
EVERYDAY CHOICES:

OPPORTUNITIES FOR ENVIRONMENTAL STEWARDSHIP

Technical Report

prepared by the

EPA Environmental Stewardship Staff Committee

for the

EPA Innovation Action Council

November 2005

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
CHAPTER 1: ENVIRONMENTAL STEWARDSHIP AND HOW IT CONTRIBUTES TO EPA’S MISSION.....	3
1.1 SOMETHING IS HAPPENING	3
1.2 ENVIRONMENTAL STEWARDSHIP – AN EMERGING VISION AND FRAMEWORK.....	6
1.3 ENABLING AND ENCOURAGING ENVIRONMENTAL STEWARDSHIP – A CHANGING ROLE FOR EPA.....	13
CHAPTER 2: EPA’S CURRENT ENVIRONMENTAL STEWARDSHIP PROGRAMS AND ACTIVITIES.....	16
2.1 A CRITICAL ASSESSMENT OF EPA’S CURRENT ENVIRONMENTAL STEWARDSHIP PROGRAMS AND ACTIVITIES	16
2.2 PERSPECTIVES FROM STATE OFFICIALS, EXPERTS, AND OTHER STAKEHOLDERS.....	24
CHAPTER 3: OPPORTUNITIES FOR EPA LEADERSHIP	29
3.1 USE RECOGNITION/CHALLENGE PROGRAMS IN A STRATEGIC WAY TO MOTIVATE BUSINESSES, COMMUNITIES, GOVERNMENT AGENCIES AND INDIVIDUALS.....	30
3.2 ENERGIZE INDIVIDUALS TO TAKE RESPONSIBILITY FOR ENVIRONMENTAL STEWARDSHIP	31
3.3 LEAD BY EXAMPLE AT EPA FACILITIES AND IN EPA OPERATIONS	32
3.4 INSPIRE EPA STAFF TO PRACTICE STEWARDSHIP	34
3.5 USE INFORMATION AND MARKETS TO FOSTER STEWARDSHIP OF ECOSYSTEMS	35
3.6 ENCOURAGE STEWARDSHIP IN COMMUNITIES	36
3.7 PROMOTE PRODUCT STEWARDSHIP	37
CHAPTER 4: STRENGTHENING THE FOUNDATION FOR ENVIRONMENTAL STEWARDSHIP AT EPA	40
4.1 STRENGTHEN MEASUREMENT AND REPORTING ON RESULTS FROM ENVIRONMENTAL STEWARDSHIP ACTIVITIES	40
4.2 IMPROVE EPA-WIDE COMMUNICATION, OUTREACH AND MARKETING	48
4.3 UNIFY EPA ACTIVITIES TO MAKE MORE ACCESSIBLE FOR INTERNAL AND EXTERNAL AUDIENCES	51
4.4 REFLECT STEWARDSHIP IN EPA PLANNING, BUDGETING AND ACCOUNTABILITY SYSTEMS.....	51

4.5	ALIGN EPA EFFORTS WITH STATE AND TRIBAL ACTIVITIES AND PRIORITIES.....	53
4.6	REFINE ENVIRONMENTAL AWARENESS AND EDUCATION ACTIVITIES TO REALIZE FULL VALUE.....	55
4.7	IMPROVE OUR KNOWLEDGE BASE – PERFORM CRITICAL RESEARCH.....	57

APPENDIX A: ENVIRONMENTAL STEWARDSHIP & EPA: CHARGE FROM THE ADMINISTRATOR TO THE INNOVATION ACTION COUNCIL.....	59
---	-----------

APPENDIX B: ROSTER OF PROJECT PARTICIPANTS	61
---	-----------

APPENDIX C: DETAILED SUMMARY OF INTERVIEWS WITH STATE OFFICIALS, EXPERTS AND OTHER STAKEHOLDERS	62
--	-----------

APPENDIX D: STEWARDSHIP RESOURCE OUTCOME STATEMENTS	80
--	-----------

APPENDIX E: SOME DEFINITIONS OF STEWARDS AND STEWARDSHIP	84
---	-----------

APPENDIX F: SUPPLEMENTARY INFORMATION FOR THE CRITICAL ASSESSMENT	88
--	-----------

ENDNOTES.....	99
----------------------	-----------

APPENDIX G: ENVIRONMENTAL STEWARDSHIP MEASUREMENT REPORT	[web link]
---	-------------------

APPENDIX H: BENCHMARKING REPORT ON PERFORMANCE MEASURES FOR ENVIRONMENTAL STEWARDSHIP AND INNOVATION	[web link]
---	-------------------

APPENDIX I: OPTIONS PAPERS	[web link]
---	-------------------

APPENDIX J: LIST OF EPA ENVIRONMENTAL STEWARDSHIP PROGRMS AND DESCRIPTIONS	[web link]
---	-------------------

[Web links to be supplied in the near future.]

[This page intentionally blank.]

INTRODUCTION

On May 9, 2005, Administrator Stephen L. Johnson asked the EPA Innovation Action Council (IAC), a group of the most senior career officials from each headquarters and regional office, to undertake a special project on environmental stewardship. (See Appendix A, "Environmental Stewardship and EPA: Charge from the Administrator to the Innovation Action Council.")

In his charge, the Administrator noted that "in addition to operating effective regulatory and enforcement programs, EPA is gaining substantial experience with stewardship approaches – including voluntary programs, market incentives, recognition and leadership programs, pollution prevention, environmental education, information and collaborative problem solving. Although these stewardship efforts are designed to produce environmental results, EPA can improve their effectiveness with a more unified strategy and with clear goals and priorities."

With this in mind, he asked the Innovation Action Council to do three things:

1. Explore and better define EPA's vision of environmental stewardship and the role of stewardship in the future of environmental protection;
2. Assess EPA's current environmental stewardship activities to determine effectiveness and opportunities for improvement; and
3. Recommend options and priorities for how EPA, in partnership with states and tribes, can encourage stewardship that addresses environmental priorities and achieves results.

The IAC responded by establishing a Steering Committee, composed mainly of IAC members, and a staff committee that had broad representation from around the Agency. (See Appendix B) The staff committee has met almost every week since it was established and has been very actively and enthusiastically engaged throughout the project. In addition to its own research, the staff committee also drew on the wisdom of a number of experts and stakeholders and several outside consultants.

The report to the Administrator, *Everyday Choices: Opportunities for Environmental Stewardship*, is the IAC's official response to the Administrator's charge. This technical report and appendices from the staff committee to the IAC provide many details that could not be included in a short report. The staff committee wrote and rewrote many papers on a wide range of topics. Many of these papers appear as sections in the technical report and the appendices. Taken together they illustrate the logic and the many opportunities for EPA's active involvement in environmental stewardship.

The first chapter in this technical report addresses the first part of the charge, to explore and better define EPA's vision and role in environmental stewardship. Chapter 2 contains the assessment requested in the second part of the charge and the results of the interviews conducted with state officials, experts and other stakeholders. Chapters 3 and 4 respond to the third part of the charge, concerning options and priorities for EPA.

It is important to stress that the ideas and proposals described in this technical report were developed by the staff committee as background material for the IAC response to the Administrator. They have been compiled in this report to help inform the broader dialogue about environmental stewardship at EPA and to serve as a resource during the implementation phase of this project.

CHAPTER 1: ENVIRONMENTAL STEWARDSHIP AND HOW IT CONTRIBUTES TO EPA'S MISSION

1.1 SOMETHING IS HAPPENING

An industry official approves the design of a new product. An individual selects a new automobile. A community launches a new recycling system. A state government purchasing agent buys supplies.

These are everyday choices – each of which may appear to be small and of little consequence, but when multiplied by the number of times they are made every day they have significant implications for the environment and the quality of life for everyone. Some of the people making these choices understand these consequences and factor them into their decisions. Others make no connection.

Now consider the following news stories from the last 14 months:

- The president of a major U.S. manufacturing company announces plans to invest \$1.5 billion in the development of cleaner technologies and products over the next ten years, positioning the company for new sales. “We plan to make money doing it,” he says.¹
- The number of individuals placing orders for new hybrid-fueled automobiles creates months-long backlogs.²
- The mayors of 50 cities from around the world sign the United Nations Urban Environmental Accords, listing 21 actions to improve energy use, waste reduction, urban design, urban nature, transportation, environmental health and water use.³
- The U.S. Secretary of the Army issues a far-reaching “Army Strategy for the Environment: Sustain the Mission – Secure the Future,” mandating principles of sustainability across the Army specifically to strengthen its long-term military effectiveness.⁴

These are news stories about leaders among business, individuals, communities and government organizations voluntarily making choices in the course of their everyday lives and work – choices that in these cases make economic sense and will help improve environmental quality and achieve sustainable outcomes. Among the leaders, there is what some people are calling the race to the top. These stories are not what many people expect to hear. These stories are about leaders and they do not yet reflect broad practice among the 295 million Americans who make countless decisions every day that affect the environment. But they demonstrate what can and is being done around the United States and the world.

Throughout the millennia there have always been people who have voluntarily made choices that respected the long-term interests of the environment. Stewardship has a long history in many

cultures. Close to home, these values and practices have been and continue to be central for most American Indians – considered by many to be the first practitioners of environmental stewardship in North America. George Washington practiced stewardship as a farmer. The consequences of poor environmental stewardship were often not as severe when the population and economy were smaller and technologies were simpler than they are today, but serious human-caused environmental problems have occurred at a number of times and places.⁵

Today, some people and organizations see that ecologically sustainable choices are in their best interest. They see that ecologically sustainable choices are likely to be economically sustainable. For them, environmental stewardship is a natural part of the marketplace and can be the route to sustainability.

Consider this recent statement by the leaders of five highly respected research institutes in five major industrialized countries:

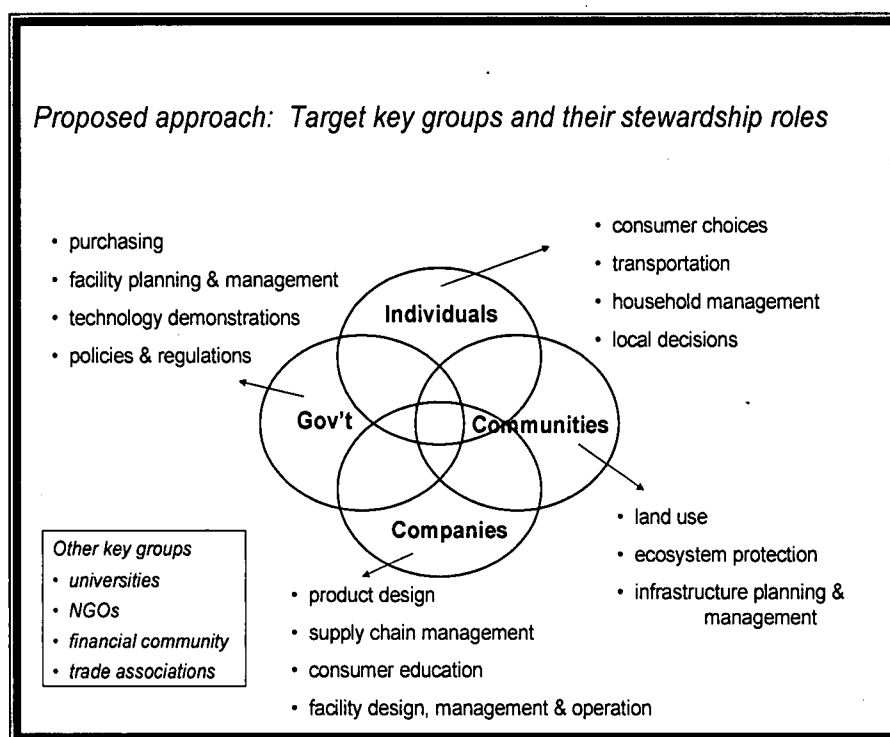
“Over the next 50 years, while the world’s population is forecast to increase by 50 percent, global economic activity is expected to increase roughly fivefold. Conventional demand studies suggest that global energy consumption is likely to rise nearly threefold and manufacturing activity at least threefold, driven largely by industrialization and infrastructure growth in developing regions. Global throughput of material is also likely to triple, according to conventional projections.”⁶

These numbers will likely be somewhat smaller in the US and other developed countries, but the global trends will affect everyone. It is fair to say that most people do not want to see environmental and other negative resource-related impacts grow by 500%, 300% or even 50%. In fact, people want an environment that is cleaner for everyone, a resource base that is more robust and an economy that is stronger and supports all individuals. Not only do people want to enjoy these benefits in their own lifetimes, but they also want to sustain them for their children and grandchildren.

The choices that businesses, individuals, communities and government organizations make every day – product design and manufacture, personal housing and transportation, city planning and services, and government procurement and operations – are what ultimately drives the strength of our economy and our resource base and the quality of our environment. More specifically, environmental degradation or improvement, whether it first appears to be caused by “major” or “minor” sources, is ultimately the product of many everyday choices. (See Figure 1.)

It is possible for the 295 million Americans to make these everyday choices and meet their needs while simultaneously improving and sustaining the economy, the resource base, and the environment. Careful choices can abundantly provide for and sustain all three for future generations. This is the vision that many of the leaders see. They see that this vision can be accomplished by making everyday choices carefully – redesigning products, creating new transportation options, and so forth. In these changes, they see opportunity for themselves, their organizations and the society at large: overall success is linked to the success of each part.

Figure 1: Who Can Help Solve These Environmental Challenges?



Most of these everyday choices are beyond the direct control of government and should remain so. While current regulatory programs have yielded remarkable results over the past several decades and should be vigorously continued, no amount of regulatory authority or funding would be sufficient to meet the current challenges to the environment posed by a changing population, economy and technology. But government can help by creating opportunities in the marketplace and at large for careful everyday choices – enabling and encouraging environmental stewardship. When people have realistic and attractive opportunities to make these careful choices, they often do so on their own because they see that it is in their interest and then everyone benefits.

Today there is wide public recognition and agreement that human prosperity and environmental quality go hand in hand and that environment and sustainability are critical to a successful society. Equally important, there is a shared understanding that governments can not accomplish many important societal goals on their own; for that reason, our understanding of and experience with collaboration and partnerships have advanced considerably.

In response to these developments in the society at large, EPA and its state government partners have initiated a series of efforts designed to enable and encourage environmental stewardship. Some of these efforts remain small, but some have become substantial programs. At EPA, these efforts are emerging throughout headquarters and regional programs. This is what led the EPA Administrator to say in his charge to the Innovation Action Council that “in addition to operating effective regulatory and enforcement programs, EPA is gaining substantial experience with stewardship approaches – including partnership (or voluntary) programs, market incentives, recognition and leadership programs, pollution prevention, environmental education, information and collaborative problem solving. Although these stewardship efforts are designed to produce

environmental results, EPA can improve their effectiveness with a more unified strategy and with clear goals and priorities.”

1.2 ENVIRONMENTAL STEWARDSHIP – AN EMERGING VISION AND FRAMEWORK

Dictionary Definitions of Steward and Stewardship

Steward: [ME. steward < Old English E. *stigweard* < *stig*, enclosure, hall, sty + *weard*, a keeper, ward] 1. A person put in charge of the affairs of a large household or estate....⁷

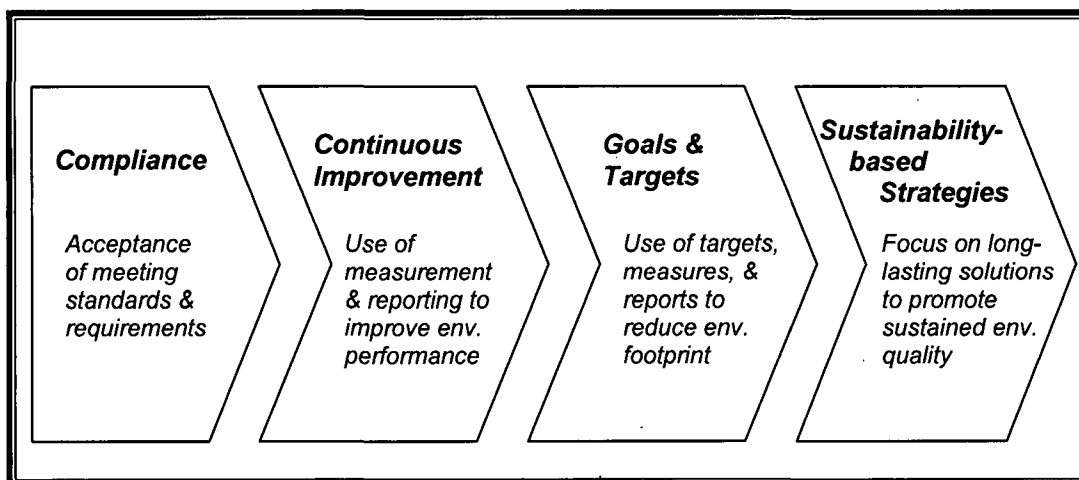
Stewardship: The careful and responsible management of something entrusted to one’s care.⁸

For additional definitions, see Appendix E.

The mission of the U. S. Environmental Protection Agency is to protect human health and the natural environment. Our state government partners have missions that are very similar. Over much of our history, we have approached this mission largely through regulations on pollution at the point of discharge. In the 1990s, realizing that options for environmental benefits exist earlier in a process or activity than the point of discharge, we added the focus of pollution prevention to encourage pollution reduction at the source. This approach recognizes the many choices that people make every day that affect the environment and creates opportunities for them to make them in ways that benefit the environment. Within the Agency, it has also helped forge the development of a number of cross-media and integrated activities.

This development has helped and been helped by an evolving sense of environmental responsibility or stewardship, particularly among the leaders of the largest organizations whose actions affect the environment. As illustrated in Figure 2, the evolution has progressed from compliance, to continuous improvement, to goals and targets, and, most recently, to sustainability-based strategies.

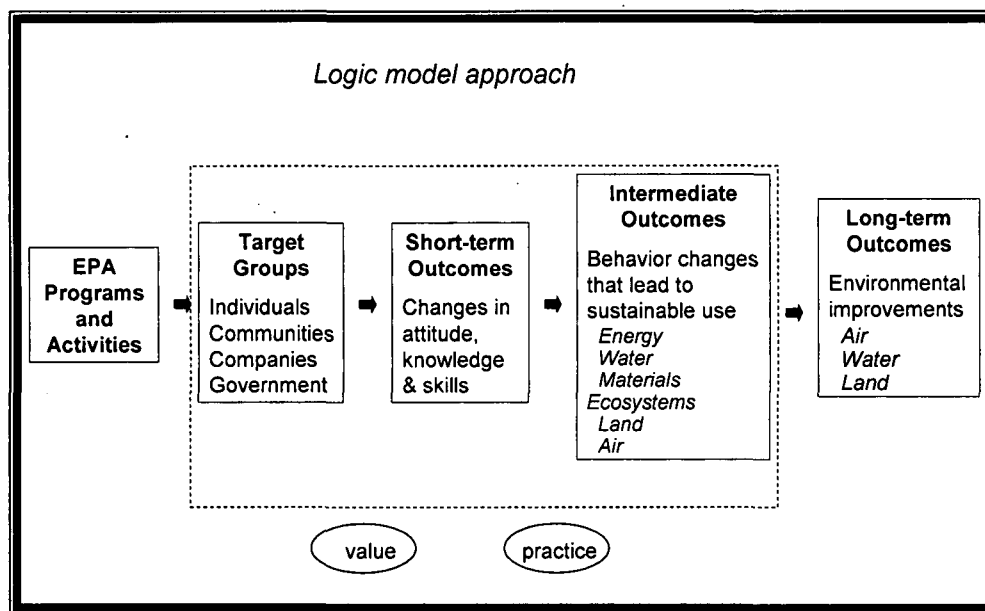
Figure 2: The Evolution of Environmental Stewardship⁹



This evolving sense of environmental responsibility or stewardship is exciting because it can significantly help to protect human health and the environment – a goal that is widely endorsed and integral to EPA’s mission. Indeed, environmental stewardship approaches have already begun to yield impressive results. Environmental stewardship can help address a wide variety of environmental problems. Current enforcement and compliance methods are and will remain essential to the EPA, but in some cases, regulation could achieve greater results if coupled with environmental stewardship. In some situations – especially involving many everyday choices – stewardship may be the more or only viable approach. It holds the promise of giving private parties the opportunity to participate in achieving sustainable environmental results and of reducing costs to government. Given the actions already taken by some leaders and the readiness of many parts of society to engage, EPA and its state partners have a significant opportunity to enable and encourage others to follow.

The logic of this role is fairly straight-forward. (See Figure 3) By focusing on key groups, such as individuals, communities, business and government organizations, EPA can help to enable and encourage them to make everyday choices that will lead to the health and sustainable use of key natural resources and resource systems: energy, water, materials, ecosystems, land and air. With time and collaboration, this will lead to the long-term measurable improvements in the air, water and land that we need to protect human health and the natural environment. In this context, environmental stewardship is a means and sustainable natural resource systems and better environmental quality are ends.

Figure 3: Stewardship Behavior – One Link Between EPA Activities and Environmental Results



EPA’s Strategic Plan currently describes environmental stewardship as a driver that crosses the Agency’s five Goals. Specifically, it defines it as follows: “Behavior that includes, but also exceeds, required compliance. Stewards of the environment recycle wastes to the greatest extent possible, minimize or eliminate pollution at its source, and use energy and natural resources efficiently to reduce impacts on the environment.”¹⁰

The EPA Innovation Action Council (IAC) has articulated a vision and definition of environmental stewardship, to guide the Agency (see Exhibit 1):

Exhibit 1: Environmental Stewardship: IAC Vision and Definition

Vision

EPA's vision of environmental stewardship is that all parts of society actively take responsibility to improve environmental quality and to achieve sustainable outcomes.

Definition

Environmental stewardship is the responsibility for environmental quality shared by all those whose actions affect the environment, reflected as both a value and a practice by individuals, companies, communities, and government organizations. Positive stewardship behavior demonstrates acceptance of this responsibility through the continuous improvement of environmental performance to achieve measurable results and sustainable outcomes.

This definition of environmental stewardship is meant to be broad and inclusive. EPA should use this definition to encourage everyone to improve their environmental performance. Strong environmental stewardship is expressed in both values and practice.

The values are simple:

1. Respect for the environment, on which life depends;
2. Acceptance of personal and organizational responsibility for environmental quality; and
3. Recognition of the need to sustain the environment for future generations. (See Exhibit 2)

Exhibit 2: Environmental Stewardship is Future-Oriented

White House Office of the Federal Environmental Executive

"We define sustainable environmental stewardship to include those concepts, strategies, tools, practices, and approaches that lead to environmental improvement in a manner that is sustainable over time, considers the long term effects as well as the shorter term, more immediate effects, and that contributes positively, even if indirectly, to the social and economic condition."¹¹

State of Illinois – Environmental Protection Agency

"Environmental stewards strive to sustain natural resources and our environment for future generations. People depend on natural resources for their livelihood. However, pressures on the environment resulting from development are steadily increasing. Therefore, it is necessary for citizens and the business community to ensure that their activities and operations are environmentally responsible."¹²

University of Michigan

"Everyone is a steward of the environment around us. We do not own the environment—no one can. We are simply caretakers of the resources that we use in our daily lives, and it is our responsibility to administer those resources to the best of our abilities so they are available for the use and enjoyment of others, including future generations. Stewardship is what we do.... Simply put, stewardship is the concept of responsibly managing all of our resources for the benefit of present and future generations of people, plants, and animals."¹³

EPA: "Beyond RCRA - Waste and Materials Management in the Year 2020"

"What kind of world will we actually inhabit in 2020? Some predict that it will be better than the present - where products and materials will be less toxic and reusable, and where resources will be used more efficiently so that far less waste is produced. Others predict we will experience a bleaker future - where harmful chemicals will be more prevalent throughout our environment and may seriously affect groundwater, drinking water, and food supplies. While we can't know which of these scenarios - or others - will exist in 20 years, considering the future now makes sense if we want a chance to shape it positively."¹⁴

Iroquois Confederacy:

"In our every deliberation we must consider the impact of our decisions on the next seven generations."¹⁵

A Journalist

Every day parents prepare their children for the future; every day we should prepare the future for our children.¹⁶

The committee developed a list of characteristics or practices and behaviors (see Exhibit 3) ("short-term outcomes" in the logic model) of sound environmental stewardship. This list is based closely on several widely-recognized sets of principles, such as the Hannover Principles, the CERES Principles, the Equator Principles, the Enlibra Principles, the Principles of Eco-efficiency by the World Business Council for Sustainable Development, The Natural Step and others.¹⁷

Exhibit 3: Characteristics (or Practices and Behaviors) of Sound Environmental Stewardship

1. ***Protects natural systems and uses natural resources effectively and efficiently.*** Considers and reduces the household, community, farm, or company's entire environmental footprint. Safeguards and restores nature at home and elsewhere. Follows the pollution prevention hierarchy of acting first to prevent pollution at its source. Uses less toxic, more environmentally benign materials, uses local resources and conserves natural resources whenever possible. Reuses and recycles materials and wastes. Seeks sustainability.
2. ***Makes environment a key part of internal priorities, values and ethics, and leads by example.*** Makes decisions through his/her own volition that will prevent or minimize environmental harm. Anticipates, plans for, and takes responsibility for economic, environmental and social consequences of actions. Approaches business strategies, policy planning, and life as an integrated dynamic with the environment. Acts in innovative ways, using all available tools and adding value wherever practical. Adopts holistic, systems approaches.
3. ***Holds oneself accountable.*** Measures the effects of behavior on the environment and seeks progress. Applies an understanding of the "carrying capacity" of the environment (the ability of the environment to absorb pollution) to measure progress and update objectives to achieve continuous improvement, often using indicators, environmental assessments, and environmental management systems.

4. **Believes in shared responsibility.** Recognizes obligations and connections to shareholders, customers, communities at home and elsewhere. Within a company, a steward is concerned with the full life cycle of products and services, beyond company boundaries, up and down the supply chain (including suppliers, customers and end-of-product-life). Within a community, a steward protects the environment for all members and takes responsibility for effects of use of resources extracted from other locations, effects on the overall watershed, effects on downstream air pollution, and effects of wastes disposed of elsewhere. A steward operates with transparency and encourages others to be collaborative stewards.
5. **Invests in the future.** Anticipates the needs of future generations while serving the needs of the present generation. Actions reflect possible changes in population, the economy and technology. Guides the development of technology to minimize negative environmental implications and maximize potential stewardship applications. Values and protects natural and social capital. Seeks preventative and long-term solutions in community development, business strategy, agricultural strategy, and household plans.
6. **Exceeds required compliance.** Views environmental regulations only as a floor, not a target. (Note: this characteristic applies only to the extent that regulations apply; an environmental steward does not have to be part of EPA's regulatory universe.)

