# Comprehensive Site Plan 2000

Los Alamos
NATIONAL LABORATORY

LA-UR 99-6704

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# Comprehensive Site Plan 2000

**Produced under the Direction**
**of the**
***Senior Executive Team***
**and**
***Site Planning and Construction***
***Committee***
**by the**
***Site Planning and Development***
***Group, PM-1***

January 31, 2000

**Los Alamos**
NATIONAL LABORATORY

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# DIRECTOR'S FOREWORD

The Laboratory has made great strides improving our planning processes over the past few years. This Comprehensive Site Plan (CSP2000), for example, replaces the Site Development Plan last published in 1990. CSP2000 is a living document. As a work "in progress", it provides you with a common baseline of information and begins to correlate the Laboratory's programmatic efforts with infrastructure and facilities needs. This approach is crucial both to revitalization and bringing new initiatives to reality.

This Laboratory faces major facilities challenges that will require informed and collaborative problem solving. Our Strategic Plan states, *"Implicit in achieving true excellence in operations is closer integration of the operations with the needs of the science, technology, and programmatic organizations of the Laboratory."* This document ties physical development and the programmatic work of the Laboratory directly together. I encourage you to use this document and participate as a stakeholder this coming year when it is updated.

**John C. Browne**

# ACKNOWLEDGMENTS


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Audits and Assessments Division (AA) – AA-2
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Chemical Science and Technology Division (CST)
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Internal Security Office (ISEC)
Utilities and Infrastructure Group of the Facilities and Waste Operations Division (FWO)
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# I. INTRODUCTION

The *Comprehensive Site Plan 2000* (CSP 2000) presents the insitutional vision for the physical infrastructure system at Los Alamos National Laboratory and identifies planning principles that guide the development of this system. The CSP reflects responses to external and internal influences on the Laboratory's physical planning. Some effects are immediate and others long term, the CSP is an annual look at the influences and the responses.

## *CSP Relationship to Laboratory Mission*

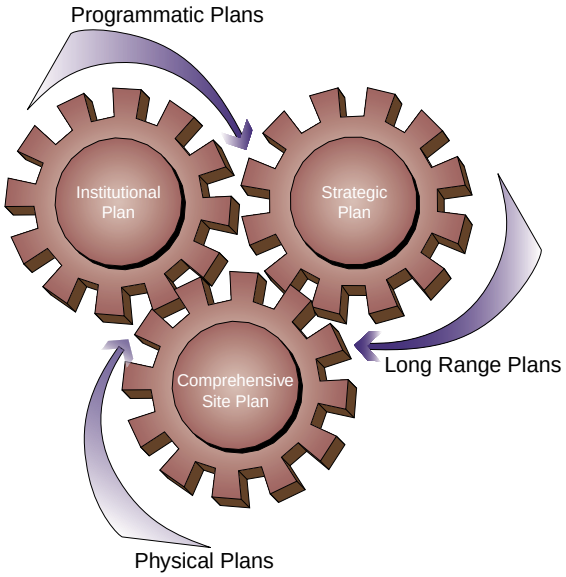
The Laboratory's mission, ***"to enhance global security,"*** and the mission's several subcomponents are the foundation of the CSP. The mission focuses on the following:

- Stockpile stewardship
- Nuclear materials management
- Nonproliferation and arms control
- Remediation of the environmental legacy of nuclear weapons

To support these missions, the Laboratory must document its current capabilities and develop a process for making strategic investments into facilities and infrastructure which enable the work of today and prepare the Laboratory to do the work of the future. The CSP in its annual updates will document the progress toward an integrated infrastructure system in support of the Laboratory mission.

## *Relationship to Other Laboratory Planning*

The Laboratory's Institutional Plan presents the programmatic structure for accomplishing the Laboratory's mission, while the Strategic Plan provides strategies for Laboratory leadership in seeking scientific, engineering and technical solutions to a wide range of emerging national challenges. The CSP supports these plans by recommending timely, flexible and quality development actions to meet the needs of today's programs and to position the Laboratory for the dynamic future.




## *Relationship to DOE/UC Agreements*

DOE Order 430.1, Life Cycle Asset Management (LCAM), issued in 1995, established a performance-based system for tracking the management of its diverse facilities. The DOE later issued a Functional Requirements Document (FRD) to ensure that the Laboratory's contractor, the University of California, understands and accepts the requirements for site planning. Subsequently, the Laboratory adopted a Laboratory Implementing Requirement document (LIR 210.01.01) that establishes the process that the Laboratory will follow to meet the FRD requirements.

The Laboratory's Director and senior executive team identified the need for a comprehensive site plan to strategically address the physical infrastructure needs of the Laboratory. The Department of Energy as owner of the site and its facilities, the Department of Energy also requires the development of a plan that aligns the programmatic missions of the Laboratory with the physical infrastructure development of the site. The CSP responds to both of these needs.

## Guide for Future Physical Development

The *Comprehensive Site Plan 2000 (CSP)* presents the institutional vision for the physical system of the Laboratory. The CSP focuses on progress toward the vision within a 10-year planning period and identifies improvements essential to achieving that progress. It identifies issues and concerns derived from analyzing the current state and the projected changes over the next 10 years. It addresses the current condition of the physical systems and future needs within the context of the Laboratory's strategic plans.

The key objectives of this plan are to:

1. describe the vision, principles and strategies for achieving the physical systems,
2. describe the CSP process used to guide progress toward the vision,
3. describe essential actions (projects) needed and indicate their implementation and funding status, and
4. bring forward issues that may affect progress toward the vision.

The CSP is prepared annually to provide updated infomation on the vision, the planning process, yearly investments and development results.

## How to Use CSP 2000

The *Comprehensive Site Plan 2000* is a tool that will help you do your job better. Use it as a reference and also as a key tool in the process of managing change. The Plan intergrates a vast amount of useful planning information in one document. You can become aware of planning assumptions, issues and projects that can affect you own work area and projects.

The CSP organizes the Laboratory by 10 planning areas. Refer to the Site Wide Planning Areas map in Section VI to determine the geographic location you are interested in, and then consult the relevant planning area Subsections VI.B-VI.K to get more detailed information. General site wide information is contained in the beginning of Section VI.A.

The CSP is a living document and a work in progress. It will be updated annually to reflect changes in the Laboratory mission and planning. Some components of the CSP will undergo rapid change as internal and external factors that affect the Laboratory shift. Others will be very slow to change. In either circumstance, some information may not reflect the status at the time you read it. If you have information to make the Plan more complete or up to date, contact "www.lanl.gov/csp2000" or call 655-5900.

# II. THE VISION

## *Institutional Vision for the Physical Plant*

The vision is to provide a comprehensive site wide plan to guide future Laboratory growth and promote and plan for an attractive work environment conducive to research and mission success. To accomplish the vision, primary goals are to:

- advance ongoing revitalization and maintenance so the Laboratory's work can be safely and efficiently performed,
- develop facilities that support and contribute to the core competencies of the Laboratory,
- create an efficient place to work that is comfortable, safe, secure and aesthetically pleasing, and
- create an environment that contributes to attracting and keeping top-quality personnel.

## *Planning Principles*

The Laboratory's Site Planning and Construction Committee (SPCC) reviewed and adopted the following planning principles to support the institutional vision and to guide project development.

### *CSP Planning Principles*

- ***Integrate*** the Laboratory's planning elements into the development process. The planning elements are land use, transportation, security, utilities, facilities, environment/safety/health and quality environment.
- Plan for ***long range*** occupancy and programmatic needs. Facilities should be planned to accommodate the dynamic scientific future as well as meet current needs.
- Plan ***flexibility*** into facilities to accommodate change in existing and emerging missions and programmatic needs.
- Support ***partnerships*** between Laboratory programs and private enterprises. Develop stakeholder support at the local and regional levels.
- Improve ***transportation and utility infrastructure systems*** regionally and Laboratory wide to provide reliable service capacity, enhance traffic safety, upgrade operations and activities, reduce energy costs and improve security.
- ***Upgrade facilities*** by replacing temporary, outmoded and substandard facilities with new, permanent or renovated facilities as appropriate.
- Create ***quality work environments*** that are safe, environmentally sound and physically attractive. Design environments for people to interact and exchange ideas.

## Strategies

Strategies to implement the planning principles are identified below.

### 1. Comprehensively Plan for Long Range

Comprehensively plan the long-range (10-year) development of the Laboratory's physical plant. Comprehensive site planning contributes to the Laboratory's mission by aligning program needs with facility capabilities and needs to derive the most benefit from development investment.

### 2. Coordination with Site Wide Environmental Impact Statement

The Site Wide Environmental Impact Statement process helps to assess the environmental impact of Laboratory programs and decisions. Specific actions listed in the plan either have been or will be coordinated with NEPA review.

### 3. Reorganize Facilities

Reorganize facilities to bring disbursed program components into closer physical proximity to each other for operational efficiency and enhanced staff interaction.

### 4. Infill and Revitalize

Encourage construction of new facilities within existing developed areas and support revitalization efforts. TA-03 revitalization is a major effort in this strategy.

### 5. Replace Temporary and Aging Facilities

Replace, remove or decommission temporary, aging and/or contaminated facilities to control the high cost of maintaining these structures. Replacement with new, permanent or revitalized facilities will control and reduce operational costs.

### 6. Manage Infrastructure Extensions

Future infrastructure development will emphasize upgrading and/or replacing existing utility systems. Extension of new infrastructure into undeveloped "greenfield" areas will be permitted only for major mission-directed programs requiring facilities that cannot be located within existing developed areas of the Laboratory.

### 7. Consolidate Security Zones

Consolidate special nuclear materials facilities into a single zone whenever possible. Organize high-security facilities close to one another to avoid security conflicts with nonsecure facilities.

### 8. Consolidate Support Facilities

Consolidate support facilities to locations with access to roads that avoid truck and delivery routes through densely developed areas and/or secure areas of the site.

### 9. Manage Facility Space as an Asset

The cornerstone of integrated space management will be stewardship of the Laboratory's physical assets as valuable national resources from acquisition through operation and disposition.

### 10. Match Space to Work

A facilities strategy is to create work spaces that appropriately match the tasks being done in those spaces.

### 11. Relocate Work in Leased Facilities to Laboratory Land

Relocate most facilities to Laboratory sites. In particular most sites north of Los Alamos Canyon should be relocated onto Laboratory land south of the canyon.

### 12. Develop Quality Work Environment Improvements with Each Project

In the future, project planning should identify, incorporate and budget for environmental enhancements such as pedestrian walks, sitting areas, bus shelters, etc.

### 13. Develop a Secure and Safe Road System

Develop the road network to enhance the regional road system and reduce long term conflicts between Laboratory development and public traffic uses. Specific improvements include a loop road around TA-03 to remove public traffic from the core areas of TA-03, reduce traffic conflicts, and enhance safety and security concerns.

# III. THE PROCESS

The *Comprehensive Site Plan 2000* is an institutional document and is intended to be used at all levels of the Laboratroy. It involves the active participation of the full spectrum of the Laboratory's experts and knowledge holders. The process employed to develop the CSP is critical to achieving the institutional vision.

## *The CSP 2000 Plan Process*

The Comprehensive Site Planning process will continue to evolve and mature. Each year, as the plan cycle is repeated, the process will become more comprehensive and integrative.

Each CSP is written and produced at a fixed point in time. There are projects and information that have changed from the time of writing to when the document is read. The annual nature of the CSP is a response to the quickness of some of the changes. If you have information to make the Plan more complete or to update it, contact "www.lanl.gov/csp2000" or call 665-5900.

Each year four activities related to the Comprehensive Site Plan will be repeated to update the goals, data, plans and implementation. In CSP 2000, the monitoring of progress will become next year's basis for CSP 2001.

### *Comprehensive Site Plan Major Activities*

***1. Identify CSP Goals***

The Senior Executive Team (SET) and the Site Planning and Construction Committee (SPCC) identify and adopt planning principles and assumptions for the CSP.

***2. Collect Data and Analyze***

A series of data-gathering activities, including the following:

- Interview of program and line managers to understand the specific mission and goals of the programs and related facility needs
- Review of other existing planning documents, current and archival
- Collection of information on budgeted, planned and proposed projects currently under discussion
- Collection of information from support divisions and groups on existing site wide conditions and within each planning area

Data analysis begins as data collection finishes.

- Analysis of program needs as related to facilities and projects
- Analysis of existing-conditions information for opportunities and constraints to development

***3. Develop Plans and Identify Issues***

Preparation of CSP issue mapping, with review by stakeholders.

- Identification of issues and review of map accuracy in a series of stakeholders workshops for program, line, support, and administrative divisions representatives
- Development of summary project maps that capture current and anticipated changes related to programs and missions site wide and by planning area
- Development of matrices relating issues and projects to program missions, funding and schedule

***4. Monitor Progress and Evaluate CSP Process***

- Monitoring of project progress
- Review of feedback about the planning process and adjust it as needed

***Begin the Process Again...***

## CSP Source Documents

Significant strategic and programmatic planning information for the CSP was obtained from the following:

- *Los Alamos National Laboratory Institutional Plan FY 2000-FY 2005*
- *Integrated Facilities Plan for the Nuclear Weapons Program,* LA-CP-99-249
- *Nuclear Facilities Strategic Plan,* LA-CP-99-248
- *Hign Explosives Working Group (Consolidation of HE Infrastructure Requirements Summaries)*
- *Security Planning Report* by Bruce Matthews
- *Readiness in Technical Base and Facilities Implementation Plan Sept. 27, 1999*.

Other critical planning resources that are reflected in the CSP include:

- *Site Wide Environmental Impact Study* (SWEIS)
- Maintenance Management Plans
- Condition Assessment Survey Program, and
- Decontamination and Decommissioning Program.

The intent of the CSP is that it will be used in conjunction with the many other Laboratory planning documents to assist decision making regarding infrastruture planning and development.

## CSP 2000 Stakeholder Input

Stakeholder involvement is a critical component of the Comprehensive Site Plan process. The involvement of stakeholders is necessary to add depth and quality to the information upon which the plan is based. The groups that gave input for the CSP 2000 process were exceptional partners in this effort providing important insights and perspective. The following specific activities were employed to gather stakeholder input.

***Interviews***

Nuclear Weapons Program
- Scott Gibbs
- Phil Goldstone
- Bruce Matthews
- Jim Holt

Environment, Safety & Health Division (ESH)
Chemical, Science and Technology Division (CST)
High Explosives Working Group
PRISMA/PRAD
Earth and Environmental Science Division(EES)
Bioscience Division (B) formally included in Life Sciences
Nuclear Materials Technology Division (NMT)
Environmental Science and Waste Technology Division (E)
Materials Science and Technology Division (MST)
Security and Safeguards Division (S)
Applied Physics Division (X)
Physics Division (P)
Dynamic Testing Division (DX)

***Stakeholder Forums***

October 26, 1999
October 27, 1999
November 1, 1999

***Web Page***

October 18, 1999 release date on *www.lanl.gov/csp2000*

***Printed Drafts*** (limited distribution)

September 30, 1999
October 24, 1999

## CSP 2001 Stakeholder Input

It is a priority task for the CSP 2001 to capture fully the facilities needs of the Laboratory. A major effort will be to gather in greater depth the program and mission requirements and interests related to facilities planning from the full range of stakeholders in the CSP process. Below is a list of the range of groups from which input will be sought for the CSP 2001

### 1. Department of Energy (DOE)

The Department of Energy (DOE) is the owner of and primary stakeholder in Los Alamos National Laboratory.

The following list identifies major DOE programs and other DOE programs operating at the Laboratory during FY 1999.

#### Major DOE Programs

- Defense Programs (DP)/Stockpile Stewardship
- Defense Programs/Weapons Management
- Other Defense Programs
- Defense Programs/Landlord or Institutional
- Nonproliferation and National Security
- Environmental Restoration and Waste Management
- Office of Science

#### Other DOE Programs

- Fissile Materials Disposition
- Nuclear Energy
- Energy Efficiency and Renewable Energy
- Fossil Energy
- Counterintelligence
- Environment, Safety and Health

### 2. Non-DOE Entities

Non-DOE entities fund a variety of scientific, research and development projects that enhance scientific efforts that will grow in the future to expand the work of the Laboratory.

- Department of Defense
- Department of Health and Human Services/ National Institute of Health
- National Aeronautics and Space Administration
- Nuclear Regulatory Commission
- Environmental Protection Agency
- Other Federal Agencies
- Private Industry

### 3. University of California (UC)

a. Programs/Divisions
b. Facility Management

### 4. Adjacent Political Entities

The Laboratory must earn the trust of its adjacent neighbors to effectively remain a vital scientific and technological asset for the nation. Adjacent governmental agencies are as follows:

- Los Alamos County
- San Ildefonso Pueblo
- Bandelier National Monument
- United States Forest Service
- Rio Arriba County
- Santa Fe County

### 5. Laboratory employees and others who work at the Laboratory

# CSP Process for Projects

## 1. CSP Organization/Structure

The Laboratory has instituted a new, formal structure for planning the future Laboratory physical plant. The organization and intent of the new structure is to ensure that the concerns and needs of the Laboratory's many, diverse entities are heard and their inputs incorporated into Laboratory planning recommendations. The following describes the organization and structure of the new process.

### Senior Executive Team (SET)

The Senior Executive Team (SET) has final responsibility for decisions affecting the operations of the Laboratory, including institutional, strategic and physical planning. The Director, the three deputy directors and the three associate directors of the Laboratory compromise the SET.

### Site Planning and Construction Committee (SPCC)

The SPCC reviews and makes recommendations for planning and development initiatives to the SET. Members of the committee include representatives from major programs and divisions within the Laboratory and a representative from the Los Alamos Area Office of DOE. The SPCC is chaired by the Deputy Laboratory Director for Operations and staffed by PM-1 (Site Planning and Development).

### Program and Line Divisions

Program and line divisions define programmatic needs for the CSP. The program and division managers provide program goals and forecast the quantity, quality and type of facilities needed to support their goals.

### Other Planning Resources

Other planning resources at Los Alamos National Laboratory include support divisions that have expertise on specific issues that effect site planning. Those support divisions include Security and Safeguards (S), Facilities and Waste Operations (FWO), and Environment, Safety and Health (ESH). The responsibility of these groups toward the CSP is to provide data and planning recommendations and project information related to their management and operations issues.

### Site Planning and Development (PM-1)

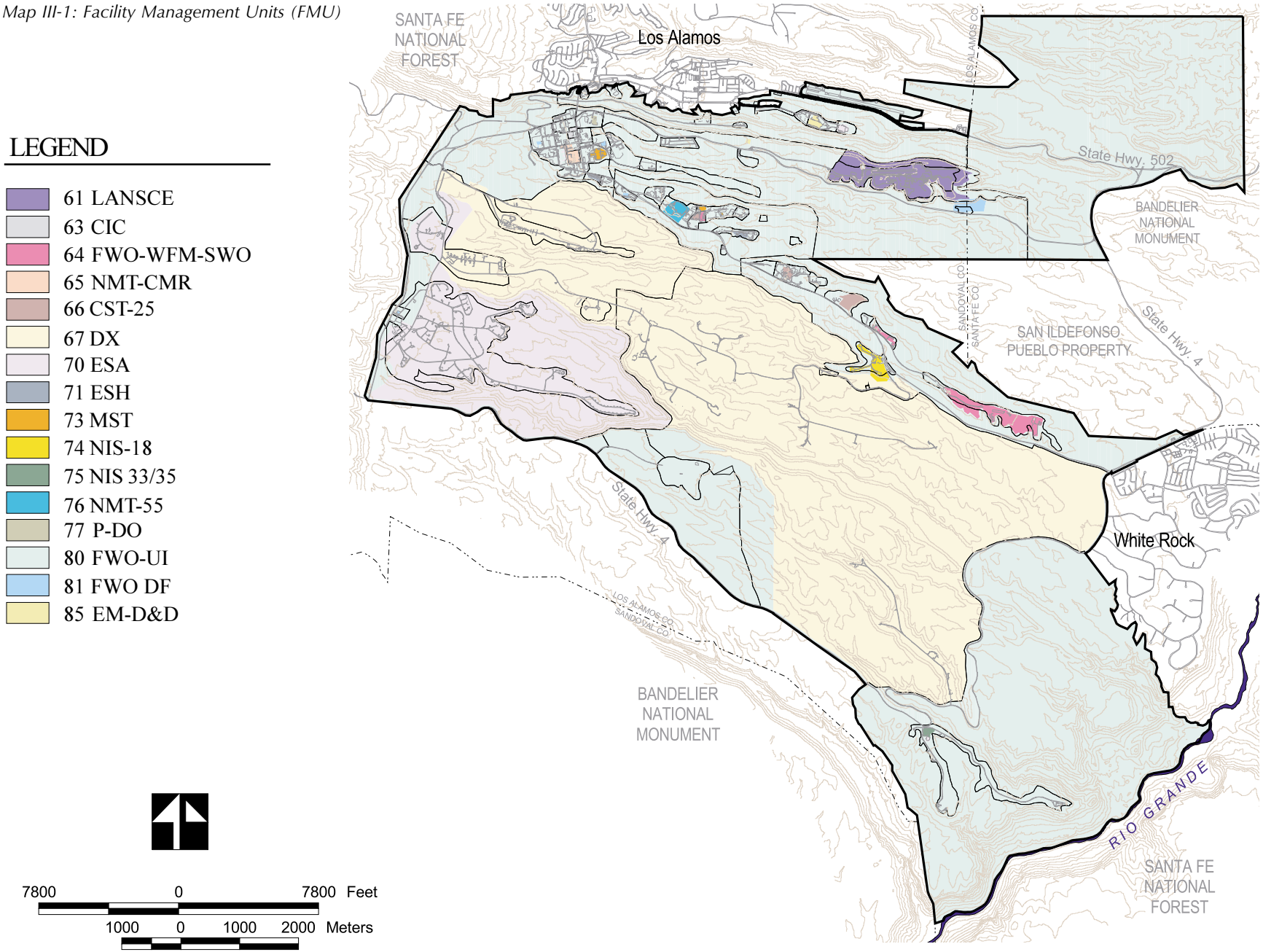
The Site Planning and Development group produces the CSP for the SET and the SPCC. It is involved in data collection, organization and analysis of programmatic and facilities information and production and publication of the CSP document.

## 2. FMU Program

The Facility Management Program at Los Alamos established a decentralized system for managing facilities across the Laboratory. Within the program, Laboratory divisions own facilities and are accountable for maintenance of the buildings' operational safety envelopes and for maintenance management. The intent of the institutional program is to ensure that the Laboratory's physical infrastructure supports programmatic requirements and facility needs and that formality of operations is consistent and appropriately applied across all facilities.

Implementation efforts to date have helped facilities and technical operations to be managed with greater emphasis on safety and with improved formality of operations. Additional work is proceeding in these areas as facility management organizations mature. Future efforts include completing the actions from the implementation assessment and developing improved standards for facilities activities. Institutional systems and organizations are changing form and culture in support of the Facility Management Program. Map III-1 depicts the 16 current Facility Management units and the areas of the Laboratory for which they are responsible.

*Map III-1: Facility Management Units (FMU)*



# IV. CHANGING PROGRAM NEEDS

The *Comprehensive Site Plan* (CSP 2000) proposes future physical facilities for the Laboratory to carry out its mission. The CSP identifies the needs of current programs and attempts to accommodate their needs based on current trends in scientific research and development.

## Needs Input

The program concepts presented here are based on interviews conducted with program division office representatives and organizations in the Laboratory.

The Nuclear Weapon Program (NWP) Office and its associated line organizations received particular emphasis. Support organizations, including E-Division and the Life Sciences Division, and divisions not under the direct purview of NWP, including the Material Science and Technology (MST) Division, Earth and Environmental Science (EES) Division and Physics (P) Division, provided additional input. The interviews helped to identify potential future directions and proposed possible options. Forecasts are for the 10-year planning horizon of this Comprehensive Site Plan.

## DOE Laboratory Strategy

An important change is the Department of Energy (DOE) laboratories strategy. DOE and the Defense Programs (DP) are developing an integrated strategy for the nuclear weapons laboratories. As part of this strategy, Los Alamos National Laboratory will have responsibility for high-performance computing and simulation. The hydrodynamic test infrastructure and support throughout the complex will be consolidated at Los Alamos, including both x-ray-based and proton-based radiography as well as future advanced hydrotesting facilities.

Lawrence Livermore National Laboratory will have responsibility for high-performance computing and simulation and the National Ignition Facility. Sandia National Laboratories will have responsibility for Microelectronic Engineering Sciences and Applications (MESA). By capitalizing on the capability excellence at each laboratory, this integrated plan will address emerging stockpile stewardship requirements, ensure national security, and enhance scientific and research capability at these institutions in a comprehensive, responsive and cost-effective manner.

To rebalance the directed weapons workload, moving the responsibility for the W80 system from Los Alamos to Lawrence Livermore is being addressed. In addition, DOE will direct efforts in pulsed-power facilities such as Pegasus and Atlas toward Nevada and will enhance the capabilities of the Nevada Test Site in the areas of subcritical experiments and advanced diagnostics. The Comprehensive Site Plan will be left flexible to accommodate changes required by this integrated strategy.

## Integrated Laboratories Implications for Los Alamos

The implications of the integrated strategy for Los Alamos consist of two main components: super-fast computing, and advanced hydrodynamic testing.

The first component of the DOE integrated strategy for Los Alamos is the development of TeraOps supercomputer capabilities for the Stockpile Stewardship Program. Trends indicate a growing dependence upon larger and faster computational capabilities for the Science-Based Stockpile Stewardship (SBSS) Program and other problems related to national security. Los Alamos will have a major role in this development. Future applications for supercomputers solving problems related to biological, earth, and social sciences.

The second component of the integrated strategy is the designation of Los Alamos to host the Advanced Hydrotest Facility (AHF) for the Science Based Stockpile Stewardship Program. The AHF has two major pieces at the Laboratory. The first piece is the Dual-Axis Radiographic Hydrodynamic Test Facility (DARHT), See Figure IV-1, and the second is the Proton Radiographic Facility (P-RAD). The following narrative describes issues gleaned from the interviews for the CSP that identify options and opportunities for facilities and infrastructure related to program needs.

## Summary Missions/Alternatives/ Requirements Tables (SMART)

The table at the end of this section relates program missions to facility alternatives and requirements. The table is called Summary Missions/Alternatives/Requirements Table (SMART).

The SMART matrices capture the forecasted 10-year program mission activities and link the activities to required facilities needed to accomplish the work. Related high priority projects (see project list in Section VIII) are referenced when it is appropriate to link mission requirements with needed facilities. In many cases the SMART Table shows that projects have yet to be defined or funded that will address these mission requirements.

The SMART matrices comprise the distilled program needs assessment of the CSP.

*Figure IV-1: DARHT Facility*

## Program Issues

### 1. Significant Analytical Chemistry Needs Exist

Presently, the principal facility for a full suite of analytical chemistry capabilities exists at the Chemistry and Metallurgy (CMR) building at TA-03. Because CMR operates as a Category II Nuclear Facility, any non-nuclear analytical chemistry procedure incurs extraordinary costs. Programs with nonnuclear analytical chemistry needs must either develop their own capabilities or have the analysis performed at other laboratories.

Interviews with organizations that depend upon analytical chemistry suggest that locating their facilities within a Perimeter Intrusion Detection Assessment System (PIDAS) protected "nuclear campus" near TA-55 and other nuclear materials activities would afford special value with regard to materials transfer and security.

### 2. Transportation and Security Issues

E-Division has proposed the establishment of a non-public road connecting TA-54 with the nuclear campus. From a safeguards and security point of view, this provides for secure transportation of nuclear materials and relieves current public roads from periodic interruptions.

### 3. Nuclear Campus

The impact of establishing a nuclear campus incorporating TA-55 and portions of TA-35 will have an immediate and potentially negative impact upon the following.

**National High Magnetic Field Laboratory (NHMFL)** The Laboratory must resolve the issues of operating any "user" facilities like the NHMFL so proximate to sensitive TA-55 facilities. The potential benefits associated with the research at this facility must be balanced against the cost savings associated with consolidating all Special Nuclear Materials (SNM) into a nuclear campus.

**Target Fabrication Facility (TFF) -** The Target Fabrication Facility was originally designed as a $T_2$ facility for performing materials research and development (R&D) and advanced manufacturing in support of the Laboratory's Inertial Confinement Fusion (ICF) Program. The facility is still used for supporting all high-energy-density physics programs. This facility can continue to operate within a protected area but could perhaps take on a larger role in support of $T_2$ programs.

**Atlas, Pegasus, and Trident -** The integrated strategy proposes the relocation of the Atlas and Pegasus facilities from Los Alamos to the Nevada Test Site. The ultimate use of the facilities depends upon the needs of those using the relocated machine, or perhaps another use will be defined. Potential users could include the Non-nuclear Component Manufacturing Facility (NNCMF).

### 4. Is Bioscience the "Third Pillar" in the Laboratory's Vision for the Future?

Laboratory management has suggested that the future vision for the Laboratory will be built on three main pillars: National Defense Programs, Strategic/Advanced Computing, and Bioscience.

What are the facilities and capabilities that must exist to make this vision a reality? Where do we locate the Bioscience enterprise? What are the other disciplines that should be accessible to the biological science community to promote synergistic interaction? All these questions suggest colocation of Bioscience into the TA-03 Core with location proximate to the advanced computing capabilities.

### 5. Do We Have a Plan for CMR Reuse?

The CMR Building located in TA-03 will be empty within the next 10 years. Is the CMR Building adaptable for new programmatic or other uses? NMT-DO personnel have determined that decontamination and decommissioning (D&D) of this building will be expensive. Renovation of the structure will also be costly.

Can CMR be upgraded to be an acceptable facility for housing Bioscience, EES, or for warehousing? Or is the best solution to remove the facility and create a parcel of land for new facilities?

### 6. *Revitalization Strategies – Four Primary Areas*

Revitalization of physical facilities focuses on four primary areas of the Laboratory. A brief discussion of revitalization needs for each area follows.

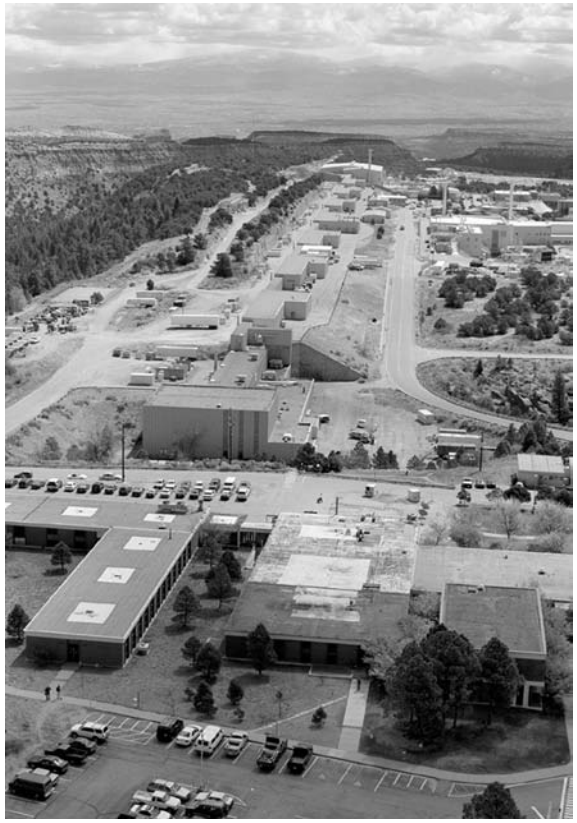
**Experimental Engineering Planning Area:** This area of the Laboratory constitutes the heart of the Hydrodynamic Test Program. DX and ESA Divisions are working together on the development of upgraded facilities for high explosives (HE) handling/processing/assembly, etc. The science based stockpile stewardship (SBSS) and stockpile management (SM) programs cover this work. DP-1, The Assistant Secretary for Defense Programs, must support the activities at these sites.

**Core Planning Area:** The Strategic Computing Complex (SCC) is the very heart of the SBSS mission and must be supported by DP-1. In the future, this capability will be critical for Bioscience and other leading-edge research at Los Alamos.

**LANSCE Planning Area:** LANSCE is the main driver for the Proton Radiography (P-RAD) program at the Laboratory, See Figure IV-2. It is one of the two main components of the Laboratory's integrated strategy. LANSCE hosts multi- and mixed-program, multiorganizational activities. The various groups that occupy and use the site must integrate their facility needs to accomplish their individual missions. There is a critical need for both classified and unclassified laboratory and office space by all occupants at the site.

**Pajarito Corridor West Planning Area:** This site is primarily a nuclear stockpile management (SM) and materials disposition (MD) site. The site is indispensable for SBSS.

*Figure IV-2: LANSCE Facility*



### 7. *The Proposed Advanced Hydrotest Facility (AHF) Includes the Following Components*

**DARHT** will need a major assembly support building with the capability to handle very large containment/confinement vessels for various hydrodynamic shots and dynamic experiments. Large radiographic capabilities that can do static radiography on "full-up" assemblies is also needed (See Figure IV-3).

**TA-53 - PRISM/Proton Radiography Facility** needs the same capability or a way to share this capability.

**Advanced Hydrotest Facility (AHF)** support from TA-55 is essential for the program at DARHT or PRISM. There is a programmatic need justifying the replication of at least three modules of PF-4 as being driven by the need to support the AHF Program for SBSS by DP-10 and DP-20 needs. This facility is very important to the SBSS Program, and will need support at the highest levels of DOE and the Congress.

*Figure IV-3: Alternate view of DARHT facility*

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Manufacturing** | | | | | |
| <10 pits/year | Fabrication and assembly of Plutonium Components | Plutonium Facility (TA-55) | | Support Stockpile Requirements (Something less, maybe much less, than 50 pits/year) | Fabrication and assembly of Pu Components |
| | Analytical Chemistry & Materials Characterization | CMR (TA-03) | By 2010 nuclear weapon missions are to be out of CMR due to facility age & condition. | | Optimized Analytical Chemistry & Materials Characterization for Manufacturing Facility should support all aspects of thenuclear weapons missions including waste management activities |
| | Non-Nuclear Component Fabrication & JTA support. Materials characterization and process development. Material could include depleted Uranium | SIGMA (TA-03) | Capability to perform WR machining does not exist. Need support facility / capabilities. Need to upgrade dimensional inspection | | Non-Nuclear Component Fabrication & JTA Support. Material could include depleted uranium |
| 1 Neutron Tube Target Loader, <1000 targets/yr | | WETF (TA-16) & TA-21 Support | TA-21 is being closed | 2-3 Neutron Tube Target Loaders, 3500-4500 targets/yr. | |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| Facility Upgrades to TA-55<br>Facility upgrades include refurbishment of existing facilities for Pu component manufacturing and construction of new space, Additional capabilities include a high energy X-Radiography capability as well as cold support laboratory space, change rooms and offices. | Prepare Pajarito Corridor West Area Master Plan to establish program space requirements and identify suitable sites for facility upgrades. | |
| Replacement of CMR Building functions commensurate with support to future DOE program missions | Define the requirements of the replacement facility including location and floor space. Facility should be sized to support all Laboratory analytical chemistry needs. (e.g., waste mgmt, non-nuclear components, etc.) Design, build and operate as a nuclear Cat III or less facility. Identify the reuse potential for CMR building. Absent a suitable reuse, estimate cost for D&D and removal. | CMR Replacement |
| Upgraded Sigma building or a new facility to support non-nuclear component manufacturing. A new facility, the Non-nuclear Pit Component Facility (NPCF) has been proposed for construction adjacent to the Sigma Building. This facility will include aspects of SM39, the Laboratory machine shop, and manufacturing capabilities commensurate with limited WR Pit production.<br>Potential reuse of the Antares Hall and surrounding facilities at TA-35 for potential manufacturing facilities. | Identify the location , space and capability requirements for the new NPCF. Determine the affect of new construction on necessary ongoing operations in existing facilities.<br><br>Can existing buildings at TA-35 currently used for Atlas be reconfigured for NPCF? | |
| Consolidation of TA-21 capabilities to WETF | Establish relocation space for TA-21 functions to TA-16 (WETF) and define the cost for D&D and removal of TA-21 buildings. Transfer of capability from TA-21 to building 16-450, an addition to the WETF facility. Installation of a third NTT loader in building 450. Reconfiguration of the basement of building 450 for R&D space. | WETF - Roof Upgrades |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Manufacturing (cont.)** | | | | | |
| Detonator production capable of <3000/yr. | Manufacture of detonators | High Explosive Facilities | | Detonator production capable of 6000-8000/yr. | Manufacture of detonators |
| Fabrication of JTAs & other non-nuclear pit components | Manufacturing | Administrative Support Facilities at TA-03, TA-08, TA-16, & TA-55 | | | Consolidated facilities based upon manufacturing activity |
| Support of manufacturing processes | Static radiography & non-destructive examinations | Radiography Capabilities | | Support of manufacturing processes | Weapons component radiography & non-destructive analysis |
| | Machine shop support | Main Shops (TA-03) | | | Machine Shop Support |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| Based upon the Directive schedule for fabrication of detonators, there is a forecasted minimum need to double the existing space (43,000 sq. ft.) | New detonator facilities and office space at TA-22. Expand the existing explosives detonator facility space TA-22, bldgs 91 and 93. | |
| Additional space at manufacturing technical areas including TA-03 and TA-55, TA-35. | | |
| Perform non-destructive evaluations on all assemblies in all stages of manufacturing and development. | Upgraded capabilities or new radiography facility located near DARHT. | DARHT |
| Upgraded shops and/or relocation to the NPCF. Potential sites are TA-03, TA-35. Facilities need to be upgraded. | Potential use of Antares Hall at TA-35 for non-nuclear manufacturing | |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Surveillance** | | | | | |
| 20 pits per year | Disassembly of pits and recovery of SNM | Plutonium Facility (TA-55) | | 40 pits per year | Disassembly of pits and recovery of SNM |
| | Analytical Chemistry & Materials Characterization | CMR (TA-03) | By 2010 nuclear weapon missions are to be out of CMR | | Analytical Chemistry & Materials Characterization |
| | Non Nuclear Component Surveillance | SIGMA (TA-03) | | | Non Nuclear Component Surveillance |
| | Limited Neutron Tube Target Surveillance | WETF (TA-16) & TA-21 Support | TA-21 is being closed | | Robust Neutron Tube Target Surveillance |
| | Limited weapons surveillance (valves), polymer aging, weapons component aging | Engineering Facilities | | | Multiple weapons surveillance, polymer aging, multiple weapons component aging |
| Surveillance of 10-12 Detonator sets/yr | Perform surveillance on detonators<br>800 MeV Neutron source | High Explosive Facilities<br>Accelerator Facilities | | Surveillance of 75-150 Detonator sets/yr. | Perform surveillance on detonators<br>800 MeV Neutron source |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| Additional cold laboratory and office space. Increased numbers of retired weapons and increased component age will necessitate the additional diagnostic capabilities in the "hot" laboratory space. | Identify capability and space needs to conduct surveillance program that integrates the Stockpile Stewardship needs with Stockpile maintenance (e.g. connect to the AHF program.) | |
| Transfer the activities to the facility that replaces the functional capability currently at CMR | Define the requirements of the replacement facility including location and floor space. Identify the reuse potential for CMR building. Absent a suitable reuse, estimate cost for D&D and removal. | CMR Replacement |
| Transfer of the surveillance activities to an upgraded Sigma building to support non-nuclear manufacturing, or a new facility. The proposed NPCF could/would serve this function. | Determine the projected requirements for non-nuclear component manufacture and surveillance and determine exact facilities/capabilities and location requirements. | |
| Transfer of the capabilities to WETF | Prepare plan for disposition of facilities at TA-21<br>Establish relocation space for TA-21 functions to TA-16 (WETF) and define the cost for D&D and removal of TA-21 buildings. | |
| Consolidated facilities and additional space @ TA-16 | | |
| High Explosive Facility consolidation and additional facilities | Prepare LANSCE Mesa Area Master Plan | |
| Maintenance of LANSCE for hydrodynamic testing and source of protons for radiography cinematography | | AHF |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Surveillance (cont.)** | | | | | |
| Surveillance of 10-12 Detonator sets/yr | Non nuclear component surveillance | Administrative Support Facilities at TA-03, TA-8, TA-16 | | Surveillance of 75-150 Detonator sets/yr. | Consolidated facilities based upon manufacturing activity |
| Surveillance of 100 RTGs/yr | Recover Pu 235 | Facilities at TA-55 | | Similar as current | Continue as current |
| | Analytical Chemistry & materials characterization | CMR (TA-03) | By 2010 nuclear weapon missions are to be out of CMR | | Continue as current |
| Two dimensional radiography, 5-10 experiments/yr | Weapons component radiography & non-destructive analysis | Radiographic Facilities | | Three dimensional radiography, 10-20 experiments/yr. | Weapons component radiography & non-destructive analysis & Heavy assembly facilities for containment /confinement tests at DARHT and PRISM |
| | 800 MeV Neutron source | Accelerator Facilities | | | 800 MeV Neutron source |
| Two dimensional hydrodynamic calculation support | Pulse power drives ICF experiment | Pulsed-Power Facilities | | Three dimensional hydrodynamic calculation support | |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Additional space at surveillance technical areas | | |
| | | |
| | | |
| Advanced Hydrotest Facility (AHF) as embodied in proton radiography techniques and DARHT/Diagnostic "X" capabilities for advanced hydrotesting upgraded capabilities or new radiography facility | Complete second axis of DARHT and build additional support laboratories | DARHT<br>AHF |
| Maintenance of the LANSCE facility and capability | | TA-53 Cooling Tower<br>TA-53 RLW |
| Relocation of the Atlas pulsed power machine to NTS relocation of Pegasus to UNLV | Facilities are necessary for the conduct of high energy density physics experiments necessary to understand phenomena occurring in nuclear weapons. | Atlas |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Surveillance (cont.)** | | | | | |
| Limited weapons certification / surveillance and sub-critical experiment support (<1/ month). | Visual examination and measurements | Engineering Facilities | | Multiple weapons certification /surveillance for manufacturing and multiple sub-critical experiment support (2-3 month). | Visual examination and measurements |
| **Certification** | | | | | |
| Annual weapon certification to the nation | In Progress-Pit Manufacturing Process Certification | Plutonium Facility (TA-55) | | Similar as current | Robust Certification program for Pit Manufacturing |
| | In Progress-Analytical Chemistry and Materials Characterization Process Certification | CMR (TA-03) | By 2010 nuclear weapon missions are to be out of CMR | | Certified Analytical Chemistry and Materials Characterization Processes |
| | In Progress-Non-Nuclear Manufacturing Process Certification | SIGMA (TA-03) | | | Certified Non-Nuclear Manufacturing Processes |
| | Limited Neutron Tube Target Certification | WETF (TA-16) & TA-21 Support | TA-21 is being closed | | Robust Neutron Tube Target Certification |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Consolidate engineering facilities at TA-16, build additional manufacturing support facilities, including enhanced non-destructive evaluation (NDE) capability. | Prepare Experimental Engineering Area Master Plan to refine program space requirements and select suitable sites for required facilities. | |
| | | |
| Additional cold laboratory and office space. | Identify program space and capability requirements. Select a location within the proposed nuclear campus. Prepare Pajarito West Area Master Plan. | |
| Transfer of certified processes to the replacement facilities for the CMR Building | Define the requirements of the replacement facility including location and floor space. Identify the reuse potential for CMR building. Absent a suitable reuse, estimate cost for D&D and removal. | CMR Replacement<br>CMR Upgrades |
| Transfer of the certification activities to an upgraded Sigma building to support non-nuclear manufacturing or to a new facility | Incorporate into program for upgrading the Sigma building, or defining a new facility. | |
| Transfer of the certification activities to WETF | Establish relocation space for TA-21 functions to TA-16 (WETF) and define the cost for D&D and removal of TA-21 buildings. | |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Stockpile Stewardship and Management* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Certification (cont.)** | | | | | |
| Annual weapon certification to the Nation | Weapons Certification Facility Infrastructure | Administrative Support Facilities | | Similar as current | Weapons Certification Facility Infrastructure |
| Certification of 1000 detonators/yr | | High Explosive Facilities | | Certification of 2000 –3000 detonators/yr. | |
| | | Supercomputing Facilities | | | |
| **Nuclear Materials** | | | | | |
| Pit and Plutonium /Uranium storage | Constrained Pit and Plutonium/Enriched Uranium Storage | - Plutonium Facility (TA-55)<br>- TA-18 | | Pit and Plutonium/ Uranium storage | Robust Pit storage and Reduced Uranium and Plutonium Inventories |
| Plutonium /Uranium storage | Constrained Plutonium and Enriched Uranium Storage | CMR (TA-03) | | Plutonium/ Uranium storage | Reduced Uranium and Plutonium Inventories |
| Depleted Uranium storage | Constrained Depleted Uranium Storage | SIGMA (TA-03) | | Materials for non-nuclear components and hydro tests | Reduced Depleted Uranium Inventory |
| Tritium storage and handling | Sub-optimized Tritium storage and Handling | WETF (TA-16)<br>TA-21 Support | TA-21 is being closed | Boost systems, tritium R&D. | Optimized Tritium operations |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Certification Facilities at various technical areas | | |
| New Detonator Facility and support space | | |
| Supercomputing Complex at TA-03 | Under construction | SCC |
| | | |
| Additional vault space at TA-55 and disposition of excess nuclear materials offsite —Disposition of all nuclear materials out of TA-18 | Laboratory and DOE must work together to identify a site for the storage of SNM that is in excess of programmatic needs. A site should be chosen that already incurs large security cost and which will be minimally impacted by a larger volume of SNM.<br>Identify a site either at another location or within the Laboratory, where critical experiments can be performed. | |
| Disposition of all nuclear materials out of CMR and TA-03. Should move to have material out of TA-03 within 12 – 18 months. | Removal of SNM from TA-03 will reduce security cost at CMR, thus making CMR building more attractive for other occupants. Potential rehab could lead to reuse by the Biosciences Division or others. | |
| Disposition of excess nuclear materials offsite, or relocate into a new facility located at Pajarito West, i.e. TA-35 Atlas facility | Laboratory must identify capability needs and facility and site location | |
| Ensures the capability maintenance necessary to have a strong R&D base in tritium technology. | Identify capabilities and facility requirements at existing TA-16 site | |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Research and Technology Development* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Basic/Applied Research and Technology Development** | | | | | |
| Maintain core competencies to design, test, & manufacture nuclear weapons | Pit Manufacturing Process Development | -Plutonium Facility (TA-55)<br>-Sigma Complex (TA-03)<br>-Machining and Inspection TA-03, TA-16 | | Maintain core competencies to design, test, & manufacture nuclear weapons | Pit Manufacturing Process Development |
| | Analytical Chemistry and Materials Characterization Process Development | CMR (TA-03) | | | Analytical Chemistry and Materials Characterization Process Development |
| | Non-Nuclear Materials and Manufacturing Process Development | SIGMA (TA-03) | | | Non-Nuclear Materials and Manufacturing Process Development |
| | Tritium Process Development | WETF (TA-16) & TA-21 Support | TA-21 is being closed | | Tritium Process Development |
| | Criticality Experiments | TA-18 | | | Criticality Experiments |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Additional cold laboratory and office space. | Laboratory capabilities and additional facility space must be defined and appropriate siting must be selected. Support for hydro testing and surveillance activities will require new space. Prepare Pajarito West Area master Plan. | |
| Transfer of activities to the replacement facilities for the analytical chemistry and characterization facilities currently located in CMR building. | Identify the facility and capabilities necessary to support the total NWP. | CMR Replacement |
| Transfer R&D activities in materials and processes to an upgraded Sigma building to support manufacturing and process development for all aspects of the nuclear weapons program. | Conduct trade studies to determine cost effectiveness of buying components from other DOE sites, commercial suppliers, or establish new capabilities at the Lab. Investigate the cost effectiveness of reuse of facilities like the Atlas Facility at TA-35 for a manufacturing laboratory for the NWP. | |
| Transfer of the R&D Activities currently done at TA-21 to WETF | Identify capabilities and facility requirements at existing TA-16 site. Capabilities should include both the advanced engineering and research aspects of tritium science. | |
| Relocation to another site. The DAF at NTS has been identified as a potential location. Some functions could be retained in the Pajarito West Planning Area while other criticality machines could be relocated to NTS. One critical assembly machine may be retained at Los Alamos. | Identify a site either at another location or within the Laboratory, where nuclear criticality experiments can be performed. Identify new location and physical space requirements for resulting buildings. Identify impacts upon the new site and disposition of the existing site and physical space requirements for resulting facilities. | |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Research and Technology Development* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Basic/Applied Research and Technology Development (cont.)** | | | | | |
| Maintain core competencies to design, test, & manufacture nuclear weapons | Engineering Science | Engineering Facilities | | Maintain core competencies to design, test, & manufacture nuclear weapons | Engineering Science |
| | Stockpile Explosives evaluation & R&D | Stockpile Explosives evaluation & R&D | | | Advanced Explosives development & R&D |
| | Stockpile weapons code development | Supercomputing Facilities | | | Advanced Computing & Architecture, weapons code design & development |
| | Administrative, Facility & Infrastructure Support | Administrative Support Facilities | | | Administrative, Facility & Infrastructure Support |
| | Machine shop support | Main Shops (TA-03) | | | Machine Shop Support |
| | Actinide Science & Seaborg Institute | Plutonium Facility at (TA-55) CMR(TA-03) | | | Actinide Science & Seaborg Institute |
| | Materials Science | SIGMA (TA-03) | | | Materials Science |
| | Tritium Science | WETF (TA-16) & TA-21 Support | TA-21 closing | | Tritium Science |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| Additional R&D space and office space | Activities related to all aspects of surveillance and certification must be used to justify enhanced capabilities. | |
| Additional high explosive R&D space and heavy assembly facilities are required to conduct the Advanced Hydro Program | | |
| New Supercomputing complex. Activities in the SCC must be supported by benchmarking experiments in upgraded facilities | Enhance the "collision probability" between scientists in all areas of science based stewardship to improve predictive capabilities without nuclear testing. | SCC |
| Revitalization of TA-03 and other administrative support facilities at The Laboratory | | |
| Potential sites include the Atlas facility in TA-35 | Upgraded shops and/or relocation. | |
| Additional cold laboratory and office space located in the proposed "Nuclear Campus" of TA-55.<br>Transfer of activities to the replacement facilities for the CMR Building | Laboratory capabilities and additional facility space must be defined and appropriate sites selected. | CMR Replacement |
| Transfer of the S&T activities to an upgraded Sigma building to support non-nuclear manufacturing or a new facility | Define the capabilities required and identify the facilities and siting requirements consistent with the trade studies performed for NWP support. | |
| Transfer of the S&T activities to WETF | Identify capabilities and facility requirements at existing TA-16 site. | |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Research and Technology Development* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Basic/Applied Research and Technology Development (cont.)** | | | | | |
| Maintain core competencies to design, test, & manufacture nuclear weapons | Criticality Experiments | TA-18 | | Maintain core competencies to design, test, & manufacture nuclear weapons | Criticality Experiments |
| | International Atomic Energy Agency (IAEA) Interactions | -Nonproliferation & Arms Control Facilities<br>-International Technology & Security Facilities | | | IAEA Interactions |
| **Advanced Hydrodynamic Testing** | | | | | |
| Hydrotesting of simulated nuclear weapons components | Hydrotesting is the most important diagnostic for nuclear weapons performance short of nuclear testing | PHERMEX | Scheduled for closure | | |
| | Two dimensional radiography, 5-10 experiments/yr | DARHT Facilities | | Dual axis motion picture flash X-rays | Three dimensional radiography, 10-20 experiments/yr. |
| | Two dimensional hydrodynamic testing and calculation support | LANSCE | | Multiple axis Proton Radiography for full 4π assemblies | -Three dimensional hydrodynamic testing and calculation support<br>-Proton Radiography cinematography |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Relocation to another site | Identify a site either at another location or within the Laboratory, where critical experiments can be performed. | |
| | | NISC |
| | | |
| | PHERMEX is scheduled for mothballing | |
| The completion of DARHT and it's supporting facilities is at the heart of the Laboratory's hydrotest program. There are no viable options.<br>Advanced Hydrotest Facility (AHF) and advanced proton radiography techniques<br>Upgraded capabilities or new radiography facility | Completion of 2nd axis of DARHT<br>Diagnostic "X"<br>Completion of assembly support facilities to utilize this facility | AHF |
| Proton Radiography using LANSCE as the source of diagnostic protons | Use LANSCE accelerator at TA-53.<br>Consider relocation to NTS | AHF |

