g., fishing, swimming, boating, skiing, etc,), many do not fully appreciate other aspects such as water conservation, reuse, wastewater treatment, industrial usage, irrigation, drinking water supplies, and aquatic organism needs. Nonpoint source Management Program E&O processes deliver information to large numbers of citizens in many socio-economic groups using typical methods of mass outreach such as television, radio, and print media, but internet-based and social media can be used as well. To help guide NPS program and Section 319 grant funding, programmatic and project-level E&O reflect targeted:

- **Deliberation**
  - ✓ Citizens understand why there is need to protect and restore water quality
  - ✓ Citizen awareness of improved human and environmental health; socio-economic, and other benefits
  - ✓ Accounts for the wide disparity in citizen knowledge and access to information
  - ✓ Effective and sustained communication ("buy-in") is essential for long-term interest and participation
- **Approaches**

- ✓ Solicit public participation and target entities that already have an interest in protecting and restoring water quality
- ✓ Target individuals and audiences who do not have a foundational knowledge of water quality issues using singular and aggregate mass media, advertising, and other E&O venues
- ✓ Present water resource data to diverse audiences
- ✓ Continue to advocate a high priority need to holistically protect resources for future generations to enjoy
- ✓ Publicize statewide and coastal area recreational, clean drinking water, economic development, and other benefits of clean and healthy waters
- ✓ Solicit early public input in key NPS management program decision-making processes

A primary driver of E&O efforts in Alabama is to institutionalize NPS management processes from federal and state agency-led resource dependency to promoting a locally-led responsibility and problem resolution ownership approach. This precept involves devolving from a top-down approach to endorsement of a locally-led driven approach with agency support. It is recognized that local sectors may lack the capacity to adequately plan and effectively implement some water quality protection and restoration initiatives. The ADEM (and Section 319 grant funding) continues to institute an iterative coordinated approach involving communication, collaboration, and cooperation among state agencies, and local interest groups to ensure stakeholders are reached and engaged and problems are effectively addressed.

ATTACHMENT G.1

Education and Outreach: Audiences and Action Items

Section G.1: Resource Targeting

The Alabama NPS Management Program encourages stakeholders to undertake (both physically and financially) measures to reach a mutually agreed upon outcome. Limited E&O resources prescribe that the NPS program implement the most effective and cost-efficient methods to reach a target audience. While there a number of factors that contribute to NPS water quality degradation, but trying to convey too much statewide scope and scale information are nearly as problematic as not committing to an educational effort at all. If the message becomes too long or complicated, the majority of the targeted group will not commit the time and energy required to listen or learn about the problem. Smaller watershed and community-based efforts are more "local" assessment, planning and management advantageous. Resource agencies are also able to respond quickly to requests for E&O materials, information, support, training and management assistance.

Focused, locally led and inclusive groups have different reasons to get involved and to make changes in their daily routines. People will generally not make the effort to reduce NPS pollution and protect water quality unless they perceive specific benefits of doing so. Incentives such as health and well-being, aesthetics, and economics are frequently communicated to encourage early and sustained involvement.

Individuals and groups are generally at different levels of understanding about environmental problems. Audiences continue to be assessed and E&O tailored to meet the needs and knowledge levels of particular audiences. In some instances, materials have already been developed by other agencies, academic institutions, or by the private sector. Section 319 grant funding weighs the benefits of supporting or adapting current E&O programs and materials rather than spending resources to develop new processes and resources. The Section 319 grant promotes the following NPS pollution management, watershed health and water quality protection and restoration E&O delivery mechanisms to help NPS partners achieve NPS pollutant load reductions and to help waters of the state meet water standards and beneficial uses. Primary NPS audiences include, but are not limited to:

A. General Public

This group is the primary targeted NPS management audience. It is critical to the success of the NPS program that the public be effectively reached; but providing and maintaining E&O to such a large and diverse group is challenging and funding resources are insufficient. While some citizens are members of another target group listed below, efforts will be aimed at the majority who are not.

