FUTURE DIRECTIONS
FOR EPA AND ENVIRONMENTAL PROTECTION

EPA ALUMNI ASSOCIATION MEMBERS SURVEY REPORT

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CENTER FOR ENVIRONMENTAL POLICY
SCHOOL of PUBLIC AFFAIRS

EPA Alumni Association
We're Not Done Yet!

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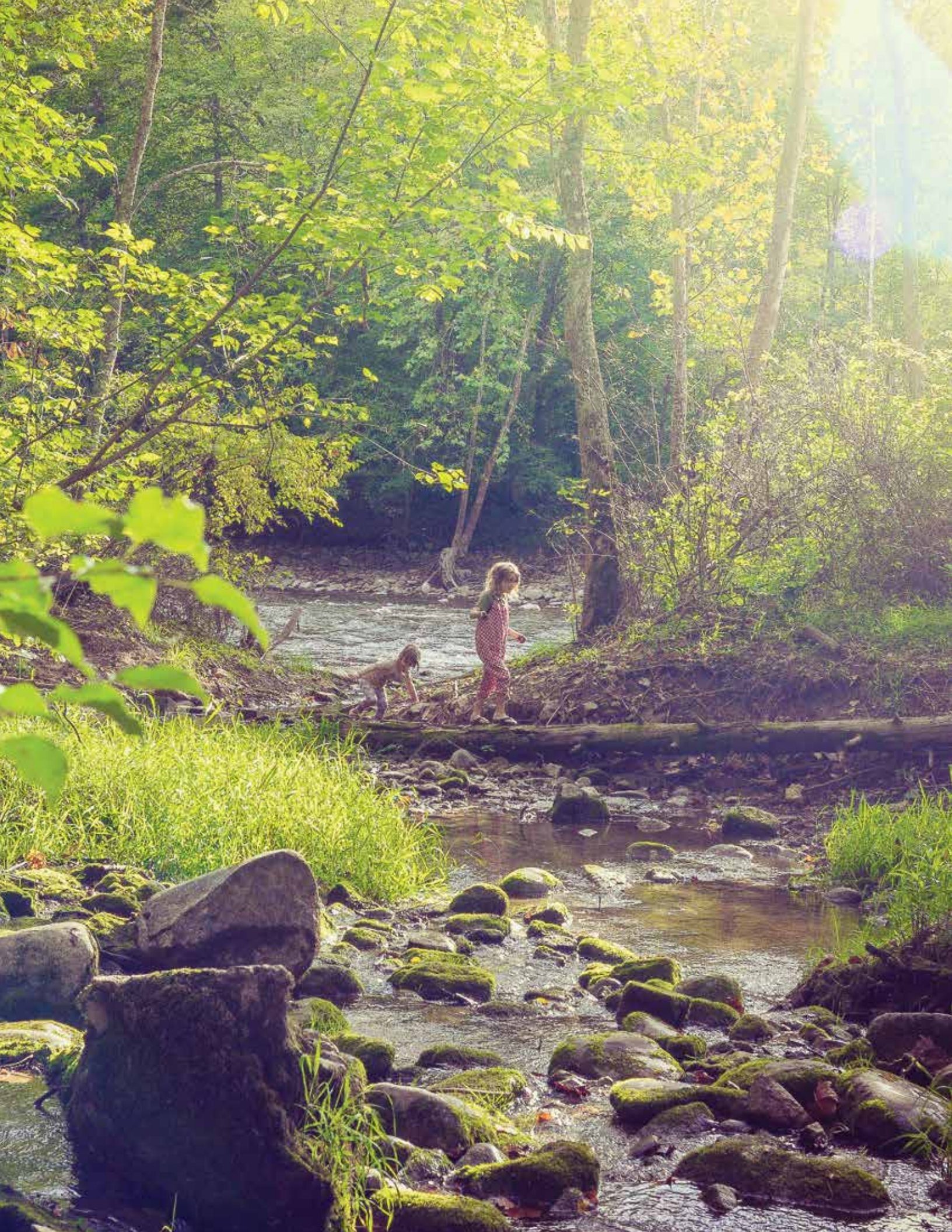


INTRODUCTION

American University School of Public Affairs' Center for Environmental Policy (CEP) and the EPA Alumni Association (EPA AA) formed a partnership in 2018 to identify possible future directions for environmental protection and the Environmental Protection Agency (EPA). The project looks decades ahead from EPA's 50th anniversary (2020) — past today's contentious issues and legislative framework — to a future time in which many points of view can come together around a shared vision for the environment.

As part of the CEP-EPA AA project, a survey of EPA AA members was conducted in November 2018 to draw upon the extensive experience of former EPA employees in identifying future challenges and promising directions for the agency. The results of the survey are summarized in this report and were used in developing a preliminary report written by CEP titled "Future Directions for EPA and Environmental Protection," which will be available at american.edu/spa/cep.

CEP and EPA AA hope the survey and the upcoming conference will spark needed dialogue about the future of environmental protection, human health, and EPA's role. While the Alumni Association members can provide valuable insight based on their history/experience/expertise in developing and implementing environmental programs since the beginning of EPA almost 50 years ago to the present, there are many other groups that continue to have major roles in the environmental and human health protection enterprise (including current EPA employees).

The survey instrument was distributed by email to members of the EPA Alumni Association (recipients). Of the 1,550 emails delivered, 871 were opened by recipients, and 381 recipients submitted survey responses (respondents). The results provide a rich set of data reflecting the views of former employees with approximately 8,426 years of cumulative experience (an estimated 24.4 years of EPA experience per respondent). In addition to quantitative responses to survey questions, respondents submitted over 1,400 "long form" written responses to open-ended survey questions or in optional comment fields following most questions in the survey.

SELECTED SURVEY RESPONSE DATA

1,550
SURVEYS DELIVERED VIA EMAIL TO RECIPIENTS

871
SURVEY EMAILS OPENED BY RECIPIENTS

381
RESPONSES SUBMITTED (respondents)

24.5%
RESPONSE RATE (percentage based on total emails delivered)

700
WRITTEN COMMENTS ON CHOICE/RATING QUESTIONS (questions 1–15)

732
WRITTEN RESPONSES TO OPEN-ENDED QUESTIONS (questions 16–18)

SELECTED BACKGROUND DATA ON SURVEY RESPONDENTS

44.6%
RESPONSES FROM FORMER HEADQUARTERS EMPLOYEES

41.5%
RESPONSES FROM FORMER REGIONAL EMPLOYEES

80.8%
RESPONSES FROM FORMER EPA EMPLOYEES WHO SERVED OVER 10 YEARS

41.2%
RESPONSES FROM FORMER EPA EMPLOYEES WHO SERVED OVER 30 YEARS

KEY TAKE-AWAYS
EMERGING FROM THE SURVEY

1. **Climate change is far and away viewed as the most important environmental challenge of the future. Other important challenges are water resource management, energy sustainability, and protection of biodiversity and ecosystems.**

2. **Scientific excellence is a critical foundation for EPA's actions and future role, especially science directed toward developing tools and solving problems.**

3. **Public awareness and consumer information are powerful sources for moving industry toward sustainability, yet regulations will still be needed to deal with poor performers.**

4. **Strengthening the essential EPA-state relationship is critical, but there are no simple solutions. EPA must continue an active oversight role, with more emphasis on technical assistance.**

5. **Public understanding and engagement on environmental issues is critically important for tackling future challenges. EPA must use new tools to reach broader audiences with credible information on science, solutions/policies, and progress.**

6. **An "all of the above" approach is needed for climate change, including incentives, partnerships, and mandates. An "Apollo moon shot" to decarbonize our economy is needed.**

7. **EPA's historical strengths in regulation, science, and technology provide a sturdy foundation for the future, but EPA should improve its ability to adopt new approaches and form partnerships.**

8. **Clarity of mission, motivated staff, scientific excellence, and openness to new approaches are essential ingredients of a successful future EPA.**

SURVEY RESULTS

I. FUTURE POLICY AND PROGRAM DIRECTIONS

MOST IMPORTANT ENVIRONMENTAL CHALLENGES OF THE FUTURE (QUESTION 1)

The first question of the survey asked respondents to choose up to four environmental challenges from a list of eight. The highest proportion of alumni selected "climate change mitigation, impacts, and adaptation" (311 respondents, or 82.1 percent) as one of the top environmental challenges of the future. The second and third priorities: "water resources management, including water pollution and allocation, and adequate infrastructure" (selected by 242 respondents, or 63.9 percent) and "energy-related impacts, including fossil fuels extraction/use, and the transition to sustainable energy resources" (226 respondents, or 59.6 percent), both having connections to climate change. Nearly half of respondents (187) listed "protection of biodiversity and ecosystems" as one of their top-four future challenges, which many respondents likely also connected to climate change. Taken together, there is a clear signal that climate change and its effects are viewed as the top environmental challenges of the future.