## Summary Missions/Alternatives/Requirements Table

| *Nuclear Weapons Research and Technology Development* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Advanced Hydrodynamic Testing (cont.)** | | | | | |
| Hydrotesting of simulated nuclear weapons components | Flyer plates, pin shots, etc. | Multiple specialized firing sites for experiments of various types | Maintaining integrity of buffer zones is an issue<br>Protection of wildlife and environment | | Flyer plate, EOS, specialized testing of explosives and materials |
| **Nuclear Weapons Simulation and Computing** | | | | | |
| Improve data representation of 3D simulation codes | Develop and deploy tera-scale technology for visualization and large scale simulations | LDCC | | Improve data representation of 3D simulation codes | Develop and deploy tera-scale technology for visualization and large scale simulations |
| 1-5 TeraOp Regime | Computing | Supercomputing Facilities | | 250-500 TeraOps Regime | Computing |
| **Intertial Confinement Fusion and Radiation Physics (ICF & RP)** | | | | | |
| Fundamental understanding of weapons physics | Supplies basic data on ignition and TN burn | Pulsed-Power Facilities Pegasus & Atlas | | Similar as current | Continue as current |
| **Accelerator Production of Tritium** | | | | | |
| Tritium supply R&D | Formerly produced in production reactor | None | Now tritium supply needed in next 6-10 years. | | Continue as current |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| Potential to create new contained firing facilities | | |
| Continue to develop networked systems. Develop higher speed platforms. | Continue development of 30-teraOps and 100-teraOps computer platforms. Build the SCC.<br>Construct the SCC as the lynch pin (along with NISC) of TA-3 Revitalization | SCC<br>NISC |
| Supercomputing Complex @ TA-03 | Under construction | SCC |
| Atlas facility move to NTS<br>Pegasus move to UNLV | How to prepare Los Alamos experiments for conduct in Nevada? | Atlas |
| Two commercial light-water reactors in TN by TVA. APT is designated backup technology for tritium supply. | Continue APT engineering development and demonstration activities. | APT |

## Summary Missions/Alternatives/Requirements Table

| *Threat Reduction* | | | | | |
|---|---|---|---|---|---|
| ***Current Requirements*** | ***Current Functions/Capabilities*** | ***Current Facilities*** | ***Current Issues/Concerns*** | ***Forecasted Requirements*** | ***Forecasted Functions/Capabilities*** |
| **Non Proliferation and International Security** | | | | | |
| Provide technology to prevent global proliferation of nuclear, chemical, and biological weapons & materials | Detector development, JTOT | Nonproliferation & Arms Control Facilities | | Provide technology to prevent global proliferation of nuclear, chemical, and biological weapons & materials | Detector development, JTOT |
| | Analytical chemistry and characterization | CMR (TA-03) | Current state of the facility | | |
| | Nuclear nonproliferation training | SIGMA (TA-03) | | | Nuclear nonproliferation training |
| | Critical Experiments, JTOT activities | Critical Experiments (TA-18) | | | Critical Experiments, JTOT activities |
| | Detector development and international security | International Technology & Security Facilities | | | Detector development and international security |
| | Nuclear threat reduction | -Nonproliferation & Arms Control Facilities -International Technology & Security Facilities | | | Nuclear, biological, and chemical threat reduction |
| | Nonproliferation Surveillance | | | | Nonproliferation Surveillance |
| | Nuclear, Chemical, & Biological Surveillance | | | | Nuclear, Chemical, & Biological Surveillance |
| **Materials Disposition** | | | | | |
| | The Laboratory has the nation's only mixed oxide fuel production capability. | ARIES glove box line at TA-55 | Increases in stockpiles of surplus fissile materials due to US and Russian arms-control implementation | Training center and fuel fabrication demonstrations | Demonstrate technology for pit dismantlement and Pu conversion |

| *Alternatives/Options* | *Facility Strategies* | *Related Projects* |
|---|---|---|
| | | |
| Nonproliferation and International Security Center, upgraded & possible relocated JTOT facilities | | NISC |
| | | CMR Replacement |
| Relocation of training activity to another site | | |
| Relocation to more secure location. Suggested siting at DAF/NTS. | | |
| Nonproliferation and International Security Center (NISC) | Construction of NISC as part of NISC TA-03 revitalization | NISC |
| New NIS Center and supporting facilities<br>Definition of facility needs for controlling weapons of mass destruction, (i.e., nuclear, biological, chemical) | Potential reuse application of the CMR building?<br>Can this building be retrofitted for some of this work? | CMR Upgrades |
| New NIS Center and supporting facilities | | NISC |
| New NIS Center and supporting facilities | | NISC |
| | | |
| Storage and disposal of surplus weapons-usable fissile materials, including Pu ceramic vitrification and burning in reactors | Use ARIES at TA-55 as training center for operators of future Pit Disassembly and Conversion Facility. | |

# V. EXISTING CONDITIONS

## Regional Overview

Los Alamos National Laboratory is located in north-central New Mexico, an area of enchanting natural beauty enriched by the interweaving of Native American, Hispanic, and Anglo-American cultures.

The very old and the very new are juxtaposed within the immediate environs of the Laboratory; pueblos where traditional ceremonies and customs are still honored, old high-mountain Hispanic villages, and the ruins of prehistoric Native American cultures are found nearby.

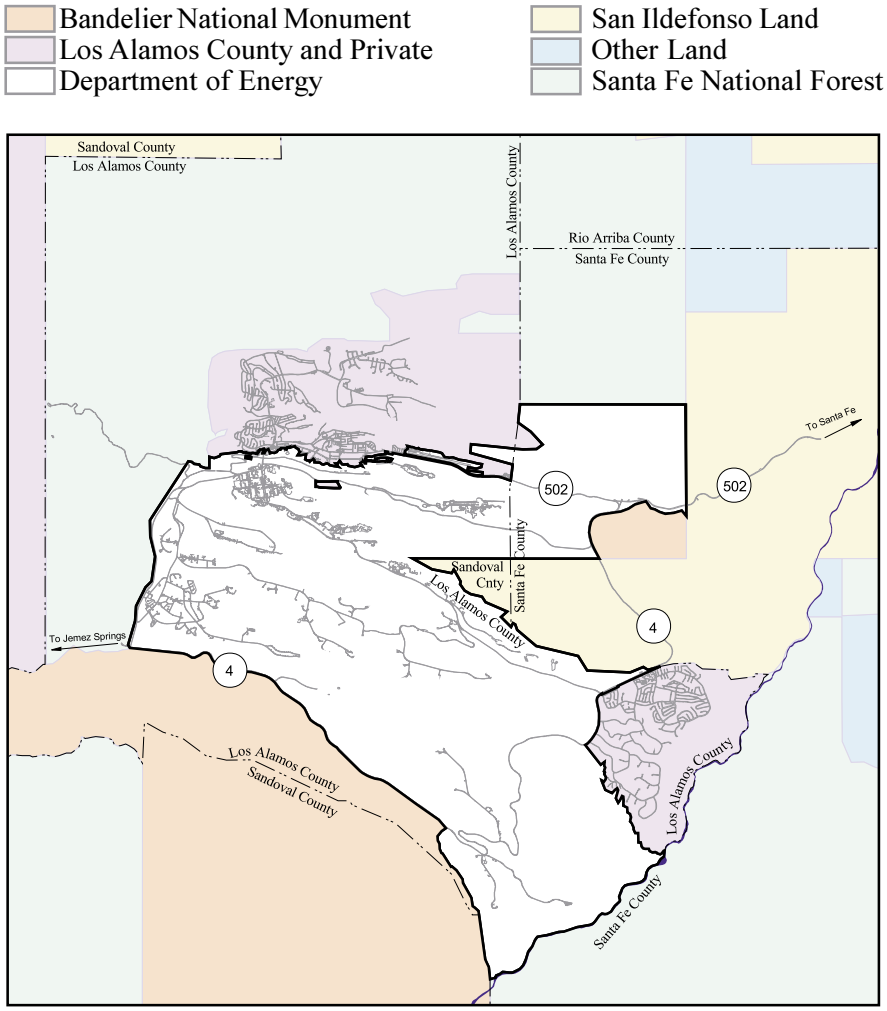
North-central New Mexico is dominated by the Jemez Mountains to the west and Sangre de Cristo Mountains to the east. These two ranges flank the Rio Grande Valley, which bisects the state from north to south.

The northern portion of New Mexico depends heavily on tourism, recreation, agriculture, and the state and federal governments for its economic base. The Laboratory and its associated support service sub-contractors are the largest industrial employers in the region.

Laboratory activities directly influence four major communities in New Mexico – Los Alamos, Santa Fe, Espanola and Albuquerque. The Laboratory draws employees, contractors and resources from throughout the region.

Infrastructure requirements for roads and utilities are intimately tied to the regional systems in this area. The Laboratory is a major influence in the economic, social and environmental management of the region.

*Figure V-1: Surrounding Land Ownership*



## Regional Factors Affecting Planning and Development

People in and around Los Alamos are concerned with several local issues that merit brief review to permit a better grasp of general planning concerns affecting the region. These issues include concerns about environment, economic development, tourism, housing, schools, public services, and transportation and are often manifested as disputes about appropriate land use decisions.

### 1. Laboratory Related Economy

The Laboratory and its associated support service subcontractors are the largest industrial employers in Northern New Mexico. The Laboratory directly or indirectly creates about 29% of the region's jobs, and its positive impact on the Northern New Mexico economy is commensurate with this fact. In FY99, the Laboratory's estimated operating budget was $1.5 billion. The total economic impact of the Laboratory in 1997 was $4.1 billion for the overall New Mexico economy and $3.4 billion for the three counties of Rio Arriba, Santa Fe, and Los Alamos. This represents 4.8% of the total New Mexico economy and 30.1% of the three county economies. Tourism, recreation, agriculture, and the state and federal governments complete the predominant economic generators in the region.

### 2. Economic Development

Generally, area residents have been supportive of the Laboratory and its activities. This attitude has been fostered by the Laboratory's positive economic benefits that have accrued during the past four decades.

Efforts to identify additional land for industrial development that could complement programs at the Laboratory are ongoing. These efforts constitute an attempt to continue to diversify the local economy. Two projects-the research development park adjacent to the Laboratory and DOE-sponsored transfer of particular Laboratory lands to other public entities–will be discussed in greater detail later in this document.

### 3. Transportation

Currently, over 50% of Laboratory and contractor employees commute to the site. This has regional impacts on transportation, planning and development. Highways provide primary access to the Laboratory from the Rio Grande Valley and Albuquerque. The Los Alamos Airport, now owned by Los Alamos County, hosts scheduled air service between the town site and Albuquerque. There are also several privately sponsored commuter flights between the two communities. Commuter van service is available from Albuquerque, Santa Fe, and Española to Los Alamos, but private vehicles provide the bulk of transportation to and from "the Hill." Los Alamos has no rail service. The Laboratory supported the State of New Mexico's sponsored park and ride mass transportation (bus) system in November 1998. The service was interrupted early in 1999, but plans to reinstate the service are ongoing. The Laboratory will continue to cooperate with the county, state and federal transportation agencies to continue to develop regional transportation and transit systems.

### 4. Adjacent Landowners

It is in the Laboratory's best interest to continue its cooperation with Los Alamos County, the U.S. Forest Service, Bandelier National Monument, San Ildefonso Pueblo, and other neighbors to attain mutually beneficial land use planning goals, Figure V-1. The Laboratory's planning efforts should be coordinated with the efforts of these other entities whenever feasible.

### 5. Environmental Stewardship

Public concerns continues about environmental compliance throughout the DOE complex. People who live in Los Alamos and the surrounding region value the quality of life that distinguishes this area. The Laboratory must continue to demonstrate that it can and will comply with all applicable federal and state environmental regulations.

### 6 Housing

Housing supply and demand, housing choices and affordability, and the selection of new areas for future housing development are always topics of concern to local residents and the Laboratory. The high cost and lack of available housing impacts the Laboratory's ability to recruit and retain top quality staff. The Laboratory needs to identify steps to support development of more diverse housing.

*Figure V-1: Omega Bridge*

## Facilities

In 1943, development of Los Alamos National Laboratory began with the construction of a little more than 93,000 square feet at a cost of approximately $1.8 million as shown in Figure V-2. Currently, the Laboratory occupies over 7.8 million gross square feet of facility space with an estimated replacement value of roughly $3.5 billion.

A short tour through TA-03 demonstrates quickly what this facilities analysis shows. The current overall state of Laboratory facilities is well below acceptable national facilities standards. As Figure V-3 on Current Facility Condition shows, approximately 47% of current Laboratory space is rated in “Poor” or “Fail” condition.

The primary reason for the poor condition of facilities at Los Alamos is the fact that 54% of the facilities are over 40 years old and were built prior to the adoption of modern design and energy consumption codes and standards. These facilities have served the Laboratory well but now need replacement or rehabilitation.

Without such actions, these older facilities will continue to require costly maintenance and repair. The end result of not addressing these aging and failing facilities will be decreased facilities reliability and ultimately major declines in employee productivity. The Laboratory’s investment in facilities is quite literally an investment in the Laboratory’s major asset - the workforce.

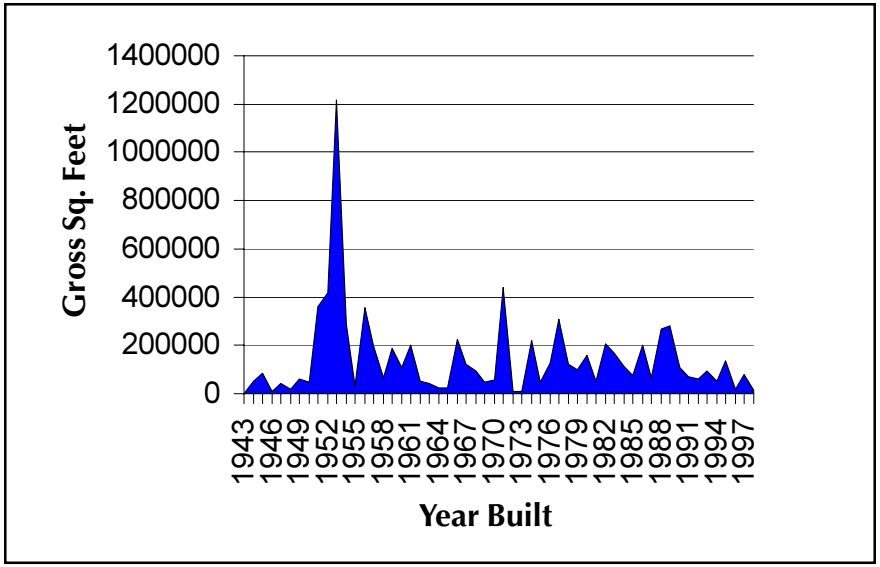



*Figure V-2: Historic Laboratory Construction*

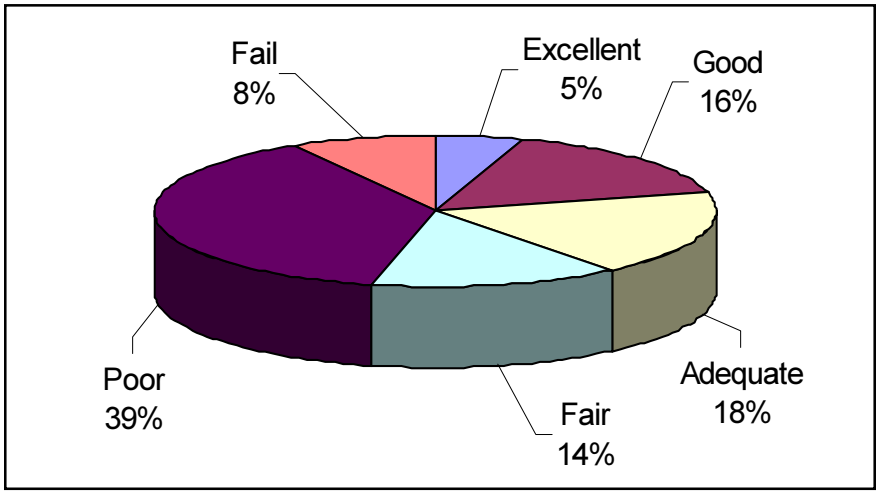



*Figure V-3: Current Facility Condition*

The Laboratory Facility Condition Model (Fig. V-4) depicts the history of facility aging at Los Alamos National Laboratory and the natural decline of facilities over time. In the early 1950s over 2 million square feet of Laboratory space were constructed-approximately 25% of the Laboratory's facilities. As this group of facilities ages, the Laboratory's overall facilities ratings decline with it. It was not until the late 1970s that the 1950s era facilities began to move into the marginal condition labeled Fair. These spaces are now declining into the Poor and Fail categories. As Fig. V-5 indicates, the issue of substandard space is a relatively recent and rapid phenomenon. By 2010, over 50% of the existing facility space at Los Alamos National Laboratory will be in the Fail category.

Not only are failing facilities a recent problem, but the large quantity of facilities reaching this condition at the same time threatens to overtake the Laboratory's ability to address the growing problem. The replacement value of the currently rated Fail space is estimated at about $200 million. The estimated backlog of maintenance and repair on these older facilities is $750 million.

The situation is exacerbated by current funding constraints. Traditional Congressional line-item funding is an extremely long and inflexible process. Given the quantity and speed with which replacements or renovations will be needed, the line-item process is unlikely to be able to respond on a timely basis. Critical to accomplishing the scale of facilities improvements needed is the ability to use alternative funding strategies. Congressional approval to use third-party financing and other public-private funding strategies is crucial to the successful revitalization of the Laboratory. DOE currently does not have the ability to use alternative funding for capital improvement projects.

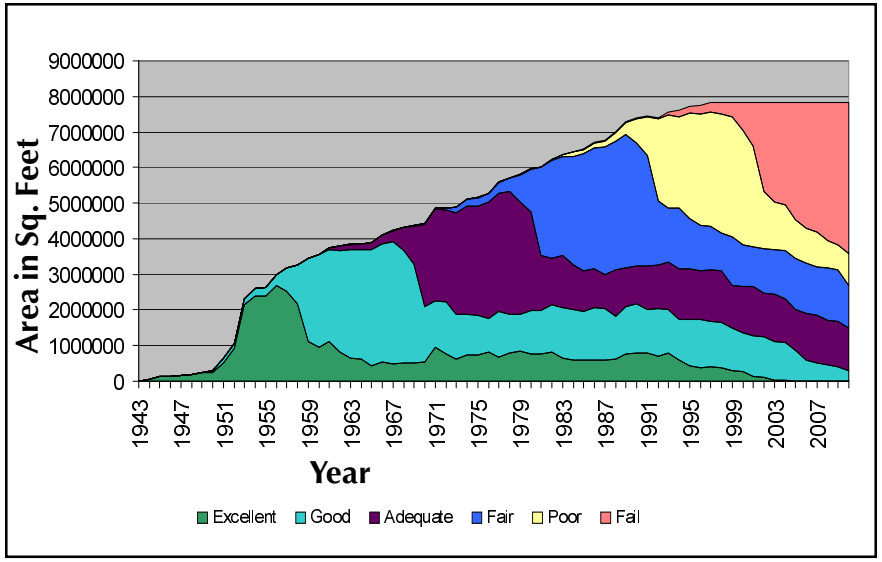



*Figure V-4: Laboratory Facility Condition Model*

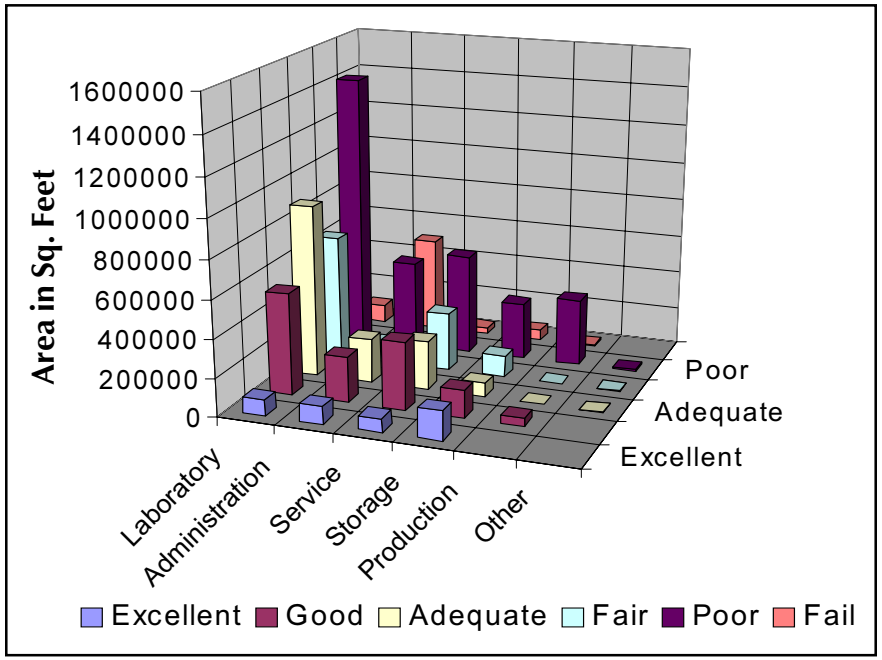



*Figure V-5: Laboratory Facility Use and Condition*

## *On-Site Planning Considerations*

### *1. On-Site Population*

Laboratory workers and the programs and services in which they work make up the basic, common denominator for determining physical facility needs. The Laboratory projects that the on-site population will remain between 12,000 to 13,000. Current geographic distribution of the on-site population density is indicated in the On-site Population Density Map, V-1.

Employees fall into various categories of employment and are employed by different entities. Most Laboratory employees are employed directly by the University of California. Other personnel are supplied by employers such as Johnson Controls Northern New Mexico (JCNNM), Protection Technologies Los Alamos (PTLA), and several employee contract companies.

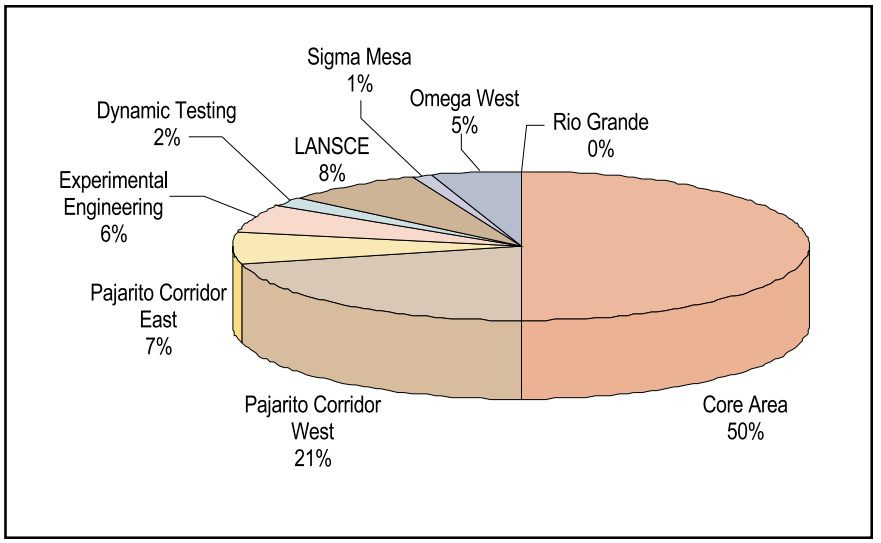
On-site population counts are increased by other personnel because of the Laboratory's increased interface with private sector research and development. Various scientific and engineering enterprises also have a presence in Los Alamos County. Other populations are on the site as a result of providing services to the Laboratory, for example, the post office, parcel delivery companies, Los Alamos County employees, and utility companies. Some of these individuals have security badges, indicating the frequency of their presence on-site. The above types of personnel are not included in the on-site Laboratory population statistics.

Table V-1 presents 1999 Laboratory population statistics by employer. These figures are not constant and are based on the consensus at a particular time.

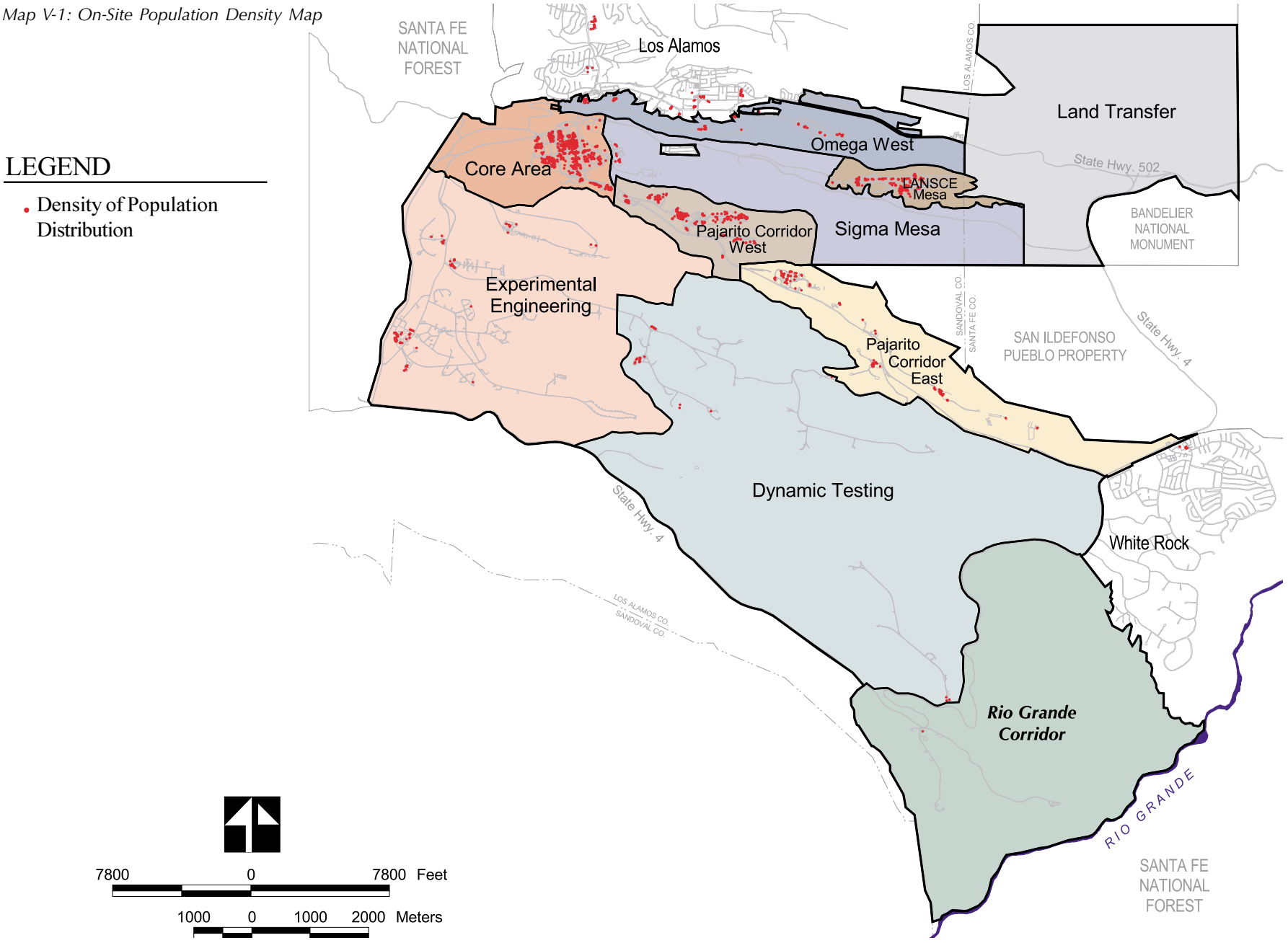
**Table V-1: 1999 Laboratory Population**

| Personnel | Workforce |
|---|---|
| Laboratory (nonstudent) | 6,974 |
| Laboratory (students) | 1,709 |
| Affiliates | 811 |
| Special Program Guests | 263 |
| Johnson Controls Northern NM | 1,381 |
| Protection Technology | 347 |
| Contract Labor | 1,178 |
| **Total Workforce** | **12,663** |

*Figure V-4: Population by Planning Area*



*Map V-1: On-Site Population Density Map*



## 2. Physical Constraints

Many of the plan recommendations contained in Section VI, The Plans are a direct outgrowth of the development opportunities and constraints inherent in the environment. The natural characteristics that were mapped and analyzed and that constitute major determinants of site opportunities and constraints include topography, slope, soils, vegetation, geology and seismology, climate, endangered species, archaeology and cultural resources, and surface hydrology.

### a. Natural Resource Management Plans

Natural Resource Management Plans are an integral part of the planning process at Los Alamos National Laboratory. They apply to the entire site rather than to individual projects, thereby affecting all planning and development.

DOE is responsible for the natural resources at the Laboratory as a Natural Resources Trustee (DOE 1996). The Record of Decision for the 1999 Site Wide Environmental Impact Statement requires the Laboratory to create an Integrated Resource Management Plan. In order to fulfill this responsibility, DOE and the University of California are implementing a Natural Resources Management Program integrating natural resources management activities that include:

- Biological management
- Forest management
- Threatened and endangered species habitat management
- Groundwater protection
- Watershed management
- Air quality management

Results of these ongoing programs are reported in annual surveillance reports and other Laboratory documents.

### b. Topography and Slope

Los Alamos is located on the Pajarito Plateau. The plateau has been deeply eroded by runoff, resulting in a series of mesas separated by canyons, many of which are several hundred feet deep. See Map V-2: Topography Map.

Much of the Laboratory's land is unbuildable. Within the Laboratory, steep slopes and deeply cut canyons severely constrain development. Over 25% of the Laboratory site has canyon side slopes which are 20% or greater. Conversely, many portions of the broad mesa tops and canyon floors have slope gradients of 0%-5%. Facilities siting must also be based on a consideration of slopes in terms of safety (i.e., stability, landslides, and rockfalls) and development costs.

### c. Soils

All soils at the Laboratory have limitations for building, some of which are exceedingly difficult to overcome. There are 28 soil types within the Laboratory boundaries. Refer to the *Soil Survey of Los Alamos County, New Mexico* in Volume II of the *CSP 2000* for the suitability of soils for various types of development. Development on soils with severe limitations is discouraged.

### d. Vegetation

Plant diversity within the Laboratory site is extensive and varies with the localized topography, elevation gradients, and microclimates. Seven major overstory vegetation types exist throughout the 4,900-foot gradient in the county. See Volume II of the *CSP 2000* for additional vegetation information.

The ability of the habitats to absorb new structures should be evaluated before facilities are sited. Sites should be engineered to prevent excessive erosion. Site plans should incorporate landscaping with native species to maintain continuity with the natural environment and to conserve water.

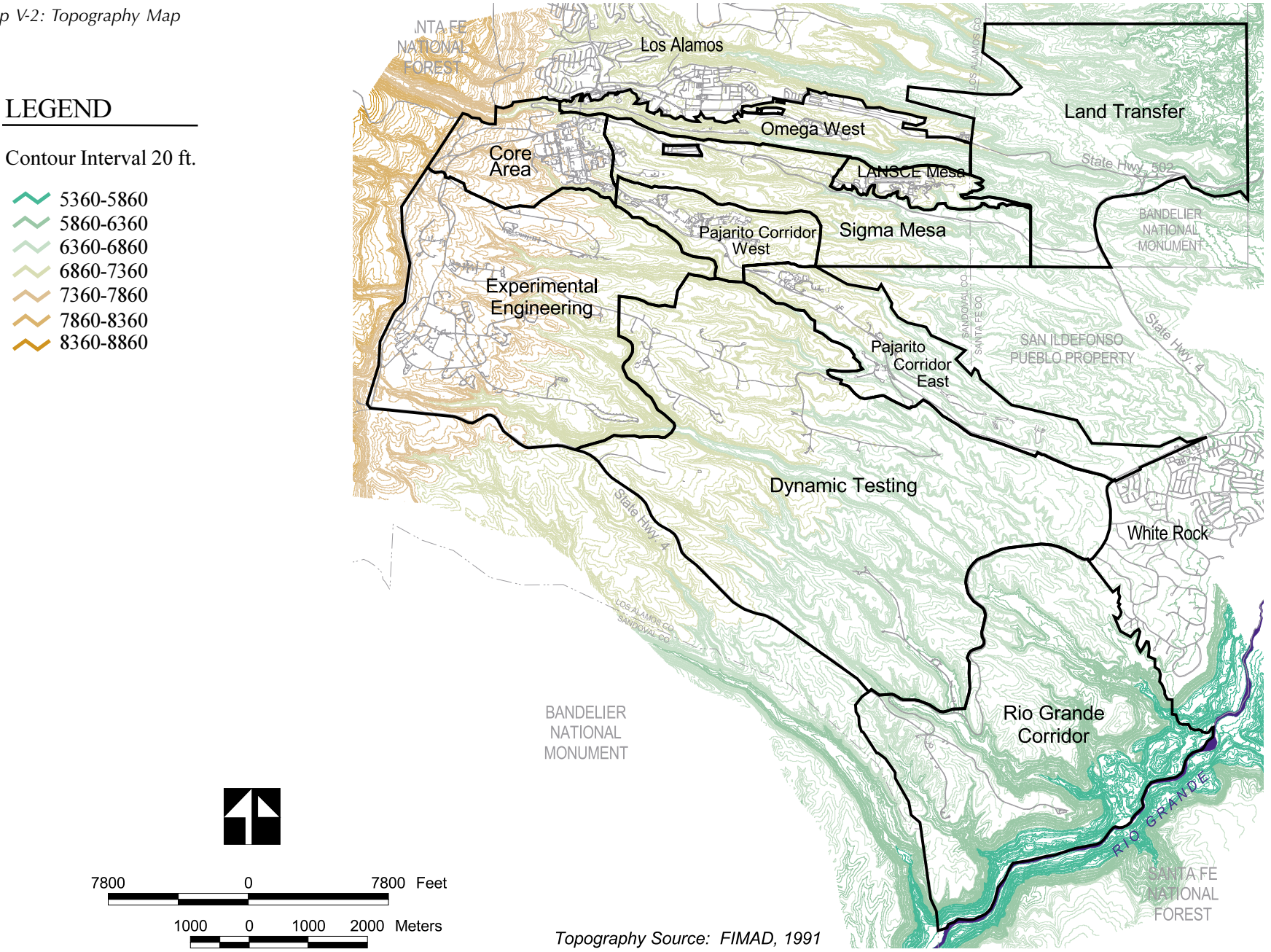
### e. Climate

In general, climate at the Laboratory does not have a major planning impact. Los Alamos has a temperate mountain climate with four distinct seasons.

The average annual precipitation (rainfall plus the water-equivalent of frozen precipitation) is 47.6 cm (18.7 in.). Los Alamos winds are generally light, having an annual average of 2.5 m/s (5.5 mi/h). However, the period from mid-March to early June is apt to be windy.

Lightning is very frequent in Los Alamos. In an average year, Los Alamos experiences 61 thunderstorm days a year, about twice the national average.

*Map V-2: Topography Map*




*Topography Source: FIMAD, 1991*

### *f. Geology and Seismology*

Los Alamos National Laboratory lies atop the Pajarito Plateau, which was formed by cataclysmic volcanic eruptions approximately 1.2 million years ago. Slope stability within the Laboratory is extremely variable. Steep canyon walls are susceptible to massive failures, posing rockfall hazards and long-term stability problems at mesa edges.