Action Items to Communicate NPS Pollution Controls

1. Property owners reduce the amount of commercial fertilizers and pesticides used in yards and landscapes
2. People recycle automotive fluids or properly dispose of them rather than dumping on the ground or down stormwater drainage systems
3. People properly dispose of potential toxic household products such as paints, solvents, cleaners, and batteries
4. Property owners will compost organic materials from their property rather than disposing of them in landfills
5. Property owners own property adjacent to streams implement BMPs to protect existing riparian areas and restore those areas that have been impaired
6. Citizens encourage their elected officials to protect greenway systems along major stream corridors
7. Citizens participate in roadside and stream litter clean-up activities in their communities.
8. Citizens involvement in Adopt-A-Stream including visual surveys and clean-ups
9. Citizens become more knowledgeable of reporting problems to appropriate authorities
10. Citizens support adherence to land disturbance laws, rules, regulations, and ordinances

Methods

1. Local newspapers and magazines and websites look for articles of interest for their readers and local television and radio stations may have openings on talk shows. Public service announcements can provide information and help reinforce information from other sources.
2. Utility companies can provide information as monthly billing statement inserts. Virtually every household in the state gets a utility bill making this an exceptional way to mass communicate.
3. The County Extension office is often the first place an individual calls for information on gardening, landscaping, and home management.
4. Nature Centers, Outdoor Education Centers, Training Facilities, and State and local Parks located throughout the state offer regular programs for children and adults. The audiences may not be large but as a group, that are likely already motivated and receptive to information relative to water quality and natural resource protection.
5. A fair, festival or other event is generally conducted most weekends somewhere in the state. Organizers frequently provide display space at a discount or at no charge to non-profit organizations. The Alabama Department of Tourism and Travel and local convention and visitor bureaus generally publish the dates of events well in advance. Education delivery mechanisms may be active or passive.

Incentives

1. Tax dollars used to maintain and improving storm drainage systems, controlling flooding, collecting and disposing of yard waste, landfill expansions, etc., could be used for other socially beneficial ways in the watershed
2. Municipalities, businesses and organizations can earn money from recyclable products
3. Property owners save money from reduced lawn care
4. Property values located adjacent to clean and healthy streams and lakes are generally of higher economic value
5. Increased recreational opportunities associated with clean and healthy waters attract more tourism and businesses and help raise environmental and socio-economic conditions throughout the watershed and county
6. Some activities require commitment but not a lot of money. Adopt-A-Stream and Alabama Water Watch activities can help make watersheds and communities more healthy, attractive and livable and provide opportunities for citizens to spend time outdoors addressing environmental problems

Education and Outreach Resource Needs

1. Alternatives to traditional landscape practices and landscape materials
2. Proper disposal of common household toxic materials and automotive fluids
3. Where to call to report observed problems or to ask questions
4. The potential environmental and economic benefits of clean and attractive waterbodies in the community
5. How to maintain stream banks and riparian areas
6. What a clean and healthy stream can and should look like
7. Flyers, pamphlets, and brochures suited to general audiences that explain the value of clean and healthy watersheds and communities. These E&O resources should provide specific ways that individuals can protect and restore water quality in their community and should include local contacts as practicable
8. Information packets with watershed health and water quality protection and restoration, NPS pollution, and listings of resource agencies that have primary oversight and can provide additional information
9. Develop and distribute television and radio public service announcements to broadcast stations
10. Regular communication using e-mail lists and list-serve groups
11. Conferences, meeting and seminars with active participation and input from both the public and private sectors
12. Information and training to businesses, nurseries and garden centers, agricultural cooperatives, and building supply stores that sell products and services that can potentially impair water quality

B. Educators

This group includes elementary and secondary school teachers. Long-term success may depend in large part on whether the activity meets the state board course of studies and standards. Educators can influence their students, the student's parents and the community as a whole by effecting changes in both attitudes and behaviors.

Action Items to Communicate NPS Pollution Controls

1) Incorporate NPS pollution and water quality protection studies in each grade level. Visit streams and bodies of water near the school and provide hands-on activities requiring collections, observations and recording of data.

