Chapter 1

Technology and Information Management and Security

The task force explored using information technology[7] to enhance the effectiveness and efficiency of the NEPA process. We sought specific examples of innovative technical approaches to the assessment and communication of potential environmental impacts.

Information management[8] is critical to implementing NEPA, and to its goals and mandates. After establishing the nation's environmental policy,[9] Congress set high goals for the Federal government,[10] and called upon all Federal agencies to use and manage environmental information before decisionmaking.[11] CEQ regulations that implement NEPA state that:

> NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and

[7] In this discussion, information technology refers to the hardware, software, and other electronic media used to manage information.

[8] In this discussion, information management includes accessing, acquiring, storing, manipulating, and distributing information.

[9] NEPA Section 101(a) states "that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." 42 U.S.C. § 4331(a).

[10] NEPA Section 101(b) specifies the following goals: "(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." 42 U.S.C. § 4331(b). NEPA Sections102(2)(G) and (H) also call upon all agencies to "make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment" and to "initiate and utilize ecological information in the planning and development of resource-oriented projects." 42 U.S.C. § 4332(2)(G)-(H).

[11] 42 U.S.C. § 4332(2)(C).

before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.[12]

Information about the NEPA process, such as the people, cost, and time involved, environmental data, models used to analyze data, and relevant laws and regulations are used during the NEPA process. Analytical documents, including EAs (environmental assessments) and EISs (environmental impact statements), provide information about the analysis and the process. Informing decision makers and the public is essential to the NEPA process. Effective and efficient NEPA implementation requires information-rich communication among Federal, State, and local governments, Tribes, private industry, citizens, and academia. Agencies must identify significant environmental issues and convey quality, timely information to agency planners, decision makers, and the public. Publishing and distributing EAs and EISs is just one aspect of effectively and efficiently conveying needed information, and involving the public and other stakeholders. Participation in preparing the NEPA analyses and documents increases the value of citizens' experience and produces better results.

1.1. Government Initiatives

Technological advances have dramatically enhanced our capacity to obtain, manage and use information. Legislators and policy makers recognize that the Federal government must keep pace with technological advances. Recent information-technology initiatives and legislation have focused on:

- Information quality;
- Reducing the paperwork associated with Federal government operations;
- Promoting greater consistency in Federal information management policies by improving the efficiency of information collection, maintenance, use, and dissemination, particularly by strengthening partnerships with other levels of government and nongovernmental organizations; and
- Ensuring the timely and equitable exchange of information with the public.

The Office of Management and Budget's (OMB's) "E-Government Strategy–Implementing the President's Management Agenda for E-Government" identified 24 initiatives specifically designed to improve the effectiveness and efficiency of Federal information management and technologies.[13] These initiatives are designed to further the goals of the President's Expanding E-Government Initiative[14] by focusing on:

[12] 40 C.F.R. § 1500.1(b).

[13] Office of Management and Budget, "E-Government Strategy-Implementing the President's Management Agenda for E-Government" (Feb. 27, 2002), *available at* http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf.

[14] Presidential Memorandum, "Electronic Government's Role in Implementing the President's Management Agenda" (July 10, 2002), *available at* http://www.whitehouse.gov/news/releases/2002/07/20020710-6.html.

- ❖ Making it easy for citizens to obtain service from and interact with the Federal government;
- ❖ Improving government efficiency and effectiveness; and
- ❖ Improving government's responsiveness to citizens.

Several initiatives affect the NEPA process. A goal of the e-Authentication initiative is to build and enable trust to support the widespread use of electronic interactions between the public and government and among governments. A goal of the Geospatial Information One-Stop initiative is to provide access to the Federal government's spatial data assets in one location and to help increase the accessibility of State and local spatial data assets.

Congress has also recently addressed information and information technology issues. Systems that provide public access to information must comply with section 508 of the Rehabilitation Act Amendments of 1998 to ensure that the information technology provided is accessible to people with disabilities.[15] Section 515 of the Treasury and General Government Appropriations Act of Fiscal Year 2001, commonly known as the Information Quality Act,[16] addresses the need to ensure and maximize the quality, objectivity, use, and integrity of information disseminated by Federal agencies. The recently enacted E-Government Act of 2002[17] promotes electronic government services and processes by establishing measures that require Internet-based information technology to enhance access to government information.

