NNSA/EA-1375

Environmental Assessment for Construction and Operation of a New Office Building and Related Structures within TA-3 at Los Alamos National Laboratory, Los Alamos, New Mexico

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Department of Energy
National Nuclear Security Administration
Los Alamos Area Office

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Acronyms and Terms

ac	acres
BMPs	best management practices
C&T EIS	Conveyance and Transfer Environmental Impact Statement
CFR	Code of Federal Regulations
dB	decibel
dBA	decibel scale with A-weighted frequency
DOE	(U.S.) Department of Energy
EA	environmental assessment
EIS	environmental impact statement
EPA	Environmental Protection Agency
ft	feet
ft^2	square feet
FY	fiscal year
ha	hectares
HVAC	heating, ventilation, and air conditioning
JCNNM	Johnson Controls Northern New Mexico
km	kilometers
km^2	square kilometers
LAAO	Los Alamos Area Office
LANL	Los Alamos National Laboratory
LDCC	Laboratory Data Communications Center
m	meters
m^2	square meters
m^3	cubic meters
mi	miles
mi^2	square miles
NEPA	National Environmental Policy Act
NISC	Nonproliferation and International Security Center
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
NRHP	National Register of Historic Places
OEL	Occupational Exposure Limit
PL	Public Law
PRSs	potential release sites
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SCC	Strategic Computing Complex
SHPO	State Historic Preservation Office
SWEIS	Site-Wide Environmental Impact Statement
SWPP	Storm Water Pollution Prevention (Plan)
TA	technical area (at LANL)
TRU	transuranic
UC	University of California
U.S.	United States
yd^3	cubic yards

EXPONENTIAL NOTATION: Many values in the text and tables of this document are expressed in exponential notation. An exponent is the power to which the expression, or number, is raised. This form of notation is used to conserve space and to focus attention on comparisons of the order of magnitude of the numbers (Examples):

1×10^{4}	=	10,000
1×10^{2}	=	100
1×10^{0}	=	1
1×10^{-2}	=	0.01
1×10^{-4}	=	0.0001

Metric Conversions Used in this Document

Multiply	By	To Obtain
Length		
inch (in.)	2.50	centimeters (cm)
feet (ft)	0.30	meters (m)
yards (yd)	0.91	meters (m)
miles (mi)	1.61	kilometers (km)
Area		
acres (ac)	0.40	hectares (ha)
square feet (ft^2)	0.09	square meters (m^2)
square yards (yd^2)	0.84	square meters (m^2)
square miles (mi^2)	2.59	square kilometers (km^2)
Volume		
gallons (gal.)	3.79	liters (L)
cubic feet (ft^3)	0.03	cubic meters (m^3)
cubic yards (yd^3)	0.76	cubic meters (m^3)
Weight		
ounces (oz)	29.60	milliliters (ml)
pounds (lb)	0.45	kilograms (kg)
short ton (ton)	0.91	metric ton (t)

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Executive Summary

The National Nuclear Security Administration (NNSA) has assigned a continuing role for Los Alamos National Laboratory (LANL) in carrying out its national security mission. To continue this enduring responsibility requires that NNSA maintain the capability and capacity required to support its national mission assignments at LANL. One of the buildings that houses programmatic, management, and support functions essential to the overall LANL operations and nuclear weapons work performed for the United States Department of Energy and the NNSA[1] is the Administration Building (Building 3-43) at Technical area (TA) 3. This building has many identified structural, systemic, and security problems associated with it. NNSA needs to correct these problems so that the necessary programmatic, management, and support functions housed within can continue to function at LANL with a high level of efficiency. Additionally, NNSA also needs to minimize, wherever possible, the use of energy and fiscal outlays for maintaining operations.

The Proposed Action is to construct and operate the following within LANL's TA-3: a multistoried office building to house about 700 personnel and their functions, which would move from Building 3-43; a one-storied lecture hall; and a separate multilevel parking structure. The Proposed Action would include the transfer of personnel and operations from the LANL Badge Office to existing space at LANL and the subsequent demolition of this building. When operations and personnel were completely removed from Building 3-43 to the new office building, the NNSA would demolish Building 3-43 as well.

The No Action Alternative was also considered. Under this alternative, Building 3-43 would slowly be vacated, staff would be distributed to other existing offices or other temporary structures, and Building 3-43 would be left to deteriorate. This is not an alternative that meets NNSA's purpose and need for action.

The new office building, lecture hall, and parking structure are proposed for construction and operation in heavily developed areas within TA-3, which contains little or no suitable habitat for most plant and animal species. Traffic congestion in this area, particularly as a result of the development of the Research Park, would continue at TA-3. Parking availability in the TA-3 area would increase with the addition of 400 new parking spaces as a result of the Proposed Action. Construction and demolition wastes would be trucked to a licensed commercial landfill or reused for backfilling on-site. The overall visual quality within TA-3 would change with the ongoing addition of new buildings in the area. The addition of the new office building, lecture hall, and parking structure would contribute further to the visual improvements in the TA-3 area by removing Building 3-43. Building 3-43 has been identified as an historic structure. A plan would be developed that would include research tools to preserve the historical knowledge and features of this Manhattan Project structure.

[1] The National Nuclear Security Administration (NNSA) is a separately organized agency within the Department of Energy (DOE). It formally began operating on March 1, 2000. As part of the Defense Authorization Bill passed in September 1999, the NNSA was created to respond to significant security challenges at the DOE's national laboratories and production and test facility.

Cumulative effects of the Proposed Action, along with past, present, and reasonably foreseeable actions, on LANL and surrounding lands are anticipated to be negligible. No increase in LANL operations are anticipated as a result of this action.

1.0 Purpose and Need

1.1 Introduction

The *National Environmental Policy Act of 1969* (NEPA) requires federal agency officials to consider the environmental consequences of their Proposed Actions before decisions are made. In complying with NEPA, the United States (U.S.) Department of Energy (DOE), National Nuclear Security Administration (NNSA)[2], follows the Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] Parts 1500–1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). The purpose of an Environmental Assessment (EA) is to provide Federal decision makers with sufficient evidence and analysis to determine whether to prepare an Environmental Impact Statement or issue a Finding of No Significant Impact.

Los Alamos National Laboratory (LANL) is a national security laboratory located at Los Alamos, New Mexico (Figure 1), that comprises 43 square miles (mi^2) (111 square kilometers [km^2]) of buildings, structures, and forested land. It is managed and operated under contract by the University of California (UC) with direction, management, and oversight provided by NNSA. In this case, the NNSA decision to be made is whether to replace the existing Administration Building (Building 3-43) at LANL's Technical Area (TA) 3 by constructing and operating a multistoried office building together with a lecture hall within the same TA. The project would also include the construction and operation of a multi-level parking structure nearby and the demolition of Building 3-43.

The objectives of this EA are to (1) describe the underlying purpose and need for NNSA action; (2) describe the Proposed Action and identify and describe any reasonable alternatives that satisfy the purpose and need for agency action; (3) describe baseline environmental conditions at LANL; (4) analyze the potential indirect, direct, and cumulative effects to the existing environment from implementation of the Proposed Action, and (5) compare the effects of the Proposed Action with the No Action Alternative and any other reasonable alternatives. For the purposes of compliance with NEPA, reasonable alternatives are identified as being those that meet NNSA's purpose and need for action by virtue of timeliness, appropriate technology, and applicability to LANL. The EA process provides NNSA with environmental information that can be used in developing mitigative actions, if necessary, to minimize or avoid adverse effects to the quality of the human environment and natural ecosystems should NNSA decide to proceed with implementing the construction and operation of an office building and other structures at LANL. Ultimately, the goal of NEPA and this EA is to aid NNSA officials in making decisions based on an understanding of environmental consequences and taking actions that protect, restore, and enhance the environment.

[2] See footnote Page ix.

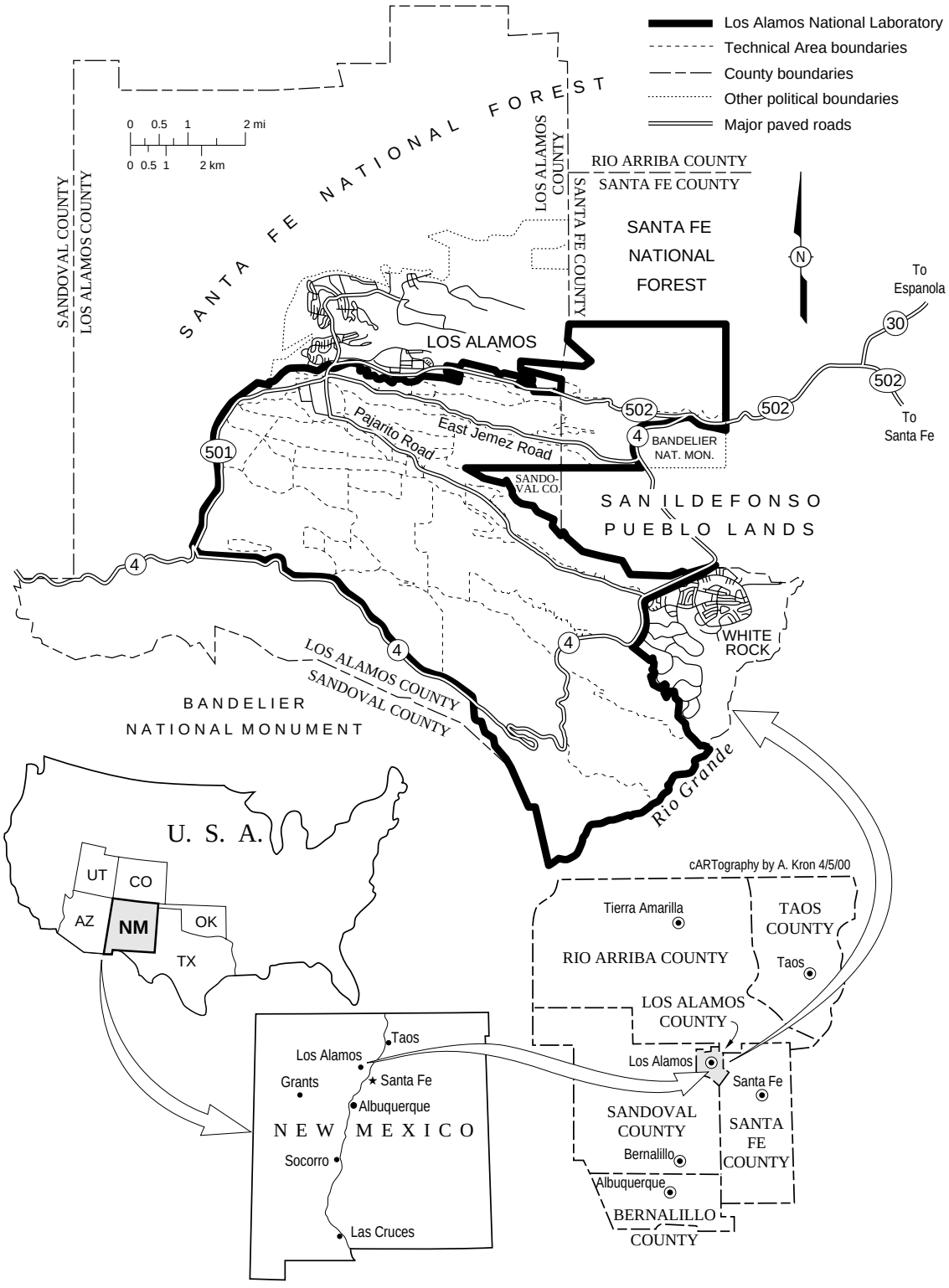

Figure 1. Location of Los Alamos National Laboratory.

1.2 Background

NNSA maintains core intellectual and technical competencies in nuclear weapons technology, as well as a safe and reliable national nuclear weapons stockpile. NNSA fulfills its national security nuclear weapons responsibilities through the Stockpile Stewardship Program, which involves activities performed at LANL. LANL is one of several national laboratories that support DOE responsibilities for national security, energy resources, environmental quality, and science. The NNSA's national security mission includes: the safety, reliability, and performance of the nuclear weapons in the stockpile; promoting international nuclear safety and nonproliferation; reducing the global danger from weapons of mass destruction; the provision of nuclear propulsion plants for the U.S. Navy; enhancing national security through the military application of nuclear energy; and supporting U.S. leadership in science and technology. The energy resources mission of DOE includes research and development for energy efficiency, renewable energy, fossil energy, and nuclear energy. The DOE's environmental quality mission includes treatment, storage, and disposal of DOE's wastes; cleanup of nuclear weapons sites; pollution prevention; storage and disposal of civilian radioactive waste; and development of technologies to reduce risks and reduce cleanup costs for DOE activities. DOE's science mission includes fundamental research in physics, materials science, chemistry, nuclear medicine, basic energy sciences, computational sciences, environmental sciences, and biological sciences and often contributes to the other three DOE missions. LANL provides support for most of these departmental missions, with a special focus on national security.

To carry out its Congressionally assigned mission requirements, NNSA must maintain a safe and reliable infrastructure at each of the national laboratories. The *1999 Final Site-Wide Environmental Impact Statement for Continued Operations of the Los Alamos National Laboratory* (SWEIS; DOE 1999a) discusses each of the previously identified DOE missions in greater detail and analyses for different levels of operations at LANL that support these missions. The SWEIS also included an identification of emerging actions at LANL (Section 1.6.3.1 of the SWEIS) and included a discussion of DOE's consideration of a variety of options for the renovation of infrastructure at LANL's TA-3 (Figure 2) that could include the replacement of a number of aging structures either individually or as part of a multi-building effort. It was anticipated in 1999 that one or more building replacements would be needed; the construction would be of office and light laboratory buildings to continue housing the existing types of activities currently pursued at TA-3. Planning for renovations or replacements was still underway and the impacts of these actions were not considered in the SWEIS. Similarly, other LANL actions were identified that were not yet sufficiently developed in 1999 to allow DOE to incorporate an analysis of impacts in the SWEIS. Some of these actions have subsequently received analyses of impacts in compliance with NEPA, and construction has begun on two other large office and light laboratory buildings at TA-3 (the Strategic Computing Complex [SCC] and the Nonproliferation and International Security Center [NISC]).