Los Alamos is located in a moderate seismic zone when compared to other areas of the country. Twenty-five faults and four seismic source zones within the Los Alamos region have been identified as potential seismic sources significant to the Laboratory in terms of ground shaking. Ground motion accompanies all earthquakes and is the primary effect that must be considered in the design and construction of Laboratory facilities.

Because of the close proximity to the Pajarito fault system, including the Pajarito, Guaje Mountain and Rendija Canyon faults, surface rupture must be considered in the siting of facilities. Surface rupture is a low probability event and generally accompanies larger earthquakes with Magnitude 6 and above. Nevertheless, siting new facilities over known faults with significant existing displacement should not be done.

The Laboratory has mapped the locations of faults in the area enclosing TA-55 on the east and TA-03 on the west and is in the process of mapping other areas of the Laboratory. For facility siting and new construction, fault zones capable of surface rupture should be treated in a fashion similar to the special study zones of California, site-specific fault investigations for new construction should be conducted, and siting new facilities over the trace of a potentially active fault should be avoided. Guidelines for siting facilities with respect to faults are being developed.

Los Alamos National Laboratory has evaluated its building inventory for potential seismic risks. The seismic risk for each building was based on a combination of seismic vulnerability and consequence of failure. Consequence of failure was based on building occupancy and/or hazard category. The risk score for an individual building could range from 0 to 100. Consistent with DOE guidance, buildings with risk scores greater than a given threshold were designated as being Exceptionally High Risk. The 25 buildings at Los Alamos identified as Exceptionally High Risk are shown in Table V-2. The results of this evaluation are provided in *Los Alamos National Laboratory, Supporting Documentation, Implementation of Executive Order 12941.*

**Table V-2: Potential Seismic Risk, Exceptionally High Risk Buildings**

| Building Number | Building Name |
|---|---|
| 03-29 | CMR Laboratory |
| 03-30 | General Warehouse |
| 03-38 | Administration/Shops C105318 |
| 03-39 | Tech Shop |
| 03-43 | Administration Building |
| 03-66 | Sigma Building |
| 03-70 | Parks & Refuse Office |
| 03-123 | Theoretical Office Building |
| 03-132 | Computer Building |
| 03-200 | Office Building |
| 03-207 | J. R. Oppenheimer Study Center |
| 03-215 | Physics Analytical Center |
| 03-216 | Weapons Test Support |
| 03-422 | Office Building |
| 08-21 | Office Building |
| 35-27 | Nuclear Safeguard |
| 35-87 | Laboratory OfficeBbuilding |
| 43-39 | DOE-LAAO Hq. Building |
| 46-24 | Laboratory & Office Building |
| 50-01 | Radiation Liquid Treatment |
| 53-06 | Accelerator Tech building |
| 55-39 | Educational Support |
| 55-01 | Administration Building |
| 55-02 | Support Office Building |
| 59-01 | Occupational Health Laboratory |

### g. Threatened and Endangered Species

Federal agencies must comply with the 1973 Endangered Species Act (ESA) as amended. The Los Alamos National Laboratory Threatened and Endangered Species Habitat Management Plan (HMP) has been developed to protect federally listed threatened and endangered species on or near Los Alamos National Laboratory.

The HMP defines habitats for threatened and endangered species. These areas are designated as an Area of Environmental Interest (AEI) on maps in that document. The designated AEIs have both core and buffer areas. The core area designates the necessary habitat for a species and has the highest level of protection. The protective elements of the buffer are related to preventing core degradations primarily from light and noise disturbances. Areas that are not designated as AEIs are presumed to have little or no impacts to endangered or threatened species.

### h. Surface Hydrology

The Rio Grande is the master stream of the region and drains an area of more than 14,000 square miles in Northern New Mexico and southern Colorado. Many drainage areas originate in or pass through the Laboratory, Los Alamos town site, and the White Rock areas.

Mesa-top locations are generally free from any risk of flooding; however, storm water and snowmelt runoff concentrate in the site's deep, narrow canyons, thereby increasing the risk of flooding for any facilities constructed on the canyon bottoms. The floodplains and wetlands in the canyon bottoms are cautionary zones for siting buildings.

Floodplains are protected under Executive Order 11988. This order emphasizes reductions in the risk of flood loss; tries to minimize the impact of floods on human safety, health and welfare; and aims to restore the natural and beneficial values of floodplains.

Activities triggering the Laboratory's review of potential floodplain impacts are as follows:

- Construction within a floodplain
- Alteration of a stream course
- Significant increase in the water flow into a floodplain (e.g., large new development with numerous impervious surfaces.)
- Removal of large amounts of vegetation in a floodplain

Wetlands are protected under the Clean Water Act and Executive Order 11990. Any excavation or fill activity in a wetland requires a Laboratory (ESH-20) review. Depending on the extent of the excavation and fill, a permit may be required. Vehicle access in a wetland must also be reviewed by the Laboratory. Other activities requiring Laboratory review of wetlands include any significant change (increase or decrease) in effluent discharge to a National Pollutant Discharge Elimination System outfall, elimination of an outfall, and discharge to a new outfall. These activities may require a wetland assessment.

### i. Archeology and Cultural Resources

At present, approximately 80% of Laboratory lands have been surveyed for cultural resources. The Laboratory uses the DOE's definition of cultural resources, which includes archeological sites and artifacts dating to the prehistoric, historic and ethnohistoric periods; standing structures that are over 50 years old and that represent a major historical theme or era; cultural places and sacred objects that have importance to Native Americans; and to American folklife traditions and art.

The Laboratory site and surrounding areas contain examples of all of these types of cultural resources. These include the material remains of over 10,000 years of prehistoric human occupation, the historic occupation of the Pajarito Plateau beginning in the 1400s and the Laboratory buildings and structures associated with the Manhattan Project and the Cold War. Almost three-quarters of cultural sites are found on mesa tops, which are the preferred locations for Laboratory development today.

Under Section 106 of the National Historic Preservation Act (NHPA), all proposed work must be evaluated for its potential to adversely impact significant cultural resources, and appropriate measures must be taken to mitigate impacts. Over 1,400 archeological sites have been recorded at the Laboratory to date, and approximately 500 of 2000 facilities are potentially significant historic properties. The Laboratory recently received a Save America's Treasures Grant for restoration of V Site, a complex of wooden buildings within TA-16. The buildings were used for high explosives (HE) research and development at the end of World War II and contributed to the creation of the first atomic bomb, the "Trinity" device.

*Figure V-2: Candy Kettle for the Trinity Device*

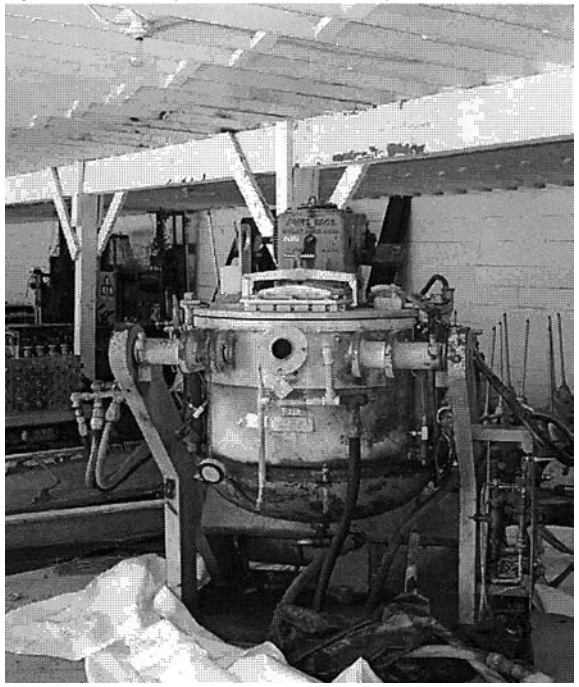


*Figure V-3: The Manhattan Project, V Site*

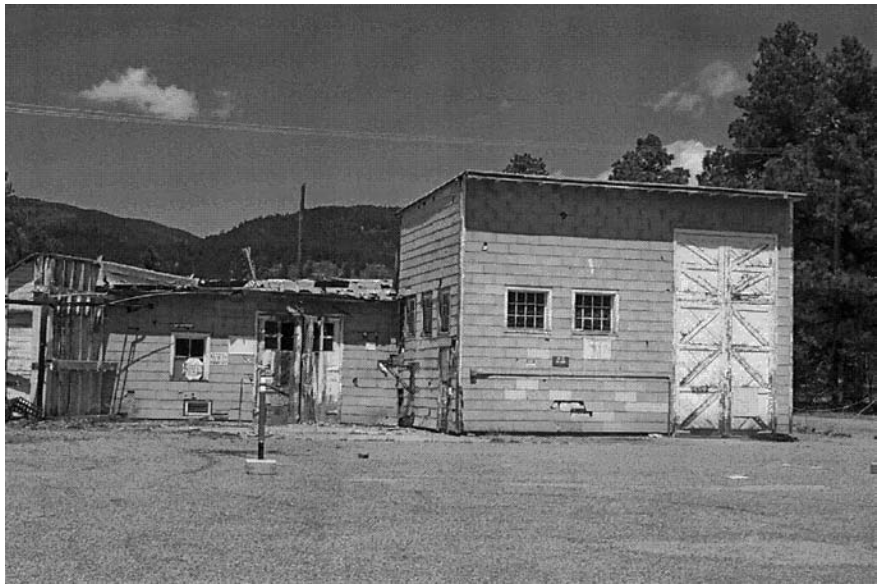


*Figure V-4: The Manhattan Project, V Site*

## 3. Operational Constraints

### a. Radiological Zones

Radiological hazard areas should be considered in the planning process. Information on specific locations can be obtained from the Environment, Safety, and Health's (ESH) Radiation Protection Program Office. Radiation hazard areas are not "development exclusion zones." Neither construction nor new operations are precluded, but the reasonableness of the proposed activity must be considered. For example, a new storage facility might be ideally located within one of these areas adjacent to a facility that needs new storage. The most important objective is to ensure that the use is compatible with the hazard concerns and that documentation for the decision is provided.

### b. Blast Buffer Zones

Explosives research, development, and testing uses require large, isolated, exclusive, and consolidated reservations of land. Carefully controlled access is required to maintain safety, security, and environmental compliance. These areas require buffers to minimize adverse impacts on surrounding lands. Only specialized facilities and approved personnel are permitted, in accordance with ES&H procedures.

### c. Radio Frequencies

Many operations, programs, and experiments occurring at the Laboratory are adversely affected by AM radio transmissions. Therefore, for safety and other operational reasons, AM transmissions are not allowed to originate on Laboratory property. Any new radio frequency broadcasts at the Laboratory must be coordinated with the frequency manager in the Telecommunications Group (CIC-4).

### d. Hazardous Waste

At Los Alamos, the number of potentially contaminated sites is approximately 2,100. Much of the investigative work on these sites has been completed; as a result, many sites have been found not to be contaminated and are being removed from the total list of sites without further action. At many of the remaining sites, accelerated cleanup has been completed or has begun. A small percentage of sites, currently estimated at less than 10%, will need to go through the entire corrective action process, a task that is expected to take until 2009 to complete.

Data gathered since 1970 in a comprehensive environmental monitoring and surveillance program indicate that no contamination that threatens the health or safety of local residents is known to exist on private property.

The Laboratory Environmental Restoration (ER) Project is governed primarily by the corrective action process prescribed in the Resource Conservation and Recovery Act (RCRA), but it is also subject to other applicable laws and regulations and to Laboratory policies.

The New Mexico Environment Department administers RCRA in New Mexico. The ER Project must respond to RCRA requirements for assessing and cleaning up sites at active hazardous waste treatment and storage units.

Other applicable federal acts are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Environmental Policy Act (NEPA). Federal and state statutes, executive orders, DOE orders and Secretary of Energy notices also guide hazardous waste remediation at the Laboratory.

### e. Airspace

Although not strictly a constraint to development, the airspace constraints could affect any initiative requiring an aerial survey of the Laboratory as a step in the development process. For planning purposes, all airspace within 12,500 vertical feet above sea level inside Laboratory boundaries is safety-restricted airspace. No aircraft can enter this restricted air space without prior approval from the Laboratory.

## 4. Constraints and Development Opportunities Maps

Physical and operational constraints maps portray the opportunities and limitations related to development at the Laboratory.

### a. Constraints Scores and Rationale

To develop the constraints maps, physical and operational issues that affect development were characterized and mapped for the entire Laboratory site. Then individual constraints were scored on a four-point scale, the various constraints were overlaid using a GIS-based mapping program. The resulting maps depict four constraint categories: no, slight, moderate, or severe constraints. Any specific location on the constraints map may have more than one constraint score associated with it; however, the highest constraint score at that location represents the constraint "level."

The following Operational and Physical Constraints tables, (V-3, V-4, V-5), explain the constraints, constraint scores and scoring rationale that are represented on Map V-3 Site Wide Physical Constraints and on Map V-4: Site Wide Operational Constraints.

*Table V-3: Constraint Level*

| CONSTRAINT SCORE | CONSTRAINT LEVEL |
|---|---|
| 0 | No constraints |
| 1 | Slight constraints |
| 2 | Moderate constraints |
| 3 | Severe constraints |

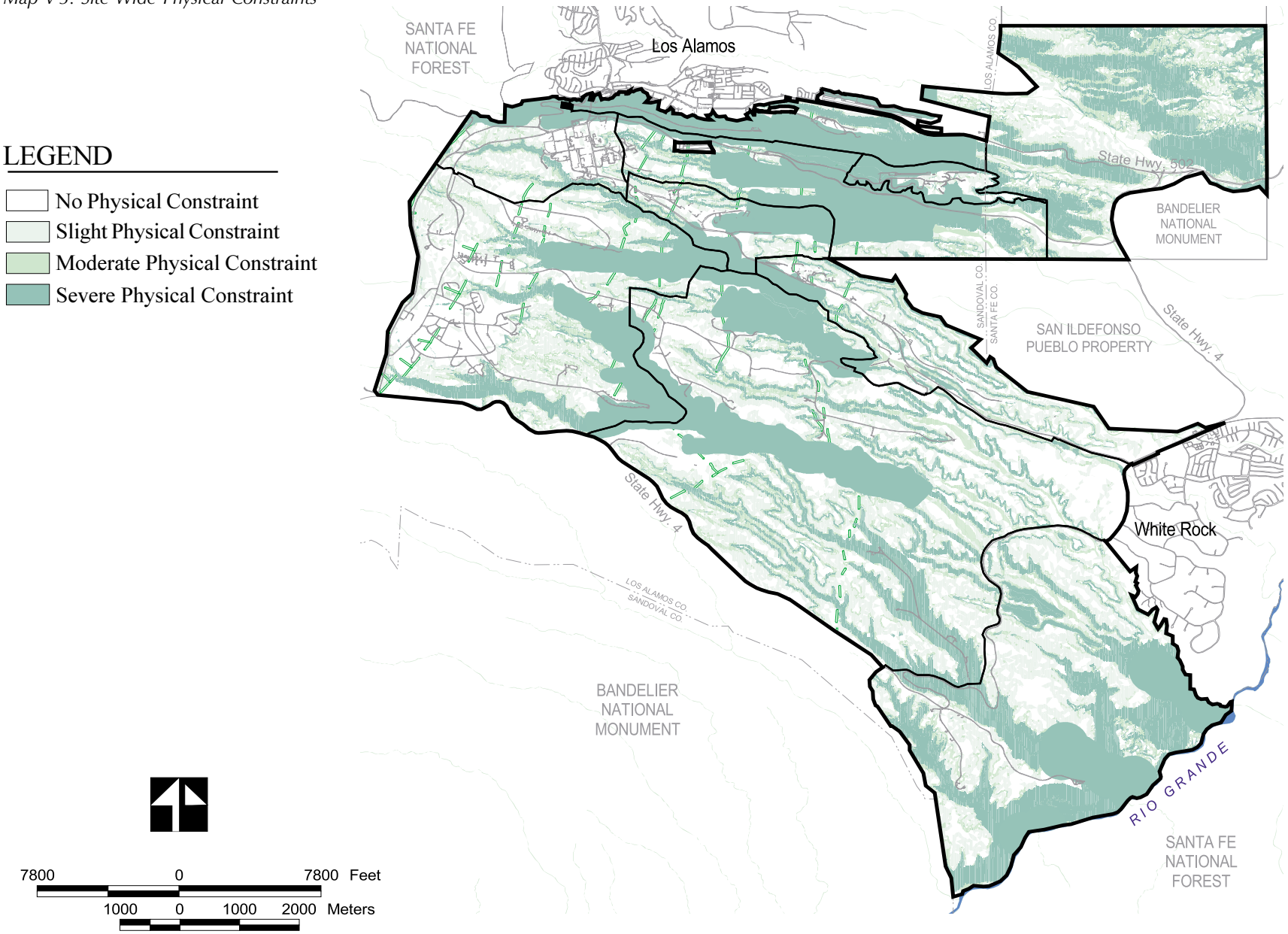
### b. Physical Constraints

*Table V-4: Physical Constraints*

| CONSTRAINT | SCORE | RATIONALE |
|---|---|---|
| Slope 0%-5% | 0 | Development can be easily sited. |
| Seismic/fault lines | 1 | Nuclear facilities are not permitted on faults. Other facilities can be sited on or set back from faults per Engineering Sciences and Applications Division requirements. |
| Slope 6%-9% | 1 | Minimal engineering and cost to overcome. |
| Slopes 10%-19% | 2 | Facilities can be engineered to overcome constraint at a moderate cost. |
| Threatened and Endangered Species Habitat Buffer | 2 | The buffer is meant to protect the core area and is not as constrained as the core. May be seasonal. |
| 100-Year Floodplains and Streams | 2 | Development may occur within 100-year floodplain, provided impacts are mitigated. Because these places can be engineered to overcome constraint, this particular environmental concern should not be overly weighted. |
| Slopes 20%+ | 3 | Can be engineered to overcome constraint, but at a high cost. |
| Threatened & Endangered Species Habitat Core | 3 | Critical to survival of endangered and threatened species. No development without mitigation. |
| Wetlands | 3 | Permit requirements. |

• *Areas of 1 acre or less, whether a constraint score of 0, 1, or 2, were incorporated into the surrounding larger parcels. In most cases, these areas are changing slopes.*

*Map V-3: Site Wide Physical Constraints*



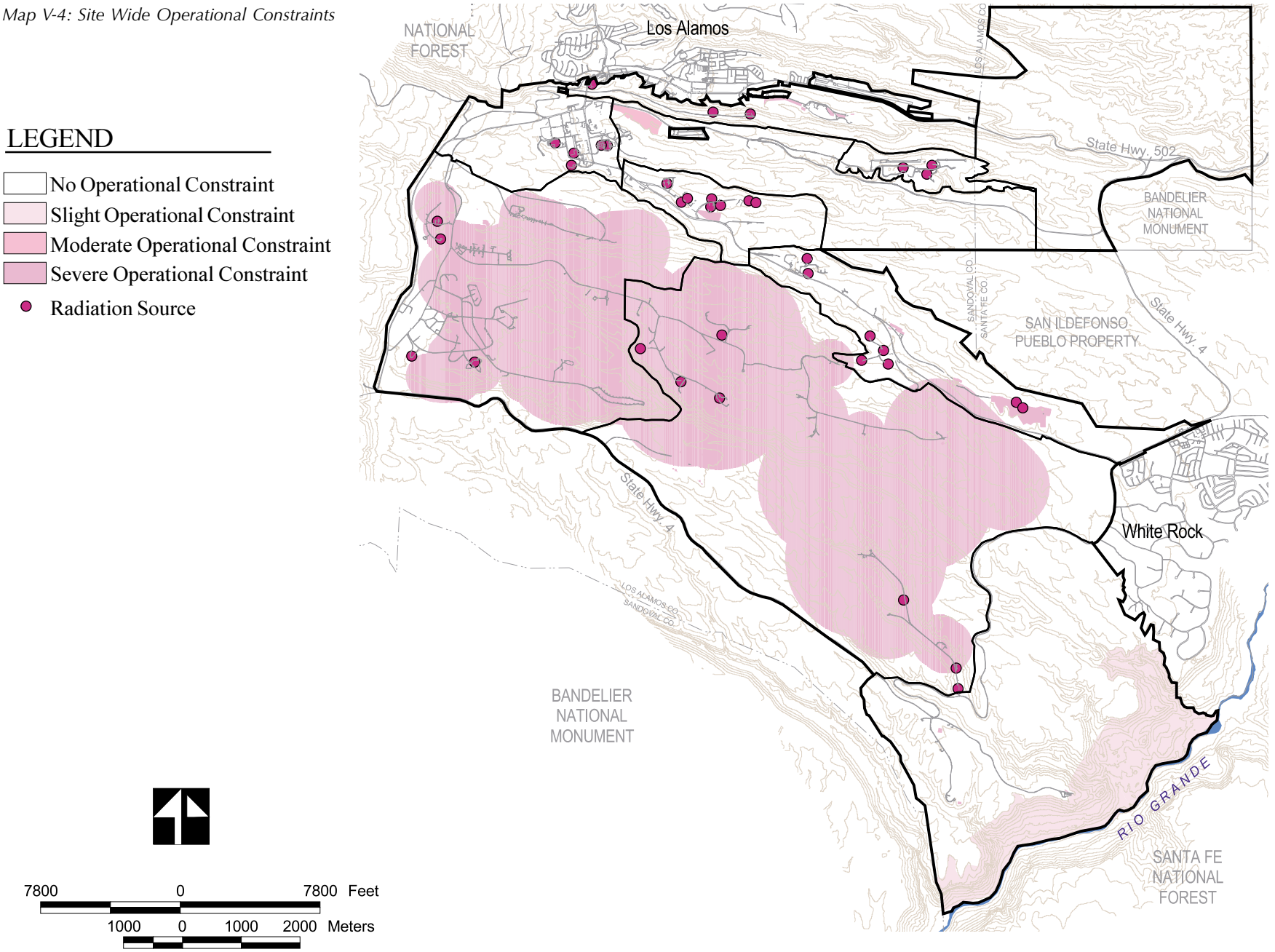
## c. Operational Constraints

*Table V-5: Operational Constraints*

| CONSTRAINT | SCORE | RATIONALE |
|---|---|---|
| Radiological Sources* | NA | Need authorization to be in area not open to the general public – only affects non-Laboratory development. |
| White Rock Canyon Reserve | 1 | DOE retains ownership of this 1000-acre reserve, but Department of Interior (Bandelier National Monument) will be the lead agency. |
| Sanitary Landfill | 2 | Costly site preparation is likely. |
| Hazardous Waste | 3 | These sites may contain hazardous contaminants that may affect human health and the environment and may be costly to clean up. |
| Blast Buffer Zones | 3 | Only specialized facilities and approved personnel permitted in accordance with ES&H procedures. |

* *Currently includes only radiation safety point sources, which are not analyzed in the operational constraints map. They are included for information on Map V-4, Site Wide Development Opportunities.*

*Map V-4: Site Wide Operational Constraints*



### *d. Development Opportunities Maps*

The development opportunities areas shown on Map V-5: Site Wide Development Opportunies are created from the combination of the physical and operational constraints maps discussed before. This map depicts all areas without constraints and with only slight and moderate constraints. Areas that include one or more severe constraints – those with an individual score of 3 – which would be due to the presence of unique operational or natural resources or activities, are identified as sites with unique development considerations.

- Areas with unique development considerations possess at least one of the following attributes: material disposal site, blast buffer zone, threatened and endangered species habitat core, wetlands, or slopes greater than 20%.

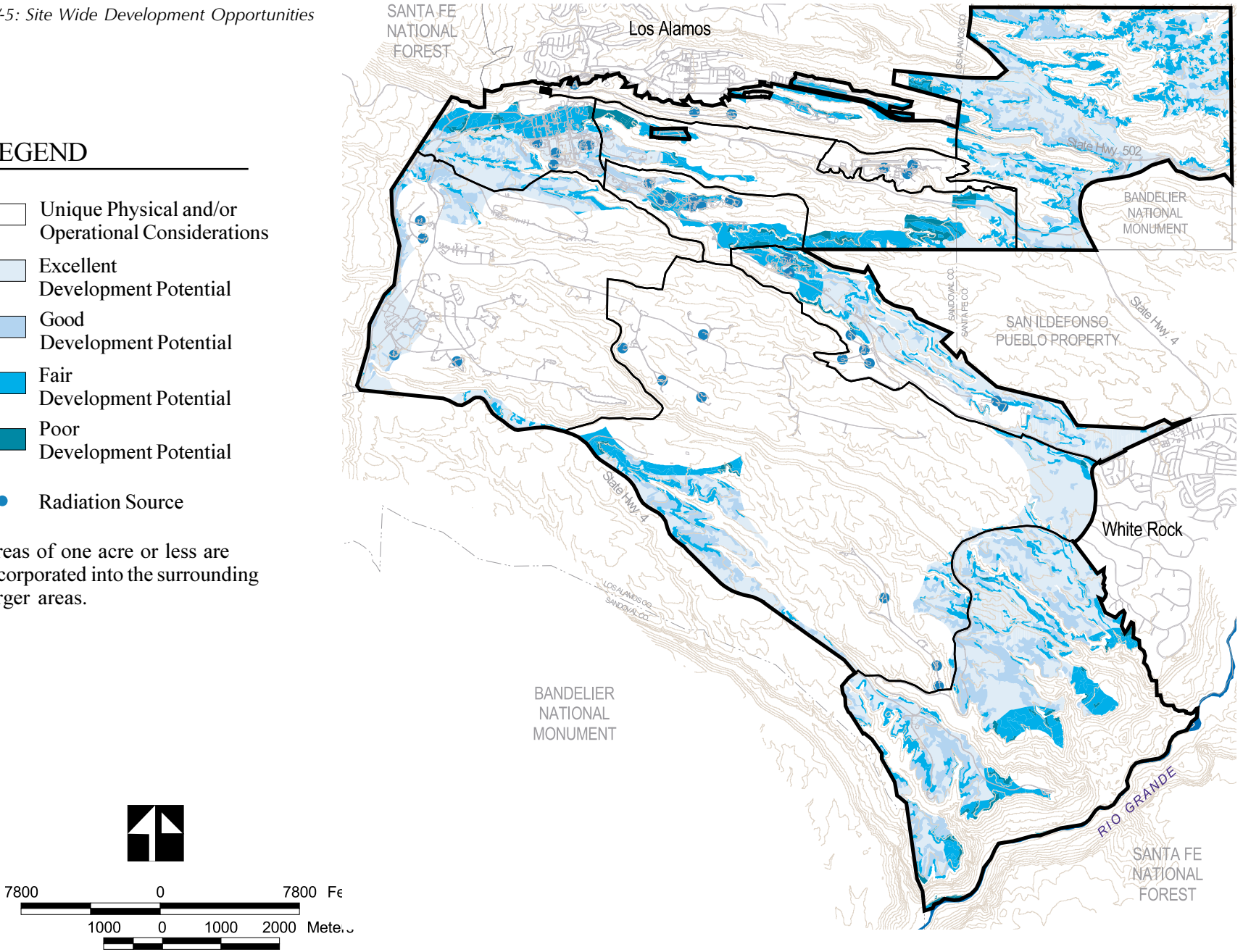
- Locations with constraint level scores = 0, 1 or 2 do not contain the unique operational and/or physical considerations discussed immediately above. These locations are analyzed to determine the cumulative effects of constraints on potential development and are ranked. The ranking is based on the sum of all constraint scores at each location, (see Table V-6).

*Table V-6: Development Opportunities*

| DEVELOPMENT OPPORTUNITIES SCORE | RANKING |
|---|---|
| 0 | Excellent Development Potential |
| 1 | Good Development Potential |
| 2-3 | Fair Development Potential |
| 4+ | Poor Development Potential |

*The recommendations based on these scores are for general planning purposes only and should not be used as substitutes for standard site specific investigations and applicable regulations.*

*Map V-5: Site Wide Development Opportunities*



# VI. THE PLANS

## Introduction to the Plans

The Plans section describes the ongoing, planned and future projects by planning areas. The Plans section is organized into 11 subsections. Each relates to one of the planning areas on the adjacent map,VI-A1.

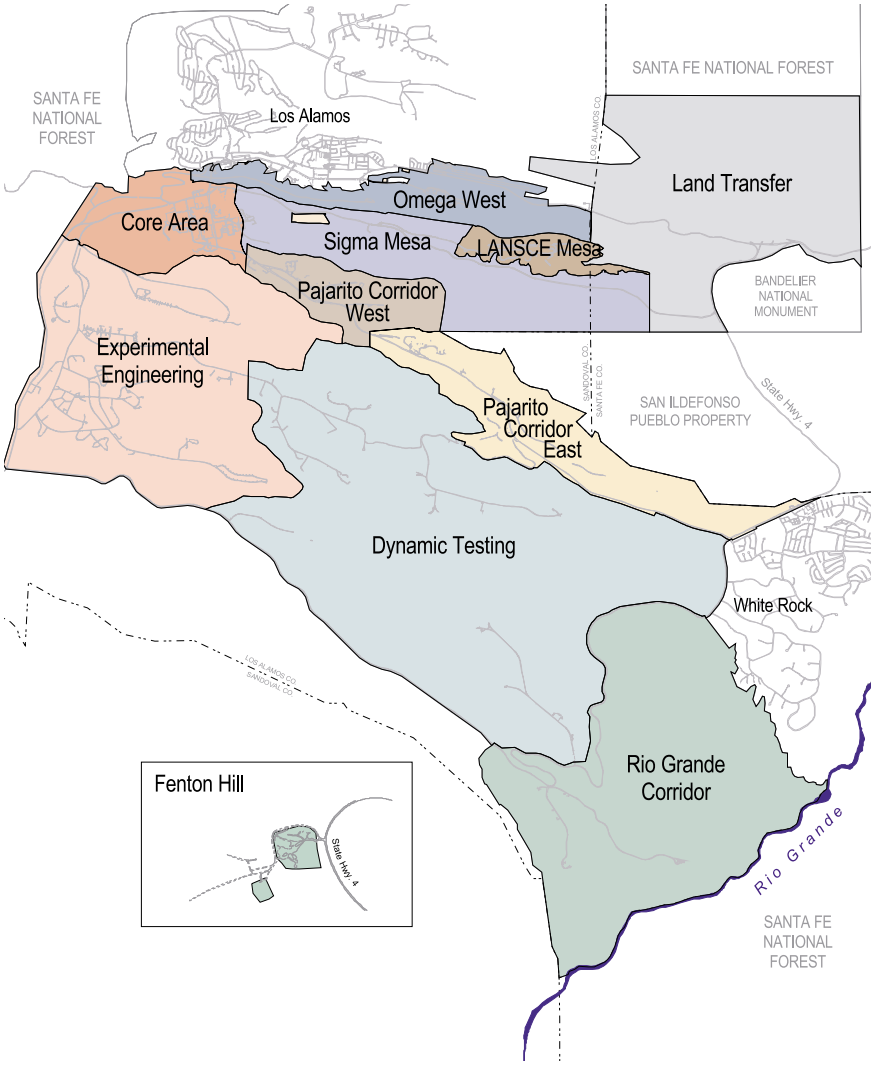
- Site Wide (Total Site)
- Core Planning Area
- Pajarito Corridor West Planning Area
- Pajarito Corridor East Planning Area
- LANSCE Mesa Planning Area
- Experimental Engineering Planning Area
- Dynamic Testing Planning Area
- Sigma Mesa Planning Area
- Omega West Planning Area
- Rio Grande Corridor Planning Area
- Land Transfer Area

Each subsection summarizes the following components of the Comprehensive Site Plan for that individual planning area:

- Assumptions for physical planning
- Opportunities and constraints
- Summary Map

The expertise and assistance of many divisions and groups throughout the Laboratory were critical to informing and guiding the plans for each planning area.

*Map VI-A1: Site Wide Planning Area Boundaries*



# A. Site Wide Planning Area

## *1. General Description*

The Laboratory is situated on approximately 26,660 acres, or 43 square miles, of DOE land, making Los Alamos National Laboratory the largest in land area of all the national laboratories. About 87% of the Laboratory is located within Los Alamos County.

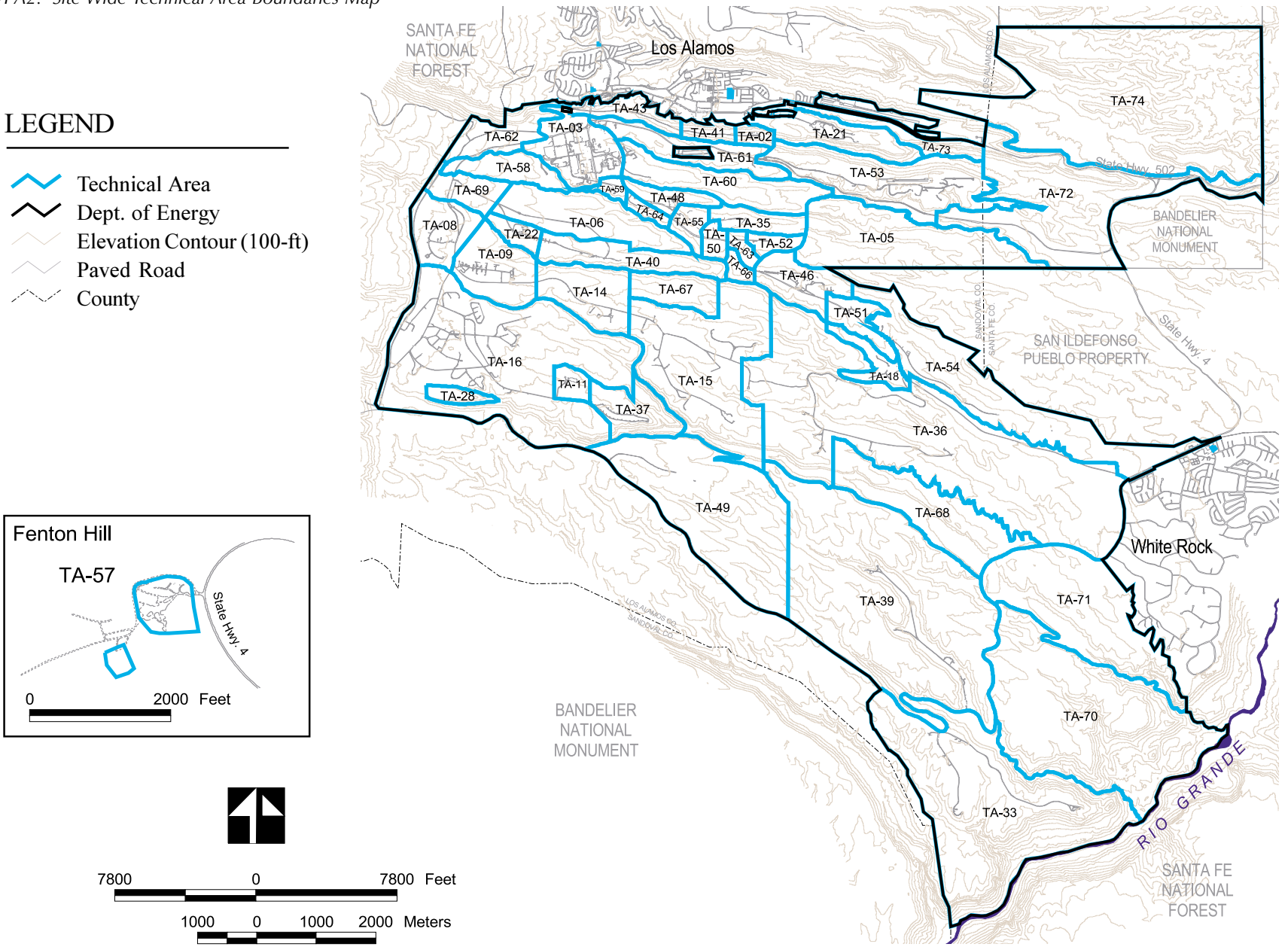
Presently, Los Alamos National Laboratory's on-site population is approximately 12,000, including both employees and contractors, housed in over 1,500 buildings which total over 7.8 million square feet.

Although at a cursory glance there appears to be sufficient land for future expansion at the Laboratory, most land is very difficult to develop, given significant physical and operational constraints. For example, over 25% of the Laboratory's acreage consists of slopes that exceed 20%. Adding to the scarcity of developable land is the type of work that the Laboratory performs. Security and safety buffers for defense-related work often require large reservations of land for these programs to continue without adversely affecting surrounding areas. These types of constraints severely limit developable land at the Laboratory.

There are currently 50 designated technical areas into which the Laboratory is divided. The nonsequential arrangement of the technical areas as shown on the adjacent Site Wide Technical Area Boundaries Map, VI-A2, reflects the 50-year history of development at the Laboratory, the limitations of the natural topography, and the functional relationships that have occurred over the years.

As a facility, the Laboratory is diverse-geographically, programmatically, and operationally. The Laboratory has a multiplicity of divisions and groups accomplishing a wide range of critical functions locally, regionally, nationally and globally. This diversity is a great strength and adds to the complexity of carrying out integrated physical planning at the Laboratory.

*Map VI-A2: Site Wide Technical Area Boundaries Map*



## 2. Land Use Development

The following 10 land use categories describe the activities at Los Alamos National Laboratory.

***Administration*** – Nonprogrammatic technical expertise, support, and services for Laboratory management and employees. TA-03 is the center for this land use, with other small scattered sites throughout the Laboratory.

***Experimental Science*** – Applied research and development activities tied to major programs. This land use occurs in a combination of offices, laboratories, and ancillary spaces requiring unique and specialized facilities.

***High Explosives R&D*** – Research and development of new explosive materials. This land use is isolated for security and safety.

***High Explosives Testing*** – Large, isolated, exclusive use areas required to maintain safety and environmental compliance during testing of newly developed explosive materials and new uses for existing materials. This land use also includes exclusion/buffer areas.

***Nuclear Materials R&D*** – Isolated, secured areas for conducting research and development involving nuclear materials. This land use includes security and radiation hazard buffer zones. It does not include waste disposal sites.

***Physical/Technical Support*** – Includes roads, parking lots, and associated maintenance facilities; infrastructure such as communications and utilities; facility maintenance shops; and maintenance equipment storage. This land use is generally free from chemical, radiological, or explosives hazards.

***Public /Corporate Interface*** – Provides link with the general public and other outside entities conducting business at the Laboratory, including technology transfer activities. This land use occurs in a variety of settings including offices, laboratories, and special function buildings such as the Otowi Building and Research Library.

***Theoretical/Computational Science*** – Interdisciplinary activities involving mathematical and computational research and related support activities.

***Waste Management*** – Provides for activities related to the handling, treatment, and disposal of all generated waste products, including solid, liquid, and hazardous materials (chemical/radiological/explosive).

***Reserve*** – Areas that are not otherwise included in one of the previous categories. It may include environmental core and buffer areas, vacant land, and proposed land transfer areas.

### *Strategies for Land Use*

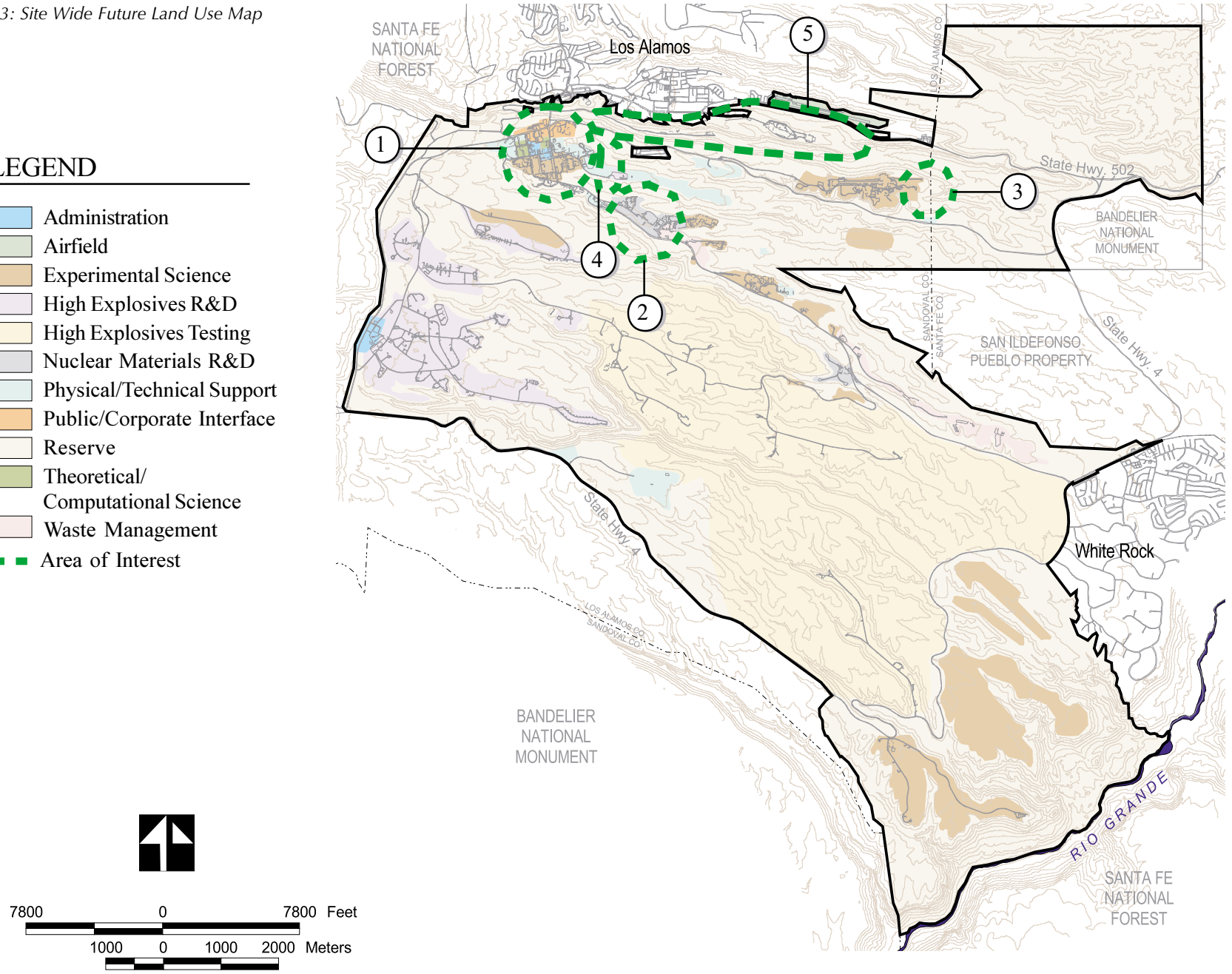
Land use strategies for the Laboratory are as follows:

- Reorganize facilities to bring disbursed program components into closer physical proximity to each other.
- Encourage construction of new facilities within existing developed areas and in support of revitalization efforts.
- Remove temporary structures such as trailers and transportables to create space for more cost-effective permanent buildings.
- Remove surface parking lots from prime development areas.
- Relocate most facilities back to Laboratory sites.
- Transfer designated lands to other agencies and political entities.

The Site Wide Future Land Use Map, VI-A3, depicts major land use changes that will affect development on a Laboratory scale.

1. Planned revitalization of TA-03.
2. Consolidation of most nuclear materials R&D to a nuclear campus at TA-55.
3. Expansion of experimental science for the Advanced Hydrotest Facility (AHF).
4. Relocation of JCNNM from TA-03 to TA-60.
5. Long-range removal of all Laboratory functions from the Omega West Planning Area.

*Map VI-A3: Site Wide Future Land Use Map*



## 3. Transportation

The Laboratory's remote location, topography, and development pattern have created unique transportation problems. Its location on a series of mesa tops separated by deep canyons and the dispersed arrangement of facilities on these mesas combine to make access between Laboratory facilities difficult and circuitous. Development of roads and parking has been incremental, often guided by short-term needs. The incremental growth has neglected pedestrian, bicycle and transit improvements. Maintenance of the transportation infrastructure has generally been inadequate to keep up with needs. These factors have resulted in site wide transportation difficulties.