2) Demonstrate NPS pollution and water-quality related projects at local, regional and state science fairs
3) Facilitate Adopt-A-Stream, Alabama Water Watch of other similar volunteer programs in the classroom and school wide
4) Connect local students with other students active in water quality activities including county, state, regional and national organizations, programs and activities
5) Sign up to receive and contribute to newsletters of public agencies and private organizations

Methods

1) Provide readily-usable classroom materials and resources
2) Present information at teacher training conferences and seminars
3) Enlist the expertise of programs at state colleges and universities to mentor school teachers
4) Provide materials for student projects
5) Provide presentations to local school boards
6) Provide presentations to parent-teacher groups
7) Distribute curriculum materials to teachers.
8) Coordinate student use of environmental education centers and nature centers
9) Provide instruction and training to develop funding proposals

Incentives

1) Readily available, practicable, pertinent/usable environmental classroom materials that fit into the local schools and state's course of studies
2) Practical activities that offer student enrichment
3) Awards program to recognize teachers who attend training sessions, receives grants, and participate in community-based environmental protection-based programs and projects
4) Personal satisfaction in enhancement of school and community quality of life
5) Continuing Education credits

Education and Outreach Resource Needs

1. How to organize and conduct an Adopt-A-Stream, Alabama Water Watch or other volunteer programs
2. Audio-visual resources and materials to conduct NPS pollution and water quality-based classroom, lab, and field activities
3. Information identifying resource entities that can provide financial and technical assistance
4. Public outreach presentations and recognition support for schools, students and teachers
5. High quality and technically accurate print and electronic media that fit state mandated courses of study
6. Resources that tie-in and reinforce other instructional areas such as language, math and social studies
7. Bookmarks, posters and similar items to reinforce learning; accomplishments of educators and schools

C. Environmental Groups

Resource groups and non-governmental organizations presented in the Alabama Grassroots Clearinghouse, for varying and resolute reasons, continue to communicate attention to natural resource sustainability and environmental protection and restoration.

Action Items to Communicate NPS Pollution Controls

1. Support vegetative covers and pollution filter strips
2. Protect and restore riparian buffers, streambanks, and aquatic habitat
3. Promote recycling and alternative material uses
4. Promote environmental education in schools
5. Evaluate regulatory and voluntary adherence relative to land disturbance activities
6. Participation in litter and stream cleanup and volunteer monitoring
7. Public recognition of accomplishments

Methods

1. Memberships: presentations at conferences, seminars, and training
2. Media: television, radio and Internet webcast topical discussions and personal interviews

3. Newsletters: disseminate current E&O information and future events using printed or electronic formats so that various groups and organizations coordinate their efforts and learn from each other
4. Data Collection: identify and assess statewide and community specific water resource information
5. Surveys: identify priorities, assess public perceptions, and evaluate needs, resources, and progress

Incentives

1. Decreased NPS pollution runoff ensures water quality is protected and restored and use benefits enhanced for recreation (boating, swimming, fishing, hiking), wildlife (aquatic habitat and flora and fauna), and human health (clean and safe drinking water)

Education and Outreach Resource Needs

1. Similar to "General Public" above
2. Organization, audio-visuals, publicity, financial resources

D. Civic and Community Groups

This target group includes organizations such as the Lions, Kiwanis, and Rotary Clubs and the League of Women Voters; Home Owner - Boat Owner associations, and garden clubs. Members of these groups tend to have a vested interest in sustaining quality-of-life in their communities and conduct regular public-service projects.

Action Items to Communicate NPS Pollution Controls

1. Participants in Adopt-A-Stream, Alabama Water Watch and other volunteer water quality protection programs
2. Facilitate projects to protect and enhance riparian, streambank and shoreline areas
3. Sponsor or otherwise assist local schools in obtaining water quality resources and obtaining monitoring supplies
4. Participate in stream/lake clean-ups

Methods

1. Facilitated presentations at regularly scheduled meetings. Most groups meet monthly and readily welcome speakers.

Incentives

1. Member's sense of civic pride and responsibility and intrinsic contributions to the community
2. Potential economic benefits to the community including increased property values, recruitment of new business, and attractiveness to tourists and visitors
3. Recreational benefits including greenways, boating and fishing, and passive recreation such as hiking
4. Health and quality of life benefits from clean water
5. Providing teacher and student project and learning resources and other opportunities
6. Recognition and awards for citizen contributions to the community