"In an ideal world, regulation is replaced by stewardship; an inherent respect for the environment. In this concept of stewardship, everyone takes responsibility for their actions and the use of resources for the benefit of the community."

- excerpt from the North Carolina Department of Environment and Natural Resources, "Principles of Enforcement"¹⁸

Another way to look at key stewardship groups is to look at what drives them towards the values and practice of environmental stewardship and what barriers they face. The experts and stakeholders interviewed in connection with this environmental stewardship project made a number of interesting points on this subject. The following chart is drawn largely from their comments. (See Exhibit 4).

Exhibit 4: Drivers and Barriers for Environmental Stewardship

	Drivers	Barriers
All	- Consideration of future generations - Concern over environmental, economic, and social viability	- Lack of accountability and responsibility; Lack of clear goal or end state - Lack of measuring and valuing tools - Lack of trust
Individuals	- Individual belief system, altruism - Environmental education - Recognition of connection between environmental quality and quality of life - Increased awareness & access to information and scientific evidence	- Feeling that small, individual actions don't make a difference - Lack of understanding of connection between people and the environment - Perception that "green" products are more costly and of lower quality; reluctance to accept cost or quality penalties with purchases - Reluctance to make lifestyle shifts to accommodate stewardship behaviors

	Drivers	Barriers
Companies	- Increased knowledge of business benefits from stewardship - Public, customer and shareholder expectations - Pressure for corporate transparency, public access to information - Competitive pressures for waste reduction - Desire to reduce risk from non-compliance with basic environmental laws, regulations, and standards - Concern over corporate or brand image - Awareness of supply chain risks and opportunities - Emerging international regulations	- Lack of accountability and responsibility - Lack of well-documented connection between environmental stewardship and economic benefits / good business practice - Consumer perception that “green” products are more costly and of lower quality - Majority of capital market institutions are not yet measuring and valuing environmental performance and stewardship - Hard to navigate government programs - Lack of sufficient technical assistance for small and mid-sized businesses - Lack of economic signals in the marketplace
Communities	- Environmental education - Public demand- Recognition of connection between environmental quality and quality of life - Increased awareness & access to information and scientific evidence - Enhance the effectiveness of public services	- General feeling of apathy; lack of accountability and responsibility - Feeling that small actions don’t make a difference - Lack of understanding of connection between people and the environment - Reluctance to make lifestyle shifts to accommodate stewardship behaviors - Reluctance to agree to up-front costs to support stewardship
Government Organizations	- Public perception, expectations; public pressure - Pressure for transparency - Need to respond to new and complex problems - Need to achieve better results with less resources - Demands of stakeholders	- Lack of accountability and responsibility - Term “environmental stewardship” not widely used among state and local government agencies - Difficulty defining environmental stewardship and creating consistency across programs - Lack of alignment between stewardship and regulations

Having defined the target groups and what they can do to practice environmental stewardship, it is necessary to define the intermediate outcomes that EPA should work with these groups to achieve.

Effective environmental stewardship requires all of us to manage natural resources in ways that protect and enhance – rather than compromise – the ability of future generations to meet their own needs. In this project we considered our stewardship of six major groups of natural resources: air, ecosystems, energy, land, materials, and water.

The manner in which we extract (mine/harvest), use, reuse and dispose of these natural resources determines the major environmental outcomes with which EPA and the nation at large are concerned. How we steward these natural resources is also the key to solutions to environmental

problems. Proactively supporting innovations to protect, conserve, and enhance these resources will enable us to contribute to the well being of both people and the natural environment over the long run.

To this end, the committee developed six simple statements describing the outcomes that the nation ought to seek.

- **Air:** Sustain clean and healthy air.
- **Ecosystems:** Protect and restore ecosystem functions, goods, and services.
- **Energy:** Generate clean energy and use it efficiently.
- **Land:** Support ecologically sensitive land management and development.
- **Materials:** Use materials carefully and shift to environmentally preferable materials.
- **Water:** Sustain water resources of quality and availability for desired uses.

The committee expended considerable effort to describe these outcomes in greater detail, in the belief that such statements could be very useful for planning, implementation and measurement/evaluation. These outcome statements are included in Appendix D.

Because these six natural resources are each part of a larger, life-sustaining system, the stewardship of any single resource inevitably influences the quality or availability of others. A closer look at “materials stewardship” illustrates this interdependence: Through green design, lifecycle management, conservation, and recycling of materials and products, environmental stewardship can (1) protect ecosystems affected by resource extraction and waste disposal; (2) avoid pollution of water, land, and air associated with materials production, transportation, use or disposal; and (3) conserve water and energy consumed in production, transportation, or use. Wise strategies maximize “compounded returns” such as these.

The discussion of key stewardship groups and the stewardship/sustainability outcomes lead to a useful framework for environmental stewardship. (See Exhibit 5).

Exhibit 5: Environmental Stewardship Framework

	Air	Ecosystems	Energy	Land	Materials	Water
Individuals						
Companies						
Communities						
Government Organizations						

The workgroup asked several experts to offer their thoughts on the vision statement we developed (See Chapter 2 and Appendix C). Most tacitly agreed with the statement. However, they also offered an admonition. EPA cannot allow environmental stewardship to become just one more EPA initiative. It must be viewed as a legitimate part of the mission the Agency was given by the Congress. It must be linked to core programs and it must be attended by operational goals. For it to be viewed credibly, some suggest that the Agency needs to “set the bar higher” for its actions under environmental stewardship and should offer bold steps that are recognized as the Agency doing something differently. We should be a catalyst for change. In the words of one expert: “Stewardship is a powerful and potentially very successful concept; it has the potential to be a touchstone that people can use to bring them back to the underlying purpose and goals that should inform and underlie all EPA activities.”

1.3 *ENABLING AND ENCOURAGING ENVIRONMENTAL STEWARDSHIP – A CHANGING ROLE FOR EPA*

Over the past decade, EPA has gained considerable experience in stewardship approaches. Most of EPA’s programs can (directly or indirectly) encourage environmental stewardship values and practices, but some are more oriented in this direction than others. Examples of programs and activities that particularly enable and encourage environmental stewardship values and practices include:

- Pollution Prevention
- Performance-based/Leadership/Recognition Programs
- Partnership/Voluntary Programs
- Environmental Education and Fellowships
- EPA Web Site – information on tools and best practices
- Collaborative problem solving
- Geographic Approaches
- Compliance Assistance
- Technical Assistance
- Provision of Market Incentives
- Research (e.g., on green engineering and chemistry, behavior, industrial ecology)

In turn, each of these categories has many components. For instance:

- Pollution Prevention: Design for the Environment, Green Suppliers Network, Hospitals for a Healthy Environment, state/tribal technical assistance to business;

-
- Performance-based/Leadership/Recognition: Performance Track, EnergyStar, President's Environmental Youth Awards, Presidential Green Chemistry Challenge Award; and
 - Geographic Approaches: Watersheds and estuaries, Brownfields, SEQL and other regional projects, CARE.

As part of this project, the committee has created a list of many of these programs, with descriptions. (See Appendix J). Within several months, we expect to have a web-enabled portfolio, to make it easier to identify EPA environmental stewardship programs.

EPA has started down the path of enabling and encouraging environmental stewardship, but there is still a great deal more for the Agency to do to help the country achieve the emerging vision of environmental stewardship and meet the challenge to the environment posed by the changing population, economy and technology.

In this context, several key points about EPA's changing role are in order. These points generally apply to EPA's state and tribal government partners as well.

- An increase in the amount of attention to environmental stewardship should not imply a decrease in the amount of attention to effective regulatory and enforcement programs.
- EPA will need to be much more strategic in its environmental stewardship activities. Our strategy to date has been to "let a thousand flowers bloom." Now we need to think carefully about targets of opportunity, approaches and deployment of resources. The framework of key stewardship groups – individuals, companies, communities and government organizations – and the six major resource systems that must be the immediate objects of our stewardship – air, ecosystems, energy, land, materials and water – appears to be a useful organizing concept.
- In this context, EPA environmental stewardship programs that address only one target group and/or one resource may get environmental results, but programs or multi-program strategies that address more than one group/resource may achieve more for EPA's limited resources.
- Viewed from the outside, EPA has a treasure chest of information that can help people and organizations meet their environmental stewardship responsibilities. But this information is not integrated and oriented optimally to meet customer needs.
- In terms of jurisdiction and solutions, EPA has but a portion of environmental stewardship opportunities within its purview. We acknowledge and applaud those whose own vision and actions already are at the forefront of environmental stewardship, whether in their personal, public, or business life. Our role is to enable and encourage those who have not adopted environmental stewardship to benefit from the leaders, and to move individuals from passive choices to informed and active choices.
- As EPA moves to enable and encourage better environmental stewardship, we will need to play multiple roles. We will need to act as a leader, a partner, a student, problem solver, a facilitator and a regulator. We will need to provide information, incentives and

recognition, and we will need to demonstrate exceptional stewardship in our own programs. More specifically, we will need to offer practical direction and challenges to individuals both inside and outside the Agency. We will need to strengthen our role as partners with companies who are incorporating environmental considerations within each business decision they make. We must serve as a facilitator for communities, providing access to the tools and knowledge they need to make informed environmental decisions. We must continue to be environmental problem solvers. We will have to do all this while maintaining our traditional regulatory role. In short, the “EPA brand” – the services for which we are known – will evolve.

- EPA must collaborate with state, tribal and local government partners that deliver many of its regulatory programs and also have developed regional and community based environmental stewardship programs. As with other environmental stewardship leaders, a number of state, tribal and local governments are on the forefront of environmental stewardship and EPA should seek to support and encourage these efforts through its funding, technical assistance, and partnerships on voluntary and other programs.
- These new roles will create new expectations of EPA staff. We will need to pay attention to the resulting internal challenges as we address human capital development.
- Moving towards stewardship strategies already has fostered considerable innovation on the part of EPA and other organizations. In fact, innovation and collaborative problem-solving are key to advancing environmental stewardship strategies.
- The shifts suggested here will require a foundation based on three major elements:
 - Information. Environmental stewardship must rest on a bed of sound knowledge and information – strong science and research, technical assistance information, transparent publicly-reported operating information, such as the Toxics Release Inventory (not including confidential information), and program accountability information.
 - Inspiration. Environmental stewardship depends on people who can see beyond the short-term and who are excited to take actions because they see the long-term benefits to themselves and others. Spreading inspiration is also a major task of leaders in every field.
 - Trust. Environmental stewardship requires considerably more trust between all parties than in the regulatory system – a change that can be particularly difficult to make. Trust must be initiated by leaders. The old adage from nuclear disarmament may also apply: “Trust but verify.”

As we consider EPA’s changing role in more detail, it is timely to begin with a further assessment of our current programs and activities, which is where the next chapter begins.

CHAPTER 2: EPA'S CURRENT ENVIRONMENTAL STEWARDSHIP PROGRAMS AND ACTIVITIES

In order to assess EPA's current environmental stewardship activities, the committee undertook two tasks. In the interest of getting an outside view, the committee engaged contractors to perform both tasks. First, the committee retained ICF Consulting, Inc., to do an independent assessment. This assessment is presented in the first section below. Second, the committee retained Ross and Associates to interview key experts and stakeholders. The summary of these interviews is presented in the second section below.

2.1 *A CRITICAL ASSESSMENT OF EPA'S CURRENT ENVIRONMENTAL STEWARDSHIP PROGRAMS AND ACTIVITIES*

The critical assessment of EPA's current portfolio of environmental stewardship programs and activities was based on data provided by EPA during August-October, 2005. The assessment was designed to answer the following questions:

1. What fraction of the Agency's resources is invested in environmental stewardship activities?
2. How are the Agency's investments distributed across the key sustainability goals of environmental stewardship (i.e., air, water, land, materials/toxics, ecosystems, energy)?
3. How are the Agency's investments distributed across the key stakeholder groupings (i.e., individuals, businesses, governments and communities)?
4. How are the Agency's investments distributed among "end-of-pipe" programs versus those that address problems from a prevention or sustainability perspective?

Time and resources did not permit a detailed program-by-program analysis to address these questions. Rather, this assessment looked at EPA's stewardship portfolio as a whole using previously-collected data, limited quantitative analysis, and the application of professional judgment by EPA staff and ICF Consulting staff with broad experience with the subject matter. Supplementary information relating to this critical assessment is presented in Appendix F.

2.1.1 Database Development

2.1.1.1 Definitions

This assessment sorted EPA's environmental stewardship activities into 4 major groupings:

1. Partnership programs that support environmental stewardship [These programs are also often known as voluntary programs.]
2. Grant programs that support environmental stewardship

-
3. Programs providing information, education, tools and other resources in support of environmental stewardship
 4. Regulatory, enforcement and compliance assistance programs, including site-specific Regional projects.

To be included in the critical assessment of **partnership (or voluntary) programs**, an activity had to meet all of the following criteria:

- Voluntary
- Significant, two-way engagement with their members
- Requires action on the part of the stakeholder
- In active operation

The **grants program** assessment, excluded grant programs principally designed to support State or Tribal implementation of regulatory programs or enforcement activities, or were principally designed to fund infrastructure construction.

EPA's portfolio of **information, education and related programs** is also analyzed below.

The Agency's **regulatory program** provides a baseline from which a stakeholder's voluntary activities can grow and be measured. However, because the regulatory program dwarfs the Agency's voluntary activities, the inclusion of the former would make it difficult to draw any conclusions about the latter. With more time and resources, it would be possible to analyze the regulatory program as well and elucidate its impact on stewardship behavior and outcomes.

2.1.1.2 Data Collection

Because there was no pre-existing list of environmental stewardship activities, it was necessary to create one. The critical assessment process began by collecting, compiling and reconciling several lists containing approximately 400 distinct EPA activities.¹⁹ Of these, several dozen were found to be inactive or terminated, and a few dozen other activities fell out of the critical assessment because no information about the activity – other than its name – was readily available. The remaining activities were categorized as grants, information/education activities, or as voluntary programs.

ICF developed a list of 133 partnership programs sponsored by various Headquarters components and Regional offices. Budget data were provided by the program offices for 73 out of the 87 headquarters programs, which account for the lion's share of the Agency's voluntary programs investment. However, it must be noted that the budget data were collected somewhat informally, and it is likely that there are inconsistencies between EPA offices in how voluntary program budgets were defined.

Funding data for EPA's grant programs were collected from an online database maintained by the Grants Administration Division, supplemented by data from the program offices. Funding data were available for 24 of the 57 grant programs.

ICF assigned each partnership program and grant program to one sustainability outcome (e.g., air, water, land, ecosystems, energy, materials/toxics, or “multiple resource outcomes”). ICF also assigned each program to a primary and secondary stakeholder type (e.g., individuals, communities, governments, businesses). In addition, ICF also assigned a third stakeholder grouping as an intermediary if needed: for example, a partnership program might work with retailers to change the products that consumers purchase. For this program, individuals would be the primary stakeholder category, and businesses would be the intermediary. Not surprisingly, assignment of programs to sustainability outcomes and stakeholder groupings was more an art than a science.

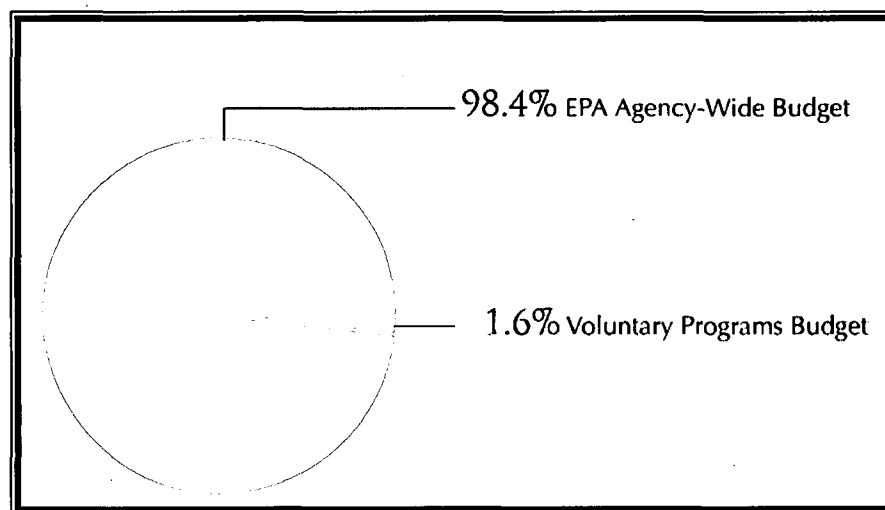
Performance data for the partnership programs could not be collected in a consistent fashion during the time available. EPA has struggled to collect comparable performance data for its diverse portfolio of partnership programs, and because such data were lacking, ICF was not able to analyze the performance of the voluntary programs; nor could ICF assess the extent to which environmental stewardship drives environmental results. This is an important gap in EPA’s management systems, one which is addressed in greater detail later in this report.

2.1.2 Critical Assessment of Voluntary Programs

2.1.2.1 Aggregate Budget Analysis

The Agency’s FY2005 appropriation included \$2.3 billion for its Environmental Programs and Management account and approximately \$8 billion for the Agency overall. The 73 partnership programs for which ICF collected budget data accounted for \$125 million in 2005 spending, equivalent to 5.4% of the Environmental Programs and Management account or 1.6% of the overall EPA budget. (See Figure 4.)

Figure 4: EPA Agency-wide Budget and Partnership (Voluntary) Programs Budget



It is also interesting to evaluate the distribution of Agency investments based on the size of the partnership programs. As shown in Exhibit 6 below, the 7 largest Headquarters programs account for about two-thirds of the overall partnership program budget. The remaining 66 programs account for the other third.

Exhibit 6: Distribution of Headquarters Partnership Programs by Program Budget & Size

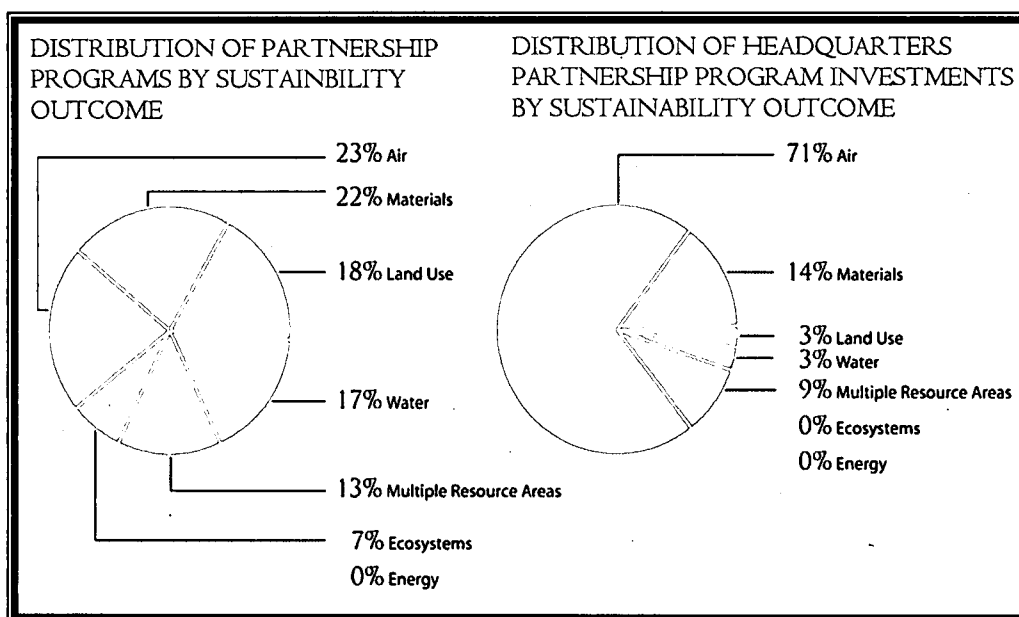
Funding Range	Number of Programs	Total Budget	Percentage of Total Budget
Less than \$100,000	19	\$512,500	0.4%
\$100,000 - \$499,000	19	\$3,999,900	3.2%
\$500,000 - \$999,999	9	\$6,510,100	5.2%
\$1 million - \$4.9 million	19	\$34,385,670	27.4%
\$5 million - \$9.9 million	3	\$23,097,100	18.4%
\$10 million or greater	4	\$56,900,000	45.4%
Total	73	\$125,405,270.00	

2.1.2.2 Sustainability Outcomes

EPA's environmental stewardship portfolio is dominated by activities directed towards air (23% of the programs), materials issues (22% of the programs), land use issues (18% of the programs) and water issues (17% of the programs). Eighteen other programs address more than one resource type. Only 9 of the 133 programs address ecosystems. Energy as a sustainability outcome is not the stated primary focus of any program (although many programs address energy use as a means of reducing other environmental impacts). (See Figure 5.) However, as shown in Figure 5, the large majority of EPA's HQ voluntary program budget is invested in air-related programs, a natural resource highly affected by energy use.

Figure 5: Distribution of Headquarters Partnership Programs and Investments by Sustainability Outcome

[See text above concerning percentages relating to energy.]



Within the air resource category, climate change attracts the greatest attention, accounting for almost half of the programs (and two-thirds of the HQ partnership program budget investment). Criteria air pollution accounts for almost one third of the programs, while indoor air quality, air toxics, and ozone depletion together account for the remaining quarter. Acidic deposition is not the principal target of any stewardship program.

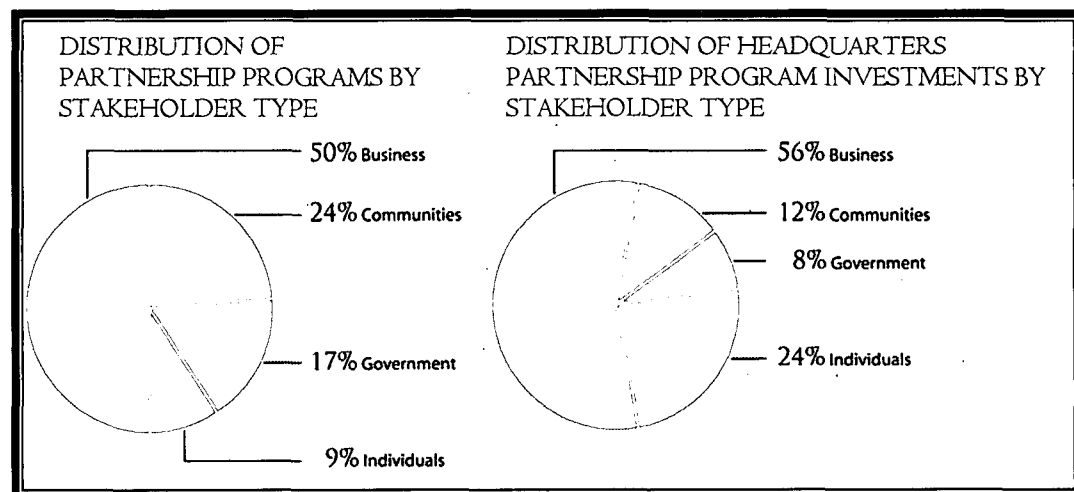
The other major resource areas (water, materials) did not have a similar concentration of programs addressing a single environmental issue. About one quarter of the water programs addressed water quality, another quarter addressed drinking water, and the remainder addressed water availability, groundwater, surface water, etc. in fairly equal measure. Water availability accounts for over half the budget for water-related HQ partnership programs, with the remaining funds being evenly dispersed among programs that address other water issues. Irrigation and recreational uses of water, water security, and near-shore and deepwater oceanic issues appear to be unaddressed.

The materials programs were similarly well-distributed, with a handful of programs addressing product design, product end-of-life, national program chemicals, other industrial/agricultural chemicals, toxic waste, and hazardous waste. About two-thirds of the HQ partnership programs budget that relates to materials is used to address pesticides and other industrial chemicals, with the remaining one-third of funds addressing the other materials programs. Product packaging and municipal solid waste are not the primary target of any of these programs.

2.1.2.3 Stakeholder Groups

About half of EPA's environmental stewardship programs engage the business sector. Another 24 percent engage community partners. The remaining programs are split between those that promote stewardship with governments and with individuals. Business-focused programs also take the largest share of HQ voluntary program budget investments, accounting for 56% of the total. Note however, that programs targeting individuals receive a larger share of the budgetary pie than their numbers would suggest, while the opposite is true of programs directed at governmental and community stakeholders. (See Figure 6.)

Figure 6: Distribution of Partnership Programs and Investments by Stakeholder Type



Within the business category, a plurality of programs (and over half of the HQ voluntary program budget) address multiple business sectors (e.g., Sector Strategies) or all business sectors alike (e.g. Green Power Partnership). Many other programs, however, address a specific business sector, such as the chemical industry (5 programs) or the mining industry (2 programs). Only one business-focused program explicitly addresses small business as its primary audience.

Within the community category, 21 of the 32 programs address all types of communities. The remaining 11 are targeted at professional associations, non-governmental associations, rural and urban communities, schools, and watershed groups. Over 90 percent of HQ funding for community programs goes to programs that address all types of communities.

Five of the 12 programs addressing individuals address all individuals, while the remaining programs specifically engage students and urban populations. Almost 90 percent of HQ funds for programs targeted at individuals go to voluntary programs that address all individuals.

The 23 programs relating to governmental stakeholders are divided between Federal participants (8), state/local participants (7), tribes (2), and programs open to any governmental participant (6). Programs targeting Federal participants receive over 80 percent of HQ funding on voluntary programs and states receive the majority of the remaining 20 percent.

2.1.2.4 Distribution of programs by resource area and stakeholder group

Exhibit 7 below displays the number of programs at each intersection of resource area and stakeholder group, while Exhibit 8 displays the budget amount invested by HQ voluntary programs at each intersection point. This view can suggest opportunities for program co-marketing and program consolidation.