### Strategies for Transportation

The following are transportation strategies for the Laboratory:

- Move public traffic out of the Core Planning Area by developing an arterial loop road around TA-03.
- Move truck and other large-vehicle traffic out of densely developed areas by relocating delivery and distribution activities to areas along East Jemez Road.
- Move parking out of prime developable areas and locate new facilities at the perimeters of built zones where connections to on-site transit can be easily made.
- Develop strategies to reduce conflicts between public traffic and secure zones.
- Create a multimodal transportation system that supports regional transportation needs.
- Develop a complete transportation system that incorporates pedestrian, bicycle and transit improvements.
- Develop a transportation infrastructure that provides for emergency and safety needs.

The Site Wide Future Transportation Map, VI-A4, shows projects that are underway or proposed that support the Laboratory's transportation strategies.

(1) ***TA-03 Perimeter Loop Road -*** Revitalization efforts in TA-03 call for a perimeter loop road to route traffic around the core of TA-03. This allows TA-03 to be accessible but secure. The west section of the loop road is currently being planned. The eastern section is awaiting planning.

(2) ***Options for Pajarito Road -*** The development of a nuclear campus at TA-55 will make the security and safety conflicts with public traffic on Pajarito Road more pronounced. Three alternatives are under discussion:

- (2a) Closure of Pajarito Road to public traffic, with a guard gate east of TA-54.
- (2b) Building of a parallel bypass road south of the current alignment.
- (2c) Building of a north-south connector road between Pajarito Road and East Jemez east of TA-46.

(3) ***Add Secondary Accesses -*** Secondary access roads are proposed to improve site circulation, emergency response times, contingency planning and fire fighting capability. A major component would be a north-south connector between Pajarito Road and East Jemez Road and a second bridge to the town site to reduce public traffic in the core of TA-03.

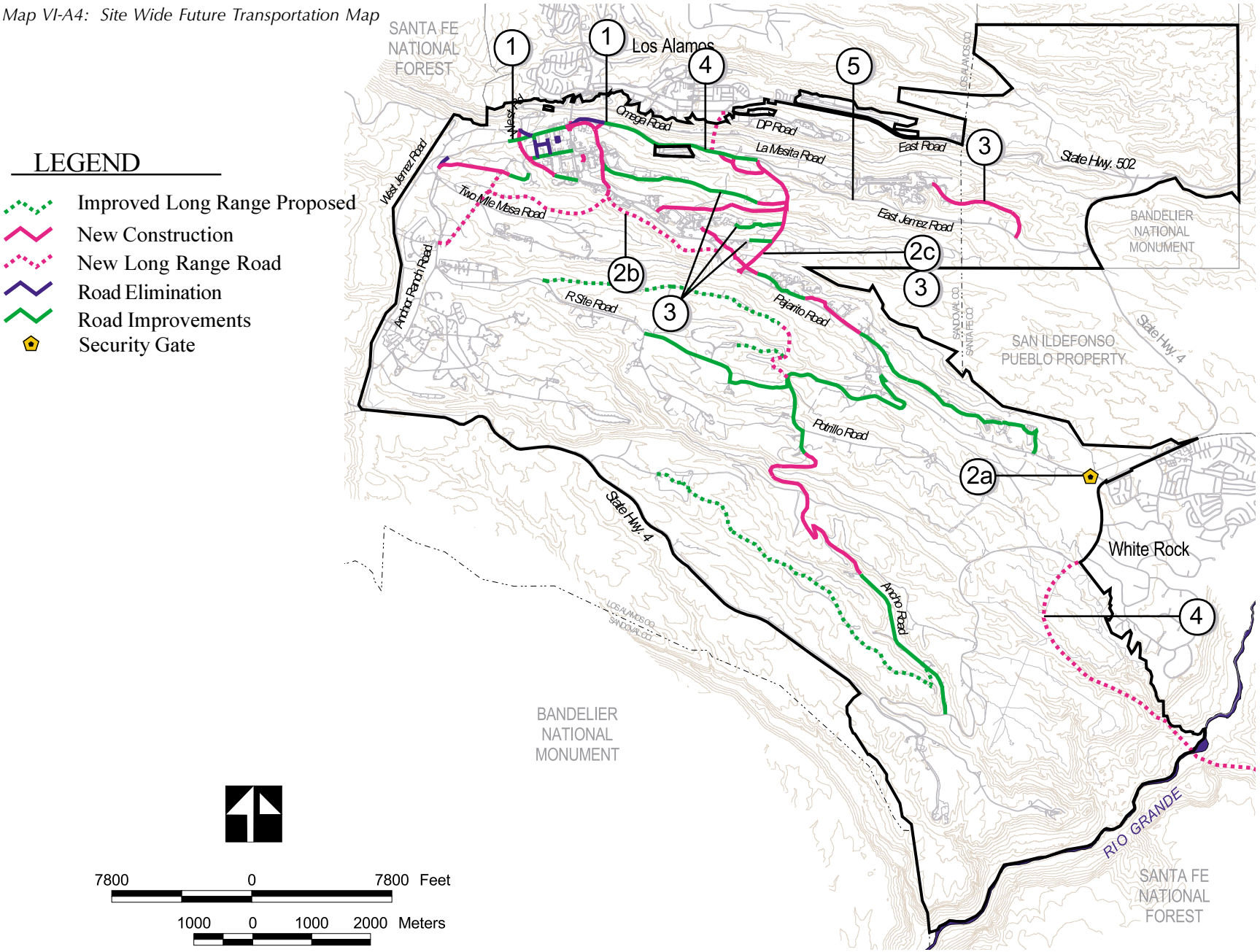
(4) ***Regional Connection to Santa Fe-*** A long range regional road connection to Santa Fe and Albuquerque needs to be considered. A second major access to Los Alamos is a safety and security need.

(5) ***Upgrade East Jemez Road -*** Traffic increases are projected for East Jemez Road if Pajarito Road is closed to public traffic. Improving the total length of East Jemez Road is proposed if the closure occurs.

*ns* ***Develop Pedestrian Trails -*** The Laboratory staff desires bicycle and pedestrian trails for both work and recreational purposes. These trails can also serve dual purposes as fire access, utility corridors and unpaved emergency access. Proposed improvements for pedestrians and bicyclists are included in the Core Area and LANSCE Mesa Planning Areas.

*ns* ***Integrate Transit Use -*** As space for surface parking becomes more restricted, the need to integrate transit planning increases. Projects to incorporate transit facilities into parking relocation plans for TA-03 are underway. Site wide transit planning is needed on this issue.

*Map VI-A4: Site Wide Future Transportation Map*



## 4. Security

### Security Goal and Objectives

The Laboratory's physical goal for security/safeguards is to maintain and strengthen security protection through long-term site development planning. This goal can be accomplished through the following objectives:

- Consolidate secure functions and interests to the extent permitted by other Laboratory functional and technical requirements.
- Limit public access to, and visibility of, limited-security and Category I & II SNM areas.
- Minimize public proximity to secured areas by locating public interface functions at the perimeter of the site.
- Establish buffer zones to protect limited-security and Category I & II SNM areas from unauthorized access.
- Surround or buffer higher-security functions with lesser-security functions to protect and insulate these functions from security threats.

### Security Policies

The following policies are proposed to guide the Laboratory's security/safeguards decision-making process:

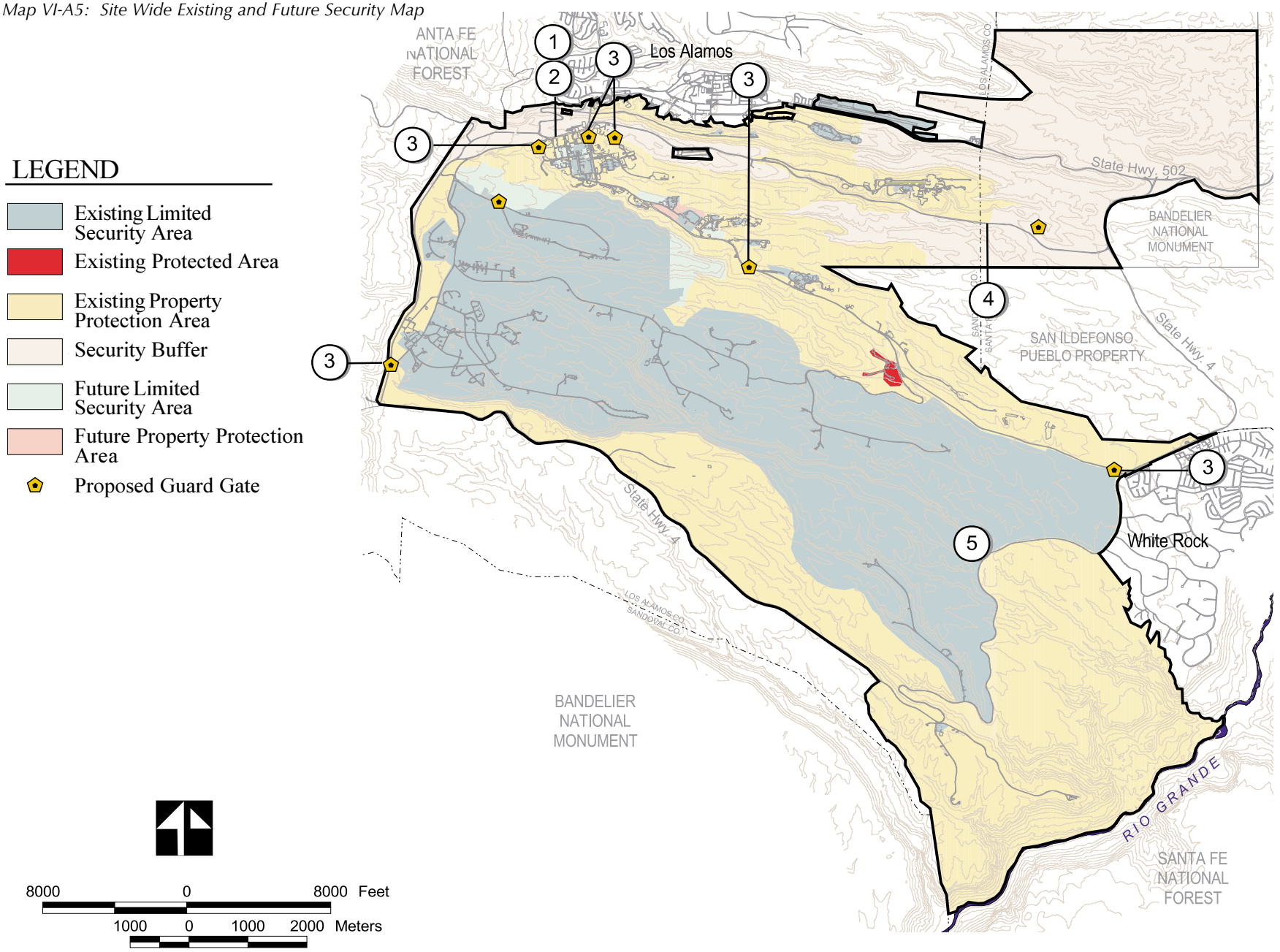
- Enhance awareness of physical security threats through education of all Laboratory personnel as necessary to help identify potential problems before any incident occurs.
- Consolidate all Category I & II SNM in as few areas as possible to enhance safeguards and security.
- Minimize the number of limited-security areas to the extent permitted by programmatic needs to consolidate and buffer such operations.
- Provide new road linkages between selected points to enhance security and emergency response time capabilities and to lessen reliance on public roads for operational activities.
- Construct peripheral roads and parking to minimize private vehicle access to secure sensitive areas.

The Site Wide Existing and Future Security Map,VI-A5, shows current and proposed projects that support the security goal, objectives and policies.

1. Establish a secure, centrally located storage facility for inactive classified documents.
2. Complete the industrial security perimeter fence around TA-03 and construct visible entry points that can be optionally staffed.
3. Provide capability to control access at Laboratory entry portals.
4. Widen East Jemez Road and make related intersection improvements so that public use and access along Pajarito Road can be de-emphasized.
5. Install fencing or other deterrents between NM 4 and the southeast boundary of the Dynamic Testing Planning Area.

- Continue to fence, sign, and enhance patrols of all Laboratory lands to discourage illegal and undesirable activities such as poaching, unauthorized entry, and vandalism as well as erosion and habitat degradation.
- Close Pajarito Road to public access when limited-security islands along Pajarito Road and the southeast portion of TA-03 expand toward each other. Reroute traffic to the TA-03 bypass roads, after they are constructed.

*Map VI-A5: Site Wide Existing and Future Security Map*



## 5. Utilities

Utility efforts that affect the Laboratory at the site wide level are the focus of this section. Minor defects are not considered unless they are part of a major issue. Major issues are categorized into three areas of concern.

**System Condition -** Analysis of overall system integrity. Data from maintenance reports, repair logs, and scheduled inspections support these conclusions.

**System Materials -** Analysis of systems' main and connecting materials. Data from design documents, construction as-builts, and repair notes support materials mapping.

**System Capacities -** Analysis of current system capacities and demands. Data from previous reports and field investigations have located pinch points and delivery failures.

Utility systems include major facilities on the site. The sewage treatment plant is 3 years old and has had award-winning operation. It is a model facility recognized by state and federal agencies. Electricity and steam are generated at the TA-03 power plant. Steam is also generated at TA-21. The TA-16 generation plant is dormant and scheduled for demolition.

### a. Water System

Programs underway involve a leak study to detect defects in the water distribution system, possible replacement of asbestos-tainted piping, and expansion to link several new facilities into the fire protection loop.

#### *Water System Condition*

Los Alamos National Laboratory's water system is generally in good condition. However, two areas of concern are pressure consistency and fire supply lines. Water pressure consistency is a particular problem in the areas of lower elevation where the water pressure often exceeds the pressure rating for the distribution pipe.

The second concern involves inadequate fire lines. Traditionally, fire hydrants are connected to pipes that are at least 6 inches in diameter. Laboratory water service lines that provide water for fire protection need to be replaced if they have diameters that are less than 6 inches.

#### *Water System Materials*

Asbestos cement pipe is no longer used for domestic services in the United States. The Laboratory has approximately 28,425 linear feet of asbestos cement pipeline. This pipe is located in TAs-15, -50 and -53. To resolve this problem, new service leads should be installed in lieu of connections to the asbestos cement pipe. Cast iron and steel piping can be problematic if not lined or protected from corrosion. Segments should be inspected individually to determine if the pipelines require remedial action or replacement within the next 10 years.

#### *Water System Capacities*

Currently, there are no site wide issues regarding the availability or capacity of the water distribution system.

### b. Sanitary Sewer System

The Laboratory has an aggressive sanitary sewer system maintenance and inspection program. It involves daily and monthly inspections of the lift stations and annual assessment of the pipelines.

#### *Sewer System Condition*

The sanitary system is generally in good condition.

#### *Sewer System Materials*

Replacement of asbestos cement piping for health and safety reasons related to the asbestos in the pipe material is currently being considered. The Laboratory has approximately 3,435 linear feet of asbestos cement sewer pipe. This pipe exists in several technical areas: TA-03, TA-18, TA-50 and TA-59. Where feasible, these sections will be replaced or bypassed with new mains.

Vitrified clay pipe, which is brittle, and cast iron and steel pipes, which are subject to corrosion if unlined, are continually inspected and assessed. If the pipes are found to be damaged or degrading, appropriate remedial action will be taken.

#### *Sewer System Capacities*

Individual pipe segments throughout the Laboratory's sanitary sewer system have inadequate slopes. These segments are prone to clogging. Flat sections should be replaced with lines that possess a minimum flow velocity of 2 feet per second. The lines are then self-clearing.

### c. Solid Waste

Both the Laboratory and Los Alamos County use the same county sanitary landfill, located in the western portion of TA-61. The anticipated life of the landfill is estimated to be about 5 years. Upon closure, the Laboratory anticipates sending sanitary solid waste to a proposed regional landfill near the village of Ojo Caliente. Operations at this proposed site are anticipated to begin in the next 5 years.

### d. Radioactive Liquid Waste Collection and Treatment

Radioactive liquid waste is generated from a variety of chemical laboratory and production activities conducted at many locations throughout the Laboratory. The majority of the liquid waste streams are transferred by direct pipeline between the generating facilities and the treatment facilities. Liquid waste streams from several facilities are transferred via truck transport to the main treatment facility at TA-50. Trucked liquid waste averages one truck per month at 700 to 800 gallons.

Radioactive liquid waste currently is treated at three on-site locations.

**TA-50** The major facility is the Radioactive Liquid Waste Treatment Facility (RLWTF) at TA-50. This facility is 38 years old and nearing the end of its functional life. A replacement facility needs to be planned.

**TA-21** The existing satellite treatment facility at TA-21 Building 257 will be converted into a holding station for tritiated aqueous TSTA waste prior to transport to TA-53 evaporation basins. It is anticipated that this capability will be required until the termination of TSTA operations in 2-5 years.

**TA-53** A third treatment facility is located at TA-53. This system is dedicated to TA-53 operations and tritiated wastewater trucked in from other Laboratory facilities.

## e. Natural Gas System

### Natural Gas System Condition

In general, the Laboratory's gas system is old. Almost half of the gas system was installed in the 1950s and another third in the 1960s.

Important natural gas system projects:

- A major repair project in the planning stage is slip-lining a 10-inch steel pipe which connects Tech Meter Two to the gas grid system on East Jemez Road. Short-term plans are to slip-line it with an 8-inch polyethylene (PE) sleeve. Long-term plans include replacement of the pipe.

- Possible replacement of the uncoated steel natural gas main line which was installed in the 1950s within the next 10 years.

### Natural Gas System Materials

At present, site distribution is via approximately 62 miles of pipe. Ninety-five percent of this pipe is made of carbon steel. Carbon steel pipe is susceptible to corrosion through cathodic attack. A small percentage of the steel pipe is now slip-lined with polyethylene plastic to repair for leaks. Direct burial PE piping is more cost effective than steel and can be maintained without cathodic protection. 90% of the natural gas system was constructed prior to 1985. In 1985 PE piping was introduced as an alternate material for low pressure gas piping. While PE pipe is the material of choice, steel is used when a section of steel piping is replaced because of cathodic protection requirements. Steel is also used for canyon crossings and above ground installations where strength considerations are also necessary.

### Natural Gas System Capacities

Utilizing computer modeling and empirical methods, the Laboratory has identified areas of concern. These issues include the following:

- At present, no redundant border metering station capable of supplying full capacity gas demand exists. Redundancy is necessary, since failure of Tech Meter One could curtail a large percentage of Laboratory operations. Funding for this addition is being pursued for FY 2000.

- Tech Meter Three is currently located in an area inaccessible due to radiation in the area.

- The 3-inch gas pipe running from Diamond Drive east on Pajarito Road, serving TA-54, is too small to carry peak load capacity. Current plans are to upgrade this pipe to a 6-inch line. This project is tentatively scheduled for design in FY 2000.

- A restriction of unknown origin exists in the 6-inch pipe along East Jemez Road east of the Royal Crest Trailer Court. Specific plans for this pipe have not yet been developed.

## f. Steam System

Los Alamos National Laboratory has two primary sources of steam: the power plant in TA-03 and the TA-21 steam plant.

### Steam System Condition

The steam system supply lines are in good condition. Steam return or condensate lines are a continuing maintenance problem. The return system is being gradually upgraded by replacing fiberglass piping with steel. An analysis of repair logs for 1997, 1998, and 1999 also identified areas of "high repair density." These high-repair areas need complete replacement projects.

### Steam System Materials

In order to solve earlier leak problems, a Bondstrand synthetic, fiberglass condensate was installed in the 1980s. This material does not blister or corrode; however, it does not withstand high steam temperatures. When steam enters a Bondstrand pipe section, the pipe cracks and shatters. An analysis has located areas of Bondstrand condensate pipe and defined replacement projects.

### Steam System Capacities

The power and generation plants have the capacity to deliver three times current demand. Central steam is an obsolete system but is too costly to change in developed areas. For new facilities and where feasible, gas heating should be considered a viable substitute for steam systems.

### g. Communications

The central goal of voice, data, and video communications planning at the Laboratory is to provide an effective, secure, and economical communications system that helps maximize the productivity of employees in accomplishing the Laboratory's mission.

A key factor for providing effective communication service is staying abreast of and applying new technologies. The Laboratory telecommunications system has undergone a major change with the completion of the Los Alamos Integrated Communications System (LAICS) that provides analog and digital switching now and well into the next decade.

The fiber infrastructure consists of 74 miles of fiber cable and 34,000 terminated fibers. This provides a flexible, fiber-optic distribution system for routing connections to the campus's high-performance switching fabric for 624 buildings. The copper infrastructure consists of 62,600 outside plant copper cable pairs distributed throughout the Laboratory. The supporting infrastructure for the copper and fiber feeder and distribution system is provided through the use of a combination of direct buried, aerial and underground (21 miles) duct banks.

### h. Electrical System

Currently, electrical power for Los Alamos National Laboratory is supplied from the DOE/Los Alamos County power pool. The Laboratory's on-site generation capabilities consist of three natural gas fired boilers, which supply three turbine generators. These turbine generators are rated at a total generating capacity of 20 megawatts. They are also used for emergency power and as spinning reserves for the power pool.

The Laboratory's distribution and utilization network consists of 59.5 miles of underground cable, 105.4 miles of overhead wire, 594 pole-mounted transformers, 329 pad-mounted transformers, 3,113 poles, 47 MVA of capacitors, numerous fuses, lighting arrestors and 11 switchgear lineups. The system has a total connected capacity of 299.4 MVA.

To provide maintenance and construction support, the Laboratory has two programs in place and is developing a pilot program. The first method is a computerized preventive maintenance program (PMP) in which a 15-member JCNNM crew performs both maintenance and construction. The second program is breaker maintenance. On a regular schedule, a crew removes circuit breakers from switchgears for cleaning, inspection, and relay testing. A metering network pilot program that monitors power usage and logs events that occur in the utilization systems is also used.

#### *Electrical System Condition*

Although the Laboratory's electrical system is generally in good operating condition, specific concerns require attention.

- The 13.8-kV switchgear and oil circuit breakers (OCBs) at several locations are 30-40 years old and obsolete. Replacement parts are often no longer available. A budget item must be placed in each fiscal year business plan for ongoing replacement of inadequate switchgear until all have been replaced. Hazardous failures have already occurred and will continue unless corrective action is taken.

- Five 115-kV/13.8-kV step-down transformers provide all the electric power delivered to the Laboratory and the Los Alamos town site. The transformers were installed in 1957, 1964, and 1969 and should be on a program for replacement.

- Transformer capacity redundancy is presently inadequate. Consideration should be given to adding additional units before replacing older units so that shortfalls in redundancy are corrected as soon as feasible.

- Presently, two 115-kV transmission lines carry all the bulk electric power for the Laboratory, the Los Alamos town site and White Rock. Both lines terminate on a common bus. A third 115-kV transmission line is planned to interconnect Public Service Company of New Mexico (PNM) with the Laboratory's power system at a new and physically separate 115-kV switchyard from the termination point of the original two lines. This will provide redundancy and increase reliability and security.

- Two-thirds of the Laboratory's 13.8-kV distribution system is run overhead. Where feasible, such distribution lines should be relocated to underground duct banks to improve reliability and increase the security of the system.

- One-third of the lightning-caused interruptions occur on the single S-17 13.8-kV distribution circuit. Improved insulation coordination on this circuit, the Laboratory's longest aerial circuit, is a specific upgrade that can improve distribution system reliability for the entire site.

- Significant and chronic over-design of low-voltage delivery facilities represents a major continuous loss of electrical energy due to core and coil losses. Replacement of old and poor equipment with properly sized equipment would mitigate this problem. A program to relocate serviceable equipment to sites more befitting their sizing could be part of the replacement program.

***Electrical System Materials***

Since 1982 the Laboratory has been replacing old and outdated underground cable with modern ethylene-propylene-rubber (EPR) insulated cable. Over 90,000 linear feet of old cable remain. That old cable must be replaced before increased end-of-life failure rates become disruptive.

There are 31 PCB-contaminated transformers spread across the Laboratory. Some also contain perchloroethylene – a RCRA-listed material. These transformers should either be replaced or refilled with a suitable dielectric fluid to mitigate the PCB and RCRA concerns.

***Electrical System Capacities***

Portions of the 13.8-kV aerial distribution lines are not adequate to carry the anticipated loads. To carry the additional distribution loads, reconductoring existing circuits and adding new circuits to accommodate the heavier conductors are essential.

The Norton transmission line is limited to 120 MVA in its present configuration. The Norton line is not adequate to carry electrical loads greater than 75 MW if the TA-03 power plant and the PNM-Reeves line were out of service. The Norton line can be reconductored to a capacity of over 200 MVA, so that it could carry existing and future loads alone, but with reliability solely dependent upon its integrity. Enhancement of load-serving capability either through increased transmission/transformation capability or through the addition of on-site generation capability will increase the fault-duty of the Laboratory's power distribution system. This could result in exceeding the fault-duty rating for a significant amount of Laboratory low-voltage systems at the building-wiring level and must be included in the planning for future system upgrades.

*Figure VI-A2: Electrical Substation*

### *Strategies for Utility Infrastructure*

The following strategies were identified for utilities infrastructure during the Comprehensive Site Plan process:

- Continue to replace obsolete materials and inefficient system components.
- Define and use utility corridors.
- Create redundancy in utility systems both on-site and regionally.
- Design for system and area needs versus single-project needs.
- Plan infrastructure as private sector developers would for the long-term and total demand.
- Integrate building maintenance plans with comprehensive planning goals to promote cost savings, productivity and energy efficiency.
- Participate in regional efforts related to
  - utility supply improvements,
  - water management,
  - power pool,
  - emergency services, and
  - landfill.
- Continue to investigate alternative resources such as microturbines, solar, etc.

## 6. Facilities

In FY98, the Laboratory spent about $115 million on space costs. Currently, there are approximately 7.8 million gross square feet of facility space on-site. Additionally, the Laboratory leases about 281,000 square feet of space in Los Alamos, White Rock, Española, and Santa Fe. In total, the space is distributed as follows: 95% administration, 2% support, 2% storage, and 1% laboratories. Effective and cost-efficient management of this large amount of space is a critical effort at the Laboratory.

### Revitalized Space Management Process

With the evolution of the Laboratory's distributed facility management model, the need to reevaluate the Laboratory's current space management process has become apparent. The Facilities and Waste Operations Division (FWO) is preparing a recommendation to revitalize the Laboratory's space management activities as a fully integrated formal process.

The purpose of the integrated space management process is to manage the Laboratory's physical assets as valuable national resources. The management of physical assets, from acquisition through operation and disposition, is intended to be an integrated and comprehensive process linking the various life cycle phases.

The cornerstone of the integrated space management program will be a space utilization target, or setpoint, for each line organization or program. This setpoint will be the total square footage of space allocated to each Laboratory line organization and program. The Laboratory's Senior Executive Team (SET) will be responsible for reviewing each organization for alignment with its target space allocation. This evaluation will be based upon an analysis by FWO.

In concert with the utilization target, the SET will establish priorities among programs and activities as they impact space needs. These priorities will be determined on the basis of comprehensive facilities planning by the Project Management Division.

Success of the integrated space management program will rely upon the leadership of specific entities with specific responsibilities.

***Senior Executive Team (SET)***

- To promote a culture that recognizes space as Laboratory "community property."

***Site Planning and Construction Committee (SPCC)***

- To establish space utilization standards.

***Line/Program Organization Managers***

- To provide reports of the population in space assigned to their respective organizations.
- To develop plans and implement actions consistent with SPCC guidance that will align their organizations to their space utilization setpoint.

***Facility Managers (FM)***

- To allocate space within utilization standards and use and activity priorities adopted/established by the SET.

***Facilities and Waste Operations (FWO)***

- To provide to the SET reports on the utilization of all Laboratory space.
- To facilitate the disposal of excess space per LIR 230-01-01.0, Laboratory Excess Space and Surplus Facility Requirements.
- To develop space utilization standards and recommendations for SPCC consideration.
- To expand and maintain the Laboratory's space database and its user interface capabilities.

### *Facilities Management Strategies*

Facilities space management strategies that have been identified by the stakeholders during the Comprehensive Site Plan process include the following:

- Create an integrated space management process.
- Replace temporary structures with permanent space.
- Avoid reinvestment in substandard space.
- Prioritize infill uses first.
- Relocate off-site Laboratory facilities and space to Laboratory sites.
- Reorganize facilities to bring disbursed program components into closer physical proximity to each other.
- Colocate like types of functions.
- Construct to commercial quality standards.
- Design flexibility of use and function into space standards.

## 7. Quality Environment

The physical setting of Los Alamos is spectacular and beautiful. There are panoramic views across the Rio Grande Valley to the Sangre de Cristo Mountains, and the Jemez Mountains provide a dramatic backdrop. The steep canyons and narrow fingerlike mesas, enhanced by the mountain flora and fauna and mild climate, create an enchanting environment for the Laboratory. Properly managed, this physical setting is a powerful asset for the Laboratory, providing an environment that attracts quality staff.

Los Alamos was established in response to a national emergency and continued to operate under intense pressure during the Cold War era. Much of the man-made environment resulted in an austere, military/industrial appearance. Given the Laboratory's intense focus, the development was appropriate for the time.

As the Laboratory faces new challenges of the 21st century, the Laboratory's physical plant must change. No longer a rushed national venture, the Laboratory is now a firmly founded national institution with a long, proud heritage. It must now reinvent itself to meet the future. There are critical mission-related reasons for improving the Laboratory environment.

***a.*** ***Quality Personnel -*** Los Alamos National Laboratory's greatest asset is its people. Today, the Laboratory competes on a global and national scale for the best and the brightest, not just with other governmental agencies but with private industry as well. Potential employees now assess the quality of the environment they will work in as well as the work they will do. Most expect a quality corporate campus and research park environment. In order to compete well, the Laboratory needs to address this perception.

***b.*** ***Quality Private Partnerships*** - In the future the Laboratory will need to strengthen partnerships with private industry. As the Laboratory looks for these partners, it will need to once again assess the quality of the environment.

***c.*** ***Quality Investment -*** The Laboratory needs to address the quality of its investments.In private life we often judge people and organizations by the visual quality of the space they occupy and maintain. This evaluation is one way to assess the management capabilities of a group. When careful thought and planning is taken to care for investments, those investments look better and function better for longer periods of time.

The Laboratory now faces a period in which opportunities for revitalizing the quality of the Laboratory environment are available. The following are some opportunities:

- Revitalization of TA-03.
- Replacement of many facilities which have exceeded their design life and need replacement or revitalized space soon.
- Replacement of substandard temporary space with permanent facilities.
- Development of new initiatives and programs that require new types of facilities.
- Establishment of heightened security that may require the relocation of some secure activities and possibly changes to the site wide transportation system.
- Improvement of site wide transportation to reduce conflicts between public and Laboratory traffic, between service and general traffic, between automobile and pedestrian/bicycle traffic.

The Laboratory recently published *Site and Architectural Design Principles*, a document that presents principles and guidelines for upgrading the quality of site wide development. The document presents a review of guidelines for improvements to the Laboratory's entrances, land development and siting, transportation, parking, pedestrian accommodations, landscaping, open spaces, security, safety, and architectural and visual image.

These principles need to be incorporated and budgeted into the requirements for all new projects at the Laboratory. This incremental process of incorporating site wide quality standards into new projects will, over time, have an impact-if they are firmly required and implemented on each project.

There is another level of improvements-those that are institutional in nature rather than project related, such as site wide signage and landscaping of open space linkages between buildings. These need a mechanism for funding and implementation that is identified and empowered by the Laboratory.

The following are current projects that support the strategies for quality environment:

- Planned pedestrian and area improvements related to SCC and NISC.
- Budgeted improvements for shuttle bus shelters at TA-03.
- Proposed revitalization of TA-03.
- Proposed trail and walkway improvements at the LANSCE Mesa Planning Area.
- Proposed architectural, pedestrian and parking improvements at the Experimental Engineering Planning Area.
- Proposed site wide signage and monumentation plan.

### *Strategies for Quality Environment*

The following are strategies for achieving and maintaining a quality Laboratory environment:

- Incorporate the Laboratory's *Site and Architectural Design Principles* into all new project requirements; in particular, incorporate architectural finishes, pedestrian improvements, transit facilities and landscaping.
- Develop a pedestrian campus environment at TA-03.
- Develop pedestrian environments where on-site population is clustered.
- Integrate pedestrian and bicycle improvements with infrastructure projects, i.e., jogging trails over utility corridors and walks with roadways.

# B. Core Planning Area

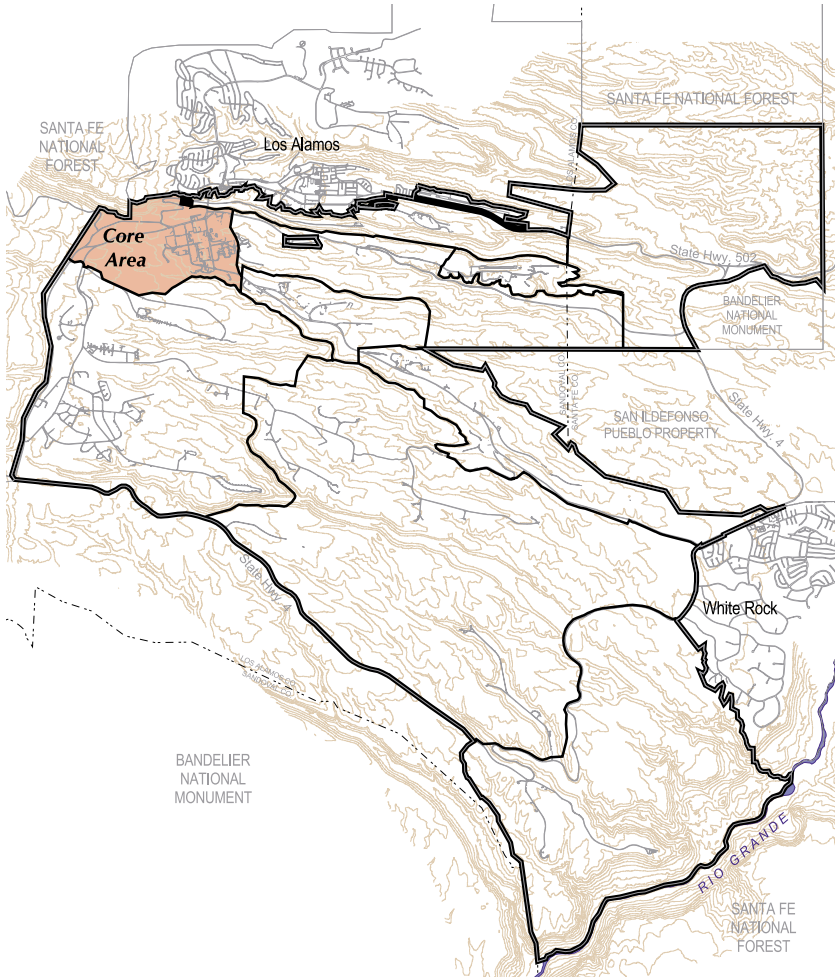
## 1. General Description

The Core Planning Area is in the northwest corner of the Laboratory and encompasses 2 square miles. It contains the majority of the Laboratory's population, buildings and infrastructure. The Core Planning Area, see Map VI-B1, is the heart of the Laboratory and is its central business district. All major roads within the Laboratory lead to this area. The Core Planning Area includes TAs-03, -06, -58, -59, -60, -61, and -62.

The following planning assumptions will guide the physical planning of the Core Planning Area for the next 10 years:

- *The Core Planning Area will remain the Laboratory administrative center.*
- *The Core Planning Area will house*
  - *theoretical and computational science,*
  - *experimental science to a limited degree,*
  - *biosciences growth as it becomes the "third pillar" at the Laboratory,*
  - *the Strategic Computing Complex (SCC), and*
  - *the Nonproliferation and International Security Center (NISC).*
- *SNM activities will be removed from the Chemical and Metallurgy Research (CMR) Building within 10 years.*
- *Major support functions and services will be relocated to Sigma Mesa.*
- *TA-03 will be the area for primary public interface.*
- *The Research Park north of TA-03 will be the primary interface area with private research and development firms.*
- *The Core Planning Area will be the initial focus of the Laboratory's revitalization efforts to replace older buildings.*

*Map VI-B1: Core Planning Area Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Core Planning Area.

### Physical Constraints

In the Core Planning Area, the land use for TAs-58, -62, and portions of -06 and -69 is essentially Reserve, with ongoing archeological survey areas with them. Federally protected species habitat areas encompass the northern portions of TAs-03, -61 and -62. One-hundred-year floodplains and associated and isolated wetlands exist throughout the area. TAs-06, -58, and -69 have severe to moderate topographic (slope) constraints.

The seismic surface rupture hazard is probably very low in the Core Planning Area. TA-03 lies within a structurally complex zone at the southern end of the Diamond Drive graben. In TA-03, the worst-case scenario would affect facilities sited directly on a principal rupture plane of a potentially active fault.

Although the probabilities for seismic surface rupture are extremely low, the Rendija Canyon fault zone, the Pajarito fault zone, and the east-southeast trending cross faults must be considered potentially active, or "capable" in the definitions for the Code of Federal Regulations. For facility siting and new construction, these capable fault zones should be treated in a fashion similar to the special study zones of the state of California. Project-specific fault investigations should be conducted, and siting new facilities over a potentially active fault should be avoided.

### Operational Constraints

Point nuclear sources in TA-03 create safety analysis report (SAR) areas that lead to development and adjacency restrictions. Affected areas cover most of TA-03 and portions of TAs-06, -58, -59, -60, -62, and -69. Work within these areas is restricted to Laboratory and Laboratory contractor personnel only. The Sigma Building and two of its adjacent facilities (03-35 and 03-141) house nuclear materials. The Sigma Building is also the site of a solid waste management unit (SWMU). These uses create serious adjacency issues in this planning area.

Several facilities within the Core Planning Area have Nuclear Facilities Authorization Basis (NFAB) restrictions. These restrictions are specific regarding availability and reliability of water and electrical supplies that must exist in order to operate these facilities. Future development could affect the NFAB – most notably the new Strategic Computing Complex (SCC) facility's electrical needs.

The planning area has several fuel storage tanks and other potential release sites (PRS) which could constrain development on or near their locations.

The eastern portions of TA-03 have several support facilities such as the steam plant, the gas cylinder plant, and maintenance operations. The major constraints on these sites involve effects on redevelopment costs, particularly for relocation of infrastructure, demolition and site remediation.

Other broad scale constraints include the CMR building's nuclear materials R&D activity and exhaust stack noise levels that result in noise complaints from as far away as White Rock.

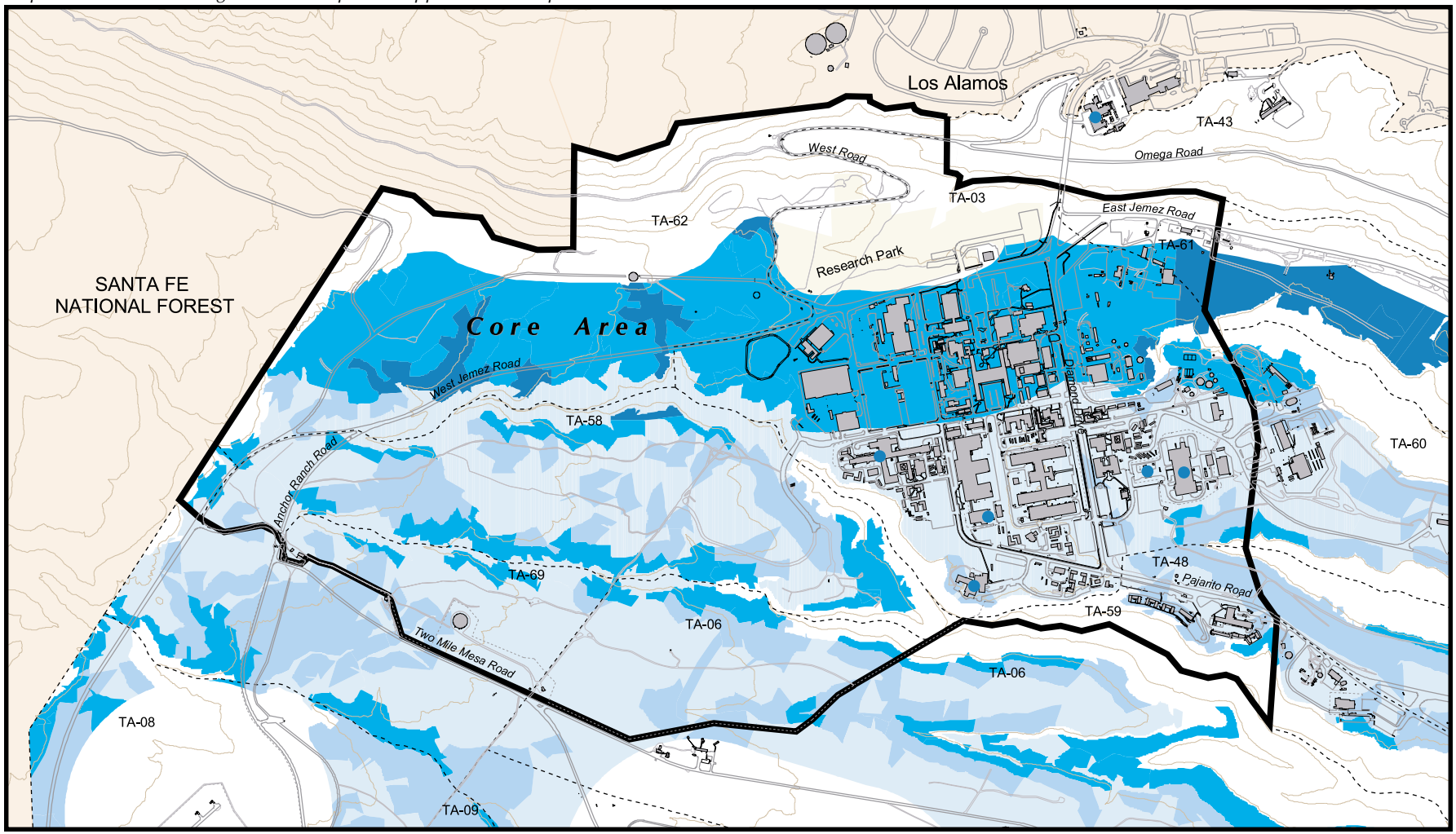
The Core Planning Area has a number of buildings listed as "Exceptionally High Risk" for a seismic event, including in TA-03, Buildings 29, 30, 38, 39, 43, 66, 70, 123, 132, 200, 207, 316, and 422, totaling 1.75 million square feet, and in TA-59, Building 1, containing 53,900 square feet. The Research Park north of TA-03 will preclude development of Laboratory facilities in that area.

### Development Opportunities

Major development opportunities become available with the relocation of CMR activities to TA-55 and the relocation of major support facilities to the Sigma Mesa Planning Area.

Approximately 200 acres are available for development in TAs-58, and -69 as shown on Map VI-B2. In the western portion of TA-06, road and utility improvements need to be extended to develop these areas.

*Map VI-B2: Core Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

1500 0 1500 Feet

500 0 500 Meters

## 3. Projects for the Core Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-B3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the Summary Map.

### Development of Strategic Computing Capabilities

1. Budgeted construction of SCC building.
2. Budgeted construction of parking lots to replace lots removed by SCC/NISC.

### Development of NIS Initiatives

3. Budgeted construction of NISC building.

### Revitalization of TA-03

4. Proposed removal of Administration, Sherwood, Scylac and JCNNM buildings and trailers and transportables.
5. Proposed replacement with new Administration facility, an office building for classified use, an office building for unclassified use.
6. Planned development of pedestrian campus environment around new facilities.
7. Proposed pedestrian mall and site landscaping with utility corridors.

### Non-Nuclear Activities

8. Planned expansion of Sigma facilities.
9. Considered reuse of CMR building for other new programmatic issues.

### Land Use Development

10. Proposed extension of roads and utilities to TA-58 and-69 to prepare for future development and to establish new vehicular links with the Experimental Engineering Planning Area.