Federal initiatives and acts complement the information management goals of NEPA and provide opportunities to enhance the effectiveness and efficiency of the NEPA process. CEQ should continue to promote the use and sharing of NEPA information and information systems by working with OMB, other government officials, nongovernmental organizations, and private businesses and industry to ensure that NEPA information requirements are supported by other Federal information management and technology requirements.

1.2. NEPA-Process Tracking Systems

Through interviews with various agencies, the task force learned about why the NEPA process often experiences delays. Some delays occur at the individual NEPA-process level, while others are more systemic. Lack of timely consultation with regulatory agencies, agency experts unable to devote sufficient time, failing to coordinate NEPA-process timelines with program and project development and cooperating agency schedules, and insufficient staff to oversee the process and work can cause process delays.

[15] 29 U.S.C. § 701 *et seq.* at § 749d.

[16] Pub. L. No. 106-554, 114 Stat. 2763.

[17] Pub. L. No. 107-347, 116 Stat. 2899.

To identify the causes of delay and respond proactively, many agencies are experimenting with software applications that track the NEPA process. Several agencies are also developing systems to better manage NEPA activities agency-wide. The software applications track the process by compiling data such as:

- Proposal description;
- Potentially affected location(s);
- Level of NEPA analysis and documentation (e.g., categorical exclusion, EA, or EIS);
- NEPA and activity planning timelines and milestones;
- Status of the NEPA process (e.g., scoping, draft, or final);
- Public involvement activities;
- Costs associated with activities integrated into the NEPA process; and
- NEPA team members.

Additionally, some tracking systems include the ability to generate e-mail notices to team members when their attention is required.

Many agencies with NEPA-process tracking systems are planning enhancements, such as searchable libraries of NEPA analytical documents and links to geospatial data and other reference documents and studies. Electronically posting and receiving comments and supplementing traditional NEPA document publication and distribution with CD-ROM and Website publication are also being adopted by agencies.

Integrating NEPA-process tracking systems with agency-project management systems has increased interest in using the NEPA systems to track proposal implementation, mitigation effectiveness, and related costs. Agencies actively involved in developing the systems noted that such initiatives could be used to meet a variety of Federal requirements such as E-Government's Electronic Records Management and Geospatial Information One-Stop initiatives,[18] the Government Performance and Results Act of 1993,[19] and Freedom of Information Act[20] requests.

For example, the Department of Energy has developed requirements and procedures for posting its EISs and EAs on the DOE NEPA Web site (http://tis.ch.doe.gov/nepa/). In addition, DOE systematically tracks NEPA process costs and performance metrics, conducts analyses, and presents the results in quarterly *Lessons Learned* reports, which are made publicly available on the DOE NEPA Web site. The NEPA community could benefit from sharing the experiential knowledge gained from developing electronic NEPA information distribution standards and tracking mechanisms and would likely realize cost savings by reducing redundant development costs.

[18] Office of Management and Budget, "E-Government Strategy-Implementing the President's Management Agenda for E-Government" (Feb. 27, 2002), *available at* http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf.

[19] Pub. L. No. 103-62, 107 Stat. 287 (codified in part at 31 U.S.C. § 1115 (2000)).

[20] 5 U.S.C. § 552.

Although technologies for enhancing the effectiveness of NEPA implementation are widely available, many agencies lack the resources and knowledge to develop and use information management strategies and information technologies to help manage NEPA process and analytical information. The absence of consolidated and current NEPA information hinders agencies' ability to access basic information and respond to the public, Congress, other public officials, and stakeholders. CEQ encourages agencies to participate in information gathering about the NEPA process. However, additional opportunities to access and share decentralized Federal, State, Tribal, and local knowledge should be explored. The availability of technical and management skills for NEPA analyses must also be ensured.

1.3. Information Needs for NEPA Analyses

Timely completion of NEPA analyses depends on the availability of and access to existing information and the ability to collect new information. Reducing the accumulation of extraneous background data and emphasizing relevant environmental issues is key to the successful use of information in the NEPA process.[21]

Searching existing analyses and documents and coordinating with other agencies can address some requirements. For example, previous NEPA analyses and documents can be reviewed to better understand the range of Federal activities that might collectively affect a given area and to better understand the success of previous impact prediction techniques. However, Federal agencies identify information needs to ensure that the unique requirements of each proposed action are met.