Exhibit 7: Distribution of Partnership Programs by Stakeholder and Sustainability Outcome

	Air	Ecosystems	Energy	Land Uses	Materials	Multiple Resource Areas	Water	Total
Business	24	--	--	8	22	7	5	66
Communities	2	3	--	12	2	4	9	32
Government		5	--	4	5	5	4	23
Individuals	5	1	--	--	--	2	4	12
Total	31	9	0	24	29	18	22	133

Exhibit 8: Distribution of FY05 Headquarters Partnership Program Investments by Stakeholder and Sustainability Outcome

	Air	Ecosystems	Energy	Land Uses	Materials	Multiple Resource Areas	Water	Total
Business	\$49,219,370	--	--	\$1,110,000	\$13,776,200	\$5,980,700	\$7,500	\$70,093,770
Communities	\$12,350,000	\$502,000	--	\$2,078,000	\$0		\$405,000	\$15,335,000
Government	--	\$100,000	--	\$250,000	\$3,560,500	\$4,594,000	\$911,000	\$9,415,500
Individuals	\$28,150,000	\$10,000	--			\$85,000	\$2,316,000	\$30,561,000
Total	\$89,719,370	\$612,000	\$0	\$3,438,000	\$17,336,700	\$10,659,700	\$3,639,500	\$125,405,270

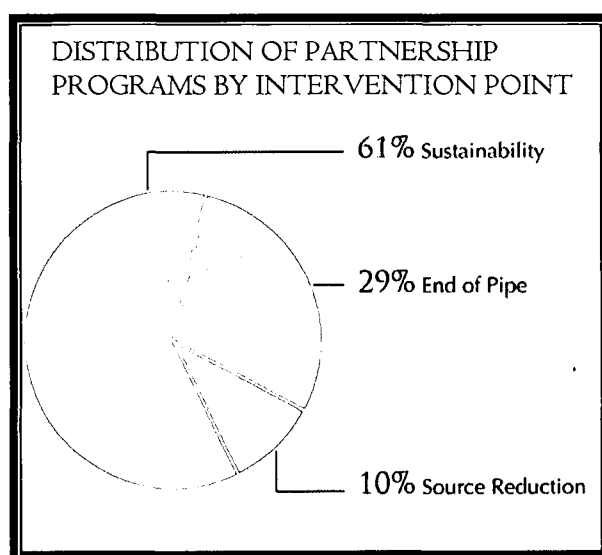
2.1.2.5 Program intervention

Programs can intervene at different points in a decision chain that gives rise to an environmental problem. The Agency has increasingly sought to move from a pollution control to pollution prevention and, in recent years, to working with businesses and individuals to completely re-envision their production and consumption approaches to reduce life-cycle environmental impacts (described as "sustainability" below).

ICF was able to assign 118 of the 133 partnership programs within this framework, although it should be noted that not all programs or resource areas (viz. ecosystems) fit neatly.

Of the 118 programs, 72 can be classified as sustainability programs, 12 as source reduction programs, and 34 as end-of-pipe programs. (See Figure 7 below.) Examples of sustainability programs include ENERGY STAR, the Green Power Partnership and SmartWay Transport, Green Chemistry, most of the Design for the Environment initiatives, the Federal Electronics Challenge, Business for the Bay, Adopt Your Watershed, and the Water Use Efficiency Program.

Figure 7: Distribution of Partnership Programs by Intervention Point



2.1.2.6 Related Programs

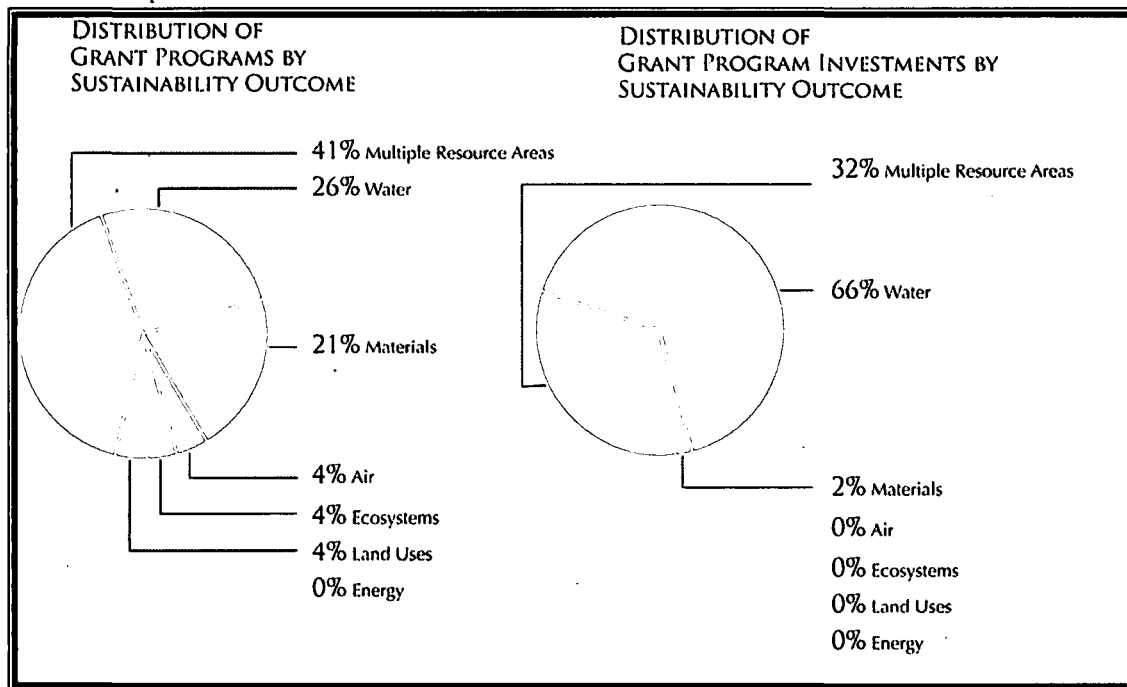
In addition to operating programs that directly stimulate environmental stewardship activities by stakeholders, EPA also supports environmental stewardship through the provision of grants, information, software, educational materials and training.

2.1.2.6.1 Grant Programs

In the grants area, ICF identified 57 grant programs that could be categorized as environmental stewardship-related.²⁰ EPA allocated \$343 million in FY2005 for the 24 grant programs for which budget data were available, equivalent to 4.3% of the overall EPA budget.

The distribution by sustainability outcome – by both number of programs and dollar allocation -- is dominated by multiple resource-area grants and grants in the water area. (See Figure 8.) Grants programs that address water receive the most funding, at almost \$226 million, while programs that address multiple resource areas are funded at \$110 million. The programs with the largest individual headquarters budgets are the National Nonpoint Source Management Program (\$207 million), Science to Achieve Results (STAR) Research Program (\$51 million), and ORD's Consolidated Research and Training (\$30 million).

Figure 8: Distribution of Grant Programs and Investments by Sustainability Outcome

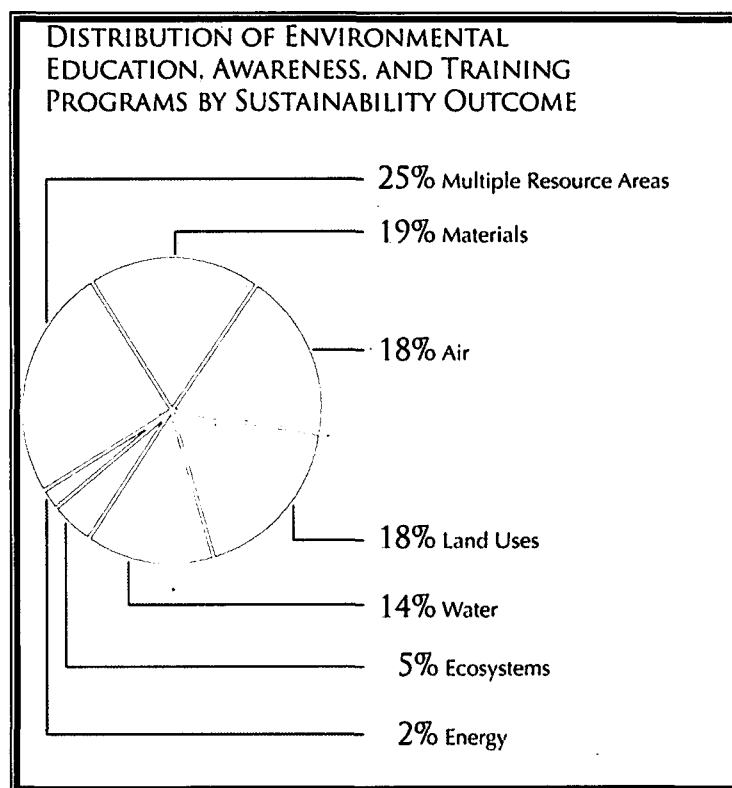


2.1.2.6.2 Information, Education and Training Activities

ICF identified 104 distinct EPA activities which concentrate on providing education, information, software, training and other tools in support of environmental stewardship. The distribution of the activities is dominated by air, water, materials and multiple resource area

activities. Ecosystems and energy together account for 7 of the 104 activities. (See Figure 9 below.)

Figure 9: Distribution of Environmental Education, Awareness, and Training Programs by Sustainability Outcome



2.2 PERSPECTIVES FROM STATE OFFICIALS, EXPERTS, AND OTHER STAKEHOLDERS

To inform this report, interviews were conducted on environmental stewardship with several groups of knowledgeable individuals: eight commissioner or deputy-commissioner level officials in state environment and natural resource agencies and a number of subject matter experts and EPA stakeholders from academia, policy advocacy and research organizations, the sustainability and conservation movements, corporations and business, non-profit environmental organizations, and officials from states, local government, and Tribal nations.

State officials were asked about EPA's draft vision and definition for environmental stewardship and the concepts embedded therein; environmental stewardship or stewardship-like efforts underway in their organizations; and how EPA might better work with states to facilitate environmental stewardship and encourage stewardship behaviors in individuals, businesses, and communities. Experts were asked questions about the definition and concept of environmental stewardship, the prospective role of government and EPA in fostering stewardship, and examples of stewardship behaviors among business, individuals, government, and communities. Stakeholders were asked about the definition of environmental stewardship, their stewardship efforts and experiences, barriers that prevent them from becoming better environmental

stewards, and steps that EPA could take to help their organizations and/or constituencies to be better environmental stewards.

On balance, interviewees expressed strong support for the ideals embodied in EPA's draft vision and definition of environmental stewardship. State officials in particular emphasized the importance of stewardship-related efforts both to achieving environmental quality goals and to promoting the long-term health and sustainability of environment and natural resource agencies. These views are summarized briefly below. Appendix C is a more detailed report.

2.2.1 Results of Interviews with State Officials

While state officials expressed strong support for environmental stewardship ideas, there was less unanimity of support for use of the term "environmental stewardship." Some state officials expressed a preference for terms that are more in general use in program implementation and that carry with them a stronger connotation of the marriage of environmental quality and abundance with economic prosperity.

State Leaders Interviewed

1. Bill Ross, North Carolina
2. Larry Soward, Texas
3. Dawn Gallagher, Maine
4. Mike Linder, Nebraska
5. Bob King, South Carolina
6. Scott Hassett, Wisconsin
7. Howard Roitman, Colorado
8. Jim Branham, California

All states have ongoing efforts that they characterize as consistent with EPA's draft vision and definition of environmental stewardship, although these efforts often are articulated under the umbrella of "environmental sustainability" or are related to traditional core environmental programs rather than promoted as "environmental stewardship."

Many state efforts are focused on two related areas: working to encourage businesses to reach for environmental outcomes that are beyond those that would be required by existing regulatory programs (so-called "beyond compliance" efforts) and working to integrate or reduce barriers between environmental programs. For example:

- Nebraska works across local, state, and federal agencies to combine watershed development and protection efforts with small community revitalization;
- Colorado has an Environmental Management System (EMS) permit program that focuses on superior environmental outcomes and regulating businesses in a more holistic way;
- Wisconsin has the "Green Tier" program that recognizes beyond compliance efforts;
- North Carolina has an "Environmental Stewardship Initiative" to promote and encourage superior environmental performance in the regulated community;
- Maine is working with other New England states to establish joint priority setting between environment and public health agencies. One of the outcomes of this effort will be materials to support individuals in assessing the "health" of their homes;
- California is supporting efforts to develop best practices for sustainability in the wine grape and other agricultural sectors; and

-
- Minnesota has a program to foster product exchanges for lead tackle, mercury-containing products, lawn equipment and wood stoves.

State stewardship-related efforts are not limited to areas where there are traditional environmental regulatory programs or mandates.

- State environment agencies are increasingly considering land conservation goals in their stewardship-related efforts and are partnering with sister natural resource agencies to jointly further environmental and land conservation goals. For example, South Carolina is working with other southeast states to explore sustainability and stewardship at active military bases.
- States increasingly are investing in efforts to give businesses and consumers information and encouragement to support more environmentally-sound behaviors and choices. Some of these efforts extend to direct financial support for environmentally beneficial choices. For example, Texas provides financial assistance for repair or replacement of vehicles that fail emissions testing.
- States are acting as conveners and supporters of business or community-initiated environmental stewardship efforts that often are primarily motivated by economic or social values but can be optimized to achieve environmental benefits. For example, Maine inspectors are working to match the “waste” streams of facilities with raw material needs of other companies to further waste reduction goals.

State officials offered a number of suggestions for how EPA might better work with states to further environmental stewardship goals. These include:

- Defining environmental stewardship efforts in the context of existing EPA programs and priorities;
- Nesting environmental stewardship efforts in the context of existing EPA measurement and program evaluation mechanisms;
- Creating true flexibility at the regional-office level for state programs to explore stewardship-related ideas in part, at least, through an increased focus on environmental outcomes over programmatic processes;
- Reaching to change culture within EPA, other government agencies, and with individuals, businesses, and communities by emphasizing joint responsibility and accountability for shared goals and working through partnerships and collaboration, rather than strict command and control strategies; and
- Investing in stewardship-related support, including, for example, providing leadership within federal agencies for government to act as an environmental steward in its own consumptive and operational choices; developing core capacities, such as marketing capacities, that states could access to support their independent state-specific stewardship efforts; and acting as a convener and leader of a national dialogue that raises stewardship awareness and expectations in individuals, businesses, and communities.

2.2.2 Results of Interviews with Experts and Stakeholders

While they supported the ideas of environmental stewardship, experts and stakeholders identified a number of potential improvements to EPA's definition and vision for environmental stewardship, including:

- Articulate who is responsible for what to whom;
- Recognize that the term "environmental stewardship" fails to fully capture the broader social and economic context of decision-making faced by many organizations and the term may be less useful in the context of business where the terms "sustainability" and "corporate citizenship" are increasingly used; and
- Respect that for some people the term "stewardship" has a strong religious connotation.

While they often do not call them environmental stewardship activities, experts and stakeholders identified a strong trend towards increasing implementation of steward-like behaviors and working to encourage others to do so. A number of drivers motivate stewardship behaviors including:

- Increasing awareness of the risks and opportunities posed by businesses' supply chains;
- Increasing availability of and access to information and scientific evidence about the status of ecosystems and their ability to support human life, health, and economy; and
- Shifting public expectations about purchasing and investment decisions.

Experts and stakeholders also identified a number of ways that environmental stewardship behaviors may be constrained, including:

- Failure of "green" products to capture consumer imagination or market share in a way that allows companies to realize marketing advantage;
- Failure of investors and financial institutions to fully value environmental performance;
- Measuring stewardship behavior and performance can be difficult;
- The perception that individuals and small actions cannot make a difference; and

Experts Interviewed

1. Ray Anderson, Interface Carpets
2. Herman Daly, University of Maryland
3. Don Hudson, Chewonki Foundation
4. Wes Jackson, Land Institute
5. Matthew Kiernan, Innovest Strategic Value Advisors
6. Reid Lifset, Yale University
7. Mindy Lubber, CERES
8. Joel Makower, Greenbiz.com
9. Doug McKenzie-Mohr, Community Based Social Marketing

Stakeholders Interviewed

1. Marcia Aranoff, Environmental Defense
2. Bill Becker, STAPPA/ALAPCO
3. George Carpenter, Procter & Gamble
4. Don Chen, Smart Growth America
5. Chuck Clarke, Seattle Public Utilities
6. Steve Hellem, GEMI
7. David Paylor, State of Virginia
8. Mark Van Putten, ConservationStrategy
9. Terry Williams, Tulalip Tribes Natural Resources Department

-
- The lack of information on or effective targeting of barriers to individual consumers making better stewardship choices.

Like the state leaders interviewed, experts and stakeholders suggested a number of ways that EPA might begin to help businesses, individuals, communities, and government organizations overcome these constraints, including:

- Clarifying where the statutory authority to focus on stewardship comes from, in anticipation of questions from potential critics;
- Focusing more of the Agency's voluntary initiatives on small and mid-sized businesses, where technical assistance often is most needed;
- Improving integration and coordination of the Agency's voluntary programs and creating a more "customer-focused" orientation;
- Targeting investments to explore actual implementation of stewardship behaviors, particularly those where outcomes can be measured;
- Helping to understand the true barriers and benefits associated with specific stewardship behaviors. Through the increased use of marketing research and expertise, EPA can greatly improve state and local efforts to encourage specific stewardship behaviors among the general public and targeted populations;
- Acting as a convener of public dialogue on stewardship issues and actions that companies, individuals, and governments can take, and using the "bully pulpit" to publicize and call for successful stewardship approaches;
- Considering approaches to reduce in a fundamental way the amount of material throughput in the economy – that is, to limit the amount of extraction, depletion, and pollution inherent in particular material flows;
- Reaching out to the education community to incorporate environmental and stewardship based curriculum elements into ongoing efforts to define minimum educational expectation and to help educators understand how environmental and stewardship based curriculum might contribute to student success and testing program requirements; and
- Leading by example with respect to federal government purchasing and infrastructure.

CHAPTER 3: OPPORTUNITIES FOR EPA LEADERSHIP

INTRODUCTION

The role of EPA in environmental stewardship is to enable and encourage individuals, companies, communities and government organizations to practice sound environmental stewardship. This role is central to EPA's mission. The Agency can pursue this role in a variety of ways as illustrated in the ideas described in this chapter. These ideas form the basis for the options described in the Report to the Administrator. The ideas in this chapter, prepared by the staff committee, are described at greater length in Appendix I.

It is important to stress that the ideas and proposals described in this report were developed by the staff committee as background material for the IAC response to the Administrator. They have been compiled in this report to help inform the broader dialogue about environmental stewardship at EPA and to serve as a resource during the implementation phase of this project.

The ideas and proposals in this chapter are meant to spur creative thought and additional options for consideration. Some of the proposals are better developed than others and some fit in several categories and so are listed more than once. The staff committee considered five criteria while creating the list:

1. Likelihood for significant, measurable environmental results.
 - Inspires collaborative, multi-media approach for addressing important environmental problems.
 - Demonstrates potential for continuous improvement, short-term results and potential for longer-term environmental outcomes.
 - Addresses emergent, high priority issues.
 - Iterative approach for getting results.
2. Practical implementation steps.
 - Cost effectiveness/favorable funding prospects.
 - Potential for replicability or leveraging to maximize investment.
 - Short-term measurable impacts.
 - Likely support by EPA offices and programs.
 - Utilizes existing EPA skills, experiences, and authority.
3. Support from key outside groups.
 - Creates stakeholder enthusiasm to adopt stewardship practices.
 - Motivates public enabling institutions, e.g. academia, NGOs, and local governments.
4. Advances EPA strategic priorities.
 - Targets major obstacles facing current EPA activities.
 - Addresses a gap in existing activities or strengthens work already being done.
5. Alignment with stewardship strategy (principles, target groups & key outcomes).
 - Unifying and inspirational.

-
- Directly induces stewardship behavior or builds knowledge and capacity for stewardship objectives (training, research, partnership activities).

IDEAS AND PROPOSALS FOR ADVANCING ENVIRONMENTAL STEWARDSHIPS

3.1 *USE RECOGNITION/CHALLENGE PROGRAMS IN A STRATEGIC WAY TO MOTIVATE BUSINESSES, COMMUNITIES, GOVERNMENT AGENCIES AND INDIVIDUALS*

Principles:

- Focus on significant environmental issues, both nationwide and regional in scope.
- Design for biggest impact (use right incentives; reduce significant barriers).
- Figure out the key behavioral leverage points for specific target groups.
- Don't set up new challenge programs in isolation; build on existing efforts.

Approach: Create something of real interest to the public. For example, in conjunction with EPA 35th anniversary, Administrator could:

- Host an environmental stewardship summit to discuss challenges and develop commitments;
- Convene top experts to help prioritize emerging stewardship opportunities for EPA; and
- Consider creating a Baldrige type award for environmental excellence (Presidential or Administrator level).

3.1.1 Motivate Businesses with Targeted Challenges, Networks and Information

- Expand EPA's compliance assistance and P2Rx centers to encourage stewardship practices.
- Create a network of experts to educate business sectors on economic benefits of stewardship.
- Create a national challenge for clean transportation strategy; stakeholders to define priorities.
- Challenge key economic sectors to create comprehensive stewardship programs & targets.
- Develop regional and national challenges in programs such as Performance Track.
- Select key environmental challenge and business sectors for a national challenge program.
- Share ideas by creating an EPA Stewardship group/network of EPA employees who work on stewardship programs.

3.1.2 Design Recognition, Challenges and Information to Encourage Community Stewardship

- Highlight stewardship in EPA's National Award for Smart Growth Achievement.
- Target clubs (sports, garden, rotary) to participate in environmental stewardship activities in the community.
- Institute a challenge to communities on ambient water quality monitoring and watersheds.
- Build environmental stewardship in the Community Action for a Renewed Environment (CARE) grants.

-
- Develop a report card for communities on availability and sustainable environmental stewardship practices.
 - Develop a “calculator” for communities to identify stewardship actions, environmental and environmental impact links to information.

3.1.3 Use EPA Expertise to Help All Federal Agencies Improve Environmental Performance

- Create a friendly federal agency-to-agency challenge/contest/competition to reduce the environmental footprint.
- Expand the Fedcenter.gov website (maintained by EPA, the Office of the Federal Environmental Executive, and the Army Corps of Engineers) to include more information for federal facilities on improving and measuring their environmental stewardship performance.
- Work with GSA on solutions to obstacles that prevent progress on our EMS significant aspects.
- Encourage and/or create statements of best practice or (possibly voluntary) “standards” on labeling and packaging to help consumers.
- Partner with Canada to bring the Canadian One Tonne Challenge to the American public.
- Work with the Federal Employee Thrift Savings Plan to include a corporate responsibility stock index option.
- Leverage EPA efforts by working with non-government organizations (NGOs) and universities to encourage stewardship.

(Note: ideas from topic 2, “Energizing Individuals,” and topic 3, “Leading by Example,” are relevant here.)

3.2 *ENERGIZE INDIVIDUALS TO TAKE RESPONSIBILITY FOR ENVIRONMENTAL STEWARDSHIP*

Context:

- Individuals make environmental decisions every day (e.g., in our homes, purchases, transportation).
- Many people want to make good environmental choices but not sure it makes a difference.
- Low environmental literacy inhibits adoption of good environmental practices.
- EPA can help increase awareness and information about stewardship behaviors.

3.2.1 Increase Awareness of Environmental Stewardship Among the General Public

- Encourage EPA staff to reach out locally to schools, companies, etc. on stewardship practices.
- Strategically use environmental education to promote stewardship behavior in target groups.
- Create partnerships to deliver existing tools/resources about how to reduce your environmental footprint.
- Use Performance Track and other voluntary programs to engage staff/communities on stewardship actions.
- Create an environmental stewardship major outreach/marketing campaign.

3.2.2 Upgrade EPA Website to be the Premiere Location for how to “Reduce Your Footprint”

- Build on existing sites that provide practical ways to be a good environmental steward.

3.2.3 Enhance Delivery of Information that Inspires Individuals to be Good Stewards

- Have EPA join the Commuter Choice Program, maintain transit subsidies program, etc.
- Lead the effort to include a socially responsible investment fund in the Thrift Savings Plan (TSP).
- Work with the Federal Highway Administration to encourage bike trails along highway routes in metropolitan areas.
- Work with companies to sponsor collection and proper disposal of household hazardous wastes.
- Evaluate financial incentives for consumer choices that have less environmental impact.

3.2.4 Design Creative Challenges that Cultivate Stewardship Behavior

- Create challenges such as:
 - For EPA employees to reduce their environmental footprint at home and work.
 - To a specific group of individuals to solve a specific environmental problem.
 - To the public to reduce their environmental footprint (e.g., Canada’s One Tonne Challenge as a model).

3.2.5 Leverage Recognition Programs and Find New Ways to Showcase the “Power of One”

- Use of the Example Presidential Environmental Youth Awards.
- Create new recognition program for stewardship excellence at work, community or personal lives.

3.3 LEAD BY EXAMPLE AT EPA FACILITIES AND IN EPA OPERATIONS

3.3.1 Set Bold Public Goals to Reduce EPA’s Current Footprint Using Our New EMSs

- Achieve carbon neutral operations for at least one EPA facility every 2 years (EPA’s Ada Lab as model).
- Offset emissions for all EPA work-related air travel.
- Cut energy use by 25 percent by 2012 from 2003 levels.
- Cut water use by 20 percent by 2012 from 2003 levels.
- Have all new buildings achieve ENERGYSTAR label for energy efficiency.
- Adopt green janitorial & pest control services for all EPA-occupied facilities by 2010.
- Provide staff training on green meetings; develop contract language for easy access.
- Double the number of EPA laboratories in Lab 21 within 2 years.

3.3.2 Spur Markets for Environmentally-Preferable Products and Services

- Identify the best opportunities to green incoming products/services (comprehensive supply chain study).
- Purchase renewable energy certificates for 100% of EPA's electricity consumption by 2006.
- Triple EPA's fleet of energy efficient hybrid vehicles in three years.
- Require LEED Gold (the leading green building standard) for all new EPA facilities.
- Continually increase inventory of products offered in Agency's green office supply contract.
- Have all new computer equipment meet the EPEAT bronze-qualified standard (for environmental preferability).

3.3.3 Encourage Stewardship Behavior in EPA Employees

- Authorize each employee to spend one day per year working to work on a local stewardship project.
- Increase overall employee participation in transit subsidy and carpool programs.
- Create new awards to recognize EPA's most outstanding environmental stewards - on and off the job.
- Create high quality education and training to help staff understand environmental issues, conditions, trends and stewardship initiatives.

3.3.4 Work with Other Agencies on Improving Federal Government Environmental Performance

- Partner with the Office of Personnel Management on a socially responsible investment option for the federal retirement system.
- Partner with the General Services Administration, the Department of Energy and other federal agencies and DOE on infrastructure to support green power and alternative fuel use, as well as the application of green building principles, throughout the federal government.
- Challenge agencies to adopt best practices for all phases of electronics life cycle through the Federal Electronics Challenge.