Written Comments on Question 1

Written comments submitted as part of the survey reinforced the data. For example, respondents wrote:

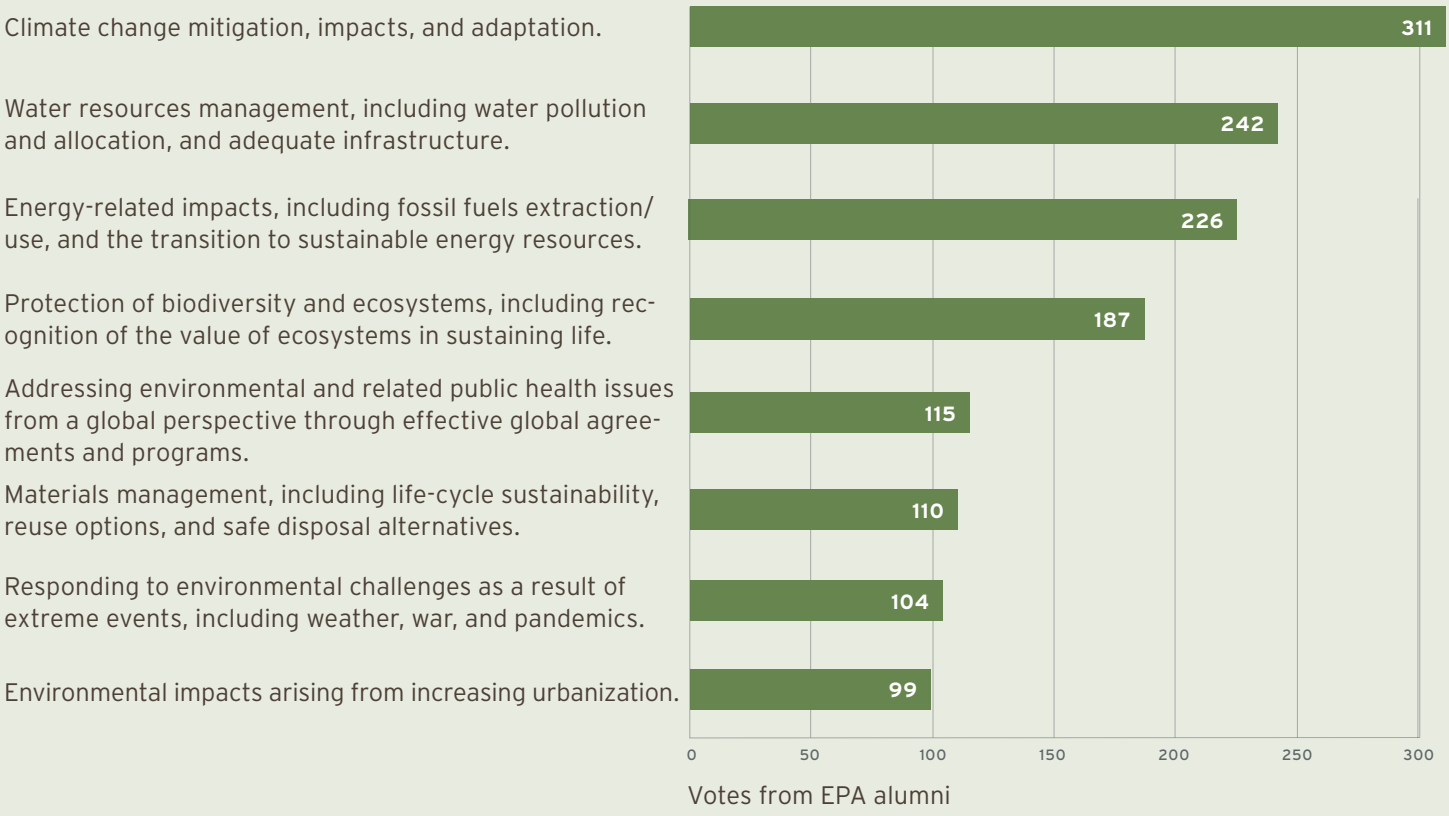
"The most important challenge facing EPA, the United States, and the world is climate change and dealing with the impacts of climate change over the next 100 years or more. In my opinion, everything else pales by comparison. My selections above are all related to climate change."

"Climate change is the key challenge for the next 50 years and water is key to survival."

"Climate change is first by a mile."

QUESTION 1

What are the most important environmental challenges for EPA in the decades ahead? (Select 4)



Climate change is far and away viewed as the most important environmental challenge of the future.

Some respondents thought of "challenges" more broadly and suggested the inclusion of political, scientific/data, and population growth on the list of priorities. For example:

"One challenge missing is the continued production of safe and cheap food free of pollutants sufficient to feed the Earth's population."

"We need more emphasis on building awareness with the general public regarding the seriousness of our environmental concerns. Far too many people think that we have already solved the environmental problems and that little else needs to be done…"

"The overarching challenge [is] to engage the public, elected officials and others so they understand and appreciate EPA's successes and achievements over 50 years even while serious challenges, especially climate, remain."

"For me, the elephant in the room is that EPA has no political support. The agency has to adjust its behavior and policies to become politically viable."

"Surveys show people increasingly interpret facts according to their political beliefs, not the other way around. Still, breaking this down will be critical for any other major environmental initiative."

IDEAS FOR PROMOTING ENVIRONMENTAL AND HUMAN HEALTH PROTECTION (QUESTION 2)

Respondents were asked to select three ideas that would be "most effective for promoting protection of human health and the environment" from a list of five. The top selection was "partnering with industry and others to promote tools, guidelines, and operating standards for sustainable practices/systems," selected by 252 respondents, or 67.2 percent. Second was "investing in programs such as Safer Choice or Energy Star that use the marketplace to promote sustainably produced or safer products," selected by 203 respondents, or 54.1 percent.

Variation by Time of Service at EPA on Question 2

Respondents who left the agency relatively recently (less than six years ago) were more likely to select "investing in programs such as Safer Choice or Energy Star that use the marketplace to promote sustainably produced or safer products" than respondents who left the agency more than 20 years ago (by 10 percentage points). Those who worked for a short time at EPA (less than 10 years) were aligned in supporting the top choices in this question but were markedly less supportive of the third choice "Reporting to the public on facility waste generation, and providing recognition and incentives for companies performing "above and beyond" regulatory requirements" (by 12 percentage points) than the average among all respondents.

Written Comments on Question 2

Written answers related to question 2 reflected three general strands of thinking. First, EPA needs to have a stronger enforcement edge – many respondents indicated that this should've been an option listed for question 2. One respondent summed up this view succinctly:

"It ALL starts with enforcement."

A second strand that emerges is support for an evolution in EPA's role toward collaboration and greater use of public reporting on company environmental performance. For example:

"All of these options are excellent: they harness the power of information and most couple that with collaboration."

"More carrots and less sticks. Businesses and communities should view EPA as legitimately helpful and beneficial rather than corrosive."

"Given the current situation which shows no sign of changing, it is clear that EPA will have to be more aggressive in partnering with the regulated community and other industries to achieve sustainability goals."

"Reporting to the public on bad actors would go with public acknowledgment of good stewards."

"Partnering and collaboration are tools that have fallen into disuse; they need to be reactivated to be proactive rather than 'blame' someone after the fact."

Some respondents merged the idea of strong enforcement coupled with investment in collaborative efforts. For example, one wrote:

"EPA needs to continue to evolve its roles, but needs to maintain a compliance focus. Increased transparency, expanding right-to-know, and encouraging voluntary actions are critical. These must support actions 'beyond compliance.'"

The third strand of comments suggested that the options presented weren't bold enough:

"We have to think much more broadly than this about where we should be headed in the future."

Respondents in written comments on question 2 again signaled a desire for more emphasis on climate change and a very forward-looking emphasis for science at EPA:

"50 years from now, EPA will be judged by how well it pivoted to recognize implications of GHGs…for human health and the environment…We should be asking the question 'what do we need to do to move in that direction ASAP?'"

"By design EPA should always be seen as a problem solver and partner in promoting sustainability and environmental compliance. A focus on stronger partnerships on science and research would be a goal worth establishing…"

"Nothing is more important than a solid foundation of peer-reviewed science on which to set all regulatory actions and even proactive innovative approaches."

Other topics frequently mentioned include: promoting education/public relations, stakeholder communications, and working at the local level with communities.

USING NEW TOOLS AND WORKING WITH STATES/TRIBES (QUESTIONS 3 AND 4)

In response to questions about EPA's relationship with states/tribes and the role of EPA regional offices, respondents generally signaled support for continuing some fairly traditional EPA functions, and indicated balanced support across potentially competing roles—with the possible exception of a tilt in emphasis toward science/technical assistance and collaboration. In question 3, "strengthening science…" received the highest proportion of "support" ratings (95 percent) among all choices in questions 3, 4, and 5. The theme of excellence in science/tech is echoed by the strong support indicated for "establishing technical assistance as a critical mission" selected by 89.1 percent combined respondents among "strongly agree" (49.1 percent) and "agree" (40.0 percent). In question 4, respondents backed the continuation of traditional Regional Office roles including: "compliance monitoring, inspections, and enforcing regulations" (88.7

QUESTION 2

Which of these ideas would be most effective for promoting protection of human health and the environment in the coming decades? (Select 3)

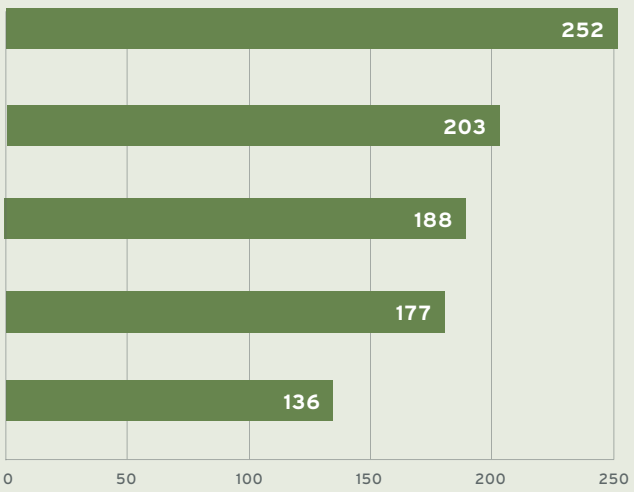
Partnering with industry and others to promote tools, guidelines, and operating standards for sustainable practices/systems.

Investing in programs such as Safer Choice or Energy Star that use the marketplace to promote sustainably produced or safer products.

Reporting to the public on facility waste generation, and providing recognition and incentives for companies performing "above and beyond" regulatory requirements.

Publishing detailed, localized information on pollution sources and permit compliance.

Integrating EPA permitting programs into comprehensive "companywide" sustainability plans.



Votes from EPA alumni

QUESTION 3

To what degree do you agree or disagree that EPA should begin moving in these directions to meet future challenges?