### Security Development

11. Planned relocation of SNM activities from CMR to TA-55.
12. Proposed building of guard gates to control access to TA-03.
13. Proposed closure of Pajarito Road to public access. Closure at RT4 or near TA-66.

### Transportation Development

14. Planned development of west loop road at TA-03 to reduce public through traffic.
15. Planned development of east loop road at TA-03 to reduce public traffic through TA-03.
16. Planned redesign of Omega Bridge/Diamond Drive intersection for safety concerns.
17. Proposed upgrade of traffic controls and intersection along West Jemez Road in response to new development at TA-03.
18. Proposed elimination of Bikini Atoll and Parry Roads to remove central area vehicular traffic.
19. Proposed upgrade of West Mercury Road to correct deficiencies.
20. Planned establishment of bus stops for shuttle system to outlying parking lots.
21. Proposed creation of bicycle and pedestrian path/trails system for alternative transportation.

*NS* Long term planning for TA-03 revitalization should provide replacement lighting for the adjoining roads and walks on the SCC perimeter.

### Infrastructure Revitalization

22. Planned initial phase of sewer upsizing to correct capacity issue:
    - replace Mercury Road collector pipe
    - replace 10-inch line to WW Treatment facility
23. Budgeted replacement of steel steam line at Omega Bridge to replace leaking section.

*NS* Ongoing utility revitalization activities as noted in Site Wide Planning Area section.

### Quality Environment Development

*NS* Proposed TA-03 signage and monumentation improvements.

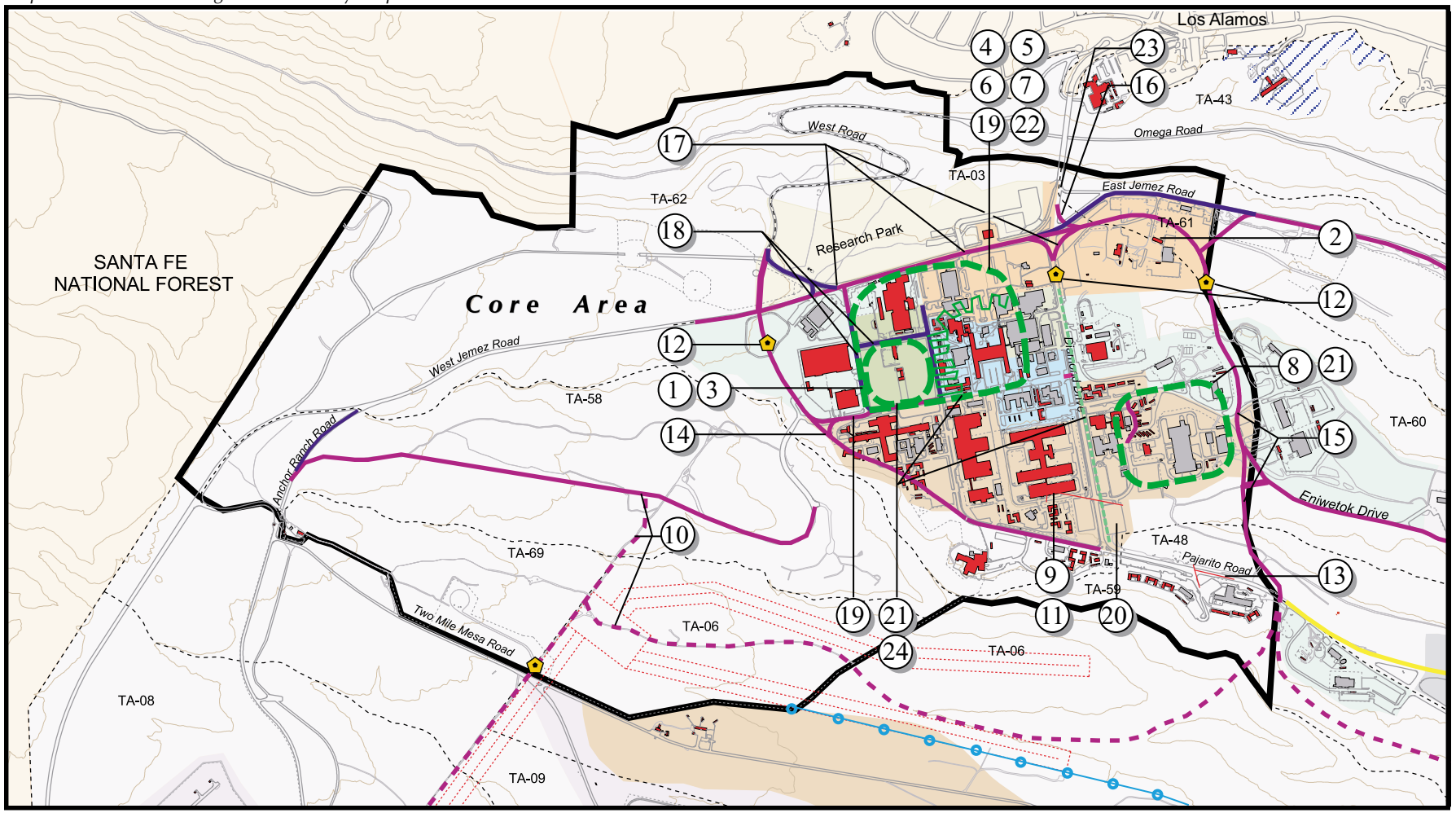
24. Proposed pedestrian mall and campus landscaping.

### CSP 2000 Issues for Core Planning Area

Important issues that need discussion for continued refinement of the CSP planning for this area:

- *What should happen to CMR after SNM activities vacate the building? Are there alternatives to demolition?*
- *Security has stated that all Category I and II security be eliminated from the Core Planning Area. What should be the process to accomplish this?*

*Map VI-B3: Core Planning Area Summary Map*




LEGEND

- Administration
- Experimental Science
- High Explosives R&D
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Public/Corporate Interface
- Research Park
- Reserve
- Theoretical/Computational Science
- Land Transfer Tracts
- Planning Area
- Poor or Failed Bldg.
- Area of Interest
- Electric Line 115 kV
- Proposed Elec. Line 115 kV
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Fences
- Proposed Guard Gate
- Proposed Pedestrian Improvements
- Road Elimination

1500 0 1500 Feet
500 0 500 Meters

# C. Pajarito Corridor West Planning Area

## 1. General Description

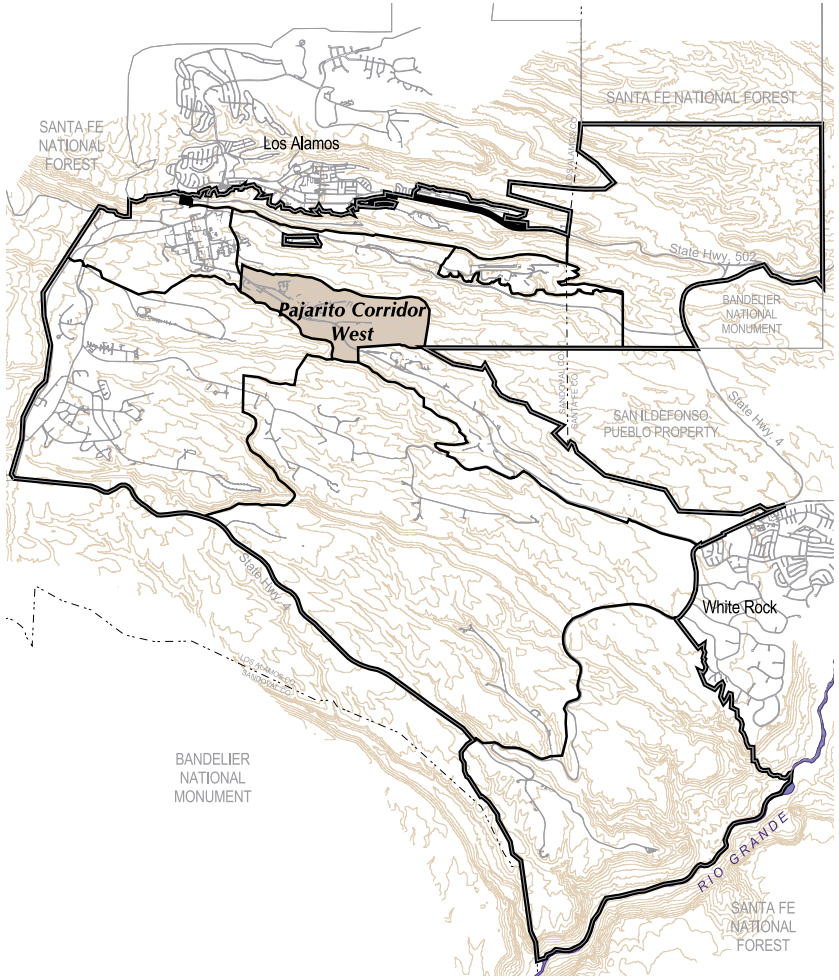
Pajarito Corridor West Planning Area lies between Mortandad Canyon on the north and Pajarito Canyon to the south as shown on Map VI-C1. Pajarito Road extends through the planning area for 1.7 miles, bisecting the area. Pajarito Corridor West Planning Area encompasses TAs-35, -48, -50, -52, -55, -63, -64, -66 and small portions of TAs-05 and -46.

The activities in the Pajarito Corridor West Planning Area are heavily focused on nuclear materials research and development, such as plutonium processing, nuclear safeguards research and development, and radiochemistry. Other work includes theoretical and computational activities, waste management and treatment, and industrial partnership activities.

The following assumptions will guide physical planning at the Pajarito Corridor West Planning Area for the next 10 years:

- *The Pajarito Corridor West Planning Area is the proposed location of the nuclear campus.*
- *The replacement CMR facility will be located at TA-55.*
- *SNM processing, storage and handling should be maximized in a single PIDAS-protected area at the nuclear campus.*
- *Other activities directly related to SNM should be located within the nuclear campus, but not necessarily within the PIDAS-protected area.*

*Map VI-C1: Pajarito Corridor West Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning within the Pajarito Corridor West Planning Area.

### Physical Constraints

Federally protected species habitat, their related buffer zones and the steep slope of Pajarito Canyon encompass a significant portion of the Pajarito Corridor West Planning Area. Adjacent to the northern boundary are 100-year floodplains and associated wetlands. There are also 100-year floodplains at the southwest and southeast boundaries. The planning area also contains isolated wetlands in the northern half of the site. Development of these environmentally sensitive areas is discouraged.

Regarding seismic concerns, the *Structural Geology of the Northwestern Portion of Los Alamos Laboratory, Rio Grande Rift, New Mexico: Implications for Seismic Surface Rupture Potential from TA-03 to TA-55* reports that TA-55 sits in a relatively simple geologic structure. For TA-55 and the eastern portions of the study area, the potential for seismic surface rupture is thought to be extremely low because virtually no deformation in the last 1.22 million years can be documented.

### Operational Constraints

Almost every major facility in the Pajarito Corridor West Planning Area has a nuclear source with associated safety analysis report (SAR) areas. Consequently this is one of the most-restricted areas at the Laboratory. Work within these areas is restricted to Laboratory and Laboratory contractor personnel only.

Various experiments are conducted in TA-35 that are very sensitive to vibrations. These experiments are normally conducted at night when there is less traffic and general activity.

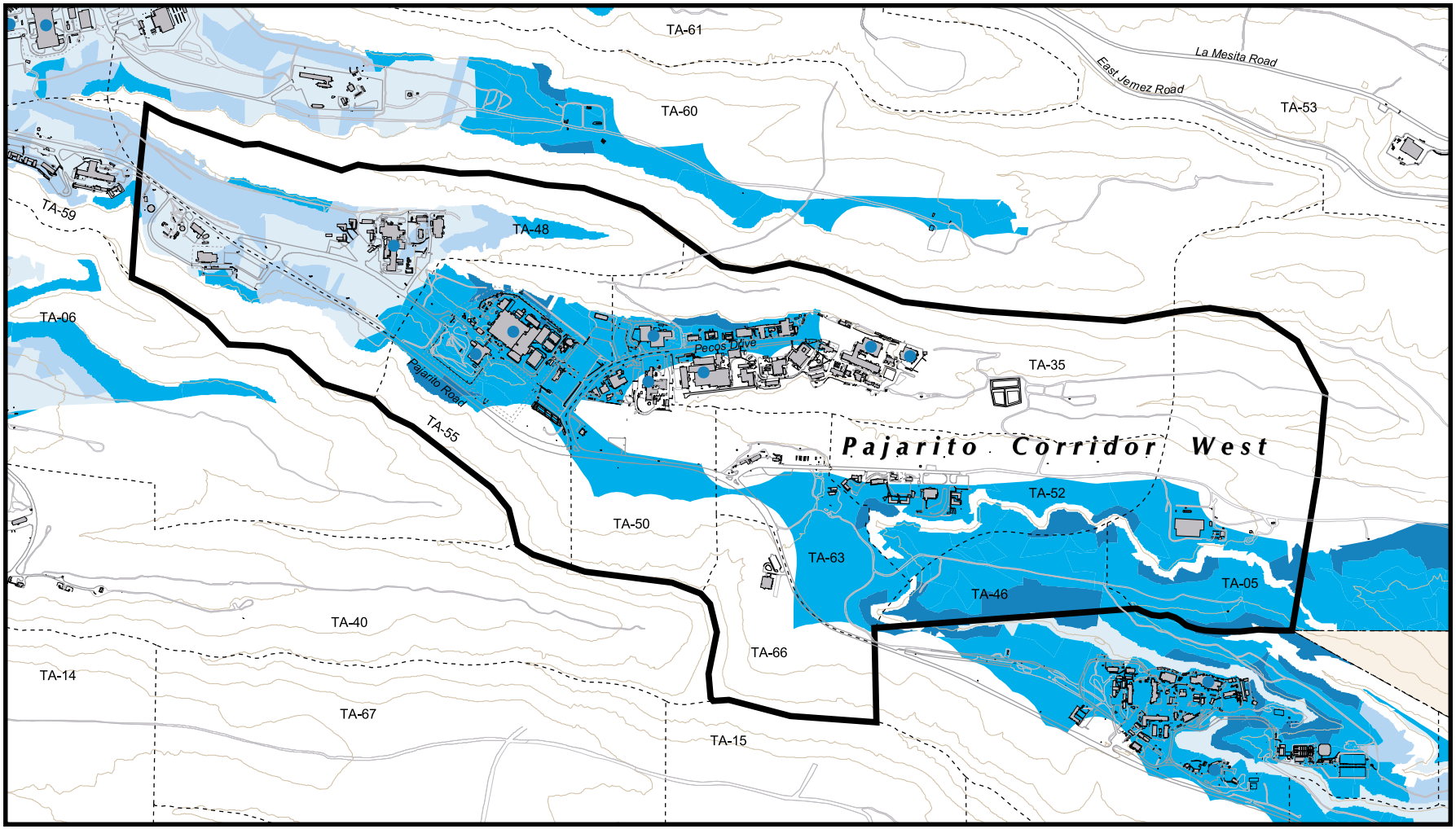
TA-50 is the primary location for Laboratory waste collection. The TA-50 waste facility complex is a hazardous, Category 3 nuclear facility. Radioactive liquid waste lines enter this facility from throughout the Laboratory. The current waste facility is 38 years old and nearing the end of its useful lifetime. There are eight radiation sources and contaminated areas in the northern half of TA-50. A possible new site for a radioactive waste treatment facility is TA-63. There is land available, and it is an appropriate location for siting such a facility.

Buildings identified as “Extremely High Risk” for seismic events within the Pajarito Corridor West Planning Area include Building 27 in TA-35 and Building 1 in TA-50.

### Development Opportunities

Significant development opportunities are limited in the Pajarito Corridor West Planning Area as shown in Map VI-C2. Small parcels of developable land exist, such as east and west of TA-48 and -52, in the central part of TA-50, south of Pajarito Road, and in the southeast area of TA-66. Infill development at TA-35 and -55 is possible if permanent buildings are built to replace the small, temporary structures scattered throughout the areas. Utility and road access in this planning area is readily available.

*Map VI-C2: Pajarito Corridor West Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

1500 0 1500 Feet
500 0 500 Meters

## 3. Projects for Pajarito Corridor West Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-C3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary sap.

### Development of Nuclear Campus

1. Planned replacement of CMR and SNM functions to new facility at TA-55.
2. Proposed reuse of target fabrication at TA-35.
3. Proposed replacement of waste facility at TA-50 because of life-cycle replacement need.
4. Planned radiographic facility.
5. Proposed removal of trailers and transportables and replacement with permanent buildings.
6. Proposed long-term relocation or reuse of nonnuclear and public interface facilities within the nuclear campus, including Atlas and Pegasus.

### Transportation Development

***Three Options for Pajarito Road***

7a. Closure of Pajarito Road to public traffic with control gate to reduce safety and security concerns.

7b. Realignment and upgrading of Pajarito Road, including new bypass road south of existing alignment.

7c. Building of new north-south connector road between Pajarito Road and East Jemez Road to alleviate traffic on Pajarito Road.

8. Potential restricted access road from TA-55 to potential AHF firing site in Sigma Mesa Planning Area. Road grade to be separate from new public road (1c).

9. Proposed limited access road from TA-48 to TA-54 for movement of SNM to waste facilities.

10. Proposed second road from TA-35 to proposed Pajarito/East Jemez Road connector road for emergency/safety access.

11. Planned additional parking facilities to accommodate growth of nuclear campus.

12. Proposed transit facilities to accommodate population growth at the nuclear campus.

### Security Development

13. Increased security area at the nuclear campus.

### Infrastructure Revitalization

*NS* On-going utility revitalization activities as noted in Site Wide Planning Area section.

14. Planned upgrade of 3-inch natural gas line from Pajarito Corridor West to TA-54 to meet capacity needs at TA-54.

15. Proposed reconductoring of Norton electrical transmission line to increase site wide electrical distribution capacity.

### Facilities Revitalization

*NS* Proposed replacement, removal or upgrade of poor or failing facilities that are approximately 25% of facilities in the planning area.

16. Proposed replacement of seismic "Extremely High Risk" Building 27 at TA-35.

17. Proposed replacement of seismic "Extremely High Risk" Building 1 at TA-50.

### Quality Environment Enhancement

18. Proposed development of walks and outdoor spaces for pedestrian and staff circulation safety.

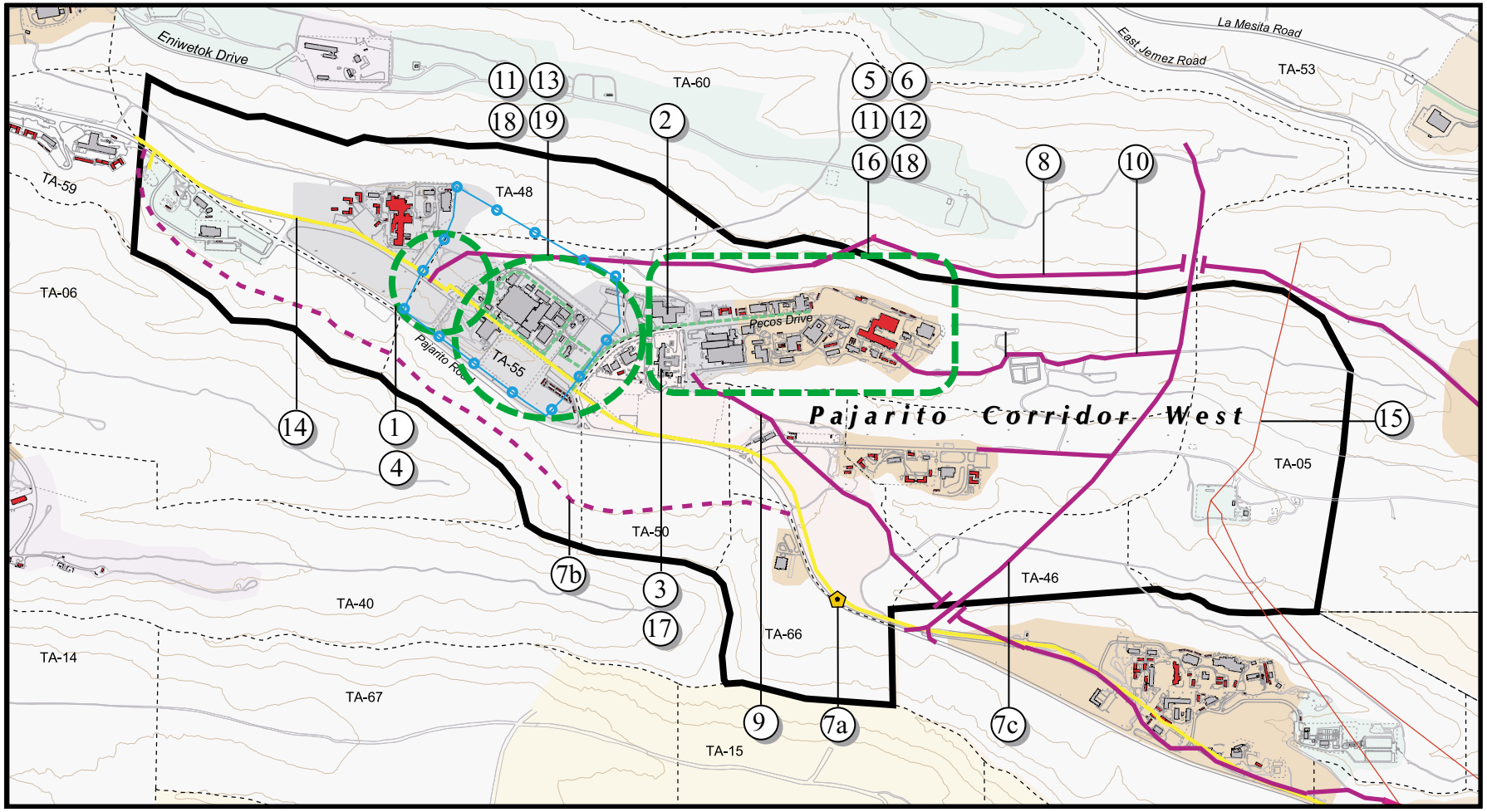
19. Proposed development of cafeteria in nuclear campus to accommodate increased staff population.

### CSP 2000 Issues for Pajarito Corridor West Planning Area

Important issues that need discussion for continued refinement of the CSP for this planning area:

- *Identify process and schedule for CMR replacement.*
- *Identify what SNM activities should eventually relocate to the nuclear campus.*
- *Identify policy for dealing with nonnuclear activities in nuclear campus.*
- *Identify process for replacing seismic "Extremely High Risk" buildings.*
- *Identity process for replacement of radioactive waste treatment facility at TA-50.*

*Map VI-C3: Pajarito Corridor West Planning Area Summary Map*




LEGEND

- Experimental Science
- High Explosives R&D
- High Explosive Testing
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Reserve
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Electric Line 115 kV
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Fences
- Proposed Guard Gate
- Proposed Pedestrian Improvements

1500 0 1500 Feet
500 0 500 Meters

# D. Pajarito Corridor East Planning Area

## 1. General Description

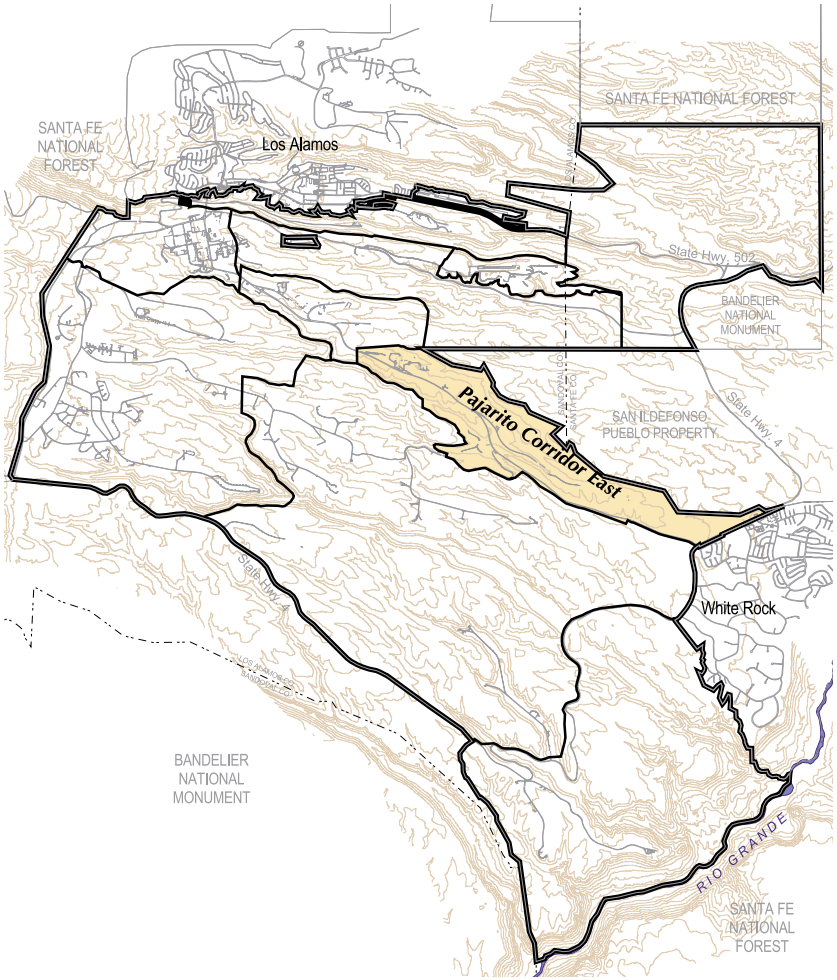
Pajarito Corridor East Planning Area is approximately 2.6 square miles in area. The planning area is bounded by San Ildefonso Pueblo to the north and New Mexico State Highway 4 and White Rock community to the east. The Dynamic Testing Planning Area lies to the south. Pajarito Road bisects the planning area from the northwest to the southeast for approximately 4.6 miles.

The Pajarito Corridor East Planning Area houses nuclear materials R&D, experimental science, waste management and physical/technical support uses. Pajarito Corridor East Planning Area consists of TAs-18, -46, -51, -54, -64 and a narrow width of the northern boundary of TA-36.

The following assumptions will guide the physical planning of the Pajarito Corridor East Planning Area for the next 10 years:

- *The long-range assumption is to cease nuclear activities at TA-18. This will require transfer of some key functions to the proposed nuclear campus at TA-55. Some activities may be relocated to the Nevada Test Site.*
- *The storage of contaminated waste and its characterization and shipment to WIPP will continue to be handled through TA-54.*

*Map VI-D1: Pajarito Corridor East Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Pajarito Corridor East Planning Area.

### Physical Constraints

The topography of the Pajarito Corridor East Planning Area imposes major constraints. Development in its western half is restricted to narrow mesa tops. Development to the northeast is restricted by Canada Del Buey Canyon. The canyon contains 100-year floodplains and associated wetlands. As in most Laboratory canyon bottoms, archeological surveys have identified significant archeological sites there. In addition, federally protected species habitats are in the northwestern portion of this planning area. Development in these environmentally sensitive areas is discouraged.

### Operational Constraints

Much of the Pajarito Corridor East Planning Area is restricted because of special nuclear materials (SNM) and hazardous waste management functions that occur there. There are eight nuclear sources with safety analysis report areas in TA-18. Work within these areas is restricted to Laboratory and Laboratory contractor personnel only.

Both TA-51 and -54 host research, management and disposal operations dealing with radioactive solid and hazardous chemical waste. As a consequence of these activities, there are numerous solid waste management units (SWMU) and point release sources throughout the area. Currently, it is anticipated that Savannah River will be unable to receive any waste materials until 2007.

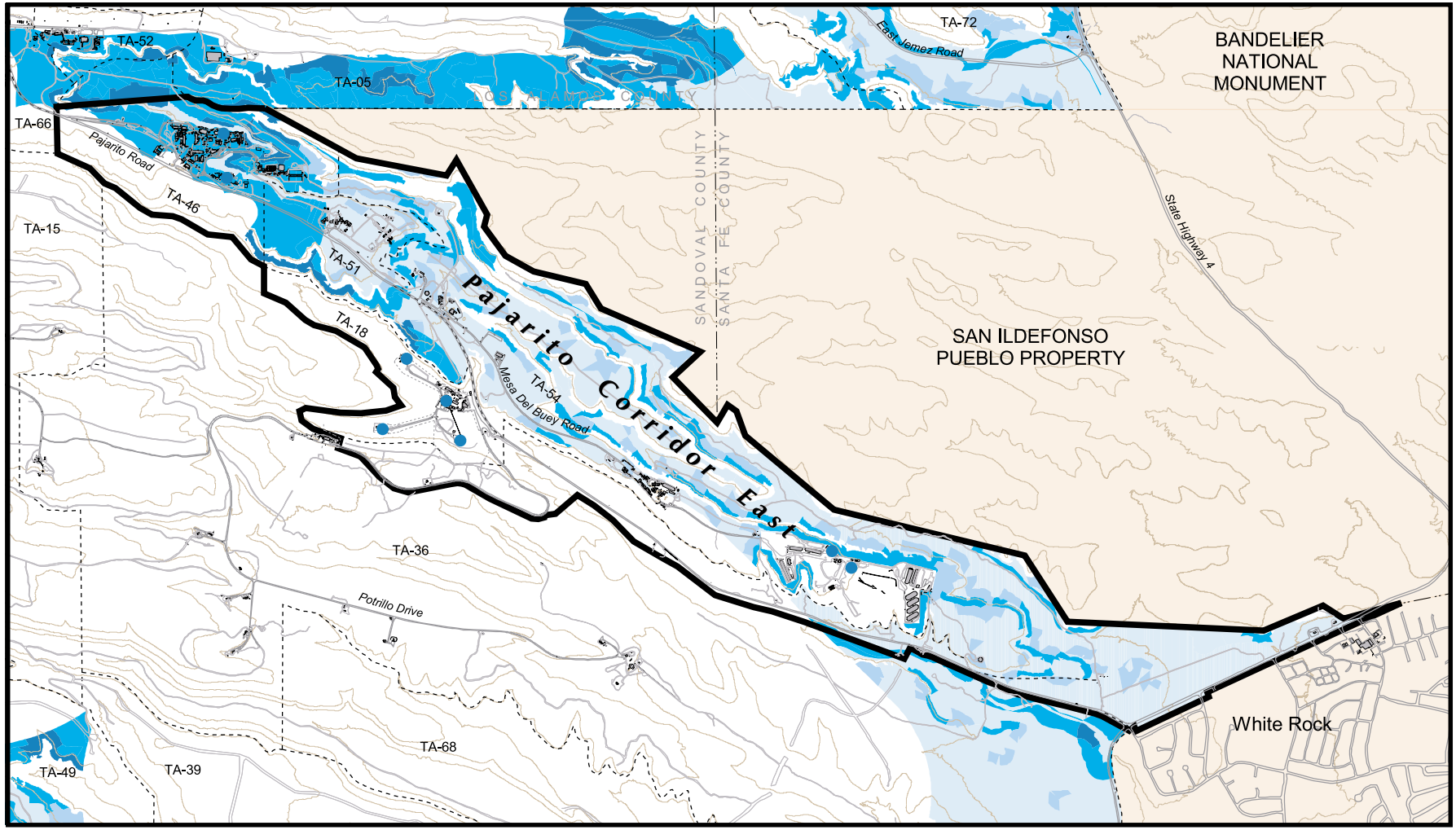
Electrical power lines parallel much of Pajarito Road and restrict certain experimental activities unless measurement instruments are properly shielded.

The entire southern boundary of the Pajarito Corridor East Planning Area is adjacent to the High Explosives Testing Area and its associated explosive safety zones and buffer areas. The northern and eastern boundaries of TA-54 abut San Ildefonso Pueblo and White Rock communities, respectively. These jurisdictions could pose development restrictions.

### Development Opportunities

Development opportunities exist east and west of TA-46, on all sides of TA-51, north of Pajarito Road in TA-36, and north of NM State Highway 4 in the eastern end of TA-54. Potentials for redevelopment become available upon removal of SNM activities from TA-18. Utility and road access are readily available in this planning area.

*Map VI-D2: Pajarito Corridor East Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

3000 0 3000 Feet

1000 0 1000 Meters

## 3. Projects for the Pajarito Corridor East Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-D3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### Consolidation of SNM Activities

(1) Proposed long-range cessation of nuclear activities at TA-18, relocation of activities to other sites.

(2) Proposed improvements as per TA-54 Land Use Plan.

-Future dome across pits 18, 27 and 36

-Area J dome over pit 4 with additional sheds

-Electronic access control gate

-Truck scale at Area J opposite Pit 4

-Proposed asphalt pad for container storage

### Transportation Development

(3) Planned upgrade of intersection of TA-54 access road and Pajarito Road to correct traffic safety problems.

(4) Planned construction of nonpublic road from TA-48 to TA-54 to move SNM material on private road and eliminate public road closings from Pajarito Corridor West to TA-54.

(5) Improve the road eastward from TA-54 to Pajarito Road for safety and emergency access needs.

(6) Proposed upgrade of the road along the boundaries between TA-18 and -36 to provide a second entrance to the Dynamic Testing Planning Area.

### Security Development

(7) Proposed alternate guard gate on Pajarito Road if SNM operations continue at TA-18.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization activities as noted in Site Wide Planning Area section.

(8) Planned upgrade of 3-in. natural gas line from Pajarito Corridor West to TA-54 to meet capacity needs at TA-54.

(9) Proposed reconductoring of Norton electrical transmission line to increase site wide electrical distribution capacity.

### Facilities Revitalization

*NS* Proposed replacement, removal or upgrade of temporary facilities in planning area.

### Quality Environment Enhancement

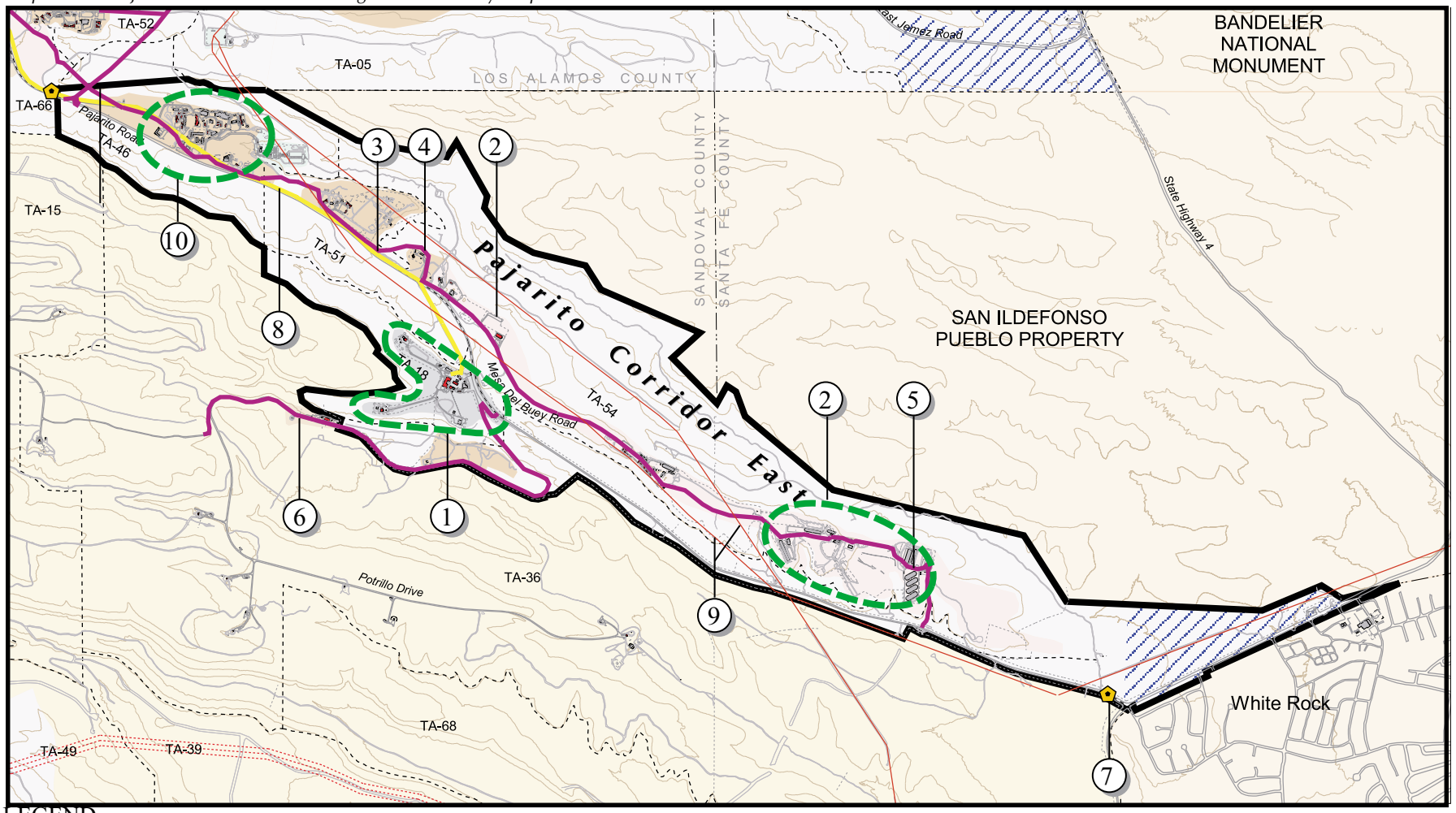
(10) Proposed development of walks and outdoor spaces at densely built locations.

### CSP 2000 Issues for Pajarito Corridor East Planning Area

Important issues that need discussion for continuing refinement of the CSP in this planning area:

- *Identify potential to cease nuclear activities at TA-18. Identify possibilities for reuse of site and facilities.*
- *Assess status of projects identified in the 1991 TA-54 Land Use Plan.*
- *Assess opportunity to replace, remove or upgrade temporary facilities in this planning area.*

*Map VI-D3: Pajarito Corridor East Planning Area Summary Map*




LEGEND

- Experimental Science
- High Explosives R&D
- High Explosive Testing
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Reserve
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Electric Line 115 kV
- Proposed Elec. Line 115 kV
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Fences
- Proposed Guard Gate

3000 0 3000 Feet
1000 0 1000 Meters

# E. Los Alamos Neutron Science Center (LANSCE) Mesa Planning Area

## 1. General Description

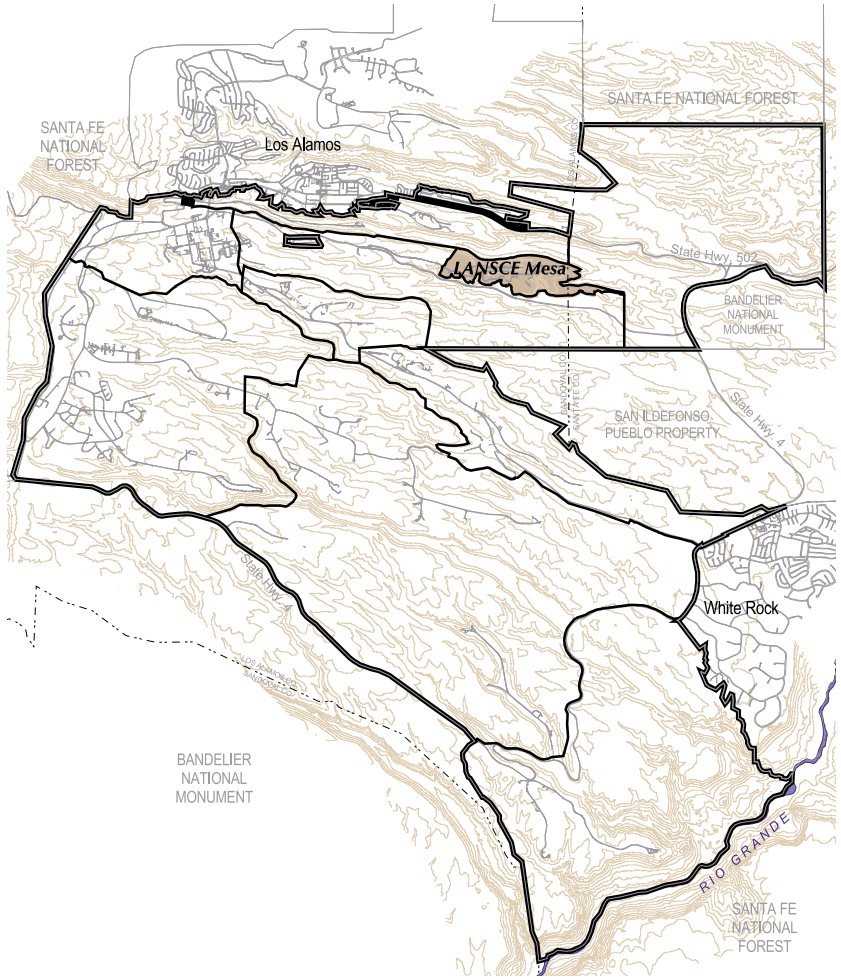
The LANSCE Mesa Planning Area is a site of approximately 0.5 square mile, located entirely atop Mesita De Los Alamos and within the boundary of TA-53. Three planning areas surround it: Omega West to the north, Land Transfer to the east, and Sigma Mesa to the south and west.

The LANSCE Mesa Planning Area supports the primary Laboratory missions of Stockpile Stewardship and Stockpile Management. Facilities in this planning area include the 800-MeV proton linear accelerator, a Proton Storage Ring; neutron production targets at the Lujan Center and the Weapons Neutron Research facility, an isotope production facility and a variety of spectrometers. The Accelerator Production of Tritium Project Office, including the Low-Energy Demonstration Accelerator and R&D activities in accelerator technology and high-power microwaves are also located in the planning area.

The following planning assumptions will guide the physical planning of LANSCE Mesa Planning Area for the next 10 years:

- *LANSCE will remain primarily dedicated to Stockpile Stewardship and some Stockpile Management programs.*
- *Growth of new Stockpile Stewardship programs, specifically portions of the Advanced Hydrotest Facility will happen in the LANSCE Mesa Planning Area.*

*Map VI-E1: LANSCE Mesa Planning Area Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the LANSCE Mesa Planning Area.

### Physical Constraints

LANSCE Mesa Planning Area encompasses a very narrow mesa bordered on the north by the Los Alamos Canyon and on the south by Sandia Canyon. These canyons limit the developable area. Federally protected species habitat, archeological sites, and 100-year floodplains are present in both canyons. There are two isolated wetlands in the planning area.

### Operational Constraints

Most of the LANSCE Mesa Planning Area consists of usable land surface that has been developed. LANSCE is not a nuclear facility. This planning area has been the Laboratory's largest source of airborne radioactive emissions that are presently well below the emission regulation standards.