3.3.5 Demonstrate Value of Information, Education and Best Practices

- Consider becoming the first federal agency to participate in the Global Reporting Initiative.
- Highlight EPA's own environmental stewardship results in the Performance and Accountability Report.
- Improve EPA's public website to empower citizens and other groups to practice stewardship.
- Conduct live and virtual tours to show others the green aspects of EPA's facilities.
- Use EPA facilities to test latest green products, technologies, services, & conservation design.
- Open a national environmental education center on EPA Research Triangle Park's (RTP) campus.

-
- Develop and promote educational resources about stewardship within EPA's library system.
 - Model green meetings principles at every EPA event and work with other federal agencies to increase the number of hotel and conference centers that offer green meeting facilities.
 - Collaborate with state and local governments to increase their participation in environmental stewardship activities.

3.4 *INSPIRE EPA STAFF TO PRACTICE STEWARDSHIP*

3.4.1 Top EPA Team Must "Walk the Talk"

- Ask that senior leaders visibly demonstrate a personal commitment to practicing environmental stewardship.
- Reinforce consistent environmental stewardship "message" in speeches, conversations and meetings.
- Make a consistent theme at grand events like Earth Day, P2 Week, etc.
- Re-enforce message in simple ways (ask staff about their stewardship accomplishments).
- Use the environmental stewardship ethic to promote cross-office planning and multimedia action.

3.4.2 Train All Staff on Environmental Stewardship Principles, Responsibilities and Opportunities

- Consider "mandatory" training (akin to the ethics training) on environmental stewardship.
- Create new training courses on key environmental problem areas for employees at all levels.
- Promote outreach/advocacy and facilitation/negotiation skill development that enables EPA staff to engage the public on environmental stewardship.
- Improve training on Federal Advisory Committee Act (FACA), ethics and other factors that can complicate collaborative problem solving.

3.4.3 Incorporate Environmental Stewardship as a Priority in Staff Accountability Systems

- Include in performance standards (like customer service, contract management & diversity).
- Use Individual Development Plans to allow and encourage participation in community outreach efforts.

3.4.4 Challenge and Enable EPA Employees to Improve their Environmental Performance at Work

- Design measurable and reportable challenges.
- Encourage events via teleconferencing and other virtual meeting technology. This will encourage those who would not otherwise be able to attend/participate to do so.
- Equip all offices with auto light shut offs and all computers with energy saving features.
- Provide convenient/effective collection for recycling throughout EPA facilities.

-
- Make double-sided copying the norm.
 - Pursue further ideas such green roofs, composting of food scraps, etc.

3.4.5 Reward Outstanding Environmental Stewardship Behavior by EPA Employees

- Create a new Agency award focused on environmental stewardship excellence at EPA.
- Create another EPA award for stewardship accomplishments outside the Agency.
- Ensure that other prestigious awards at EPA and other agencies value environmental stewardship.

3.5 *USE INFORMATION AND MARKETS TO FOSTER STEWARDSHIP OF ECOSYSTEMS*

Goal: to protect and restore ecosystem functions (the goods and services they provide) through

- Improved “policy measures” that include broad range of regulatory/voluntary actions.
- Markets to promote entrepreneurial action, investment, and market innovation.

Emphasis:

- Information that supports decisions (at many levels) to protect and restore ecosystem functions.
- All ecosystem goods and services; not limit to currently recognized market values.

Approach:

- Priorities based on importance, vulnerability, status of services and restoration/recovery potential.
- Target stewardship that is likely to improve ecosystem integrity, resilience and productivity.
- Ensure alignment with the overall stewardship initiative and EPA priorities.
- Find multiplier effects to catalyze a sequence of responses (e.g., in investment, research, etc.).
- Focus on a few, mutually reinforcing strategies; plan to adapt based on learning and experience.

3.5.1 Ecosystem Literacy Campaign Targeted to People of All Ages

- Actively engage elementary, middle and high schools, and universities in understanding of ecosystems.
- Create compelling “public service” announcements for radio, TV.
- Assist journalists in all media to publicize ecosystem stewardship.
- Expand interpretive outreach programs in natural areas and parks, and by eco-tourism.
- Encourage sportsmen, birders, etc. to articulate ecosystem benefits to others.
- Reach out to key sectors (e.g., building contractors, developers, transportation).

3.5.2 Recognize Ecosystem Stewardship Leaders in Private Sector & State/Local/Tribal Government

- Build on examples such as the collaboration between Wisconsin farmers and the World Wildlife Fund; South Carolina and other southern states that are pursuing sustainability and environmental stewardship with active military bases; and Nebraska, which works across local, state and federal agencies to combine watershed development and protection efforts with small community revitalization.

3.5.3 Expand Incentives that Foster Ecosystem Stewardship

- Consider how to use state revolving funds, labeling programs and trading programs.
- Re-align state and federal funding programs (such as water revolving funds).
- “Certify” some management activities expected to preserve or restore ecosystem services.
- Take advantage of unique current opportunities, such as those created by the current military Base Realignment and Closure (BRAC) activities.

3.5.4 Invest in Collaborative, Applied R&D Designed to Create New Stewardship Approaches

- Use geospatial and decision-support tools for evaluating “natural infrastructure” vs. engineered infrastructure.

3.5.5 Target Geographic Collaborations with State, Tribal & Federal partners

- Select specific ecosystem type (e.g., agricultural ecosystems, freshwater systems).

3.6 ENCOURAGE STEWARDSHIP IN COMMUNITIES

Context:

- Place-based communities have huge potential to engage in environmental stewardship.
- Community is simply a localized, organized group of people with shared beliefs, goals, or interdependence.
- Community can be defined by natural geography (such as a watershed, a valley, or a coastal area).
- Community can be organized by political boundaries (such as a neighborhood, city, county, reservation or state).
- EPA has a rich history of supporting community-based approaches to environmental protection.
- There are many EPA community programs (e.g., Brownfields) but few focus on stewardship directly.
- EPA has multiple roles in collaborative problem solving such as leading/facilitation/partner/information.

3.6.1 Demonstrate Stewardship Solutions in Rebuilding a “Sustainable Gulf Coast”

- Engage community leaders/citizens in planning and rebuilding for sustainability.
- Showcase the benefits of green infrastructure and smart growth for the rest of the country.
- Form federal and state partnerships for sustainability.
- Collaborate with water management experts from the Netherlands and elsewhere.
- Engage the lending and insurance industries to encourage responsible development.

3.6.2 Improve EPA’s Capacity to Support Proactive Stewardship

- Staff a “Communities Clearinghouse” to provide easy public access to EPA resources.
- Strengthen and tailor EPA’s long-term planning methods/tools to serve needs of local communities.
- Coordinate with states and federal agencies in targeted partnerships (e.g., Great Lakes).

3.6.3 Information and Tools to Support Community Environmental Stewardship

- Develop EPA role as wholesaler of stewardship resources to groups with community delivery mechanisms.
- Develop, publicize, and market EPA’s resources for community-level activity (EMSs; other tools).
- Build stewardship criteria in EPA’s community-based grant solicitations (e.g., CARE, Brownfields).
- Make stewardship grants/loans for community activities for technical or administrative support (P2/CSO/etc.).
- Pilot a community-wide “GreenChoice” rewards program.

3.6.4 Integrate Principles of Community Stewardship into Current Awards and Recognition

- Create an award for communities that achieve outstanding measurable environmental results.
- Recognize outstanding community leaders.
- Recognize grassroots organizations of many types (e.g., faith congregations, sports clubs, Boy/Girl Scouts, etc.).

3.7 PROMOTE PRODUCT STEWARDSHIP

Goal: Products are designed and managed to be safe for the environment for entire life cycle

Context: This is a complex issue with many dimensions (toxics, product take-back, globalization, etc.).

- Prosperity has increased consumption of products, with increased environmental impacts.
- Inaccurate market signals to makers, sellers, consumers and government.
- Disposal costs are an externality; few incentives for sound management by consumers.
- EU, Japan, and Canada and others developing product stewardship policies.

-
- Lack of leadership in U.S. could place our producers at a competitive disadvantage.
 - Numerous efforts underway at EPA and elsewhere, but no coherent, unified strategy.

Approach: Announce a bold integrated multi-media focus on products as an innovative way to promote environmental stewardship by industry and individuals through making, buying and managing products in a more sustainable way. Do this by creating partnerships with groups that design, make, sell, use, and manage products at end of life.

- Industry (raw materials suppliers, manufacturers, distributors, retailers, waste management).
- Individuals at the consumer, institutional, governmental level that use products.
- NGOs (examples: Product Stewardship Institute in Massachusetts) that provide leadership.
- Government (local waste authorities; federal/state/ local P2 & solid waste policymakers).

3.7.1 Create an EPA-wide, Coordinated Green Product Strategy & Implementation Plan

- Aim to increase pace of green product design; facilitate greener products in marketplace – clarify EPA position on labeling/product certification (e.g., Agency vs. 3rd party).
- Define criteria for selecting greener products (e.g., single factor vs. multi-media life-cycle).
- Devise strategy for prioritizing product/technology categories for attention.
- Determine how various relevant EPA programs (and other Federal agencies) work together.

3.7.2 Collaborative Approaches to Foster Sustainable Design

- Spur innovation of and publicity on next-generation/sustainable products and services.
- Sponsor multi-stakeholder collaboration on design of new products and services
- Increase press opportunities and visibility of environmental implications of everyday product choices.

3.7.3 EPA Product Recognition Program

- Use Design for the Environment (DFE) to recognize consumer products with more positive environmental/health profiles.

3.7.4 Innovation Challenge Awards

- Catalyze innovation & fundamental research on safer chemicals, processes and engineering.
- Establish DFE Innovation Challenge Awards and supporting ORD research grants.

3.7.5 Design Product-Specific Strategies

- Continue to identify specific products for greener design, better use, and safer end-of-life recovery.
- Work with stakeholders on product-specific life cycle improvement strategy.

3.7.6 Partner with Other Countries to Share Experiences About Product Stewardship

- Share Canadian experience with U.S. audiences (especially State/local governments).
- Convene national meeting to showcase product stewardship programs and identify opportunities.

CHAPTER 4: STRENGTHENING THE FOUNDATION FOR ENVIRONMENTAL STEWARDSHIP AT EPA

The vision described in Chapter 1 and the ideas described in Chapter 3 can only become real if EPA undertakes a series of actions to strengthen the foundation for environmental stewardship. These actions may not be very visible to the public but they are essential for the success of an EPA environmental stewardship strategy. This chapter describes key improvements that are needed.

4.1 STRENGTHEN MEASUREMENT AND REPORTING ON RESULTS FROM ENVIRONMENTAL STEWARDSHIP ACTIVITIES

Measurement is vital to successful environmental stewardship. This section discusses important opportunities for strengthening measurement to support better environmental stewardship, drawing on two detailed reports which were commissioned by the workgroup and which are included in the Appendices: *Environmental Stewardship Measurement Report*, and *Benchmarking Report on Performance Measures for Environmental Stewardship and Innovation*.

Effective environmental stewardship measurement is needed to:

- Identify environmental opportunities and problems that need attention and environmental opportunities that can be pursued;
- Evaluate stewardship programs and activities and their environmental results and identify those worth replicating;
- Provide fast feedback to improve day-to-day decisions and longer term feedback to inform strategic decisions;
- Inform strategy and support cooperative stewardship efforts;
- Assess return on public investments; and
- Reinforce stewardship attitudes and awareness.

4.1.1 Build a System of Measures to Support Environmental Stewardship

EPA's 2003 *Draft Report on the Environment* discusses the usefulness of a "hierarchy of indicators" that clearly links various types of measures in a manner that enables one to understand how programs and actions connect to ambient environmental conditions and ultimately to human and ecological health outcomes. The "hierarchy of indicators" is helpful to keep in mind as EPA considers how to strengthen measurement related to environmental stewardship. There is no single indicator or measure of stewardship. Instead, effective stewardship and stewardship program performance assessment requires a clearly defined system

of measures that connects program outputs to stewardship behavior changes to measures of natural resource outcomes and eventually to short and long-term ecological condition and human health outcomes.

Effective environmental stewardship measurement can be challenging. Adherence to the following guidelines can help to ensure that EPA's stewardship measurement activities are effective and efficient.

- *Make measurement relevant to compel action.* Construct measures that provide real time feedback and that illuminate the benefits of stewardship actions, including economic benefits.
- *Improve alignment and consistency among measures.* Expand current efforts to coordinate measurement activities across EPA voluntary programs to aid data comparisons and aggregation and to ease measurement and reporting burdens. Common measures can ease measurement and reporting burden while enabling comparison and even spurring healthy competition for performance improvement.
- *Strike a balance between burden and benefit.* Pursue measurement strategies that provide useful information in a cost-effective manner.
- *Don't reinvent the wheel.* Build partnerships with other organizations who are working to improve measurement of stewardship behaviors and performance to improve and align stewardship measurement activities.
- *Support measurement at multiple levels that can be tailored to users and uses.* Ensure that measurement activity is occurring at all geographic levels and locations that are necessary to equip people with the information they need to focus their actions. For each intended use of stewardship measures, focus on just a few key metrics that are meaningful to the intended audience and relevant to the program's goals.

A review of how other federal agencies have successfully developed stewardship initiatives suggests several models for measuring stewardship program performance. Effective measures are directly tied to the program's strategic goals, and focus primarily on short and long term program outcomes, as well as program efficiency. Data should be gathered to measure baseline conditions and set appropriate targets, and then progress towards those targets can be assessed annually or every few years. Federal agencies, where feasible, can partner with states to collect baseline and performance data. Data can be collected from program participants in order to track quantitative outcomes (e.g., amount of energy conserved), while surveys can be used to track changes in attitudes and behaviors. The following are examples of reasonable performance measures for stewardship, focusing on natural resource outcomes.

Outcome Measures

- Acres of undeveloped land or important habitat conserved.
- Number of acre-feet or gallons of water conserved.
- Kilowatt hours of energy conserved.

-
- Number of acres of cropland on which erosion is reduced to below a specified level.
 - Consumption of renewable fuel as a percentage of total transportation fuel consumption.
 - Number of comprehensive nutrient management plans applied by owners and operators of animal feeding operations.
 - Increase in specific indicators of environmental literacy among program participants, as compared to the general population.
 - Percentage of program participants who initiate or implement a positive change in their organization or community within five years of their participation, based on knowledge gained from their participation.

Program Efficiency Measures

- Acres of wetlands established, re-established, rehabilitated, enhanced, or protected/maintained per \$1 million in total costs.
- Total program cost or expenditure per acre of forest protected from conversion to non-forest uses.

Measures should be placed within a context. For example, measurements of water and energy conservation should be compared to the total amount of water and energy used by program participants and the target population as a whole. Finally, measures of stewardship should be made readily available to key audiences (e.g., program staff, participants, and the public), in order to recognize progress and encourage accountability.

A similar review of the performance measures from Program Assessment Rating Tool (PART) assessments of EPA offices that have environmental stewardship initiatives yielded a similar list. (It is important to note that because of the manner in which programs— including those with environmental stewardship initiatives – are organized in the PART, these measures are frequently applied to groups of programs, rather than individual initiatives.)

Outcome Measures

- Percent change in average nitrogen deposition and mean ambient nitrate concentrations (Acid Rain, OAR).
- Number of waterbodies identified by states (on the 2000 303(d) list) as being primarily NPS-impaired partially or fully attaining designated uses (Non-point Source Grants, OW).
- Percent cumulative reduction of chronic human health risk from environmental releases of industrial chemicals in commerce since 2001 (Existing Chemicals, OPPTS).
- Cumulative conservation of millions of BTUs of energy and gallons of water (New Chemicals, OPPTS).
- Reduction in phosphorus loadings (millions of pounds) (Non-point Source Grants, OW).

Program Efficiency Measures

- Section 319 funds (\$ million) expended per partially or fully restored waterbody (Non-point Source Grants, OW).
- Reduction of EPA's per-chemical review costs from expedited reviews as a result of training provided to chemical developers (Sustainable Futures, OPPTS).
- Cleanups Complete (3-year rolling average) per total cleanup dollars (Leaking Underground Storage Tanks, OSWER).
- Ratio of number of students/teachers that have improved environmental knowledge per total dollars expended (Environmental Education, AO).

4.1.2 Learn From and Leverage Partners' Measurement Activities

EPA's partners are engaged in significant stewardship measurement activity. EPA can learn from, encourage, and support the expansion of these external stewardship measurement and reporting initiatives. Some compelling stewardship measurement initiatives are listed below.

- The Global Reporting Initiative (GRI) and Facility Reporting Project have developed environmental measurement and reporting frameworks for corporations and facilities that are being quickly adopted by companies worldwide. Companies across numerous sectors are expanding stewardship measurement and reporting activities, and using metrics to inform decision-making through tools such as the balanced scorecard.
- The Business Roundtable's SEE Change sustainability initiative has a major measurement and reporting component.
- Numerous communities in the U.S. have developed quality of life and sustainability indicators to track environmental stewardship outcomes at the local level.
- The Canadian and Australian governments and numerous non-governmental environmental organizations have developed user-friendly calculators that help individuals understand their environmental and greenhouse gas emissions "footprints" and enable them to make better stewardship decisions.
- EPA's Office of Solid Waste has developed a widely used "WARM" model that helps users convert quantities of materials (e.g., office paper, glass, aluminum, newsprint, corrugated paper) that is "source reduced" or recycled into greenhouse gas savings.
- The GRI has developed a measurement and reporting framework for public agencies, to help government organizations improve the consistency and effectiveness of sustainability and stewardship reporting.

4.1.3 Opportunities for EPA to Improve Environmental Stewardship Measurement

In light of these reflections and activities, this section discusses key steps that EPA can take to improve measurement to support effective environmental stewardship.

4.1.3.1 Set clear environmental stewardship goals and objectives

Clear environmental stewardship goals and objectives lay the foundation for measurement. Understanding the status of the environmental resources—air, water, land, ecosystems, energy, and materials—provides important information regarding where additional stewardship actions are needed. Knowing that EPA cannot encourage stewardship everywhere at once, measurement is needed to identify where significant problems and challenges lie. Specific, challenging environmental goals can be identified that address priority problems. Measurement can inform how specific audiences affect or can contribute to specific environmental goals. Stewardship actions from multiple audiences—individuals, companies, communities, and governments—may be needed to achieve a particular environmental goal.

Pick specific, challenging environmental goals and objectives. The target audience-environmental sustainability outcome matrix below can be a useful tool for identifying and mapping how specific environmental goals and objectives are relevant to key groups and outcomes. As an example, the matrix below highlights one potential goal that might fit within the Individuals/Energy cell. Multiple objectives could be established for each goal (one is shown in the matrix cell). The matrix could also be used to illustrate linkages among goals, objectives, and measures. In this example, the Individuals/Air cell is highlighted to denote that the goal and the associated objectives and measures in the Individuals/Energy cell have a strong connection to individuals' stewardship activities related to air quality and climate change.

	Air	Ecosystems	Energy	Land	Materials	Water
Individuals						
Companies						
Communities						
Government Organizations						

Goal 1: Reduce residential energy use

Objective 1: Increase the energy-efficiency of home appliances to lower residential energy use in the U.S.

Objective 2: Increase the energy-efficiency of lighting and HVAC systems in new homes.

Potential Measures:

- Total annual residential energy use (kWh)
- Total annual residential energy savings (kWh and average annual household consumption equivalency)
- Value of energy savings (dollars)
- Associated reductions in air pollutant emissions, including greenhouse gas emissions (tons)

Identify key outcome measures for each environmental stewardship goal. Under each goal and objective, one could identify or develop multiple specific programs and projects designed to achieve these goals and objectives, as measured by the common outcome measures. While specific programs and projects would have additional measures to help tell a more complete story, all of the programs and projects supporting a specific environmental goal could have common measures that link them to that goal.

4.1.3.2 Strengthen measurement systems for existing EPA environmental stewardship programs and projects

Clearly map the relationship between EPA programs and projects and environmental stewardship goals and objectives. Once specific, measurable environmental goals and objectives have been established, EPA can determine which projects and programs address a particular goal and objective and which could be adapted to do so. A single environmental stewardship goal, such as to improve energy efficiency, could be supported by a portfolio of multiple projects and program activities that are designed to accomplish the goal. For example, the ENERGY STAR program may have a suite of program activities that address the goal of reducing residential energy use, and that focus on the objective of improving the energy-efficiency of home appliances. At the same time, the Sector Strategies programs or other EPA programs could also support the goal of reducing residential energy consumption through other activities, such as working with the construction sector or architects to address energy-efficiency in new homes.

Clearly map the relationship between program goals, outputs, and outcomes. While measures of progress toward the environmental goal may be consistent across programs and projects, programs and projects should have input, output, and outcome measures that help link them to the larger environmental goal. Input measures for a program or activity can capture Agency (e.g., staff, time, resources) and societal costs, when possible, to help measure program efficiency. Output measures track products produced or services delivered by a program, and can also help inform program performance. A range of short-term and long-term outcome measures can complete the picture, illustrating a coherent story that demonstrates how program results connect to the environmental goal, even in cases where causality can be difficult to prove.

By mapping a system of environmental stewardship measures and rigorously tracking project and program performance during pilot phases, EPA can use measurement to more tightly organize programs and activities around priority stewardship goals. Such a measurement system can also help to ensure that investments in programs and projects are efficiently and cost-effectively contributing to these broader goals. To bring greater organizational strength to this approach to stewardship measurement and management, EPA could establish *environmental stewardship goal managers* to facilitate communication and decision-making across projects. Many U.S. companies are pursuing a similar strategy, where they are establishing “value stream managers” who are responsible for working across functional and programmatic boundaries to ensure that the end goal is met—the customer gets the high-quality product or service they want, when they want it, at a reasonable cost.

Seek measurement alignment and consistency across programs. The mapping of programs and projects to specific stewardship goals, as well as the mapping of program output and outcome measures, should highlight areas where program measures could be aligned across selected EPA programs or aligned with measurement standards being adopted outside of EPA, such as the GRI. Current efforts to align EPA voluntary program measurement with the GRI-based measures and “data dictionary” used by the National Pollution Prevention Roundtable should be strongly supported.²¹ Consistency can reduce measurement and reporting burden, particularly in places where a partner may be asked to measure and report on a stewardship activity in multiple ways. For example, the measures of water use or hazardous waste generation required by the GRI framework and various EPA voluntary programs may differ. In addition, measurement

consistency can facilitate data aggregation across programs as well as comparability of stewardship performance results.

4.1.3.3 Design new environmental stewardship programs with measurement in mind

New programs, projects, and challenges can be developed to address environmental stewardship goals and objectives needing more attention than existing EPA programs provide. Measurement should be an essential component of new EPA programs and challenges designed to encourage stewardship behaviors and actions among targeted audiences.

Measures can be built into new program design. One approach is to select a priority environmental problem and goal that requires attention across multiple partners. For example, EPA's 33/50 Program set challenge goals for broad-based reductions in Toxic Release Inventory releases for selected substances, and EPA's Resource Conservation Challenge has set a national goal of recycling 35% of municipal solid waste in the U.S. Another approach is to select a specific target audience or partner, and to reach agreement about specific, challenging environmental objectives that contribute to the environmental goal. For example, EPA's Sector Strategies program has worked with the iron and steel sector to identify important stewardship objectives, such as increasing the beneficial reuse of slag to minimize waste from the sector and reducing emissions of selected hazardous air pollutants. Similarly, EPA could work with outdoor groups to identify environmental objectives and associated measures which these groups could help to address by encouraging stewardship behaviors among their constituencies, such as boating practices that prevent the spread of aquatic invasive species.

Engage partners when defining program measurement systems. While EPA can identify and propose tangible goals and targets for potential challenges and partnerships, direct collaboration with potential partners to establish measures and realistic targets can increase ownership of the goal and help to identify potential obstacles to success. For example, EPA's EnergyStar program has successfully engaged appliance and electronics manufacturers to determine appropriate energy use measures and targets for EnergyStar labeling and to select appropriate measures to track progress.

4.1.3.4 Develop stewardship measurement systems that can inform and support people in their work

EPA should do more than just focus on measurement to assess the effectiveness of EPA's environmental stewardship programs. The Agency can also lead efforts to build measurement tools that provide feedback to people that can inform and support their daily work. While there is no one-size-fits-all approach to stewardship measurement, there are some general opportunities for measuring stewardship behavior associated with each of the four target audiences identified by EPA—individuals, companies, communities, and government organizations. Some of these opportunities are outlined below.

Individuals

- Expand and coordinate use of marketing measurement studies to identify barriers and benefits associated with specific stewardship behaviors (e.g., recycling, composting, implementation of water and energy saving measures), and to test pilot behavior change

outreach and marketing campaigns. Collect and share marketing measurement results and program evaluation measurement results among state and local government agencies.

- Consider use of prominently featured calculator tools on EPA's website to raise awareness of individuals' stewardship performance and steps they can take to improve their stewardship performance.

Companies

- Expand the number of sectors where key measures and targets are identified that address the most significant environmental issues for the sector, such as is done in EPA's Sector Strategies program. Information on targets and measures can be used to develop sector-focused challenges that seek to encourage specific stewardship behaviors.
- Meet with companies within one or more sectors to identify appropriate performance measures for tracking progress with specific challenge programs.
- Consider expansion of web-based tools that can pool stewardship behavior and performance results across voluntary programs and enable efficient roll-up and analysis of trends information. The Pollution Prevention Assessment Tool used by the P2 community would serve as a model for such an effort.

Communities

- Support programs that engage citizens in measurement of local ecosystem health (particularly local water quality). These programs can both help to fill the significant data/information gaps that exist, while raising local awareness about the status of local ecosystems.
- Facilitate information sharing among communities who are developing sustainability and quality of life indicators to track the effectiveness of community-based stewardship efforts.

Government Organizations

- Measure and report on federal facility stewardship performance, including compliance with Executive Orders targeting stewardship behaviors as well as basic measures such as water and energy use. Consider the Global Reporting Initiative's public agency sector framework as a guide to stewardship measurement and reporting for federal facilities. Such an effort could start with measurement and reporting by EPA facilities, and could be expanded for use by other federal agencies, state, and local government agencies.
- Expand web-based tools to support and communicate federal facility stewardship measurement. Such an effort could build on the U.S. Office of the Federal Environmental Executive (OFEE) EMS progress measurement and reporting scorecard. The Fedcenter.gov website, a joint initiative of EPA's Office of Enforcement and Compliance Assurance (OECA), the Army Corps of Engineers' Construction Engineering Research Laboratory and OFEE could also be expanded to include stewardship measurement tools and information.