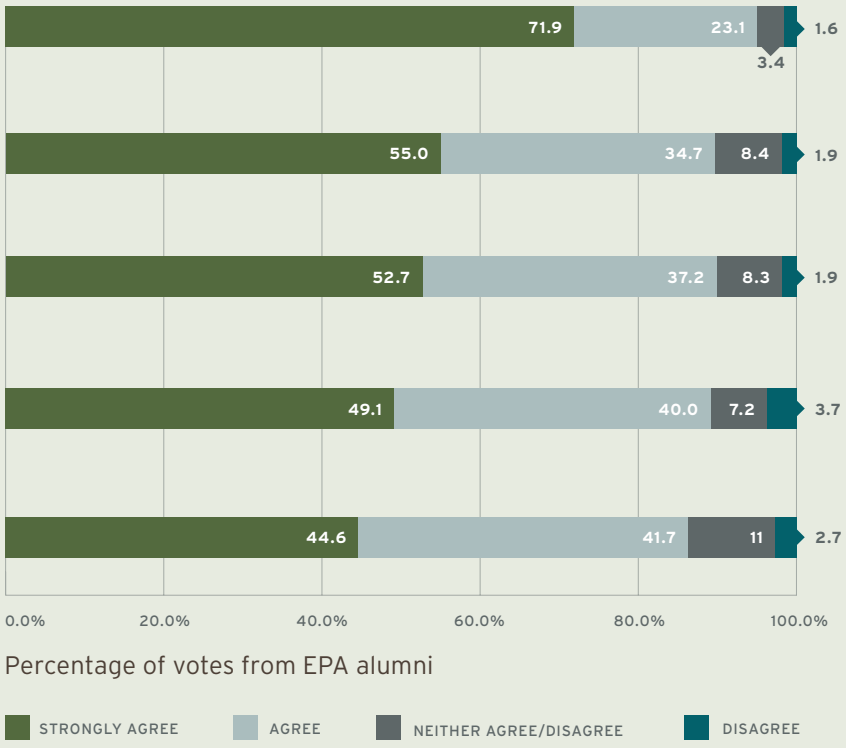
Strengthening science, technology, and information capabilities beyond past levels, including forecasting, science communication, and leadership.

Becoming a problem solver and partner with states, tribes, local governments, NGOs, and private industry, while maintaining enforcement functions.

Using innovative approaches beyond traditional regulatory solutions, including those to encourage sustainability.

Establishing technical assistance as a critical mission that makes EPA a valuable partner to other environmental agencies and the regulated community.

Systematically surveying and anticipating emerging threats (including feedback from stakeholders) to "get ahead" of environmental problems, and design responses.



QUESTION 4

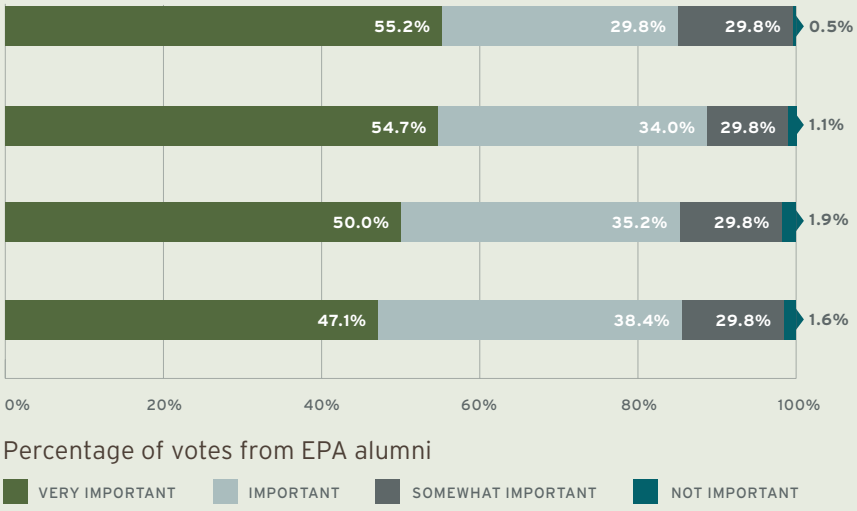
How important are these activities going to be for EPA Regional Offices in the future?

Preparing for, and responding to, emergencies and disasters, including natural events as well as radiological, chemical, and biological incidents.

Compliance monitoring, inspections, and enforcing regulations.

Overseeing, reviewing, and approving state/tribal implementation of federal requirements (to ensure a "level playing field").

Providing training, technical assistance, and certification for state and tribal employees.



percent considered it "very important" or "important"); "providing training, technical assistance, and certification for state and tribal employees" (85.6 percent "very important" or "important"); "overseeing, reviewing, and approving state/tribal implementation of federal requirement" (85.2 percent "very important" or "important"); and "preparing for, and responding to, emergencies and disasters, including natural events as well as radiological, chemical, and biological incidents" (85.0 percent "very important or "important").

The idea of experimenting with new approaches was somewhat mixed. In question 3, support for collaborative approaches is suggested by 89.8 percent of respondents who agreed EPA should begin "using innovative approaches beyond traditional regulatory solutions, including those to encourage sustainability." Also, 89.7 percent agreed on EPA "becoming a problem solver and partner with states, tribes, local governments, NGOs, and private industry."

Respondents appeared somewhat less enthused about "alternative"

EPA-state/tribal arrangements, as can be seen from responses to question 5 (please, see next section).

Written Comments on Questions 3 and 4

In written comments, many respondents supported more emphasis on training and tech support at EPA. For example:

"EPA should be seen by state and local agencies as a supporter and not just as an enforcer."

"EPA should work with tribal organizations to develop their capacity so that they can lead their own programs with EPA oversight."

"While the need for a level playing field is real, it's also been a burr under the saddle of the EPA-state relationship. While EPA's oversight and enforcement role remains necessary, it is more important that EPA work to strengthen the technical abilities of the states and tribes and provide specialized assistance…"

Several respondents suggested that third parties could be used more extensively to carry out technical assistance. Despite visible support for more emphasis on technical assistance and collaborative approaches, a few respondents seemed hesitant to accept a diminished enforcement and oversight role for EPA. For example, respondents wrote:

"Effective, efficient, and professional enforcement is critical!"

"Ensuring that states achieve national standards is very important."

SUPPORT FOR NEW APPROACHES (QUESTION 5)

The ratings of effectiveness for the two options, "significantly enhanced reporting to the public on state/tribal performance coupled with reduced EPA oversight" and "establishment of minimum state/tribal program elements, coupled with multimedia block grants," were relatively low (rated as "not effective" by 27.6 percent and 18.8 percent, respectively), with a large block of respondents rating these alternatives as just "somewhat effective" (35.1 percent and 37.4 percent, respectively). The suggestion of "certifying state/tribal-wide programs, with periodic audits or reviews" and "expansion of EPA's current Performance Partnership system" fared somewhat better with support of 69.4 percent and 70.4 percent ("very effective" or "effective," respectively).

Abstentions on Question 5

Question 5 seems to have presented a challenging topic, as a large number of respondents chose not to rate the alterna-

Public awareness and consumer information are seen as a powerful force for moving industry toward sustainability, yet regulations will still be needed to deal with poor performers.

QUESTION 5

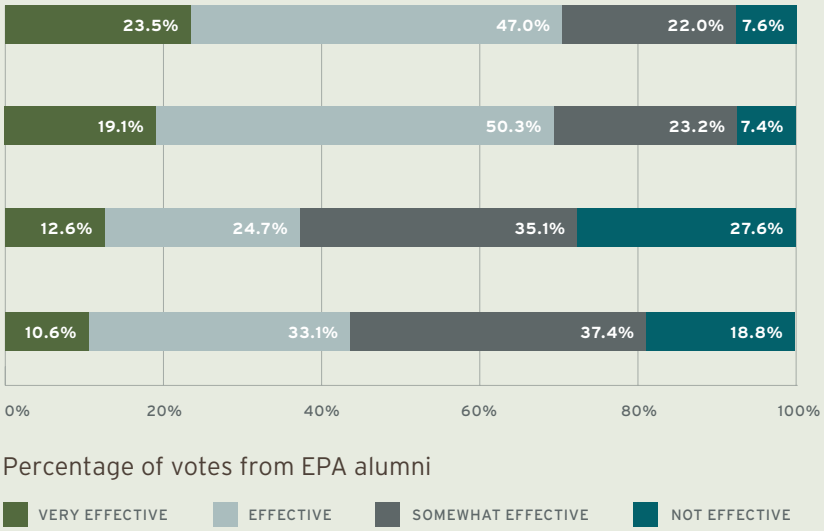
How effective do you believe these alternative EPA-state/tribal arrangements would be for advancing the protection of human health and the environment?

Expansion of EPA's existing Performance Partnership system, in which EPA negotiates individual state/tribal agreements on priorities, commitments, and funding.

A process for "certifying" state/tribal-wide programs, with periodic audits or review.

Significantly enhanced reporting to the public on state/tribal performance coupled with reduced EPA oversight.

Establishment of minimum state/tribal program elements, coupled with multimedia "block grants."



tives presented. In total, there were 137 abstentions with an average of 9.2 percent of "no opinion/don't know" per alternative.

Written Comments on Question 5

With respect to alternative EPA-state/tribal arrangements, written responses seemed to split on whether EPA should serve more as a safety net and focus on compliance assistance, or whether stronger oversight was needed:

"More important than any of these [alternative arrangements] will be a commitment to an expansion and institutionalization of collaborative decision-making approaches such as E-Enterprise […] in which EPA, states, and tribes together set agendas, develop workplans, fulfill mutually agreed upon tasks, and frame consensus policies on issues of shared implementation responsibility."

"In the future, States should be well trained and staffed with EPA being a facilitator and partner. Review and oversight should not be necessary and would be minimal."