Many of the buildings and structures at TA-3 were built in the mid-1900s after World War II ended and the facility was designated a scientific laboratory, later to become one of the country's

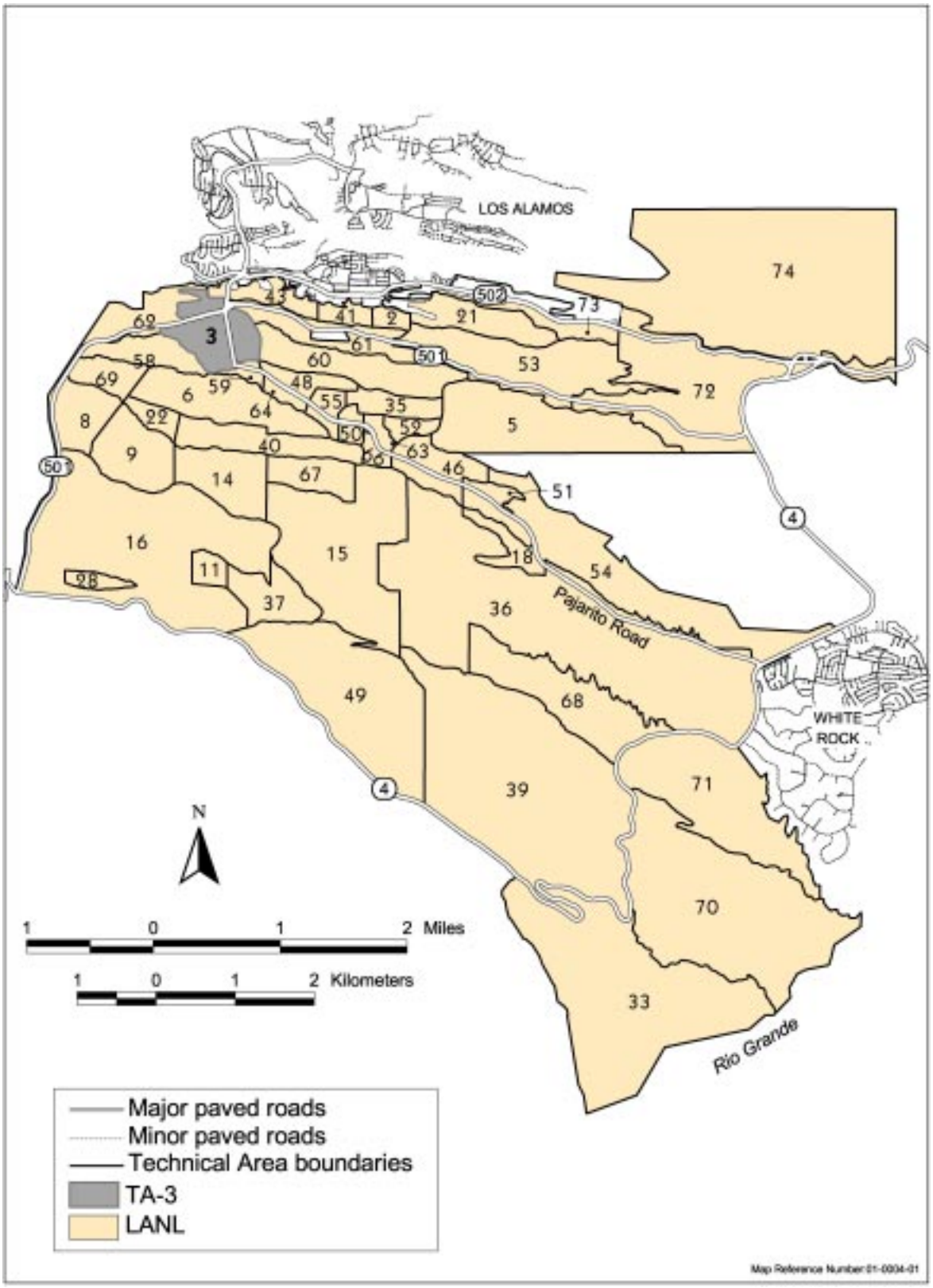

Figure 2. TA-3 location map.

national security laboratories. Building 3-43 is nearly 50 years old, having been constructed in the mid-1950s to house administration, office, and laboratory functions. Today, this 313,500-square-foot (ft^2) (28,215-square-meter [m^2]) building houses about 1,000 workers, including seven organizations that perform LANL management functions, program management offices for the Nuclear Weapons Directorate, and technical operations that include containment programs, geo-analysis, nonproliferation and international security, technology and safety assessments, and theoretical and applied physics. In addition, Building 3-43 contains LANL support functions for information and records management, printing services, lock shop, internal security, and classification. It also houses general meeting rooms, including one of the larger LANL auditoriums. Each of these programmatic, management, and support functions is essential to the LANL overall operations and nuclear weapons work performed for NNSA.

There are structural and systemic problems at Building 3-43 that make it difficult to meet the functional and safety requirements of the operations housed therein. Among the identified problems is the reliability of the major building systems, namely, the electrical, mechanical, plumbing, and building envelope (Figures 3a, b, c). The building's systems were not designed to meet demands that were unforeseen in the 1950s (such as today's needs for increased electric power and high-speed computer and communication systems), and system components are also failing because of normal stresses, strains, and general fatigue resulting from operating long beyond their individual design lives. With these component failures, it is becoming increasingly difficult to provide replacement parts for equipment that is no longer being manufactured for today's markets. The windows of the building, which make up much of its exterior envelope, have also started to fail and suffer from air and moisture infiltration. The roof of the building is at its failure stage. Large amounts of asbestos were incorporated into the building when it was built and needs to be removed. The basic plumbing systems are crumbling from within and can no longer be reliably maintained. The heating, ventilation, and air conditioning (HVAC) system does not meet current commercial standards for office facilities. Much of the building does not have air conditioning, while other portions of the building are cooled by multiple systems, including over 100 through-wall systems (i.e., window air conditioners) that have been installed over the years. These through-wall systems are very noisy, inefficient, and expensive to operate. Additionally, the 300-ton water chiller that cools portions of the building has already failed and been upgraded in the past. The electrical distribution system does not function reliably, does not meet current code standards, and does not include surge protection capabilities needed to protect modern office equipment, especially personal computers. The lighting systems fail to meet current standards for appropriate ergonomic illumination or energy use.

The Building 3-43 structure does not meet current DOE or Uniform Building Code seismic standards and its construction design is no longer allowed. A DOE-sponsored structural evaluation (LANL 2000a), with peer review, indicates that the seismic capacity is about 25 percent of that required by current standards. In the event of a design basis earthquake, it is anticipated that Building 3-43 would be extensively damaged and might collapse. Furthermore, the building design is not consistent with National Fire Protection Life Safety Standards. For example, the corridors are used for return air plenums, and the building lacks sufficient separation walls. The building also does not meet Americans with Disabilities Act standards. Building 3-43 was built well before our increased dependence on office electronics occurred. The building is not configured to easily handle today's demands for increased power and high-

Figure 3a. Existing Administration Building 3-43 (looking mostly east).

Figure 3b. Cramped and makeshift offices.

Figure 3c. Exterior fire alarm panel and air conditioning units.

speed communications systems. It also does not facilitate the shifts in the levels of staff and staff operations housed therein that have occurred over the past 40-plus years. The configuration of the building sections does not foster the variety of work that is being performed in the building today and their specific needs.

Because of these features, the existing facility is a poor work environment for NNSA's cyber-based weapons program. One of the significant changes that has occurred since Building 3-43 was constructed is the expectation of physical security. This change has a major impact on the physical makeup of the building. As computers have greatly increased the amount of classified information present in an office, the need for greater compartmentalization, the levels of physical

control, and the alarms have changed. These changes and shifts have impacts on ventilation, fire suppression, electrical, ceiling, floor, and wall infrastructures.

The effectiveness of current staff and the ability to recruit and retain qualified employees are being adversely affected. Building 3-43 is the primary reception area for visiting dignitaries and LANL stakeholders, including the President, members of Congress, the Department of Defense, and industrial and academic leaders. It is important that this building present an environment to these visitors that is consistent with the high level of science conducted at LANL.

Overall, it is estimated that Building 3-43 requires an additional $500,000 per year in energy costs over that required for a more modern energy-efficient building of similar size. Similarly, operational and routine maintenance costs for Building 3-43 are estimated to be several million dollars per year over those required by newer buildings of a similar size.

1.3 Statement of Purpose and Need for Agency Action

The NNSA has assigned a continuing role for LANL in carrying out its national security mission. To continue this enduring responsibility requires that NNSA maintain the capability and capacity required to support its national mission assignments at LANL. One of the buildings that houses programmatic, management, and support functions that are essential to the overall LANL operations and nuclear weapons work performed for DOE and the NNSA is the Administration Building 3-43. This building has many identified structural, systemic, and security problems associated with it. NNSA needs to correct these problems so that the necessary programmatic, management, and support functions housed within can continue to function at LANL with a high level of efficiency. Additionally, NNSA also needs to minimize, wherever possible, the use of energy and fiscal outlay for maintaining operations.

1.4 Scope of this EA

A sliding-scale approach (DOE 1993) is the basis for the analysis of potential environmental and socioeconomic effects in this EA. That is, certain aspects of the Proposed Action have a greater potential for creating environmental effects than others; therefore, they are discussed in greater detail in this EA than those aspects of the action that have little potential for effect. For example, implementation of the Proposed Action would affect waste disposal resources in the LANL area. This EA, therefore, presents in-depth descriptive information on these resources to the fullest extent necessary for effects analysis. On the other hand, implementation of the Proposed Action would cause only a minor effect on socioeconomics at LANL. Thus, a minimal description of socioeconomic effects is presented.

When details about a Proposed Action are incomplete, as a few are for the Proposed Action evaluated in this EA (for example, the exact amount of waste generation), a bounding analysis is often used to assess potential effects. When this approach is used, reasonable maximum assumptions are made regarding potential emissions, effluents, waste streams, and project activities (Sections 2.0 and 3.0 of the EA). Such an analysis usually provides an overestimation of potential effects. In addition, any proposed future action(s) that exceeds the assumptions (the bounds of this effects analysis) would not be allowed until an additional NEPA review could be performed. A decision to proceed or not with the action(s) would then be made.

1.5 Public Involvement

NNSA provided written notification of this NEPA review to the State of New Mexico, the four Accord Pueblos (San Ildefonso, Santa Clara, Jemez, and Cochiti), the Mescalero Apache Tribe, and to more than 30 other stakeholders in the area on February 5, 2001. In addition, upon release of this draft EA, NNSA will allow for a 21-day comment period during which comments on the draft document will be accepted from the State, pueblos and tribes, and other LANL stakeholders. Where appropriate and to the extent practicable, concerns and comments will be considered in the final EA.

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2.0 Description of Proposed Action and Alternatives

This section discusses the Proposed Action and a No Action Alternative. Section 2.1 describes the Proposed Action for the EA that would allow DOE to meet its purpose and need for agency action (Figure 4). The No Action Alternative is presented in Section 2.2 as a baseline for comparison with the consequences of implementing the Proposed Action. Alternatives that were considered but dismissed from further analysis in this EA are discussed in Section 2.3, and related actions are discussed in Section 2.4.

2.1 Proposed Action

The Proposed Action is to construct and operate the following within LANL's TA-3: a multistoried office building to house about 700 personnel and their functions, which would move from Building 3-43; a one-storied lecture hall; and a separate multilevel parking structure (Figure 5). The Proposed Action would include the transfer of personnel and operations from Building 3-490 (Badge Office) to available space within Building 3-261 (Otowi Building) and the subsequent demolition of Building 3-490. When operations and personnel were completely removed from Building 3-43 to the new office building, the NNSA would demolish Building 3-43 as well.

Information that is common to all the activities included in the Proposed Action is presented in the following paragraphs. The subsections that follow include discussion of the site work and construction of each of the buildings and structures, their operations, and the demolition actions included as part of the Proposed Action. The Proposed Action would include some modifications and upgrades to existing roadways in the area, which are also described in the following paragraphs (Table 1).

Table 1. Proposed Action Construction and Operations Chronology

Start Date	Activity	Predecessor
October 2002	Design, site preparation, and construction of office building.	Vacant site from demolition of Sherwood Building (03-105) and other miscellaneous structures. Fencing around site.
2003	Design, site preparation, and construction of parking structure.	Fencing off and removal of parking and driveways in lot east of Otowi Building (03-261).
2003	Design, site preparation, and construction of lecture hall.	Transfer of 16 employees from Badge Office (03-490) and demolition of Badge Office.
Late 2005	Occupancy and operation of new office building.	Completion of construction of Proposed Action.
2006	Demolition of Building 3-43 and restoration of site with native vegetation.	Transfer of employees from Building 03-43 and TA-21 Records Storage facility to the new office building.

Construction and Demolition

The Proposed Action would be located in TA-3, which is a highly developed area occupied by about 5,500 workers representing nearly one-half of the total population of UC and subcontractor personnel at LANL. The project construction sites are located at areas that have previously been cleared of buildings or structures or within existing paved parking areas. No undeveloped

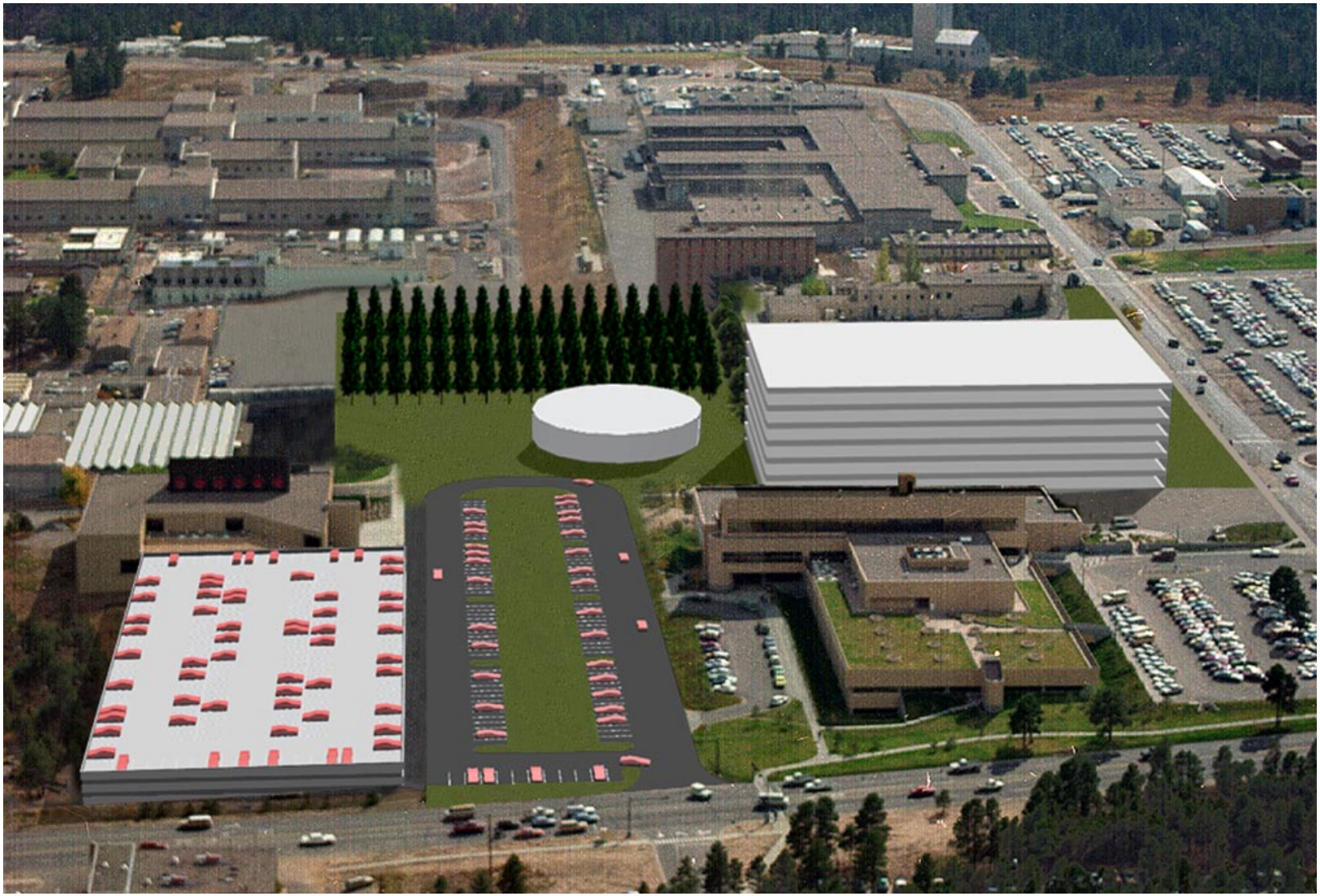

Figure 4. Conceptual rendering to show new structure and demolished areas relative to other buildings within TA-3 (looking south).

