Decision Making in the Environmental Impact Assessment Process

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This article analyzes the decision-making processes used by government agencies when trying to decide whether to approve or reject projects that impact the environment. This article examines some of the real-life inputs into the decision, as well as the influences on the decision maker. For example, some academics suggest that decision makers are more influenced by the environmental impact assessment process itself than by the conclusions of the assessment. Three case studies are presented. I provide an overview of each project and the various influences on the respective decision maker. I demonstrate that decision makers tend to elevate social, cultural, and political concerns over the natural environment. I also demonstrate that each decision maker was influenced by a particular social, cultural, or political aspect unique to each situation. I recommend further research in the expanding use of analytical tools and models in environmental decision making. These tools may encourage the decision maker to give more consideration to the results of the environmental impact assessment versus other external influences.

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> Making a decision is like standing at the proverbial fork in the road. One cannot stand still, one cannot take both forks, and one cannot be sure in advance which fork will prove to be the right path.
>
> —van Eemeren, Grootendorst, and Henkemans (1996)

This article analyzes the decision-making processes used by government agencies to approve or reject projects that may have significant impacts on the environment. One may believe that an agency will use a well-defined procedural process for making decisions, but, in reality, various internal and external factors have greater influences over the decision maker. This article examines some of the real-life inputs into the decision-making process and analyzes the results of three agency decisions that affected the environment.

To begin with, I describe some of the basic requirements for decision making as provided in the implementing regulations for the National Environmental Policy Act of 1969 (NEPA) (US Congress, 1970). I also discuss several academic observations about decision making, with an emphasis on environmental assessments. I present three case studies involving different projects that were analyzed by government agencies using the environmental impact statement (EIS) process. For each example, I provide an overview of the project and the significant issues as documented in the respective EISs. I also describe the agencies' final decisions and the reasons given for each decision. I plan to demonstrate that government agencies tend to elevate social, cultural, and political concerns over the natural environment. In addition, I plan to demonstrate that unique factors influenced the decision maker in each situation. In the next section, I describe some of the regulatory requirements for environmental decision making.

Regulatory Requirements

In response to the 1960s' environmental movement and several high-profile pollution incidents, the United States (US) Congress passed NEPA in 1969. President Nixon signed NEPA into law on January 1, 1970. NEPA created new requirements for assessing government-sponsored activities that have significant impacts on the environment. According to Kreske (1996), the US Congress intended for

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NEPA to create a balance—a productive harmony—between environmental resources and people.

NEPA has two main goals: First, agencies have to consider the environmental impacts of a proposed action before making a decision. Second, an agency has to inform the public that it considered these environmental impacts during its decision making. It is important to point out that NEPA does not require agencies to elevate environmental concerns over other appropriate political, economic, and social considerations. Rather, NEPA only requires agencies to take a hard look at the environmental consequences of a proposed action before implementing the action. Although Congress designed NEPA to achieve environmentally positive results through a compulsory procedural mechanism, NEPA simply prohibits uninformed, not unwise, agency decisions (Nowlin and Henry, 2008).

On the other hand, scholars note that full disclosure of the environmental impacts can have a powerful influence on both the agency and the public (Bazerman, Little, and Chavkin, 2003). The information gained through the EIS process may have the power to impact agency policy, the final decision, and/or society itself. If the public does not like the agency's final decision, it has the option of challenging the agency in court or electing influential politicians who support the public's position (Dietz and Stern, 2008).

The NEPA process is supposed to improve the *quality* of decisions that affect the environment. In particular, regulation 40 CFR 1500.1(c) (for all CFR citations, see Council on Environmental Quality, 1978) states that NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. Attorneys Nowlin and Henry (2008) note that "NEPA is founded on the premise that, by educating federal decision-makers about the environmental consequences of their actions, these officials would select more environmentally-positive courses of action" (p. 3). In other words, by knowing the consequences of a proposed action, the decision maker is expected to choose the most environmentally friendly option.

Another impact of NEPA is the infusion of public comments into the decision-making process. The passage of NEPA gave everybody a voice in decisions regarding the use of public funds and public lands (Nowlin and Henry, 2008). The infusion of public input into the decision-making process is supposed to result in better agency decisions (Dietz and Stern, 2008). The Council on Environmental Quality (1997) agrees, noting that the best decisions are those that meet the needs of the community while minimizing adverse impacts on the environment.