While collaboration and oversight may not be mutually exclusive, certainly the implication (in question 5) that EPA could step back from oversight was concerning to some respondents.

"Many of the recent problems have been because of lax EPA oversight of states. Further reduction in oversight would, in my mind, be disastrous."

"EPA should increase state oversight, not reduce it."

"EPA needs to remain a strong federal presence. Did not see states and especially tribes in our Region meeting some minimum requirements."

The dichotomy in opinions of the respondents seems to be summed up in this comment:

"All of these [alternative federal-state arrangements] are mechanical or transactional solutions to what is at its heart a relationship issue. The most urgent need is for EPA leaders and staff to invest in understanding the underlying dynamics of complicated issues, identify common interests and opportunities for mutual gain, and where direct action by EPA is essential, carry it out forthrightly and transparently."

Generally, respondents believed that the current Performance Partnership system and EPA's current direction under E-Enterprise were moving the EPA-state relationship in the right direction. While there is a clear message in written comments that the relationship was important and needed improvement, there is no unity around any particular actions for achieving that goal.

QUESTION 6

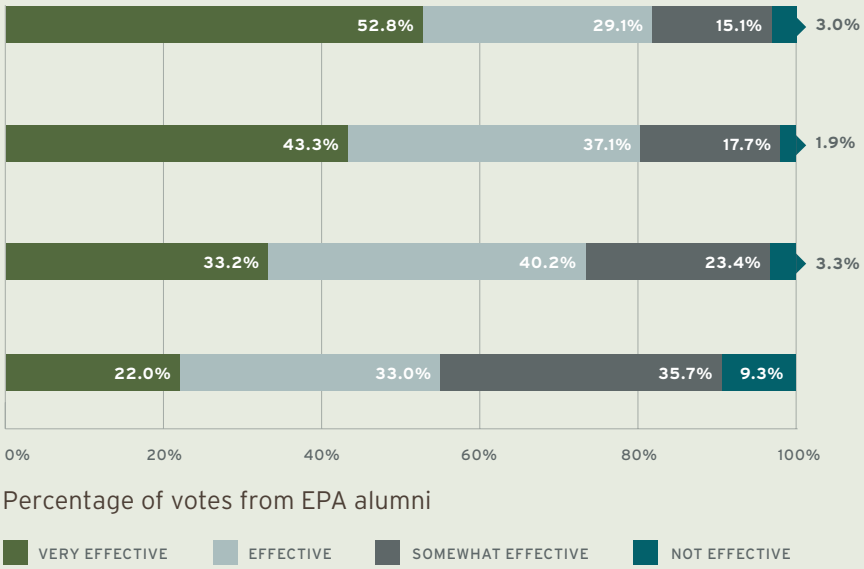
How effective do you believe the following suggestions would be for improving public awareness of environmental and related human health issues?

Expanding environmental education, including funding, at all levels of schooling.

Encouraging EPA staff to interact more with stakeholders and the public, including educational institutions, and making EPA experts more available to the news media.

Interactive information platforms hosted by EPA that provide local information on environmental conditions.

Programs to promote "citizen science" and engage citizens in collecting environmental data.



IMPROVING PUBLIC AWARENESS (QUESTION 6)

Respondents were asked to rate various suggestions for improving public awareness of environmental and related human health issues. All of the suggestions received strong support, led by "expanding environmental education, including funding at all levels of schooling" with 81.9 percent of respondents considering it "very effective" or "effective," followed by "encouraging EPA staff to interact more with stakeholders and the public, including educational institutions, and making EPA experts more available to the news media" (80.4 percent), and "interactive information platforms hosted by EPA that provide local information on environmental conditions" (73.4 percent). The lowest rated (but still well supported), suggestion was "programs to promote citizen science and engage citizens in collecting environmental data," with 22 percent rating it "very effective," about a third of respondents rating it "effective," and just over a third (35 percent) rating it "somewhat effective." Even as the lowest rated option, it still received a "not effective" rating from only 9 percent of respondents.

Written Comments on Question 6

Written comments seem to reflect a strong interest in promoting public understanding of environmental issues and EPA's mission. For example:

"We need knowledgeable citizens to support the tackling of challenging environmental problems."

"EPA needs to be a champion for the use and dissemination of science-based understanding of the world around us."

There was less clarity about how to achieve the goal of promoting public understanding, and several comments addressed whether EPA was suited to carry out an education mission.

"While I think environmental ed is important — other than providing materials for the schools — I don't think this is EPA's role…"

"No matter what EPA does, it will always be hard to get people to understand why it matters…only when things are off the rails (e.g., Flint water crisis) do people pay attention."

"EPA won't be effective if the messages are not coordinated with state/local folks who are closer to the public."

Another wrote simply:

"Education is not an EPA strength."

Despite a dose of cynicism over whether EPA can make a difference in public opinion, there were many specific comments supporting action and ideas. One respondent wrote:

QUESTION 7

How effective do you believe these proposals would be for strengthening future human health and environmental protection?

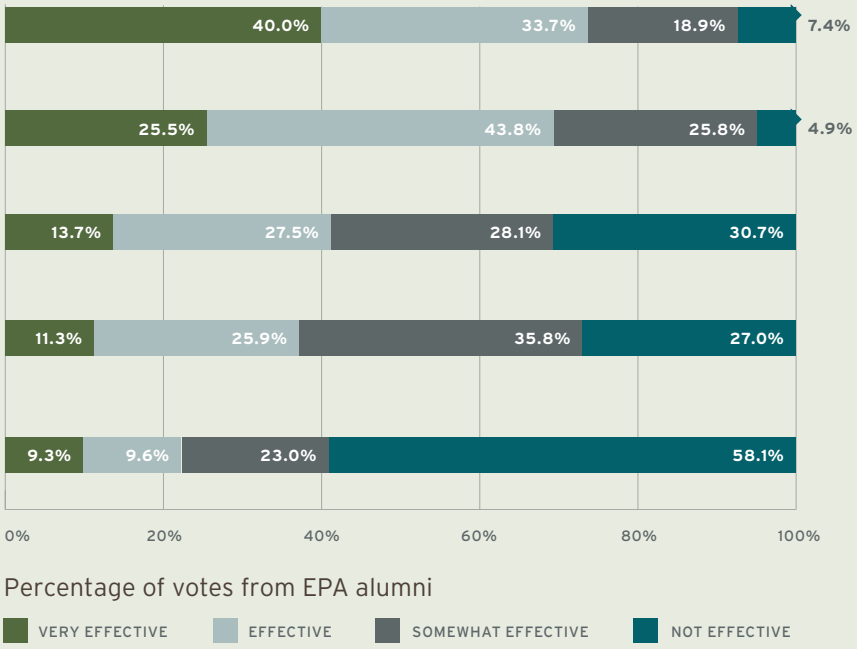
Statutory authority for EPA to coordinate federal-wide environmental policy and programs.

Establish processes within EPA to improve interagency coordination and cooperation with other federal agencies.

Creating an independent agency to report on environmental statistics and conditions.

Bringing into EPA some related environmental functions from other agencies (e.g., conservation, fish and wildlife programs).

Governing EPA by a bipartisan board or commission modeled after other regulatory agencies (e.g., FTC, FCC, FERC).



"Citizen science and providing local information on pollution levels are key areas that EPA can embrace to be more effective in supporting the public. EPA can be a credible source of information for the public, but our area of expertise is not education in schools."

Along those lines, another respondent suggested:

"Bringing right-to-know back to the forefront would be good."

Several mentioned the importance of political neutrality in communicating to the public. For example, one respondent wrote:

"This [efforts to raise awareness] could be effective, but all efforts need to be seen as politically neutral […] Somehow EPA needs to promote good science and the belief that good science can lead us to better solutions and may in fact be the only hope for the planet as it exists today."

Many respondents commented that EPA must do better in communicating to the public and that more resources are needed. One comment summed up this theme:

"Each of the above approaches has the possibility of being very effective if funding is available to implement them. Funding seems to be the limiting factor in all of these activities…"

EPA'S AUTHORITY AND ORGANIZATION (QUESTION 7)

Respondents were asked to rate six suggestions for "strengthening future human health and environmental protection" that centered on EPA's authority and organization. The most highly rated suggestion was "statutory authority for EPA to coordinate federal-wide environmental policy and programs," rated "very effective" or "effective" by a combined 73.7 percent of respondents, followed by "establish processes within EPA to improve interagency coordination and cooperation with other federal agencies" rated "very effective" or "effective" by a combined 69.3 percent of respondents. Other suggestions were rated lower, including "creating an independent agency to report on environmental statistics and conditions" (41.2 percent "very effective" and "effective" combined), and "bringing into EPA some related environmental functions from other agencies (37.2 percent "very effective" and "effective" combined). These responses were in fairly strong contrast to the more negative reaction received by the two suggestions "governing EPA by a bipartisan board or commission modeled after other regulatory agencies" and "reorganizing EPA to eliminate 'media-specific' components." The former was considered "not effective" by 59.1 percent and the latter by 58.1 percent of respondents.

Written Comments on Question 7

Several themes emerged in written comments for this question. First, comments suggested that integration or better coordination of federal programs would be beneficial, but in general "reorganization" ideas received negative commentary. One respondent wrote:

"This is the toughest question. My own experience is that trying to bring agencies together to address a major problem is incredibly tough […] so many stakeholders and so much turf. And yet, the balkanization of environmental/ecosystem/biodiversity protection isn't good either…"

Many of the respondents raised concern over whether reorganization would be overly disruptive and ultimately lead to little improvement. For example, one respondent wrote:

"I'm not a fan of reorganization – the results don't seem to outweigh the disruption."

Suggestions perceived to expand EPA's mission were not well received. For example:

"Too many cooks spoil the broth. EPA has plenty to do without expanding its turf. Just leads to more bureaucratic infighting."