4.1.3.5 Continue to address data and measurement gaps related to natural resource areas

Measurement efforts undertaken by EPA program offices and EPA's Environmental Indicators Initiative, including the development of the *Draft Report on the Environment*, are strengthening EPA's ability to identify areas needing improvement. Less attention has focused on stewardship measurement related to energy and materials. While significant data on energy and materials are collected by other organizations and government agencies, there are significant opportunities to collect, aggregate, and enhance this data in ways that would better inform environmental stewardship efforts. These opportunities include:

- Continue programmatic and cross-agency efforts, such as the Environmental Indicators Initiative, to improve environmental indicators related to air, water, land, ecological condition, and human health and to address key measurement gaps;
- Improve understanding of material flows and use by developing Material Flow Accounts, as recommended by the U.S. National Academy of Sciences and the Organization for Economic Cooperation and Development; and
- Improve use of energy data for identifying areas where increased stewardship attention is needed, drawing on energy data from existing EPA voluntary programs and other sources such as the Department of Energy's Energy Information Administration.
- Continue and support consultations with international organizations examining sustainability and stewardship measurements and indicators, including the Organization for Economic Cooperation and Development (OECD) and the European Commission.

4.2. IMPROVE EPA-WIDE COMMUNICATION, OUTREACH AND MARKETING

As the federal environmental agency, EPA should be a national leader in promoting environmental stewardship. EPA can do this in a variety of ways, such as supporting environmental education initiatives that help us understand what motivates individuals to practice stewardship, and by creating incentives for sound environmental behaviors through our growing set of voluntary programs. But the most important role for EPA is in providing information. EPA should help people understand what environmental stewardship is, why it is important, and how they can join in a national effort to protect the environment and quality of life in the United States for this and future generations through the choices they make.

To be an effective information provider, EPA must address several challenges. They include:

- Lack of a unified message at EPA about stewardship, including reconciling what can be perceived as seemingly competing and even conflicting messages about regulatory requirements and voluntary stewardship;
- Varying degrees of public understanding of environmental issues;
- Lack of understanding within EPA about how to manage a valuable asset for promoting stewardship - the EPA brand;

-
- Need to understand barriers to behavioral change;
 - Insufficient knowledge within EPA of marketing as a science, in particular marketing factors that can drive consumer behaviors;
 - Lack of coordination among many different EPA stewardship initiatives that can lead to competing and/or conflicting information; and
 - Not enough tailoring of products and information for specific audiences.

Strategic marketing and outreach are effective means of overcoming these challenges. Indeed, they are crucial for connecting EPA with the many people and organizations that must become aware of environmental issues and part of the solution for addressing them.

While “leading by example” will be important for showing the outside world the seriousness of our stewardship commitment, so too will the way we reach out and talk with people about what we are doing and want to accomplish. If done well, effective marketing and outreach will greatly increase the effectiveness of stewardship initiatives. It will connect EPA with people in a way that it has not done to a great extent in the past, particularly individuals. By giving people practical ways to protect the environment, we can start to build the kind of broad-based partnership that is needed to deal with some of our society’s most vexing and diffuse environmental problems.

Key Actions

Develop a coherent message. EPA needs to explain - internally and externally - what stewardship means and how it fits with our mission of protecting public health and the environment. This message must be visible through words and actions at every level of the Agency and must acknowledge the need for strong regulatory compliance. Once defined, EPA should identify strategic opportunities to engage the public and build their support for stewardship. Options include:

- *Launch a national dialogue to engage the public on stewardship.* Routinely set up public dialogues to exchange ideas for encouraging and enabling stewardship and discuss why stewardship is important;
- *Publicly roll-out new initiatives that showcase stewardship as a means to solving priority problems.* Use the power of the Administrator’s office to announce priority initiatives and gain public support for them;
- *Highlight EPA’s own stewardship.* Increase the visibility of EPA’s annual environmental performance report to show people internally and externally that our words are backed up by action; and
- *Develop a communications toolkit.* Distribute a set of resources that can help headquarters and regional offices stay on message and communicate consistently and effectively with priority audiences about stewardship.

Improve environmental literacy. Getting people to do more for the environment is difficult if they do not understand its value and act accordingly. Recognizing the importance of an environmentally-educated public, EPA should:

- *Undertake an assessment of current environmental education resources.* A recent study at EPA identified about 50 environmental education programs. EPA should conduct a full assessment to determine how the resources associated with those programs are being deployed, what they are achieving, and how they might be leveraged more strongly to maximize the collective value; and
- *Develop strategic partnerships that increase the value of EPA's environmental education initiatives.* Based on the assessment described above, EPA should look for opportunities to leverage its environmental education resources by partnering with educational institutions and other organizations that share similar goals.

Enlist specialized expertise to improve EPA's marketing and brand management. EPA needs marketing expertise to more effectively reach target audiences. In particular, EPA needs a better understanding of the factors and trends that drive individual (i.e., consumer) choices, and of how to manage its brand. While EPA has gained considerable expertise with these issues through select programs, such as ENERGY STAR and the Chesapeake Bay Program, the Agency does not have expertise on these issues across the board. To build this capability, EPA should:

"A good brand reflects the promise of your program....it will determine - perhaps more than anything else - decision-makers' receptivity to the actions you are asking them to take."

EPA Voluntary Program Guidelines
on Branding (Draft)

- *Develop an EPA-wide marketing plan to guide our many stewardship initiatives.* EPA should determine how to best reach out to target audiences and engage them in initiatives and dialogues that can increase and improve stewardship; and
- *Leverage the work on branding that has already been done for EPA's voluntary programs.* The Agency should use the branding guidelines being developed for its voluntary programs to increase staff understanding of the branding concept and to help shape a more strategic approach to managing the EPA brand.

Improve internal coordination among stewardship initiatives. EPA needs to become more coordinated and sophisticated in how we develop products and services, including information components, for end users. In particular, EPA should:

- *Provide comprehensive links for priority audiences on EPA's highly visible web page.* Create sites that consolidate information for individuals, communities, companies and, over time, subsets of these constituencies, e.g., schools, hospitals, service industries; and
- *Simplify information about stewardship opportunities.* EPA should start by packaging its voluntary programs in a way that simplifies participation for priority audiences. Using results from the critical assessment of existing programs, this packaging should reflect an

understanding of which programs are likely to net both participants and the society at large the greatest environmental return.

4.3 UNIFY EPA ACTIVITIES TO MAKE MORE ACCESSIBLE FOR INTERNAL AND EXTERNAL AUDIENCES

It is important that both Agency employees and those outside the Agency have access to materials and information that will help them practice better environmental stewardship. It is clear that we need to organize our environmental stewardship programs as “portfolios of opportunities” so that they can be easily used by all interested parties. It is also clear that we need to market these materials more effectively to align with the needs and thinking of our target audiences. We have initiated an effort to inventory all of these programs and to make the information about them more accessible. (See Appendix J.)

4.4 REFLECT STEWARDSHIP IN EPA PLANNING, BUDGETING AND ACCOUNTABILITY SYSTEMS

4.4.1 Introduction

The Agency’s strategic and annual planning and budget processes are key mechanisms for integrating environmental stewardship approaches into EPA’s work. These long-term and short-term planning processes establish priorities for our environmental protection efforts, and identify the strategies for accomplishing our environmental results. To ensure a high degree of accountability and visibility, the Agency should continue efforts to incorporate quantifiable measurement of environmental stewardship results into the Agency’s long-term and annual performance commitments and integrate environmental stewardship into existing implementation strategies. Potential ways to accomplish this include incorporation of environmental stewardship strategies and results in strategic and regional plans; annual plans and budgets; national program priorities, guidance, and corresponding regional performance commitments; and annual performance measures.

The following set of recommendations provides suggestions for potential ways to more clearly establish priorities and demonstrate outcomes for environmental stewardship.

4.4.2 Recommendation 1: Increase Attention to Regional Environmental Stewardship Activities in National Program Manager (NPM) Guidance Documents

Environmental stewardship program activities can contribute to the accomplishment of long-term national program priorities and annual regional performance commitments. As national program managers update their NPM guidance documents each year, opportunities exist for including consideration of environmental stewardship approaches. In setting national program targets, NPMs should consider the contribution that environmental stewardship programs and activities can make in achieving the targets. For example, if a region works with a company through a voluntary environmental stewardship program to reduce energy use, water use, or air and water pollution, the environmental results of these activities could potentially contribute to more ambitious performance targets. These commitments could then be captured in the Agency’s

Annual Commitment System, which tracks Regional activities and contributions to achieving national program priorities. The experience that Performance Track is getting in incorporating directions into NPM guidance should be useful to other stewardship programs.

Regional managers should also include consideration of on-going state environmental stewardship efforts when developing annual state workplans, performance partnership agreements, and performance partnership grants. Appropriate recognition of multi-media projects and the positive role of collaboration should be accounted for in these annual work plans and to the extent possible, funding flexibility.

4.4.3 Recommendation 2: Integrate Environmental Stewardship into National & Regional Planning

4.4.3.1 Strategic Planning

The current revision of the Agency's Strategic Plan presents a timely opportunity for incorporating environmental stewardship as an integral approach for achieving environmental results. The means and strategies section under each goal describes how the Agency intends to achieve the long-term measurable environmental commitments contained in the strategic planning architecture (e.g., objectives, sub-objectives). Representatives of the Agency's stewardship programs could work with the Goal Teams to develop, for inclusion in the means and strategies narratives that support each goal, a description of how environmental stewardship specifically contributes to achievement of the outcomes under the goal. In this way, the Agency can highlight the essential role that environmental stewardship plays in each of our programs to achieve environmental results. The Agency has begun revising its Strategic Plan in the fall of 2005. In this connection, futures planning goes hand-in-hand with environmental stewardship.

4.4.3.2 Regional Planning

Regional planning establishes priorities for accomplishing regional environmental protection work, based on joint planning and priority setting with states and tribes. Regional Plans could present an opportunity for articulating the use of environmental stewardship approaches to achieve ongoing programmatic outcomes. Regional plans also offer potential opportunities for describing how environmental stewardship can help address unique regional priorities or environmental problems. For example, voluntary approaches may enhance the results that can be achieved through a more traditional regulatory approach.

EPA and the State Partnership and Performance Group recently formed a workgroup comprising headquarters, regional, and state program and planning contacts to develop options on an approach and format for the next round of Regional Plans. Guiding principles for these recommendations include developing plans that will (1) inform key decision-making processes, (2) reflect measurable environmental outcomes, (3) streamline plans, and (4) be beneficial to headquarters and regional senior managers. The Office of the Chief Financial Officer (OCFO) intends to issue guidance for the next round of Regional Plans in late 2005.

4.4.4 Recommendation 3: Develop Outcome Based Measures of Environmental Stewardship

The Agency's Annual Plan and Budget includes annual performance goals and measures that are expected to be accomplished with the requested resources. The Agency tracks progress toward these annual performance targets and, at the end of the year, reports on whether they were achieved in the annual Performance and Accountability Report. These annual performance goals and measures should be outcome-based to the degree possible and linked directly to the longer-term outcomes contained in the Agency's strategic planning architecture of goals, objectives, and sub-objectives in the most recently developed five-year Strategic Plan.

Incorporating environmental stewardship measures in Agency performance measurement systems would provide critical information about the relative contribution that voluntary environmental stewardship programs can make toward accomplishing environmental results. Development of new environmental stewardship annual performance goals and measures for inclusion in Agency management systems (which may be tracked and reported either externally or internally) would require development of the measure itself, a baseline, and an annual target. To the degree possible, annual performance goals and measures should be stated as an environmental or health outcome, rather than an output. Programs may begin developing new external performance goals and measures at this time for inclusion in the FY 2008 annual planning and budget process next summer.

4.4.5 Recommendation 4: Submit Budget Proposals to Advance Environmental Stewardship

Each year, EPA submits a budget request to the Office of Management and Budget in September that includes both the resources and the expected performance results associated with those resources (i.e., externally reported annual performance goals and measures). The annual planning and budget process provides an opportunity to advance the use of environmental stewardship in Agency programs.

In a budget climate of level or declining resources, environmental stewardship approaches may offer opportunities to accomplish our work in new ways, for example, through voluntary initiatives aimed at changing the behavior of individuals. To enhance the likelihood of success in the annual budget process, budget proposals should be supported by strong outcome-based performance results information and describe how resources would be redirected from other areas to accomplish the work.

The next opportunity to submit a budget proposal to advance environmental stewardship in the Agency would be as part of the FY 2008 annual planning and budget process in Summer 2006.

4.5 ALIGN EPA EFFORTS WITH STATE AND TRIBAL ACTIVITIES AND PRIORITIES

As described in Chapter 2 and Appendix C of this report, State and Tribal officials generally express strong support for the ideals embodied in EPA's draft vision and definition of environmental stewardship and a willingness and interest in working with EPA to further these ideals.

All of the States interviewed for this report have ongoing environmental stewardship-related activities and many States are actively expanding these types of efforts. Although they often are articulated under the umbrella of “environmental sustainability” or are related to traditional core environmental programs rather than promoted as “environmental stewardship,” States characterized many of their efforts as consistent with EPA’s vision and definition of environmental stewardship. They emphasized that it is important that EPA environmental stewardship efforts reinforce ongoing State investments in environmental stewardship and learn from State experiences. Whenever possible, correspondence between State and Federal efforts should be established, so efforts are structured to be mutually complementary and supportive.

Many State efforts are focused on two related areas: working to encourage businesses to reach for environmental outcomes that are beyond those that would be required by existing regulatory programs (so-called “beyond compliance” efforts) and working to integrate or reduce barriers between environmental programs. Increasingly, State stewardship-related efforts are not limited to areas where there are traditional environmental regulatory programs or mandates. Often, State environmental agencies are considering land conservation goals in their stewardship-related efforts and partnering with sister natural resource agencies to jointly further environmental and land conservation goals. States also are investing in efforts to give businesses and consumers information and encouragement to support more environmentally-sound behaviors and choices. Some of these efforts provide direct financial support for environmentally beneficial choices.

Tribal leaders emphasized that environmental stewardship is central to their culture and that their Nations have a long history of environmental stewardship and considering the impacts of decisions on future generations. Many of the general approaches that have been suggested for aligning EPA and State environmental stewardship programs and activities also apply to aligning EPA and Tribal environmental stewardship programs and activities.

State and Tribal officials offered a number of specific suggestions for how EPA might better work with them to further environmental stewardship goals. Many of these suggestions, such as creating a national dialogue on environmental stewardship, leading by example, applying environmental stewardship approaches to ecosystems, communities and products, creating a robust measurement program for stewardship and nesting stewardship activities within existing environmental programs and planning mechanisms, are key parts of the options and recommendations presented elsewhere in this report. Other suggestions include the following options:

Create sufficient flexibility at the regional office level for State and Tribal programs to explore stewardship approaches. The officials stressed that States and Tribes are laboratories of innovation for environmental protection and are responsible for most direct delivery of environmental programs. They need flexibility to experiment with stewardship-related ideas, particularly those that focus on environmental outcomes that cut across traditional program areas or that reach beyond compliance with existing requirements. Part of this will be addressed by incorporating stewardship activities into NPM guidance document and other national and regional planning efforts as described earlier in this report. Flexibility also may be needed in the types of activities for which State grant funds may be spent, the numbers of specific types of activities (e.g., certain types of inspections) that States must carry out, and the ways in which environmental regulatory targets are defined (e.g., to provide alternative targets in situations

where overall superior environmental outcomes can be achieved, such as in an Environmental Management System context). EPA needs to work with States and Tribes to integrate stewardship as a legitimate environmental management tool and work to reconcile any potential conflicts with regulatory responsibilities.

Provide support for stewardship efforts. The officials also stressed that EPA grant programs must recognize and reward State and Tribal investments in stewardship efforts. Because of the budget situation in which many States and Tribes find themselves, grants must recognize that investment in stewardship may come at the expense of investments in other activities. Stewardship needs to be connected to EPA's vision and funding priorities. EPA should also give credit for stewardship activities during program performance reviews.

Build on existing EPA environmental stewardship programs and priorities and collaborate to achieve common goals. Stewardship efforts are an opportunity to frame and coordinate many current activities and to guide future thinking about investments and strategy. Specific suggestions include:

- Target investments that explore actual implementation of stewardship behaviors, particularly those in which outcomes can be measured.
- Increase the understanding of how economics can work harmoniously with ecosystems, reducing the false sense of choice between a healthy economy and a healthy environment.
- Continue to create the floor, the baseline, of environmental protection through regulatory and enforcement programs and through support of State and Tribal environmental programs, while at the same time offering incentives to move beyond minimum standards.
- Create capacity, toolkits, or other resources that States and Tribes could use or customize to support their programs, in particular, information and capacity on marketing to focus efforts to educate consumers and change consumer behavior and ensure that educational efforts at the local, State, Tribal and Federal level are as effective and efficient as possible for the investment made.
- Encourage market mechanisms that provide competitive advantages to for stewardship practices, including preferences in insurance, lending, and capital markets.

4.6 REFINE ENVIRONMENTAL AWARENESS AND EDUCATION ACTIVITIES TO REALIZE FULL VALUE

4.6.1 Environmental Stewardship and Environmental Education (EE): An Integral Partnership

Environmental stewardship efforts may be greatly enhanced through effective utilization and improvement of existing Environmental Education (EE) resources. EE is a process that: 1) increases public awareness and knowledge of environmental issues and challenges; 2) teaches people how individual and collective actions affect the environment; 3) develops skills people can use to weigh various sides of complex environmental issues, and make informed decisions;

and 4) inspires personal responsibility for environmental preservation, restoration, and/or conservation. The path from education, to increased knowledge and awareness, to behavior change and action is one that EPA must utilize if it hopes to effectively persuade individuals, communities, businesses, agencies and organizations to become better environmental stewards.

4.6.2 The Current Status of EPA's Environmental Education Programs

As with environmental stewardship programs, programs focusing on EE are scattered throughout the EPA. EPA's formal EE programs may be grouped into voluntary programs, training programs, community education and outreach, internships, fellowships, and K-12 programs. Individual programs are housed in different offices, making communication and coordination difficult. In an effort to connect these various programs to one another, the Office of Environmental Education's (OEE) website acts as a centralized location for internal staff to find out what other education efforts are occurring throughout the Agency. OEE also provide resources to teachers and educators and offer grant opportunities to those involved in environmental education.

4.6.3 Opportunities to Strengthen Environmental Stewardship through Environmental Education

Education provides a forum to prevent human health risks and pollution by teaching choices and encouraging good environmental stewardship. The stronger the education programs are, the clearer and louder the stewardship message will be. For EPA's Environmental Education to succeed, education and communication must occur both internally and externally. The Office of Environmental Education (OEE) is already working on ways to increase communication and awareness about EE within EPA, with other government agencies, and with the public at large. Current efforts include:

- Facilitating communication among EE programs and staff, in part through the development of an EPA program database containing information on materials produced, methodologies used, and audiences targeted, to be available within and to the public;
- Enhancing evaluation and strategic planning for EE programs; and
- Working to include education approaches in EPA's future strategic plans.

In addition to present OEE efforts, the visibility and accountability of environmental education may be increased through the following recommendations:

- Active management support for EE programs: In order for the EE approach to succeed at the EPA, there must be more active support at all management levels in the form of necessary resources, recognition, and encouragement;
- Provide professional development opportunities for EE staff with an emphasis on education, evaluation, communication, and other key topics; and
- Improve the product review system to enhance the effectiveness of the products and coordination between programs.

The environmental stewardship effort can be greatly enhanced by tying into already existing EE programs and helping the OEE reach a wider audience and better communicate with its present audience. Education provides the underpinnings for EPA's overall mission and is inextricably linked to environmental stewardship. The enhancement of one implies the growth of the other. Through proper support and planning, EPA can grow both its environmental education and stewardship programs, thereby moving substantially closer to achieving its overall goals and mission.

4.7 IMPROVE OUR KNOWLEDGE BASE – PERFORM CRITICAL RESEARCH

Successfully implementing a stewardship approach to environmental protection and improving over time will require us to build a knowledge foundation through research. In general, there are several important aspects to capture in a research portfolio that will inform stewardship. First, we should both understand and improve the infrastructure (physical, informational, economic, social) that makes stewardship choices comfortable and convenient, and also develop new and innovative choices for stewards. Second, we should learn from the successes and failures of the past with respect to stewardship, as well as inform decisions that will enable us to shape the future. Third, to develop lasting solutions to complex problems, we should draw on an understanding of how societal and ecological systems interact. Fourth, we should learn how to better provide the information required by government, communities, businesses, and individuals to make better choices. Finally, we must understand under what conditions the collection of stewardship behaviors and regulatory outcomes work together on a local, regional, and national scale to help us achieve the sustainability outcomes we are aiming for.

Stewardship requires a multi-disciplinary research approach in engineering, chemistry, ecology, public health, economics, social sciences, etc. Research that can potentially inform the plans and decisions of four types of stewardship groups is described below: (1) community and regional decisionmakers, (2) industry and business, (3) individuals and households (4) ecosystem managers. Stewardship also requires full communication between researchers and users inside and outside of EPA, so that useful research questions are asked and knowledge gained from research is effectively transferred and applied.

4.7.1 Community and Regional Decisionmakers

Local governments and communities would benefit from a better understanding of future implications of their planning decisions. The location, design, and materials selected for new development within a community or region can affect the level of impact it has on the environment. Different residential, commercial, and transportation densities (dictated by building codes) and designs (driven by architectural and civil engineering practice) are associated with altered consumption and land use patterns. These in turn lead to environmental implications. For example, the characteristics and patterns of land development in a region can affect energy consumption, as well as air quality through mobile and stationary source emissions. Similarly, the water demands of development can be in balance or at odds with ecological health. Land use can also affect materials use patterns and subsequent environmental impacts. Research can help to illuminate the linkages among demographic changes, economic trends, and technology/infrastructure transformations influencing future development; resource (water,

energy, materials) flow and consumption patterns; alternative build-out scenarios for metropolitan areas; and the associated projected environmental outcomes. Factors that motivate or discourage community members to choose to become better stewards are also important to understand. Then, tools and approaches can be developed that enable communities and local/regional governments to be better environmental stewards and over the long run prevent environmental pollution, promote wise use of resources, and enhance environmental quality and public health.

4.7.2 Industry & Business

Companies would benefit from a broader array of options to meet their sustainability objectives. Research can contribute to the knowledge foundation to increase available options over time to: (a) design greener products, (b) build and operate greener facilities, and (c) manage materials and products from “cradle to cradle.” Research can lead to new approaches to designing molecules, products, processes, and systems that use safe chemicals; use energy, materials, and water efficiently; and effectively eliminate or reduce waste at the source. Broader issues can inform strategic industrial and business stewardship. Understanding the environmentally beneficial applications as well as harmful implications of emerging technologies, such as Nanotechnology and Biotechnology, can help to guide the development of these new technologies. A materials flow systems understanding can illuminate leverage points in product lifecycles that may reap the greatest return. Finally, understanding the dynamics of organizations, including conditions and factors that motivate green choices and behavior can inform future policies.

4.7.3 Individual and Households

Individuals and households would benefit from more information, more incentives, and more choices for stewardship behavior. Research can contribute to individual and household stewardship in several areas. First, an understanding of what types stewardship choices and behavior (from composting to carpooling) on the part of individuals makes the biggest difference for long-term environmental results would help to prioritize policy relating to individual stewardship. Second, understanding how stewardship innovation behavior diffuses from lead environmental stewards to others in the general population can help to target stewardship programs for individuals. Third, research can contribute to understanding the incentives and disincentives for stewardship behavior, such as relating to economics, convenience, or comfort. Finally, an understanding of the role of information in guiding stewardship can inform the presentation of environmental information, such as in eco-labels or environmental indicators.

4.7.4 Ecosystem Managers

Ecosystem managers can benefit from decisionmaking tools drawing on an improved understanding of ecosystem structure and function and effects on ecosystem services. Priority research needs relate to (a) development of forecasting methods, (b) elucidation of how stressors affect ecosystem services, and (c) decision tools to compare trade-offs among alternative resource uses and flow patterns. The outputs of this research will include a variety of tools to transfer this knowledge from scientific research to application by stewards at all levels of society.

APPENDIX A:

ENVIRONMENTAL STEWARDSHIP & EPA:

CHARGE FROM THE ADMINISTRATOR TO THE INNOVATION ACTION COUNCIL

Background: EPA's current strategic plan has a new emphasis on environmental stewardship to accomplish the Agency's mission – reflecting an ongoing evolution of policy goals from pollution control to prevention and sustainability. The changing nature of the environmental challenges we face and the different types of solutions that are needed to get results require us to engage all parts of society – individuals, companies, environmental and other non-profit groups, communities and government – to improve public health and the environment.

Today, a growing number of organizations and individuals are embracing stewardship values by taking responsibility for the environmental consequences of their actions. Environmental stewardship behavior can be harnessed in strategies for addressing “new” environmental problems and in strategies for continued progress on “old” problems. Stewardship strategies can help push beyond compliance-oriented outcomes, mobilize new players in environmental problem solving and ensure that solutions consider long term impacts.

This vision of environmental protection is emerging throughout EPA programs and in all five goals of EPA's strategic plan. Thus, in addition to operating effective regulatory and enforcement programs, EPA is gaining substantial experience with stewardship approaches – including voluntary programs, market incentives, recognition and leadership programs, pollution prevention, environmental education, information and collaborative problem solving. Although these stewardship efforts are designed to produce environmental results, EPA can improve their effectiveness with a more unified strategy and with clear goals and priorities.

Charge: To realize the full benefits of stewardship and use EPA resources efficiently, we need to critique our progress and define strategic priorities. The Innovation Action Council should:

1. Explore and better define EPA's vision of environmental stewardship and the role of stewardship in the future of environmental protection;
2. Assess EPA's current environmental stewardship activities to determine effectiveness and opportunities for improvement; and
3. Recommend options and priorities for how EPA, in partnership with States and tribes, can encourage stewardship that addresses environmental priorities and achieves results.

Schedule and process: The IAC should organize an inclusive process to gather information and ideas from program and regional offices, states and tribes. A draft report should be completed in six months – to inform the next EPA Strategic Plan, and strengthen how EPA's management and accountability systems support stewardship approaches.

Together with strong regulatory programs, stewardship approaches have significant potential to improve environmental quality. Fostering environmental stewardship as a societal ethic requires

new roles for EPA, and I look forward to a continuing IAC leadership role in charting this course for the Agency.