In response to the passage of NEPA, government agencies developed procedures for assessing the effects of federal actions on the environment. These procedural requirements include instructions for conducting environmental impact assessments and preparing EISs. The EIS process is supposed to weigh the benefits versus the costs of the project. In accordance with regulation 40 CFR 1502.1, federal officials are supposed to use the information gained during the EIS development process, in conjunction with other relevant material, to plan actions and to make decisions. Through the EIS process, agencies have to publicly acknowledge the environmental consequences of their actions prior to actually taking the proposed action. Later in this article, I describe three sets of EISs that were developed for projects that had significant impacts on the environment.

Both government agencies and the public have one potential shared misunderstanding about the EIS process—whether agencies make decisions beforehand and then develop EISs to justify these decisions. Regulations specifically prohibit government agencies from doing this (see 40 CFR 1502.5). However, members of the public recognize that the draft EIS, issued for public comment, will present a proposed recommendation for the decision maker's consideration, a rhetorical maneuver suggesting that the agency may have structured the EIS to support the proposed action under consideration. Ben Noller (2009) notes that "there is significant public skepticism as to whether federal agencies truly remain objective and candid during the NEPA process, especially when the agency is itself a proponent of the particular project rather than a permit-issuing arbiter" (p. 7). In other words, agencies that propose their own projects may be less objective in the NEPA process than third-party agencies.

Finally, in accordance with regulation 40 CFR 1505.2, each agency is required to prepare a concise public Record of Decision. The Record of Decision is supposed to state what the decision was, identify alternatives considered, and discuss relevant factors (economics, technical considerations, and agency mission) used by the agency when making its decision. In the next section, I present several academic studies about decision making, with an emphasis on environmental assessments.

Literature Review

Academics have studied the decision-making process, and the results of these studies indicate that the decision maker must consider many internal and external factors during the decision-making process. For example, Rude (1995), who studied technical and business decision making, suggests that decision makers must consider three criteria (technical, managerial, and social) when making a decision. *Technical criteria* include legal restrictions, standards, codes, and precedents. *Social criteria* include the environmental impacts, cultural issues, ethical issues, and human values. *Managerial criteria* include costs, equipment, personnel, training, and demand. Ideally, the agency decision maker will consider all three criteria prior to making a decision that affects the environment.

Academics also suggest that environmental decision making is a complex process. For instance, Dietz and Stern (2008) comment that "environmental decisions present very complex choices among interests and values, so that the choices are political, social, cultural, and economic, at least as much as they are scientific and technical" (pp. 7–8). Likewise, Bartlett (1997), who studied the rationality and logic of NEPA, suggests that NEPA decisions are based in politics, in part, because NEPA does not mandate specific results. Bartlett reinforces this idea by suggesting that NEPA "decisions are expected to be made in political ways, by political persons, in political settings" (p. 53). Similarly, Shepard (2005) comments that the selection of the proposed action "almost always is based on social values, economic priorities, and political considerations" (p. 7). In other words, agency decision makers tend to elevate social and political concerns over the environmental costs of a project.

The ultimate goal of the environmental assessment process is a decision that is informed and defensible. However, this goal is difficult for several reasons, including the multiple objectives and pressures of the various stakeholders, the many conflicting constraints among the various environmental options, and the accumulation of large amounts of project-specific information that the public and decision maker have to consider. As a result, environmental assessment decisions fall into the "broad category of multi-objective, multi-criteria decisions" (Shepard, 2005, p. 4).

One may wonder whether agency decision makers actually use the information presented in an EIS. Various scholars who have researched certain projects or specific agencies believe that the *conclusions* of the environmental impact assessment have little influence on the decision maker. Instead, the decision maker is influenced by the decision-making *process*.

To begin with, Hansen et al. (2013) suggest that decision-making is influenced by structures and actors. In particular, making environmental impact assessment decisions "is not necessarily determined in the final approval at the end of the process, but is shaped by input from actors more or less continuously during the [assessment] process" (p. 39). In a case study, Hansen et al. concluded that the actors in a working group influenced the decision maker, and the findings presented in the environmental impact assessment report had little influence on the final decision.

Similarly, Deelstra et al. (2003) suggest that "the world of decision-making is determined not only by formal procedures and governmental bodies, but also consists largely of informal processes wherein various actors negotiate with each other" (p. 520). The authors suggest that planned and structured environmental research seems of little importance to policy decision makers. Instead, the authors believe that "decision-making can be perceived as a game played by negotiating actors operating in informal and semi-formal forums" (p. 522). The goal of the game is to influence the decision maker. For this reason, the authors suggest that the environmental impact assessment report should concentrate on the issues that are important to the actors involved; otherwise, the report may not be used for decision making.