Education and Outreach Resource Needs

1. Information and training on NPS pollution, water quality, stream protection, shoreline protection, flood control, aquatic habitat enhancement, stream clean-up, recycling, and volunteer monitoring
2. Presentations about what citizens, local governments, and businesses can do
3. The environmental and socio-economic benefits and value of clean and safe surface and groundwaters
4. As many members are active in local business and government, benefits to the business climate

E. Businesses

This is a diverse group, including corporations, small businesses, and professional associations. Action items should be tailored to a specific business or industry audience.

Action Items to Communicate NPS Pollution Controls

1. Implement stormwater runoff management practices that reduce discharge rates and volumes and improve water quality
2. Adopt turf grass varieties that tolerate lower levels of maintenance
3. Implement land development and use practices that consider water quality protection
4. Publicize business efforts to protect water resources.
5. Sponsor streambank and roadside litter clean-ups and activities in the community

6. Provide financial and technical assistance to schools and other groups to protect and restore water quality

Methods

1. State and local chapters of business organizations and professional associations meet regularly and usually welcome speakers
2. Many organizations have newsletters or brochures that inserts may be attached to provide E&O to both small targeted or mass audiences
3. Professional associations whose members are licensed by the state require their members to complete a specific number of continuing education units each year. Partner with licensing authorities to develop programs that meet the organization's requirements for continuing education credits.
4. General information on the value and benefits of clean waterways
5. Examples of pollution control ordinances
6. State and federal permit regulations and development standards to mitigate pollutant runoff
7. Impact of land disturbance on water quality and benefits of protecting riparian areas
8. Design, installation and management techniques for erosion, sediment, and stormwater control structures
9. Planning and site design for developers
10. Impacts of environmental laws, rules and regulations designed to protect water resources on a local, state and federal level

Incentives

1. Financial (business cost savings, growth, and economic development)
2. Positive public opinion and quality of life benefits
3. Avoiding negative incentives (fines, lawsuits, injunctions) for violating regulations and laws
4. Projects and companies that meet site development standards could promote themselves and their projects as going above and beyond regulations and requirements
5. Awards programs to recognize individuals, companies and organizations who, in the operation of their business, demonstrate exception sensitivity to natural resource protection and restoration

Education and Outreach Resource Needs

1. Examples of specific site development practices to protect water quality rom NPS pollutant runoff
2. Sources of technical information and practice implementation assistance
3. Continuing education requirements
4. Easily accessible copies and compendiums to explain applicable laws, rules, and regulations
5. Audio-visual presentation and meetings for targeted audiences
6. Continuing education requirements

6. Local Officials

This group includes public service officials and municipal employees. This is a very diverse group and activities, presentations, training sessions and educational materials must be targeted to specific audiences within the local government.

Action Items to Communicate NPS Pollution Controls

Inclusion of "NEMO" protocols in planning and zoning decisions
Coordination of land use planning decisions using a watershed-based approach
Awareness of the causes and adverse effects of NPS pollution by the jurisdiction's employees
Ordinances and site engineering standards to address erosion from construction sites, road design, road width, lot layout and slope gradients
Protection and restoration of riparian areas
Stormwater runoff practices design to encourage infiltration
Recycling facilities

Methods

1. Educational seminars, continuing education programs and credits, and in-service training
2. Presentations at professional conferences
3. Presentations at local public meetings

4. Local television and radio interviews

Incentives

1. Proactive action economic benefits and legal and monetary consequences of inaction
2. Administrative leadership of elected officials and recognition by peers for making positive environmental protective and economically beneficial decisions
3. Recognition by community groups and citizens to develop and enhance recreation and quality of life opportunities such as boating, fishing, hiking and picnicking along clean and healthy stream corridors
4. Economic benefits of clean and attractive streams to attract new businesses, tourists and visitors
5. Increased property values associated with attractive stream corridors
6. Support for teacher and student learning

