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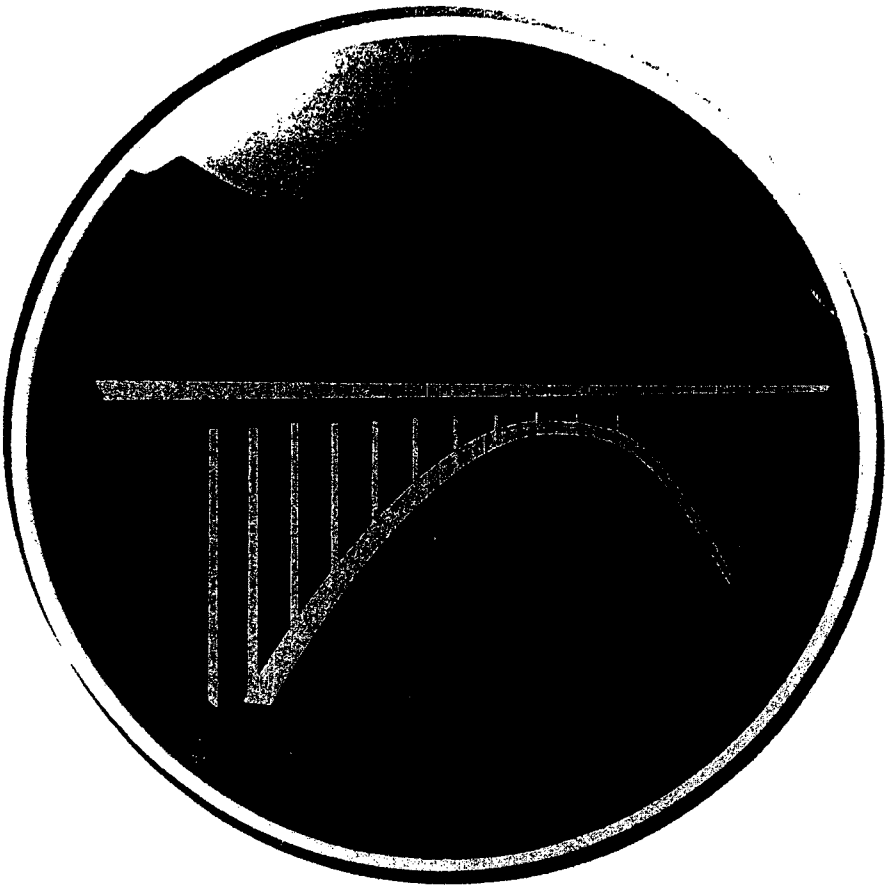
LALP-95-113

Site Development Plan
Annual Update 1995



Science Serving Society

Los Alamos
NATIONAL LABORATORY

Site Development Plan
Annual Update 1995

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

The Los Alamos National Laboratory Site Development Plan-Annual Update (SDP-AU) is a part of the planning process that presents issues affecting Laboratory land and facilities use or development that have arisen during the previous year and are anticipated in coming years.

> *"As a National Laboratory, we must emphasize national needs, which fall into three areas, as described in our mission statement: national defense needs, which include the responsibility to reduce the nuclear danger; civilian national needs in such areas as energy, environment, and infrastructure; and commercial technology needs, which we can meet in partnership with industry."*
>
> *Sig Hecker*
> *September 1994*
> *Institutional Plan*

This document is prepared by the Cross Cutting Support Group (ESS-5) and is supportive and consistent with the Laboratory's Institutional Plan, Strategic Plan, and Capital Asset Management Plan

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Los Alamos National Laboratory is located in north-central New Mexico, an area that is dominated by the Jemez Mountains to the west and the Sangre de Cristo Mountains to the east. The Laboratory is located on the Pajarito Plateau, a volcanic shelf on the eastern slope of the Jemez Mountains, at an approximate elevation of 7,000 feet (2,200 meters). The Pajarito Plateau is cut by a number of steeply sloped, deeply eroded drainage canyons that have formed isolated, finger-like mesas running west to east.