In addition, van Breda and Dijkema (1998) note that environmental "decision-making is unstructured, uncontrollable, and unpredictable. Furthermore, the actual contents of the [environmental impact assessment] contributed little to decision-making" (p. 391). Instead, the authors believe that the *process* of decision making influenced the final decision more than the *content* of the environmental impact assessment report.

Finally, Stern and Predmore (2011), who studied the results of NEPA decisions within the US Forest Service, note that NEPA and decision making were not always coupled, but were commonly separated. The authors suggest that decision makers "tended to emphasize the importance of efficiency in NEPA processes while deemphasizing the importance of minimizing the negative social and environmental consequences of their actions" (p. 272). One reason for this mind-set is agency accountability. The authors suggest that agency decision makers are accountable to produce measurable outcomes dictated by fiscal-year targets. As a result, decision makers desire to get proposed actions implemented as "cleanly and efficiently as possible" (p. 272).

For example, the initial preferred alternative presented in an environmental assessment was selected about half of the time for complex projects and about three-fourths of the time for simple projects. The agency demonstrated efficiency by consistently selecting the original proposed alternative.

In the following section, I present three examples of environmental decision making, and I explain the major influences on the decision maker. Later in this article, I explain whether these three examples are in compliance with NEPA requirements and whether they are representative of the academics' conclusions.

Three Examples of Environmental Decision Making

US Department of the Army, Makua Military Reservation

The first example involves the US Army's decision to conduct live-fire training at the Makua Military Reservation. The Makua Valley is located on the western side of the Hawaiian island of Oahu. Perched between the Pacific Ocean and the volcanic bluffs of the Waianae Mountains, the valley is home to endangered plant and animal species, as well as numerous archaeological ruins. The name *Makua* means "parent" in the Hawaiian language, and some claim that the Makua Valley is the mythic birthplace of the Hawaiian people (Myers, 2001). The Makua Valley is also home to the US Army's Makua Military Reservation (Figure 1).

The Makua Military Reservation has a long and storied history that dates back to the 1920s, when the military first installed gun emplacements in the valley. After the attack on Pearl Harbor, the Army confiscated around 2,670 hectares (ha) (6,600 acres) and evicted ranchers from the valley in order to train troops for World War II. The Army still controls around 1,700 ha (4,200 acres) of the valley.

Figure 1. Makua Military Reservation, Island of Oahu.

For many years, the Army and other military services bombed, strafed, and shot bullets within the Makua Valley "with relative impunity" (Myers, 2001, p. 2). In 1998, live-fire training caused wildfires in the valley, catching the attention of the local residents as well as the US Fish and Wildlife Service. Because of these wildfires, the Army suspended training activities at the Makua Military Reservation.

A group of residents and the advocacy group Earthjustice Legal Defense Fund filed a lawsuit against the Army in response to the wildfires. The plaintiffs demanded that the Army comply with the requirements of NEPA and conduct a thorough review of the environmental impacts of training on the Makua Valley. Local activists also believed that the Army did not fully understand and respect the sacredness of the Makua Valley (Myers, 2001).

The Army subsequently completed a limited environmental impact assessment in 2000 and then announced that it would resume partial training activities. The Army's analysis concluded that it could conduct live-fire training without damaging historic sites and the environment. The residents and activists were not impressed with the assessment and took the Army to court again in 2001 to block the Army from using the property pending completion of an EIS. The activists believed that implementation of the EIS process would ensure that the Army conducted a thorough review of the environmental impacts of military training.

The Army initially balked at the idea because of the time and money that would be necessary to complete the EIS process, and the Army tried to have the lawsuit dismissed. The local activists prevailed in court, and, pending completion of the EIS process, the Army had to refrain from using the Makua Valley for live-fire operations.

The Army subsequently issued the draft EIS in August 2005 (US Department of the Army, 2008) and the final EIS in July 2009 (US Department of the Army, 2009a). The proposed action, and the various alternatives to the proposed action, involved different levels of training. In other words, the Army intended to conduct training at the Makua Military Reservation, and the decision maker was expected to choose the level of training that would be conducted. The final EIS, with all attachments, consisted of about 6,000 pages.

Figure 2. Meteorological monitoring at Makua Military Reservation.