Educational Needs

1. Land use planning that considers vulnerability of streams
2. Regulatory updates and the consequences of failure to meet requirements
3. Causes and effects of NPS pollution and the impacts water quality
4. Recommended practice manuals
5. Grants and financial resource information and proposal development assistance
6. ADEM should prepare, adapt or acquire these materials or programs:
7. Model ordinances to address erosion and sediment control, riparian buffers, licensure or certifications, stormwater management, permitting requirements, and LID designs for roads and development plat layouts
8. Nonpoint Education for Municipal Officials (NEMO) training
9. Training programs for firefighters, police, building inspectors, and other government employees who spend time traveling in the community to include information about NPS pollution, impacts on stream water quality and wildlife practices to mitigate pollutant loadings, legal mandates to protect water quality, and technical assistance providers to contact when problems are observed

6. State Agencies and Officials

The Alabama NPS Management Program incorporates applicable nonpoint source and water quality based E&O programs, products and processes of a multitude of state agencies. Given limited resources, ADEM/Section 319 grant staff cannot realistically and should not prescribe all watershed restoration and protection E&O efforts or attempt to be involved with or manage the myriad of local options across the state; it is an inefficient and unproductive use of public funds. An emphasis is placed on careful identification and prioritization of E&O activities to achieve NPS program goals and objectives including frameworks and metrics.

Action Items to Communicate NPS Pollution Controls

1. Incorporate LID site design in publically-funded construction projects to reduce or eliminate the discharge of nonpoint pollutants
2. Incorporate pollution prevention and recycling in public-funded projects to reduce or eliminate solid waste and discharge of nonpoint source pollutants
3. Provide for licensing, certification, and training for contractors involved in land-disturbance activities
4. Incorporate protection of watershed health in land use planning decisions
5. Interagency and government official seminars
6. Training for state employees in the targeted groups
7. Keep lines of communication open to eliminate unnecessary duplication of efforts and to build on successes

Methods

1. Workshops provide updates on new laws, regulations, and rules
2. Provide technical assistance to key personnel in applicable departments and sections
3. Presentations for key government officials and staff
4. Networking to convey the NPS and water quality protection messages to many and various audiences at little or no expense
5. Outdoor displays, signage, demonstration sites, websites, targeted advertising media campaigns

Educational Materials Needed

1. Seminars and meetings materials (audio-visual) for officials including information describing NPS pollution sources, effects and impacts to water quality, site development and construction best management practices, and watershed-wide land use planning, consequences of failure to meet or maintain water quality standards
2. Grant and loan sources, funding application development, and funded-project management assistance
3. Information for employees presented in easy-to-understand formats and including identifying NPS pollutant impairing the community; impacts on stream water quality recommended practices for reducing pollutant loads from urban areas, legal water quality mandates, resources for additional information, and training opportunities

Section G.2 Target E&O Activities to Meet State Water Quality Standards and Beneficial Uses

- Implement the NPS components of a TMDL to accelerate restoration of Section 303(d) listed impaired waters
- Partner with communities and individuals to protect groundwaters and drinking water sources (e.g. public water systems; water supply, wellhead capture zones, private drinking water wells)
- Focus available resources to protect high quality and unimpaired waters (e.g., Outstanding Alabama Waters, Outstanding National Resource Waters, Treasured Alabama Lake, or future designations)
- Facilitate continued implementation of the USDA-NRCS National Water Quality Initiative (NWQI) in Alabama
- Continue to leverage Farm Bill programs to support efforts of the Gulf of Mexico Alliance, Gulf of Mexico Initiative, CWA S. 6217, and other multi-state and multi-agency NPS nutrient management strategies
- Coordinate "unavoidable" land / stream disturbance compensatory activities with applicable wetland and stream restoration or "mitigation banks" and efforts (e.g. ADOT, ADCNR, state-approved private sector efforts)
- Promote voluntary NPS pollution programmatic approaches but apply statutory, regulatory and administrative "back-up" authorities and interventions to achieve state water quality standards when voluntary BMP implementation efforts, strategies, and incentives do not appear to be working.
- Assess land use activity setback requirements to protect and restore priority waters, sensitive areas, or wetlands
- Engage federal, state and local partners to continuously deliberate frameworks and metrics to best measure water quality restoration and protection and beneficial use success