Stephen L. Johnson

Administrator

Date: May 9, 2005

APPENDIX B: ROSTER OF PROJECT PARTICIPANTS

Office	Steering Committee	Staff Committee	
OPEI	Jay Benforado, Chair Louise Wise	Derry Allen, Chair Bob Benson Lynn Desautels Sandy Germann Sharquita Goldring Lynda Goodgame Shari Grossarth Bill Hanson	Richard Kashmanian Shannon Kenny Greg Ondich Betsy Shaw Stephan Sylvan Rob Wolcott Gwen Yoshimura
OSWER	Barry Breen	Brigid Lowery	Clare Lindsay
OPPTS	Margaret Schneider	Karen Chu	Tom Murray
OECA	Mike Stahl	Kate Perry	
OCFO	Kathy Sedlak O'Brien	Elizabeth Walsh	
OAR	Rob Brenner	Larry Weinstock	
OW	Mike Shapiro	Kitty Miller	Gary Hudiburgh
ORD		Diana Bauer Iris Goodman	Peter Fargo
OARM		Bucky Green	
OEE		Drew Burnett	
Region 2		Walter Schoepf	
Region 3		Nick DiNardo	
Region 4	Stan Meiburg	Linda Rimer	Melissa Heath
Region 5		Marilou Martin	
Region 8		Whitney Trulove-Cranor	David Schaller
Region 9		Scott Stollman	
Region 10	Rick Albright	Carolyn Gangmark	Bob Drake
ECOS/NC*	Bill Ross	Beth Graves	

*Participants from North Carolina representing the Environmental Council of the States (ECOS)

The project participants also acknowledge with thanks the contributions of consultants from the firms of ICF Consulting, Ross and Associates and Eastern Research Group.

APPENDIX C: DETAILED SUMMARY OF INTERVIEWS WITH STATE OFFICIALS, EXPERTS AND OTHER STAKEHOLDERS

C.1 STATE OFFICIALS

Eight state environment and natural-resource agency commissioners were interviewed individually by telephone and eight states participated in a group conference call on environmental stewardship.

State commissioners were asked to provide their perspectives in three areas: (1) the term “environmental stewardship” and EPA’s working definition; (2) environmental stewardship activities planned or ongoing in their state; and (3) how EPA might work with states and tribes to support and foster environmental stewardship activities and behaviors.

This summary presents key themes and ideas that emerged from the interviews. Interviews were carried out over a period of approximately five weeks in August and September 2005. Each individual interview was approximately 30 minutes in length. The list of interviewees and participants in conferences calls is attached.

C.1.1 Defining Environmental Stewardship

State commissioners were asked to react to EPA’s draft vision and definition of environmental stewardship and to the concepts embedded in the draft vision and definition.

State commissioners expressed support for the ideals embodied in EPA’s draft definition of environmental stewardship and the importance of these types of efforts both to achieving environmental quality goals and to the long-term health and sustainability of environment and natural resource agencies. Commissioners talked about environmental stewardship activities as representing the “next phase” in environmental protection efforts and about the importance of efforts that move to create a shared national vision for how individuals, businesses, and communities can—through their actions—contribute to enhanced public health and environmental protection. In particular, state commissioners emphasized the need to look holistically across environmental programs to identify strategies that can solve multiple problems at the same time.

There was not unanimity about the usefulness of the term “environmental stewardship” as opposed to other terms. Some state commissioners were supportive of the term “environmental stewardship” because that term was already in use in their states. For example, the Wisconsin Department of Environment and Natural Resources has a strategic plan and vision statement that includes the idea of “shared responsibility of natural resource stewards.” The North Carolina Department of Environmental Quality has an “Environmental Stewardship Initiative” aimed at teaching businesses and other organizations about Environmental Management System (EMS) approaches and recognizing exceptional EMS commitments and results. At the same time, other state commissioners expressed concern that the term “environmental stewardship” is not in

general use in their state agencies or among the individuals, businesses, or communities they serve. In addition, some state commissioners expressed concern that the term “environmental stewardship” had the potential to be interpreted as focused exclusively on natural resource issues such as land-use and land conservation, or confused with long-term land use control initiatives (often called “long-term stewardship” initiatives) in place in many state clean up programs. State commissioners who were concerned with the term “environmental stewardship” expressed a preference (sometimes a strong preference) for terms that are in more general use, such as “environmental sustainability.”

Incorporating the concept of economic prosperity into the thinking about “environmental stewardship” is important. A number of state commissioners mentioned the need to link environmental achievement with economic vitality and to move beyond the false thinking that those two goals are at odds. State commissioners who were more comfortable with terms such as “environmental sustainability” than “environmental stewardship” emphasized that sustainability concepts already tend to connote the pairing of abundance in the environment and the economy.

State commissioners echoed a number of the critiques of EPA’s draft definition of environmental stewardship that were identified during the expert and stakeholder interviews. In particular, it is important to name accountability and responsibility—if everyone is responsible collectively, then no one will feel responsible individually, and nothing will get done. The goal, end state, or environmental outcomes that are the aspiration of stewardship activities should be clearly identified. In other words, how do we know when we are making progress?

C.1.2 Environmental Stewardship Efforts in States

State commissioners were asked about environmental stewardship efforts that they are investing in or leading.

All states interviewed have ongoing efforts that they characterized as consistent with EPA’s draft vision and definition of environmental stewardship. Most state commissioners described their level of attention to and investment in stewardship-like efforts as increasing and becoming increasingly important within their agencies.

Many state stewardship efforts are focused in two related areas: working to encourage businesses to reach for environmental outcomes that are beyond those that would be required by existing regulatory programs (so-called “beyond compliance” efforts) and working to integrate or reduce barriers between environmental programs. Often, these efforts are not called by the name “environmental stewardship.” Frequently they are part of state environmental sustainability programs or agendas, although in some cases, stewardship-like efforts are under the umbrella of more general programmatic improvement or efficiency. Examples of state stewardship-like efforts include:

- Nebraska works across local, state, and federal agencies to combine watershed development and protection efforts with small community revitalization.
- Colorado has an Environmental Management System permit program that focuses on superior environmental outcomes and regulating businesses in a more holistic way.

-
- Wisconsin has the “Green Tier” program that recognizes beyond compliance efforts.
 - North Carolina has an “Environmental Stewardship Initiative” to promote and encourage superior environmental performance in the regulated community.
 - Maine is working with other New England states on an initiative to establish connections and joint priority setting between environment and public health agencies. One of the outcomes of this effort will be materials to support individuals assessing the “health” of their homes.
 - California is supporting efforts to develop best practices for sustainability in the wine grape and other agricultural sectors.
 - The Texas environmental excellence awards celebrate efforts of citizens, communities, businesses, and organizations to preserve and enhance the environment by honoring the most outstanding waste reduction and pollution prevention efforts in the State.
 - Minnesota has a program to foster product exchanges for lead tackle, mercury-containing products, lawn equipment and wood stoves.

State stewardship-related efforts increasingly consider land conservation, particularly, but not exclusively, in Agencies that have responsibility for both natural resources and environmental protection. For example, Wisconsin has a \$60 million land conservation fund. More traditional environmental protection agencies also are looking at conservation. South Carolina is working with other southern states to explore sustainability and stewardship at active military bases, in part motivated by land conservation goals. California EPA, which does not have responsibility for natural resource management, is working with its sister state agencies to support the work of state land conservancies. This collaboration gives CALEPA the opportunity to work with the conservancies to marry environmental efforts (such as the work of local water regulatory boards) with the unique tools that conservancies have (such as the ability to purchase land and control easements). In addition, many state cleanup programs have long incorporated considerations about long-term stewardship, land use, and conservation, and a number of states environmental agencies are initiating efforts to support sustainable agricultural practices that also are motivated, in part, by land conservation goals. Opportunities for environmental agencies to team and collaborate with land management and natural resource agencies and organizations, particularly in the agriculture area, are an important part of the overall package of stewardship approaches.

There are important opportunities for stewardship-related activities in areas where there are not currently as many programmatic drivers for compliance. State commissioners mentioned work in areas such as energy usage, water conservation, and air pollution reduction. A number of states also have efforts focused on agriculture and maintaining the health and viability of agricultural operations.

In part to take advantage of these opportunities, states increasingly have efforts oriented towards giving businesses and consumers information and encouragement to support more environmentally sound consumptive behaviors and choices. These efforts are often media-focused, particularly around waste reduction, water quantity and quality, and air quality efforts.

For example, the Drive Clean Across Texas Program is a public outreach and education campaign designed to raise awareness, change attitudes, and ultimately changes citizens' behavior to reduce air pollution from cars and trucks. Some state programs extend to providing financial support. In Texas, for example, the State provides financial assistance to qualified owners of vehicles that fail emissions testing through the AirCheck Texas Repair and Replacement Assistance Program.

States have an important role to play as conveners for environmental stewardship efforts, particularly voluntary or beyond compliance efforts. States are facilitating and supporting efforts by businesses, communities, or other organizations and helping these organizations connect to and learn from one another. Often these efforts may have as their primary motivating factor some economic or social value, but they also can be optimized to create environmental improvement. For example:

- Maine inspectors are working to identify opportunities to pair businesses that have complementary “waste” streams and production processes. For example, a potato processor with high volumes of excess waste water was teamed with a paper manufacture that could use the “waste” water in the paper production process.
- Maine convenes twice-yearly meetings of “Step Up” program participants—businesses that have made commitments to superior environmental performance—so these businesses can learn from one another’s efforts.
- South Carolina has invested in full-time environmental liaison staff to serve as ombudspersons and help people understand the complexities of health and environmental issues and programs. These staff can work with communities who have identified particular environmental concerns to cut across programmatic boundaries to develop solutions.

State efforts also involve improving program delivery and services to improve efficiency and overall outcomes. For example:

- South Carolina is investing in plain language and streamlining efforts around environmental permitting.
- Maine is working to better combine and integrate pollution prevention efforts with hazardous waste compliance inspections and efforts.

C.1.3 EPA and Environmental Stewardship

It is important for EPA to define its environmental stewardship efforts in the context of existing Agency programs and priorities. State commissioners agreed with EPA’s thinking that stewardship efforts are not so much a new program or initiative, but rather an opportunity to frame and—state commissioners emphasize—coordinate many current activities and to guide future thinking about investments and strategy. At the same time, state commissioners advised EPA to avoid creating the perception that environmental stewardship is just another “flavor-of-the-month.”

EPA should identify and capitalize on stewardship efforts that are already occurring independently, outside of government. There are opportunities to do this domestically by working with sectors such as agriculture and forest products and forward thinking companies and municipalities or other local governments and internationally by working with efforts in the European Union, Japan, and other nations.

Measurement of stewardship efforts and nesting these efforts into existing measurement and performance tracking systems is important to success and may be difficult. A number of state commissioners described the importance of measures in driving state priorities and emphasized the need to develop measures of stewardship activities that could be used to monitor achievements and focus investments on environmental outcomes. Some state commissioners mentioned that some current EPA measurement approaches may constrain state innovation and stewardship-related activities. For example, particularly in times when state budgets and staffing levels tend to be shrinking, measurement approaches that tie state grant levels to the numbers of regulated facilities or the numbers of inspections or enforcement actions carried out force state investment in directions that may not allow much room for innovation. In these situations, states might rather invest in areas or programs that they believe would achieve superior environmental outcomes, but are constrained from doing so by the need to fulfill ("get credit for") specified program-related activities. These sorts of disconnects perpetuate the feeling that stewardship, or innovative approaches that cut across programs to reach to environmental outcomes more generally, are not really part of the core work of environmental programs and are somehow separate from most of the day-to-day implementation work of environmental laws.

Creating true flexibility at the regional-office level for state programs to explore stewardship-related ideas is important. States are the laboratories of innovation for environmental protection; they also are responsible for most direct delivery of environmental programs. States need flexibility to experiment with stewardship-related ideas, particularly those that focus on environmental outcomes that cut across traditional program areas or that reach beyond compliance with existing requirements. Commissioners described that too often EPA's overarching ideas or goals about flexibility to further shared environmental priorities expressed at the political level, by senior career officials, or in the innovation-focused offices do not seem to "stick" with staff in enforcement-oriented offices or with line staff and managers in the regional offices who have the most influence over day-to-day state/EPA interactions. A commissioner observed, "if half of EPA is counting success by the number of enforcement actions and half is worried about stewardship, then that's a tough discrepancy for states to manage." Flexibility may be needed in the types of activities for which state grant funds may be spent, the numbers of specific types of activities (e.g., certain types of inspections) that states must carry out, and the ways in which environmental regulatory targets are defined (e.g., to provide alternative targets in situations where overall superior environmental outcomes can be achieved, such as in an Environmental Management System context).

Financial support for state stewardship efforts is critical. EPA grant programs must recognize and reward state investments in stewardship efforts. Because of the budget situation that many states find themselves in, grants must recognize that investment in stewardship will often come at the expense of investments in other activities. Stewardship needs to be connected to EPA's vision and funding priorities.

Shifting to a stewardship-related way of thinking is primarily about culture change—creating a culture that is more about individual and corporate responsibility and accountability and relies on shared goals, partnership, and collaboration, rather than strict command and control strategies. Many of the state efforts described above take this approach and could be supported by EPA efforts to bring additional flexibility to state implementation of environmental programs.

EPA can make investments that will support or encourage state stewardship-like efforts. Many of the suggestions for EPA investment made by state commissioners echoed some of the suggestions made by experts and stakeholders. Specific suggestions from state commissioners include:

- Creating a clear definition of environmental stewardship and how stewardship behaviors might differ from current ways of acting.
- Targeting investments in exploring actual implementation of stewardship behaviors, particularly those in which outcomes can be measured.
- Acting as a convener of public dialogue on stewardship issues and actions that companies, individuals, and governments can take and using the “bully pulpit” to publicize and call for successful stewardship approaches.
- Increasing the understanding of how economics can work harmoniously with ecosystems, reducing the false sense of choice between a healthy economy and a healthy environment.
- Continuing to create the floor, the baseline, of environmental protection through regulatory and enforcement programs and through support of state environmental programs, while at the same time offering incentives to move beyond minimum standards. Some interviewees discussed this as creating an appropriate balance of “carrots” and “sticks;” at the same time, the majority of interviewees in the expert category emphasized that government’s role in setting and enforcing minimum standards and expectations is a critical part of establishing the conditions for stewardship behaviors.
- Creating capacity, toolkits, or other resources that states could use or customize to support their programs, in particular, information and capacity on social marketing to focus efforts to educate consumers and change consumer behavior and ensure that educational efforts at the local, state, and federal level are as effective and efficient as possible for the investment made.
- Encouraging market mechanisms that provide competitive advantages to stewards, including preferences in insurance, lending, and capital markets.

It is critical for states and EPA to “walk the talk.” One of the most important ways that government can support stewardship efforts is leading by example. This not only strengthens government’s call to others to act as environmental stewards, it also pilots and tests stewardship concepts and expands stewardship tools and infrastructure.

State Commissioner Interview List

1. Jim Branham, California

-
2. Dawn Gallagher, Maine
 3. Scott Hassett, Wisconsin
 4. Bob King, South Carolina
 5. Mike Linder, Nebraska
 6. Bill Ross, North Carolina
 7. Howard Roitman, Colorado
 8. Larry Soward, Texas

States that participated in the conference call (September 29, 2005)

1. Arizona
2. Massachusetts
3. Minnesota
4. New Hampshire
5. North Carolina
6. Texas
7. Utah
8. Virginia
9. Wisconsin

C.2 EXPERTS AND STAKEHOLDERS

In the expert category, interviewees included representatives of academia, policy advocacy and research organizations, and the sustainability and conservation movements. In the stakeholder category interviewees included representatives of corporations and business, non-profit environmental organizations, states, local government, and Tribal nations.

Experts were asked questions about the definition and concept of environmental stewardship, the prospective role of government and EPA in fostering stewardship, and examples of stewardship behaviors among business, individuals, government, and communities. Stakeholders were asked about the definition of environmental stewardship, their stewardship efforts and experiences, barriers that prevent them from becoming better environmental stewards, and steps that EPA could take to help their organizations and/or constituencies to be better environmental stewards.

This summary presents key themes and ideas that emerged from the interviews. Although the questions differed for the expert and stakeholder groups, consistent themes emerged from the interviews across the two groups. As a result, this summary covers important themes from both the expert and stakeholder interviews. Summary points and themes that pertain primarily to either the expert or stakeholder interviews are noted as such.

Interviews were carried out over a period of approximately five weeks in July and early August 2005. Each interview was approximately one-hour in length. The list of interviewees is attached.

To collect further feedback from Tribal environmental leaders, representatives from EPA's Stewardship Workgroup met with Tribal representatives during a meeting of EPA's National Tribal Operations Committee on September 29, 2005. Observations from this session are incorporated into the summary below.

C.2.1 Defining Environmental Stewardship

On balance interviewees expressed confidence in the term “environmental stewardship” as having positive connotations as well as the potential to be a useful concept for advancing EPA’s goals. In particular, interviewees were positive about the potential of the term “environmental stewardship” to capture public imagination and to motivate people and to create a touchstone that could be used to bring decision makers and individuals back to a set of underlying purposes and goals. Interviewees emphasized two important attributes of the term “environmental stewardship.” First, it conveys a sense of *responsibility* to something or someone beyond oneself for protecting and enhancing the environment. Second, it implies the need and ability to shoulder that responsibility by taking individual *action*.

Interviewees also noted a number of features that the term “environmental stewardship” typically connotes, although these points are not necessarily articulated in EPA’s current working definition of environmental stewardship. The term “environmental stewardship” connotes:

- Being aware of and understanding the full spectrum of impacts on the natural environment.
- Using the precautionary principle to guide actions that have potential to affect the environment.
- Living on the interest of what is produced, without altering the substance of the principal.
- Adopting a holistic, integrated perspective on the consequences of decisions.
- Taking into account both the short-term and long-term implications of decisions and actions.
- Connecting natural systems to people.

A definition of “environmental stewardship” should clearly articulate who is responsible for what to whom. Interviewees, particularly in the expert category, offered a number of critiques of EPA’s draft definition of environmental stewardship. First, several interviewees identified the need to more clearly allocate responsibility for stewardship behavior. Key observations include:

- Experts emphasized the need to name accountability and responsibility – if everyone is responsible collectively no one will feel responsible individually, and then nothing will get done.

It was noted that clarity and certainty of understanding related to the allocation of responsibility are more important for institutions, such as businesses and government agencies. Institutions operate in a context that is highly structured by property rights, laws, regulations, liability, etc. Therefore, assuming ambiguous responsibility for stewardship can result in very few stepping up to assume responsibility, unless doing so is aligned with other benefits to the organization (e.g., enhanced profit).

Second, interviewees identified the need to more clearly identify the goal or end state that we should collectively seek to achieve as environmental stewards. In other words, how do we know when we are effective stewards? Specific reflections from the interviews include:

- “Avoiding environmental impacts” is not enough, environmental stewardship is also about making positive contributions to environmental restoration and improvement.
- While many interviewees noted that environmental stewardship should focus on proactive steps to protect and enhance environmental quality, some strongly believe that restoration and recovery of degraded ecosystems must be included in EPA’s definition and focus on stewardship. Restoration is of particular interest to tribes, and collaborative efforts to restore ecosystems such as the Chesapeake Bay, the Great Lakes, and the Everglades were noted as examples of restorative stewardship in action.
- There is a need to address first order issues associated with moving from an extractive economy (with predominant reliance on non-renewable sources of energy and materials) to a renewable economy that lives off the interest of what is produced rather than tapping into the principal.
- Some experts identified that the “sustainable use of ecosystem services” could be an appropriate target for stewardship behaviors.

Third, interviewees identified the need to more clearly define “to whom” stewards are responsible. They noted that much of the power of the term stewardship stems from its implication of responsibility to someone (or someones) who is held in great esteem, such as God, future generations, children and grandchildren, or oneself. Specific reflections include:

- Tribal wisdom often references the importance of considering the impacts of decisions on the next seven generations.
- References of responsibility to God or a higher being or beings can be powerful to some, but such references may not resonate with others and would be difficult for government agencies to proffer or embrace.
- Focus on responsibility to children and grandchildren can be useful, as it speaks to a human connection that most people can embrace and it has stronger immediacy and connection to mainstream audiences than a more abstract reference to future generations.

It is important to recognize that the term “environmental stewardship” fails to fully capture the broader context of decision-making faced by many organizations and the term may be less useful in the context of business. A number of interviewees, particularly in the stakeholder category, noted that the term “environmental stewardship” does not address two important dimensions of decision-making: the economic and social dimensions. While supportive of the idea of environmental stewardship, several stakeholders noted that the term is not widely used among businesses or state and local government agencies. They encouraged EPA to consider positioning “environmental stewardship” in the context of other terms or trends that may be in more widespread use. Other terms encompass many of the same ideas as “environmental

stewardship,” but they recognize other factors that compel and constrain behaviors. For example:

- Most large companies are not thinking about “environmental stewardship” but instead are thinking more broadly about corporate citizenship, sustainable development, and corporate social responsibility.
- Some interviewees emphasized the need to consider environmental stewardship in light of the “triple bottom line” of environmental, economic, and social viability.
- Some tribes think about environmental stewardship in the broader context of “cultural sustainability,” since many tribal traditions and cultural practices depend upon access to various species and natural resources.

Interviewees raised another drawback of using the term “environmental stewardship” to frame communications around EPA interactions with business. They noted that the term implies that business may need to take actions for altruistic reasons, rather than because the actions make good business sense. Talking about environmental stewardship to business could undermine a growing trend and expanding efforts to mainstream the concept that superior environmental performance is good business. Over reliance on altruistic arguments for business environmental performance improvement runs the risk of marginalizing environment as a nice to have, but not fundamental, business success factor. For example:

- Work by Innovest and others is demonstrating how business risk exposure related to climate change and other environmental performance dimensions are critical factors to consider in mainstream investment analysis and decision-making. This represents an important shift from conventional Socially Responsible Investment funds that appeal to niche investors and only capture about 2% of current investment market share.
- Recent efforts by companies such as General Electric and Procter & Gamble illustrate that there are powerful market drivers, such as shifting customer and shareholder expectations and competitive pressures for waste reduction, that are causing companies to more proactively embrace environmental performance improvement opportunities.

EPA should be aware of the heritage of the term “stewardship” and understand that the term will mean different things to different groups based on its heritage. The term “stewardship” has strong religious roots. Within religious circles, Genesis 1:26-28 is often used to support an ethic of stewardship: “and let them rule over all the earth, fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature.” In this context, stewardship is often used to describe humans’ responsibility to “God the Creator” for “taking care of creation.” As a result, the term can carry connotations of humans’ dominion over nature, which differs markedly from a conception that views humans as an integral part of ecosystems on which humans depend for survival. Modern religious uses of the term “stewardship” vary in their focus and emphasis:

- The Interfaith Council for Environmental Stewardship (ICES) has taken a conservative viewpoint. The group’s Cornwall Declaration on Environmental Stewardship focuses on mankind’s benevolent dominion over nature.

-
- The National Religious Partnership for the Environment, the World Council of Churches, the Coalition on the Environment and Jewish Life (COEJL), and others take a more centrist view of environmental stewardship that emphasizes humans as having a unique role in caring for the earth's ecosystems and creatures (humans as "the Creator's special stewards") while acknowledging that humans are embedded in and rely upon the same natural systems as other life.

The term stewardship also has important legal heritage, as it is sometime associated with the concept of *usufruct*. Usufruct means "use of the fruit" or "the right of enjoying a thing, the property of which is vested in another, and to draw from the same all the profit, utility, and advantage which it may produce, provided it be without altering the substance of the thing." Usufruct has influenced legal conceptions of property rights, and it has bearing on legal interpretations of the concept of environmental stewardship.

C.3 ENVIRONMENTAL STEWARDSHIP EFFORTS OF STAKEHOLDERS

Interviewees in the stakeholder category were asked about their own stewardship efforts, factors that motivate their investment in stewardship behaviors, and barriers to assuming greater stewardship responsibility.

While they often do not call them environmental stewardship activities, many EPA stakeholders are increasing implementation of steward-like behaviors or are working to encourage others to do so. While no interviewees identified any particular corporations and businesses as "model stewards," interviewees gave examples of how the incidence of steward-like behavior is growing in their company or in other businesses. For example:

- General Electric's ecomagination initiative illustrates how leader companies see environmental stewardship as a core element of future business success. Those companies that can find creative, resource-efficient, non-polluting ways to meet basic human needs for power, water, shelter, food, health, and transportation will capture significant economic opportunity in decades to come.
- Companies such as Procter & Gamble and Coca-Cola are pursuing initiatives that can have significant environmental improvement outcomes, although environmental stewardship is not necessarily the main driver.
- Companies such as Interface Carpets, Shaw Carpets, Herman Miller, Nike, and SC Johnson are increasingly taking a cradle-to-cradle perspective in product and process design.
- Business organizations such as the Global Environmental Management Initiative (GEMI) have numerous initiatives underway to support companies' efforts to be better stewards. Greenbiz.com and other corporate environmental news sources report increasing examples of steward-like behaviors among business.

Tribal leaders indicated that Tribal Nations throughout the U.S. have a long history of effective environmental stewardship. They would like to work with EPA on environmental stewardship.

Interviewees identified ways in which some government agencies increasing their stewardship activities or encouraging others to do so. For example:

- Government agencies such as Seattle Public Utilities are using robust triple-bottom line analysis to improve the efficacy of decision making and public sector investments.
- Governments are supporting and investing in conservation easements and other efforts to preserve natural places and habitat while accommodating low-impact human activity.
- Government partnerships such as Coastal America are working to leverage public and private resources for effective environmental stewardship.
- Governments are engaging citizens in stewardship activities through community-based environmental education initiatives, public service announcements, and citizen water quality monitoring programs.
- Governments are providing more information about environmental quality in the hands of citizens and consumers, helping them make informed decisions. Watershed-based water quality information informs people about the state of local resources, while efforts such as Energy Star enable people to more easily consider energy and environmental issues when making purchasing decisions.

Interviewees identified ways in which non-governmental organizations are helping others to adopt effective stewardship practices. For example:

- Organizations are empowering individuals and institutions to become effective stewards through education, training, assistance, and encouragement. The National Wildlife Federation's Backyard Wildlife Habitat Program has been highly successful in helping people become better stewards of their own yards. Ceres is working with institutional investors to increase their understanding of the connection between environmental stewardship and business performance.
- Organizations are facilitating information sharing among individuals, organizations, and governments, spreading creative solutions and practices that further stewardship efforts. Smart Growth America has played a key role in expanding communities' interest and capacity in stewardship.