The primary inputs into the decision-making process included training-range capacity, range design (size, location), soldier quality of life, and time and cost considerations. The Army's goal was to provide the training needed to keep soldiers ready for battle. The Army developed selection criteria that only the Makua Military Reservation would meet; therefore, the EIS process purposely limited the options of the decision maker. In fact, the Army authors included a no-action alternative that would have allowed low levels of training to continue in the Makua Valley.

During its environmental impact assessment (Figure 2), the Army identified over 100 different cultural sites on the 1,700-ha (4,200 acre) property including temples, alters, burial sites, and petroglyphs. The Army also determined that the valley was home to about 50 occurring or potentially occurring endangered plant and animal species. Army officials were forced to acknowledge, through the EIS process, that live-fire training would cause some environmental and cultural damage to the Makua Valley.

The Army issued its Record of Decision in July 2009 (US Department of the Army, 2009b). The decision maker clearly stated that training was required to comply with the Army's mission and procedural requirements. The Record of Decision also states that training would have significant natural environment and social effects. The Army chose to implement a hybrid alternative in lieu of the preferred alternative—that is, live-fire training would still be conducted but with restrictions to minimize environmental harm.

Another lawsuit ensued, and the activists won a partial court victory in November 2009 by arguing successfully that the Army had incompletely documented the cultural and marine assessments in the EIS. The Army unsuccessfully counterargued that the long-term suspension of training was causing a slow degradation in troop readiness. Currently, under court order, the Army is studying the impacts of military training on marine resources at the Makua Beach.

In summary, the Makua Military Reservation EIS was an environmental assessment of the impacts of live-fire training within a sacred valley on the Island of Oahu. The Army had to decide how much training would be conducted in the valley despite the potential damage to wildlife, habitats, and cultural resources. During the EIS process, the Army emphasized its statutory mission and concluded that it must conduct military training in the Makua Valley to fulfill its mission. Although the mission of an agency is one of several relevant factors in the decision-making process, the Army focused its rhetorical efforts on this factor. These rhetorical efforts were not entirely successful with the local population who did not support the Army's mission.

The Army was the primary beneficiary of its decision. Others who supported the decision included those who stood to financially benefit from training activities, including local businesses. Those who championed the natural environment and local culture, including activists and some Hawaiians, did not agree with the Army's decision. The Army did not voluntarily implement the EIS process. Instead, the Army implemented the EIS process in response to lawsuits initiated by the opposition.

US Forest Service, Rinconada Communication Site

The second example involves the construction of a communication tower on Mt. Taylor, New Mexico. Mt. Taylor, which was named after former President Zachary Taylor, is a dormant volcano located northeast of Grants. At 3,446 meters (11,305 feet), it's the tallest mountain in the San Mateo Mountains.

The area around Mt. Taylor is home to a number of Native American tribes, most notably the Navajo Nation. To the Navajo, Mt. Taylor is known as *Tsoodził*, one of four sacred mountains, which are the geographic boundary points for the Navajo's ancestral homeland. According to American Indian scholar Sharon Milholland (2010), the sacred mountains "are imbued with… deep personal spiritual meaning transcending the physical and the metaphysical" (p. 110). Tony Joe, a member of the Navajo Nation Historic Preservation Department, comments that

> Mt. Taylor plays a vital role in all major Navajo ceremonies, sandpaintings, and prayers…. And it is

Figure 3. Mt. Taylor, New Mexico (www.fs.usda.gov/cibola).

Figure 4. Mt. Taylor in the fall (www.fs.usda.gov/cibola).

> the responsibility of the Navajo people to give offerings, prayers, and ceremonies to the mountain. The mountain in returns [sic] provides the people with protection, and direction so we can continue to thrive as a Nation. (US Department of Agriculture, 2011a, p. 45)

Mt. Taylor (Figure 3) is situated within the Cibola National Forest. In August 2006, KD Radio, Inc., applied for a communication use lease with the US Forest Service to construct a new high-power FM broadcast facility on Mt. Taylor. KD Radio wanted to install the tower and associated support equipment on the mountain to widen its listening range. The location of the proposed tower was the Rinconada Communication Site. The Spanish-based word *rinconada* means "dead end" or "secluded place," suggesting that the site would be situated at a secluded location on Mt. Taylor. As lead agency, the Cibola National Forest had the responsibility to conduct an environmental impact assessment for the construction and operation of the communication tower.

The benefits of the tower were significant. Besides providing the public with oldies music and local news, the station could provide emergency-response broadcasts, especially during hazardous weather conditions. Supporters of the project included the governor's office, local school district, and local law enforcement agencies. However, the local tribes objected to the radio tower because it would be constructed on Tsoodził, one of four sacred mountains.