Information needed to address a proposed action and the potential environmental impacts of that action typically includes engineering and natural resource data. Other common data needs include:

- Wetlands;
- Soils;
- Water quality and quantity;
- Habitat/Threatened and endangered species;
- Land use;
- Archaeological resources;
- Tribal cultural resources;
- Facilities/Infrastructure/Utilities/Rights-of-way;
- Air quality;
- Social/Economic/Demographic; and
- Environmental protection standards.

[21] 40 C.F.R. § 1500.2(b).

Common modeling and analysis needs include:

- Air quality models;
- Noise models;
- Water quality models;
- Transportation models;
- Risk assessments;
- Economic and cost-benefit analyses; and
- Other impact assessment techniques.

1.3.1. Information Sources

Agencies rely on a combination of internal and external information sources. Data from outside sources is used because:

- Established, well-known sources were adequate for past analyses;
- Federal, State, and local governments and Tribes have special expertise in environmental, social, or economic impacts associated with a proposed action; and
- The agency might lack the resources or expertise to develop the necessary information and databases internally.

Sources of data include:

- Previous NEPA analyses with the same geographic area or similar actions;
- Internally maintained databases at the corporate and field level;
- Records of consultations with regulatory agencies;
- Field studies and internally funded research;
- Onsite environmental baseline information and interviews with site personnel;
- Peer-reviewed research presented in journals or at conferences; and
- Clearinghouses and other environmental databases.

Coordinating and consulting with Tribes, State and local governments and planning commissions, environmental and industry groups, and private landowners are also effective sources of information.

Existing information, such as environmental protection standards, data regarding sensitive environmental resources and environmental values, and the evaluation of potential impacts, can inform new decision-making processes. However, information sources must be supplemented to address the unique aspects of many proposed actions, particularly concerning the need for site-specific detail. Insufficient time, money, or expertise needed to collect data; seasonal field-data collection; and

completion of final design alternatives can delay any NEPA process and limit agencies' ability to strategically address data gaps and track environmental trends. Most agencies prefer to use peer-reviewed information; however, timelines are often too short to accommodate the peer-review process. Insufficient availability of resource experts inhibits the ability of agencies to stay abreast of current research, which in turn causes agencies to "reinvent the wheel" rather than leverage existing information resources.

Many agencies use contractors to help develop NEPA analyses and documentation. In general, the agencies we interviewed indicated that contractor use was effective; however, several concerns were raised including:

- Contracting usually results in acquiring duplicate data rather than updating existing public domain information;
- Data and analyses provided in ways that do not facilitate reuse; and
- Information provided is sometimes proprietary.

Similar concerns were raised regarding information submitted by applicants. One comment suggested using contract stipulations to ensure that data are delivered according to established standards.

1.3.2. Sharing Information Resources

Several agencies noted that sharing information resources facilitates collaboration. Ensuring coordination with other agencies, including non-Federal agencies and organizations, is important when addressing scientific and technical information issues. The Federal agencies we spoke with generally trusted the validity of information provided by State and local governments more than that provided by interest groups and individuals. Federal agencies noted that they are often hindered by financial and staffing limitations, while State and local governments commented that they are often frustrated when Federal partners do not recognize their information resources and expertise.

The task force received many comments that addressed the benefits of collaboratively sharing information resources. For example, States often have the personnel, expertise, and experience to address local concerns; local municipalities might provide a level of detail that Federal agencies cannot achieve; and State and local governments and Tribes often possess special expertise about the physical environment, customs, culture, and local tax base. Meaningful collaborative relationships between Federal and local interests can reduce financial and human resource burdens at the Federal level, while fostering better intergovernmental relationships.

Many Federal and non-Federal agencies, industry, citizens, and academia recognize the value of NEPA analytic and process information. For example, many NEPA practitioners conduct research across agencies when accomplishing cumulative impact assessments. CEQ should continue to encourage Federal agencies to work collaboratively with Federal, State, and local governments, Tribes, and cooperating agencies to address long-term knowledge-management challenges. Such challenges

include developing scalable information infrastructures, establishing standards for sharing and integrating environmental data, and using technology to ensure natural and social sciences and environmental design arts are incorporated in planning and decisionmaking.