Figure 5. Proposed office building, parking structure, and lecture hall.

(so called "green-field") areas would be involved. No construction would be conducted within a floodplain or a wetland.

Each of the buildings and structures would be designed according to general design criteria (LANL Facility Engineering Manual) for a new facility (LANL 1999a and DOE Order 413.3). Consistent with DOE Order 413.3, the substainable design would include features that would allow the structures to operate with improved electric and water use efficiency and would incorporate recycled and reclaimed materials into their construction. For example: the new office building and lecture hall would incorporate building and finish materials and carpets and furnishings made of reclaimed and recycled materials, low-flow lavatory fixtures to minimize potable water use, and energy-efficient lighting fixtures and equipment to reduce electric consumption. The parking structure would include areas for recharging battery-operated vehicles; the finished landscaping of the involved construction area would utilize captured precipitation, reused and recycled materials, and native plant species.

Other operational administrative activities would be employed at the buildings and structures that would enhance the overall LANL waste minimization effort and efforts to reduce the use of potable water and energy sources (such as recycling office waste). Every effort would be made to encourage recycling and re-use of the demolition materials. LANL has existing recycling contracts for the following materials: metal, paper, cardboard, concrete, asphalt, wire, smoke detectors, exit signs, and light bulbs. To the maximum extent possible, the demolition contractor would be required to segregate these materials for recycling.

Utility services are sufficient and available on-site to serve the new buildings and structures. Utility lines are located adjacent to the proposed building sites and would require minimal trenching to connect them to the new structures. Minor repairs to existing underground sewer or water lines may be necessary. The Building 3-43 cooling tower would be removed and the new office building cooling tower would discharge into the LANL sanitary sewer system, or the new office building may receive chilled water by sharing capacity with the LANL Data Communications Center (LDCC). This connection to the LDCC would require less than 500 feet (ft) (150 meter [m]) of shallow trenching in previously disturbed areas.

Clearing or excavation activities during site construction have the potential to generate dust and to encounter previously buried materials. If buried material or remains of cultural significance were encountered during construction, activities would cease until their significance was determined and appropriate subsequent actions taken. Standard dust suppression methods (such as water spraying) would be used on-site to minimize the generation of dust during all phases of construction activities.

Construction of each of the buildings and structures would be performed using common construction industry methods, as the operational use of these structures does not have potential hazards that would entail unique structural requirements. All construction work would be planned and managed to ensure that standard worker safety goals are met. All work would be performed in accordance with good management practices, with regulations promulgated by the Occupational Safety and Health Administration, and in accordance with various DOE orders involving worker and site safety practices. The construction contractor would be prohibited from using chemicals that generate Resource Conservation and Recovery Act (RCRA)-regulated

wastes. Engineering best management practices (BMPs) would be implemented for each building and structure site as part of a site Storm Water Pollution Prevention (SWPP) Plan executed under a National Pollutant Discharge Elimination System construction permit. These BMPs may include the use of hay bales, plywood, or synthetic sedimentation fences with appropriate supports installed to contain excavated soil and surface water discharge during construction of each of the buildings and structures. After each building and structure is constructed, mounds of loose soil would be removed from the area.

Parking within TA-3 would be shifted during the construction phase and traffic would be affected for short periods during delivery of construction materials and by the addition of construction workers in the area. Approximately 200 construction workers would be on-site during the peak construction period, adding approximately 90 vehicles to local roadways during construction. These workers would park their personal vehicles at a parking area located at the edge of TA-58 (near the southwestern corner of TA-3) about 1,500 ft (450 m) from Building 3-43 or at other parking areas near TA-3. Parking spaces to the north of Building 3-43 would be taken up by construction of the multistoried parking structure. Other parking within TA-3 would be freed up for use by removing government vehicles utilized by Johnson Controls Northern New Mexico (JCNNM) employees that use a parking lot on the west side of TA-3 next to Building 3-38 to parking areas (paved and gravel based) a distance away along Eniwetok Road in TA-60 next to Building 60-17. Security fencing at the Building 3-38 parking area would be removed and the general public and LANL workers could then use approximately 227 parking spaces. The TA-60 parking area would require the erection of industrial security fencing along its perimeter. Completion of the SCC and NISC will provide additional parking in this area. Proposed parking changes are summarized in Table 2 and discussed further in Section 2.1.2.

Table 2. Parking Changes Chronology

Date	Activity	Number of Parking Spaces	Parking Spaces Cumulative
May 01	Today (no activity)	—	4,061
Jun 01	Sherwood building demolition	-40	4,021
Oct 02	JCNNM employee parking	+227	4,248
Jan 03	NISC parking lot	+208	4,456
Mar 03	New office building and parking structure start	-300	4,156
May 03	NISC occupation	-162*	3,994
Oct 03	New parking structure and office building complete	+700	up to 4,694

*Parking spaces are available within one-quarter mile (five-minute walk) radius, and LANL shuttle service would continue.

Vehicles (such as dump trucks) and heavy machinery (such as bulldozers, a drill rig, dump trucks, cranes, and cement mixer trucks) would be used on-site during the construction phase. These vehicles would operate primarily during the daylight hours and would be left on-site over night. No permanent additional exterior artificial lighting would be required. If needed, temporary task lighting would be used. Wastes generated by site preparation and construction activities are expected to be nonhazardous. Soil and reclaimed crushed concrete rubble and reclaimed asphalt material would be staged at the building debris storage yards located at TA-60 along Sigma Mesa until reuse on-site or at other LANL or off-site locations. Non-reclaimable or

recyclable wastes would be disposed of in the Los Alamos County Landfill or its replacement facility. Reclaimed copper wiring and glass would be sent off-site to recycle facilities.

Construction of the office building, parking structure, and lecture hall is estimated to start in 2003 and take approximately three years to complete (2006). The demolition of Building 3-490 would take place in the early stage of the construction phase and would require about 2 months to complete. The demolition of Building 3-43 is projected to begin in 2006 and would be completed in 6 to 12 months. All of the demolition work would be accomplished using hand-held or small-scale equipment (as in the case of the removal of windows, copper wiring, and asbestos material in Building 3-43) or using heavy machinery (such as wrecking balls and bulldozers) to remove the concrete foundations and walls of the buildings. Construction materials would be procured primarily from local New Mexico suppliers. Construction workers would be drawn from local communities and communities across northern New Mexico.

Operations

After construction and demolition, the areas surrounding each of the buildings and structures would be cleared of excess soil and be landscaped. The landscaping would incorporate to the maximum extent practicable a design to capture and utilize area precipitation to minimize the need for permanent water augmentation. Low-pressure sprinklers may be required to supply water for the establishment of plants and grassy areas over the first year or two of growth. Native plants of the Pajarito Plateau would be used primarily where practicable. Other native New Mexico plants could be used minimally that may require drip system water augmentation. If practicable, "gray-water" from the TA-3 area would be piped to the site for landscape use.

The two buildings and parking structure would be designed with a lifetime expectancy of 30 years (minimum) of operation. At the end of each facility's useful life, final decontamination and demolition would be performed as needed. A separate NEPA compliance review(s) would be performed at that time. During the operational life of the buildings and various structures, the performance of routine maintenance actions would be expected. Traffic circulation in the immediate project area would not be affected by operation of these new facilities. With the addition of approximately 36 Records Storage staff from TA-21 into the TA-3 area (assuming a 0.45 vehicles per employee ratio) only about 16 additional permanent parking spaces would be required in this area. These additional parking spaces would be provided by the addition of the parking structure.

2.1.1 New Office Building and Site

DOE proposes to construct and operate an administration office building with about 275,000 ft^2 (24,750 m^2) of available floor space. The office building would have a flexible modular floor plan to allow the facility to respond to future organizational changes that could occur. It would maximize the use of natural lighting and ergonomic designs. The basic functional spaces incorporated into the construction of the office building would be as follows:

- Office spaces for the Laboratory Director, Associate Laboratory Directors, Deputy Laboratory Directors, Program and Division Directors and Managers, Chiefs of Staff, Group Leaders, Deputy Group Leaders, staff members, executive support staff, and administrative staff; and

- Records management space (for classified material) would include records storage vaults, an adjacent reading room, information processing vault with six stations, and a production scanning vault with 15 work stations; and

- Various other spaces for photocopying rooms, file servers, mail alcoves, building reception area, locker rooms, visiting staff rooms, equipment receiving areas, reception storage space, main and satellite telecommunication rooms, mechanical rooms, electrical rooms, large and small conference rooms, break rooms, janitorial storage rooms, restrooms, maintenance shop, fire protection areas, elevator lobbies and equipment rooms, stairwell areas, main lobby and vestibule, security control points, vaults, video conference rooms, storage, research library, and hallway spaces.

The office building would be located in the core area of TA-3, which would optimize the relationship of the existing business functions with the central area for theoretical and computational research (Figure 5). Proximity to fiber optic and telephone lines from the LDCC, Central Computing Facility, and SCC is required for this building. The proposed building site is located at least 50 ft (15 m) away from an adjacent potential fault line. The new office building would house both classified and non-classified operations as does Building 3-43 that would be located within a limited access security area. Special nuclear materials would not be located in the building. The building would balance the requirements for LANL's public interactions with the facility security requirements. The proposed site is also located next to an existing security fenced area around the new SCC. This security fenced area would be extended to include the new office building.

Site Preparation

The office building would be constructed at the location of the former Building 3-105 (also known as the Sherwood Building), which, together with adjacent Building 3-287 (also known as the Syllac Building) (Figure 6) is being decontaminated and demolished (discussion presented in Section 2.4). Demolition of these buildings is expected to be completed by the end of 2003. Building 3-105 included a basement about 30 ft (9 m) deep. This excavated area would be filled with soil and fenced off for safety purposes. The construction of the office building would take advantage of this formerly excavated site to reduce some of the excavation required for construction. There may be a need for further clean up of the site, including the removal of concrete curbing and some asphalt before construction. Heavy equipment would be used to excavate the basement and belowgrade area of the building site. Noise generated by the use of heavy machinery would be audible primarily to the involved workforce and to workers housed in the surrounding TA-3 area. Involved site workers would be required to wear appropriate personal protection equipment, including hearing protection equipment.

No known potential release sites (PRSs) of hazardous materials are present within the identified structure footprints (Figure 5) at the construction site. Should any suspect disposal site be disclosed during subsurface construction work, LANL's Environmental Restoration (ER) Project staff would review the site and would stipulate procedures for working within that site area. Waste soil and rock material removed during this phase would be staged at the TA-60 staging areas to be reclaimed and recycled.

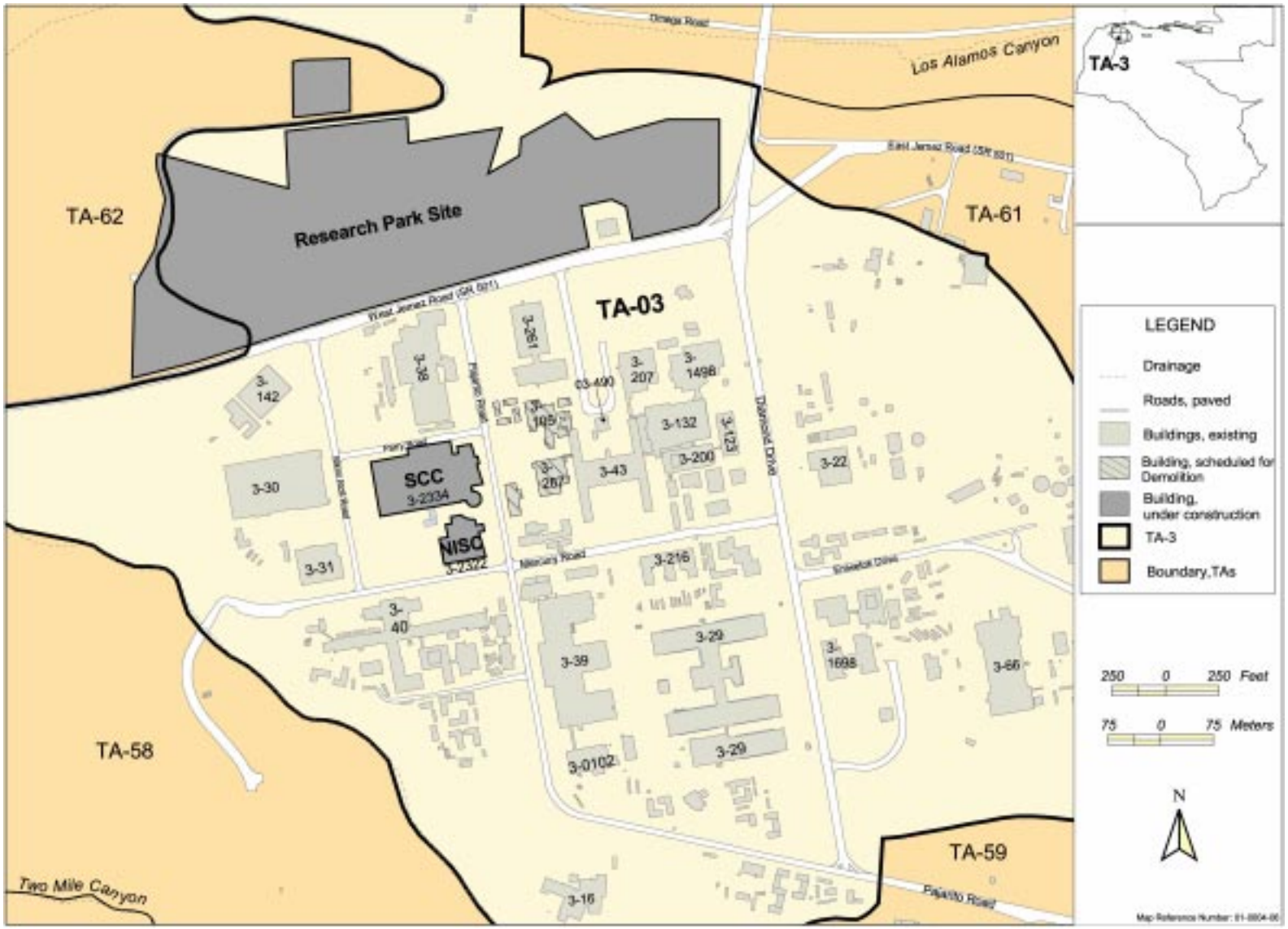

Figure 6. Ongoing construction and demolition activities.