The Laboratory is situated on approximately 27,500 acres (43 square miles) of Department of Energy (DOE) land. There are 50 designated technical areas with locations and spacing that reflect historical development patterns, topography, and functional relationships. Presently, the Laboratory has an average daily peak work force population of about 14,512 people.

Sixty percent of the Laboratory employees live in the adjacent communities of Los Alamos and White Rock. The remaining employees commute from Santa Fe, the Española Valley, Albuquerque, and other areas.

Although sufficient land appears to be available for future expansion at the Laboratory, most of it would be very difficult to develop given the severe and significant physical constraints; over one-half of the undeveloped acreage consists of slopes whose grade exceeds 20%. In addition, security and safety buffers are required so that essential Laboratory programs can continue unhindered and without adversely affecting surrounding areas.

LABORATORY OVERVIEW

I. EXISTING MISSION, WORKLOAD, AND SITE POPULATION

A. Mission

The Los Alamos National Laboratory is dedicated to supporting the DOE's goals by applying world class science and technology to the maintenance of the nation's security and well-being. The Laboratory will continue its special role in defense, particularly in nuclear weapons technology, and will increasingly use its multidisciplinary capabilities to solve important civilian problems.

The Laboratory's compelling mission is to reduce the global nuclear danger through science based stockpile stewardship and support, nuclear materials management, nonproliferation and counterproliferation efforts, and environmental restoration work. To achieve this mission the Laboratory must partner with the government and industry to help improve the nation's economic competitiveness, infrastructure, conventional defense capability, and maintain its scientific and technological advantage.

The Laboratory's vision is "Science serving society." To accomplish this vision the Laboratory will integrate science and technology with societal needs to enhance global security, preservation of the earth and quality of life. Los Alamos will foster an organization that forms strategic partnerships with government, academia, and industry, and values integrity, excellence, and public services.

The Laboratory recognizes that its competitive advantage rests with its people; with the depth, breadth, and quality of its science and technology base, and with its specially designed and built facilities, many of which are unique to Los Alamos.

The Laboratory must also adhere to the principles of good business practice, so we must:

- satisfy evolving customer needs and expectations;
- set measurable goals for all our activities;
- improve cost-effectiveness; and
- continuously improve everything we do.

The Galvin Report on the alternative futures for the Department of Energy National Laboratories defines the primary mission of the weapons laboratories which includes the Los Alamos National Laboratory as the maintenance of a safe, secure and reliable nuclear stockpile in the absence of explosive testing. Science-based stockpile stewardship is the approach chosen to achieve this mission. Non-proliferation, counter-proliferation, verification, and intelligence support are major missions.

The Report recommends activities in nuclear materials development and production be consolated at Los Alamos National Laboratory. The Report recommends funding support for the Dual-Axis Radiographic Hydrodynamic Testing (DARHT) facility, support for the Los Alamos Neutron Scattering Experiment/Los Alamos Meson Physics Facility (LANSCE/LAMPF), continued pursuit of advanced computing and computing through workstation networks for Los Alamos. Finally the Report recommends future weapons production needs be based on residual capabilities of Pantex, Los Alamos and Sandia National Laboratories.

The Laboratory strives to extend its knowledge base and the fruits of its research efforts by integrating its special resources and expertise into the scientific community at large. The Laboratory's strengths complement those of the nation's research universities and those of industry. The Laboratory, therefore, best serves the nation by developing programs that typically:

- are large in scale of time, space, size, or complexity;
- require a strong science base;
- require engineering, teamwork, and special facilities;
- benefit from a multidisciplinary approach and continuity of effort; and
- benefit the public.

To achieve the Laboratory's mission, Tactical Goals for national defense, civilian national missions and industrial partnerships have been identified (see below). The Goals are reflected in a circular chart with the primary mission of reducing the nuclear danger at the center. Tactical Goals have been delineated into six programmatic/technical efforts which are science-based stockpile stewardship, the neutron laboratory, the plutonium legacy, great science, modeling, simulation, and high performance computing, and industry. Four Tactical Goals for operation were established which are regulatory/oversight processes, operations, communication, and diversity. These Tactical Goals are intended to provide short-term or one to three year planning goals to focus our institutional resources.