The battle lines were drawn—technology and progress (and oldies music) on one side and the traditions of the local tribes on the other. The Cibola National Forest was the government agency responsible for being the arbitrator in this battle. The Forest Supervisor had final say in the matter unless someone filed an appeal.

The Cibola National Forest conducted a formal review of the environmental and social impacts of the tower. The draft EIS was issued for public comment in May 2009 (US Department of Agriculture, 2009). The Forest Service concluded that the tower would have significant impacts on cultural resources; however, there were no natural environmental impacts. Following its review of public comments, the agency issued the final EIS in January 2011 (US Department of Agriculture, 2011a). The agency published its Record of Decision in April 2011 (US Department of Agriculture, 2011b). The Forest Supervisor ruled in favor of tradition by rejecting KD Radio's application. The decision maker denied the application due to the social and cultural impacts that the project would have on Mt. Taylor (Figure 4), a traditional cultural property.

Interestingly, the Forest Service reversed its preferred alternatives between EIS revisions. In the draft EIS, the Forest Service supported the tower, but, in the final EIS, the agency supported the no-action alternative. The agency changed its mind, based on external pressure from the Navajo and internal agency pressure to preserve Mt. Taylor as a traditional cultural property.

KD Radio filed an appeal in June 2011. The decision was upheld a month later by the Forest Service (Krueger, 2011). The agency ruled that the EIS process was conducted in accordance with Forest Service procedures; therefore, it was a valid, defensible decision. However, based on the wording of the final decision, the door was left open for KD Radio, or some other company, to reapply—if the applicant could successfully reach out and obtain the support of the local tribes.

In summary, the agency's analysis concluded that the construction and operation of the tower would have resulted in little to no impact on the natural environment.

Instead, the agency concentrated its rhetorical efforts on the cultural impacts of the tower. The Forest Service eventually denied the application because of these cultural impacts. In my opinion, the agency downplayed the beneficial social and economic impacts of expanded radio service during the EIS process. The Forest Service also appears to have rejected the application primarily to appease the Navajo. The Navajo benefited from the decision, whereas the applicant and those who would have gained from improved radio service did not benefit.

What is remarkable about this decision is that it deviates from the norm. Coppola (2000) suggests that, "for mainstream America, the dominant ideology is progress-oriented, economic, and technologically situated" (p. 23). The final EIS for the Rinconada Communication Site, and the agency decision, took the opposite approach—that is, the agency chose tradition over technological advancement.

Bureau of Indian Affairs, Absaloka Mine Expansion

The third example involves the Bureau of Indian Affairs' (BIA) review and approval of the expansion of the Absaloka Mine by Westmoreland Resources, Inc. (WRI). Westmoreland Resources obtained its first lease from the Crow Tribe in 1972. This lease included the rights to coal reserves situated in the 445,150-ha (1.1-million acre) Crow Ceded Area located north of the Crow Indian Reservation in Big Horn County, Montana.

The Absaloka Mine opened in 1974. Through 2006, about 147 million tons of coal had been produced at the mine (US Department of the Interior, 2008a). In February 2004, WRI entered into a new lease agreement with the Crow Tribe, under the provisions of the Indian Mineral Leasing Act, for two undeveloped and interconnected coal reserves encompassing 1,480 ha (3,660 acres). The two leases were called the Tract III lease and the South Extension lease. The Tract III lease is located between the existing mine in the Crow Ceded Area and the Crow Indian Reservation, and the South Extension lease is located wholly within the reservation. Western Resources exercised its lease options for these two properties in June 2006 because it was running out of coal in the Crow Ceded Area (Figure 5).

Before WRI could begin strip-mining operations within the two new properties, it needed to obtain a number of government approvals and permits. One hurdle was an environmental impact assessment of the proposed activity. In November 2006, the BIA published a Notice of Intent in the *Federal Register* [71 FR 68831 (US Department of the Interior, 2006)] notifying the public that the agency planned to prepare an EIS for the two proposed extensions of the Absaloka Mine. In the *Federal Register* notice, the BIA notified the public that the proposed action was to approve the mineral leases and associated surface-use agreements. That is, the BIA planned to give WRI the necessary approvals to conduct strip-mining operations on the two properties.

Figure 5. Absaloka Mine (draft environmental impact statement, US Department of Interior, 2008a).

Figure 6. Typical landscape in South Extension area of Crow Indian Reservation (Record of Decision, US Department of the Interior, 2008c).