Stakeholders identified a number of drivers that motivate stewardship behaviors. Many of these drivers are resulting from key trends. Important factors compelling stewardship behaviors among business and corporate entities include:

- The existence and enforcement of basic environmental laws, regulations, and standards that set expectations for minimum performance. Increasingly, businesses are implementing management systems to reduce the risk of non-compliance or making changes to reduce the overall cost of environmental risk and compliance management. Increasingly, the potential negative impact on corporate or brand image is of greater concern to companies (particularly in visible sectors, such as consumer products) than the potential costs associated with non-compliance.

-
- Increasing awareness of the risks and opportunities posed by businesses' supply chains is driving more and more companies to pay attention to and to work to improve environmental performance among their suppliers, and to a lesser degree, among their customers.
 - Increasing availability of and access to information and scientific evidence about the status of ecosystems and their ability to support human life, health, and economy. Primarily spurred by the Internet, the public also has better access to information on the environmental performance and compliance history of companies and facilities. Information can shift public and customer expectations, increasing pressures for behavior change. Increasing pressures for corporate transparency are also creating incentives for companies to become better stewards.
 - Shifting public expectations affect purchasing and investment decisions. Interviewees indicated that the power of the marketplace can be significant in driving stewardship behaviors, particularly when environmental externalities and risk are incorporated into prices and valuation.

Important factors are compelling stewardship behaviors among individuals and communities:

- As mentioned above, the public has greater access to information and scientific evidence about the status of ecosystems globally and in their local community.
- People are increasingly making the connection between environmental quality and quality of life. There has been a significant increase in community-based organizations that are working to protect and restore local water bodies, parks, and other natural resources. Other community based organizations are working to reduce sprawl and traffic congestion.
- For some individuals, altruism or their belief system may inspire them to assume additional stewardship responsibility.
- Environmental education has played a key role in raising awareness of environmental stewardship among young people, although there has been a recent trend away from environmental education due to the increasing focus on core curriculum among most schools as a result of the federal No Child Left Behind legislation. Interviewees reported that many environmental education centers have not effectively linked environmental education curriculum to core curriculum used for test preparation.

Stakeholders identified a number of barriers to stewardship behaviors. Important factors constraining corporate environmental stewardship include:

- While there is growing pressure for corporations to become better corporate citizens and to improve environmental performance, most consumers make specific purchasing decisions on price and performance, not environmental criteria. Most "green" products have failed to capture consumer imagination or market share in a way that allows companies to realize marketing advantage. Mainstream product marketers often actively

steer away from selling environmental benefits of products, since most consumers still perceive “green” products as more expensive and of inferior quality.

- Investors and financial institutions are only beginning to value environmental performance and stewardship behaviors, and what’s measured and valued by capital market institutions drives shapes corporate direction and priorities.
- Measuring stewardship behavior and performance can be difficult. Accepted methodologies for valuing social and environmental impacts and costs, and the value and outcomes of stewardship behaviors are only beginning to emerge.
- Many government programs designed to assist companies to become better environmental stewards are not customer-focused. The sheer number of EPA programs and initiatives, and the difficulty of navigating these programs to find relevant technical assistance.

Interviewees also noted that there are important factors constraining individuals’ environmental stewardship behaviors, which need to be understood and addressed.

- Some interviewees noted that the challenge is not lack of awareness or caring, but rather a perception that small actions do not make a difference. Most individuals are not willing to make major shifts in lifestyle, or to accept significant cost or quality penalties when making purchasing decisions, to be better environmental stewards.
- Other interviewees noted that it is not possible or wise to talk about universal barriers to behavior change, as the specific barriers that are most salient vary. Research is needed to better understand the barriers to specific stewardship behaviors, since our assumptions about barriers are often wrong. For example, what are the biggest barriers which prevent people from properly disposing of hazardous household waste? What are the biggest barriers that cause people to buy more paint than they need?
- Other interviewees noted that people do not always see how environmental quality information and environmental issues connect to them, their families, their health, their quality of life. They indicate that efforts to make the people-environment connection more transparent are needed. Increasing recognition of the value of ecosystem services and the ability of ecosystems to provide these services would be useful.

C.4 EPA AND ENVIRONMENTAL STEWARDSHIP

The approach that EPA takes to defining and pursuing “environmental stewardship” should reflect what the agency is interested to accomplish with the term. Interviewees made several suggestions of ways that EPA might want to think about defining and pursuing environmental stewardship, including: -

- Stakeholders advised EPA to avoid creating the perception that environmental stewardship is just another “flavor-of-the-month.” EPA should think hard about the potential value of using the concept of environmental stewardship to organize or guide agency activities. In particular, what does the concept of environmental stewardship

enable the agency to accomplish that it cannot address through current initiatives, language, and organizing concepts?

- Some interviewees noted that a definition that was allowed to be “all things to all people” doesn’t really set a direction.
- Some stakeholder interviewees also emphasized that, to the extent stewardship is used to address business activity, there is a need to put appropriate boundaries on any environmental stewardship initiative such as “consistent with sound science and risk management and sound fiscal responsibility” so that stewardship would not become a standardless ideal that, therefore, no company could achieve.
- If EPA is interested to use the concept of environmental stewardship to influence behaviors of the mainstream public, several interviewees indicated that a simpler, more compelling version of the definition is needed. For example, “We all need to accept the responsibility to be good environmental stewards, safeguarding nature’s ability to support our health and livelihoods and ensuring that the air, water, land, and natural systems can sustain the health and prosperity of our children and grandchildren while enabling them to experience the majesty and beauty of nature.” Some interviewees suggested that EPA might want to consider developing a compelling example or analogy to clearly articulate the concept of environmental stewardship.
- Some interviewees were interested in the aspirational nature of a stewardship conversation, and the ways that the concept of stewardship might permeate both organizational and individual decision making.
- Some interviewees noted that current public perceptions of EPA and the federal government’s commitment to improving environmental quality may lead many stakeholders and segments of the public to be skeptical of the concept of environmental stewardship if it is interpreted as government abdicating its responsibility for environmental protection or its role as a guardian of the public interest and the “commons.”

Stakeholder and expert interviewees both indicated that many of EPA’s current activities and programs support and encourage environmental stewardship. EPA plays a vital and critical role in establishing minimum performance expectations through regulations and enforcement. EPA also plays a critical role in conducting and supporting research and disseminating information of the status of environmental quality and performance. Experts noted that these functions provide a foundation for stewardship behavior, and the focus attention of areas needing additional stewardship attention. At the same time, many of EPA’s voluntary and educational programs are providing tools, resources, and incentives to support stewardship behaviors that are not possible, at least at this time, to require through regulatory means. EPA increasing role in convening collaborative processes to restore and protect ecosystems was identified as critically important to fostering a broad-based stewardship agenda and ethic. EPA is also helping to raise the visibility of important stewardship issues and opportunities, such as smart growth and environmental awareness among financial markets.

Stakeholders also had suggestions about how their stewardship efforts might be more effectively supported or encouraged by EPA. These include:

- Clarifying where the statutory authority to focus on stewardship comes from, in anticipation of questions from potential critics.
- Creating a clear definition of environmental stewardship, and how stewardship behaviors might differ from current ways of acting.
- Focusing more of the Agency's voluntary initiatives on small and mid-sized businesses, where technical assistance often is most needed.
- Improving integration and coordination of the Agency's voluntary programs and creating a more "customer-focused" orientation. (Note: a similar suggestion was made by experts interviewed.)
- Avoiding the perception or appearance of a disconnect between the aspirations of stewardship and agency actions, particularly in the program offices. Any such disconnect would undermine the agency's stewardship efforts and inhibit its ability to inspire stewardship in others, especially the public. EPA's work to establish an environmental stewardship agenda should demonstrate that the agency is serious, and should avoid disconnects between the agency's public stance on stewardship and the individual actions of the media programs.
- Target investments in exploring actual implementation of stewardship behaviors, particularly those where outcomes can be measured.

Interviewees in the expert category offered a number of views about actions EPA might take to foster environmental stewardship. These include:

- Helping to understand the true barriers and benefits associated with specific stewardship behaviors. Through the increased use of social marketing research and expertise, EPA can greatly improve state and local efforts to encouraging specific stewardship behaviors among the general public or targeted populations.
- Acting as a convener of public dialogue on stewardship issues and actions that companies, individuals, and governments can take, and using the "bully pulpit" to publicize and call for successful stewardship approaches.
- Increasing the understanding of how economics can work harmoniously with ecosystems – reducing the false sense of choice between a healthy economy and a healthy environment.
- Increasing the understanding of the natural environment and the dependence that all people have on the natural environment. This will help increase the understanding of how to accurately value ecosystems both in a monetary sense and in the sense of public mores. In related comments, interviewees also emphasized the important role EPA might play in

supporting efforts to develop methods for incorporating full environmental costs into product pricing.

- Continuing to create the floor, the baseline, of environmental protection through regulatory and enforcement programs and through support of state environmental programs, while at the same time offering incentives to move beyond minimum standards. Some interviewees discussed this as creating an appropriate balance of “carrots” and “sticks;” at the same time, the majority of interviewees in the expert category emphasized that government’s role in setting and enforcing minimum standards and expectations is a critical part of establishing the conditions for stewardship behaviors.
- Taking up the potential difficulties associated with the underlying economic assumption that “all growth is good.” Some growth may not be good from an environmental standpoint and government may, over time, need to consider approaches that set an upper limit on overall consumption but then let markets allocate the constrained resources, similar to cap and trade approaches.
- Considering approaches to reduce in a fundamental way the amount of material throughput in the economy – that is, to limit the amount of extraction, depletion, and pollution inherent in particular material flows.
- Developing policies that encourage people to farm and that increase the number of small farms that operate in harmony with nature – protecting land from erosion, nutrient depletion, and contamination.
- Reaching out to the education community to incorporate environmental and stewardship based curriculum elements into ongoing efforts to define minimum educational expectation and to help educators understand how environmental and stewardship based curriculum might contribute to student success and testing program requirements.
- Packaging voluntary programs and agency resources so that they are conveniently accessible to users rather than, as is currently the case, organized according to EPA’s internal programmatic structure. Some suggested a quick, easy to complete profile that businesses (or individuals) could fill out, that would result in them receiving a tailored menu of EPA programs that might be of interest.
- Leading by example with respect to federal government purchasing and infrastructure.

C.5 EXPERT INTERVIEW LIST

1. Ray Anderson, Interface Carpets
2. Herman Daly, University of Maryland
3. Don Hudson, Chewonki Foundation
4. Wes Jackson, Land Institute
5. Matthew Kiernan, Innovest Strategic Value Advisors
6. Reid Lifset, Yale University
7. Mindy Lubber, CERES

-
8. Joel Makower, Greenbiz.com
 9. Doug McKenzie-Mohr, Community Based Social Marketing

C.6 STAKEHOLDER INTERVIEW LIST

1. Marcia Aranoff, Environmental Defense
2. Bill Becker, STAPPA/ALAPCO
3. George Carpenter, Procter & Gamble
4. Don Chen, Smart Growth America
5. Chuck Clarke, Seattle Public Utilities
6. Steve Hellem, GEMI
7. David Paylor, State of Virginia
8. Mark Van Putten, ConservationStrategy LLC (formerly President, National Wildlife Federation)
9. Terry Williams, Tulalip Tribes Natural Resources Department

APPENDIX D: STEWARDSHIP RESOURCE OUTCOME STATEMENTS

Effective environmental stewardship requires all of us to manage resources in ways that protect and enhance – rather than compromise – the ability of future generations to meet their own needs. Resources directly relate to the multi-media environment we protect, the underlying causes of the environmental problems we address, and the solutions we develop. EPA will encourage stewardship activities contributing to sustainable outcomes in six resource areas: air, ecosystems, energy, land, materials, and water. Proactively supporting innovations to protect, conserve, and enhance these resources will enable us to contribute to the well being of both people and the natural environment over the long run.

- **Air:** Sustain clean and healthy air
- **Ecosystems:** Protect and restore ecosystem functions, goods, and services
- **Energy:** Generate clean energy and use it efficiently
- **Land:** Support ecologically sensitive land management and development
- **Materials:** Use materials carefully and shift to environmentally preferable materials
- **Water:** Sustain water resources of quality and availability for desired uses

Because these six resources are each part of a larger, life-sustaining system, the stewardship of any single resource inevitably influences the quality or availability of others. A closer look at “materials stewardship” illustrates this interdependence: Through green design, lifecycle management, conservation, and recycling of materials and products, environmental stewardship can (1) protect ecosystems affected by resource extraction and waste disposal; (2) avoid pollution of water, land, and air associated with materials production, transportation, or use; and (3) conserve water and energy consumed in production, transportation, or use. In order to maximize “compounded returns” such as these, EPA’s strategy explicitly encourages stewardship activities among the six resource areas that are mutually enhancing.

Our goal is to support infrastructure and encourage activities that inspire commitment to environmental stewardship at all levels of public and private society. We aim to stimulate a wide variety of stewardship activities that will not only yield immediate, localized benefits but will also confer large-scale regional and national benefits that will leave a lasting legacy for future generations.

D.1 AIR: SUSTAIN CLEAN AND HEALTHY AIR

Clean air is an essential resource for healthy people and ecosystems. Clean and healthy air necessarily encompasses indoor and outdoor breathing environments for people, animals, and plants. Energy production and use has a major influence on the breathing environment in the

form of emissions from cars, trucks, and power plants. Additionally, emissions from other sources such as manufacturing, agriculture, and waste incineration can also affect our air quality.

The air and atmosphere provide many services besides healthy breathing. For example, the hydrologic cycle is intimately connected with atmospheric circulation patterns, and consequently, acid rain links air pollution to negative affects on forests, soils, water bodies, and urban structures. In the upper atmosphere, air also plays various protective roles. Stratospheric ozone provides an irreplaceable service to human and ecosystem health by filtering the sun's harmful rays. Meanwhile, appropriate concentrations of greenhouse gases in the atmosphere help to regulate the climate system upon which our society depends.

D.2 ECOSYSTEMS: PROTECT AND RESTORE ECOSYSTEM FUNCTIONS, GOODS, AND SERVICES

Ecosystems are self-organized, geographic mosaics of interacting living and non-living components. Ecosystem goods & services are derived from the structure and function of these interacting components. As noted by the National Academy of Sciences, "Human society is dependent on the 'goods and services' provided by ecosystems, including clean air, clean water, productive soils, and generation of food and fiber." This list could be expanded to include flood mitigation, nutrient recycling in wetlands and streams, climate regulation, and the provision of valuable genetic resources. In addition to providing goods and services for human society, ecosystems provide animal habitat and aesthetic beauty.

Conserving and enhancing ecosystems for current and future generations requires adaptive management approaches. We can work to protect ecosystems in their entirety by further integrating our expertise in specific media areas such as air, land, and water and incorporating an understanding of biodiversity and native flora and fauna. We can play an important supporting role in developing methods for people at all levels of society and governance to help them understand and protect ecosystem function over the long term.

D.3 ENERGY: GENERATE CLEAN ENERGY AND USE IT EFFICIENTLY

Our modern American society needs energy for transportation, manufacturing, commercial, and residential purposes. Energy production and use impacts our environment at every stage of its lifecycle – from extraction of fuels and generation of power to the use of electricity and gasoline. From a life-cycle standpoint, Americans also consume energy in the form of imported products, since other countries must use energy to manufacture and transport their exports.

Of the numerous types of energy resources, each has unique environmental risks and benefits; some are cleaner and more renewable than others. Clean generation minimizes waste, pollution, and ecosystem damage on local, regional, and global scales. Greenhouse gas emissions and climate change have further crystallized the need to move toward abundant energy resources that are renewable, clean, and ecosystem friendly. As we undergo this transition, it is important that we continually improve energy conservation, efficiency, and effective use so that we increase societal benefits per unit of energy consumed.

D.4 LAND: SUPPORT ECOLOGICALLY SENSITIVE LAND MANAGEMENT AND DEVELOPMENT

Abundant and high-quality land has long been one of our nation's most valuable natural resources. Therefore, encouraging stewardship ethics and behaviors among landowners is important for long-term environmental protection. Long-term stewardship of land – in the form of preservation, conservation, restoration, and responsible economic development – will help protect ecosystem function and enable beneficial human use. Continuous improvement of land management practices should protect watersheds, conserve critical habitats, restore contaminated lands to ecological and economic use, encourage prudent waste management practices, and incorporate the principles of “smart growth.”

The way we manage our land influences every other resource. For example, developing suburban and “exurban” land without provision of mixed land uses and transportation alternatives can compound traffic congestion (an energy implication) and air pollution. Additionally, most substances that we use on urban lands and rooftops eventually find their way into our waterways, where they join rural pollutants such as eroded soils, fertilizers, manures, and pesticides. Greater use of “buffer zones” and permeable surfaces reduces erosion and runoff and also allows more pollutants to filter naturally through vegetation and soil.

D.5 MATERIALS: USE MATERIALS CAREFULLY AND SHIFT TO ENVIRONMENTALLY PREFERABLE MATERIALS

Enhancing materials stewardship has three main aspects: (1) careful use of non-renewable materials throughout product lifecycles (extraction, processing, product manufacture, product use, product reuse/ recycling/ disposal); (2) sustainable use of renewable materials throughout product lifecycles; and (3) moving from toxic towards safer chemicals and environmentally preferable materials.

Products can be designed, manufactured, used, and returned to the industrial or natural cycle for reuse and recovery, with safer chemicals and environmentally preferable materials chosen everywhere feasible along the way. A systems understanding of the flow of materials through product lifecycle and associated toxicological effects, as well as water and energy consumption, informs continuous improvement including the next generation chemical synthesis, materials development, and product design. Materials cycling enables materials to be carefully used through several product lifecycles. Some materials (particularly non-renewable materials) are best recycled by industry. Others (particularly renewable materials) are appropriately designed to biodegrade and return nutrients to improve the land without causing contamination or compromise.

D.6 WATER: SUSTAIN WATER RESOURCES OF QUALITY AND AVAILABILITY FOR DESIRED USES

Sustaining long-term quality and availability of water resources will directly enhance human and ecosystem health. Effective stewardship of water at all levels of society requires an integrated approach to continuously (1) increase informed use, (2) improve our water efficiency, (3) minimize impacts on hydrologic systems, and (4) ensure clean water.

First, informed use of water resources is founded on a realistic understanding of the geographic constraints on water availability and quality; these constraints should shape our conservation strategies and practices. Second, innovative products, processes, and systems can dramatically improve the efficiency with which we use water in all aspects of our lives – whether in residential, industrial, or agricultural settings. For example, since we consume about 40% of our fresh water in producing energy, improved energy efficiency would confer dramatic benefits for water as well. (And conversely, conservation of water leads to benefits for energy through reductions in requirements, such as for pumping and water treatment.) Third, minimizing alterations to our hydrologic environment means that, wherever possible, we choose to use water in ways that protect and restore ecosystem functions and replenish the quality and availability of long-term water supplies. Finally, and we must ensure clean water that supports healthy drinking, recreation, and a productive and diverse natural environment.

APPENDIX E: SOME DEFINITIONS OF STEWARDS AND STEWARDSHIP

Webster's New World Dictionary

"steward [ME. stiward < OE. stiweard < stig, enclosure, hall, sty + weard, a keeper, ward] 1. A person put in charge of the affairs of a large household or estate...."

President George W. Bush, Earth Day, 2002

"Good stewardship is a personal responsibility of all of us. And it's a public value. And that's what's important for Americans to understand, that each of us have the responsibility, and it's a part of our value system in our country to assume that responsibility."

White House Office of the Federal Environmental Executive

"We define sustainable environmental stewardship to include those concepts, strategies, tools, practices, and approaches that lead to environmental improvement in a manner that is sustainable over time, considers the long term effects as well as the shorter term, more immediate effects, and that contributes positively, even if indirectly, to the social and economic condition."

EPA Strategic Plan - Goal 5

"EPA uses the term "environmental stewardship" to describe behavior that includes, but also exceeds, required compliance. Stewards of the environment recycle wastes to the greatest extent possible, minimize or eliminate pollution at its sources, and use energy and natural resources efficiently to reduce impacts on the environment."

EPA Annual Report (FY2004) - Goal 5

"Strong environmental stewardship protects the environment and conserves natural resources. EPA works directly with the regulated community to recognize and encourage outstanding environmental leadership and performance through innovative programs...."

EPA: "Beyond RCRA - Waste and Materials Management in the Year 2020"

"What kind of world will we actually inhabit in 2020? Some predict that it will be better than the present - where products and materials will be less toxic and reusable, and where resources will be used more efficiently so that far less waste is produced. Others predict we will experience a bleaker future - where harmful chemicals will be more prevalent throughout our environment and may seriously affect groundwater, drinking water, and food supplies. While we can't know which of these scenarios - or others - will exist in 20 years, considering the future now makes sense if we want a chance to shape it positively."

EPA National Center for Environmental Innovation (NCEI) Retreat Session: Corporate Stewardship and Responsibility

"Corporate stewards are generally expected to provide environmental and public health protections beyond what is required by the law and to integrate environmental considerations into their business decision-making.... 'Stewardship' generally refers to taking responsibility for the long run well-being of an organization or resource, such as the environment."

E4E: The Environmental Protection System in Transition - Toward a More Desirable Future

“Corporate environmental stewardship is an approach to managing a company that reflects an internal set of values and priorities that takes into account society’s concern for the environment. It is a way of identifying and pursuing good business strategies that are consistent with protection of the environment, from raw materials selection to manufacturing processes to product composition to disposal. It entails the more efficient use of materials through increased knowledge and information concerning inputs, and focuses attention on the life cycle of a product and the services that product provides in addition to (or in lieu of) the more traditional focus on producing and selling a product. Stewardship holds the potential for decreasing a company’s environmental impact, increasing operational and economic efficiencies, and improving financial performance. In effect, stewardship allows firms to derive business value from environmental excellence.”

PCSD: Sustainable America - A New Consensus

“Goal 5: Stewardship - Create a widely held ethic of stewardship that strongly encourages individuals, institutions, and corporations to take full responsibility for the economic, environmental, and social consequences of their actions.”

Aldo Leopold: A Sand County Almanac

“In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.”

The Massachusetts Environmental Stewardship Program

The Massachusetts Environmental Stewardship Program encourages “environmental improvement through pollution prevention and resource conservation. The purpose of the Program is to encourage Massachusetts manufacturers and other regulated entities to become superior environmental performers by going beyond the requirements of environmental regulation as they strive toward sustainability”

University of Michigan

“Everyone is a steward of the environment around us. We do not own the environment—no one can. We are simply caretakers of the resources that we use in our daily lives, and it is our responsibility to administer those resources to the best of our abilities so they are available for the use and enjoyment of others, including future generations. Stewardship is what we do.... Simply put, stewardship is the concept of responsibly managing all of our resources for the benefit of present and future generations of people, plants, and animals.”

3M Corporation

“3M’s commitment is to actively contribute to sustainable development through environmental protection, social responsibility and economic progress. To us that means meeting the needs of society today, while respecting the ability of future generations to meet their needs.”

“A few of 3M’s key objectives around sustainable development include:

- Reducing our environmental footprint.

-
- Assuring our products are safe for their intended use through their entire life cycle.
 - Assuring the appropriate management of any 3M health and safety issues that may touch customers, neighbors and the public.
 - Maintaining a safe and healthy workplace.
 - Satisfying our customers with superior quality and value.
 - Providing a supportive, flexible work environment.
 - Supporting local needs and education in communities where 3M employees live and work.”

Baxter International

“Baxter takes seriously its commitment and responsibility to produce life-enhancing products while limiting their impact on the environment and society. This responsibility continues throughout a product’s lifecycle, from research, development and design, through selection and use of raw materials, manufacturing, packaging, distribution and product use and disposal. Baxter is continually seeking opportunities for improvement and innovation in this area.

- *Non-hazardous Waste*: For the second year in a row, Baxter generated less non-hazardous waste than it did the year before. Baxter has achieved a 27 percent reduction on a per-unit-of-production-value basis since 1996.
- *Regulated Waste Performance*: On a per-unit-of-production-value basis, Baxter reduced hazardous waste generation by 9 percent and achieved an 8 percent reduction since 1996.
- *Packaging Performance*: Baxter is on-target to meet or exceed its goal to reduce packaging material by 20 percent by year-end 2005, compared to the 1995 baseline.
- *Water*: Baxter has not formally adopted a companywide water use reduction goal. In the face of a nearly 8 percent increase in production, water usage remained constant in 2003 compared to 2002. Baxter has reduced its water usage by 18 percent per unit of production value since 1996.
- *Air*: Baxter has achieved its air goal, an 80 percent reduction on a per-unit-of-production-value basis in toxic emissions in 2001. Since 2001 Baxter has further reduced air emissions by an additional 10 percent
- *Reducing Energy Use and Associated Greenhouse Gas Emissions*: In 2003 Baxter achieved a savings and cost-avoidance of approximately \$3.9 million. On a per-unit-of-production-value basis, the company improved overall company energy efficiency an additional 3 percent from 2002 to 2003.”

Johnson & Johnson

“Johnson & Johnson has established a leadership role among multinational corporations in terms of ethical behavior and stewardship of the environment. We take a beyond compliance approach to environmental responsibility striving for performance that does not merely comply with regulations but reduces our environmental footprint.”

“Johnson & Johnson is committed to:

- *Operating beyond compliance* with all applicable laws and regulations by uniformly meeting Johnson & Johnson global environmental policies and standards, ISO 14001 environmental management system standards, and other voluntary principles to which we subscribe.
- *Maintaining structure* at the corporate and operating companies that assures proper oversight, using environmental accountability as a measure for management performance.

-
- *Integrating environmental goals* into our business strategies and plans while publicly reporting on our progress.
 - *Striving for zero waste*, 100% resource efficiency, and enhancement of the environment.
 - *Utilizing innovative technologies* and leveraging best practices globally for the greatest environmental gain and continuous improvement.
 - *Fostering an environmental ethic* among our management, employees, stockholders, customers, suppliers and communities worldwide.
 - *Building relationships* with regulatory agencies, interest groups, thought leaders, and communities to engender collaboration, cooperation, and mutual understanding.
 - *Enhancing corporate social responsibility* by supporting environmental health and education, conservation and community-based programs worldwide.”