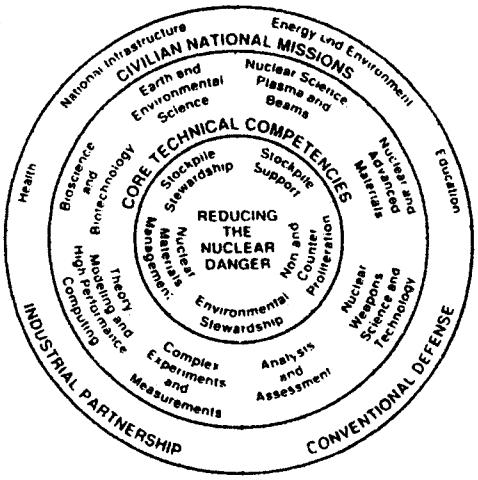


TABLE I. BUDGET PLAN*

Funding Source	$M FY94 BA	$M FY95 BA**
DOE		
Defense Programs	351	342
Env. Restoration	211	218
Interl. & National Security	82	90
Energy Research	88	66
Nuclear Energy	13	10
Civil. Rad. Waste Mgmt	15	21
Energy Efficiency	12	17
Other DOE	11	11
DOE Reimbursable	40	40
Subtotal DOE	**823**	**815**
Reimbursable Work		
DoD	77	74
NRC	1	2
Federal Agencies	46	57
Non-Federal	10	11
*Subtotal R/W	135	144
Total Lab Operating	**958**	**959**
Capital Equipment	41	43
Construction	30	28
Total Lab Funding†	**1029**	**1020**

*All numbers are rounded off.

**FY95 represents current projected cost

†Includes capitalization

Source. Los Alamos National Laboratory. Budgeting group (BUS-2)

B. Workload

The Laboratory's multidisciplinary and multi-programmatic workload includes hundreds of projects and programs in defense, environmental management, energy research, and more for both DOE and others, totaling more than $1 billion. The Laboratory's most recent actual and current budget authority (BA) workload by funding source is listed in Table I.

C. Population

Of the 14,512 workers (as of February 1995) at the Laboratory, 9079 are Laboratory employees (approximately 7594 full-time equivalents [FTEs]) and 5433 are non-Laboratory employees including JCI, PTLA, affiliates, and contract labor.

Approximately 48% of the regular Laboratory personnel are in the Technical Staff Member series, and the remaining 52% are structured series employees (i.e., Technical Support, Specialist Staff Member, Office Support, and General Support). Table II is a summary and projection table of Laboratory personnel. The population levels of the Laboratory are in a state of flux, therefore, Table II represents a snapshot of the Laboratory's population.

II. REGIONAL AND SITE INFORMATION

A. Regional Information

1. Technology Transfer

As the Laboratory's mission evolves to include increasing commitment to industrial partnerships and related technology transfer initiatives, the demands on the site and facilities are also changing. The Laboratory's central business district, Technical Area (TA) 3, and some other outlying TAs require greater access, parking, and support facilities for visitors, partners and stakeholders. Additional high quality office, conference and meeting space is needed for Laboratory employees and related corporate partners. Security perimeters may need to be pulled back. Land may need to be transferred for industrial or corporate facilities development. Third-party financing may be appropriate for such development on DOE land. Some or all of these actions may contribute significantly to both regional economic development and national economic competitiveness.

TABLE II. PERSONNEL SUMMARY

	FY95	FY96	FY97	FY98	FY99	FY00
DOE effort	2725	2442	2442	2442	2442	2442
Work for others	415	358	358	358	358	358
Subtotal-Operating	**3140**	**2800**	**2800**	**2800**	**2800**	**2800**
Direct recharge	940	920	920	920	920	920
Program/Division support	1200	1150	1150	1150	1150	1150
Subtotal Direct	**5280**	**4870**	**4870**	**4870**	**4870**	**4870**
Indirect	1280	1230	1230	1230	1230	1230
LDRD*	300	300	300	300	300	300
Total Lab FTE's	**6860**	**6400**	**6400**	**6400**	**6400**	**6400**