With the help of a contractor, the BIA issued the draft EIS in March 2008 (US Department of the Interior, 2008a). Similar to the wording of the 2006 Notice of Intent, the agency's proposed action was to approve the two extensions of the permit area to allow WRI to strip-mine coal on the two properties. The draft EIS concluded that strip-mining operations would have positive effects on the Crow Tribe's socioeconomics but negative effects on air quality, groundwater quality, surface-water quality, and wildlife habitats (Figure 6).

In October 2008, the BIA simultaneously issued the final EIS (US Department of the Interior, 2008b) and Record of Decision (US Department of the Interior, 2008c). The final EIS recommended approval of the proposed action, and the Record of Decision formally approved the proposed action. The decision was finalized in November 2008, after the expiration of the regulatory-required 30-day waiting period.

In 2009, after receipt of all remaining government approvals and permits, WRI began mining operations in the expanded areas. These expanded areas contain an estimated 77 million tons of coal. According to the executive vice president for WRI, "the Absaloka mine is somewhat unique in that it's one of the very few mines mining Native American coal," and this partnership "has produced a significant amount of revenue for the Tribe" (Bushbaum, 2011, p. 49) through royalty payments, taxes, and employment opportunities.

In summary, the BIA conducted an assessment of the impacts of coal mining at the Crow Indian Reservation in Montana. The BIA focused its attention on the short-term socioeconomic benefits—efficient mining operations, use of coal for power production, and income to the Crow Tribe—over all other factors. Despite the environmental damage that mining would cause, the Crow Tribe supported these strip-mining operations because of the short-term financial benefits the Crow Tribe would receive. In my opinion, the BIA downplayed the negative effects of coal mining and coal burning during the environmental assessment process. There are indications that the BIA intended to approve the project prior to development of the draft EIS, and the agency appeared to implement the EIS process simply to comply with NEPA requirements.

After completion of the EIS process, the Crow Tribe discovered that mining operations had destroyed one of their cherished cultural sites—a bison kill site. After it became aware of the loss, the Crow Tribe was critical of the mine operator and the BIA. This incident initiated a public debate as to whether the BIA conducted a sufficient cultural resource inventory during the EIS process. In my opinion, the BIA didn't provide sufficient information to the public about the cultural resources that would be impacted during mining. Instead, the BIA apparently expected the public to obtain this information outside of the EIS process.

In recent years, the coal industry has experienced a significant downturn that has dramatically affected the Absaloka Mine. The mine's annual output has decreased in recent years because of decreased domestic demand for coal, and the economic benefits to the Crow Tribe have declined accordingly. The mine operator hopes that international demand for coal will increase; otherwise, the future looks bleak for the Absaloka Mine.

Discussion

Recall that NEPA has two main goals: an agency has to consider the environmental impacts of a proposed project and the agency has to inform the public about these impacts. All three agencies—Army, Forest Service, and BIA—implemented the requirements of NEPA by conducting the required analyses, although the Army conducted its analysis under court order. All three agencies informed the public of their respective conclusions via draft EISs, final EISs, and Records of Decision.

The Army's choice to conduct live-fire training in the Makua Valley was based on political considerations, the Forest Service's choice of the no-action alternative was based on cultural concerns, and the BIA's approval of strip-mining operations was based on economic and mining-efficiency priorities. All three agencies concluded that the economic and social aspects of the human environment outweighed the natural environment. That is, each agency chose a course of action based on social, cultural, or political impacts of the project versus the natural or physical environmental impacts. This finding is in agreement with the opinions of Dietz and Stern (2008), as well as Bartlett (1997), who point out that NEPA does not require agencies to elevate environmental concerns over other appropriate political, economic, and social considerations. Bronstein et al. (2005) remind us that "the underlying principle of NEPA is that all impacts of a project are eventually social, as they ultimately affect people" (p. 675).

During my review of the three sets of EIS documents, I noted that the agency authors concentrated on a particular angle or viewpoint. The Army concentrated its rhetorical efforts on fulfilling its mission. Brady (1990) points out that the temptation is great for the agency seeking to perform some action to write an EIS to allow itself to achieve its statutory mission. Since the Army rhetorically structured the EIS to support its position, one could argue that this was analogous to the Army being a biased proponent of the project.