"Good questions. Hard answers…but expanding EPA's mission or purview assumes other agencies are on-board as well."

The idea of governing EPA by a board or commission received mixed written comments, and the idea of an independent agency to report on environmental data/conditions received mostly negative written comments. Comments generally reflected little enthusiasm for any of the suggestions, and several comments questioned whether the current political environment was conducive for implementing major changes in EPA's authority.

CLIMATE CHANGE (QUESTIONS 8 AND 9)

Two questions in the survey asked about policy responses for climate change. Question 8 asked respondents to select two potential legislative options out of a list of seven. Four of the options received over 120 "selections" out of 370 respondents who answered the question. The option receiving the highest support was "an economy wide carbon tax," (selected by 137, or 37.0 percent of respondents), followed by "require EPA to establish technology-based standards for economy sectors/activities contributing significantly to greenhouse gas emissions" (selected by 126, or 34.1 percent, of respondents). Both options, "a carbon tax for industries that emit significant levels of greenhouse gases" and "require and fund EPA/federal work with the states/tribes/cities to help them to adapt to the effects of climate change," were selected by 120, or 32.4 percent, of respondents. The suggestion to "require EPA to establish both an economy-wide carbon tax and technology-based standards for the transportation sector" received support from 103, or 27.8 percent, of respondents, and the proposal to "mandate that EPA establish a cap-and-trade system" received support from 73, or 19.7 percent of respondents. Far and away the respondents favored some type of legislation for climate change, and only

An "all of the above" approach is needed for climate change, including incentives, partnerships, and mandates.

"[We need] an Apollo Moonshot to decarbonize our economy."

– Survey respondent

QUESTION 8

Which legislative options would be the best way to address the challenges of climate change? (Select 2)

An economy-wide carbon tax.

Require EPA to establish technology-based standards for economy sectors/activities contributing significantly to greenhouse gas emissions.

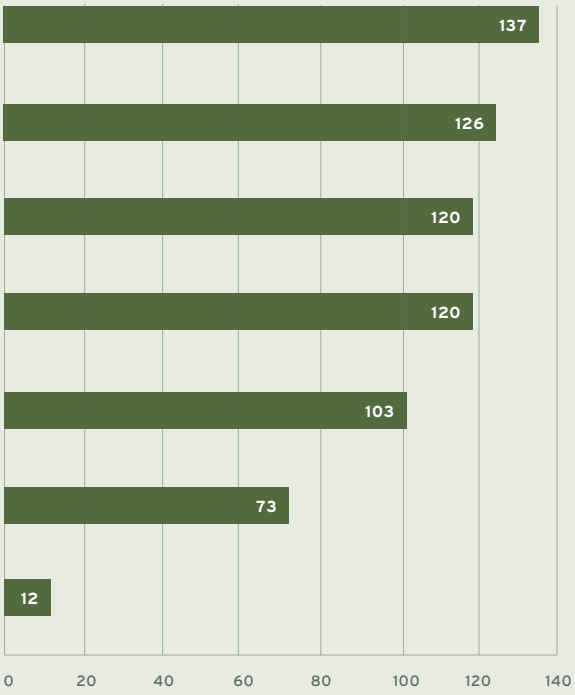
A carbon tax for industries that emit significant levels of greenhouse gases.

Require and fund EPA/federal agency work with the states/tribes/cities to help them to adapt to the effects of climate change.

Require EPA to establish both economy-wide carbon tax and technology-based standards for the transporation sector.

Mandate that EPA establish a cap-and-trade system.

No new legislation, with EPA continuing to address climate change using existing authorities.



Votes from EPA alumni

QUESTION 9

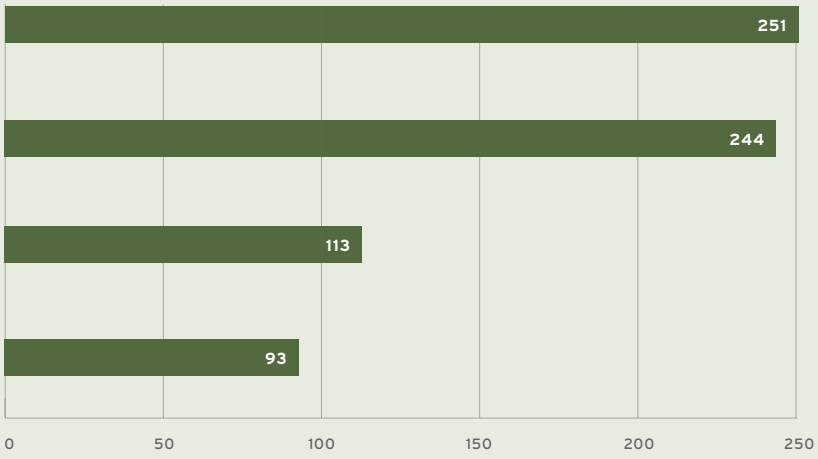
Of the following actions, which are the most important to address climate change? (Select 2)

Government investment in technologies to improve energy efficiency, conservation, and alternative energy sources.

U.S. leadership on a global level through establishing and implementing international agreements, technical assistance, training, and outreach.

Technical assistance and partnerships to promote voluntary and private-sector-led initiatives.

Investment in technologies for carbon removal and sequestration.



Votes from EPA alumni

12 respondents, or 3.2 percent, selected the option "no new legislation, with EPA continuing to address climate change using existing authorities."

Question 9 asked respondents to select two (out of four) actions other than significant new authorities that they deem "most effective" to address climate change. Two suggestions received the lion's share of support. The option receiving the most support was "government investment in technologies to improve energy efficiency, conservation, and alternative energy sources" selected by 251 respondents, or 65.9 percent, of respondents. The second receiving high support was "U.S. leadership on a global level through establishing and implementing international agreements, technical assistance, training, and outreach" selected by 244, or 64.0%, of respondents). Support for the other two options dropped considerably, with only 113, or 29.7 percent, of respondents selecting the option "technical assistance and partnerships to promote voluntary and private-sector-led initiatives," and 93, or 24.4 percent, of respondents selecting the option "investment in technologies for carbon removal and sequestration."

Written Comments on Questions 8 and 9

Three themes emerge from the written responses to the climate change questions. First, more support is needed for technologies to reduce carbon emissions, with nine respondents (2.4 percent) suggesting the creation of more incentives as a "missing" option. Second, global action is needed, and needed now. Third, respondents seemed to favor an "all of the above" approach, with the exception that there was little support for voluntary action that wasn't coupled with some form of a government mandate.

Regarding legislative options, there was a clear sense that bold action was needed.

"Climate change needs predictability and certainty. If legislative change gets us there, go for it."

"Be prepared to act as soon as the naysayers get the message."

One respondent wrote:

"[We need] an Apollo Moonshot program to decarbonize our economy."

Many respondents offered suggestions on how carbon tax or cap and trade schemes might work and the pros and cons of various approaches. Many commenters indicated that a carbon tax may be the preferred option but may be difficult to achieve politically. Some suggested ways to make a tax more politically acceptable. For example, one commenter wrote:

"[…] both [taxes and cap-and-trade] would be a hard sell, but economists are sold on a properly constructed tax that would rebate to those with lower incomes. The two alternative market based approaches are the best of the lot…"

Respondents seem to support various approaches to encourage development of technologies for reducing greenhouse gas emissions. Some commenters suggested that industry had the expertise to solve technology challenges and that putting a price on carbon emissions (i.e., a carbon tax or cap/trade) would be the best way to drive technology. Others suggested that government investment in research and development, or the concept of "best available technology" using the model of existing laws, would provide a necessary boost to carbon-reducing technologies.

"Current Research and Development on low carbon technologies is woefully inadequate."

"We need knowledgeable citizens to support the tackling of challenging environmental problems."

– Survey respondent

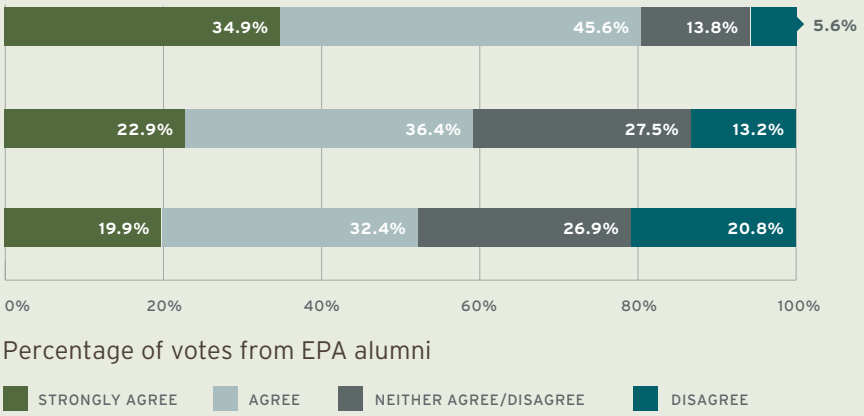
QUESTION 10

To what degree do you agree or disagree with these statements about EPA's future role in environmental justice?

EPA should address disparities in environmental protection by considering cumulative local risks in permitting decisions.

EPA's most valuable role in environmental justice will be providing technical assistance and convening other agencies to solve local problems.

EPA would need new statutory authorities in order to effectively address disparities in environmental protection.