Construction

The new office building's structure would most likely consist of a concrete substructure with a steel superstructure designed to meet current building loading, wind, and seismic standards. It would be constructed of fireproof and fire-retardant materials. High-quality materials appropriate for a corporate office facility would be used for portions of the exterior and interior of the facility. The building would be about six stories high with one to two stories underground. The topography of the site is such that the west side of the structure would extend no more than five stories above ground and the east side would rise to about six stories above ground. The total height of the building above ground level would range from about 90 to 105 ft (27 to 32 m).

Standard industry practices would be employed during the construction of the new office building. Work at the site would require the use of heavy equipment such as cranes, forklifts, cement trucks, and other similar construction equipment. It would also require the use of a variety of hand tools and equipment. Noise at the site would be audible primarily to the involved workers. During the construction phase, space would be required for equipment storage and material staging. The area south of the office building (the site of former Building 3-287) and the parking lot east of the Otowi Building, which would be the location for the new parking structure, would be available for use during the construction of these new buildings and structures for storage and staging purposes.

Approximately 12,000 cubic yards (yd^3) (9,120 cubic meters [m^3]) of solid waste would be generated during construction of the office building. This waste (consisting of such items as packaging and strapping material, excess gypsum board pieces, broken or bent nails and screws, and empty material containers) would be disposed of at the Los Alamos County Landfill or other replacement landfill. It is estimated that one truck per day and five days per week would be sufficient to remove this material from the site for a duration of about 24 months.

Operation

The office building would house personnel from Building 3-43 and the TA-21 Records Storage Center for a total population of about 700 full-time LANL workers. The building would provide office and computer user space to house some of LANL's technical research programs – primarily from Applied Physics, Theoretical, and Decision Analysis Divisions, program management; senior management including the Director, and Associated and Deputy Director staff; and key LANL support functions currently housed in Building 3-43. Of the approximate 1,000 employees currently working in Building 3-43, some would be moving into the new SCC and NISC (Figure 6), and about 700 would move into the new office building. This population figure includes about 36 staff from the TA-21 Records Storage facility that would be housed in the new building together with their operations. There would also be space made available to visitors on a short-term-use basis (usually hours or days in length). Conference rooms and meeting spaces would also be used in the building, as would areas for computing operations, and service operations. This building would have one of the highest levels of occupancy of any building at LANL.

Average water and power use and waste generation amounts would be typical of other modern office buildings. UC does not meter either water or electric use nor does it track waste generated at Building 3-43. Annual LANL usage of electricity is 628 gigawatt-hours, 693 million gallons (3,645 million liters) of water, 187 million gallons (708 million liters) of sewage, and 2,860 tons

(2,600 metric tons) of solid waste (DOE 1999a). Operation of the new office building is expected to use less water and electricity than Building 3-43 because of the fewer personnel it would house, the construction design, the use of energy-efficient lighting and equipment, and the use of water-conservation measures incorporated in the building and landscape features.

2.1.2 Parking Structure

A new parking structure would be constructed within a paved parking area located to the east of Building 3-261 (Figure 5). This site is accessed off of West Jemez Road (State Road 501) at the intersection with Casa Grande Drive. This is a signalized intersection with turning lanes in all directions. The newly developed Los Alamos Research Park is located on the north side of this intersection.

Site Preparation

A potential fault line across the existing parking lot and proposed location for the new parking structure would require the parking structure to accommodate the expected seismic loads. The site would be excavated to remove asphalt before construction. Approximately 1,100 yd^3 (836 m^3) of asphalt would be taken from the site to the TA-60 storage area where it would be recycled for use elsewhere at LANL.

Construction

The parking structure would be sized and designed to optimize available parking at the site. Depending on the number of existing parking spaces eliminated by its construction, up to the maximum of 300 spaces present at the site, the structure would be sized to replace the number of spaces eliminated by the structure and add 400 more. Therefore, the total number of parking spaces provided by the new parking structure would range upwards to a maximum of 700 standard automobile spaces (Table 2). It could accommodate from 400 to 1,000 vehicles (including cars, vans, trucks, motorcycles, and bicycles). The structure would either be single storied or may be multiple storied; the current estimate is that it would be no more than four stories above ground level in height (about 70 ft [21 m] above grade). The building is planned as "cast-in-place" concrete construction with steel reinforcement. The exterior would incorporate high-quality materials. Vehicles within the parking structure would be largely excluded from sight as viewed from the roadway.

Parking lost during the construction phase would be offset by 250 parking spaces that will become available upon completion of the SSC and NISC buildings by late 2003. In addition, as already discussed, approximately 300 spaces will become available after the transfer of government vehicles from parking spaces currently used next to Building 3-38 on the west side of the TA-3 developed area.

Operation

The parking structure would be available for use by LANL employees and visitors by 2004. The structure would provide for related services such as the charging of batteries for battery operated vehicles. Maintenance of the facility would be minimal and would be expected to be conducted routinely over the anticipated minimum 30-year operational life span.

2.1.3 New Lecture Hall

A 600-seat lecture hall would be constructed at the site of the existing Building 3-490 along Casa Grande Drive to replace the one located within Building 3-43 (Figure 5). An enclosed corridor to provide access from within that building would connect the lecture hall to the office building.

Demolition and Site Preparation

Site preparation would include the demolition of Building 3-490 after the workers housed in that building had been relocated to Building 3-261 (the Otowi Building). Approximately 500 yd^3 (380 m^3) of building demolition material and excavated soil and rock would be removed from the site and transported to Sigma Mesa for reclamation and reuse or to the Los Alamos County Landfill or another approved municipal landfill for permanent disposal.

Construction

The lecture hall would be located less than 150 ft (45 m) away from the new office building. The lecture hall would be one story high (about 20 ft [6 m] above ground level) and designed in the same style and materials as the new office building. Construction of the lecture hall would be conducted in a similar manner as that of the office building. It would require the use of heavy equipment and machinery. The building would include an entry vestibule, rest rooms, equipment rooms, storage rooms, and utility rooms in addition to the 600-seat lecture hall.

Operation

This lecture hall is needed to conduct large, classified meetings and colloquiums in support of programmatic work. The design and construction of this facility would include a secure corridor connecting the new office building that would allow the lecture hall to be used for open as well as classified discussions. Maintenance of the facility would be minimal and would be expected to be conducted routinely over the anticipated minimum 30-year operational life span.

2.1.4 Demolition of Building 3-43

The demolition of Building 3-43 would occur after all personnel and operations are removed starting in about 2006. A waste minimization and pollution prevention plan would be prepared as part of the Proposed Action project to address waste issues for the demolition of Building 3-43. As already discussed, building demolition materials would be recycled and reused to the extent practicable. All waste requirements for demolition-generated wastes would be met. Building 3-43 has a large amount of incorporated asbestos-containing building material that would require a rigorous asbestos removal program and disposal of the material at a specifically permitted disposal facility located off-site from LANL. Building 3-43 housed a photo lab at one time, and some chemical and heavy metal contamination may exist in a small area in the basement. This has not been identified as a PRS. Further characterization would be performed before demolition activities. Hazardous waste generated during demolition actions would be packaged according to U.S. Department of Transportation standards and shipped off-site for treatment and disposal.

After the building was demolished, crushed concrete from the structure would be used to fill the hole left by the removal of Building 3-43's basement. The concrete would likely be crushed at the site or moved to the TA-60 concrete crushing site for the crushing action to occur and then trucked back to the site. Clean fill dirt would be placed on top, and the entire area would be planted over.

2.2 No Action Alternative

The No Action Alternative provides a description of current conditions to compare to the potential effects of the Proposed Action. This alternative must be considered even if DOE is under a court order or legislative command to act [10 CFR 1021.32 (c)]. Under the No Action Alternative DOE would not construct an office building, parking structure, or lecture hall—nor would DOE demolish Building 3-43 nor Building 3-490. The need for increased electric power and communications systems and security systems in Building 3-43 would not be met. Poor-quality office space and the effectiveness of current staff and the ability to recruit and retain qualified employees would remain a problem. Current DOE or Uniform Building Code seismic standards would not be met and use of the building would be phased out over time as commercial lease space or space within LANL became available or trailers could be brought on site. No TA-3 disturbance of existing parking or building sites would occur. There would be no construction or building removal debris to require disposal. Utility usage would remain essentially the same as present usage for a time and then be transferred to whatever new office space was made available. No consolidation of record storage would be allowed and no new parking spaces would be created. Continued expenses for repairs and replacement of aging HVAC systems and other building components would increase. As building systems and other components fail and cannot be replaced or repaired, areas of the building would be closed. As a result, attrition of staff from the building would continue and eventually human occupancy of the facility would cease.

2.3 Alternatives Considered but Dismissed

2.3.1 Use of Other Existing Space

UC staff at the LANL Space Management Office have determined that no single office space within LANL or commercial space within the Los Alamos townsite is available at this time that could house a staff of 700 with the necessary security and computing requirements. Also, space outside of the TA-3 area would negatively affect productivity and effectiveness attributed to the potential fragmentation of operations and longer travel times for associated personnel. It would take considerable time (several years) before a space large enough to house that many staff could become available in the commercial sector. No other office space of that size is anticipated to become available at LANL within the next five years either. Office spaces for small numbers of personnel are available both within LANL and within Los Alamos townsite; however this piecemeal approach to housing the 700 Building 3-43 personnel would require that they be scattered throughout Los Alamos County and LANL. This approach to making use of existing space would also negatively affect productivity and effectiveness attributed to the potential fragmentation of operations and longer travel times for associated personnel and the cost may be greater. The ability to provide adequately for security requirements could likely not be met through this method of space procurement. This alternative was considered to be unreasonable and was not analyzed in this EA.

2.3.2 Building 3-43 Renovation

Correcting all identified problems, inefficiencies, and inadequacies of the 3-43 Administration Building would not meet DOE's purpose and need. Modifications to existing facilities, especially one as inadequate as Building 3-43, are expensive, inefficient, and would fall short of meeting security requirements. Designing these characteristics into a new facility with an

element of flexibility for future requirements would greatly enhance NNSA's ability to maintain control over any sensitive information that would be maintained in the facility. Additionally, correcting all the identified building seismic deficiencies would be technically challenging in that a 75-percent correction would be required to meet today's seismic requirements. The building's exterior is mostly composed of glass windows, with a concrete frame and block infill design. Making changes of the magnitude required would be extremely costly if they could be devised at all. The ability of engineers to reconfigure the building to meet current needs within its existing footprint would also be difficult and costly. New HVAC, plumbing, electrical, and other building systems would have to be installed to replace the existing systems that are failing. Doing renovation of this nature and magnitude while the building is occupied would result in work slowdowns or require temporary relocation of some workers.

The overall effort required to retrofit the existing building to meet all current building design and safety codes, needs and requirements of operations, and security needs would be prohibitively difficult and fiscally imprudent. Additionally, the time needed to plan, design, and rebuild the structure would delay needed safety corrections unacceptably, thereby necessitating costly interim facility repairs or changes, which would add to the overall expense and difficulty of the exercise. The costs and time expenditures would be much greater than the cost and time required to plan and build a new structure(s) to house the programmatic, management, and support functions needed by UC.

Building 3-43 was not designed or constructed in a fashion that is conducive to large-scale system upgrades. To shut down even the smallest sections would require shutting down utilities that serve much larger portions of the building. In addition, the serious deficiencies in the seismic design and other building systems would be extremely costly and difficult to correct. Even after such an investment, the building would gain less than an additional 20 years of life.

Finally, even if efforts to rebuild this facility were attempted, there is no sufficient secure area within TA-3, at another LANL site, or within the townsite to house the current staff and operations during renovations. This alternative was considered to be unreasonable and was not analyzed further in this EA.

2.4 Related Actions

2.4.1 Final Site-wide Environmental Impact Statement for the Continued Operation of the Los Alamos National Laboratory

The Final LANL SWEIS (DOE 1999a), dated January 1999, was issued in February of that year. A record of decision was issued in September 1999, and a Mitigation Action Plan was issued in October 1999. As already noted in this EA, the SWEIS included text regarding the consideration of a variety of options for the renovation of infrastructure at TA-3 that would include replacing a number of aging structures either individually or as part of a multibuilding effort, but the analysis of these action's impacts was not included in the SWEIS (DOE 1999a).

2.4.2 TA-3 Revitalization Plan

UC, as required by DOE in 1997, conceived a draft comprehensive site plan for LANL that included the revitalization of the entirety of TA-3, along with other portions of LANL's technical areas. LANL's draft comprehensive site plan was issued by UC on January 31, 2000, for

stakeholder and public review (LANL 1999b). As conceived in 2000, the LANL TA-3 Revitalization Plan would have required a level of funding that is not currently planned by NNSA and Congress in order to be realized in its entirety; an attempt to seek third-party financing for site plan implementation was not successful. In January 2001, NNSA requested that UC, along with other NNSA site facility contractors, revise their facility comprehensive site plan according to new guidance for aligning the site planning process with budget formulation and execution, starting with Fiscal Year (FY) 2003 budget planning (Creedon 2001). Consequently, LANL's new Ten-Year Comprehensive Site Plan is scheduled for UC submittal to NNSA in the September or October 2001 time frame; after NNSA approval is obtained, the plan will then be issued to LANL stakeholders. As directed by NNSA, this Ten-Year Comprehensive Site Plan will be revised annually to support the budget request for the next budget year.

Individual projects for the construction of the SCC and NISC consistent with the TA-3 Revitalization Plan were proposed in the past five years and were subject to separate NEPA compliance reviews. These two projects are discussed in the following subsections of this document. The proposed replacement of Building 3-43 with a new facility was included in the 2000 Draft Plan along with other activities as part of the "Revitalization of TA-03," and it is expected to be reflected in the new Ten-Year Comprehensive Site Plan as well. Given the nature of the Ten-Year Comprehensive Site Plan as a constantly evolving tool for site planning and budgeting purposes, it is unlikely that compliance strategies will be developed for implementation as a whole, although this may be revealed as possible after the final plan is issued and reviewed. Until the Ten-Year Comprehensive Site Plan has been issued and a reasonable compliance strategy developed, review of each proposal will be made to ensure the project's overall consistency with the general LANL site planning process. To that end, the Proposed Action under consideration in this EA is consistent with the LANL site planning process.

2.4.2.1 Strategic Computing Complex

NNSA is constructing and will soon operate the SCC building within TA-3 in proximity to the proposed new office building (Figure 6). The SSC will house and operate an integrated system of computer processors capable of performing approximately 50 trillion floating point operations per second, as part of the Accelerating Strategic Computing Initiative in support of the Stockpile Stewardship and Management Program. This facility is planned for completion by late 2001.

An EA was completed for this project on December 18, 1998, (DOE 1998a) and, based on this EA, DOE determined that the Proposed Action would not significantly affect the quality of the human environment and issued a Finding of No Significant Impact in December 1998.