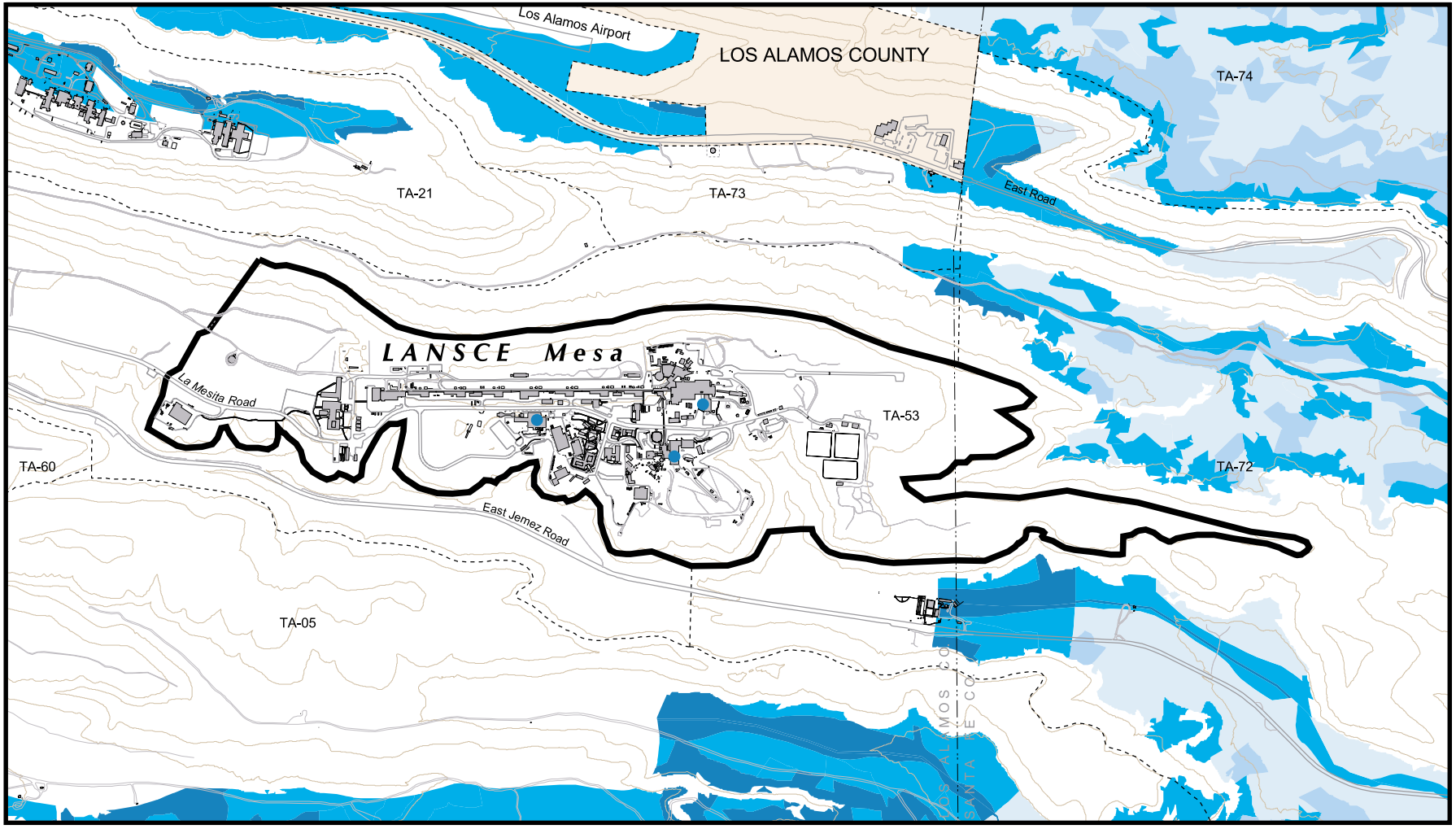
Operating the accelerator in LANSCE requires 250,000 gallons of water a day and $1 million in electricity a month. Such high draws on existing utilities could restrict the development of other facilities with high water and/or high power requirements.

Waste lagoons located at the east end of the site are currently being sampled to identfy appropriate remediation activities. The exent to which redevelopment is feasible will depend in part on the remediation alternative selected for this site.The site also contains three radiation sources, a radioactive liquid waste line, and other potentially contaminated areas. A significant portion of the area is within a safety analysis report area. The western end of the mesa contains a major utility corridor. Several solid waste management units and point release sources also are found in this planning area. Seismic "Extremely High Risk" buildings in this planning area include Buildings 1, 2 and 6 at TA-53.

### Development Opportunities

Few development parcels remain, but opportunities are available for redevelopment in underutilized or inappropriately used parcels. Many of these sites are occupied by trailers, transportables, and temporary storage containers.

*Map VI-E2: LANSCE Mesa Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

1500 0 1500 Feet

500 0 500 Meters

## 3. Projects for LANSCE Mesa Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-E3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### Development of AHF Capabilities

1. Planned development of the 50-GeV ring module of the Advanced Hydrotest Facility (AHF) to support Stockpile Stewardship mission.
2. Potential tunnel connections to AHF-related facilities at Sigma Mesa (Mortandad Canyon) and Dynamic Testing Planning Areas.
3. Proposed classified and unclassified office space to support AHF development and other programs.

### Revitalization of LANSCE

4. Proposed physical/technical support facilities for nuclear materials R&D.

### Transportation Development

5. Proposed second access road eastward to East Jemez Road to provide secondary safety/ emergency access. Also limited access route to potential AHF firing site in Sigma Mesa Planning Area.
6. Proposed removal of trailers and transportables to create opportunities for new development and parking.
7. Proposed sidewalks to improve pedestrian circulation and safety within developed areas.

### Security Development

8. Proposed guard gate on potential new access road.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization activities as noted in Site Wide Planning Area section.

*NS* Budgeted upgrade of fire protection system, including second supply line, storage tank and connections to existing fire lines for safety reasons.

9. Proposed reconductoring of Norton electrical transmission line to increase site wide electrical distribution capacity.

### Facilities Revitalization

*NS* Proposed replacement, removal or upgrade of poor and failed facilities which are approximately 7% of facilities in this planning area.

10. Potential replacement of seismic "Extremely High Risk" buildings 1, 2 and 6 at TA-53.

### Quality Environment Enhancement

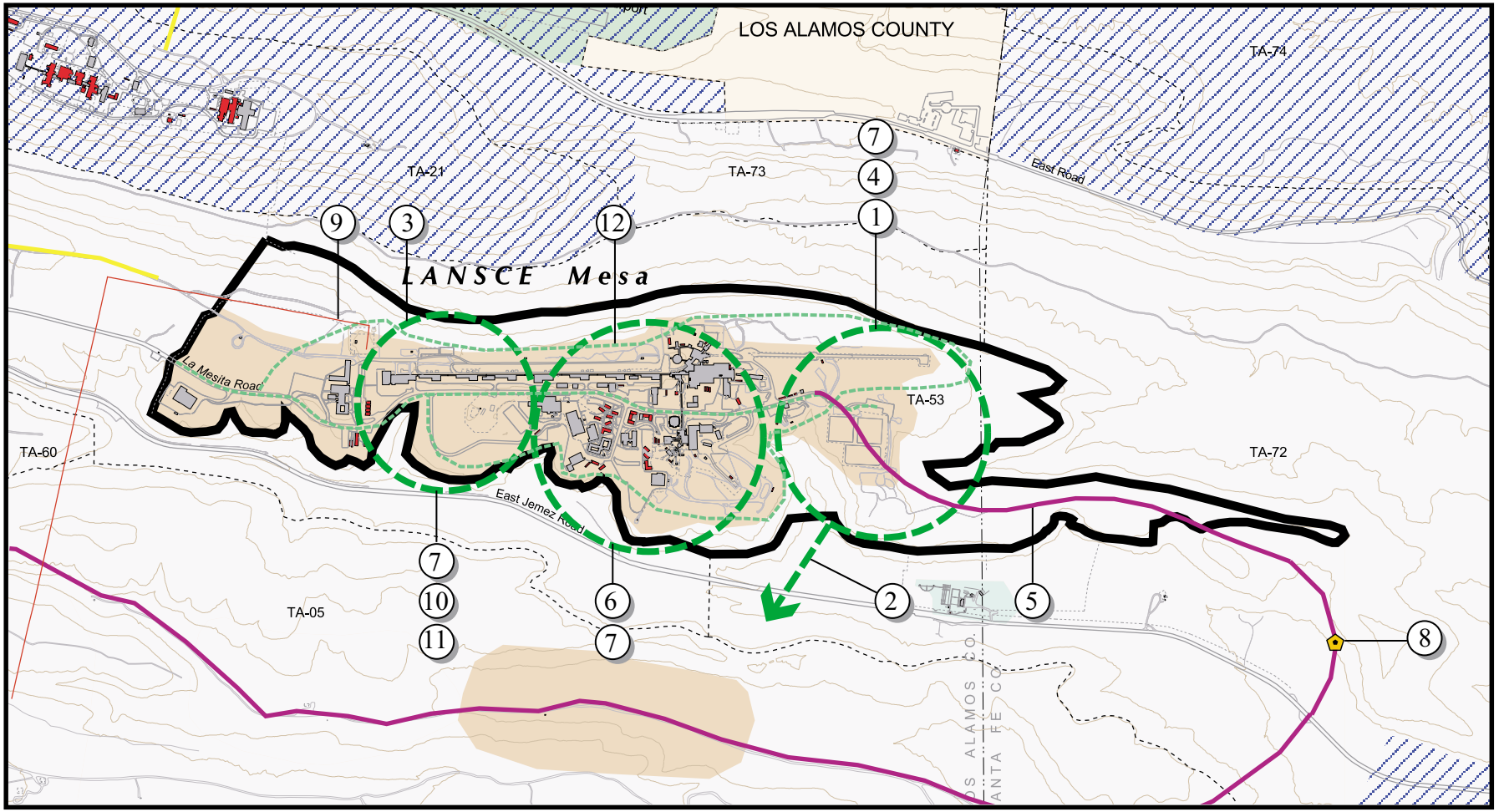
11. Proposed development of picnic pavilion to provide area for personnel interaction.
12. Proposed walking/jogging trail, bicycle and pedestrian paths to meet staff requests for safer pedestrian and bicyclist environment.

### CSP 2000 Issues for LANSCE Mesa Planning Area

Important CSP issues that need discussion for continuing refinement for this planning area:

- *Identify timing, scope and facilities needed for ring module of AHF.*
- *Create strategy for removal of temporary structures to create opportunity for new development and parking.*
- *Create and improve pedestrian and bicycle circulation.*

*Map VI-E3: LANSCE Mesa Planning Area Summary Map*




LEGEND

- Airfield
- Experimental Science
- Non-DOE Property
- Physical/Technical Support
- Reserve
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Electric Line 115 kV
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Guard Gate
- Proposed Pedestrian Improvements

1500 0 1500 Feet

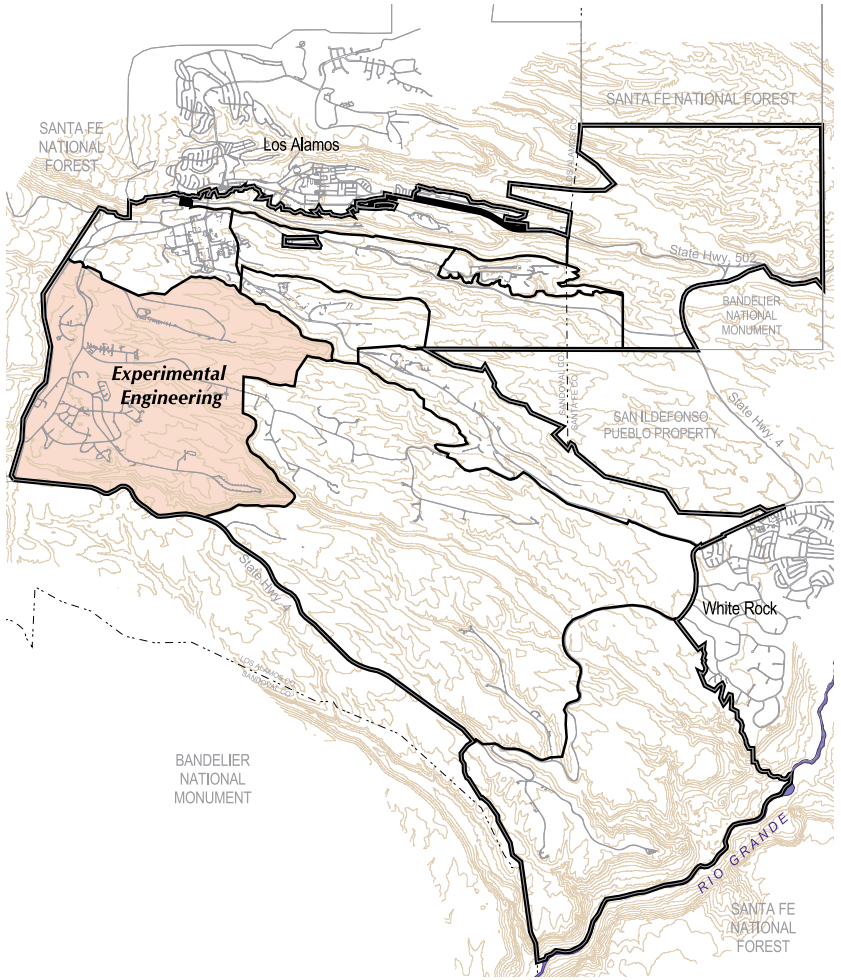
500 0 500 Meters

# F. Experimental Engineering Planning Area

## 1. General Description

The Experimental Engineering Planning Area shares the westernmost section of the Laboratory with the Core Planning Area. The Experimental Engineering Planning Area covers approximately 6.9 square miles. The western boundary abuts the Santa Fe National Forest. West Jemez Road parallels the western boundary and lies within Laboratory property. TAs -08, -09, -11, -14, -16, -22, -28, -37, -40 and portions of TAs-67 and -69 are in the Experimental Engineering Planning Area.

*Map V1-F1: Experimental Engineering Planning Area Key Map*




The following assumptions will guide the physical planning of Experimental Engineering Planning Area for the next 10 years.

- *The Experimental Engineering Planning Area will host the future tritium consolidation efforts in new facilities at TA-16.*
- *High explosives (HE) activities will be consolidated within the planning area to increase operational effectiveness and efficiency.*
- *Development related to the Advanced Hydrotest Facility (AHF) will affect this planning area. Existing assembly and radiographic facilities may be removed and replaced with new facilities in either the Experimental Engineering or Dynamic Testing Planning Areas.*

## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Experimental Engineering Planning Area.

### Physical Constraints

In the Experimental Engineering Planning Area, an extensive system of canyons, which includes Canon de Valle to the east, Water Canyon to the south, and an unnamed canyon to the west, limits development. The eastern canyon portion of the planning area is federally protected species habitat and associated buffer zones. Archeological survey areas cover most of the mesa tops in the western portion of the Experimental Engineering Planning Area. Development in these environmentally sensitive areas is discouraged.

### Operational Constraints

This planning area is restricted and closed to all nonexplosives development, testing and storage activities. Current explosives-clear zones cover much of the area and prohibit any nonexplosives-related facilities development. Explosives containment technology may modify the extent of these zones in the future. The prohibition of AM radio transmissions within the Laboratory is particularly important in this planning area.

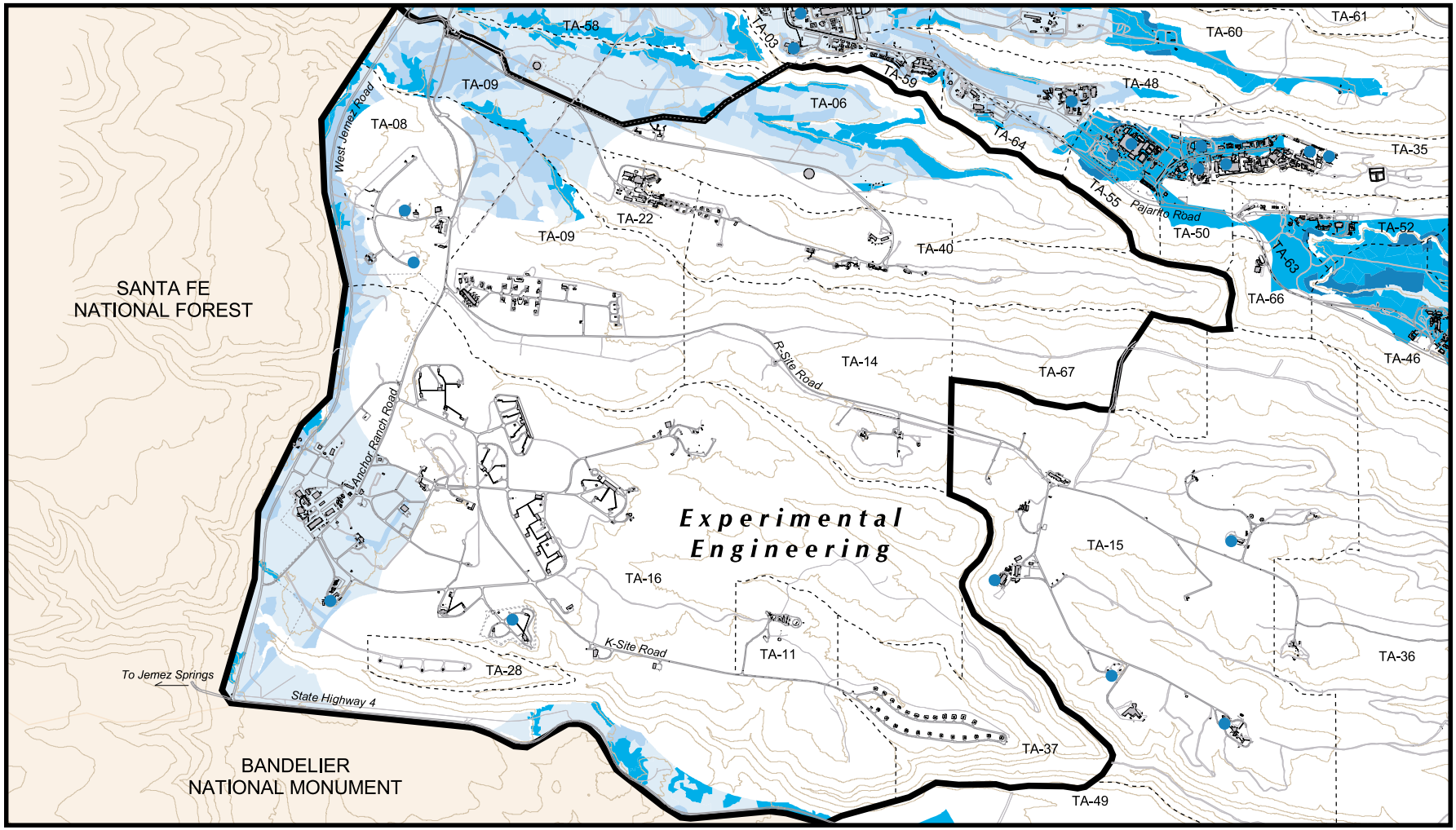
There are four radiation sources in the western half of this planning area. The safety analysis report for this planning area allows work within these areas by only Laboratory and Laboratory contractor personnel. A hazardous materials disposal site is located on the northern boundary of TA-16.

The proximity of the Experimental Engineering Planning Area to NM State Highway 4 and the U.S. Park Service's Bandelier National Monument on the south and the U.S. Forest Service's Santa Fe National Forest on the west could pose future development restrictions.

### Development Opportunities

Development opportunities for additional high explosives R&D functions exist along the northern and western boundaries of the Experimental Engineering Planning Area. The best potential areas include the eastern end of TA-40, the middle portion of TA-16, and the northern half of TA-14 and all of TA-67. Utilities would have to be extended to all these areas.

*Map VI-F2: Experimental Engineering Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

3000 0 3000 Feet

1000 0 1000 Meters

## 3. Projects for the Experimental Engineering Planning Area

Proposed, planned or budgeted projects noted below and on the facing Summary Map, VI-F3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### Development of AHF/DARHT

(1) Proposed demolition of existing assembly facility at TA-08 to be replaced with new facility related to AHF/DARHT.

(2) Proposed demolition of radiographic facility at TA-08 to be replaced with new facility related to AHF/DARHT-undetermined location in planning area.

### Consolidation of Tritium Activities

(3) Planned consolidation of tritium functions from Omega West Planning Area to TA-16.

### Revitalization of Experimental Engineering

(4) New office buildings to replace aging, high-maintenance temporary structures.

(5) Budgeted detonator facility scheduled for completion in FY 2002.

### Transportation Development

(6) Proposed upgrade of road between TA-14 and -67 to improve circulation.

(7) Proposed upgrade of road to TA-09 for future access to TA-58.

(8) Proposed road across TA-6 for access to future development sites.

### Security Development

(9) Proposed fence in TA-06 for perimeter security.

(10) Proposed new guard gate on future road to TA-09.

(11) Upgrade control gate at southwest boundary of TA-16.

(12) Proposed secure storage.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization activities as noted in Site wide Planning Area section.

(13) Budgeted replacement of collapsed sewer line section between manholes 769 and 770.

(14) Budgeted upsizing of 2-in. natural gas line to location of DARHT.

(15) Proposed new 115-kV electrical transmission line to improve site wide distribution and supply security.

### ESH Efforts

(16) Proposed program for controlled access to historic site.

### Facilities

*NS* Proposed replacement, removal or upgrade of facilities rated as poor or failed (84% of facilities in the planning area).

### Quality Environment Development

(17) Proposed improvement for pedestrian safety between parking areas and buildings.

(18) Proposed upgrade of architectural and physical appearance including signage, landscaping and improves outdoor spaces.

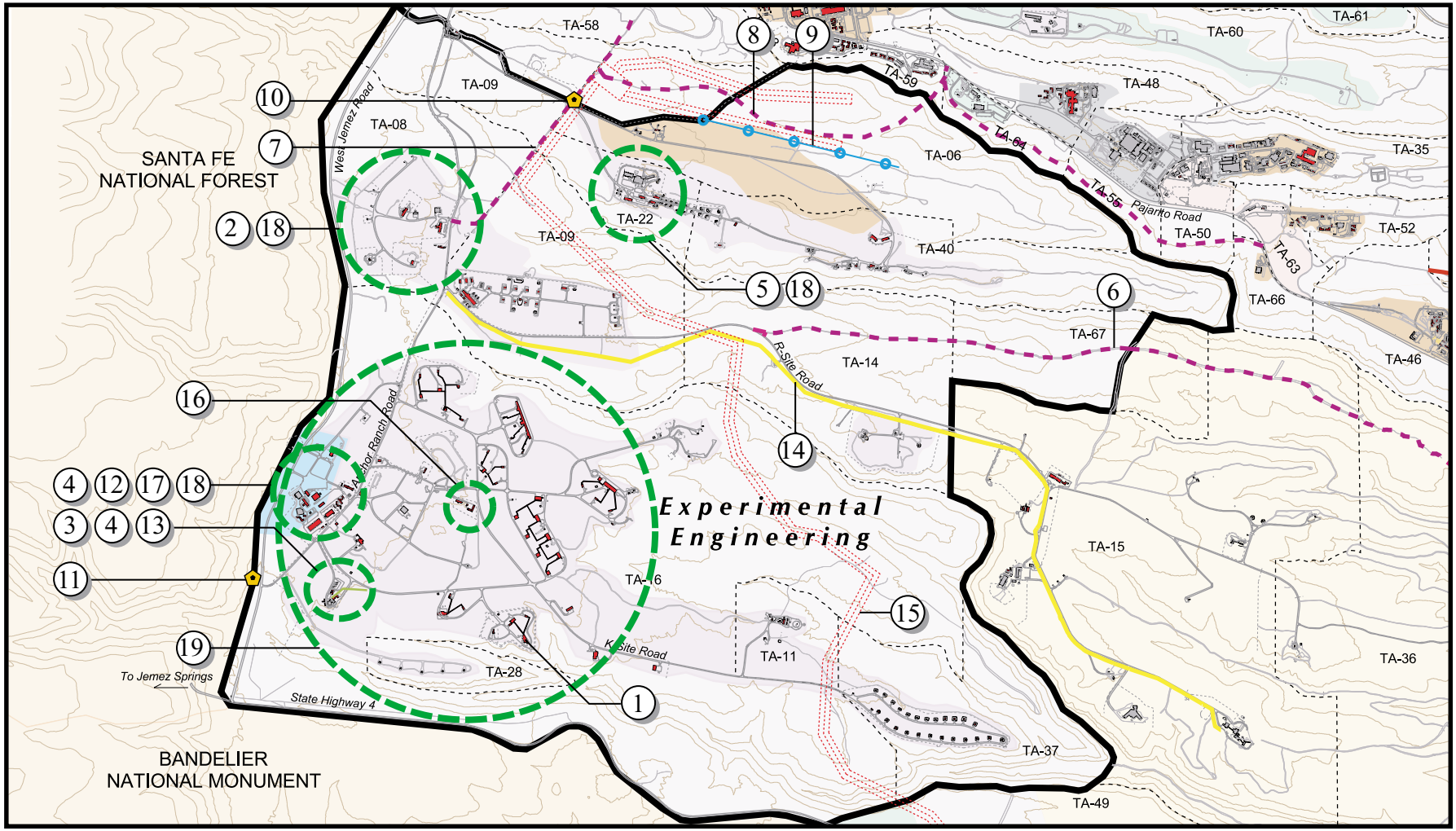
(19) Proposed closure and revegetation of unused roads in the planning area.

### CSP 2000 Issues for Experimental Engineering Planning Area

Important issues that need discussion for continuing refinement of the CSP for this planning area:

- *Continue to consolidate high explosives facilities within the planning area,*
- *Continue to remove, replace or upgrade poor and failed facilities in planning area,*
- *Plan for consolidation of tritium functions to TA-16.*

*Map VI-F3: Experimental Engineering Planning Area Summary Map*




LEGEND

- Administration
- Experimental Science
- High Explosives R&D
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Reserve
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Fences
- Proposed Guard Gate
- Sanitary Sewer Line
- Gas Pipeline
- Proposed Elec. Line 115 kV

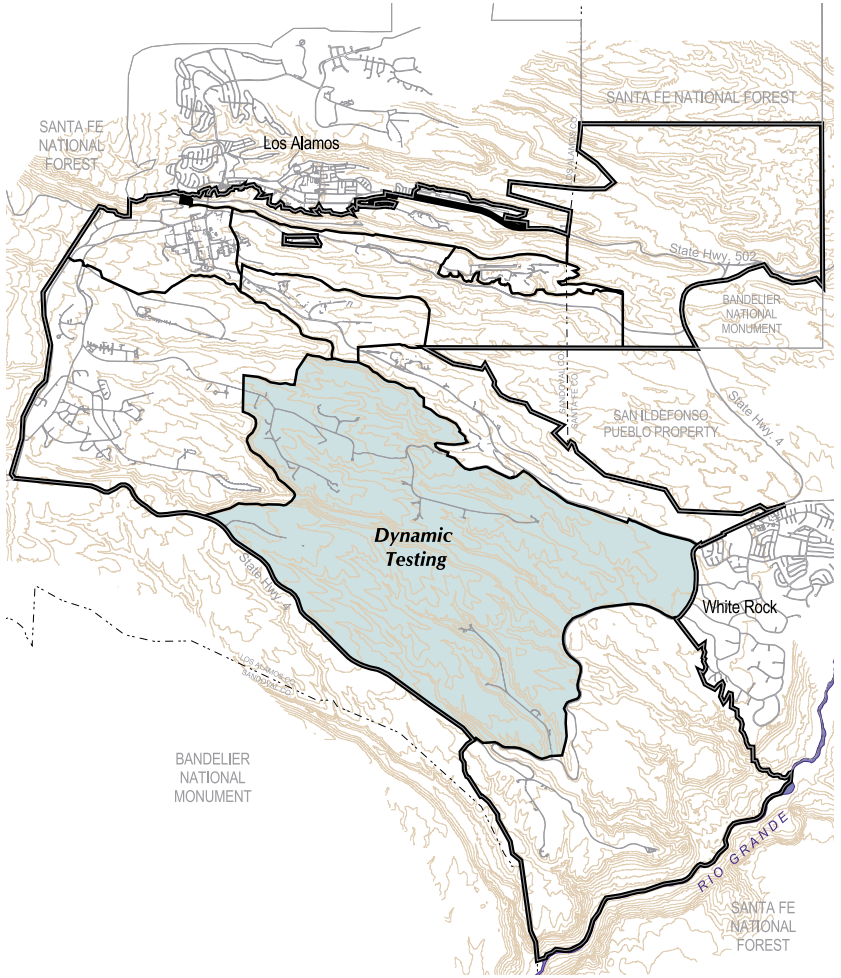
3000 0 3000 Feet
1000 0 1000 Meters

# G. Dynamic Testing Planning Area

## 1. General Description

The Dynamic Testing Planning Area is the largest planning area and covers approximately 12.6 square miles. It is bordered on the north by the Pajarito Corridor East Planning Area. The community of White Rock and the Rio Grande Corridor Planning Area lie to the east. To the south are NM State Highway 4 and Bandelier National Monument. Three mesas, Frijoles, Mesita del Buey, and Mesita del Potrillo sit within the area and are separated by four canyons, Ancho, Fence, Indio, and Potrillo. The primary land use in the Dynamic Testing Planning Area is high explosives testing. The Dynamic Testing Planning Area contains within its boundaries TAs-15, -36, -39, -49, -68 and parts of TA-67.

*Map VI-G1: Dynamic Testing Planning Area Key Map*




The following assumptions will guide the physical planning of the Dynamic Testing Planning Area for the next 10 years:

- *The Dynamic Testing Planning Area will continue to be crucial in the primary stockpile stewardship work of the Laboratory.*
- *The DARHT and PHERMEX facilities are located here. DARHT is a crucial element in the Advanced Hydrotest Facility.*
- *Nonnuclear testing work will continue in this area.*

## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Dynamic Testing Planning Area.

### Physical Constraints

Thirty-three Native American groups have extensive, archived archeological sites throughout the Dynamic Testing Planning Area, particularly along the canyon bottoms. These are documented ruins requiring that vehicular travel remain on designated roads. There are also federally protected species habitats in the same areas. Several buildings in this planning area are potentially eligible for inclusion on the National Register of Historic Places, and their redevelopment, reuse or demolition must be coordinated with the NM State Historical Preservation Office. Seven hundred-year floodplain systems wind through the planning area. The easternmost of the floodplains has associated wetlands. Development in these environmentally sensitive areas is discouraged.

### Operational Constraints

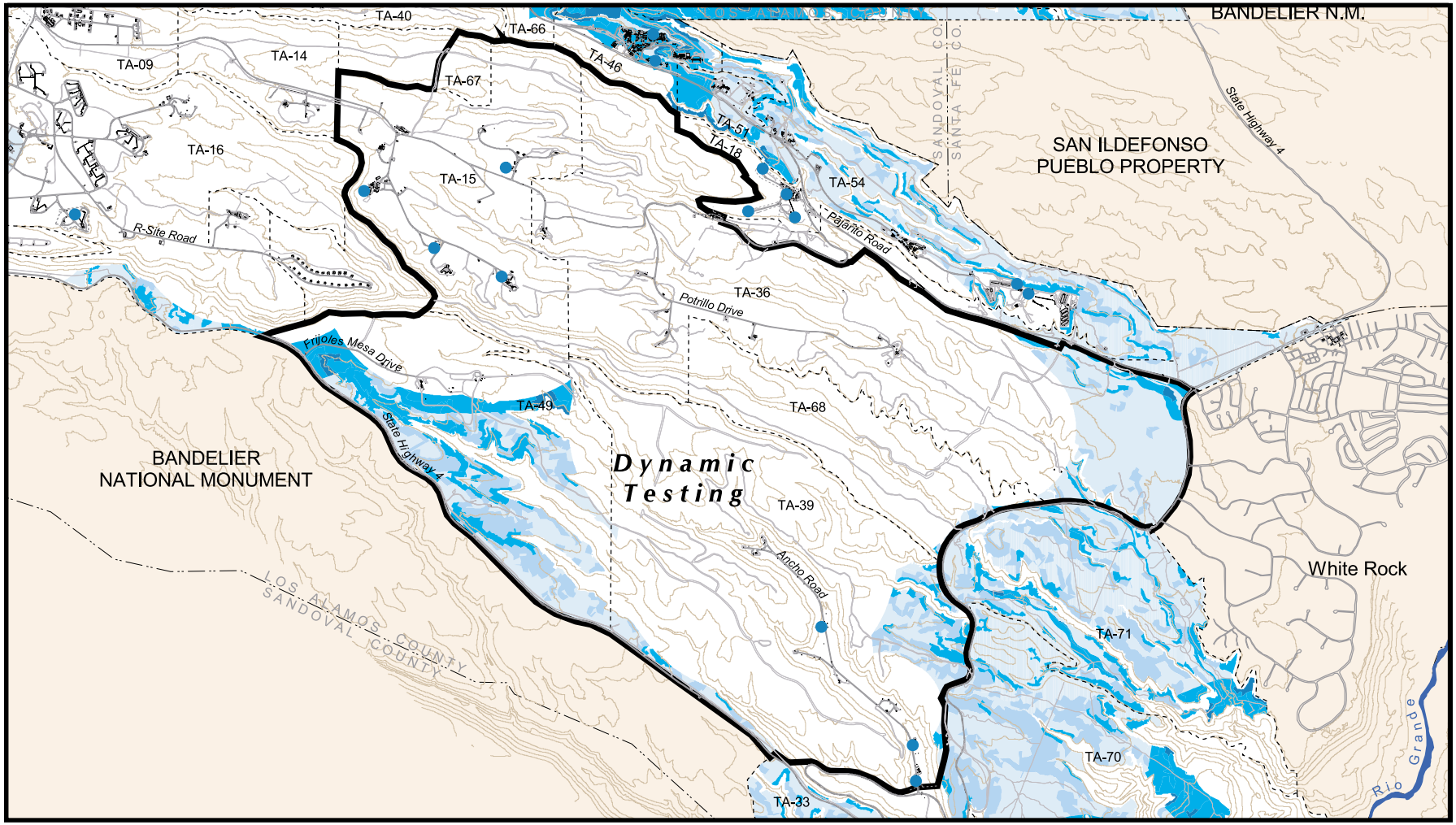
The predominant constraint for the Dynamic Testing Planning Area is the large safety buffer zones required for testing high explosives materials and devices. All radio transmissions are prohibited. Testing in this area requires geographic separation of facilities for safety and buffering. Explosives containment technology may modify the extent of these zones in the future. There are several radiation sources whose radiation safety areas fall within the explosives safety zones. SWMUs located throughout the Dynamic Testing Planning Area contain contaminated materials, projectiles, and shrapnel.

The eastern boundary of this planning area abuts NM State Highway 4 and the community of White Rock. Bandelier National Monument is on the southern boundary. These adjacent areas could pose development restrictions.

### Development Opportunities.

Development opportunities in the Dynamic Testing Planning Area are presently limited to high explosives testing functions with one exception. TA-49 is presently used as a training area and has been considered as a location for a Laboratory sanitary landfill to replace the current landfill in the western portion of TA-06. TA-49 could be used for a variety of other purposes provided they do not adversely affect high explosives testing functions. Utilities will have to be extended throughout this area.

*Map VI-G2: Dynamic Testing Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

5000 0 5000 Feet

1000 0 1000 2000 Meters

## 3. Projects for Dynamic Testing Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-G3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### Development of AHF Capabilities

(1) Planned development of facilities to support the Advanced Hydrotest Facility (AHF) initiative in this area, including the following:

- Development of DARHT and PHERMEX as part of AHF initiative.
- Replacement of trailers and transportables with three permanent buildings to consolidate facilities and remove high-maintenance buildings.
- Potential development of heavy assembly facility in support of DARHT and AHF.

(2) Proposed underground connections related to AHF at TA-53.

### Transportation Development

(3) Proposed upgrade of road from TA-14 to TA-36 to improve access to Pajarito Road.

(4) Proposed road from TA-36 to TA-68 and -39 to improve north-south circulation between facilities in planning area.

(5) Proposed road from TA-49 to TA-39 to improve east-west circulation.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization as noted in Site Wide Planning Area section.

(6) Budgeted project to upsize 2-in. natural gas line to DARHT area.

(7) Planned addition of third 115-kV electrical line to increase site wide electrical redundancy, increase reliability and security.

### Facilities Revitalization

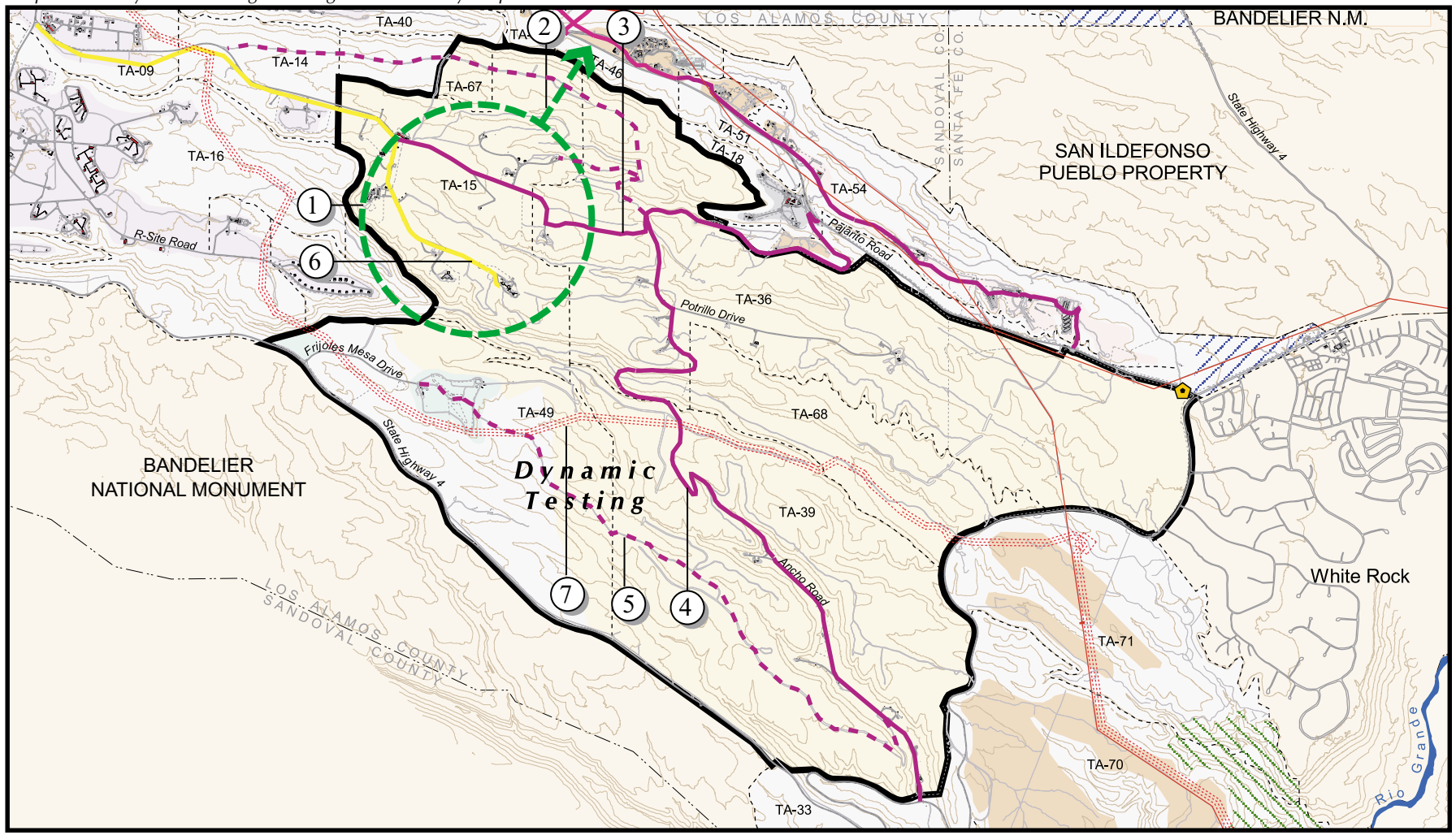
*NS* Proposed replacement, removal or upgrade of poor or failed facilities which compose 35% of facilities in this planning area.

### CSP 2000 Issues for Dynamic Testing Planning Area

Important issues that need resolution for continuing refinement of the CSP for this planning area:

- *Identify proposed AHF development to be located within this planning area.*
- *Identify the process for upgrading, removing or replacing poor and failed facilities that make up 35% of the facilities in the planning area.*
- *Evaluate the feasibility and costs, including environmental mitigation, of improving the internal roads within planning area.*

*Map VI-G3: Dynamic Testing Planning Area Summary Map*




LEGEND

- Experimental Science
- High Explosives R&D
- High Explosive Testing
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Reserve
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Guard Gate
- Electric Line 115 kV
- Proposed Elec. Line 115 kV
- Wildlife Preserve

5000 0 5000 Feet
1000 0 1000 2000 Meters

# H. Sigma Mesa Planning Area

## 1. General Description

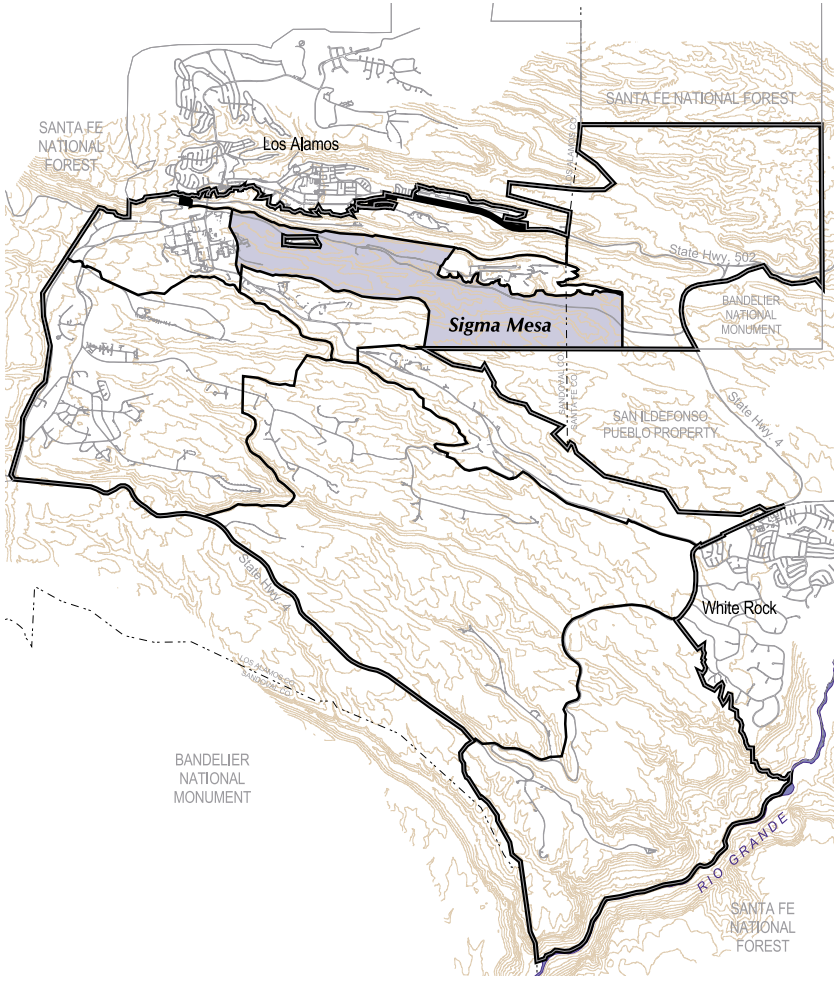
The Sigma Mesa Planning Area is bordered by the Omega West and LANSCE Mesa Planning Areas on the north, the Land Transfer Area on the east, Pajarito Corridor West Planning Area and San Ildefonso Pueblo on the south, and the Core Planning Area on the west. East Jemez Road runs east-west through the planning area. TAs-18, -46, -51, -54 and -65 comprise this planning area.

Sigma Mesa Planning Area is essentially reserve land. The predominant Laboratory work done in this planning area is physical/technical support. There is also a small area used for high explosives R&D. Unique to this planning area is the privately owned 25-acre inholding where the Royal Crest Mobile Home Park is located.

The following assumptions will guide the physical planning of the Sigma Mesa Planning Area for the next 10 years:

- *Support facilities are to be consolidated to the Sigma Mesa Planning Area. This consolidation will enable the Laboratory's support services subcontractor, Johnson Controls Northern New Mexico (JCNNM), to work more efficiently.*
- *The Rack Assembly and Alignment Complex on Sigma Mesa, although not currently used, is presently being maintained for future programmatic needs, but will be reevaluated as appropriate.*
- *The Advanced Hydrotest Facility (AHF) will impact the Sigma Mesa Planning Area. Tunnels, roads and support facilities may be required in this planning area.*

*Map VI-H1: Sigma Mesa Planning Area Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Sigma Mesa Planning Area.