QUESTION 11

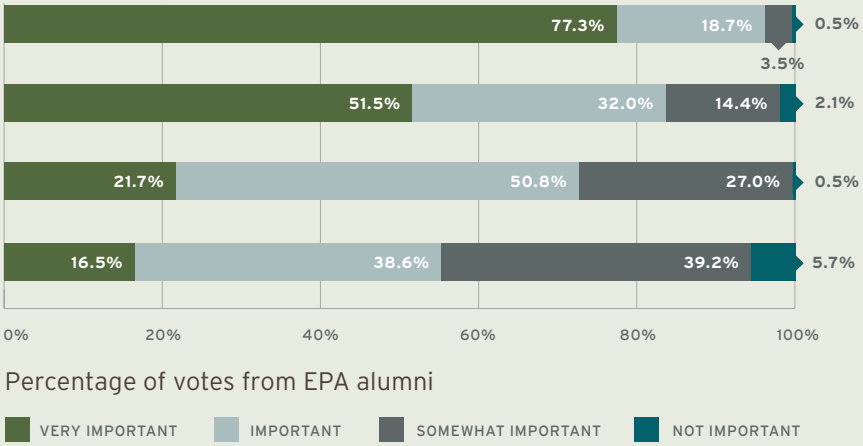
How IMPORTANT do you believe these factors are for ATTRACTING good employees to EPA?

Attractiveness of EPA's mission.

EPA's image and coverage in the media.

Pay and benefits.

Interest in a federal career.



QUESTION 12

How IMPORTANT do you believe these factors are for RETAINING good employees at EPA?

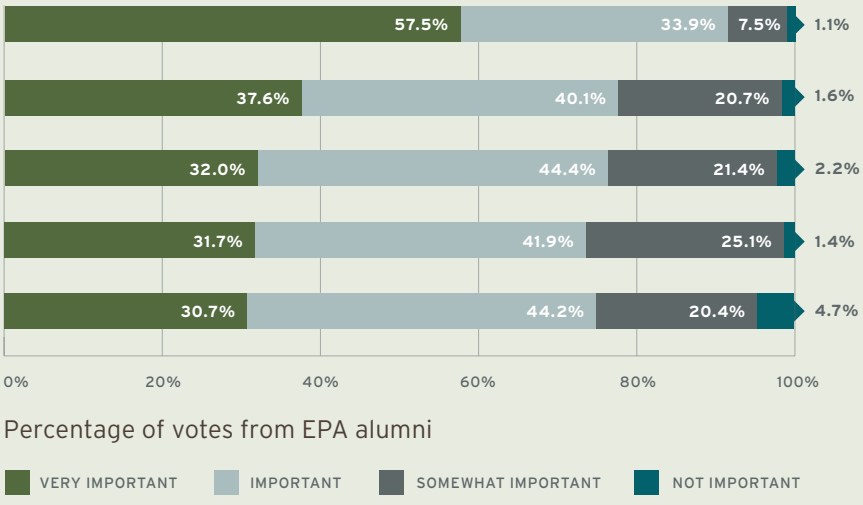
Fostering a culture of innovation, learning, and continuous improvement.

Providing opportunities for cross-program movement.

Linking training and mentoring to clearly defined career steps.

Supporting informal networks and inclusion to foster a shared sense of mission.

Giving supervisors incentives for supporting employee career development.



"[…] the government needs to work with industry to make alternative technologies economically competitive with older technologies."

One comment reflected the "all the above" mentality as well as a sense of urgency shared by many respondents by suggesting:

"Technology forcing initiatives are necessary at this late date in the game. Technology standards combined with cap and trade could move people forward. We are past the time when voluntary measures and/or educational [measures] will suffice."

One exception to "all of the above" was a reaction to the suggestion of investing in carbon removal and sequestration. While there was some support for the idea (one-fourth of respondents selected it as "most important" for investment), it also received some negative commentary.

"[…] technology involved in carbon removal and sequestration is very expensive and not readily available…"

"Technology for sequestration is a false promise…."

Many respondents noted the international dimension of climate change, particularly in comments related to question 9. Several respondents noted that the U.S. will have to take the lead, with several commenters specifically urging that the U.S. remain in the Paris Accord. Examples include:

"This is a global problem with uncertain outcomes. Need a global strategy."

"EPA has to lead internationally by domestic example – everything else is rhetoric or secondary."

EPA'S ROLE IN ENVIRONMENTAL JUSTICE (QUESTION 10)

Respondents were asked to rate three statements concerning EPA's role in environmental justice. Respondents selected "strongly agree" (34.9 percent) or "agree" (45.6 percent), for a combined 80.6 percent general agreement with the statement "EPA should address disparities in environmental protection by considering cumulative local risks in permitting decisions." The other two statements, "EPA's most valuable role in environmental justice will be providing technical assistance and convening other agencies to solve local problems" and "EPA would need new statutory authorities in order to effectively address disparities in environmental protection," received less support with only 59.3 percent generally agreeing with the former and 52.2 percent generally agreeing with the latter. A sizable number of respondents expressly disagreed with the need for a new statutory authority for EPA (65 respondents 20.8 percent), and 60 respondents abstained from rating this option.

Written Comments on Question 10

Among themes that emerged from written comments, some respondents suggested that full compliance with EPA standards would ameliorate environmental justice concerns. Others, however, seemed to recognize that more should be done to address cumulative risks. One respondent wrote:

Strengthening the essential EPA-state relationship is critical, but there are no simple solutions. EPA must continue an active oversight role, with more emphasis on technical assistance.

"There are significant constraints involving federal, state and local legal authorities to address many environmental risks, particularly cumulative ones. Clarifying the use of the civil rights 'disparate impact' standard [….] will likely be important. Until then, partnerships are likely to be more effective."

Several commenters seemed skeptical of a federal role in environmental justice. One respondent wrote:

"I do not think this is EPA's responsibility. I think it is a local and state agency responsibility."

Related to this view, some commenters suggested that land use and the location of industries had a more important effect on environmental justice than regulatory control. For example, one respondent wrote:

"How does one deal with local land use decisions? EPA tried to do that under the 1970 Clean Air Act and was slapped down by Congress…"

Finally, several commenters suggested that local communities themselves need to articulate what type of help they need, and EPA should avoid any "top down" program.

ATTRACTING AND RETAINING GOOD EMPLOYEES (QUESTIONS 11 AND 12)

EPA's mission was rated by far as the most important factor for attracting good employees to EPA. This selection was rated as "very important" by 77.3 percent of respondents and combined with "important" ratings it is considered important by 96.0 percent of respondents. The next highest rated factor for attracting good employees to EPA was "EPA's image and coverage in the media" rated "very important" or "important" by 83.5 percent of respondents, followed by pay and benefits (72.5 percent) and "interest in a federal career" (55.1 percent).

As for the question of what factors influence employee retention, the option "fostering a culture of innovation, learning, and continuous improvement" stood out among other responses with 91.4 percent of respondents considering it "very important" or "important." The remaining options received, on average, a rating of "very important" or "important" from 75 percent of respondents.

Written Comments on Questions 11 and 12

While a large number of respondents said employees are motivated by EPA's mission, a significant portion suggested that this "sense of mission" was at risk of slipping due to attacks on the agency, political opposition, and other factors. For example:

"Future employees will need a better sense of the future of the agency."

"EPA employees have been under attack since [the 1980's] and EPA needs an ally and advocate to counter attack.

"EPA needs to demonstrate excellence and integrity in its leadership and performance for some years in a row to recover from the past two decades."

"Mission and perception of impartial scientific/tech/regulatory results based on open debate are overwhelmingly important."

Many respondents wrote about their personal experience working with employees who were committed to the mission. A few were very explicit in stating the EPA employees were not motivated by pay.

"Pay is never the key to attract the best. People want to contribute to something worthwhile that is BIGGER than they are. People want to be challenged by, and PROUD of what they do…The image and effectiveness of EPA is vital to this."

"A person's moral compass probably has as much to do with choosing EPA for a career as other factors."

Notable in the written comments was the number of respondents who suggested that EPA managers needed to improve. Examples:

"The biggest problems at EPA are related to unqualified managers."

"We also need to improve management training. Many managers would benefit from additional training on how to better work with and improve their staffs throughout their careers."

One respondent summed up the interplay between "mission" and "good management" by recommending:

"Establish and maintain program goals and objectives and show employees how their role and performance supports those objectives and is appreciated by managers."

Respondents provided a range of other possible factors for attracting and retaining good employees, including good facilities, good management, employee recognition, and fairness in the workplace.

QUESTION 14

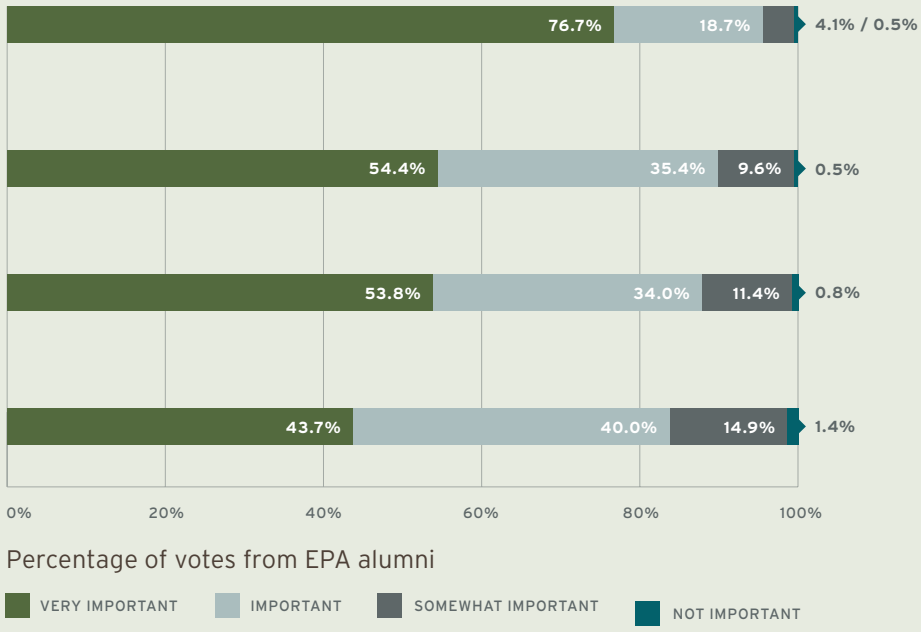
How IMPORTANT are these investments for meeting the scientific challenges of the future?