2.4.2.2 Nonproliferation and International Security Center

NNSA has completed a proposal to construct and operate the NISC building on the northwest corner of Pajarito and Mercury Drive in TA-3 also in proximity to the proposed new office building (Figure 6). The NISC building would consolidate the verification and intelligence functions of approximately 600 Nonproliferation and International Security Division personnel who are currently spread out over eight TAs and 45 facilities. This building is planned for completion around late 2002.

An independent NEPA analysis for the NISC building was completed (DOE 1999b) in July 1999. Based on this EA, DOE determined that the Proposed Action would not significantly affect the quality of the human environment and issued a Finding of No Significant Impact in July 1999.

2.4.3 Demolition of Vacated Buildings

The demolition of vacated buildings and removal of trailers and transportables is ongoing at LANL and in particular at TA-3 (Figure 6). Demolition has been evaluated for NEPA compliance purposes and was categorically excluded from the need to prepare either an EA or an Environmental Impact Statement in June 1998.

2.4.4 Final Environmental Impact Statement for the Conveyance and Transfer of Certain Land Tracts Administered by the U.S. Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico (C&T EIS)

On November 26, 1997, Congress passed PL 105-119, the *Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act,* 1998 (Section 632, 42 U.S. Code Sections 2391; the Act). Section 632 of the Act directs the Secretary of Energy to convey to the Incorporated County of Los Alamos, New Mexico, or to the designee of the County, and to transfer to the Secretary of the Interior, in trust for the Pueblo of San Ildefonso, parcels of land under the jurisdictional administrative control of the Secretary at or in the vicinity of LANL. A Record of Decision for this action was issued in December 1999.

DOE prepared the C&T EIS (DOE 1999c) to examine potential environmental impacts associated with the conveyance or transfer of each of the land parcels tentatively identified in the DOE's *Land Transfer Report to Congress Under Public Law 105-119, A Preliminary Identification of Parcels of Land in Los Alamos, New Mexico, for Conveyance or Transfer* (DOE 1998b). One of the parcels identified for transfer was the DP Road Tract that includes the TA-21 Records Storage and Archives building. The relocation of this function as part of the Proposed Action analyzed in this EA would be in support of the Record of Decision for the C&T EIS.

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3.0 Affected Environment and Environmental Consequences

Section 3.0 describes the natural and human environment that could be affected by the Proposed Action and the No Action Alternative and the environmental consequences of those actions. Based on the Proposed Action description, potential environmental resources that may be affected as a result of implementing the Proposed Action have been considered. Environmental issues were identified and either addressed in this section or not, based on the "Sliding Scale Approach" discussed earlier in this EA (Section 1.4). Table 3 identifies the subsection where potential environmental issues are discussed or notes why they are not addressed in this document.

Table 3. Environmental Issues Considered

Environmental Category	Applicability	Subsection
Transportation, Traffic, and Infrastructure	Yes	3.2.1
Waste Management	Yes	3.2.2
Visual Resources	Yes	3.2.3
Cultural Resources	Yes	3.2.4
Geologic Setting	Yes	3.2.5
Air Quality	Yes	3.2.6
Human Health	Yes	3.2.7
Noise	Yes	3.2.8
Socioeconomic	Yes	3.2.9
Water Quality	Yes	3.2.10
Land Use	No. Land uses and land use designations in TA-3 as a result of the Proposed Action would not change or be affected.	N/A
Ecological Resources, Wetlands, Floodplains	No. The proposed project would be located in previously disturbed and developed land within an industrialized area of LANL. This building site is adequately distant from potential habitat for areas designated as sensitive habitat for Federally listed threatened and endangered species so that there are no special protective restrictions regarding site activities. There are no floodplains or wetlands affected by this project.	N/A
Environmental Justice	No. Populations that are subject to Environmental Justice considerations are present within 50 miles (mi) (80 kilometers [km]) of Los Alamos County; potential effects of this project would be localized within a 10 mi (16 km) radius. Populations nearest to the construction site and within this radius are not predominantly minority and low-income populations.	N/A
Potential Release Sites	No. No PRSs have been identified in the area designated for the Proposed Action.	N/A

3.1 Regional Setting

The Proposed Action would be located within the area of Los Alamos County that includes LANL. LANL comprises a large portion of Los Alamos County and extends into Santa Fe County. LANL is situated on the Pajarito Plateau along the eastern flank of the Jemez Mountains and consists of 49 TAs. The Pajarito Plateau slopes downward towards the Rio Grande along the eastern edge of LANL and contains several fingerlike mesa tops separated by relatively narrow and deep canyons.

Commercial and residential development in Los Alamos County is confined primarily to several mesa tops lying north of the core LANL development, in the case of the Los Alamos Townsite, or southeast, in the case of the communities of White Rock and Pajarito Acres. The lands surrounding Los Alamos County are largely undeveloped wooded areas with large tracts located to the north, west, and south of LANL that are administered by the Department of Agriculture, Santa Fe National Forest; the Department of Interior, National Park Service, Bandelier National Monument; and Bureau of Land Management to the east.

Detailed descriptions of LANL's natural resources environment, cultural resources, socioeconomics, waste management, regulatory compliance record, and general operations are described in great detail in the *Site Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory* (DOE 1999a). Additional information is available in the *Environmental Surveillance and Compliance at Los Alamos at Los Alamos During 1999 – 30th Anniversary Edition* (LANL 2000b) report and the *Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration, Actions taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico,* (DOE 2000). These documents may be found in the LANL library and are available on the world-wide-web at http://nepa.eh.doe.gov/eis/eis0238/feis0238toc.html, http://lib-www.lanl.gov/la-pubs/la-13775.pdf, and at http://lib-www.lanl.gov/pubs/doesea-03.htm respectively.

3.2 Potential Environmental Issues

3.2.1 Transportation, Traffic, and Infrastructure

3.2.1.1 Affected Environment

About one-half the LANL workforce is located at TA-3, and this TA also has the highest percentage of land used for vehicle parking. Personal vehicles are the predominant transportation mode at LANL and Los Alamos County. There are four main LANL access points that accommodate about 43,000 average daily trips. Accident rates in Los Alamos are considerably less than other urbanized areas in New Mexico and are trending downward. In 1996, the County of Los Alamos had a rate of 18 crashes per one-thousand population and the rate declined to 14 crashes per one-thousand population in 1998. The County's population is essentially stable. Statewide, the comparable accident rate was 28 per one-thousand population in 1998 and 31 per one-thousand in 1996 (http://www.unm.edu/~dgrint/annual.html). While construction of the SCC and NISC have decreased the number of parking spaces within the central portion of TA-3, there are approximately 4,230 spaces within one-quarter mile (5 minutes walk) of the center of TA-3 (Pava 1999). In 1999, LANL implemented a transportation strategy within TA-3 that included reserved parking for carpool vehicles, shuttle bus service to more distant satellite lots, and pedestrian crossing improvements.

All necessary utilities are available close to the proposed project locations. There are electric, steam, water, and sewer lines located nearby and serving the proposed building envelope and this is also the case at the parking structure site.

3.2.1.2 Proposed Action

Construction activities would create some temporary and localized short-term parking inconveniences over a three-year period. This project would not adversely affect traffic, parking, and infrastructure services in this area in the long term after the construction phase was completed. New parking spaces provided by the proposed parking structure would help alleviate the tight parking situation in TA-3. Per capita utility demand would actually be reduced with the construction of an energy-efficient office building and the demolition of old and temporary structures.

It is estimated that 200 construction personnel would be on-site at the peak construction period. This means approximately 90 vehicles could be added to local roadways during construction of the office building and the parking structure, assuming a 0.45 vehicle/employee ratio (DOE1999b). Construction personnel would park on-site and at remote designated parking areas.

Construction of the proposed parking structure would delete up to 300 existing spaces east of Building 3-261 temporarily. The new office building construction and operation itself will not affect parking demand. The loss of these parking spaces would be offset by the 250 spaces created after the completion of SCC and NISC (which will occur in 2003 before the start of the parking structure) and the 227 spaces created by the removal of all government vehicle parking spaces around TA-3-38. The government vehicle parking lot at TA-60 (Sigma Mesa) where workers would leave their private vehicles and pick up a government vehicle would not affect parking within TA-60 (Table 2). The parking site is at the unused test fabrication facility on Sigma Mesa (TA-60-17) that is partially paved and may only require the addition of some gravel and a perimeter fence.

Truck volumes that would carry waste material to either local or regional landfill sites are shown in Table 4 (Page 32). Each truck is estimated to haul 10 yd^3 (8 m^3). The asphalt removed from the parking lot east of Building 3-261 would be taken to the TA-60 storage area where it would be recycled for use elsewhere at LANL. About one truck per day would be needed to carry this material during site preparation for the parking structure.

Approximately 36 Records Storage staffers would relocate from TA-21. Assuming a 0.45 vehicle per employee ratio, 16 additional permanent parking spaces would be needed in TA-3.

The government vehicle remote site at Sigma Mesa would increase traffic along Eniwetok Drive and at the intersection of Eniwetok Drive and Diamond Drive, particularly during the morning and evening peak periods. The addition of up to 227 additional vehicle trips in this area would not substantially affect this intersection. Eniwetok Drive to the east of the JCNNM warehouse and repair shops (TA-60-1 and -2) is a narrow road with minimal shoulders.

The new office building would contain more energy-efficient utility systems. Some of the existing utilities in and around Building 3-105 (Sherwood) and the proposed parking structure would require relocation and/or repairs and modifications for tie-ins and to service the new office building. The present Building 3-43 cooling tower would be removed and the new office building cooling tower would discharge into the LANL sanitary sewer system, or the new office

building may receive chilled water by sharing capacity with the LDCC. This connection to the LDCC would require less than 500 ft (150 m) of shallow trenching in previously disturbed areas.

3.2.1.3 No Action Alternative

Approximately 36 Records Storage staffers would not relocate from Los Alamos townsite. Therefore, assuming a 0.45 vehicle/employee ratio, 16 additional permanent parking spaces would not be needed. The current parking inconveniences would persist long term because the 400- to 1000-space parking structure would not be built. Consequently, the surface parking lots constructed to replace the loss of spaces from the SCC and NISC projects and the shuttle service would continue to be used. The existing utility network would remain in place. Energy-efficiency improvements would not occur.

3.2.2 Waste Management

3.2.2.1 Affected Environment

Both LANL and Los Alamos County use the same solid waste landfill located on DOE land. The Los Alamos County Landfill accepts waste from other neighboring communities. The Los Alamos County Landfill receives about 18,850 tons per year (17,100 metric tons per year), with LANL contributing about 2,860 tons per year (2,600 metric tons per year). Based on discussions with the Los Alamos County Solid Waste Manager (Bachmeier 2001), the current plans are to close the Los Alamos County Landfill by June 30, 2004. Several landfill possibilities within New Mexico could be used after 2004, such as the landfill located at Rio Rancho, which is approximately 85 highway mi (137 km) south of Los Alamos. Access to the Rio Rancho landfill is along state highways and Interstate Highway 25. The current Los Alamos County Landfill would be capped and would enter the monitoring phase of its life cycle, and a portion of the site would be used as a transfer station. The recycling center would continue to operate.

Hazardous waste regulated under the RCRA is transported to TA-54 at LANL for proper management, which is carried out in accordance with applicable laws, regulations, and DOE Orders. Non-RCRA-regulated hazardous wastes are disposed of off-site at various commercial disposal locations.

Dedicated pipelines to the Sanitary Wastewater Systems Consolidation plant at TA-46 deliver sanitary liquid wastes from TA-3 and other TAs at LANL. The plant has a design capacity of 600,000 gallons (2.27 million liters) per day and in 1995 processed a maximum of about 400,000 gallons (1.5 million liters) per day (DOE 1999a).

3.2.2.2 Proposed Action

This project would require the handling of construction material from the new office building, parking structure, and lecture hall and disposal of wastes from construction demolition activities, which would affect waste management resources in the area. A complete waste characterization has not been completed at this time. However, it is anticipated that an initial waste evaluation of Buildings 3-43 and 3-490 would be accomplished during the conceptual design phase for the new office building and lecture hall. This evaluation would identify the known waste forms and quantities that exist within Buildings 3-43 and 3-490 and will establish removal and disposal plans. Early discussions with the Building 3-43 facility management staff and knowledge from previous construction projects at LANL indicate the potential for the following waste types and

general representative volumes. A summary of waste types, quantities, and disposal is included at the end of this section in Table 4.

- Solid waste (office wastes, material packaging, glass, etc.)
- Construction and demolition solid wastes (concrete, steel, lumber, etc.)
- Hazardous (asbestos, photo-chemicals, lead, beryllium)

Radioactive and mixed wastes have not been identified at this time and are not expected to be found in the building. This would be known upon completion of the waste characterization study. These wastes, if present, would be handled by LANL waste operations staff using approved methods.

The waste management plan for the Proposed Action would be to dispose of the solid waste from construction, demolition and operations at the Los Alamos County Landfill, a new regional facility, or other New Mexico landfills. The new regional landfill project is still in the very early stages of planning and environmental analysis. Other New Mexico licensed solid waste landfills would likely be used. The Rio Rancho landfill is about 85 highway mi (137 km) from LANL. Use of this landfill would require transporting LANL solid wastes along regional highways, which would result in the same affect as other traffic in the region.

Construction

Construction debris primarily comprised of wood, metal, and asphalt would be the typical waste expected to be generated during construction of the office building, parking structure, and lecture hall. This solid waste would be disposed of either at the Los Alamos County Landfill or at another appropriate municipal solid waste landfill. Small amounts of hazardous waste would be generated that LANL waste management personnel would manage in accordance with the requirements of RCRA and other appropriate laws, regulations, and DOE Orders. Additionally, the project would generate excess uncontaminated soil from excavation activities. The soil would be stockpiled at a location on Sigma Mesa (TA-60) or other approved material management area for future use.

Demolition of Building 3-43 and Building 3-490

Solid waste from demolition would include mostly concrete, metal, and glass generated as a result of the removal of Buildings 3-43 and 3-490. To the extent possible, demolition-generated material would be recycled or reused either at LANL or off-site (see following paragraphs for discussion of this issue). The debris that could not be recycled or reused from both buildings would most likely be disposed of at a municipal solid waste landfill such as the Rio Rancho landfill.

Hazardous wastes would be identified and removed from Building 3-43 before the general structural demolition begins. UC would manage this work. The work would be performed by commercial subcontractors licensed for this type of activity. UC uses qualified disposal sources for various hazardous waste materials. The disposal sites are audited for regulatory compliance before being included on the UC qualified contract source list for the disposal site locations across the U.S. (Table 4). Potential off-site disposal locations (for hazardous wastes) include either Mountainair, New Mexico, or Phoenix, Arizona, for asbestos; Albuquerque, New Mexico, for lead; Henderson, Colorado, or Kettleman Hills, California, for beryllium; and Fernley,

Nevada, for photo-chemicals. Mountainair is located about 130 mi (48 km) from Los Alamos. Phoenix is about 550 mi (880 km) and Albuquerque is 90 mi (144 km) from Los Alamos. Henderson, which is just north of Denver, is about 380 miles (608 km) from Los Alamos, and Kettleman Hills, just north of Los Angeles, is about 965 mi (1,544 km) away. Fernley, Nevada, located just outside of Reno, is about 1,080 mi (1,728 km) from Los Alamos.