Section G.3 Target E&O Activities to Implement Best Management Practices to Protect and Restore Surface Waters, Groundwaters, and Natural Resources

- Integrate E&O programs, technology transfer, and technical assistance with a focus on consensus to meet the desired environmental outcome
- Facilitate partnerships between producers and landowners/users to develop and implement watershed-based management plans that address EPAs 9-key plan elements
- Facilitate partnerships with federal and state agencies; land-grant universities, communities, and others to align, leverage, and deliver environmentally-protective and economically-sensible measures to mitigate anthropogenic impacts of NPS pollution on natural resources and human health.
- Prioritize projects and leverage Section 319 grant resources with NPS pollution management incentive programs
- Research and promulgate new or improved technologies, guidelines, standards, and practices
- Enhance greater collaboration with a full spectrum of NPS partners to accelerate research, and innovation and new technologies including developing, updating, and distributing appropriate BMP manuals and guides
- to address NPS pollution challenges and to restore impaired water resources
- Target resources to address NPS pollution on a HUC-12 subwatershed level as feasible and practicable
- Target NPS pollution measures based on public and private sector interests, site-specific conditions, land-use, extent, economics, effectiveness, and maintenance considerations
- Consider environmentally protective and economic aspects when designing, retrofitting, or implementing structural solutions, singularly and in combination to get the "best bang for the NPS mitigation buck"
- Leverage NPS mitigation resources to best address site-specific pollutant causes and extent (e.g., Section 319 pollutant load reductions, TMDL pollutants of greatest concern; concentration, proximity, etc.,)
- Mitigate Section 319 grant priority pollutant load reductions (e.g., nitrogen, phosphorus, and sediment/siltation) and nonpoint source TMDL pollutants of concern

- Strengthen socio-economically disadvantaged areas and/or to distribute non-English NPS-related outreach materials
- Coordinate efforts to minimize impacts to drinking water sources, recreational use waters, and high quality waters
- Target nutrient criteria (in the form of chlorophyll *a*) for publically-owned lakes and reservoirs
- Protect and enhance aquatic species, aquatic habitat and other critical areas of concern
- Coordinate efforts prevent or reduce atmospheric transport (mercury)
- Prevent the spread of invasive species to preclude detrimental impacts to environmental and economic health and sustainability

Section G.4 Target E&O Activities to Achieve Nonpoint Source Pollutant Load Reductions

- Address complex NPS pollution management challenges
- Target priority waterbodies, watersheds, and site-specific project areas (e.g. CWA Section 319, 303(d), and 6217/coastal programs; TMDLs, USDA-National Water Quality Initiative; etc,)
- Disseminate water quality and pollutant load reduction information including recent and historical trend data
- Promote practices protect, restore, conserve and re-use the waters of the state
- Partner with entities to estimate NPS pollutant load reductions
- Report watershed-based management project results to illustrate improvements in land, water, and air quality
- Communicate NPS pollution results in federal and state websites, databases, and reports

Section G.5 Target E&O Activities to Develop and Sustain NPS Pollution Management Partnerships

- Continue to improve coordination with governmental agencies, private sector interests, and citizen groups at the state and watershed level
- Integrate and align resource programs and project implementation plans to expeditiously make the best use of limited resources (i.e., prevent, compensate, mitigate, and adapt to NPS pollution problems)
- Clearly articulate NPS management program goals and objectives
- Ensure that E&O programs and services are made accessible
- Engage partners early on to help build trust and encourage long-term participation
- Increase participation to under-served citizens
- Enhance personal and corporate watershed and water quality protection behaviors
- Partner with voluntary citizen monitoring groups
- Balance staffing, planning and implementation actions to best utilize limited E&O resources
- Collaborate with agencies acting or preparing to act on potential environmental, economic, and public health/humanitarian risks posed by climate change
- Implement applicable Memorandum of Agreement or Memorandum of Understanding
- Conduct surveys and interviews to assess citizen knowledge, awareness and attitudes