For example, many respondents and agency staff who commented were interested in using spatial data and geographic information systems (GIS) throughout the development of NEPA analyses and documentation as well as when communicating with the public and decision makers (see the Communication Mechanisms section of this chapter). Understanding the geographic context of proposed activities improves planning by showing the extent of the proposed activities and their associated impacts, promoting more consistent analyses and reviews, and facilitating cumulative effects analysis and monitoring efforts. However, geospatial data holdings are widely dispersed. Compiling available data across jurisdictional boundaries is often difficult due to differences in data element definitions, sampling methodologies, spatial and temporal resolution, technology, and standards. Lack of adequate metadata and documentation also inhibits the use of non-Federal information. Therefore, to use GIS in the NEPA process successfully, uniform standards for GIS and mapping data are needed.

1.3.3. Initiatives Foster NEPA Information Resources

The difficulties associated with data and modeling requirements and information identification and collection during the NEPA process are common to most agencies. Therefore, several comments supported CEQ developing NEPA document repositories and standardizing environmental information. The respondents believe that such efforts would simplify the identification and compilation of data, ensure the availability of quality data, and facilitate consistent reviews. Although the task force does not think that CEQ is in a position to develop document repositories or standardize environmental information, ongoing Federal initiatives are addressing the development and use of scientific and technical resources in Federal decisionmaking.

For example, OMB Circular A-16, "Geographic Information and Related Spatial Data Activities",[22] established the National Spatial Data Infrastructure and the Federal Geographic Data Committee[23] as the coordinating body to promote the use and dissemination of geospatial data. The recent E-Government Strategy identified the Geospatial Information One-Stop initiative to establish a single point of access to existing Federal spatial data assets and to improve the accessibility of State and local geospatial information resources. While these initiatives are primarily concerned with data collection and access, other efforts, such as the Federal Interagency Hydrologic Modeling Conference,[24] share and promote development of modeling tools. Many

[22] Office of Management and Budget, Circular A-16 Revised, "Coordination of Geographic Information and Related Spatial Data Activities" (Aug. 19, 2002), *available at* http://www.whitehouse.gov/omb/circulars/a016/print/a016_rev.html.

[23] Spatial data policy development, including standards development and coordinating spatial data activities with other levels of government, academia, and the private sector, are examples of the committee's program of work.

[24] The Federal Interagency Hydrologic Modeling Conference occurs under the auspices of the Advisory Committee on Water Information (http://water.usgs.gov/wicp/acwi/), bringing together entities that use water information in a decisionmaking context. Through workshops, symposia, and working groups, the Advisory Committee on Water Information maximizes the effectiveness of water information-related activities and improves standards, guidelines, and procedures for the collection, analysis, management, and dissemination of water information.

agencies interviewed participate in these and similar efforts. The task force believes that the NEPA community should promote the development of data, information, and analytical methodologies applicable to the NEPA process through greater coordination with such initiatives. We also believe that the NEPA community should promote the use of metadata and standards protocols across Federal, State, and local governments for information used in NEPA analyses.

1.4. Communication and Public Access to Information

Effective implementation of information management and technologies helps the right people receive the right information at the right time in the right form. However, different constituencies have different interests and place different values on different types of information. The NEPA process has benefited from information technologies that provide increased access to information and enhance public participation. However, because the expertise and technological capabilities of participants in the NEPA process can vary widely, determining how much information to provide to what groups, and how and when to provide the information can be challenging.

1.4.1. Communication Mechanisms

The task force found that methods of exchanging information generated the most discussion, particularly concerning individuals who lack access to or training in information technologies. Both Federal and non-Federal groups agree that electronic distribution of information and documents and use of other information technology tools is not substitution for traditional public involvement mechanisms, such as scoping meetings and hardcopy document publication and distribution. Most people favored flexible and adaptable public involvement approaches that use a variety of media and forums and are tailored to the preferences and needs of local constituencies. Although many information technologies have been used to enhance public involvement, a few agencies continue to request additional guidance on the extent to which IT methods can be used.

Although not exclusive to information technologies, a related concern was that communication and information flow is often not interactive. For example, Websites might be a good way to post public meetings and disseminate technical information, but they do not necessarily facilitate two-way communication. Likewise, some Web-based comment forms do not provide a way to clarify information or ask questions. Available two-way communication technologies (e.g., Internet chatrooms, email listservers, or video conferencing) are not often used.

Several organizations noted that the visual nature of GIS helps communicate complex concepts to their constituencies. According to the Western Governors' Association, GIS technology is a vital component of successful NEPA processes that address land management decisions because the decisions are spatial and stakeholders relate to location; therefore, location is often the focus of stakeholder comments and concerns. The U.S. Air Force commented that a Website developed by Eglin Air Force Base to accomplish interdisciplinary reviews of environmental impact analyses uses GIS to illustrate proposals. Their GIS also provides simultaneous access to operational and environmental information, thereby increasing awareness of environmental issues.