The waste quantities shown below have been developed from prior LANL demolition reports and preliminary walk-throughs of Building 3-43. The estimates would be refined as additional information becomes available during the development of the project design, but these estimates are expected to be bounding of the actual waste amounts generated.

Table 4. Approximate Waste Management Type, Quantity, and Disposal Location

Type	Source	Quantity yd^3 (m^3)	Traffic (truck/day, 5-day week)	Period (Fiscal Year)	Duration	Potential Disposal Location
Solid Waste	03-43 Construction	12,000 (9,120)	1	2003-5	24 months	Rio Rancho, New Mexico
Construction and Demolition	03-43 Demolition	5,200 (3,952)	3	2006	3 months	Rio Rancho, New Mexico
Construction and Demolition	03-490 Demolition	500 (380)	<1	2003	1 month	Rio Rancho, New Mexico
Aggregate Stone	03-43 Demolition	20,000 (15,200)	10	2006	3 months	Onsite (LANL) crushing and re-use as backfill
Aggregate Stone	03-490 Demolition	100 (76)	<1	2003	1 month	Rio Rancho, New Mexico
Asbestos	03-43 Demolition	6,200 (4,712)	7	2006	1.5 months	Mountainair, New Mexico, or Phoenix, Arizona
Lead	03-43 Demolition	1 (0.76)	1	2006	1 day	Albuquerque, New Mexico
Beryllium	03-43 Demolition	60 (46)	2	2006	1 day	Henderson, Colorado, or Kettleman Hills, California
Photo-chemicals	03-43 Demolition	TBD	1	2006	1 day	Fernley, Nevada

Operations

Solid waste generated during the operation of the office building, lecture hall, and parking structure would be disposed of at the Los Alamos County Landfill or other appropriate solid waste landfill. The amount of waste generated during operation of these new structures would not increase substantially from current volumes generated at Building 3-43.

Waste Minimization and Pollution Prevention

The Proposed Action would make every effort to encourage recycling and reuse of the demolition materials wherever possible during each of the three stages of the project. For example, the concrete demolition waste could be crushed and reused to backfill the Building 3-43 basement excavation site. This would divert some of the waste away from land disposal. Asphalt materials would be ground up and stockpiled for reuse at LANL. UC utilizes various off-site waste-recycling facilities for the following materials: metal, paper, cardboard, concrete, asphalt, wire, smoke detectors, exit signs, and light bulbs. To the maximum extent possible, the demolition contractor would be required to segregate these materials for recycling. UC is contemplating contract incentives for the construction contractor that would encourage recycling and waste minimization. Waste that is shipped off-site would conform to applicable requirements. Most unclassified shipments are transported via commercial carriers.

3.2.2.3 No Action Alternative

There would be no waste generation under the No Action Alternative as there would be no construction or demolition wastes generated. The construction and demolition waste and truck traffic to other landfills or recycling centers would not occur.

3.2.3 Visual Resources

3.2.3.1 Affected Environment

The visual environment of LANL is described in the 1999 LANL SWEIS. The natural setting of the Los Alamos area is panoramic and scenic. The mountain landscape, unusual geology, varied plant communities, and archaeological heritage of the area create a diverse visual environment. Portions of the viewshed underwent substantial changes as a result of the Cerro Grande Fire. The fire denuded large areas of the mountain slopes that form the scenic background in the Los Alamos area. The resulting landscape is both more stark and less uniform than before the fire (DOE 2000).

Much of the development within LANL is austere and utilitarian. Overcrowded conditions have often resulted in an unplanned, visually discordant assembly of structures. Much of the development has occurred out of the public's view. The most visible developments are a few tall structures, facilities at high, exposed locations, and those beside well-traveled, publicly accessible roads. Tall structures, such as the Rack Assembly and Alignment Complex at TA-60, and the extremely dense mixed development in areas such as TA-3 have been identified as adverse visual impacts (DOE 1999a).

The Proposed Action would be implemented within LANL's Core Planning Area (TA-3). The Core Planning Area contains most of LANL's population, buildings, and infrastructure. In the future, this area is expected to contain LANL's central administration functions and to be LANL's primary public interface area (LANL 2000b).

3.2.3.2 Proposed Action

The Proposed Action would have some beneficial and some disruptive effects. The existing administration building is part of the "dense mixed development" within TA-3 that constitutes an adverse visual impact because it contains unusually discordant structures. The removal of

Building 3-43 would be considered a beneficial effect. The Proposed Action would be consistent with LANL's Comprehensive Site Plan (LANL 2000b). The proposed office building, lecture hall, and parking structure would be visually compatible with nearby office and computing structures, such as the SCC and NISC buildings and the Los Alamos Research Park, this would enhance the overall appearance of the Core Planning Area.

The proposed office building would stand about 105 ft (32 m) above grade and would be one of the taller structures at TA-3. The vent stack for the new NISC would be about 90 ft (27 m) high. The proposed office building would be about 20 ft (6 m) higher than the SSC and thus would be a prominent landmark building. From various viewpoints, the office building would be clearly visible at the base of the Jemez Mountains and would be one of a number of visually disruptive elements against the natural lines of the background landscape from distant viewers. The parking structure and lecture hall would be lower and would not be expected to be visible from a distance. Close by, the building would be consistent with nearby new office and computing structures within TA-3.

3.2.3.3 No Action Alternative

Under the No Action Alternative, Building 3-43 would continue to contribute to the adverse visual effects of the TA-3 area. The current Administration Building is about 75 ft (23 m) tall above ground level. No other visual resources effects (either beneficial or adverse) would occur.

3.2.4 Cultural Resources

3.2.4.1 Affected Environment

Cultural resources include any prehistoric sites, buildings, structures, districts, or other places or objects considered to be important to a culture or community for scientific, traditional, religious, or any other reason. They combine to form the human legacy for a particular place (DOE 1999a). To date, over 2,000 archaeological sites and historic properties have been recorded at LANL.

The criteria used for evaluating cultural resources depends upon their significance as sites eligible for listing to the National Register of Historic Places (NRHP) as described in the *National Historic Preservation Act* (16 United States Code 470). These determinations of significance are met by evaluating each cultural resource based on it meeting any one or more of the following characteristics:

a) Association with events that have made a significant contribution to the broad pattern of our history.
b) Association with the lives of persons significant in our past.
c) Illustration of a type, period, or method of construction; for its aesthetic values or for its representation of the work of a master; or if it represents a significant and distinguished entity whose components may lack individual distinction.
d) It has yielded, or may be likely to yield, information important in prehistory or history.

No prehistoric sites are located in the area of the Proposed Action. There are numerous structures in TA-3 that have been identified as historic structures.

3.2.4.2 Proposed Action

The planned construction and use of the office building, parking structure, lecture hall, and TA-60 government vehicle parking lot would not affect recorded cultural resources. The demolition of Building 3-43 would have an adverse effect on an historic structure. The primary effect would be the loss of a NRHP-eligible property through demolition. The Administration Building was constructed in 1956 and is an important building in the Laboratory's history and may be considered eligible for the NRHP under Criteria A, B, and C. An NRHP eligibility assessment for this structure has been completed and sent to the New Mexico State Historic Preservation Office (SHPO) for concurrence, and the Advisory Council on Historic Preservation has been notified of the adverse effect.

Because the demolition of this building has an adverse effect to the property under Section 106 of the *National Historic Preservation Act of 1966* (as amended) and 36 CFR Part 800.5, "Assessment of Adverse Effects," a treatment plan to resolve these adverse effects would be negotiated between the SHPO and the DOE. The treatment plan would include a combination of the following elements: archival large format photos, existing architectural blueprints, preparation of a current set of as-built drawings, preparation of a detailed report on the building's history, and interviews with past and present workers. Additions to the treatment plan could result from negotiations with the SHPO over the resolution of the adverse effects.

A Memorandum of Agreement for resolution of adverse effects would be prepared following SHPO concurrence on the NRHP eligibility assessment and would implement the treatment plan and proceed parallel with this EA. The Advisory Council on Historic Preservation would be notified of the Memorandum of Agreement and would have an opportunity to comment.

3.2.4.3 No Action Alternative

The effect of the No Action Alternative on cultural resources is that an historic structure (Building 3-43) would not be demolished. The LANL Administration Building Occupancy Reduction Plan (LANL 2001a), intended to remove occupants from Building 3-43, would take longer to implement. After the building is vacated the structure would begin to deteriorate because the same level of funds would no longer be expended to maintain this building, as it would not serve to support NNSA missions. This form of benign neglect would also result in an adverse effect on an historic structure as eventually the action would also result in the loss of the structure.

3.2.5 Geological Setting

3.2.5.1 Affected Environment

Geologically, LANL is located within the northern Rio Grande rift, a seismically active area. Although surface-faulting earthquakes have not occurred historically in the LANL region (within 60 mi [100 km] of LANL), geological evidence indicates that they have occurred during the Quaternary Period (1.6 million years). Three fault zones dominate geologic structures in this area: the Pajarito Plateau, Rendija Canyon, and Guaje Mountain faults. Evidence indicates that the most recent surface-faulting seismic events occurred approximately 1,300 to 2,300 years ago (Pajarito Plateau fault). All three faults are geologically young and are capable of producing future earthquakes. LANL has been mapped to identify the locations of faults in the area enclosing TA-55 on the east and TA-3 on the west, and the University of California (UC) is in

the process of mapping other areas of LANL. Studies indicate that a fault exists under Building 3-43 and a potential fault lies under the parking lot east of Building 3-261 (Figure 5).

3.2.5.2 Proposed Action

The Proposed Action could be affected by the geologic setting. Prior analysis had indicated the potential for the existence of two faults in the TA-3 area (Figure 5). Based on this information, a probabilistic analysis of potential surface rupture was performed. This analysis indicates that the annual probability of surface rupture is less than one in ten thousand. This probability is less than the required performance goal for the facility and in accordance with DOE Standard 1021-93, "Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components" (DOE-STD 1021-93).

A site-specific investigation was performed as the proposed office building would have high occupancy and serve a vital mission. Six boreholes up to 115 ft (35 m) deep were excavated at the proposed site for the new office building. This task has confirmed the presence of faulting in the area shown in Figure 5 and provided a general location. Following the practices and guidance used in the states of California and Utah in areas where faulting is present, the building would be located no closer than 50 ft (15.25 m) from the fault location. Construction of the office building at the proposed site can easily accommodate this standoff requirement.

The potential fault across the existing parking lot east of Building 3-261 also runs through the proposed location for the parking structure. As with the fault near the proposed location for the office building, studies indicate the probability of surface rupture is less than the performance goal of the parking structure. Thus the site is acceptable for this type of construction. Unlike the office building site, the parking structure will be, for the most part, unoccupied. Therefore, the extra conservatism used in siting the office building is not warranted and the parking structure will be sited without regard for fault location.

For seismic design with respect to ground motion, the design criteria provided in LANL's Facilities Engineering Standards Manual (LANL 1999) will be followed for both structures.

3.2.5.3 No Action Alternative

Under the No Action Alternative, Building 3-43 would not be demolished. Current DOE or Uniform Building Code seismic requirements for this facility would not be met. No construction would occur under the No Action Alternative.

3.2.6 Air Quality

3.2.6.1 Affected Environment

Air quality is a measure of the amount and distribution of potentially harmful pollutants in ambient air. UC calculates annual actual emissions of regulated air pollutants at LANL and reports the results annually to the NMED and Environmental Protection Agency (EPA). In 1998, the most recent year for which data are available, LANL was in compliance with all air quality regulations. The ambient air quality in and around LANL met all EPA and DOE standards for protecting the public and workers (LANL 2000c).

LANL is considered a major source under the State of New Mexico Operating Permit program based on the potential to emit regulated air pollutants. Specifically, LANL is a major source of nitrogen oxides, emitted primarily from the TA-3 steam plant boilers. Combustion units are the primary point sources of criteria pollutants (nitrogen oxides, sulfur oxides, particulate matter, and carbon monoxide) emitted at LANL. Of all combustion units, the TA-3 steam plant is the primary source of criteria pollutants. Research and development activities are the primary source of volatile organic compound emissions (LANL 2000c). Mobile sources, such as automobiles and construction vehicles, are an additional source of nonradioactive air emissions.

Various existing operations at TA-3 are sources of radioactive and nonradioactive emissions. Building 3-43 is not a source of either radioactive or nonradioactive emissions and is not monitored for air emissions.

3.2.6.2 Proposed Action

Construction and operation of the new office building and associated structures would be expected to produce only temporary and localized nonradioactive air emissions. The effects on air quality would also be temporary and localized.

During construction of the proposed office building, parking structure, lecture hall, and associated infrastructure and demolition of Buildings 3-43 and 3-490, there would be a temporary increase in localized particulate emissions. Operation of construction vehicles such as dump trucks, bulldozers, cranes, and waste disposal actions would also produce temporary and localized emissions of other air pollutants.

Construction and earth-moving activities associated with the Proposed Action would temporarily increase localized particulate emissions. Standard dust suppression procedures would be used to control fugitive dust. Construction activities, which are not considered stationary sources of regulated air pollutants under the air quality requirements, are exempt from permitting under Title 20 of the New Mexico Administrative Codes, Sections 2.72 and 2.70.

Demolition of Buildings 3-43 and 3-490 would also be a source of particulate emissions. Asbestos, which is regulated under the National Emission Standard for Hazardous Air Pollutants portion of the Clean Air Act, is present in Building 3-43. Asbestos removal is stringently controlled and is not expected to produce asbestos emissions. UC is required to provide advance notice of demolition at LANL to NMED regarding visible airborne emissions and to ensure the proper packaging and disposal of asbestos and other wastes (LANL 2000c).

Mobile sources, such as construction and waste transport vehicles, would produce other air pollutants (such as sulfur oxide), but the emissions would be expected to be similar to those from other recent construction actions, such as those involved in the construction of the SCC and NISC buildings and area demolition activities at LANL.

None of the activities proposed for the new office building would produce new air emissions. There would be no increase in steam or power production from the TA-3 power plant that would cause increased emissions of regulated air pollutants. Since vehicle use at TA-3 would not change substantially as a result of constructing the new building, emissions from the use of the parking structure would be the same as existing conditions at TA-3.

3.2.6.3 No Action Alternative

There would be no change in air quality as a result of this alternative. Temporary and localized emissions from current mobile sources, such as automobiles and construction vehicles, would continue unchanged from implementing the No Action Alternative.

3.2.7 Human Health

3.2.7.1 Affected Environment

This section considers the health of LANL workers and non-LANL construction workers. Public health is not considered because no members of the general public would work in the proposed new buildings or be affected by the demolition of existing buildings. In addition, no activities performed in the proposed new buildings would pose health risks to members of the public.