### Physical Constraints

Federally protected species habitat and buffer zones have been identified in the central sections of this planning area. There are delineated floodplains and wetlands found along the Sandia and Mortandad Canyon floors north of Sigma Mesa. Development within this planning area will be severely limited by slope constraints and four seismic fault zones.

### Operational Constraints

Most of the Sigma Mesa Planning Area is undeveloped. The western portion of TA-60 is used for physical/technical support functions. This support includes some of Johnson Controls Northern New Mexico operations; a sanitary landfill; and sand, gravel, and concrete operations.

The Rack Assembly and Alignment Complex occupies approximately 12 acres in the Sigma Mesa Planning Area. Although not currently in operation, it must remain on standby as part of the Nevada Nuclear Readiness Program.

The Royal Crest Mobile Home Park is a 25-acre privately owned inholding in the northern section of the planning area. San Ildefonso Pueblo borders the planning area on the south. These neighboring land ownerships could pose adjacency issues.

The western section of the Sigma Mesa Planning Area falls within the safety analysis report (SAR) area of the Sigma Building in TA-03, which creates development and adjacency restrictions for this sector of the planning area. The bulk of the remaining area falls within the SAR areas created by nuclear materials activities that occur at TA-55 and TA-35. Work within SAR areas is restricted to Laboratory and Laboratory contractor personnel only. There are several potentially contaminated sites in this planning area that may require environmental restoration.

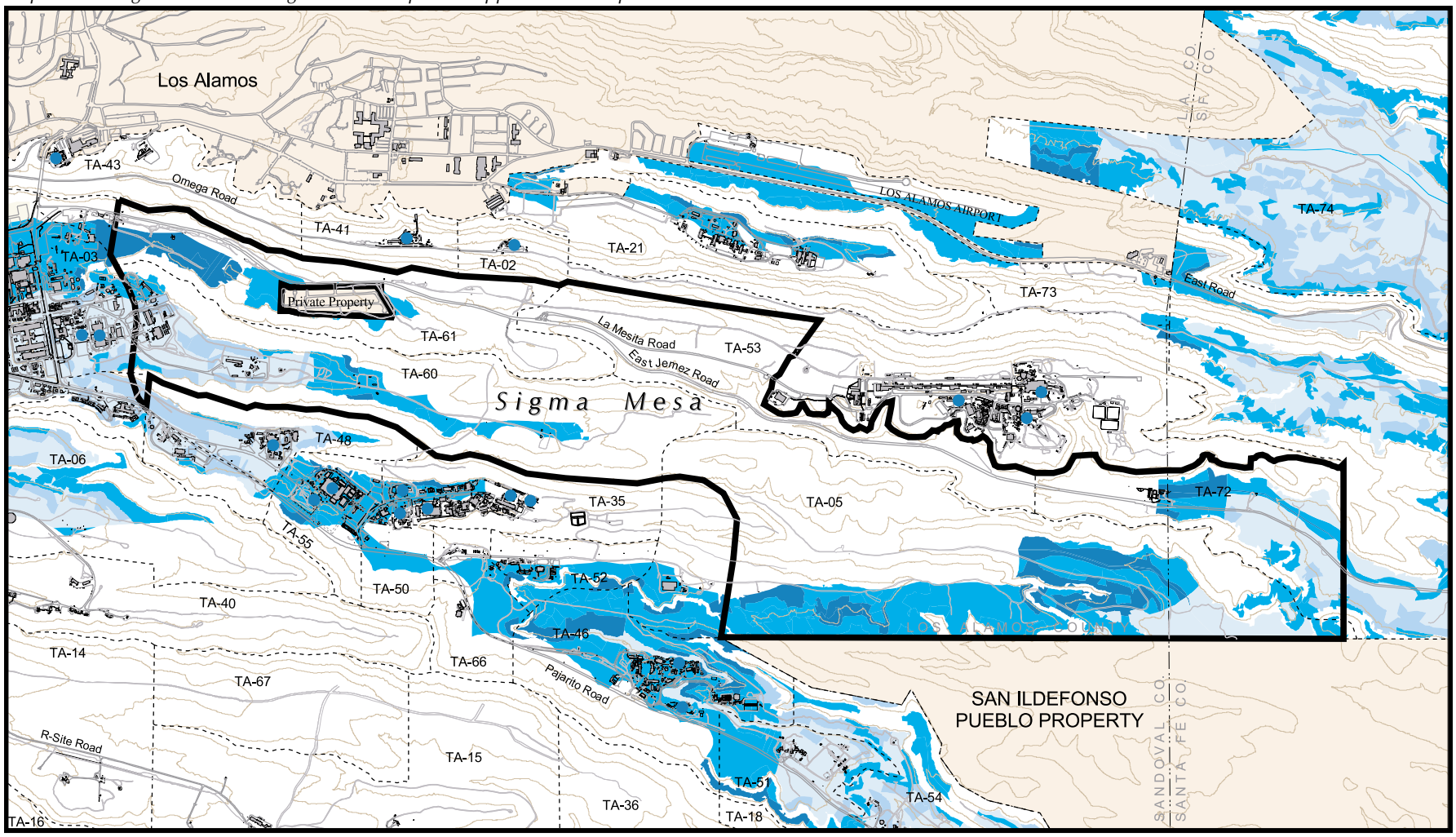
The Los Alamos County Sanitary Landfill occupies most of the northwestern portion of this planning area. There are plans to close this operation. Redevelopment of the landfill site is unlikely because of poor soil compaction, potential settlement because of refuse material decomposition, and landfill-generated gases such as methane.

### Development Opportunities

Significant development opportunities are available in the southeastern section of TA-60. The mesa top is relatively flat, has few existing structures, and would require minimal environmental restoration to prepare for new development. The area is ideal for consolidation of physical/technical support functions because of its proximity to the Core Planning Area. However, utilities would have to be extended from the western developed areas.

The Borrow Pit east of the Royal Crest Mobile Home Park is a second potential site for relocation of warehousing, shipping, and receiving functions currently in TA-03.

*Map VI-H2: Sigma Mesa Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

3000 0 3000 Feet

1000 0 1000 Meters

## 3. Projects for Sigma Mesa Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-H3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### Consolidation of JCNNM

(1) Planned consolidation of support facilities (JCNNM relocation) to Sigma Mesa.

(2) Proposed cleanup of outside storage to create developable space for other uses.

### Development of AHF Capabilities

(3) Proposed subsurface tunnels for Advanced Hydrotest Facility (AHF) from LANSCE to Dynamic Testing Planning Area.

(4) Proposed AHF firing site.

(5) Proposed new road to link AHF firing site with TA-53 and TA-55.

### Transportation Development

(6) Planned eastern section of the loop road around TA-03, which is needed before Sigma Mesa development can begin.

(7) Proposed upgrade of East Jemez Road from NM State Highway 4 to Diamond Drive to address increased traffic volumes and improved circulation.

(8) Proposed Pajarito Road to East Jemez Road north-south connector road to reduce security conflicts and provide safety/emergency access.

(9) Proposed second bridge to Los Alamos town site to improve regional traffic circulation.

(10) Upgrade and extend Eniwetok Drive for improved safety/emergency access.

(11) Proposed access to new services at the Borrow Pit in order to reduce truck traffic on East Jemez Road and within TA-03.

(12) Construct grade separation at intersection of new road serving AHF facilities and new road linking Pajarito Road with East Jemez Road.

### Security Development

(13) Open discussions with appropriate stakeholders re. the relocation and purchase of trailer park to solve safety concerns and gain approximately 100 developable acres.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization activities as noted in Site Wide Planning Area section.

(14) Planned correction of approximately 1-mile section of natural gas line east of private trailer park.

### Facilities Revitalization

*NS* Potential replacement, removal or upgrade of poor or failed facilities that compose 7% of facilities in the planning area.

### Quality Environment Enhancement

(15) Potential visual buffering of storage yards with landscaping when east section of TA-03 loop road is built.

### Regional Cooperation

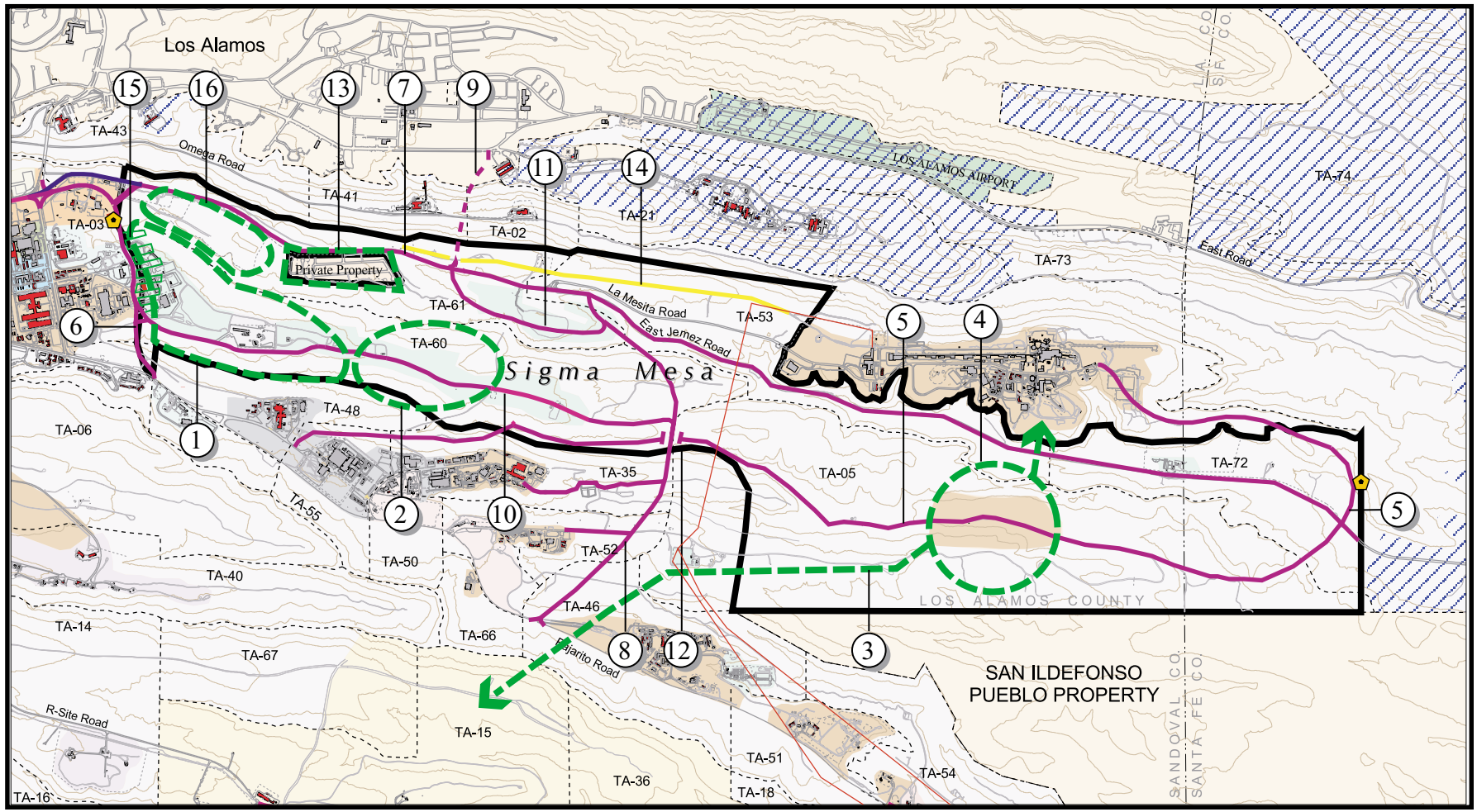
(16) Coordinate replacement of landfill site to a regional site in the Rio Grande Valley negotiated with Los Alamos County and other agencies.

### CSP 2000 Issues for Sigma Mesa Planning Area

Important CSP issues that need discussion for continued refinement of this planning area:

- *Timing and process for support facilities consolidation.*
- *Evaluation of AHF development options and NEPA effects on options.*
- *Development of a site wide transportation plan and evaluation of its effects on security, environment and transportation/traffic circulation on the Laboratory and region.*

*Map VI-H3: Sigma Mesa Planning Area Summary Map*




LEGEND

- Administration
- Airfield
- Experimental Science
- High Explosives R&D
- High Explosive Testing
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Public/Corporate Interface
- Research Park
- Reserve
- Theoretical/Computational Science
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Electric Line 115 kV
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads
- Proposed Guard Gate

3000 0 3000 Feet
1000 0 1000 Meters

# I. Omega West Planning Area

## 1. General Description

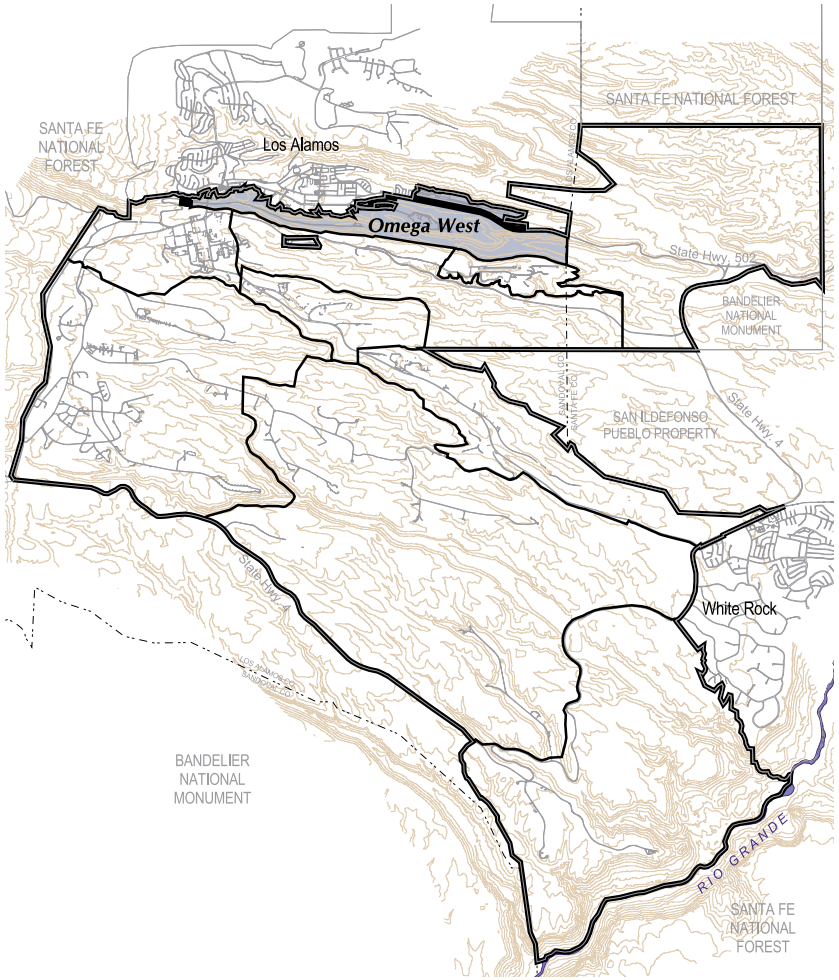
The Omega West Planning Area covers 1.6 square miles. The western half of the area incorporates the bottom of Los Alamos Canyon and some limited developable areas along the north rim of the canyon. The Los Alamos town site abuts the northern boundary. The eastern half includes the eastern portion of Los Alamos Canyon and two mesas to the north that correspond with TAs-21 and -73. The western half of the planning area is composed of TAs-02, -41 and -43.

The Omega West Planning Area is primarily reserve land. Other uses within the planning area are administration, experimental science, nuclear materials R&D and waste management. The Los Alamos County Airport lies within the planning area boundaries but is not considered part of this area for planning purposes.

The following assumptions will guide the physical planning of the Omega West Planning Area for the next 10 years:

- *All current Laboratory uses in the Omega West Planning Area are to be removed or replaced by facilities in other locations of the Laboratory. This is part of a consolidation strategy to move all Laboratory functions to locations south of Los Alamos Canyon.*
- *The long term intended use of the Omega West Planning Area is land transfer or reserve.*

*Map VI-I1: Omega West Planning Area Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Omega West Planning Area.

### Physical Constraints

Los Alamos Canyon covers most of the western half of the Omega West Planning Area. The canyon then extends south of TA-21 in the eastern half of the planning area. Development within the planning area is severely limited by steep slopes. There is a 100-year floodplain within Los Alamos Canyon, as well as federally protected species habitat. This habitat also includes the lands immediately adjacent to the canyon. There are isolated wetlands in the planning area. A number of existing facilities are located in the canyon bottom. Further development is discouraged in these environmentally sensitive areas.

### Operational Constraints

The Los Alamos town site borders this planning area on the north. Within the town site is TA-43, the Health Research Laboratory (HRL), a program funded by the Office of Biological and Environmental Research. Low-hazard chemical, radiological, and toxic materials are stored on-site. In addition, limited low-level nuclear activity is conducted within these facilities.

The program has outgrown its location, and a replacement facility is needed. Because of the safety hazards, any replacement facility should be sited away from community areas. Operational efficiencies would improve if new facilities were located near T, P, CST, and NIST programs. Much of the HRL life sciences activity supports the CMR program. Remediation for Cesium 137 and Cobalt 69 and a small amount of contaminated shielding must be completed before HRL building 20 is reused.

Within the Omega West Planning Area are three identified radiation sources and associated SAR areas, hazardous waste pipelines, solid waste and hazardous waste landfills.

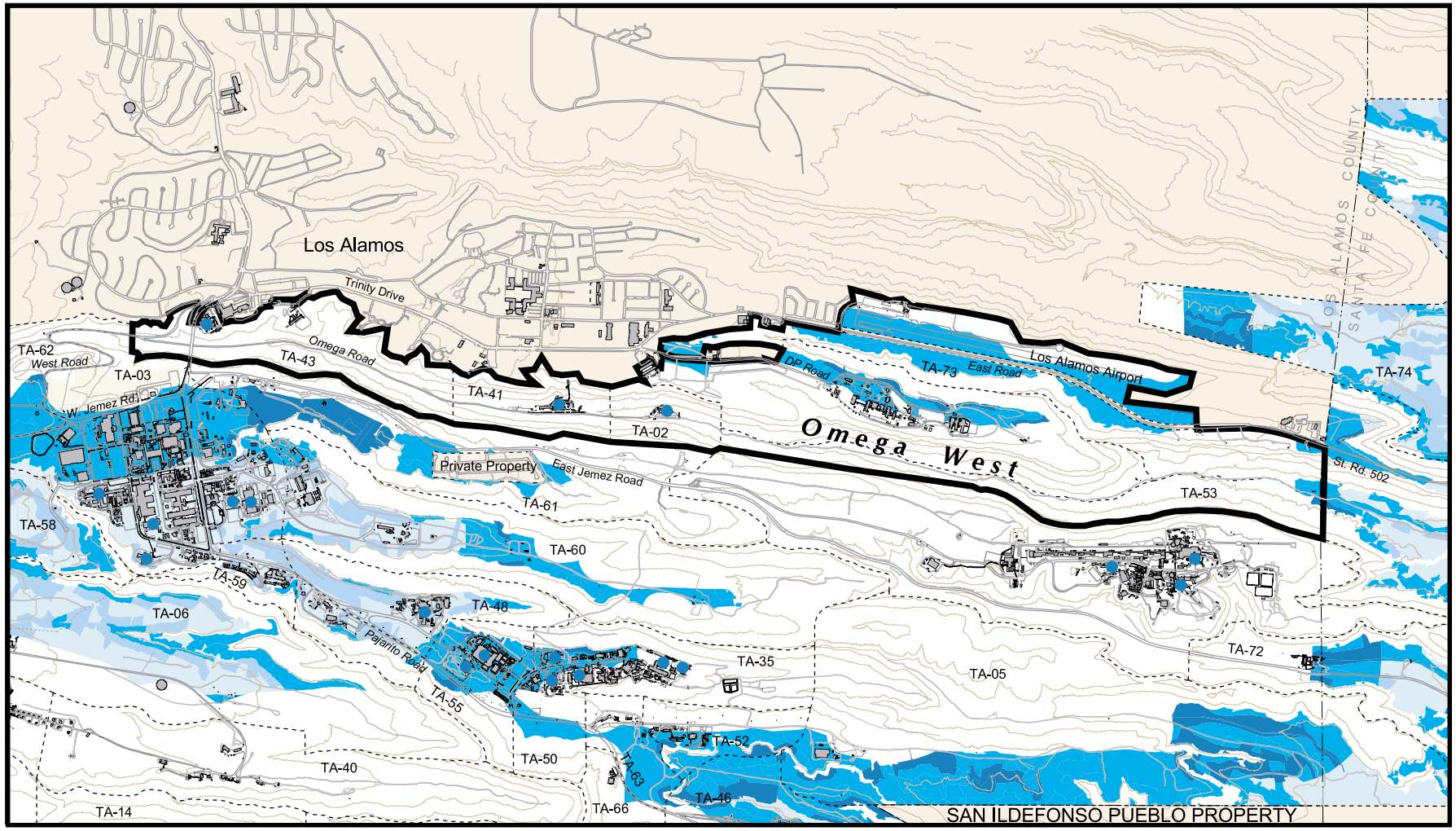
TAs-02 and -41 do not have any expansion space. Future functions here are constrained by poor access, relative isolation, and close proximity to privately owned land on the mesa top to the north. TA-43 also has no expansion space.

The Los Alamos County Airport is located in TA-73 and is part of the DOE land transfer package under consideration.

### Development Opportunities

The Laboratory has decided that no new future construction of major Laboratory facilities will happen in the Omega West Planning Area.

*Map VI-I2: Omega West Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

3000 0 3000 Feet

1000 0 1000 Meters

## 3. Projects for Omega West Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-I3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not shown" on the summary map.

### Consolidate Laboratory Functions

1. Proposed closure of TA-21 and relocation of activities to another Laboratory location.
2. Planned demolition of Omega West Reactor.
3. Proposed long-term decontamination and demolition of remaining facilities in TA-02 and TA-41.
4. Proposed consolidation of laboratory archives to central storage location at TA-03.
5. Planned move of shop functions to JCNNM consolidation site at Sigma Mesa.
6. Proposed long term decontamination and demolition of archives and SCNNM facilities in TA-21
7. Proposed consolidation of TA-21 WETF functions to TA-16 WETF site.
8. Proposed land transfer of portions of TAs-02, -21, and -43.
9. Planned relocation of Bioscience activities to the Core Planning Area. Possible reuse of the CMR Building at TA-03.

### Transportation Development

10. Proposed second bridge across Los Alamos Canyon to reduce regional traffic through TA-03.

### Infrastructure Revitalization

*NS* Ongoing utility revitalization activities as noted in Site Wide Planning Area section.

11. Planned slip-lining of existing natural gas 10-in. steel line for leak repair.
12. Proposed upsizing of existing natural gas Tech Meter 3 to improve utility redundance for Laboratory gas distribution system.

### ESH Efforts

13. Proposed cleanup of contaminated buildings at TA-21.

### Quality Environment Enhancement

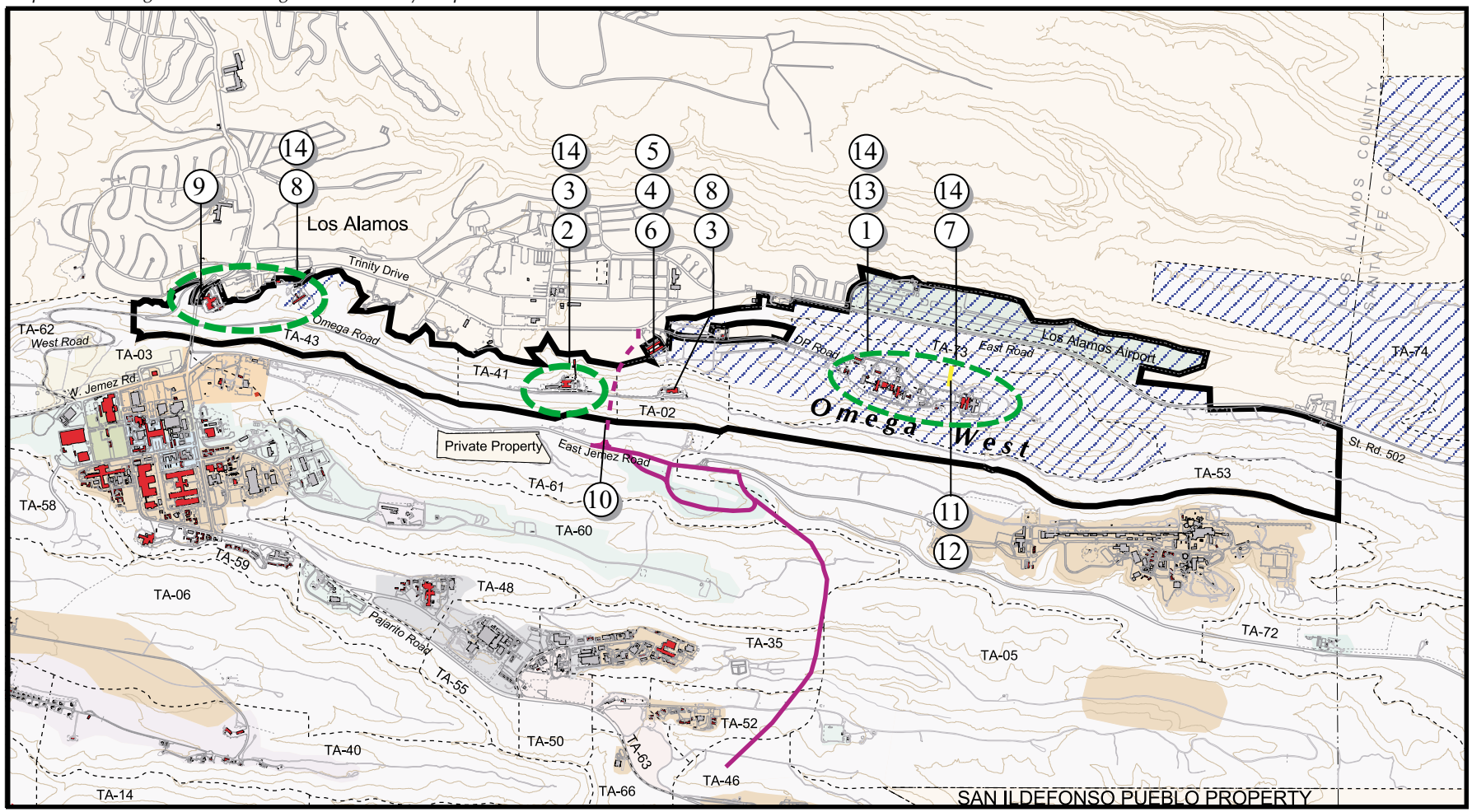
14. Revegetate sites in TAs-02, -21, -41 and -43 as facilities are closed or removed.

### CSP 2000 Issues for Omega West Planning Area

Important issues that need discussion for continued refinement of the CSP for this planning area:

- *Identify general timeline and process to close facilities in the Omega West Planning Area.*
- *Determine possibility of Bioscience activities reusing CMR Building at TA-03 or identify other potential options at TA-03.*
- *Identify the level of continuing upgrades or repairs to be done to facilities being closed in the planning area.*

*Map VI-I3: Omega West Planning Area Summary Map*




LEGEND

- Administration
- Airfield
- Experimental Science
- High Explosives R&D
- Non-DOE Property
- Nuclear Materials R&D
- Physical/Technical Support
- Public/Corporate Interface
- Research Park
- Reserve
- Theoretical/Computational Science
- Waste Management
- Land Transfer Tracts
- Planning Area
- Fair or Poor Buildings
- Area of Interest
- Gas Pipeline
- Long Range New or Improved Roads
- New or Improved Roads

3000 0 3000 Feet

1000 0 1000 Meters

# J. Rio Grande Corridor Planning Area

## 1. General Description

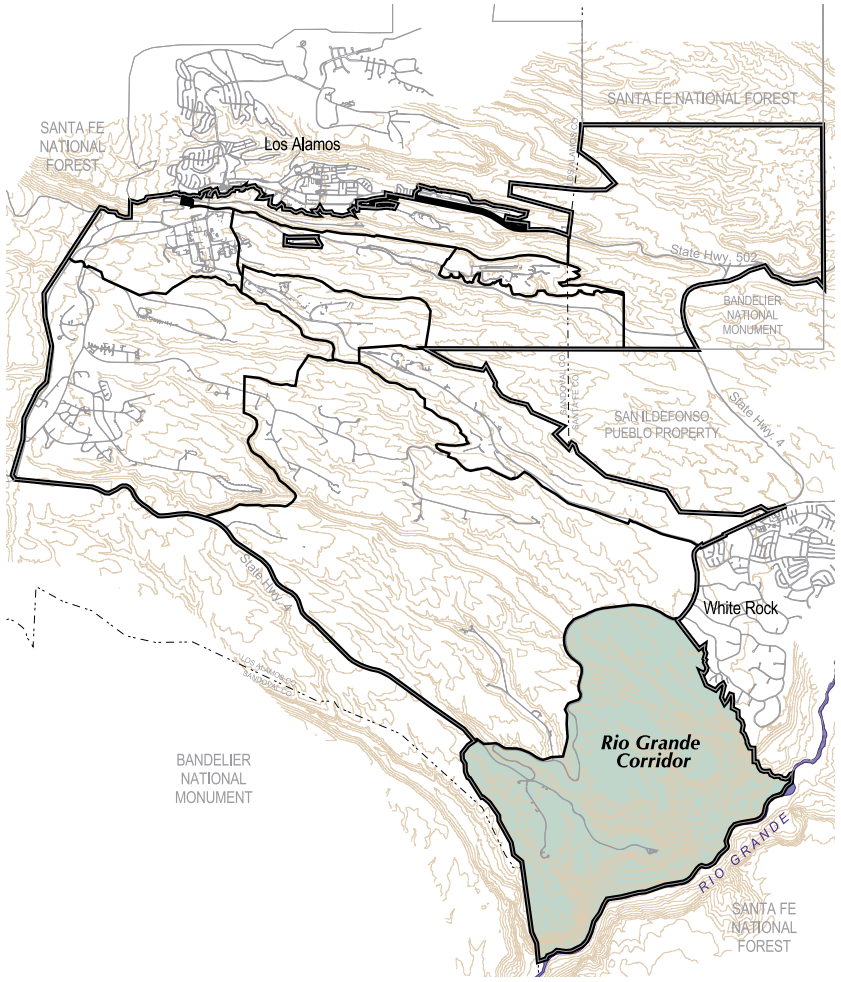
The Rio Grande Corridor Planning Area covers almost 7.7 square miles in the southeast corner of the Laboratory. The northern boundary parallels NM State Highway 4, and the community of White Rock abuts the eastern boundary. On the western and southern boundaries are the Rio Grande River and Bandelier National Monument. The Rio Grande Planning Area incorporates TAs-33, -70, -71 and narrow strips of undeveloped land in TAs-36, -39, and -68.

Also included in this planning area is the unconnected development at Fenton Hill. Fenton Hill, depicted on the Development Opportunities Map on page VIJ.3, is located about 28 miles (45 km) west of Los Alamos. The Gamma Ray Observatory and the Hot Dry Rock Geothermal Project are located at Fenton Hill.

The following assumptions will guide the physical planning of the Sigma Mesa Planning Area for the next 10 years:

- *The canyon areas along the Rio Grande will be managed as wildlife preserve.*
- *Activity at TA-33 will continue but not expand.*
- *TA-70 and -71 will continue to function as safety buffers for experiments conducted in the Experimental Engineering and Dynamic Testing Planning Areas.*
- *Major new utility corridors in the future may cross TA-33, -70 and -71.*
- *No changes are proposed for Fenton Hill at this time.*

*Map VI-J1: Rio Grande Corridor Planning Area Key Map*



## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Rio Grande Corridor Planning Area.

### Physical Constraints

The Rio Grande Corridor Planning Area is bordered on the southeast by the Rio Grande River. The planning area has three canyons: Chaquehui Canyon in TA-33, Ancho Canyon in TA-70, and Lower Water Canyon in TA-71. These canyons have severe slope constraints and contain protected species habitats and 100-year floodplains.

### Operational Constraints

The Rio Grande Corridor Planning Area is largely undeveloped and has minimal operational constraints except for a lack of utilities. The area is being held in reserve to meet potential development needs in the long-term future.

There is existing development in TA-33, including a tritium-handling facility, which is being phased out, and the National Radio Astronomy Observatory's Very Large Baseline Array telescope. Most structures in the planning area are substandard and are served by limited utilities.

Safety analysis report (SAR) areas cover the northern portion of TA-33. In TA-33 a radioactive landfill in the west-central portion; a sanitary landfill in the northern portion; and other potentially contaminated sites located in the northern, eastern, and western sectors.

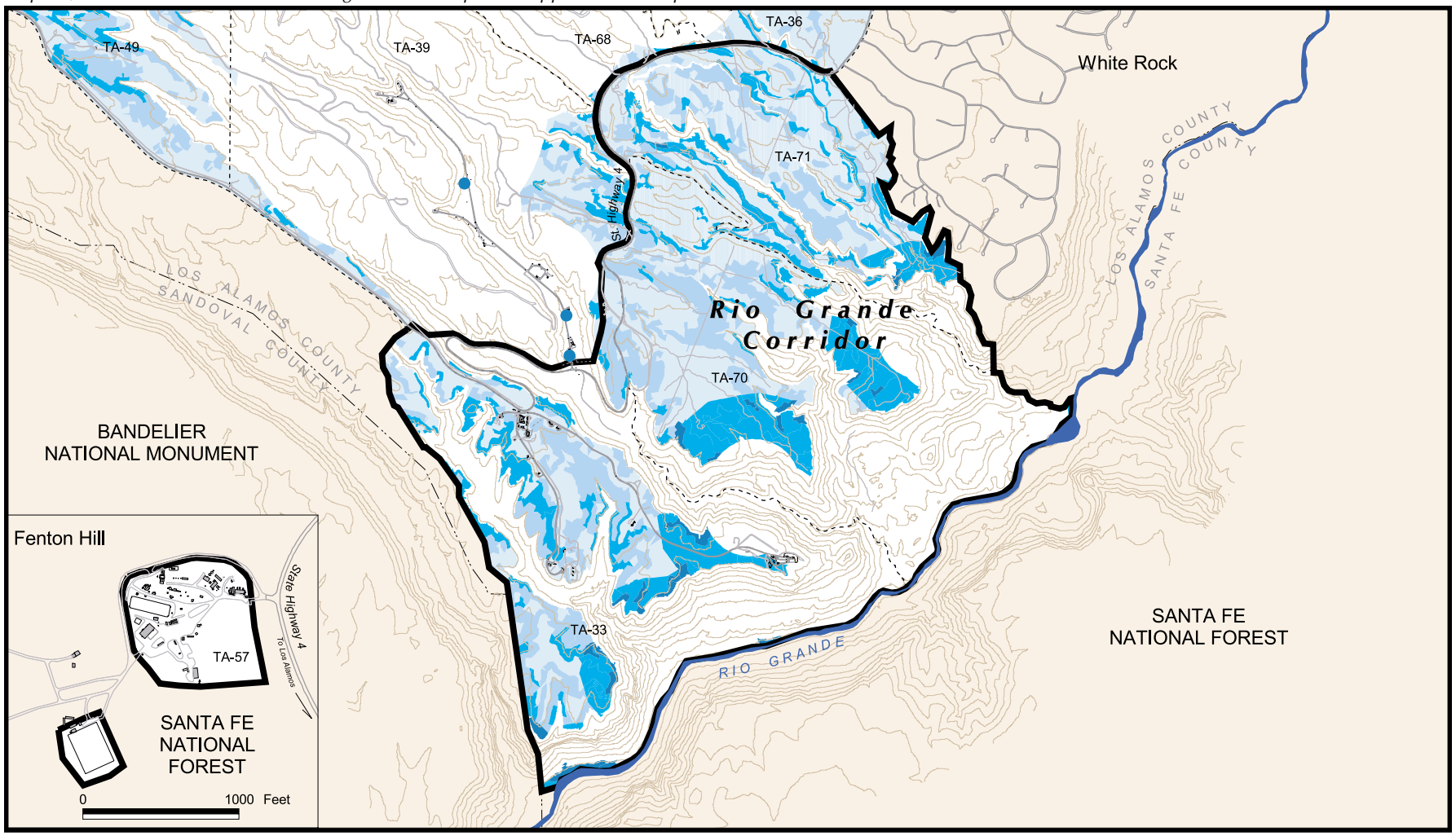
Electrical transmission line rights-of-ways traverse TAs-33, -70, and -71. In addition there are areas of possible high radio frequency located in TAs-70 and -71. TA-33 may have a potential water shortage problem and may not meet fire protection requirements for the area.

The community of White Rock is immediately east of TA-71, and the Santa Fe National Forest is southeast of TA-33 and -70. Both of which may create adjacency issues in the future.

### Development Opportunities

Significant undeveloped and minimally constrained land characterizes TAs-70 and -71. TA-33 contains a smaller amount of minimally constrained developable land. The tritium-handling facility in TA-33 is being phased out, and contaminated areas are being remediated creating additional usable acreage. All areas have very limited access to utilities.

*Map VI-J2: Rio Grande Corridor Planning Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

4500 0 4500 Feet
1000 0 1000 2000 Meters

## 3. Projects for Rio Grande Corridor Planning Area

Proposed, planned or budgeted projects noted below and on the facing summary map, VI-J3, for this planning area were identified through Laboratory documents or by stakeholders during the Comprehensive Site Plan 2000 process. The symbol *NS* stands for project "Not Shown" on the summary map.

### *Wildlife Preserve*

(1) Planned creation of wildlife preserve to be managed by separate agency.

### *Transportation Development*

(2) Proposed long-term road connection to Santa Fe.

### *Infrastructure Revitalization*

(3) Proposed future utility corridor for electrical transmission lines.

### *Quality Environment Enhancements*

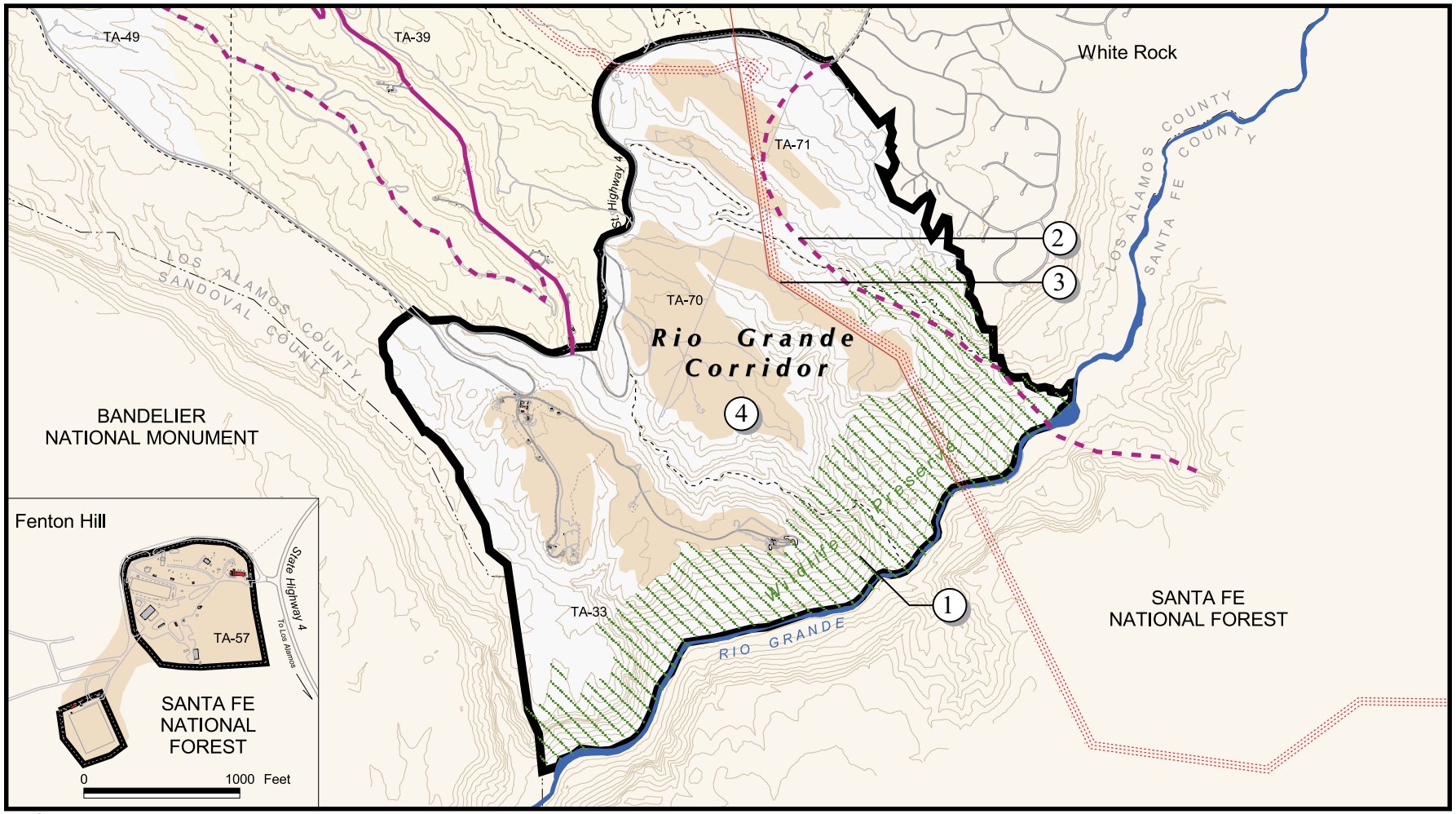
(4) Proposed improvements to existing public access trails in TA-70 and -71.

***CSP 2000 Issues for Rio Grande Corridor Planning Area***

Important issues that need discussion for continued refinement of the CSP for this planning area:

- *How will the wildlife preserve affect the Laboratory's long-term planning of utilities?*
- *Does the proposed road connection conflict with the new wildlife preserve?*

*Map VI-J3: Rio Grande Corridor Planning Area Summary Map*




LEGEND

- Experimental Science
- High Explosive Testing
- Non-DOE Property
- Reserve
- Wildlife Preserve
- Planning Area
- Fair or Poor Buildings
- Electric Line 115 kV
- Proposed Elec. Line 115 kV
- Long Range New or Improved Roads
- New or Improved Roads

4500 0 4500 Feet

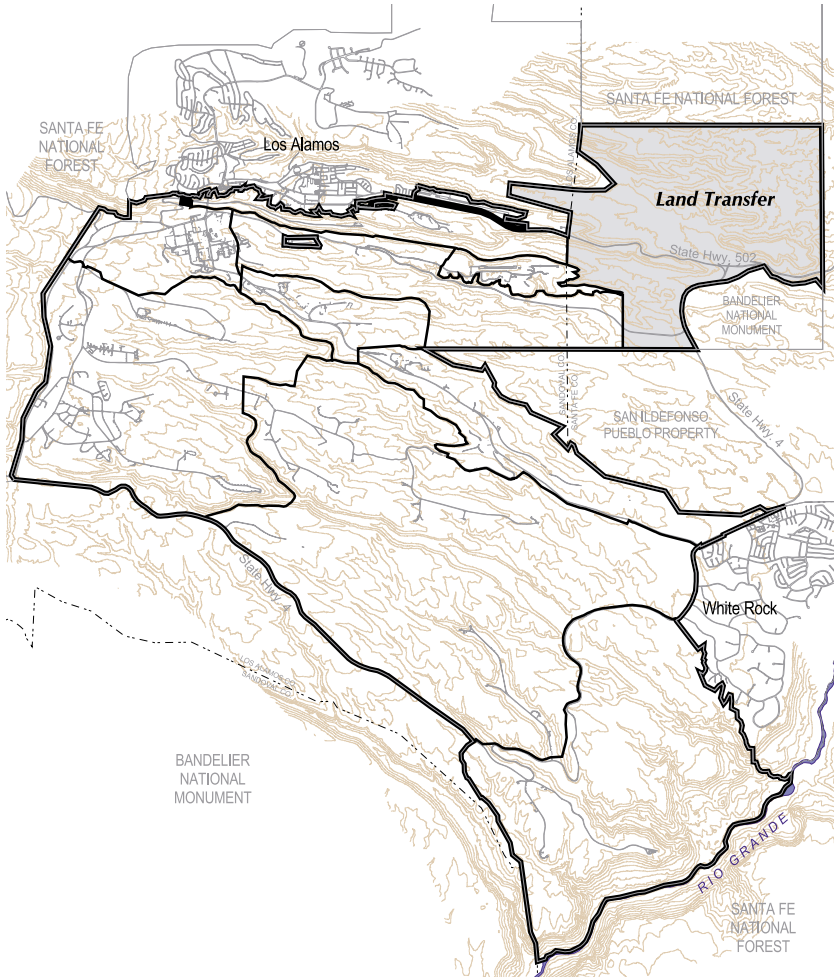
1000 0 1000 2000 Meters

# K. Land Transfer Area

## 1. General Description

The Land Transfer Area contains 5.7 square miles and corresponds with the boundaries of TAs-72 and -74. The area is geographically remote from the main body of the Laboratory.