Berzok (1986) discusses several mistakes that agencies make during the environmental assessment process. One mistake is that agencies incorrectly design and define the projects prior to the environmental impact assessment. For example,

many agencies "define their objectives so narrowly that only a similarly narrow project definition can meet them" (p. 121). I suggest that the Army fell into this trap when it established criteria so narrow that only the Makua Military Reservation met the project objectives. Not surprisingly, the Army choice to use the Makua Military Reservation for training was based on the criteria that it had established.

The Forest Service was a third-party arbitrator that concentrated its rhetorical efforts on the cultural drawbacks of the project. I believe that the Rinconada Communication Site EIS decision could have gone either way. There was no clear evidence that the agency was a proponent or opponent of the project, although the Navajo's opinions weighed heavily on the final decision of the agency.

The BIA concentrated its rhetorical efforts on the short-term benefits over the costs to society and the environment. Because the BIA appeared ready to approve the mine expansion from the beginning, I wondered whether the BIA used the EIS process to justify its decision. Regulation 40 CFR 1502.5 prohibits government agencies from using the EIS process to justify decisions already made. After my review of this EIS process, I decided that the BIA was demonstrating a paternalistic attitude toward the Crow Tribe instead of being a proponent of the strip-mining project itself. The Indian Mineral leasing Act of 1938 stipulates that the US government must approve all mineral leases, and the BIA is the agency responsible for the federal government–Indian trust relationships. Because of this paternalistic attitude, I suspect that the BIA would have approved any project that benefited the Crow Tribe.

Earlier in this article, Rude (1995) was mentioned as suggesting that decision makers must consider three criteria (technical, managerial, and social) when making a decision. The Army appeared to concentrate on technical and managerial criteria when it emphasized its statutory mission, procedural requirements, training requirements, and costs. The Army appears to have initially downplayed the social criteria, much to the chagrin of the local public. The Forest Service and BIA both appear to concentrate on the social criteria at the expense of the technical and managerial criteria.

As discussed earlier, academics (Deelstra et al., 2003; Hansen et al., 2013; van Breda and Dijkema, 1998) suggest that decision making is influenced by the decision-making process and by actors who negotiate with one another. Of my three examples, only the Forest Service's final decision appears to have been influenced by external actors. The Forest Service changed its mind about the communication tower, from acceptance to rejection, based on its negotiations with the Navajo. The Army decision maker appeared determined to approve the project regardless of external influences, which appear to have originated entirely within the agency. The decision maker's selection of a hybrid of the proposed alternative appears to be a compromise with the outside stakeholders, although one could argue that this compromise was still in the Army's favor. Finally, the BIA also appeared determined to approve the expansion of the coal mine, in part, because there was no real opposition to the project, prior to tribal discovery that mining operations had destroyed a sensitive bison kill site.

Stern and Predmore (2011) suggest that agency decision makers are influenced by efficiency and accountability. All three decision makers demonstrated some level of focus on agency goals. To begin with, the Army was focused on meeting its mission and internal procedures. However, the Army's EIS process was not efficient because of various external factors. First, the Army spent years creating a 6,000-page EIS document that was not rhetorically effective with the local public. Further, the Army was forced, several times, to implement the NEPA process by local courts. The Army might have been more successful if it had reached out to the public effectively during the original scoping process.

The Forest Service appeared to demonstrate efficiency and accountability when it denied the appeal. In its denial, the agency focused on its compliance with internal procedures (Krueger, 2011), claiming that the original decision—denial of the permit for the tower—was appropriate because the EIS process was conducted in accordance with agency procedures.

Finally, the BIA completed the EIS process as expeditiously as possible. The agency notified the public that it planned to implement the EIS process in November 2006, issued the draft EIS for public comment in March 2008, and issued the final EIS and Record of Decision in October 2008. Noller (2009) notes that "since the inception of NEPA, the timeline for implementing [the NEPA process] has increased from just over two years to something in excess of five years" (p. 20). The BIA completed the Absaloka Mine Expansion EIS process within two years, suggesting that the BIA was motivated to complete the project in a timely manner.

In a different matter, the Army appears to have been unsuccessful in its implementation of the EIS process. To begin with, the Army spent considerable resources to create

a 6,000-page EIS that was unconvincing to the local public primarily because the Army didn't really address the concerns of the audience. Earlier, this article mentions that Deelstra et al. (2003) suggest that the environmental impact assessment report should concentrate on the issues that are important to the actors involved; otherwise, the report may not be used for decision making. Initially, the Army did not concentrate on the issues that were important to the locals and thus had to spend more time and resources upgrading the EIS product. Further, I question whether anyone, including the deciding official, actually read the entire 6,000-page final EIS.