*Laboratory-Directed Research and Development

Source. Los Alamos National Laboratory Budgeting group (BUS-2)

2. Site Wide Environmental Impact Statement

The National Environmental Policy Act (NEPA) is the first major Federal law that addressed protecting the environment. Its purpose is to ensure that environmental issues are considered in the early planning stages of Federal projects and that information about environmental consequences of major actions is available to public officials and citizens before final decisions are made. Among other environmental impacts, proposed projects are evaluated for possible effects on special "sensitive" resources such as cultural resources (archeological sites or historic buildings) threatened, endangered, or sensitive species, sole-source aquifers, and floodplains or wetlands areas. One type of NEPA document is the Environmental Impact Statement (EIS), a written report in which impacts of proposed and alternative major federal actions are evaluated and mitigation procedures proposed.

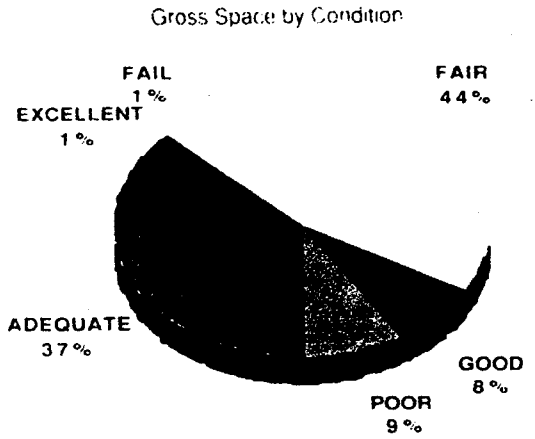
The lack of site wide NEPA documentation that meets current standards has been the subject of DOE Tiger Team findings for many DOE sites, including Los Alamos National Laboratory. The Laboratory's existing EIS was written in 1979. Since then, the environmental impacts of major new or revised Laboratory projects and facilities have been evaluated individually. The DOE, and its recently selected contractor have begun the initial stages of a Site Wide Environmental Impact Statement (SWEIS) in order to comply with NEPA. The purpose of the new SWEIS is to provide a comprehensive and cumulative look at the environmental impacts of both ongoing Laboratory activities and projected future missions of the Laboratory. It should enable us to become better stewards of the environment and better planners for the future. The SWEIS will describe the major activities at the Laboratory and the most important impacts as determined through a scoping process involving the public. While the SWEIS is in preparation, major new initiatives cannot take place unless they are justified independently and are the subject of separate NEPA documentation. The SWEIS will address operations and planned activities foreseen within the next 5 to 10 years.

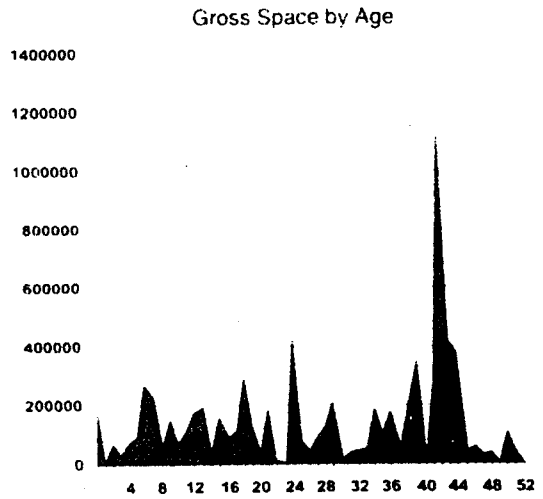
The scope of the SWEIS is determined in part by the Notice of Intent (NOI) and public scoping meetings held after the NOI has been published. The duration of the preparation, review, and decision process is expected to be about two years. The Laboratory's role in the DOE SWEIS process is to provide baseline data about the Laboratory's current environmental programs, programmatic activities, facilities, and likely future programmatic activities. The Laboratory SWEIS Project Office has been opened, under the auspices of ESH Division, to provide a single point of contact within the Laboratory for both collecting and disseminating information.