Additionally, using GIS in the NEPA process facilitates timely access to information by decision makers at all organizational levels.

Many agencies that electronically accept public comments have experienced an increase in the volume of comments received, and they expect that trend to continue. While most agencies effectively manage the increased volume and observed that the information technologies provide the tools to manage comments more efficiently and effectively, some concerns were expressed about the increased workload that electronic commenting might produce. A few agencies are reluctant to accept electronic comments due to security issues, uncertainty about how to handle form letters (not a new issue, but one exacerbated by electronic comments), and volume concerns.

1.4.2. Increased Public Interest

The public seems increasingly interested in NEPA-process information and analyses. In the past, how to respond to comments and distribute NEPA documents was the focus of public communication. However, comments received by the task force indicated that the public is demanding improved access to supporting data and models, particularly scientific and technical information, and that improved public access would:

- Better engage the public;
- Enable the public to develop independent analyses;
- Facilitate substantive review and comment; and
- Help agencies identify data gaps.

As public interest for NEPA-process information and analyses has increased, issues surrounding the release of information have become complicated. Many stakeholders would like greater opportunities to review information supporting NEPA analyses before document distribution. In particular, one public concern is that most comment periods do not give stakeholders sufficient time to educate themselves on the issues and prepare adequate responses, particularly in areas of the country where there is a large Federal presence and many NEPA activities. Additionally, many who commented on this issue want access to supporting technical information to facilitate independent analyses.

The task force acknowledges that improved and earlier access to technical NEPA-process information is possible; however, the quantity, level of detail, and timing of release of pertinent information must be considered. NEPA is an open process and public interest is growing, however, there is little uniformity in agency procedures regarding the release of information during the NEPA process. Several agencies indicated that they have reservations about releasing information, particularly scientific and technical information, when the analysis is still in progress because:

- ❖ The information could be confusing or misinterpreted (e.g., releasing information or analysis that applies to one alternative could be misinterpreted as elimination of the other alternatives);
- ❖ Releasing data without accompanying explanatory text could be misunderstood because it might not follow the plain language requirement of all government documents;
- ❖ The confidentiality, privacy, or security of applicant, contractor, and other proprietary information might be compromised; and
- ❖ Inaccurate or incomplete information could be released if reviews are unfinished.

1.5. NEPA and Information Quality

The CEQ regulations implementing NEPA state that environmental information must be available to public officials and citizens before decisions are made and actions are taken. Additionally, the information must be of high quality because accuracy is essential to implementing NEPA.[25] Additionally, the CEQ regulations state:

> Agencies are to ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.[26]

OMB's "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies"[27] implementing the Information Quality Act further emphasize the need for high quality information in NEPA analyses and documents.

Federal agencies and respondents noted that data standards and quality assurance policies establish certain expectations, which in turn facilitate increased participation by a broad variety of participants. Several comments called for development of criteria to evaluate information in the NEPA process. The task force observed that agencies with significant research functions were the most likely to have formal quality-control guidelines.

[25] 40 C.F.R. § 1500.1(b).

[26] 40 C.F.R. § 1502.24.

[27] Office of Management and Budget, "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies" (Oct. 1, 2001), *available at* http://www.whitehouse.gov/omb/fedreg/final_information_quality_guidelines.html.

1.5.1. Treasury and General Government Appropriations Act for Fiscal Year 2001

Some agencies and stakeholders raised the issue of data quality and the relationship of the Information Quality Act to the NEPA process. Many agencies thought that since NEPA regulations and procedures already contain specific provisions regarding information quality and provide for public review, the provisions of the Information Quality Act are not new requirements. Therefore, they felt that further action by CEQ was unnecessary. The task force agrees that the provisions of the Information Quality Act are consistent with the existing provisions in NEPA regulations. However, we also received many comments criticizing agency objectivity when preparing NEPA analyses and documentation, with several comments requesting criteria to validate information. Further, some agencies are concerned about potential legal impacts given the willingness of some organizations and the public to litigate information quality issues.