Section G.6 Target E&O Activities to Achieve Goals and Objectives of the NPS Management Program

- As resources allow and to the maximum extent feasible and practicable, leverage Section 319 E&O resources to meet state water quality standards and beneficial uses of state waters
- Coordinate, cooperate, communicate, and collaborate with the federal, state, and local sectors to protect and restore state surface waters and groundwaters
- Leverage national, regional, interstate, state, and other NPS management level scale resources
- Enhance efforts to restore NPS impaired waters and watersheds (e.g. TMDLs, USDA-NRCS National Water Quantity Initiative, drinking water /source water supplies, NEP, wetlands, federal and state nutrient management strategy frameworks, etc.) and protect high quality waters (e.g., Outstanding Natural Resource Waters, Outstanding Alabama Waters, Treasured Alabama Lake, etc.)
- Refine processes used to assign priority and to progressively address NPS pollution and watersheds
- Periodically (minimum every 5 years) revise the AL NPS Management Program

- Incorporate a variety of formal and informal mechanisms to sustain partnerships (e.g. memorandum of agreement, letters of support, cooperative projects, leverage funding, conduct meetings to share information and ideas)
- Ensure that the goals and objectives AL NPS Management Program are well integrated with economic stability and social and cultural goals at the state, county, and local community levels
- Coordinate, integrate and leverage the significant resources of the CWSRF loan program for eligible nonpoint source activities

Section G.7 Target E&O Activities to Provide and Enhance NPS Pollution and Water Quality E&O

- Leverage E&O resources to deliver land, water, and air pollution source information to agencies, government officials, landowners, volunteers, etc.
- Ensure that programs, services, and incentives are produced, distributed and accessible to a diverse mix of citizens and targeted audiences
- Develop and revise manuals, practices, standards, guidelines, etc, to enhance E&O delivery and leadership
- Develop and enhance training, technology transfer, and technical assistance
- Develop and implement surveys and other measures and indicators to quantify public interests, perceptions, and responses
- Integrate a variety of E&O programs to enhance communication, collaboration, coordination, and cooperation

- Achieve broad based distribution (e.g. newspaper articles, magazines, television, radio, websites, signage, videos, posters/displays, fact sheets, newsletters, brochures, conferences, meetings, seminars, training, tours, festivals, field days, advisory committees, work groups, etc)
- Develop and publish pollutant load reduction "success-stories" to characterize E&O success
- Recognize exemplary citizen-based E&O activities (e.g., recognition awards and incentives)
- Enhance minority, low income, and/or non-English speaking stakeholder efforts

Section G.8 Education and Outreach Resources

This section lists various resources that can help make NPS pollution management, water quality restoration and protection, and stakeholder involvement more successful. The AL NPS Management Program does not endorse any product, service or enterprise. Any mention of a product, publication, report, entity or enterprise is for informational purposes only and does not constitute a recommendation or endorsement by ADEM or EPA.

a. Selected ADEM Resources

- Nonpoint Source Education for Municipal Officials (NEMO)
- "How to" Guide for Stormwater and Urban Watershed Management
- Prevention and Reduction of Polluted Runoff in Alabama
- Citizens Working Together to Protect and Restore Water Quality
- Storm Drain Stenciling
- Stormwater Management and Your Community
- Stream Walk

b. Selected EPA Resources

Getting in Step: Engaging Stakeholders in Your Watershed 2nd Edition (May 2013. EPA 841-B-11-001) - this guide is intended for federal, state, tribal and local agency personnel and nongovernmental organizations that are involved in watershed management activities and recruiting and involving stakeholders in watershed efforts.
Getting in Step: Outreach Series – provides steps to develop and implement successful watershed outreach campaign
Drinking Water Academy - provides information and online training modules to ensure that water professionals, public officials, and involved citizens have the knowledge and skills necessary to protect our drinking water supply.
NPS Outreach Toolbox - helps state and local agencies and other organizations interested in educating the public on nonpoint source pollution or stormwater runoff. The Toolbox contains a variety of resources to help develop an effective and targeted outreach campaign.
Water Quality Standards Academy - supports water quality standards development by presenting classroom-based and online courses, along with occasional satellite broadcasts.
Watershed Academy - provides training and information on implementing watershed approaches to addressing water resource challenges.