B. Site Information

1. Facilities

The Laboratory's real property inventory includes some 944 permanent buildings (including 93 physical plant/utility structures and 73 currently approved for disposal), 51 temporary structures (trailers and transportables) and 806 miscellaneous facilities (including sheds, transportainers and tension support storage structures). These facilities total about 5,000,000 occupiable square feet. However, only about 1,516,000 square feet of this space, in 599 buildings, is designed to house personnel in an office environment. As a result, the Laboratory supplements on-site space with 45 commercial leases in the town site to house 806 people. The total current leased space is 213,262 square feet. Overall, Laboratory facilities (onsite and in town) are very old. 80% are more than 40 years old and 50% are more than 30 years old.





2. Facility Management Implementation Process

The purpose of the facility management (FM) implementation processes is to establish a distributed FM model across the entire Laboratory. Within the model Laboratory divisions own their facilities and are accountable for maintenance of the safety envelope maintenance management, and safeguards and security. The model is designed so that institutional infrastructure is consistent with Laboratory programmatic requirements and facility needs and to assure that formality of operations is consistent across all facilities. facility management is carried out through a graded approach that is applied based upon facility needs. The FM implementation process defines a set of baseline requirements which include authorization basis, maintenance management, configuration management, budget and cost tracking, and planning and scheduling.

The implementation process accomplishments to date include the definition of 21 facility units laboratory wide each having a designated facility manager and the completion of four FM pilot units defining 50% to 60% of the requirements stated above. A Nuclear Facilities Focus Team consisting of the managers of the Laboratory's nuclear facilities is in place and contributing to the overall implementation process. Additionally, the Facilities Working Group consisting of all of the Laboratory facility managers has been formed to address ongoing issues and concerns with the Laboratory FM process.

Additional milestones attained to date in the FM implementation process include the realignment of area coordinators and radiation control technicians for maintenance radiation protection activities. This signals the beginning of the support services organizations process to distribute services directly to the facility managers. Continuing efforts are currently underway in the areas of FM program requirements documentation, facility manager training plans and budget/cost tracking pilot programs at five of the FM units.

In the coming year the FM implementation process will work on several milestones. . .

- The development of the institutional integrated schedule for completely distributing the FM functions at the Laboratory;
- implement the FM model at six more facilities units;
- complete the development of and begin delivery of the training program;
- gain acceptance for and implement the Program Requirements Document; and
- begin the development of an integrated process for baseline requirements.

3. Stockpile Support Program Master Plan

The Laboratory's Stockpile Support Program has begun the development of a programmatic master plan to provide guidance for capital funding requests for the next twenty years. This master planning effort will utilize existing mission scenarios as well as develop additional potential mission sets from information extrapolated from various site wide and programmatic environmental impact statements. These are currently being undertaken across the DOE Complex.

The mission scenarios will be the basis for process flows developed in the next step of the master plan. The process flows will determine the capital equipment needs and facility plans. The facility plans will feed into potential land use scenarios. The master plan will encompass the TA-55 geographic area as the primary development area, but will include other areas of the Laboratory as appropriate, based upon the individual mission scenarios. The second phase of the master plan will be a selection process of the preferred mission scenarios followed by more detailed development of asset level life cycle plans and capital funding required to meet the facility requirements and mission.

III. MISSION PROJECTIONS AND RESOURCE REQUIREMENTS

The Laboratory Leadership Council, as part of its restructuring efforts, established a "vision" for a customer-focused, unified Laboratory.

- We will creatively integrate science and technology with societal needs to enhance global security, preservation of the earth, and quality of life. We will exemplify a creative, learning organization that forms strategic partnerships with government, academia, and industry and values integrity, competence and public service.

The Laboratory took another step toward identifying more clearly long term staffing, facility and resource requirements. The Laboratory established "core competencies" with the following descriptions:

- Theory, Modeling, and High Performance Computing
  - Analytic/theoretical approaches to solving complex science and engineering problems
  - Integrating theory, modeling, mathematics, programming, visualization and code validation capabilities
  - Partnering with industry for the advancement of high performance computing
  - Analysis and management of information including large data bases

- Complex Experimentation and Measurement
  - Experiments involving specialized sources, multidisciplinary measurement systems, and/or complex facilities
  - Specialized sources: e.g., accelerators, lasers, high explosives, pulsed power, etc.