Maintaining state-of-the-art ability for data gathering, analysis, and modeling, including cross-discipline approaches to define threats and design solutions.

Maintaining state-of-the-art techniques for assessing risks stemming from a large number of persistent, low-level contaminants from multiple exposure pathways.

Ability to collect and use large data sets, including the computational resources needed to analyze varying spatial and temporal scales.

Underststanding the consequences of developments in molecular science, genetics, and bioinformatics that will impact large sectors, including agriculture.



QUESTION 15

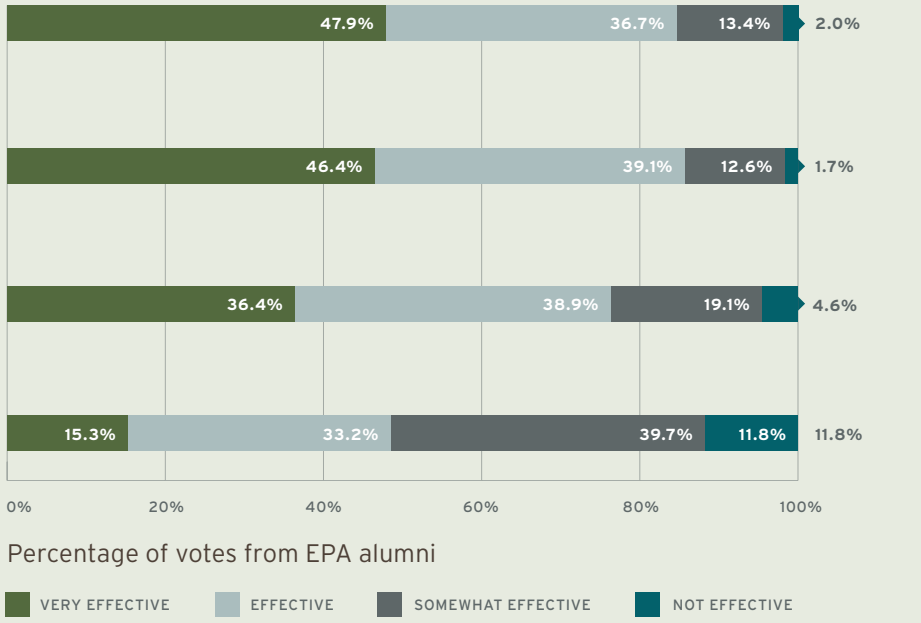
How EFFECTIVE do you believe these actions would be for helping EPA anticipate future threats to human health and the environment?

Develop advanced scientific/technical methods and tools for environmental practitioners.

Upgrade EPA's staff capabilities in modeling, forecasting, large-scale computational analysis, and social methodologies.

Work with other agencies to create a monitoring system for environmental conditions at all feasible spatial and temporal scales.

Vest authority in a senior-level official to lead an annual "scan" of scientific and technical needs (involving stakeholders) to inform priorities and budget decisions.



II. SCIENCE AND TECHNOLOGY CHALLENGES

INVESTMENTS IN SCIENCE AND TECHNOLOGY (QUESTION 14)

Respondents were asked two science-related questions to gauge support for investments or other actions to help EPA meet future science challenges. Respondents did not clearly indicate a preference among the investment options presented. Strongest support was indicated for "maintaining state-of-the-art ability for data gathering, analysis, and modeling…," with 95.4 percent of respondents considering it at least "important," followed in ratings that ranged from 83 to 89 percent for the others. A clear majority of respondents rated all the proposed investments "important" or "very important."

EPA's historical strengths provide a sturdy foundation for the future, but challenges remain for adopting new approaches and innovations.

ANTICIPATING FUTURE THREATS (QUESTION 15)

Question 15 resulted in somewhat greater differentiation among options. While three of the options were overall rated as "effective" or "very effective" with rating scores ranging from 76 to 85 percent, one option was rated much lower. The option "vest authority in a senior-level official…" was considered "effective" or "very effective" by only 48.5 percent of respondents.

Written Comments on Questions 14 and 15

Three themes emerged from written comments for questions 13 and 14. First, many comments suggested that EPA's data management/systems needed investment.

"EPA data systems are so antiquated that it is hard to achieve any of these goals."

"EPA needs to be able to analyze data from a variety of sources."

Related comments suggested that EPA needed to invest more in mapping, modeling, managing large data sets, and using artificial intelligence.

Another theme that emerged from written comments was, once again, a call for EPA to focus on climate change. Commenters suggested:

"Focus on the big threats, like climate change, and downplay minor risks, such as [risk chemicals]."

"Climate change may be the only really important scientific challenge for the future. How to predict what is going to happen with greater certainty, and new technologies to prevent or deal with the impacts of climate change."

Finally, many respondents took a broad view of EPA's future scientific challenges and advocated for greater involvement of social and behavioral scientists and non-scientists. For example:

"EPA should work to gain more multidisciplinary scientists that have advanced education in multiple areas such as natural sciences, human health, mathematics, computer science, economics and social sciences."

"In addition to traditional hard sciences, EPA should invest more in social sciences, demographics, and program evaluation."

Other issues that were addressed by more than one respondent were the need for adequate funding for science, improved science communication, prioritizing research (mostly to advance technology/tech transfer), and hiring capable scientists. Although the suggestion of vesting authority in a senior official stood out for having a somewhat lower rating

QUESTION 13

Based on your observations and experience during your tenure at EPA, which functions/activities do you believe were (at that time) among EPA's greatest strengths? (Select 8.)

score than other suggestions, there were only three written comments on the subject, mostly providing observations on how/whether such an approach would work in practice.

III. EPA'S INSTITUTIONAL STRENGTHS AND CHALLENGES

RATING EPA'S HISTORICAL STRENGTHS (QUESTION 13)

Respondents were asked to select eight functions/activities (from a list of 18) that they believe were among the EPA's greatest strengths based on their own observations and experience while at EPA.

This question produced some very distinct messages concerning EPA's strengths. Five of the functions were selected as strengths by over 50 percent of respondents, and the option "using scientific and technical information in making regulatory decisions" was selected by 340, or 89.9 percent. Three activities were selected by 80 respondents or fewer, or less than 22 percent, and just 50 respondents, or 13.2 percent, selected "providing relevant technical assistance to other countries."

In addition to "using scientific information," the highly selected activities/functions were "issuing regulations to achieve the goals set out by Congress in legislation" (69.3 percent); "defending regulations and policies in court" (58.5 percent); "writing strong regulations…" (55.0 percent) and "using compliance monitoring and enforcement…" (53.7 percent) — all squarely within the traditional and long-standing role of EPA within the nation's environmental protection enterprise. Relatively few respondents selected as strengths EPA features that would suggest an openness to alternative approaches and innovation. For example, "adopting and taking advantage of innovations in technology, such as remote compliance monitoring," was selected by 26.7 percent, and "using mechanisms in addition to compliance and enforcement to protect the environment" was selected by 37.0 percent. EPA's strength in providing technical assistance was selected by relatively few respondents, although some written comments suggested that the lower rate of selection may have been a reflection of inadequate resources dedicated to technical assistance, rather than a critique of EPA's ability/expertise.

Variation by Location on Question 13

Perceptions of EPA's historic strengths varied by location (data not displayed). Former EPA regional employees were more apt to select "finding ways in addition to regulation and enforcement to work with the business community to protect and improve the environment" (by 18.2 percentage points), and "providing timely and valuable technical assistance to small regulated entities and local governments" (by 16.3 percentage points). Likely a higher proportion of regional employees were directly involved in this type of activity/function and routinely interacted with businesses and others who were direct beneficiaries of such work. Former regional employees were less likely to select as EPA strengths "using compliance monitoring and enforcement tools to protect the environment" (by 14.5 percentage points), and "leveraging state resources and opportunities to protect the environment" (by 14.1 percentage points). As suggested by some written comments, the selections in this question may reflect a respondent's *assessment of EPA's strengths,* or possibly the respondent's *perception of the importance of the functions/activities.* Another possible explanation for locational variation in response to this question may be that regional employees saw technical assistance and "ways in addition to regulation" as effective (or underappreciated) alternatives to compliance/enforcement approaches.

Variation by Time of Service at EPA on Question 13

Responses related to EPA's historical strengths varied somewhat based on length of service at EPA and the time elapsed since departure from EPA (data not displayed). For example, respondents who left EPA more than 20 years ago were less likely (by 10 percentage points or more) to select three activities as historical strengths: "using compliance monitoring and enforcement tools to protect the environment," "leading and supporting international efforts to protect the environment," and "balancing economic impacts of regulations/policies with environmental goals." Responses may reflect an assessment of EPA's strengths at the time of service in the context of expectations of the era (e.g., EPA's compliance/enforcement efforts should've been stronger 20 years ago, as EPA's role was more focused on these activities 20 years ago), or this deviation may reflect what respondents believe was important (versus an EPA strength), as seems to be the case in some of the written comments.

Respondents who worked at EPA for 20 or more years also were less likely to select three activities as historical strengths: "communicating information about policies and regulations to the public," "leading and supporting international efforts to protect the environment," and "prioritizing resources appropriately to protect and improve environmental quality." In this case, the deviation (8-9 percentage points) is not a strong signal and may

reflect that EPA's relative strength in certain functions/activities varied over the course of a long tenure at EPA. Both groups (those departing 20 years ago or more, and those serving for 20 years or more), tended to select at a lower rate than average EPA's historical strength in "leading and supporting international efforts to protect the environment," suggesting that these EPA veterans see it as a function that isn't an EPA strength, or see it as an important function that ought to receive more attention.

Written Comments on Question 13

Written comments mostly amplified the signals indicated by the data, and, in some instances, clearly reflected respondents' perception of the importance of different functions/activities (versus EPA's strength related to functions/activities). For example:

"Compliance and enforcement was the tool that created a level playing field."