The health of LANL workers is routinely monitored depending upon the type of work performed. Health monitoring programs for LANL workers assess a wide range of potential concerns including exposures to radioactive materials, hazardous chemicals, and routine workplace hazards. In addition, LANL workers involved in low hazard operations or office work are trained to identify and avoid or correct potential hazards typically found in an office environment (e.g., tripping hazards, falls, electric shock). Because of the various health monitoring programs and the requirements for routine health and safety training, LANL workers are generally considered to be a healthy workforce with a below average incidence of injuries and illnesses.

3.2.7.2 Proposed Action

The Proposed Action is not expected to have an effect on the health of any LANL workers under normal operating conditions (non-accident conditions). UC workers would not be directly involved in the construction or demolition of buildings or structures, but they would be active in management, site inspections, and utility hook-ups. Approximately 50 peak period UC workers would support construction activities. Approximately 700 UC staff would be relocated from Building 3-43 to the new office building and approximately 16 UC staff from Building 3-490 would be relocated to Building 3-261. Applicable safety and health training and work-site criteria would be required for these office workers. Because of the limited involvement of UC workers in the construction of the new buildings and demolition of the old buildings and the relatively low health risk from office work, no effects on these workers is anticipated.

The Proposed Action is expected to have no effect on the health of any non-UC construction or demolition workers under normal operation conditions. Approximately 200 peak-period construction and demolition workers would be actively involved in potentially hazardous activities such as heavy equipment operations, soil excavations, and the handling, assembly, or demolition of various building materials. Asbestos, lead, and photo lab chemical abatement work could also pose a potential health hazard to these workers. Construction activities would take approximately three years to complete. Demolition work would take less than one year to complete. Appropriate personal protection measures would be a routine part of the construction and demolition activities, such as personal protection device use (such as gloves, hard hats, steel-toed boots, eye shields, and ear plugs or covers).

Potentially serious exposures to various hazards or injuries are possible during the construction and demolition phases of the Proposed Action. Adverse effects could range from relatively minor (e.g., lung irritation, cuts, or sprains) to major (e.g., lung damage, broken bones, or fatalities). To prevent serious exposures and injuries, all site construction contractors are required to submit and adhere to a Construction Safety and Health Plan (Plan). This Plan is reviewed and approved by UC staff before construction or demolition activities can begin. Following approval of this Plan, UC and DOE site inspectors would routinely verify that construction contractors are adhering to the plan, including applicable federal and state health and safety standards. In addition, UC staff would provide site-specific hazard training (e.g., construction safety, waste handling, etc.) to construction contractors as needed. Adherence to an approved Construction Safety and Health Plan and completion of appropriate hazards training are expected to prevent any major adverse effects on construction workers.

3.2.7.3 No Action Alternative

Under the No Action Alternative, the potential for serious exposures or injuries to LANL workers, construction workers, and members of the public would not occur from the construction and operation of the proposed buildings or the demolition of existing buildings. However, the continued use of the existing facility would pose certain minimal health and safety hazards to UC office workers and subcontractor maintenance personnel for the period of continued occupancy of the building. Use of the building would be phased out.

The potential for injuries to workers from structural damage would remain the same under this alternative. Building 3-43 does not meet DOE or Uniform Building Code seismic requirements. The seismic capacity of the building is only about 25 percent of that required by code.

3.2 8 Noise

3.2.8.1 Affected Environment

Noise is defined as unwanted sound. Sound is a form of energy that travels as invisible pressure vibrations in various media, such as air. The auditory system of the human ear is particularly sensitive to sound vibrations. Noise is categorized into two types: *steady-state noise,* which is characterized as longer duration and lower intensity, such as a running motor, and *impulse or impact noise,* which is characterized by short duration and high intensity, such as the detonation of high explosives. The intensity of sound is measured in decibel (dB) units. In sound measurements relative to human auditory limits, the decibel scale is modified into an A-weighted frequency scale (dBA).

Noise measured at LANL is primarily from occupational exposures. These measurements generally take place inside buildings and are made through the use of personal noise dosimeters and other noise monitoring instruments. Occupational exposure data are compared against an established occupational exposure limit (OEL). At LANL, the OEL is administratively defined as noise to which a worker may be exposed for a specific work period without probable adverse effects on hearing acuity. The OEL for both steady-state and impulse or impact noise is based on U. S. Air Force Regulation 161-35, Hazardous Noise Exposure, which has been adopted by DOE. The maximum permissible OEL for steady-state noise is 84 dBA for each 8-hour work period. The OEL for impulse and impact noise is not fixed because the number of impacts allowed per day varies depending on the dBA of each impact. DOE also requires that Action

Levels (levels of exposure to workplace hazards that are below the OEL but require monitoring or the use of personal protective equipment) be established for noise in the workplace. Action Levels at LANL for steady-state noise and impulse and impact noise are 80 dBA and 140 dBA for each 8-hour day, respectively.

Environmental noise levels at LANL are measured outside of buildings and away from routine operations. These sound levels are highly variable and are dependent on the generator. The following are typical examples of sound levels (dBA) generated by barking dogs (58), sport events (74), nearby vehicle traffic (63), aircraft overhead (66), children playing (65), and birds chirping (54). Sources of environmental noise at LANL consist of background sound, vehicular traffic, routine operations, and periodic high-explosive testing. Measurements of environmental noise in and around LANL facilities and operations average about 80 dBA. Some measurements have been made to evaluate environmental impacts from operational and high-explosive detonation noise. For example, the peak noise level measured at the Pulsed High-Energy Machine Emitting X-Rays facility from a 20-lb (9-kg) trinitrotoluene explosion ranged from 140 to 148 dBA at a distance of 750 ft (229 m).

The average of measured values from limited ambient environmental sampling in Los Alamos County were found to be consistent with expected sound levels (55 dBA) for outdoors in residential areas. Background sound levels at the White Rock community ranged from 38 to 51 dBA (Burns 1995) and from 31 to 35 dBA at the entrance of Bandelier National Monument (Vigil 1995). The minimum and maximum values for the County ranged between 38 dBA and 96 dBA, respectively. Ambient noise levels in the vicinity of the Proposed Action are affected primarily by automobile traffic on Diamond Drive and West Jemez Road. Routine operations at the Fire Station on West Jemez Road may also be audible throughout portions of TA-3.

3.2.8.2 Proposed Action

Noise effects to workers may require the use of hearing protection equipment. Noise heard by the public or animals in the environment resulting from the Proposed Action would be at background levels at the edges of LANL. The erection of an office building, parking structure, lecture hall, and smaller support structures, as well as the demolition of some buildings would require the use of heavy equipment for clearing, leveling, construction, and demolition activities. Heavy equipment such as front-end loaders and backhoes would produce intermittent noise levels at around 73 to 94 dBA at 50 ft (15 m) from the work site under normal working conditions (Cantor 1996, Magrab 1975). Construction truck traffic would occur frequently but would generally produce noise levels below that of the heavy equipment. The finishing work within the building structures would create noise levels slightly above normal background levels for office work areas. Noise levels may go up to around 80 dBA at the work site if light machinery is used in this stage of construction (Cantor 1996). Workers would be required to have hearing protection if site-specific work produced noise levels above the LANL action level of 80 dBA for steady-state noise. Sound levels would be expected to dissipate to background levels at the LANL boundaries or nearby residential areas. The additional construction worker personal vehicular traffic would not be expected to increase the present noise level produced by vehicular traffic on Diamond Drive or West Jemez Road during rush hour. The vehicles of construction workers would remain parked during the day and would not contribute to the

background noise levels during this time. Therefore, noise levels are not expected to exceed the established OEL.

3.2.8.3 No Action Alternative

Under the No Action Alternative, ambient noise levels would remain unchanged in the vicinity of TA-3. Potential noise from construction and demolition activities associated with the Proposed Action would not occur, but ongoing routine operations, vehicle traffic, and construction activities from other projects in the vicinity of TA-3 would continue to generate noise. However, the environmental noise levels in and around facilities or operations at LANL would be expected to remain at or below 80 dBA on average.

3.2.9 Socioeconomic

3.2.9.1 Affected Environment

LANL operations in north-central New Mexico have a significant and positive influence on the economy of north-central New Mexico. The total funding for LANL in north-central New Mexico was $1.3 billion in direct expenditures in FY 1998, yielding a total economic impact of about $3.8 billion, including indirect and induced income, or about 30 percent of the total economic activity in the region. Total personal income impact was $1.11 billion in FY 1998, or about 26 percent of personal income derived in the three counties - Los Alamos, Santa Fe, and Rio Arriba. The employment multiplier was 2.84 for the region, meaning that the 9,757 average employment level of FY 1998 supported a total impact of 27,688. In effect, nearly one of every three jobs in the region was created or supported by LANL. Approximately 80 percent of the jobs created indirectly by LANL in the region occurred in the trade, finance, insurance, real estate, and services sectors (DOE/AL 1999).

3.2.9.2 Proposed Action

The Proposed Action would not have a long-term effect on socioeconomic conditions in this area. No increase in UC employment is anticipated as a result of the Proposed Action. The additional revenue generated by the construction projects would be limited in duration resulting in a short-term effect only.

Construction of the office building, parking structure, and lecture hall would generate jobs and revenue into the local economy. Most building supplies would be purchased in New Mexico. During peak construction approximately 200 construction workers may be working on these new facilities. Close to $112 million would be spent on construction and design and oversight contracts. Approximately one-half of this amount would be for labor and one-half for materials. Construction is scheduled to take approximately three years beginning in early 2003. The removal of Building 3-490 would begin in 2003 but would take less than two months to complete. The removal of Building 3-43 is expected to begin in 2006 and last approximately 6 to 12 months. There would be no increase in the number of employees as a result of this project, and the additional 200 peak construction jobs would be filled by the existing employees in the regional work force, which includes mostly Los Alamos, Rio Arriba, and Santa Fe Counties. Because these temporary jobs would be filled by existing regional work force, there would be no effect on area population or increase in the demand for housing or public services in the region.

3.2.9.3 No Action Alternative

Under the No Action Alternative, there would be no socioeconomic benefits realized as a result of the construction of these facilities. Construction and demolition actions would not occur and therefore no construction or waste disposal associated revenue would be generated for the local economy.

3.2.10 Water Quality

3.2.10.1 Affected Environment

Data and analysis of LANL surface and groundwater quality samples taken from test wells indicate that LANL operations and activities have affected the surface water within LANL boundaries and some of the alluvial and intermediate perched zones in the LANL region. Details on the surface and groundwater quality can be found in the annual LANL Environmental Surveillance and Compliance Report (LANL 2000c).

Radiation (gross alpha, gross beta, and gross gamma) and radionuclide levels in surface waters are generally below and close to analytical detection limits and well below drinking water and public dose standards. Metals in surface water samples are typically below applicable standards when the samples are filtered before analysis. However, metal concentrations exceeding drinking water standards are relatively wide spread when samples are not filtered. Plutonium concentrations exceed regional comparison values in several sediment samples. In general, while some sediment samples exceed regional comparison value concentrations for metal, most of these metals may occur naturally in the sediments. The exception to this is selenium in sediments from upper Los Alamos Canyon, which far exceeds regional comparison concentrations (DOE 1999c).

In the regional acquifier, which serves LANL and Los Alamos County, drinking water standards were met for all radionuclides in all samples collected from 1990 through 1994. Trace amounts of tritium, plutonium, americium, and strontium have been detected, however, but not in the water supply wells. Organic compounds have also been detected in samples from test wells at TA-49, and nitrate has been detected down-canyon from the Bayo Wastewater Treatment Plant. Contaminants also have been detected in alluvial and intermediate perched groundwater (DOE 1999c).

3.2.10.2 Proposed Action

The water quality in this area would not be affected by the Proposed Action. The plumbing for the new office building would be separated from LANL's potable water supply system by an approved backflow prevention device located immediately downstream of the service entrance to the facility. Because of the new potable water piping, the piping would need to be inspected for any cross connections by certified LANL personnel.

BMPs would be implemented to prevent erosion and migration of disturbed soil from the site caused by storm water or other water discharges or wind. No placement of excavation spoils in or near drainage swales or storm drains would occur. Excavated materials would be properly disposed of either on-site or at an appropriate receiving site.

Water quality would not change as a result of operations of the new office building. Storm water runoff from the new office building and parking structure would be managed under the SWPP Plan.

3.2.10.3 No Action Alternative

There would not be any difference in water quality under the No Action Alternative as under the Proposed Action. The number of discharge points would remain the same.

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4.0 Accident Analysis

Candidate hazards for accident analysis include actions involving personal injury, electricity, explosive materials, pressurized systems, cryogenics, biohazards, radiation, hazardous chemicals, combustible materials, inadvertent criticality, toxic gas leaks, and asphyxiants. These types of hazards are potentially included within site-wide accidents, such as initiated by natural phenomena, operational accidents, or transportation accidents.

4.1 Construction and Demolition

Hazards have the potential to affect the public or workers, depending on the type of accident that may occur. The Proposed Action of constructing three structures and demolishing an existing structure presents many construction-type low-effect hazards that are common to standard industry. There may also be some hazardous chemicals associated with the demolition activity as caused by the presence of asbestos, lead, beryllium, and photochemicals. These materials would require appropriate characterization and handling. Transportation of these waste types and more innocuous waste would also be expected, creating the potential for transportation accidents. The likelihood of serious injury or death resulting from transportation accidents is addressed below.

Regarding operations in the replacement office building, potential hazards are assumed to be the same as in Building 3-43. The LANL SWEIS (DOE 1999a) provides an overall baseline for LANL from which potential accident hazards may be analyzed. Since no changes in operations of the new building are expected, the hazard and accident spectrum established in the SWEIS provides an "envelope" that adequately identifies hazards and encompasses any risks associated with operating the new office building. This includes any risk to tenants of the new building that comes from operation of other facilities at LANL, leaving only the risk associated with construction, including demolition, to be considered new activities.

No fatalities are expected during the construction and demolition stages of this project. The 1993 incidence rate of serious injury or illness and death for all types of construction reported by the National Safety Council was 0.89 per 100 full-time employees (NSC 1994). Eliminating the injury or illness rate results in an annual death rate of 0.05 deaths per 100 full-time employees. Twenty percent of this rate is from a type of construction ("heavy construction, except building") not pertinent to the Proposed Action, which further lowers the rate to 0.04 deaths per 100 full-time employees. At peak employment (200 construction workers), the estimated likelihood of a fatality is less than one (0.08 deaths per 200 full-time employees) for the total population of workers. Rates of accidents particular to demolition are unknown, but they are assumed to be similar to the accident rates of construction industry activities.

4.2 Transportation

The chance of a disabling injury occurring to a driver of a medium or heavy truck hauling hazardous waste is about 1.3 in ten thousand. Section 3.2.2 includes estimates of the number of trips by waste type expected to transport waste off-site. In 1993, there were 42,000 deaths in the U.S. from motor vehicle accidents out of 175 million licensed drivers. Medium and heavy (greater than 10,000 pounds [4,536 kilograms]) trucks accounted for about 9.1 percent of these.