    Measurement systems for extreme ranges of conditions: e.g., ultrafast, ultrasensitive, real time, remote, single event, and hostile environments
  - Compact measurement systems for remote sensing
  - Multidisciplinary approach to measurement systems that couple sensors, transducers, instrumentation, data analysis, and modeling
  - Complex facilities involving energetic and/or radioactive materials and formality of operations
- Nuclear and Advanced Materials
  - Integrates science, technology, engineering, prototyping and manufacturing for radioactive, energetic and advanced materials
  - Spans capabilities in several divisions
  - Addresses many markets: including industry, nuclear materials, weapons, and energy
  - Combination of radioactive, energetic and advanced materials makes Los Alamos distinctive; certain facilities would be very expensive and difficult to imitate
  - Vertical integration of capabilities marries material research (e.g., invention of a novel composition) with prototyping of components for specific applications. Horizontal integration of capabilities is essential for execution of large programs (e.g., weapons prototyping).
- Nuclear Weapons Science and Technology
  - Addresses a specialized but enduring need; its historical significance is central to the founding of the Laboratory
  - Spans capabilities in several divisions
  - Competency is highly distinctive to Los Alamos and supports a continuing mission for the national defense
  - The vertical integration of physics, computation, engineering and materials/manufacturing capabilities for device design and prototyping affords access to new areas of national importance (e.g., rapid prototyping for industry)
- Analysis and Assessment
  - Involves the development of multidisciplinary physical theories and computational models
  - Integrates mechanistic, statistical, probabilistic, human factors, and other techniques

    Validated through comparison with experimental data

    Applied to industrial and national security policy, economics, technology integration and trade-offs, energy, industry and manufacturing, military systems, atmosphere and ocean environment, energy generation systems, and nuclear facility safety
- Earth and Environmental Systems

  Integration of chemical, biological, and physical processes with Earth sciences in study of dynamic systems from space through the biosphere to Earth's interior

  Combined theory, modeling, observational programs to understand processes in the atmosphere, oceans and lithosphere that are affected by human activities particularly those of energy production

  Collaborative research with universities, industry, and governmental institutions

  Environmental remediation and toxic waste storage, non-proliferation, climate change, human safety and natural hazard evaluation

  Resource development from geological media (oil and gas, minerals, geothermal energy, etc.)

  Mineral physics, isotope dating and tracers, high pressure studies and geophysical field techniques.
- Bioscience and Biotechnology
  - *Biomedical research and technology* includes optics and imaging, sensors, stable isotopes, lasers, modeling/simulation, computation and informatics, and information processing abstracted from living systems (e.g., neural networks and wavelet transforms)

    Cellular Analysis includes flow cytometry, digital fluorescence microscopy and other spectromicroscopies, cell growth and cell cycle control, DNA damage and repair, cell transformation and carcinogenesis, and transgenic mouse facilities

    Biomolecular Structure, Dynamics and Functional Analysis includes scanning tunneling and transition electron microscopy, X-ray and neutron scattering, high field nuclear magnetic residence, ultrafast kinetic techniques, and optical and infrared spectroscopies

    Genomic Analysis includes chromosome sorting, clone libraries, robotics, genome mapping and sequencing, positional cloning, protein/DNA interactions, modeling/simulation, computing tools and databases.
- Nuclear Science, Plasmas and Beams

  Accelerator development for nuclear science and applications

- Intense beam physics (charged particles, neutrons, photons)
- Nuclear physics and chemistry
- Multidisciplinary applications in neutron scattering, transmutation of waste, plasma processing radiography, lithography, and defense

Resource Requirements:

The Laboratory's future workload and resource requirements are projected in Table III, which estimates the budget data in constant FY94 dollars. Construction entries include only funded line-item program construction projects. Total funded and proposed construction projects are detailed in Table IV.