Elementary School (Resources for teachers and students kids in grades K-5).
Beach Kids - learn about beaches near or in other parts of the country

Drinking Water Kids K-3 - student activities and interactive games for kids K-3
Fish Kids - learn which fish are safe to eat through interactive games
Healthy Waters Start with Water Quality Standards crossword puzzle (PDF) - For students in grades 5-6.

Polluted Runoff - tips about cleaning up urban storm water runoff and preventing pollution from logging, mining, and agricultural areas
Water Sense for Kids - provides learning resources and activities designed for students in grades 3-5 to help children understand how important it is and how easy it is to save water.
Who Needs Clean Water crossword puzzle (PDF) - For both students and teachers

Middle School (Resources for teachers and students in grades 6-8).
After the Storm - Half hour video co-produced by EPA and The Weather Channel that highlights three case studies – Santa Monica Bay, the Mississippi River Basin/Gulf of Mexico, and New York City, where polluted runoff threatens watersheds highly valued for recreation, commercial fisheries and navigation, and drinking water
Drinking Water Kids 4-8 (Student activities and interactive games for students 4-8)
Ideas for Science Fair Projects About Surface Water Quality - Brings attention to surface water quality problems by exploring science fair project ideas
What's Up With Our Nation's Waters? - This booklet presents the EPA's National Water Quality Report in an easy-to-read style and includes projects for school or fun, a water quiz, and a glossary and resources for more information

High School (Resources for teachers and students in grades 9-12)
After the Storm - Half hour video co-produced by EPA and The Weather Channel that highlights three case studies – Santa Monica Bay, the Mississippi River Basin/Gulf of Mexico, and New York City, where polluted runoff threatens watersheds highly valued for recreation, commercial fisheries and navigation, and drinking water
Drinking Water Kids 9-12 - activities and interactive games for students in grades 9-12
Drinking Water: Protecting the Source - Instructional materials for teachers that are related to water characteristics and contaminants, and designed to supplement existing instruction in agriculture, food and natural resources courses.

All Audiences
Drinking Water Kids Games and Activities - Student and teacher activities and interactive games for kids K-12
Wetlands Education - K-12 education materials on wetland resources
Who Needs Clean Water? - Teachers' Guide

c. Additional Resources

Board Diversity: Adding Diversity to the Conservation Partnership - this National Association of Conservation District two-page brochure explains ways to engage various segments of the community and recruit new partners.
Building Alliances
This guidebook explains the steps for creating an alliance (network, coalition, partnership or other cooperative effort for promoting conservation) to promote conservation goals. Available from the Social Sciences Team of USDA's Natural Resources Conservation Service at *www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045548.doc*
Public Involvement in Environmental Permits - this EPA guide provides basic information about public participation requirements and gives examples under several major permits issued by EPA's air, water and waste programs. It details what public participation activities are required under those programs, as a minimum, and suggests activities that could augment the regulatory requirements.
Top Ten Watershed Lessons Learned - EPA's Office of Water draws from the experiences of more than 100 watershed practitioners and those who support them and provides insight into important lessons learned and details about what works and what doesn't.
Tips for Working with Local Media - this one-page handout from the National Association of Conservation Districts provides tips for honing messages and building and maintaining positive relationships with local media outlets.
Community Tool Box: Stakeholder Analysis - this resource from the National Park Service provides tools and techniques for better public participation in any kind of watershed or environmental restoration process. It provides tips on decision-making methods, facilitation (e.g., active listening, brainstorming, and ice breakers), building partnerships and task forces, working with volunteers, conducting outreach, performing stakeholder analyses, and more.
EPA Office of Water's River Corridors and Wetlands Restoration - resources and information on the benefits of a restoration project are available that describes different watershed improvement programs across the nation as part of EPA's Five Star Restoration Grant Program to restore wetlands and streams.