I suggest that the Army incorrectly assessed the external social and political influences and failed to incorporate these influences until later into the EIS process. Rude (1995) notes that "social and political factors, which are hard to measure or prove, can nevertheless affect the success of the decision" (p. 190). The Army's failure to consider the social and political factors early in the process resulted in considerable losses of time and money. In addition, the Army appeared committed to using Makua Valley for live live-fire training from the beginning. Rude points out that "a commitment to a position discourages a change" (p. 185). The Army was committed to using Makua Military Reservation for live-fire testing, and its commitment to this position resulted in considerable costs and years of legal battles.

Conclusions

This article analyzed the results of three decision-making processes used by government agencies to approve or reject projects that have significant impacts on the environment. I tried to determine how these decisions fit into NEPA requirements. The purpose of NEPA, as provided in regulation 40 CFR 1500.1(c), is to promote better decisions:

> Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. The NEPA process is intended to help public officials make decisions based on understanding of environmental consequences and take actions that protect, restore, and enhance the environment.

However, in all three case studies (Army, Forest Service, and BIA), the agencies elevated social, cultural, and political considerations over environmental concerns. Both the Army and the BIA made decisions that didn't necessarily protect, restore, and enhance the environment. Academics (Bartlett, 1997; Dietz and Stern, 2008; Shepard, 2005) suggest that government agencies should elevate human concerns over environmental concerns. Bronstein et al. (2005) agree, pointing out that "the underlying principle of NEPA is that all impacts of a project are eventually social, as they ultimately affect people" (p. 675). I suggest that many decision makers will probably decide that a project's social, cultural, and political impacts are more important than the environmental impacts. The US Congress intended for NEPA to create a balance—a productive harmony—between environmental resources and people (Kreske, 1996). I question whether today's decision-making processes are representative of this balance, as intended by Congress, or whether Bartlett (1997) is correct when he states that all environmental decisions are political in nature.

I considered the role of the EIS in environmental decision making. According to regulation 40 CFR 1502.1, an EIS is more than a disclosure document. Further, the EIS shall be used by federal officials in conjunction with other relevant material to plan actions and make decisions. Some academics (Deelstra et al., 2003; Hansen et al., 2013; van Breda and Dijkema, 1998) suggest that the EIS process, not the EIS conclusion, influences the decision maker. Of my three case studies, only one decision (that by the Forest Service) appears to have been influenced by the process. The Army appears to have been influenced by internal pressures, whereas the BIA didn't experience any real internal or external pressures.

I would like to close this article with the advice of Joseph Arvai (2003), who provides several recommendations for an effective decision-making process. This process should include a well-defined problem, the incorporation of values and objectives, and informed trade-offs between the various positions. Arvai suggests that "people may be more likely to accept decisions resulting from processes that seem fair, reasonable, and amenable to allowing all interested parties an opportunity to voice their feelings and concerns" (p. 286). This "suggests that it is not necessarily the *results* of participatory decision-making process that are important to people… rather, the *process* employed in attaining the decisions may be equally, if not more, important" (p. 288). In other words, members of the public who participate in the decision-making process may be able to support the resulting policy decision even if that decision does not result in the outcome that the public wanted. Perhaps the Army could have saved itself a lot of time and trouble if it had allowed the public to become more involved at an earlier time in the decision-making process?

Future Research Opportunities

During my research of environmental decision making, I identified a number of academic articles discussing the growing use of formal analytical tools and methodologies for making decisions systematically. For example, Huang, Keisler, and Linkov (2011) describe a tool called multicriteria decision analysis (MCDA), a formal methodology that can be used to compare alternative courses of action. According to those authors, one commonly used MCDA is an analytical hierarchy process/analytic network process (AHP/ANP). This tool compares paired criteria, asking which is more important, to produce weighted scores. Using the AHP/ANP process, it is possible that each alternative in an EIS could be assigned a numerical score. The alternative with the highest score could be considered the best alternative for selection, although the score of each alternative could be manipulated by how the problem is structured and weights assigned.

None of the agencies discussed in this article (Army, Forest Service, and BIA) used analytical tools or methodologies for their systematic decision making. As noted earlier, many academics suggest that the process of decision making appears to have more impact over the decision maker than do the results of an environmental assessment. Perhaps agencies can use these types of tools to promote decisions that are based on the recommendations provided in an environmental assessment report. Academics may wish to conduct research in this area, in part, to determine whether these tools influence the final decision.

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