Rockwell Collins

“Rockwell Collins is committed to responsible environmental, safety and health management wherever it does business around the world. We have established goals to provide a safe and healthful workplace for all employees and to prevent pollution in the communities in which we operate. Environment, safety and health is an integral part of managing our business and serves the enterprise as a competitive business advantage. Through continual improvement programs, we strive to exceed environmental, safety and health regulatory requirements, enhance our environmental, safety and health management processes, and establish voluntary environmental, safety and health programs at our facilities worldwide.”

APPENDIX F: SUPPLEMENTARY INFORMATION FOR THE CRITICAL ASSESSMENT

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Adopt your Watershed	VP	OW	Water	Individuals
AgStar	VP	OAR	Air	Business
Air Challenge for Performance Track Facilities-Region 2	VP	Region 2	Air	Business
Air Challenge for Performance Track Facilities-Region 3	VP	Region 3	Air	Business
Air Challenge for Performance Track Facilities-Region 6	VP	Region 6	Air	Business
America's Marketplace Recycles	VP	OSWER	Materials	Business
Anacostia Watershed Toxics Alliance	VP	Region 3	Water	Communities
Atlantic Station XL Project	VP	Region 4	Land Uses	Communities
Atmospheric Protection Branch	VP	ORD	Air	Business
Bartow County EMS	VP	Region 4	Multiple Resource Areas	Communities
Best Workplaces for Commuters	VP	OAR	Air	Individuals
Brownfields Federal Partnership	VP	OSWER	Land Uses	Government
Buncombe County XL Project	VP	Region 4	Land Uses	Government
Businesses for the Bay (B4B)	VP	Region 3	Water	Business
Carpet America Recovery Effort	VP	OSWER	Materials	Business
Charlotte Harbor, Mobile Bay, Tampa Bay, Indian River Lagoon, Albemarle/Pamlico, and Sarasota Bay National Estuary Programs	VP	Region 4	Water	Communities
Chesapeake Bay Program: Builders for the Bay	VP	Region 3	Water	Business
Children's Environmental Health Awards	VP	OCHP	Multiple Resource Areas	Communities
Citizen-Based Water Quality Monitoring	VP	Region 9	Water	Communities
Clean Marine Engine Initiative	VP	Region 1	Water	Business
Clean Water Act Recognition Awards	VP	OW	Water	Communities
Climate Leaders	VP	OAR	Air	Business
Coal Combustion Products Partnership (C2P2)	VP	OSWER	Land Uses	Business
Coalbed Methane Outreach Program (CMOP)	VP	OAR	Air	Business
Coastal America	VP	OW	Water	Government
Collaborative Cleanups for Land Revitalization	VP	OSWER	Land Uses	Communities
Combined Heat and Power Partnership	VP	OAR	Air	Business
Community Involvement in Drinking Water Assessment (The Clean Water Coalition)	VP	OW	Water	Communities
Corporate Wetlands Restoration Partnership (CWRP)	VP	Region 1	Ecosystems	Government

Stakeholder groups are identified for all partnership (indicated here as “voluntary”) programs, but not for all grant and information/education programs. Unlike partnership programs, which are expressly designed to address specific stakeholders, grant and information/education programs can interact with and provide benefits to a range of parties. As a result, we decided to terminate further attempts to assign these programs to specific stakeholder groups.

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Louisville MSD XL Project	VP	Region 4	Ecosystems	Communities
Mercury Program- Dental Amalgam	VP	OSWER	Land Uses	Business
Mercury Program- Products	VP	OSWER	Materials	Business
Mid-Atlantic Federal Partners for the Environment	VP	Region 3	Ecosystems	Government
Mine Scarred Lands Initiative	VP	OSWER	Land Uses	Communities
Mobile Air Conditioning Climate Protection	VP	OAR	Air	Business
National Award for Smart Growth Achievement	VP	OPEI	Land Uses	Government
National Environmental Performance Track	VP	OPEI	Multiple Resource Areas	Business
National Partnership for Environmental Priorities	VP	OSWER	Land Uses	Business
Natural Gas Star	VP	OAR	Air	Business
Natural Landscaping Workgroup	VP	Region 5	Land Uses	Communities
Nitrogen Management Challenge for Golf Courses	VP	Region 2	Water	Business
Orphan Sources Initiative	VP	OAR	Materials	Government
Partnership for Safe Water	VP	OW	Water	Business
PFC Emission Reduction Partnerships	VP	OAR	Air	Business
Plug-In To eCycling	VP	OSWER	Materials	Business
Portfields Initiative	VP	OSWER	Land Uses	Communities
President's Environmental Youth Awards	VP	OPA	Multiple Resource Areas	Individuals
Public Private Partnership for Land Revitalization	VP	OSWER	Land Uses	Business
RCRA Reuse and Brownfields Prevention Initiative	VP	OSWER	Land Uses	Communities
Region 4 Environmental Education Speakers Bureau	VP	Region 4	Multiple Resource Areas	Individuals
Region 5 PCB Phasedown	VP	Region 5	Materials	Business
Regional Clean Air Incentives Market (RECLAIM)	VP	Region 9	Air	Business
Regional Pesticides Stewardship Collaborative Committee	VP	Region 4	Materials	Business
Regional Vulnerability Assessment (ReVA) Program	VP	ORD	Multiple Resource Areas	Government
Regional/CDC University Outreach on Environmental Health	VP	Region 4	Multiple Resource Areas	Business
Resource Conservation Challenge	VP	OSWER	Land Uses	Business
Schools Chemical Cleanout Campaign	VP	OSWER	Materials	Communities
Schuylkill Action Network	VP	Region 3	Water	Communities
Sector Strategies	VP	OPEI	Multiple Resource Areas	Business
SEQL	VP	Region 4	Land Uses	Communities
SF-6 Emission Reduction Partnership for Electric Power Systems	VP	OAR	Air	Business
SF-6 Emission Reduction Partnership for the Magnesium Industry	VP	OAR	Air	Business
Smart Growth Program	VP	OPEI	Land Uses	Communities
Smart Way Transport	VP	OAR	Air	Business

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Southeast Diesel Collaborative	VP	Region 4	Air	Business
Southeast Ecological Framework	VP	Region 4	Ecosystems	Government
Southern Appalachian Man and the Biosphere	VP	Region 4	Ecosystems	Communities
State Transportation and Air Quality	VP	Region 4	Air	Business
SunWise School Program	VP	OAR	Air	Individuals
Superfund Redevelopment Program	VP	OSWER	Land Uses	Communities
Sustainable Ag Partnership	VP	Region 9	Materials	Business
Sustainable Environmental Systems	VP	ORD	Multiple Resource Areas	Government
Sustainable Futures	VP	OPPTS	Materials	Business
Technical Outreach Services for Communities	VP	OSWER	Land Uses	Communities
Tribal Center for Excellence	VP	Region 4	Multiple Resource Areas	Government
Tribal Pesticide Project	VP	Region 4	Materials	Government
Trust for Public Land	VP	OW	Land Uses	Communities
Vernal Pools Stewardship Program	VP	Region 9	Ecosystems	Government
Voluntary Aluminum Industrial Partnership	VP	OAR	Air	Business
Voluntary Children's Chemical Evaluation Program	VP	OPPTS	Materials	Business
Voluntary Chlor-alkali Industry Mercury Program	VP	Region 5	Air	Business
Voluntary Mercury Air Emission Reduction Program with Nevada Gold Mines	VP	Region 9	Air	Business
WasteWise	VP	OSWER	Land Uses	Communities
Water Source Book education program	VP	Region 4	Water	Individuals
Water Use Efficiency Program	VP	OW	Water	Individuals
Watershed Academy Web-Based Training	VP	OW	Ecosystems	Government
Watershed/Water Drop Patch Project	VP	OW	Ecosystems	Individuals
Air Pollution Training Institute	I	OAR	Air	
AirData Web Site	I	OAR	Air	
American Indian Air Quality Training Program	I	OAR	Air	
An Introduction to Drinking Water Source Assessment & Education, Guide and Participant Materials	I	OW	Water	
Annotated Bibliography of Source Water Materials	I	OW	Water	
Asbestos Outreach	I	OPPTS	Materials	
Backyard Burning Web Site	I	OSWER	Air	
Battery Recycling web site -consumers	I	OSWER	Materials	
Biodiversity Education Network	I	OPA	Ecosystems	Individuals
Building for Environmental and Economic Sustainability	I	OPPTS	Materials	
Capacity Building in the Columbia River Basin	I	OPA	Water	Government

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Chemical Management Services for Schools	i	OSWER	Materials	
Chemical Safety Network Materials	i	OSWER	Land Uses	
Chemicals in My Community	i	OSWER	Land Uses	
ChemSTEER: Software Tool for Screening Level of Estimates of Environmental Releases and Worker Exposure	i	OPPTS	Materials	
Children's Health Protection: What You Can Do	i	OCHP	Multiple Resource Areas	
Citizens Guide to Community Water Conservation	i	OW	Water	
Citizens Guide to Pest Control and Pesticide Safety	i	OPPTS	Materials	
Cleanups In My Community	i	OSWER	Materials	
Community Air Screening How To Guide	i	OPPTS	Air	
Community-based childhood asthma programs	i	OAR	Air	
Community-based radon reduction	i	OAR	Air	
Composting/Organics web site and publications	i	OSWER	Land Uses	
Concerned Citizen Web Page	i	Collection of agency-wide info	Multiple Resource Areas	
Consider the Source: Pocket Guide to Protecting Drinking Water	i	OW	Water	
Consumer Handbook for Recycling Solid Waste	i	OSWER	Land Uses	
Contaminated Sediments in Our Waterways: Impacts and Solutions	i	OSWER	Land Uses	
Customer Incentives for Water Conservation - A Guide	i	OW	Water	
Deconstruction and Reuse web site and publications	i	OSWER	Land Uses	
Drinking Water Academy	i	OW	Water	Government
Drinking Water for Kids	i	OW	Water	
Earthcare Program	i	OPA	Multiple Resource Areas	Individuals
eGrid	i	?	Multiple Resource Areas	
Environmental Education and Training Partnership	i	OPA	Multiple Resource Areas	
Environmental Education Video Program	i	OSWER	Multiple Resource Areas	
Environmental education website	i	OPA	Multiple Resource Areas	
Environmental Kids Club	i	OPA	Multiple Resource Areas	
Environmental Tobacco Smoke/Smoke-Free Homes	i	OAR	Air	
EPA Student Center	i	OPA	Multiple Resource Areas	
Evaluation Exposures to Toxic Air Pollutants: A Citizen's Guide	i	OAR	Air	
Exposure Assessment Tools and Models	i	OPPTS	Air	
Extended Product Responsibility/Product Stewardship web site	i	OSWER	Land Uses	
Federal Task Force on Environmental Education	i	OPA	Multiple Resource Areas	
Fundamentals of Superfund: A Public Awareness Workshop	i	OSWER	Land Uses	

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Getting In Step: Guide for Conducting Watershed Outreach	I	OW	Ecosystems	
Global Warming Education Program/Visitor Center	I	OAR	Air	
Global Warming Visitor Center for Concerned Citizens	I	OAR	Air	
Green Power Locator	I	OAR	Energy	
Green Vehicle Guide	I	OAR	Air	
Healthy Environments and Living Places for Kids	I	Region 6	Air	Individuals
Healthy School Environments Web Site	I	OCHP	Multiple Resource Areas	
High School Environmental Center	I	OPA	Multiple Resource Areas	
Household Hazardous Wastes Web Site	I	OSWER	Materials	
How Can I Help Protect Drinking Water	I	OW	Water	
Human Health Pesticides Issues Website	I	OPPTS?	Materials	
Improving Air Quality through Land Use Activities	I	OAR	Air	
Improving Education Programs and U.S. Nature and Environmental Centers	I	OPA	Multiple Resource Areas	Communities
Jobs Through Recycling web site	I	OSWER	Land Uses	
Lake Michigan Watershed Academy - R5	I	Region 5	Ecosystems	
LCAccess	I	ORD	Materials	
Learning and the Environment	I	OPA	Multiple Resource Areas	Communities
Make a Difference Campaign	I	OSWER	Multiple Resource Areas	
Managing and Collecting Used Oil	I	OSWER	Land Uses	
National Environmental Education Advisory Council	I	OPA	Multiple Resource Areas	
National Environmental Education and Training Foundation	I	OPA	Multiple Resource Areas	
National Network for Environmental Management Studies (NNEMS) Fellowships	I	OPA	Multiple Resource Areas	
National Waste Minimization Web site, tools and publications	I	OSWER	Land Uses	
Non-formal Environmental Education Evaluation	I	OPA	Multiple Resource Areas	
Non-point Source Pollution Outreach	I	OW	Water	
Notebook on Local Urban Air Toxics Assessment and Reduction Strategies	I	OAR	Air	
OAQPS Education and Outreach Program	I	OAR	Multiple Resource Areas	
OEE Environmental Education Program	i	OPA	Multiple Resource Areas	
OnSite OnLine Tools for Site Assessment	I	?	Land Uses	
OSWER Superfund Teachers and Student Web site	i	OSWER	Materials	
Ozone and Your Patients' Health	I	OAWPS	Air	
P3 Student Competition - ORD	I	ORD	Multiple Resource Areas	
Partners in Resource Education - Hands on the Land	i	OPA	Multiple Resource Areas	Individuals

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Pay As You Throw website	I	OSWER	Land Uses	
Pesticide Safety Program	I	OPPTS	Materials	
Planet Protectors Club	I	OSWER	Multiple Resource Areas	
Planning Environmentally Aware Meetings	I	OSWER	Land Uses	
Pollution Prevention Citizen Tips	I	?	Materials	
Power of Change: Protecting the Environment for the Next Generation Campaign	I	OSWER	Multiple Resource Areas	
Power Profiler	I	OAR?	Energy	
Product Stewardship - Where you live	I	OSWER	Materials	
Protect Your Children from Lead Poisoning	I	OPPT?	Materials	
Protecting Drinking Water Workbook for Tribes	I	OW	Water	
Reducing Pesticide Risks Web Site	I	OPPT?	Materials	
Reuse of Abandoned Gas Station Sites	I	OSWER	Land Uses	
Reuse Reports/Planners	I	OSWER	Land Uses	
SAGE - Solvent Alternatives Guide	I	ORD	Materials	
Source Water Protection Local Government Resources	I	OW	Water	
Source Water Stewardship: Guide to Protecting and Restoring Drinking Water	I	OW	Water	
TRACI - Tool for Reduction and Assessment of Chemical and Other Environmental Impacts	I	ORD	Materials	
Tribal Integrated Waste Management Training	I	OSWER	Materials	
USTfields	I	OSWER	Land Uses	
Waste Reduction Record Setters Program	I	OSWER	Land Uses	
Wastes: What You Can Do Around Your Community web site	I	OSWER	Land Uses	
Water Alliance for Voluntary Efficiency (WAVE) Software	I	OW	Water	
Water on Tap: Consumer's Guide to Drinking Water	I	OW	Water	
Watershed Ecological Risk Assessment Training Module	I	OW?	Ecosystems	
Wetlands Education	I	OW	Ecosystems	
What You Can Do Around Your Home and Community Web Site	I	OPA?	Multiple Resource Areas	
What You Can Do to Clean the Air Web Site	I	OAR	Air	
What You Can Do: Office of Transportation and Air Quality Consumer Guide	I	OAR	Air	
Worker Protection Standard Training	I	OPPTS	Materials	
ALTERNATIVE OR INNOVATIVE TREATMENT TECHNOLOGY RESEARCH, DEMONSTRATION, TRAINING, AND HAZARDOUS SUBSTANCE RESEARCH GRANTS	G	OSWER	Materials	

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
American Farmland Trust Cooperative Agreement	G	OPPTS	Materials	Communities
Assessment and Watershed Protection Program Grants	G	OW	Water	
Beach Monitoring and Notification Program Implementation Grants	G	OW	Water	
Biopesticide Demonstration Projects	G	OPPTS	Materials	Business
Brownfields State and Tribal Response Program Grants	G	OSWER	Land Uses	
CARE program	G	multiple Aas	Multiple Resource Areas	Communities
Center for Agricultural Partnerships	G	OPPTS	Materials	Business
Chesapeake Bay Program	G	OW	Water	
Childhood Blood-Lead Screening and Lead Awareness (Educational) Outreach for Indian Tribes	G	OPPTS	Materials	
Clean School Bus USA	G	OAR	Air	Communities
Decentralized Waste Water System Grants	G	OW	Water	Government
Environmental Education and Training Program	G	OPA	Multiple Resource Areas	
Environmental Education Grants and Interagency Agreements Program	G	OPA	Multiple Resource Areas	
Environmental Information Exchange Network Grant Program	G	OEI	Multiple Resource Areas	
Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program	G	OECA	Multiple Resource Areas	
Environmental Justice Small Grant Program	G	OECA	Multiple Resource Areas	
Environmental Policy and Innovation Grants	G	OA/OPEI	Multiple Resource Areas	
Environmental Policy and State Innovation Grants	G	OA/OPEI	Multiple Resource Areas	
Environmental Protection Consolidated Grants - Program Support	G	Region 9/2	Multiple Resource Areas	
Great Lakes Program	G	OW	Water	
Greater Opportunities Research Program	G	ORD	Multiple Resource Areas	
Greater Research Opportunities Fellowship Program	G	ORD	Multiple Resource Areas	
Gulf of Mexico Program Grants	G	OW	Water	
Healthy Communities Grant Program	G	Region 1	Multiple Resource Areas	
Indian Environmental General Assistance Program	G	OW	Multiple Resource Areas	
International Financial Assistance Projects Sponsored by the Office of International Affairs	G	OIA	Multiple Resource Areas	
Lake Champlain Basin Program	G	Region 1/2	Water	
Long Island Sound Program	G	OW	Water	
National Estuary Program	G	OW	Water	
National Nonpoint Source Management Program	G	OW	Water	Business
National Wetland Program Development Grants	G	OW	Ecosystems	

Program Name	Program Type	EPA AAship	Sustainability Outcome	Primary Stakeholder Target
Office of Research and Development Consolidated Research/Training	G	ORD	Multiple Resource Areas	
OSWER Innovation Pilots	G	OSWER	Multiple Resource Areas	
P3 Award: National Student Design Competition for Sustainability	G	ORD	Materials	
Pesticide Environmental Stewardship Program	G	OPPTS	Materials	Communities
Pesticide Environmental Stewardship Regional Grants	G	OPPTS	Materials	
Pollution Prevention Grants Program	G	OPPTS	Materials	
Protection of Children and Older Adults (Elderly) from Environmental Health Risks	G	OA/OCHP	Multiple Resource Areas	
Regional Environmental Monitoring and Assessment Program (REMAP) Research Projects	G	ORD	Multiple Resource Areas	
Regional Wetland Program Development Grants	G	OW	Ecosystems	
Science to Achieve Results (STAR) Fellowship Program	G	ORD	Multiple Resource Areas	
Science to Achieve Results (STAR) Research Program	G	ORD	Multiple Resource Areas	
Small Business Innovation Research	G	ORD	Multiple Resource Areas	Business
Source Reduction Assistance	G	OPPTS	Multiple Resource Areas	
State Indoor Radon Grants	G	OAR	Air	
Strategic Agricultural Initiative	G	OPPTS	Materials	Business
Strategic Agriculture Initiative-Region 4	G	Region 4	Land Uses	
SUPERFUND TECHNICAL ASSISTANCE GRANTS (TAG) FOR COMMUNITY GROUPS AT NATIONAL PRIORITY LIST (NPL) SITES	G	OSWER	Materials	
SURVEYS, STUDIES, INVESTIGATIONS AND SPECIAL PURPOSE GRANTS WITHIN THE OFFICE OF RESEARCH AND DEVELOPMENT	G	ORD	Multiple Resource Areas	
Surveys, Studies, Investigations and Special Purpose Grants Within the Office of the Administrator	G	OA	Multiple Resource Areas	
Surveys, Studies, Investigations, Demonstrations, and Training Grants and Cooperative Agreements - Section 104(b)(3) of the Clean Water Act	G	OW	Water	
SURVEYS, STUDIES, INVESTIGATIONS, TRAINING DEMONSTRATIONS AND EDUCATIONAL OUTREACH	G	OPPTS	Materials	
Targeted Watershed Grants	G	OW	Water	
Water Quality Cooperative Agreements	G	OW	Water	
Water Quality Management Planning	G	OW	Water	
Wetland Program Grants - State/Tribal Environmental Outcome Wetland Demonstration Program	G	OW	Water	

Supplementary information for Figure 4.

EPA Agency-Wide Budget and Voluntary Programs Budget		
Voluntary Programs Budget	\$125,405,270	1.6%
Overall EPA Budget	\$7,874,594,730	98.4%
Total	\$8,000,000,000.00	

Supplementary information for Figure 5.

Distribution of Headquarters Voluntary Programs by Sustainability Outcome	
Sustainability Outcome	Number of Headquarters Voluntary Programs
Air	31
Ecosystems	9
Land Uses	24
Materials	29
Multiple Resource Areas	18
Water	22
Energy	0
Total	133

Distribution of Headquarters Voluntary Program Investments by Sustainability Outcome	
Sustainability Outcome	Total Headquarters Funding
Air	\$89,719,370.00
Ecosystems	\$612,000.00
Land Uses	\$3,438,000.00
Materials	\$17,336,700.00
Multiple Resource Areas	\$10,659,700.00
Water	\$3,639,500.00
Energy	\$ -
Total	\$125,405,270.00

Supplementary information for Figure 6.

Distribution of Voluntary Programs by Stakeholder Type

Stakeholder Type	Number of Voluntary Programs
Business	66
Communities	32
Government	23
Individuals	12
Total	133

Distribution of Headquarters Voluntary Program Investments by Stakeholder Type

Stakeholder Type	Headquarters Funding
Business	\$70,093,770.00
Communities	\$15,335,000.00
Government	\$9,415,500.00
Individuals	\$30,561,000.00
Total	\$125,405,270.00

Supplemental information for Figure 7.

Distribution of Voluntary Programs by Intervention Point

Lifecycle Intervention Point	Number of Headquarters Voluntary Programs
Sustainability	72
Source Reduction	12
End of Pipe	34
Total	118

Supplemental information for Figure 8.

Distribution of Grant Program Investments by Sustainability Outcome

Sustainability Outcome	Grants Budget
Air	\$ 9,312,984
Ecosystems	\$ 14,092,806
Land Uses	\$ -
Materials	\$ 12,039,250
Multiple Resource Areas	\$ 174,621,801
Water	\$ 122,941,016
Energy	\$ -
Total	\$ 333,007,857

Supplemental information for Figure 8 (cont).

Distribution of Grant Programs by Sustainability Outcome	
Sustainability Outcome	Number of Grants Programs
Air	2
Ecosystems	2
Land Uses	2
Materials	12
Multiple Resource Areas	24
Water	15
Energy	0
Total	57

Supplemental information for Figure 9.

Distribution of Environmental Education, Awareness, and Training Programs by Sustainability Outcome	
Sustainability Outcome	Number of Environmental Education, Awareness, and Training Programs
Air	19
Ecosystems	5
Land Uses	19
Materials	20
Multiple Resource Areas	26
Water	15
Energy	2
Total	106

END NOTES

¹ BNA, Inc., *Daily Environment Report*, "General Electric Commits to Cut Emissions, Increase Investment in Cleaner Technologies," May 10, 2005, page A-8.

² <http://www.detnews.com/2005/autosinsider/0506/01/A01-197580.htm>

³ BNA, Inc., *Daily Environment Report*, "U.N. Environmental Accords Signed By Mayors From 50 Cities Worldwide," June 7, 2005, page A-9.

⁴ U.S. Army, "Strategy for the Environment: Sustain the Mission, Secure the Future," Washington, DC, October 1, 2004

⁵ See Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed*, Viking, New York, 2005.

⁶ World Resources Institute (WRI), *The Weight of Nations* (Washington, 2000), p. v., available at http://materials.wri.org/pubs_description.cfm?PubID=3023

⁷ *Webster's New World Dictionary*, 2nd Edition. David B. Guralnik, ed. World Publishing Co, New York, 1970.

⁸ Merriam-Webster's Online Collegiate Dictionary at <http://www.m-w.com/dictionary/stewardship>.

⁹ Adapted from speech by Jonathan Lash, President, World Resources Institute, June 2005.

¹⁰ See the EPA Strategic Plan at <http://www.epa.gov/ocfo/plan/plan.htm>

¹¹ <http://www.ofee.gov>

¹² <http://www.epa.state.il.us/small-business/environmental-steward/>

¹³ <http://www.umich.edu/~urel/stewardship/whatis/>

¹⁴ <http://www.epa.gov/epaoswer/osw/vision.htm>

¹⁵ <http://www.usda.gov/news/pubs/indians/preface.htm>

¹⁶ Paraphrase of statement by Joel Makower, as recorded and confirmed by Carolyn Gangmark, EPA

¹⁷ Hannover Principles: <http://report.tcc.virginia.edu/classes/tcc315/Resources/ALM/Environment/hannover.html>

CERES Principles: <http://www.ceres.org/coalitionandcompanies/principles.php>

Equator Principles: <http://www.equator-principles.com/principles.shtml>

Enlibra Principles: <http://www.epa.gov/adminweb/administrator/enlibra.htm>

Ecoefficiency by the World Business Council for Sustainable Development: Livio D. DeSimone, Frank Popoff with the World Business Council for Sustainable Development, *Eco-efficiency: The Business Link to Sustainable Development*, The MIT Press, Cambridge, MA, 1997.

Natural Step: <http://www.naturalstep.org/learn/principles.php>

¹⁸ North Carolina Department of Environment and Natural Resources, "Principles of Enforcement," <http://www.p2pays.org/esi/>

¹⁹ An Access database was constructed for this assessment, and remains available for further updating and development. It is likely that additional EPA activities should have been included in this assessment, but were not discovered in the course of our research.

²⁰ Unlike the voluntary program list, the grant program list was developed in a top-down fashion. ICF started with a list of all EPA grant programs, and eliminated those supporting State, local or Tribal regulatory or enforcement programs; infrastructure grant programs; and, Congressional earmark programs. It is important to note that the alignment of the remaining grant programs with the environmental stewardship objective was often less clear than was the case for the typical voluntary program; it likely, even probable, that some fraction of grant funds was used to support activities that did not foster or enable environmental stewardship.

²¹ The National Pollution Prevention Roundtable (NPPR) and P2RX have developed a set of standard outcome, behavior, and activity measures for pollution prevention, as part of its vision for a National P2 Results Data System. See <http://www.p2.org/workgroup/Background.cfm> for more information.