*Map VI-K1: Land Transfer Area Key Map*




Planning assumptions for the Land Transfer Area are limited.

- *Portions of the Land Transfer Area will be transferred to other agencies in the future and will not be under the jurisdiction of the Laboratory after the transfer.*

## 2. Opportunities and Constraints

The following opportunities and constraints affect physical planning in the Land Transfer Area.

### Physical/Operational Constraints

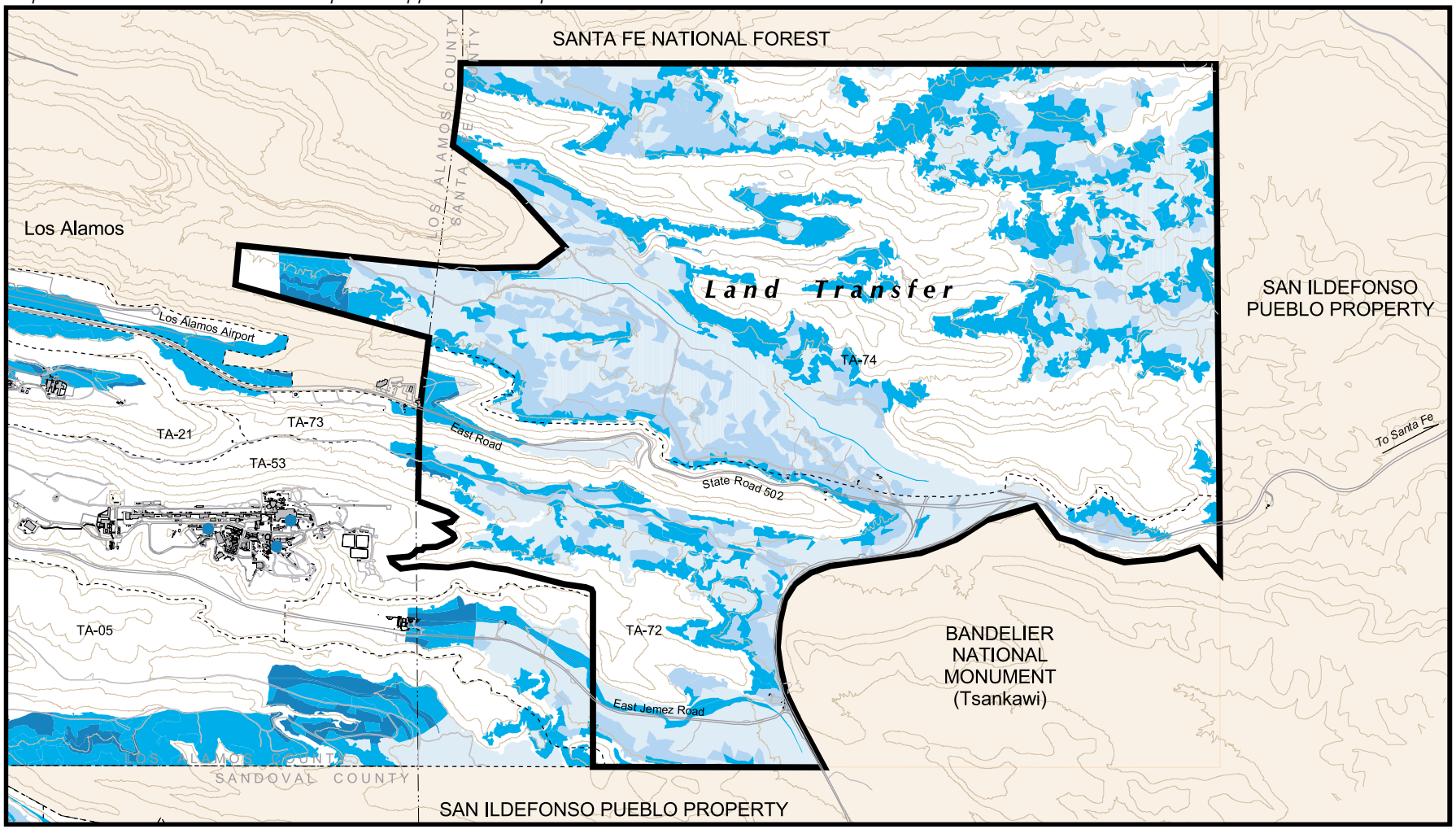
Discussion of operational and environmental constraints for the Land Transfer Area can be found in detail in the *Environmental Impact Statement for the Conveyance and Transfer of Certain Land Tracts Administered by the Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico* (1999).

As summarized by the above reference, there are no significant operational/environmental constraints associated with this area. Environmental remediation (ER) efforts in the Land Traansfer Area will continue.

### Development Opportunities

Once transferred, this land will no longer be under the jurisdiction control of the Department of Energy (DOE). Of the total 3,652 acres in the Land Transfer Area, 3,133.5 DOE acres are proposed for transfer. Most of the remaining DOE land is east and northeast of TA-53, and this land serves as a buffer to operations within TA-53.

*Map VI-K2: Land Transfer Area Development Opportunities Map*




LEGEND

- Technical Area Boundary
- Non Dept. of Energy Property
- Planning Area
- Unique Operational and/or Physical Considerations Exist
- Excellent Development Potential
- Good Development Potential
- Fair Development Potential
- Poor Development Potential
- Radiation Source

Areas of one acre or less are incorporated into the surrounding larger areas.

3000 0 3000 Feet
1000 0 1000 Meters

### *3. Future Changes*

The sole land use in the Land Transfer Area is Reserve, except for three small areas used by a NM State Highway Maintenance facility, a U.S. forest Service wastwater treatment plant, and several water wells.

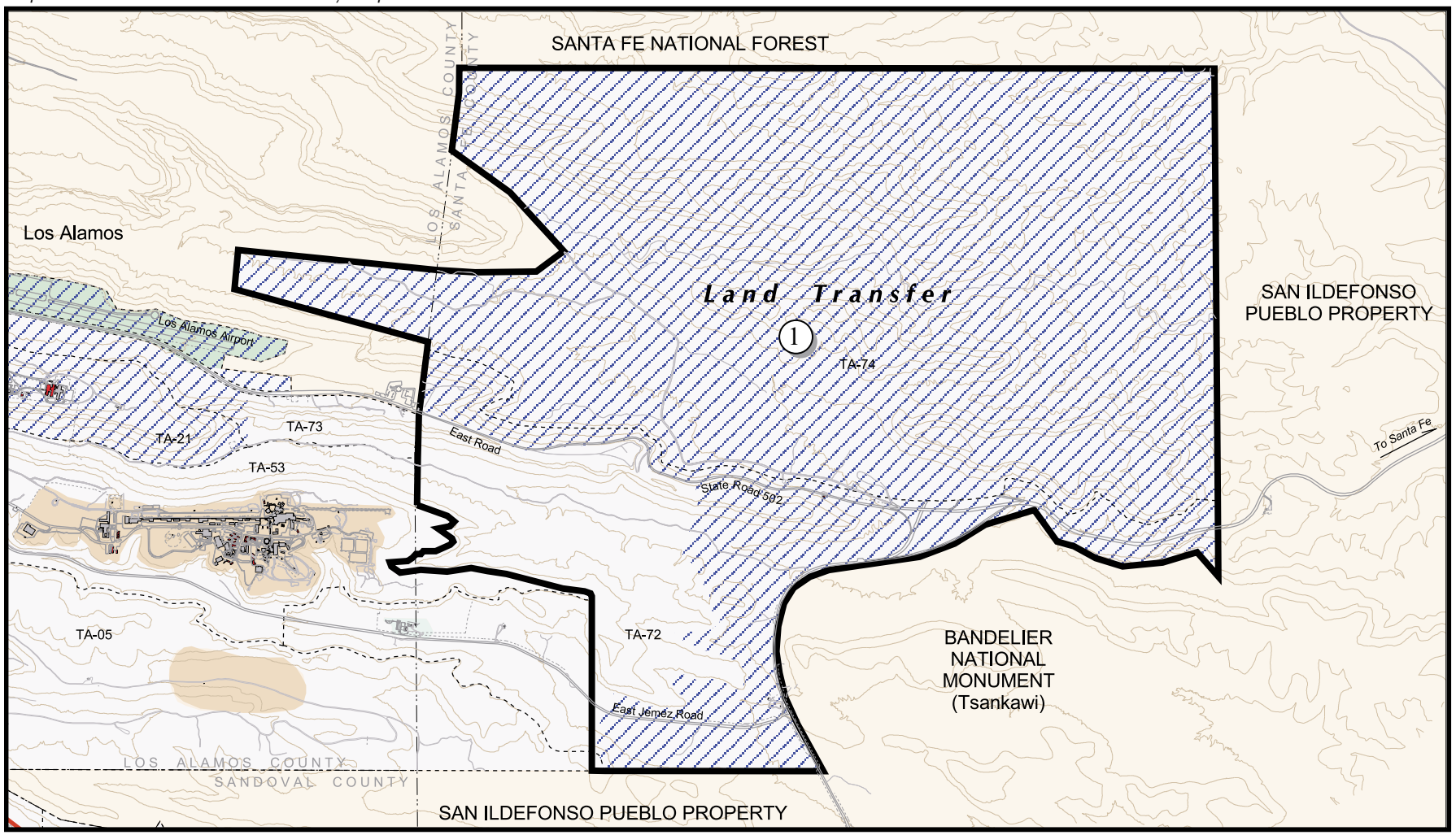
Of the total 3,652 acres in the Land Transfer Area, 3,133.5 DOE acres are proposed for transfer. The intent is to convey or transfer land to the County of Los alamos and the Pueblo of San Ildefonso. An agreement is currently being prepared to identify which entity would receive which parcel. It is anticipated that the entire process may take up to 10 years.

The *Environmental Impact Statement* for this area considers cultural or environmental preservation as the best use for the Land Transfer Area.

No site planning for the area is occurring, as the Land Transfer Area is included in various DOE land parcels for transfer to one or more adjacent political entities.

(1) Planned transfer of all land to other agencies.

*Map VI-K3: Land Transfer Area Summary Map*




LEGEND

- Airfield
- Experimental Science
- Non-DOE Property
- Physical/Technical Support
- Reserve
- Land Transfer Tracts
- Fair or Poor Buildings
- Planning Area

3000 0 3000 Feet

1000 0 1000 Meters

# VII. IMPLEMENTATION

Implementation of this Comprehensive Site Plan will need to address short-, mid- and long-term facilities planning issues. The CSP process will seek to find resolutions to the issues. Some current implementation issues are noted in this section.

## Issues

**Dynamic and Diverse Programs:** The Laboratory's dynamic and diverse programs add complexity to the implementation of any plan. Many decision makers in both DOE and the Laboratory can potentially make choices that can alter or support the Comprehensive Site Plan (CSP). The CSP process needs to coordinate closely with the decision makers in order to revise and update the CCP.

**Unanswered Questions:** Additional study of the programs' needs and futures is needed. Throughout this plan, descriptions of future program and mission directions occasionally prompt more questions than answers. The CSP is constantly evolving. It will be more relevant and useful for implementation if site planning becomes more closely tied to program planning. Facility planning will occur more smoothly as missions and program needs are further clarified between DOE and the Laboratory.

**Additional Site Planning:** There are several areas of the site that have not been explored or planned in the degree of detail that would allow the best planning to occur. For the next several years, planning efforts will focus on better identifying and understanding existing conditions consistent with available resources and institutional priorities.

**The Changing World:** Technology and the nation's defense posture, in response to new threats and interests, are rapidly changing and evolving. These changing conditions will continue to require revised missions, and thus revised facility capabilities, in order to respond to new technologies, programs, and initiatives.

**Rapidly Aging Facilities:** Many facilities at the Laboratory were constructed in the 1950s. Other facilities were constructed with a single purpose and often with a short or temporary life expectancy. Because of age or extended use, a large number of facilities have approached, reached, or exceeded their useful life. A significant amount of time and dollars is needed for demolition, refurbishment and/or replacement of these deficient facilities. Replacing deficient facilities reduces operating costs, increases the quality of the work environment, and job satisfaction of the work force.

**Facility Budget Pressures:** The natural tendency has been and will likely continue to be, to direct program monies toward programmatic work at the expense of facility maintenance and facility construction needs. Continued pressure will be applied to reduce facility operation and maintenance budgets. To be effective, operational budgets must continue to be applied intelligently for better alignment between facility and program priorities.

**Alternative Financing:** Limited line item monies have forced DOE and the Laboratory to continue to spend large amounts of maintenance and operation dollars on facilities that are past their useful life. Approval of alternative financing options such as third party financing would allow, over time, reduction of annual facility expenditures while increasing the value and usefulness of the facilities to meet current program requirements.

**Improved Project Delivery:** Implementation of the CSP requires efficient packaging and delivery of projects. Effective packaging of projects results in facility planning that is closely coupled with the program plans. Laboratory construction management and oversight functions need to demonstrate that they can implement a facility plan in accordance with program mission needs.

# Funding Strategies

Adequate project funding is key to implementation of the CSP. In recent years new strategies and approaches for funding facility projects--beyond the traditional line item (LI) and general plant project (GPP) mechanisms-- have been developed. The following are new funding options:

**Traditional Funding:** Traditional funding for line item construction funds will continue to be used for large and new major program initiatives, for example, for initiatives such as the facilities associated with the DOE laboratories integrated strategies. These line item requests will be independent requests through the DOE channels to Congress for funds. Conversion of program funds for GPP will continue for smaller construction projects that support ongoing and changing program requirements.

**Tri-Lab Agreement Funding:** The three weapons laboratories of LANL, LLNL, SNL plus the Nevada Test Site have an agreement that provides a total of $100 million annually for new, refurbished, and modified defense program facilities and infrastructure. This nominally would provide $30 million annually to Los Alamos National Laboratory for a variety of projects. However, the Strategic Computing Complex (SCC) project, funded under this agreement, commits the total of the Laboratory's share of these funds until 2005.

**Alternative Funding to LI Funds:** Revitalization projects, starting in the TA-03 area, are typical industry office and light laboratory facilities and associated infrastructure. Plans have been prepared and requests are being made for these types of projects to be funded by private industry development partners on DOE land. These facilities would then be purchased back over years through a lease-to-buy agreement, with the lease being paid by a combination of expense and possibly line item monies. Savings would accrue to DOE through the use of industrial partners' expertise in the construction of these types of facilities. In addition, the savings in operations and maintenance gained from replacing old facilities would offset the cost of capital and profit included in these types of lease agreements.

**Alternative Funding to GPP Funds:** Some smaller facility revitalization projects are essentially major deferred maintenance efforts. An alternative to program direct dollars being used for GPP, facility and organization taxes can be structured to generate funds from the user organizations. These funds would then be converted by the appropriate program office for use on general plant projects.

## Revitalization Strategies

Revitalization planning and implementation efforts are expected to focus on the following planning areas.

**1. Core Planning Area:** Revitalization is focused on TA-03 and encompasses the strategic computing and administration needs of the Laboratory. Many facilities in TA-03 are 40 or more years old. Tri-laboratory line item SCC and NISC funding will initiate the Core Planning Area revitalization efforts. Third party financing is being sought for building the administrative and specialized office space needed in TA-03.

**2. Pajarito Corridor West Planning Area:** Focus in and around TA-55 is on the proposed "nuclear campus" concept with shared security elements to meet the ongoing stockpile management and stewardship missions. Security costs, aging facilities, and the need to move SNM activities out of the CMR Building in TA-03, point to TA-55 as the next area for revitalization. TA-48 and TA-35 facilities would be part of this nuclear campus. Both technical areas need significant revitalization and modification to meet current and future mission requirements. The replacement CMR facility will seek LI monies. Other LI and GPP funds may be sought to refurbish facilities in the area.

**3. Experimental Engineering Planning Area:** Focus is on the areas primarily occupied by ESA Division and could include some DX Division operations as well. This area serves the engineering and administrative needs of the Advanced Hydrotest Facility (AHF) missions as set forth in the DOE laboratories integrated strategy. The facilities in this area are 40 to 50 years old and have evolved in such a manner that prevents the facility and infrastructure systems from adequately meeting the current needs of the work in the area. Some of this area may be refurbished by the new DOE integrated facilities strategy, but most revitalization is likely to come from facility operation and program monies using GPP monies.

**4. LANSCE Planning Area:** Focus is on the multimission needs of this area and on the support of the AHF. The majority of this area's revitalization funding may come as part of, and in support of, the DOE integrated laboratories strategy.

**5. Other Sites:** Other sites to be determined include upgrades to the explosives firing sites, the waste management sites, and other experimental sites.

# VIII. PROJECTS

## Criteria and Process for Evaluating Projects

With limited resources and many project requests, there is a need to provide senior Laboratory executives with a framework for project information from which effective decisions and strategic investments can be made. The Laboratory is evaluating DOE-accepted and industry project priority scoring systems, including the Capital Assets Management Process (CAMP). For 2000, the Laboratory is creating a validated and approved project priority process prior to a formalized annual call for projects. The process will provide flexibility to accept and incorporate special case-projects and unique situations throughout the year.

The 2000 CSP projects list was compiled from the Laboratory project call list as well as from interviews with senior management, program offices, PM Division, and others. An initial priority sort was done based on information acquired during the CSP project and interviews. The project priority list was compiled using high/medium/low categories based on the following criteria:

| | |
|---|---|
| High | • Funded projects with a construction project data sheet (CPDS) or similar.<br>• Projects with high programmatic importance.<br>• Integrated strategy projects. |
| Medium | • Projects related to continuing existing programs.<br>• Revitalization projects for continuing and enhancing existing Laboratory functions.<br>• Important projects for the site, facilities, or program, but not yet baselined. |
| Low | • Projects with no funding and/or minimal near future need. |

## Projects List

The following project table includes current and proposed projects for Los Alamos National Laboratory over the next 10 years. These projects are prioritized based on the criteria for high, medium, and low priority. The list also indicates the program sponsor, the type of project funding, the estimated Total Project Cost (TPC), and the distribution of that funding over the ten year period between FY2000 and FY2009.

The projects on these lists are those with an estimated TPC of greater than $300,000. Figures in bold blue text represent baseline estimates. Some funds have already been spent. All other funding information represents order of magnitude place holders which are to be further refined following additional site and project planning. Only projects that result in changes to the site or facilities at Los Alamos National Laboratory are included. Program or experimental projects are not included unless there is a facility or site modification impact.

## Projects Program Sponsors

There are six major DOE secretarial offices that presently sponsor current and future projects athe Laboratory. The following are the programs and the acronyms used on the project tables.

| Program Project List Reference | |
|---|---|
| Defense Program/Stockpile Stewardship and Other | DP-SS |
| Defense Program/ Weapons Stockpile Management | DP-SM |
| Environmental Restoration/ Waste Management | ER/WM |
| Nonproliferation and National Security | NN |
| Office of Science (formerly Energy Research) | O of S |
| Infrastructure and Defense Program Landlord | DP-LL |

## Project Funding Types

Projects are funded with several types of funding. The funding types are line item projects (LIP); general plant projects (GPP); expense; and third party. LIP funds are program dollars allocated by Congress for specific projects and initiatives. GPP funds are program operations funds that are allocated for capital improvements and betterments needed to meet program initiatives. Expense funds are program operating funds supporting major maintenance and facility activities that are needed to meet program missions, and that do not result in capital improvements or betterment of a facility. Third party funds are currently used only for energy savings projects at Los Alamos National Laboratory; however, there are plans and initiatives to obtain third party funds for several revitalization projects. The mortgage created when using third party funds for revitalization projects would be paid over time with savings from program operating funds and possibly some LI or GPP capital funds.

*Figure VIII-1: Advanced Hydrotest Facility Concept*

| Priority Level | Project Title | Program Sponsor | Funding Source | TPC $K | FY00 $K |
|---|---|---|---|---|---|
| H | Strategic Computing Complex (SCC) | DP-SS | LIP | **107,000** | **26,000** |
| H | CMR Replacement | DP-SM | LIP | 865,000 | 5,000 |
| H | Advanced Hydrodynamic Facility (formerly PRISM) | DP-SS | LIP | 1,600,000 | 14,000 |
| H | DARHT - PHASE I | DP-SS | LIP | **269,800** | **61,000** |
| H | Atlas | DP-SS | LIP | **48,900** | **12,201** |
| H | CMIP | DP-SM | LIP | 510,000 | |
| H | TMSE | DP-SM | GPP | **28,815** | **11,935** |
| H | CMR Upgrades | DP-SM | LIP | **223,600** | **18,000** |
| H | West Road Connector to Mercury | DP-LL | GPP | **252** | **49** |
| H | Fire Suppression Yard Main Replacement (TA-55) | DP-SM | Expense | **8,264** | **1,145** |
| H | NMSSUP, Phase I FY99 OPC | DP-SM | LIP | **74,634** | **11,300** |
| H | NISC | NN | LIP | **62,662** | **3,887** |
| H | APT Project (LANL Portion) | DP-SS | LIP | 176,772 | 52,800 |
| H | Fire Protection Improvements (FPI) | DP-LL | LIP | **17,460** | **1,908** |
| H | TA-53 Isotope Production Facility | DP-SS | LIP | **15,540** | **8,923** |
| H | AROE | DP-SS | GPP | **2,438** | **870** |
| H | Short Pulse Spallation Source (SPSS) | DP-SS | Expense | **25,888** | **4,212** |
| H | Spallation Neutron Source Line Accelerator | O Of S | LIP | 240,000 | 65,000 |
| H | Cooling Tower Replacement, TA-3-22 | DP-SS | GPP | **1,819** | **46** |
| H | Electricial Infrastructure Safety Upgrade Program | DP-LL | GPP | **40,690** | **1,000** |
| H | Satellite Parking/Intersection | DP-LL | GPP | **2,951** | **218** |
| H | TA-53 RLW Tank Replacement | DP-SS | Expense | **1,428** | **198** |
| H | Decontamination & Volume Reduction System | DP-SS | GPP | **4,740** | **3,162** |
| H | TA-53-64 Cooling Tower | DP-SS | GPP | 3,400 | 3,400 |
| H | Waste Water Collection Lines | DP-SS | GPP | **1,340** | **4** |
| H | WETF - Roof Upgrades | DP-SM | GPP | **1,189** | **552** |
| H | Central Health Physics Calibration Laboratory | DP-LL | LIP | **4,200** | **578** |
| H | NMSSUP, Phase IIa | DP-SM | LIP | 75,000 | |

| FY01 $K | FY02 $K | FY03 $K | FY04 $K | FY5 $K | FY06 $K | FY7 $K | FY08 $K | FY09 $K | FY10 $K |
|---|---|---|---|---|---|---|---|---|---|
| 59,000 | 18,000 | | | | | | | | |
| 10,000 | 100,000 | 100,000 | 150,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | |
| 38,000 | 83,000 | 251,000 | 228,000 | 256,000 | 293,000 | 71,000 | 22,000 | 242,000 | 85,000 |
| 35,000 | | | | | | | | | |
| 1,354 | | | | | | | | | |
| | 15,000 | 64,000 | 74,000 | 74,000 | 74,000 | 63,000 | 58,000 | 48,000 | 40,000 |
| 10,256 | 1,793 | | | | | | | | |
| 20,450 | 20,900 | 19,800 | 17,210 | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 18,000 | 9,600 | 5,400 | 7,143 | | | | | | |
| 4,962 | 22,102 | 20,814 | 9,108 | | | | | | |
| 45,047 | 17,824 | | | | | | | | |
| | | | | | | | | | |
| 1,989 | | | | | | | | | |
| | | | | | | | | | |
| 5,255 | 3,864 | 402 | | | | | | | |
| 80,000 | 30,000 | 30,000 | 1,000 | 10,000 | | | | | |
| | | | | | | | | | |
| 6,000 | 7,800 | 8,000 | 8,300 | 8,600 | | | | | |
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| | | | | | | | | | |
| 2,406 | 926 | | | | | | | | |
| | 10,000 | 10,000 | 30,000 | 5,000 | 15,000 | | | | |

| Priority Level | Project Title | Program Sponsor | Funding Source | TPC $K | FY00 $K |
|---|---|---|---|---|---|
| H | TA-53 RLW Treatment System | DP-SS | GPP | 4,422 | 602 |
| H | Facilities Improvements Technical Support Bldg. | DP-SM | GPP | 4,860 | 2,316 |
| H | Electrical Infrastrucutre Safety Upgrade - SM-43 | DP-LL | GPP | 1,710 | 1,143 |
| H | Bldg. 430 Tempered Water,HVAC, & Elec. Sys. Upgrades | DP-SS | GPP | 1,283 | 1,232 |
| H | Communication Operation Bldg. | DP-LL | GPP | 4,500 | 4,103 |
| H | TA-53-62 Cooling Tower Replacement | DP-SS | GPP | 2,650 | 1,478 |
| H | Natural Gas Line (Gas Line Replacement to TA-15) | DP-SS | GPP | 1,900 | 753 |
| H | Water Well Replacements | DP-LL | LIP | 17,200 | 2,708 |
| H | Ventilation Upgrade, Lujan Center | DP-SS | GPP | 2,750 | 600 |
| M | Administration Building Replacement (TA-03 Phase I Revite) | DP-LL | 3rd Party | 55,000 | |
| M | Computational Physics (TA-03 Phase I) | DP-LL | 3rd Party | 46,000 | |
| M | Convert Heating System and Upgrade Controls at TA-48-RC1 | DP-SS | GPP | 750 | |
| M | Cooling Tower TA-53-60 | DP-SS | GPP | 2,470 | 250 |
| M | Demo Administration Bldg. - TA-03 Phase I | DP-LL | 3rd Party | 13,600 | |
| M | Demo of JCN and Misc. - Phase 1 TA-03 | DP-LL | 3rd Party | 6,600 | |
| M | Demo of Sherwood - Phase 1 TA-03 | DP-LL | 3rd Party | 2,100 | |
| M | Demo of Syllac - Phase 1 TA-03 | DP-LL | 3rd Party | 2,400 | |
| M | Demolition of Misc. facilities (TA-03 Phase I) | DP-LL | 3rd Party | 3,000 | |
| M | Detonator Manufacturing Fac Enlargement | DP-SM | GPP | 5,000 | |
| M | Electrial Reliability Upgrades (3rd Line), 2002 | DP-LL | GPP | 22,000 | |
| M | ESA Office Consolidation/Revitalization | DP-SS | 3rd Party | 4,500 | |
| M | ESA Technical Support Facility/Tritium Group Office Bldg. | DP-SM | GPP | 4,400 | |
| M | Gateway Infrastructure Development | DP-LL | 3rd Party | 15,000 | 7,500 |
| M | Gateway Visitor / LAAO Bldgs. | DP-LL | 3rd Party | 23,000 | 10,000 |
| M | HVAC/Electrical Upgrade, MPF-6 | DP-SS | GPP | 600 | |
| M | Install Two Pedestrain Turnstile Gates | DP-SS | Expense | 625 | |
| M | JCNNM Relocation | DP-LL | 3rd Party | 18,000 | 9,000 |
| M | Laboratory Tritium Consolidation | DP-SM | LIP | 25,000 | |

| FY01 $K | FY02 $K | FY03 $K | FY04 $K | FY5 $K | FY06 $K | FY7 $K | FY08 $K | FY09 $K | FY10 $K |
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| 372 | | | | | | | | | |
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| 2,150 | | | | | | | | | |
| | 1,800 | 1,800 | 1,800 | | | | | | |
| | | 10,000 | 25,000 | 20,000 | | | | | |
| 750 | | | | | | | | | |
| 2,220 | | | | | | | | | |
| | | | | 13,600 | | | | | |
| | 6,600 | | | | | | | | |
| 2,100 | | | | | | | | | |
| | | | | 2,400 | | | | | |
| | 500 | 1,000 | 1,500 | | | | | | |
| 2,500 | 2,500 | | | | | | | | |
| | | 22,000 | | | | | | | |
| 1,000 | 3,500 | | | | | | | | |
| 4,400 | | | | | | | | | |
| 7,500 | | | | | | | | | |
| 13,000 | | | | | | | | | |
| 600 | | | | | | | | | |
| 625 | | | | | | | | | |
| 9,000 | | | | | | | | | |
| | | | | 14,500 | 10,500 | | | | |

| Priority Level | Project Title | Program Sponsor | Funding Source | TPC $K | FY00 $K |
|---|---|---|---|---|---|
| M | The Laboratory Warehousing Complex | DP-LL | 3rd Party | 16,000 | |
| M | Otowi Floor Replacement/Upgrades | DP-LL | GPP | 5,080 | 80 |
| M | Parking Structure - TA-03 Revit. Phase 1 | DP-LL | 3rd Party | 19,000 | |
| M | Radiographic Facilities at TA-55 | DP-SM | LIP | 20,000 | |
| M | Roof Upgrades | DP-SS | GPP | 300 | |
| M | Roof Upgrades - TA-03 Bldgs. 215, 216, 422 | DP-LL | GPP | 300 | |
| M | Security Upgrade at TA-08, Bldgs. 22/23 | DP-LL | GPP | 390 | 140 |
| M | TA-11 Sanitary Sewer/Water Line Upgrade | DP-SS | GPP | 600 | 600 |
| M | TA-15-50&194 Electrical Upgrades at the “Hollow” | DP-SS | GPP | 340 | 340 |
| M | TA-16-200 Electrical Upgrades | DP-SS | GPP | 400 | |
| M | TA-02 Omega West Reactor Fac Decom | ER/WM | LIP | 13,000 | |
| M | TA-21 DP West Facilities Decom/Demo | ER/WM | LIP | 56,000 | |
| M | TA-22-90 & 93 Roof Replacement | DP-SS | GPP | 450 | 450 |
| M | TA-03 Phase II - Auditorium Bldg | DP-LL | 3rd Party | 9,000 | |
| M | TA-03-102 Ventilation & Electrical Upgrades | DP-SS | GPP | 2,500 | |
| M | TA-33 PH Tritium Facility Decon/Demo | ER/WM | LIP | 2,077 | |
| M | TA-03-39 Compressed Air System Upgrade | DP-SS | GPP | 425 | |
| M | TA-55 Admin Revitalization | DP-SM | GPP | 5,000 | |
| M | TA-55 Site/Parking & Infrastructure Upgrade | DP-SM | GPP | 10,000 | |
| M | TA-09-33 & 35 Upgrades | DP-SS | GPP | 500 | |
| M | Target Fabrication (Series of small upgrades) | DP-SS | GPP | 800 | |
| M | Theoretical Studies (TA-03 Phase I) | DP-LL | 3rd Party | 43,000 | |
| M | Traffic & Parking Upgrades | DP-LL | GPP | 600 | 300 |
| M | WNR Detector Building | DP-SS | GPP | 450 | |
| L | Assembly Facility | DP-SS | LIP | 15,000 | |
| L | Building 200 Life Safety Upgrades | DP-SS | GPP | 735 | |
| L | Central Records Storage | DP-LL | Expense | 4,910 | 500 |
| L | Demo of Van de Graff Facility | ER/WM | LIP | 15,000 | |

| FY01 $K | FY02 $K | FY03 $K | FY04 $K | FY5 $K | FY06 $K | FY7 $K | FY08 $K | FY09 $K | FY10 $K |
|---|---|---|---|---|---|---|---|---|---|
| | 8,000 | 8,000 | | | | | | | |
| 2,500 | 2,500 | | | | | | | | |
| | | 8,500 | 8,500 | | | | | | |
| | | 10,000 | 10,000 | | | | | | |
| 300 | | | | | | | | | |
| 300 | | | | | | | | | |
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| | | | | | | | | | |
| 400 | | | | | | | | | |
| | | | | | | | | | 6,500 |
| | | | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 |
| | | | | | | | | | |
| | | | | | | | 4,500 | 4,500 | |
| 2,500 | | | | | | | | | |
| | | 692 | 692 | 692 | | | | | |
| 425 | | | | | | | | | |
| | 5,000 | | | | | | | | |
| 5,000 | 5,000 | | | | | | | | |
| 500 | | | | | | | | | |
| 800 | | | | | | | | | |
| | | | | | 14,333 | 14,333 | 14,333 | | |
| 300 | | | | | | | | | |
| 450 | | | | | | | | | |
| | | | | | 5,000 | 5,000 | 5,000 | | |
| | 110 | 625 | | | | | | | |
| 4,410 | | | | | | | | | |
| | | | | | | | | | 5,000 |

| Priority Level | Project Title | Program Sponsor | Funding Source | TPC $K | FY00 $K |
|---|---|---|---|---|---|
| L | DP East Facility Demolition | ER/WM | LIP | 40,000 | |
| L | East Loop Road Phase 1 (Gateway Connection) | DP-LL | GPP | 5,000 | |
| L | ESA Site Circulation Improvements | DP-SS | 3rd Party | 1,000 | |
| L | Firing Sites Revitalization Program | DP-SS | GPP | 25,000 | |
| L | GPP/Other buildings Revite Program (Series of GPP buildings) | DP-LL | GPP | 25,000 | |
| L | Quality of Life Upgrades | DP-SS | GPP | 350 | |
| L | Remove Temporary Buildings & Improve Parking | DP-SS | GPP | 1,000 | |
| L | Re-Route Traffic and Relocate HE Fence | DP-SS | GPP | 600 | 300 |
| L | SM-40 Annex Bldg. Demolition | DP-LL | GPP | 3,000 | |
| L | TA-14 Explosive Prep & Bunker Demolition | ER/WM | LIP | 600 | |
| L | TA-15 Electrical Distribution Upgrade | DP-SS | GPP | 1,500 | 1,500 |
| L | TA-16 410 & 430 Electrical Upgrades | DP-SS | GPP | 350 | |
| L | TA-16 Explosive Prep Bldg Demolitions | DP-SS | Expense | 5,000 | |
| L | TA-16 Lab, & Process Bldg Demolitions | ER/WM | LIP | 2,000 | |
| L | TA-16-218 Refurbish for WE Office Space | DP-SS | GPP | 750 | |
| L | TA-21 Steam Plant Boiler and Control Sys. Mods. | DP-LL | Expense | 1,250 | 250 |
| L | TA-03 Phase II - Demolition | DP-LL | 3rd Party | 3,000 | |
| L | TA-03 Phase II - General Office (500 ocup) | DP-LL | 3rd Party | 43,000 | |
| L | TA0-3 Phase II - Physics Bldg. | DP-LL | 3rd Party | 43,000 | |
| L | TA-03 Phase II - PM/F/S Bldg. | DP-LL | 3rd Party | 43,000 | |
| L | TA-03 Phase III Demolition | DP-LL | 3rd Party | 3,000 | |
| L | TA-03-40 N161 G&D (reburbish old MEC plating shop) | DP-SS | GPP | 1,000 | 250 |
| L | TA-50 Salt Removal Evaporator | DP-SS | GPP | 10,000 | |
| L | TA-60 Test Fab Facility Demolition | DP-LL | Expense | 2,000 | |
| L | Unused Roads Reclamation Projects | DP-SS | GPP | 1,000 | |
| L | Wellness/Training Bldg. (TA-03 Phase II) | DP-LL | 3rd Party | 49,000 | |
| L | West Road Connector to Pajarito | DP-LL | GPP | 5,000 | |
| | | | | | |

| FY01 $K | FY02 $K | FY03 $K | FY04 $K | FY5 $K | FY06 $K | FY7 $K | FY08 $K | FY09 $K | FY10 $K |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 8,000 |
| | | 5,000 | | | | | | | |
| 1,000 | | | | | | | | | |
| | | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | | | |
| 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | | | | | |
| 350 | | | | | | | | | |
| | | | 500 | 500 | | | | | |
| 300 | | | | | | | | | |
| | | | | | | | | 2,500 | 500 |
| | | | | | | | | | 600 |
| | | | | | | | | | |
| 350 | | | | | | | | | |
| | | | | | | | | | 5,000 |
| | | | | | 2,000 | | | | |
| 750 | | | | | | | | | |
| 1,000 | | | | | | | | | |
| | | | | 1,500 | 1,000 | 500 | | | |
| | | | | | | | | 20,000 | 23,000 |
| | | | | | | | | 20,000 | 23,000 |
| | | | | | | | | 20,000 | 23,000 |
| | | | | | | | 1,000 | 1,000 | 1,000 |
| 750 | | | | | | | | | |
| | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | | | | |
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| | | | | | | | | 20,000 | 29,000 |
| | | | | | | | | | 5,000 |
| | | | | | | | | | |

# IX. UPDATING THE PLAN

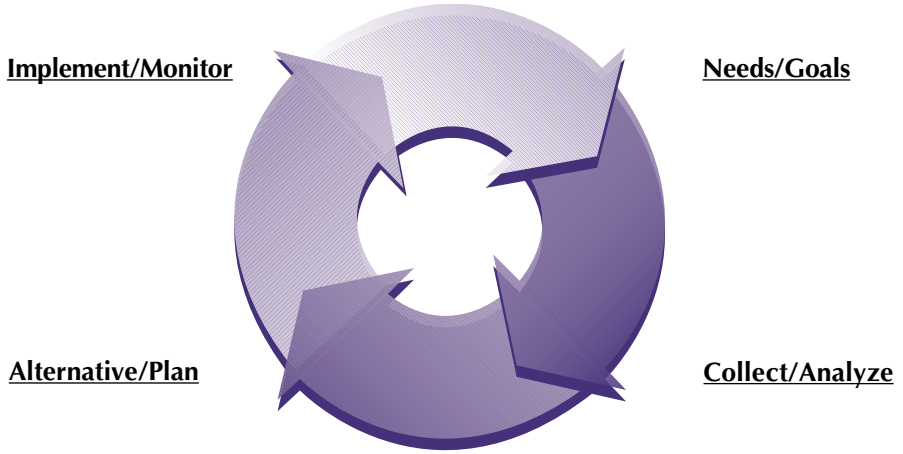
*Comprehensive Site Plan 2000* is based on an evolving and revolving process. The CSP will be revised annually. The plan is packaged in a three-ring binder to make it easy to update with inserts that will be sent to each organization and person on the distribution list.

Multifaceted methods for continuing the CSP's forward momentum include the following:

- A CSP Web Page will enable stakeholders to provide comments year-round at *www.lanl.gov/csp2000.*
- A schedule of activities will be set each year in January. The schedule will identify completion dates for activities to update the CSP, including program interviews, stakeholder forums, SPCC and SET review dates and DOE submittal dates.
- A series of communication activities such as displays, news releases and limited - distribution e-mails will keep awareness of the CSP process high throughout the Laboratory.
- A continuing dialogue with the program offices and Laboratory divisions will capture their changing missions and program needs.
- Regularly scheduled presentations to the Site Planning and Construction Committee will continue to review CSP facilities-planning issues that require senior Laboratory leadership to proceed.

These CSP activities will be refined and expanded upon to create a flexible tool to guide strategic facilities investments that will keep the Laboratory vital and strong into the 21st Century.

*The CSP is Based on an Evolving and Revolving Process*



# ACRONYM LIST

AA Audits and Assessment Division
AEI Area of Environmental Interest
AHF Advanced Hydrodynamic Facility
APT Accelerator Production of Tritium
ARIES Advanced Recovery and Integrated Extraction System (project)
B Bioscience Division
CAMP Capital Assets Management Process
CERCLA Comprehensive Environmental Response Compensation and Liability Act
CIC Computing, Information and Communication Division
CMR Chemical and Metallurgy Research (building)
CPDS Construction Project Data Sheet
CSP Comprehensive Site Plan
CST Chemical Science and Technology Division
DAF Device Assembly Facility
DARHT Dual Axis Radiographic Hydrotest Text Facility
DOD Department of Defense
DOE Department of Energy
DP Defense Programs
DX Dynamic Experimentation Division
E Environmental Science and Waste Technology
EES Earth and Environmental Science Division
EOS Earth Orbiting System
EPR Ethylene-Propylene-Rubber
ER Environmental Restoration
ESA Endangered Species Act
ESA Engineering Sciences and Applications Division
ESH Environment, Safety and Health Division
FIMAD Facility for Information Management, Analysis, and Display
FM Facilitity Manager/Management
FMU Facility Management Unit
FRD Functional Requirements Document
FWO Facility and Waste Operations Division
FY Fiscal Year
GIS Geographic Information System
GPP General Plant Project (budget category)
HE High Explosives
HMP Habitat Management Plan
HRL Health Research Laboratory
IAEA International Atomic Energy Agency
ICAMP Integrated Capital Assets Management Planning
ICF Inertial Confinement Fusion
ISEC Internal Security Office
JCNNM Johnson Controls Northern New Mexico
JTA Joint Test Assembly
LAAO Los Alamos Area Office (DOE)
LAC Los Alamos County
LA-CP Los Alamos Controlled Publication
LAICS Los Alamos Integrated Communications System
LANL Los Alamos National Laboratory
LANSCE Los Alamos Neutron Science Center
LCAM Life Cycle Asset Management
LI Line Item (budget category)
LIP Line Item Project
LIR Laboratory Implementing Requirement
LLNL Lawrence Livermore National Laboratory
LS Life Sciences Division
MD Materials Disposition
MESA Microelectronic Engineering Sciences and Applications
MST Materials Science and Technology Division
NDE Non Destructive Evaluation
NEPA National Environmental Policy Act
NFAB Nuclear Facilities Authorization Basis
NHMFL National High Magnetic Field Laboratory
NHPA National Historic Preservation Act
NISC Nonproliferation and International Security Center
NIST National Industrial Security Program
NM New Mexico
NMT Nuclear Materials Technology Division
NNCMF Non-Nuclear Component Manufacturing Facility
NTS Nevada Test Site

NWP Nuclear Weapons Program
OCBs Oil Circuit Breakers
P Physics Division
PE Polyethylene
PF Plutonium Facility
PHERMEX Pulsed High-Energy Radiographic Machine Emitting X-rays
PIDAS Perimeter Intrusion and Detection Assessment System
PM Project Management Division
PMP Preventative Maintenance Program
PNM Public Service Company of New Mexico
PRAD Proton Radiographic Facility
PRS Potential Release Site
PTLA Protection Technologies Los Alamos
R&D Research and Development
RCRA Resource Conservation and Recovery Act
RLWTF Radioactive Liquid Waste Treatment Facility
RTG Radioisotope Thermoelectric Generator
S Security and Safeguards Division
SAR Safety Analysis Report
SBSS Science-Based Stockpile Stewardship
SCC Super Computing Complex
SET Senior Executive Team
SM Stockpile Management
SMART Summary Mission/Activities/Requirements Table
SNL Sandia National Laboratory
SNM Special Nuclear Materials
SPCC Site Planning and Construction Committee
SWEIS Site-Wide Environmental Impact Statement
SWMU Solid Waste Management Unit
T Theoretical Division
TA Technical Area
TEC Total Estimated Cost
TFF Target Fabrication Facility
TPC Total Project Cost
TSTA Tritium Systems Test Assembly
UNLV University of Las Vegas
WIPP Waste Isolation Pilot Plant
X Applied Physics Division