1.5.2. Information Quality Control

Agencies prefer to use peer-reviewed information developed according to established standards, protocols, and quality control procedures to the extent practical. Research and data developed by well-respected research entities are preferred. Information from interest groups or other entities with strong positions on the proposed action are viewed with skepticism. However, many agencies noted that the ability to verify information is often compromised by a lack of internal expertise in specialized areas and a lack of adequate documentation on how the information was developed (i.e., metadata).

Based on the comments received, the task force believes that agencies must disclose how they ensure the adequacy of the data and analyses used in a NEPA process. The task force believes that if Federal agencies fail to address this situation, either overly prescriptive requirements or requirements that inhibit the dynamic advances in science and technology could be developed through judicial or legislative action. Therefore, the task force urges CEQ and Federal agencies to begin a review of information quality issues and quality control mechanisms. The review should begin by asking:

- What are the current information quality policies and guidelines?
- Do the current policies and guidelines specifically apply to the preparation of NEPA analyses and documents?
- Do the current policies and guidelines help address public concerns regarding NEPA information quality?

CEQ in conjunction with other agencies should review how agencies accomplish NEPA-information quality control and quality assurance, and determine if CEQ and Federal regulatory requirements are being met. Based upon the results of the review, CEQ should develop any necessary guidance.

1.6. NEPA and Information Security

The task force received comments regarding ensuring security and privacy of information during the NEPA process. In support of the task force, representatives from the Department of Defense conducted a brief review of agencies' treatment of sensitive information[28] during the NEPA process post September 11, 2001. Although agencies expressed a strong desire to continue to inform the public of NEPA analyses, some agencies suggested that sensitive but unclassifiable information[29] should not be readily available and that policies are needed to address the screening of environmental information to remove sensitive infrastructure security information before any such information is made available to the public.

Agencies were concerned that sharing sensitive information in NEPA documents with cooperating agencies and others might compromise information security. For example, detailing the inventory of hazardous material or the specific location of the material might be inappropriate. Several agencies have requested that their internal security and public affairs offices review and provide advice on the security of the information in NEPA documents. Representatives from the Department of Defense concluded that although information does not meet the standards for classification or qualify for an exemption under the Freedom of Information Act it might be inappropriate for public disclosure. They further concluded that agencies, particularly those working with nuclear and other hazardous materials, want more clarity about how to improve management of sensitive information during the NEPA process.

The task force believes that the security of sensitive information should include consideration of property owners' privacy rights when information is gathered on their property, and the need to protect sensitive resources such as archaeological sites and threatened and endangered species and habitat locations. Some agencies that work closely with tribal agencies are concerned about access to information regarding tribal cultural resources. Federal agencies frequently have difficulty acquiring tribal cultural, private land, and commercial proprietary information due to the originating parties' concerns about public disclosure. Disclosing the location of historic resources, archeological sites, and traditional cultural sites increases the risk of damage and unauthorized collecting and creates a reluctance to provide relevant information.

The desire to protect some types of information in NEPA documents must be balanced with the need to provide sufficient information to ensure informed decision making by Federal agencies, and to facilitate public participation. Some comments expressed concern that potential terrorist attacks and other threats could be used as a pretext to bypass public involvement. While most agencies effectively balance the need for disclosure with protection of sensitive information on a case-by-case basis, some also commented that the current lack of uniform policies leads to disparate treatment of the same information in different agencies' NEPA documents. Therefore, a broad view

[28] Sensitive information was defined by the Department of Defense group as any information that could be used by someone to harm the health and safety of the public or to otherwise undermine U.S. security interests.

[29] Information not subject to controls within the formal system for classifying national security information.

should be taken to determine the types of information that are of concern and what measures might be appropriate for handling that information in the NEPA process.

Criteria should be developed and consistently applied to all types of sensitive information in the NEPA process. Doing so will help ensure the uniform protection of sensitive information while:

- ❖ Reinforcing public trust;
- ❖ Defining public expectations;
- ❖ Facilitating cooperation; and
- ❖ Ensuring informed decisionmaking.

CEQ should work with agencies and organizations that have expertise and an interest in handling sensitive information to develop a mechanism for information security, and to promote consistency in NEPA-related sensitive-information policies. CEQ and NEPA practitioners should consider ongoing initiatives, such as OMB's implementation of the Federal Information Security Management Act of 2002,[30] and consider whether guidance specific to the NEPA process is necessary.