TABLE III. FUNDING SUMMARY ($M)

	BA FY97	BA FY98	BA FY99	BA FY00	BA FY01
DOE effort	851	851	851	851	851
Work for others	116	116	116	116	116
Subtotal Operating	**967**	**967**	**967**	**967**	**967**
Capital equipment	46	46	46	46	46
Program construction	56	56	56	56	56
Operations capitalization	(-19)	(-19)	(-19)	(-19)	(-19)
Total Lab funding	**1050**	**1050**	**1050**	**1050**	**1050**

Source: Los Alamos National Laboratory Budgeting Group (BUS-2)

MASTER PLAN

I. INTRODUCTION

The preceding mission and programmatic planning projections have been excerpted from the Institutional Plan and strategic planning efforts. These plans are linked to physical resource requirements by this Master Plan section that outlines the relationship of the land, infrastructure, facilities, and space as required by the Los Alamos National Laboratory mission. The intent is to develop and maintain the site to accommodate ongoing and changing programmatic requirements. This intent is further defined by the listing of goals provided in this section.

These planning goals are described and tied to project proposals in both the Facility and Land Requirements section that follows and the Master Plan/Projects Matrix of construction projects (Table IV). These projects will modify existing structures and also develop new ones where existing facilities are not adequate or suitable for a particular use. Requirements for land and facilities continue to evolve because the Laboratory's mission is evolving. In the meantime demand for extensions and upgrades to infrastructure systems to serve the institution continues. A continuing need exists to have DOE settle the issue of program "ownership" of multiprogram laboratories such as Los Alamos.

Following are the Laboratory's Existing Land Use and Master Plan maps. The location of construction projects for the FY1995-to-FY2001 time periods listed in the Master Plan/Projects Matrix are shown on these maps and called out by name. Projects that are Lab-wide in scope are not shown on the maps. The Existing Land Use Map shows today's land uses. The Master Plan and Future Land Use maps represent the Laboratory's vision of the future site use. No significant changes occurred this past year at Los Alamos that required revision to the land-use depictions on these maps. Both DOE's and the Laboratory's continuing reconfiguration activities are anticipated to create a changing mission and therefore a changing land-use structure to support and implement any new or altered directions.

The Site Development Plan is a twenty-year master planning document, so projects extending beyond FY 2001 are included in Table IV. Specific sites for long range projects are not shown because these projects are currently being developed and in some instances require short-notice changes in mission and scope.

II. GOALS/FACILITY AND LAND REQUIREMENTS

Land Use - We intend to achieve the most effective use of land to fulfill the Laboratory's missions. This can be accomplished through the following objectives.

- Emphasize quality site-wide development master planning and facility management technical area master planning.
- Preserve land and facilities for current and future missions and national research needs.
- Identify opportunities for transfer or lease of surplus land or facilities to other uses.
- Increase awareness of development constraints.
- Increase awareness of land-use compatibility issues during the siting and design process.
- Identify alternate locations for development and provide areas for expansion.
- Improve functional relationships between existing and future land uses by emphasizing functionally related corridors between the core area (TA-3) and other major development areas.

In support of the above objectives, the Laboratory is actively involved in further development of our geographic information system (GIS) to serve as a planning tool for not only storing and displaying a variety of land