"Without a strong enforcement program all the regulations adopted by the Agency are useless."

Likewise, some commenters clearly conveyed that, while some activity may not be a strength of EPA, it was important. For example:

"I believe that (finding ways to work with business) is of critical importance but that it was never a real strength of our Agency."

"Several of these functions are particularly important, but at the time I was at EPA, the agency did not perform them as well as I would hope: promoting market-based and other innovative solutions, and balancing economic impacts with environmental goals."

"This describes the past and is not indicative of what are the better approaches for today or the future."

Some respondents pointed out that EPA's strengths may vary considerably across programs and over time, best summed up in this comment:

"EPA has a mixed history on all of these."

OPEN-ENDED QUESTIONS CONCERNING EPA'S INSTITUTIONAL STRENGTHS AND CHALLENGES, AND GENERAL COMMENTS

QUESTION 16

If you were designing the EPA of the future, what are KEY POSITIVE ATTRIBUTES from your time at the agency that should be PRESERVED?

QUESTION 17

If you were designing the EPA of the future, what KEY CHANGES would you make to avoid the greatest frustrations you experienced working there?

QUESTION 18

Is there anything important we didn't cover? Please describe any suggestions for helping EPA meet future challenges.

Respondents were given space to write long-form responses to general questions about EPA.

By far the strongest message from open-ended written comments in this section was related to EPA's mission and staff motivation. Many respondents wrote that clarity of mission was the most important thing EPA needed to preserve. Two representative comments among dozens of others were:

"Mission identification to protect human health and the environment. Well paid and career supported employees. Clear

Clarity of mission, motivated staff, scientific excellence, and openness to new approaches form a long-term vision for the future EPA.

legislative mandates and goals."

"When hiring people, everyone should be asked 'Why do you want to work at EPA?' and preference should be given to those who answer with some variation of "I want to save the world."

"Only hire well-educated, well-spoken, passionate believers."

"Strong commitment and support of EPA's mission – walking the walk and talking the talk."

Finally, a respondent who apparently worked at EPA in its early years wrote:

"I joined EPA because of its mission. I saw Bill Ruckelshaus in action. He inspired me. Staff who join EPA don't do it for the money. They want to make a difference…"

Often, the "mission and motivation" type of comments connected to transparency and inclusion.

Scientific excellence is a critical foundation for EPA's actions and future role, especially science directed toward developing tools and solving problems.

For example:

"Commitment to the mission, openness to new approaches… seeking and valuing regional office input, seeking and valuing input by affected parties, fierce and honest internal debate/decision-making, free equal-footing access…to senior appointees."

"…the willingness of high-level managers to engage with the entire team that developed a regulation or worked on an issue and to hear from each of them, not just the team's manager."

Working relationships seemed to be related to the concepts of motivation and mission.

"Collegial relationships across all media because we were invested in a shared mission."

"Effective personal relationships. Open dialogue."

"Shared mission driven employees. We were there because of a passion to protect and preserve our environment."

Other commentary offered on "mission and motivation," included: personal experiences with strong former leaders/managers; allowing staff freedom for experimentation and innovation, collaborative problem-solving, and a culture of teamwork and participation.

A second message that emerged from the open-ended comments was the importance of maintaining scientific credibility.

"Keep the Agency's decisions based on the best current science."

"The agency's scientific expertise on environmental issues is second to none. Keep that up. Attracting top talent is key."

"Definitely scientific studies and research. The agency is known worldwide for their vast information on chemicals and data. This should never stop."

Several comments linked science and objectivity in the agency's decision-making. For example:

"Using science to inform policy and regulations. Science is important."

"Respect for science-based decisions."

"Science is the cornerstone of decision making."

"Being the purveyor of solid science devoid of political biases."

Another positive attribute that respondents said should be preserved was EPA's working relationship with states/tribes and stakeholders.

"Continue support to the states to assure their understanding of regulations and reasonable enforcement information."

"Cooperation between headquarters and regions and between regions and states."

"Ability to partner with state, tribal and local governments to achieve results."

"The EPA at the federal level can't do it all so we need to work hard to partner with state environmental agencies and technically support their efforts…"

Beyond the states/tribes, stakeholders mentioned by multiple respondents include the regulated community, universities, NGOs, Congress, and the public.

Other positive attributes that received mention by multiple respondents include: openness, transparency, and communicating to/educating the public; continuing strong enforcement of regulations; employee development and training; partnerships and collaboration with industry; staff movement across EPA programs/regions; emergency response capability; leading globally.

As for frustrations respondents experienced at EPA that should be avoided in the future (question 17), respondents provided a wide variety of responses. While no single theme overwhelmed the rest, one of the most frequently referenced issues was political influence. Some comments were blunt:

"Get rid of politics. Get rid of political reviews of technical reports."

"Reduce the political influence. Increase the use of science and technology in decisions and rulemaking."

"Perhaps a very slight frustration which has gotten worse since I was there is the politization of the Agency, with too much manipulation of EPA's work by others such as the Congress or the Administration."

"Don't allow politics to interfere with protection of human health and the environment…"

Another fairly frequently mentioned issue was cross-agency coordination, HQ-Regional interactions, and internal communication. One respondent captured this sentiment:

"I'd break down the barriers between air, water, toxics, pesticides, waste, and science programs to provide unified information that comports to both public and scientific inquiry."

Other comments related to internal communications/coordination include:

"Managers don't reach out and regularly communicate with their counterparts in related parts of the agency."

"Remove firewalls between Regions and allow a flow of talent and leadership."

"HQ and Regional relationships: EPA should institute a much more active program to encourage senior employees to have worked in both HQ and regional offices."

"Better understanding by HQ officials and staff of regional and state differences."

"HQ offices working with regions, not in oversight but in collectively achieving overall, agreed upon goals."

"I would improve communication from the bottom up so that staff could better share their ideas and concerns with management."

A substantial number of respondents indicated frustration with changing priorities and "flavor of the month" management initiatives and reorganizations. For example:

"[…] cut out the initiatives introduced every time there is a change in leadership, in most cases this moves us backwards, not forward."

"Change of focus with each change of administration."

"With finite resources, new initiatives come at a cost to existing programs. Understand and target what will be cut to accommodate any new initiative."

"[…] reorganizations that misfit the education, expertise and dedication of staff."

"Too many reorganizations, new systems of accounting, and new initiatives that really don't add value but place greater burden on staff."

"[…] How many times can you 'retool' EPA with Total Quality Management, or other 'improvement' initiatives?"

"If possible, keep reorganizations to a minimum."

"Avoid trying to apply business practices for generating widgets to a government regulatory agency."

Several respondents expressed frustration over funding levels and allocation of resources. Inconsistency in the direction of the agency and rapidly shifting priorities seem to be related concerns. Examples of these comments include:

"Ensure that the value of each of EPA's programs is recognized and avoid creating new problems by prioritizing investments into the problem du jour at the expense of valuable programs."

"More work needs to be done to prioritize our work. Conscious decisions that are transparent need to be made on what will not get done."

"Making real budget choices, not slicing and dicing, so that consequences of budget reductions were visible."

"Create a budget that makes sense instead of how it has been done in the past. The real work is performed in the Regions and they need more resources. HQ staff should be greatly reduced."

"More funding for strengthening internal technical capabilities including research programs."

Several respondents suggested that more money was needed for travel, training, and staff development, and others suggested that EPA needed more funding stability.

Many respondents focused on general management issues, including accountability for poor performers, better reward/recognition for strong performers, bureaucratic layering and excessive reporting requirements, subpar data/information systems, and the competency of managers. The following responses suggested things EPA needed to do or needed to avoid in the future:

"Ensure there is accountability oversight, and honesty in addressing challenges."

"I became frustrated with the performance review system. I would like to see more emphasis on developing skills for employees."

"Too many silos. Too many layers of management. Better communication within and between offices."

"Eliminate unnecessary bureaucratic requirements."

"Shorter sign-off chains. Fewer levels of management. More confidence in the well-qualified staff."

"Simplify regulatory development…streamline EPA hierarchy…"

"Greatly improve data management and IT systems — electronic reporting, time reporting, integration of data systems."

"Upgrade internet, email and online access to agency data systems."

There were several comments regarding managers at the Agency, including:

"Need better trained supervisors."

"EPA management needs to be comprised of people who know how to manage."

Many respondents suggested that managers need to have broader experience across the agency.

In addition to the comments addressing the areas identified above, the following topics were raised by multiple respondents: EPA's ability to adapt/encourage technological change, encouraging staff innovation, working closer with other federal agencies, breaking down stovepipes; more focused regulations and working with regulated communities, more focus on international work; improve management of grants/contracts; focus on climate change, EPA's image and public support, improve EPA communications and public information, population growth, consistent/coordinated effort to promote sustainability, and public's "right to know."

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RELATED DOCUMENTS

Focus Group Reports: EPA Alumni Association formed five focus groups of EPA alumni to consider and discuss major themes and challenges of the future. The focus group reports were an important input into the development of the survey of EPA AA members.

Focus group reports can be found on EPA AA's website: epaalumni.org/future/future_focusgroups.cfm

Focus Group 1: Future Environmental Challenges

Focus Group 2: The "Environmental Protection Enterprise" and EPA's Role

Focus Group 3: EPA's Relationship with States and Other Public and Private Actors

Focus Group 4: Science, Technology, and Information

Focus Group 5: EPA Tools, Processes, Culture, and Resources

Modernizing Environmental Protection: A Brief History of Lessons Learned, produced by EPA alumni and staff in cooperation with American University's Center for Environmental Policy. american.edu/spa/cep/future-directions

The Future of Environmental Protection and the EPA: A report issued by American University's Center for Environmental Policy based on survey results, focus group reports, and other sources of information. This report will be made available at: american.edu/spa/cep

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