1.7. Concerns about Using Information Technology

Many comments received by the task force indicated that technology has improved the availability of information. However, other comments expressed concerns. The following concerns were noted in several comments the task force received:

- ❖ Prescriptive mandates for information technologies would ultimately inhibit innovation;
- ❖ Increased use of information technology could result in an overwhelming amount of information;
- ❖ Advances in information technology, particularly computer models and analytical tools, could become a substitute for human insight and judgment; and
- ❖ Information technologies should be used with traditional NEPA process public involvement and community impact assessment techniques for optimal efficiency and effectiveness.

The task force agrees that excessively prescriptive mandates are undesirable, and we commend agencies for their application of information technologies to the NEPA process, especially given limited resources.[31] The task force reviewed several systems designed to:

[30] Section 301 of the E-Government Act of 2002, Pub. L. No. 107-347, 116 Stat. 2899.

[31] Smythe, Robert and Isber, Caroline, "NEPA in the Agencies—2002, A Report to the Natural Resources Council of America" (Oct. 2002), *available at* http://www.naturalresourcescouncil.org.

- ❖ Automate repetitive environmental analysis and analytical methods within individual agencies;
- ❖ Communicate with and disseminate information to cooperating agencies and stakeholders;
- ❖ Facilitate document review where staff is limited; and
- ❖ Track the number and status of NEPA projects across an agency.

Although development of the above systems shows agency innovation, information technology is usually unique to each agency's NEPA process. Leadership and coordination can help achieve greater compatibility and improve capabilities across agencies. CEQ should provide that leadership and coordination.

Many agencies indicated that stakeholder groups are increasingly interested in NEPA-process information and that information technologies have played a positive role in making information more readily available. Others expressed concern that information technologies have exacerbated problems associated with determining what information to use, assessing and validating the quality of the information, ensuring that documents are concise, and determining the sufficiency of information for a decision. The Internet has made information that was once only of interest to or accessible by technical specialists, readily available to the average citizen. Several agencies indicated that as the availability and supply of information has increased, stakeholder groups are taking an increasing interest in information and demanding more information. While most respondents agree that NEPA documents must focus on the relevance of the supporting technical information to the decision and confine technical detail to appendices, concerns persist. The task force believes that CEQ and Federal agencies should reinforce that NEPA documents should focus on issues that are significant to the action.[32] CEQ and the agencies should also promote the development and use of information management strategies and technologies to help agencies find and assess relevant information.

The task force acknowledges that information technologies and computer models cannot replace human insight and judgment. Several agencies are developing expert systems; however, the systems are generally designed to guide the user through a series of questions that prompt them for particular types of information. Individuals are ultimately responsible for the proper use and interpretation of the technology and the results.

We recognize that communication technologies can increase effective public involvement, and that the technologies can help manage increased public participation. However, technologies must be combined with existing, non-technological public involvement and communication techniques. There was widespread agreement that neither the electronic distribution of information and documents nor other information technology tools can substitute for traditional public involvement mechanisms, such as scoping and hardcopy document publication and distribution. Accessing and using

[32] 40 C.F.R. § 1500.1(b).

information technologies requires flexible and adaptable public involvement approaches that use a variety of media and forums and are tailored to the preferences and needs of the local constituencies.

1.8. Barriers to Using Information Technology

The task force noted several systemic barriers to the effective and efficient use of NEPA-process information technologies, which are generally encountered during implementation of any information management or information technology program. The legislative and regulatory policies previously discussed have been promulgated to mitigate information technology barriers.

1.8.1. Vision

Many agencies use information technology to replicate paper NEPA processes or have focused on electronic publication and distribution. Better leveraging of technology investments requires innovative ways to broadly use technology. Information technology solutions can eliminate paperwork and integrate activities across established organizations and jurisdictions. Strategic investment decisions must be based on practices that maximize value to the public and government, while providing the privacy and security critical to successful E-Government and NEPA implementation.

1.8.2. Change

Opportunities sometimes involve changes in current procedures, and new initiatives should include development of results-oriented performance measures that enhance information sharing, training, and communications. Adopting new policies and standards to enhance information sharing requires direction and support from leadership, and requires that agencies determine how to align and revise conflicting definitions and requirements.

1.8.3. Interoperability

Agencies generally buy and use computer hardware and software to address internal needs. Frequently, the public must search multiple agency sites to access information, and agencies cannot easily share information. Many innovations in environmental technologies and much of the experiential knowledge about the human impacts on the human environment come from State and local governments and Tribes. The NEPA process' interdisciplinary approach helps to integrate Federal, State, and local stakeholders' ecological, social, and economic data and expertise across administrative and political boundaries.[33] Federal agencies should accomplish cross-agency NEPA-process information sharing to ensure that information resources and technologies interface, and to share information with State and local governments and Tribes.