Based on these statistics, an individual driver that transports sanitary, construction, demolition, and aggregate waste has a likelihood of a fatality of about 0.2 in ten thousand. With the same assumptions, but factoring in the shorter duration of about 0.125 years for transport of the hazardous waste (Table 2), the chance of a fatality occurring to a driver of a medium or heavy truck hauling hazardous waste (asbestos, lead, beryllium, and photochemicals) is further reduced to about 0.03 in ten thousand. In the same year there were about 2,000,000 disabling injuries. The chance of a disabling injury occurring to a driver of a medium or heavy truck hauling sanitary waste is a about 11 in ten thousand.

4.3 Operations

Building three structures and demolishing two buildings bring with them an increased chance of an accident. However, once the project is completed there would be a reduction of risk to tenants of the new office building associated with better protection from hazards such as those created by earthquakes. Since the current DOE building safety codes and other standards are more protective than they were in the 1950s when Building 3-43 was constructed, the tenants of the new building should experience less risk to hazards during the operational stage.

In summary, during its operation, the proposed office building would be classified as a low hazard category with hazards that would not pose any unusual threat to the public, workers, or the environment (Bretzke 2000). This hazard classification is not associated with nuclear operations. Most of the potential hazards associated with a low hazard category facility are adequately managed through the use of standards applicable to construction and operations. External hazards, such as those posed by nearby nuclear facilities, hazardous material inventories, or chemical warehouses, pose risks that are the same as those posed to Building 3-43 and, as such, are addressed in the 1999 LANL SWEIS.

5.0 Cumulative Effects

Cumulative effects on the environment result from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them. These effects can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7). This section considers the cumulative effects resulting from the implementation of the Proposed Action and reasonably foreseeable future actions in the TA-3 area and adjacent lands.

5.1 LANL Operations at TA-3

No new types of operations and no new personnel would be introduced into LANL as a result of the Proposed Action. Land use within TA-3 would remain unchanged. Local traffic congestion centered around West Jemez Road, Diamond Drive, East Jemez Road, and Casa Grande Drive would be affected by the addition of approximately 32 vehicle trips per day (assuming 36 transferred employees and 0.45 cars per employee) during each morning and evening rush hour. The addition of SCC, NISC, and the Los Alamos Research Park (located within the northern edge of TA-3 on leased DOE-administered property that is within the LANL boundaries) will result in an increase in the TA-3 traffic congestion by adding an estimated total of 2,300 to 3,000 vehicle trips per day when all three facilities are completed. The TA-3 area already suffers from over-crowded intersections during rush hours; this problem will become more severe as the Los Alamos Research Park is completely developed over the next 7 to 8 years (estimated date for complete build-out is April 2007; there may be a slight delay thereafter until full occupancy is achieved) as most of this traffic will result from the Los Alamos Research Park occupation. The first building in the Los Alamos Research Park was completed in March 2001 and is expected to provide space for three to four hundred workers. Additionally, within the next four to five years, construction of a new office building to replace the current DOE Los Alamos Area Office (LAAO) Building at TA-43 is being contemplated for TA-3. This would add about 100 new workers to the TA-3 traffic burden. Traffic studies of TA-3 have already identified several recommended changes that would help alleviate the traffic congestion within this area, but no road realignment work has been proposed and funded yet. It is anticipated that this may occur at some future date within the next decade.

Parking availability in the TA-3 area would change from the current configuration because of the effects of the Proposed Action. The addition of about 780 new parking spaces, attributed to the combined relocation of government vehicle parking and the new parking structure that is a part of the Proposed Action, would benefit the entire TA-3 area. Additionally, upon completion of the SCC and NISC, additional parking space that is now unavailable for use because of its being used for equipment and building material lay down areas will become available for vehicle parking. The Los Alamos Research Park will have its own parking spaces and will therefore have no effect on the rest of TA-3's parking needs. The new DOE LAAO Building would have its own parking for the 100 additional workers it would bring to TA-3. Construction of this building would eliminate some current parking spaces in this area, but that number is unknown at this time. Other additional construction and demolition work conducted over the next 10 years within TA-3 would include several relatively minor activities that are anticipated to result in little overall effect with regards to parking space needs. Actions would likely include the construction

and removal of several small buildings and structures and the decontamination and demolition of some other facilities.

The overall visual quality within TA-3 would change with the soon to be completed SCC, NISC, and Research Park structures. These buildings are anticipated to be constructed using modern designs and construction materials. As the first major buildings constructed in the last 40 years within TA-3, they are noticeably different from the designs and materials used in the older structures that make up the bulk of the TA-3 area. The addition of the new office building, parking structure, and lecture hall would contribute further to the visual improvements in the TA-3 area by removing the old Building 3-43. From a distance, though, the SCC, NISC, Research Park, and new office building and parking structure would cause an increase in the number of visually disruptive elements against the natural lines of the background landscape. The negative effects on viewsheds of regional development and slight increased lighting in the night sky would be considered to be a regional impact. The Proposed Action is not expected to be a major contributor to this effect however as the parking area the new parking structure replaces is already lighted and the new office building would decrease the amount of light that would be visible at night because its design would eliminate many office windows.

Implementing the Proposed Action would generate noise primarily during the daytime hours during construction and demolition activities. This noise generation would be mostly confined to the immediate TA-3 area and would mostly be heard by the involved workers. However, there may be additional noise generation occurring at the Los Alamos Research Park at TA-3 within the same time period. This noise cumulatively may be audible for short periods of time during the daytime hours to workers within TA-3 and possibly beyond TA-3. Due to the general manner in which sound attenuates across mesas and canyons, residents located across the canyon from TA-3 should not be disturbed by the sounds originating from these projects.

The Proposed Action, together with other planned or ongoing construction activities at LANL, are expected to have a cumulative beneficial effect on worker health at LANL under normal operations. Cumulative potential adverse health effects to construction workers should be minimal and cumulative beneficial or adverse effects on public health are not expected to occur under normal conditions.

Workers at LANL would benefit from the replacement of potentially substandard facilities with new structures that meet current DOE and Uniform Building Codes. Substandard working conditions would be alleviated by the Proposed Action and other construction activities at LANL that improve individual working conditions. Improved parking conditions under the Proposed Action would also reduce the risk of pedestrian and automobile accidents from all activities conducted at TA-3. The cumulative increase in the amount of construction activity would increase the risk of construction worker injuries. However, because of rigorous health and safety requirements at LANL and based on industry injury rates of 0.04 deaths per 100 full time workers, the potential for a major injury or fatality from all new construction activities at LANL would be expected to remain low. Since members of the public do not live or work in the vicinity of the Proposed Action or other new facilities at LANL, they would not be affected by these activities.

5.2 Nearby Areas within LANL and Off-site Areas Administered by Others

Other activities that will likely occur at or nearby to TA-3 over the next 10 years include the conveyance of a 15-acre (ac) (6-hectare [ha]) portion of TA-43 to the County of Los Alamos, the subsequent demolition of the existing DOE LAAO Building at TA-43, and the construction of multistoried residential units in place of the DOE LAAO Building and over its immediate surrounding area. Construction of housing within the County of Los Alamos to replace housing units lost during the 2000 Cerro Grande fire will likely continue over the next several years (until or through about 2005). These actions will add to the overall amount of construction activities within the County and the number and availability of construction materials, workers, and local housing in the vicinity. Traffic into and out of Los Alamos County is expected to increase over the current levels because of the trips made by construction workers and the transport of materials. The visual character of the newly constructed buildings is expected to have a slight positive effect on the visual character of LANL and Los Alamos County and is not expected to result in but a very slight increase in night time lighting of the area. The overall "footprint" of urban development within Los Alamos County is expected to change slightly over the next 10 to 15 years. The possible development of Rendija Canyon would be a change as contemplated by the County of Los Alamos when NNSA conveys that tract to the County for their use (anticipated to occur before the end of 2007).

NNSA, the Forest Service, Bandelier National Monument, and the County will also be conducting wildfire hazard reduction activities that will include forest thinning activities over the Pajarito Plateau (including within LANL) and possibly some prescription burns outside the areas of immediate LANL and urban interfaces within the forested areas nearby. The resulting forest areas in and around LANL will be much more open in appearance than they are currently. The hazards from wildfires are expected to be reduced. Although wildfires would still occur, they would be much easier to bring under control and manage as lower and mid-level fires rather than as crown fires of the type exemplified by the Cerro Grande fire. Within LANL, forests will be managed according to the Wildfire Hazard Reduction and Forest Health Improvement Program, with specific project plans, such as the Wildfire Hazard Reduction Project Plan (LANL 2001b).

Use of the forest areas west and south of LANL and Los Alamos County for recreation, habitat management purposes, and timber production (only within the Santa Fe National Forest) should remain unchanged. Critical habitat areas for the Mexican spotted owl have been established by the U.S. Fish and Wildlife Service within the Pajarito Plateau areas outside of LANL, and one area within LANL has been identified as being historically occupied by the Mexican spotted owl and is protected by NNSA as well. These areas will continue to be managed for the foreseeable future as appropriate for recovery of that species. Within LANL, potential or historically occupied habitat of Federally protected, threatened, or endangered species is managed in accordance with the LANL Threatened and Endangered Species Habitat Management Plan (discussed earlier). Additional management plans for biota at LANL are being developed cooperatively by NNSA and UC.

There may be some facility construction at LANL over the next 10 years in the vicinity of TA-55. One proposed action is to build a building at TA-55 to house the TA-18 critical assembly and material storage operations; another proposed action is to construct a new electric power line

from the general White Rock area up slope to the TA-8 area. Another proposed action is the construction of a new interagency Emergency Operations Center at TA-69.

Proposed actions elsewhere within LANL include 1) the decontamination of TA-18 facilities within Pajarito Canyon and their possible demolition (in whole or in part); 2) the demolition of the TA-2 and TA-41 structures and buildings within Los Alamos Canyon; and 3) some small-scale building and structure construction and demolition activities within the TA-8 and TA-16 areas. Additional construction and demolition actions may be proposed at TA-3, TA-55, and other technical areas at LANL to replace aging structures and facilities. These are currently only contemplated in very general terms. These generally contemplated actions could include some additional construction and demolition work as infrastructure, structures, and buildings approach 50 years of continuous use.

The overall amount of developed area within LANL is expected to only slightly expand over the next 10 to 15 years. Overall electric utility use and potable water use within LANL is expected to remain fairly constant after the SCC comes on line. Actions taken by UC to conserve and reduce usage of water and generation of waste during operations should actually decrease as various reuses of waste water and waste materials is undertaken over the next several years. The use of "gray water" from the LANL sewage treatment plant at the cooling towers for SCC is the first step.

Waste volume generation during the next 10 years from decontamination and demolition of buildings and through environmental restoration efforts will be large. The waste will likely be of a variety of types, including non-hazardous waste, hazardous wastes, mixed wastes, and radioactive wastes (of both low level and transuranic [TRU] wastes). The Los Alamos County Landfill is anticipated to be closed within the next three years. LANL, along with the County, will have to dispose of their waste at another off-site solid waste disposal facility(s). Low-level radioactive waste is disposed of at Area G at LANL; this disposal site has adequate room to accommodate waste generation estimates beyond the next 10 years as identified in the 1999 LANL SWEIS and Record of Decision (ROD). TRU waste generated at LANL from environmental restoration activities would be managed and stored at LANL. No disposal path is currently available for the non-defense generated waste type. Mixed wastes (both low-level mixed and TRU-mixed wastes) are managed and stored at LANL or treated and disposed of at off-site facilities. Hazardous wastes generated at LANL are managed and stored on-site and shipped off-site for treatment and disposal as adequate and appropriate facilities become available. Detailed projections of wastes by types are provided in the *1997 Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* and DOE's subsequent ROD's based on that analysis. Additionally, the waste generated at LANL over the next 10 years will be managed in accordance with the analysis provided in the 1999 LANL SWEIS and the DOE's ROD. The implementation of the Proposed Action considered in this EA together with other site waste generations would be in accordance with DOE's RODs and is not expected to result in any waste generation projection exceedances. Cleanup from the Cerro Grande fire has mostly been accomplished; waste generation within the County of Los Alamos peaked in mid to late 2000 and early 2001. Waste generation is now within its historical range and no anticipated actions are expected that would result in greater than normal waste generation levels over the next 10 years.

Los Alamos County and LANL have historically been attainment areas for air quality with regards to criteria pollutants; visibility has also always been excellent. Implementation of the Proposed Action is not expected to change the overall air quality of the Pajarito Plateau. With the anticipated increase in the number of acres of forest to be treated over the next 10 years across New Mexico, which will include the use of prescribed burns, the number of days when visibility may be lessened will increase but overall air quality is not expected to be lessened. The issuance of burn permits by the State of New Mexico will be coordinated so that burning in the immediate LANL and Los Alamos County location will be staggered among the Agencies that use this treatment method. DOE does not currently use burning as a forest treatment method but may make a decision to do so within the next 10 years. If so, this forest treatment method would be coordinated with the State of New Mexico and the Interagency Wildfire Management Team, a cooperative organization of land stewards across the Pajarito Plateau formed to communicate and provide support and action recommendations.

Data and analysis of LANL surface and groundwater quality samples taken from test wells indicate that LANL operations and activities have influenced the surface water within LANL boundaries and some of the alluvial and intermediate perched zones within the LANL region. Detail on the surface and groundwater quality can be found in the annual LANL Environmental Surveillance and Compliance Report (LANL 2000c). No LANL activities or projects are foreseen over the next 10 years that would cause increased deterioration of the surface and groundwater quality in the region.

Cultural resources are prevalent over the Pajarito Plateau, particularly in the case of prehistoric sites. Historic sites of the Manhattan Project and that represent the homesteading period in New Mexico's past are becoming few to rare as time passes. Wooden structures deteriorate and have been burned over the past 125 years. Structures representing the Cold War period are now approaching 50 years old in many cases. Many of the industrial structures of the Cold War period within Los Alamos County are located at LANL. There are many of these structures as the period extends over about a 30-year period. DOE and UC are in the process of developing the LANL Cultural Resources Management Plan; this plan will eventually include a detailed assessment of its Cold War sites and structures. DOE will determine which of these Cold War sites to consider for constructive reuse or refurbishment and which sites would eventually be demolished. The preservation of both industrial sites and homes within Los Alamos County will largely be a function of individuals as the County has little property under its direct ownership control.

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6.0 Agencies Consulted

A NRHP Eligibility Assessment Report has been submitted to the SHPO for comment and concurrence on its eligibility. The Advisory Council on Historic Preservation has been notified of the adverse effect to an historic property.

Because the demolition of this building is an adverse effect to the property, a plan for mitigation of the adverse effect would have to be negotiated between the SHPO and the DOE. This plan can include activities such as archival large-format photos, compiling existing drawings, preparing a current set of as-builts, preparing a detailed report on the history of the building, and conducting interviews with persons who work or worked in the building. This work would have to be completed before any demolition work on the building.

NNSA has determined that no consultation with the U.S. Fish and Wildlife Service regarding the potential effect of the Proposed Action on federally protected threatened or endangered species or their critical habitat is necessary as there would be no effect to these sensitive species or their critical habitat from the Proposed Action.

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