[33] 40 C.F.R. § 1502.6.

1.8.4. Accessibility

The lack of electronic environmental information and either centralized access or access to field data significantly impacts the NEPA process. Complex interfaces and steep learning curves further discourage the use of available technology tools and resources. Additionally, acquiring information about tribal cultural sites, private land, and commercial proprietary information is often difficult for Federal agencies due to the originating parties' concern about public disclosure. Compiling available data across jurisdictional boundaries is often difficult due to differences in data element definitions, sampling methodologies, spatial and temporal resolution, technology, and standards. Lack of adequate metadata and documentation about how the information was developed were also noted as barriers to using existing information.

1.9. Issues and Recommendations

Throughout this chapter, the task force has discussed issues and recommendations that it believes CEQ should consider regarding guidance or changes to the regulations implementing NEPA. All the issues and recommendations are presented in this section.

The task force recommends that CEQ encourage greater consistency across agencies in notification processes, documentation, information resources, and analytical methodologies through strong coordinating mechanisms. We also recommend that all agencies learn from each other and coordinate with groups outside the NEPA community who are working toward similar goals. CEQ is uniquely positioned to facilitate technology transfer throughout the NEPA community and should work with agencies to ensure that future information management and technology developments for implementing NEPA are aligned with the many ongoing Federal initiatives. To use information technology to address information management and technology concerns related to the NEPA process, and to enhance the effectiveness and efficiency of the NEPA process, CEQ should:

- Promote the development and use, and coordinate sharing of NEPA information systems by sponsoring meetings, conferences, and workshops.
- Ensure that NEPAnet accommodates and responds to developing information technologies.
- Develop guidance to clarify the appropriate role of communication and information dissemination technologies during the NEPA process to enhance public involvement techniques.
- Establish a NEPA technical working group to coordinate with interagency groups to:
  - Ensure that NEPA-process information requirements are addressed when protocols and standards about data, information management, modeling tools, and information security are developed;

— Increase awareness of NEPA-process information technology developments throughout the NEPA community; and

— Facilitate identification and use of information resources developed according to established standards.

❖ Lead a review by the agencies of their quality control and assurance standards for NEPA analyses and documentation to ensure conformance with CEQ regulatory requirements[34] and Federal requirements such as Section 515 of the Information Quality Act.[35]

❖ Contact agencies and organizations that have experience working with sensitive information to establish a work group to develop and promote consistent policies for sensitive information in the NEPA process.

The task force believes that these measures support the long-term goals of working collaboratively with State and local agencies, Tribes, and the public to share and leverage environmental information and technology, and ensuring that data and information used in the NEPA process are available to all Federal, State, and local governments, tribes, and the public. The collaborative effort will foster improved evaluation and efficient information technology strategies and tools to integrate high quality environmental information in agency decisionmaking.

1.10. Summary of Recommendations

The task force recommends that CEQ:

❖ Promote the development and use and coordinate sharing NEPA information systems through sponsoring meetings, conferences, and workshops. CEQ should also ensure that NEPAnet is able to accommodate and respond to developing information technologies.

❖ Clarify and endorse the appropriate roles of communications and information dissemination technologies in the NEPA process to enhance public involvement.

❖ Establish a NEPA technical working group to coordinate with interagency groups to:

— Ensure that NEPA information requirements are represented in the development of protocols and standards pertaining to data, information management, modeling tools, and information security;

— Raise awareness of technology developments throughout the NEPA community; and

[34] 40 C.F.R. §§ 1500.1(b), 1502.24.

[35] Treasury and General Government Appropriations Act of Fiscal Year 2001, Pub. L. No. 106-554, 114 Stat 2763 (2001).

— Facilitate the identification and use of information resources developed according to the protocols and standards.

- ❖ Lead a review by the agencies of how they perform quality control and quality assurance for NEPA analyses and documentation to meet the CEQ regulatory requirements for the use of high quality information and Federal requirements such as the Information Quality Act. Any identified gaps should be addressed through clarifying guidance.
- ❖ Work with agencies and organizations that have expertise and an interest in handling sensitive information to develop a mechanism to promote consistent policies for dealing with sensitive information in the NEPA process.