TABLE IV. MASTER PLAN/PROJECTS MATRIX

Strong Ties ● Moderate Ties ◒

FY	Sponsor	Project Title	TEC ($M)	Land Use	Facilities	Transportation/ Circulation	Utilities	ES&H
1988	NWT	Dual Axis Radiographic Hydrotest Fac	81.4	◒	●			◒
1992	NWT	CMR Upgrades	187.35		◒			
1993	NWT	Static VAR Compensator	9.3	◒			●	●
1996	NWT	ATLAS	43.3		●			
1996	NWT	Water Well Replacement G1 Thru G4	16.8	◒			●	◒
1996	NWT	Fire Protection Improvements	16.9	◒	◒		●	◒
1997	NWT	DARHT Second Axis	37.4	◒	●			●
1997	NWT	Infrastructure Revitalization	50		●			
1998	NWT	Contained Explosives Test Complex	29.1	◒	●			◒
1998	NWT	Traffic Safety Upgrades	12.5	◒		●		
1999	NWT	Safeguards & Security Ph LII	33	◒				
1999	NWT	Electrical Distribution System Deficiency Cor	26.5		◒		●	◒
1999	NWT	Central Health Physics Calibration Fac	5		●			
2000	NWT	Occupational Medicine Clinic	12	◒	◒			◒
2002	NWT	Enriched Uranium Facility	160	●	◒			●
2002	NWT	Nuclear Unit Evaluation Facility	5	◒	●			
2003	NWT	Nuclear Env Simulation Test Fac	150	◒	●			
2003	NWT	Sigma Building Renovation	45		◒			◒
2003	NWT	Electrical Power Systems Upgrade	26				●	◒
2004	NWT	Central Computing Facility Refurbishment	50		◒			
2004	NWT	Transportation System Upgrades	38	●	◒	●		◒
2004	NWT	SM-40 Refurbishment	30	◒	●			◒
2005	NWT	Upgrade for Substandard Support Fac	100	◒	●		◒	◒
2005	NWT	Explosives Pulsed Power Facility	70	◒	◒			◒
2006	NWT	SM123 Refurbishment	20		◒			
2008	NWT	Advanced Hydrotest Facility	422	◒	●			
2008	NWT	Laser Science and Technology Building	56		●			◒
2010	NWT	Study Center Modernization	25		◒			
2012	NWT	Exp. Physics Weapons Support Complex	150	◒	●			◒
2013	NWT	Secure Radio Station	5		◒		◒	◒
2015	NWT	Nuclear Weapons Design Laboratory	150	◒	●			
1990	EM	ES&H Improv/Haz Waste Treatment Facility	12.5	◒	◒			●
1993	EM	Mixed Waste Disposal Fac (exp funding)	71.4	◒	◒	◒		●
1993	EM	Mixed Waste Receiving And Storage Fac	9.6	◒	◒	◒		●
1994	EM	High Explosive Wastewater Treatment Fac	6.4	◒			◒	●
1998	EM	TRU Waste Characterization/Processing Fac	72	◒				●
1998	EM	Sanitary Landfill	9.8	◒			●	◒
1997	EM	Radioactive Liquid Waste Treat Fac	110	◒				◒
1999	EM	Surveillance Well Installation Project	35					●
1999	EM	Low Level Waste Volume Reduction Facility	8.5	●			●	●
1994	SS	NNC/Neutron Tube Target Loading	5.1		◒			
1994	SS	NNC/High Power Detonators	3.15		◒			
1996	SS	NNC/Beryllium Tech	11.18		◒			◒
1996	SS	NNC/Pit Support Function	2.25		◒			
1997	SS	NMSF Renovation	34.5	◒	◒			
1999	SS	Radiographic & Stockpile Supp Fac at TA-55	22.5	◒	◒			
2002	SS	PF-4 Rehabilitation	146.6		◒			◒
1995	IHEM	TA-3 Centralized Cooling Network	16				●	◒
1995	IHEM	TA-16 Steam Plant Conversion	10		●		●	
1995	IHEM	Back Pressure Turbine Generator	1.6				●	
1998	ER	National Center For Neutron Research	782.8	◒	●			
1998	OP	National Biomedical Tracer Facility	65.5	◒	●			
2005	IS	SCIF Refurbishment/Expansion	20		◒			

***Project List Current as of April 10, 1995**

use databases; but more importantly for creating a system that will allow planners and other Laboratory staff to access and dynamically query all databases for land use and facilities planning and management purposes. GIS is also serving other important needs such as Emergency Management and Response and Waste Management/Environmental Restoration.

Facilities - Implement high-quality, permanent, and flexible facility improvements in a manner consistent with the Laboratory's mission, using the following objectives.

- Implement a distributed facility management process
- Emphasize quality site design and careful site planning for new Laboratory facilities
- Provide new or renovated permanent but flexible facilities based on Laboratory programs and operations as set forth in the Laboratory's strategic plan
- Eliminate leased buildings, trailers, and temporary facilities when feasible and cost-effective and replace them with permanent facilities
- Continue to rehabilitate or replace obsolete structures when cost effective.
- Continue to decontaminate and decommission facilities for adaptive reuse or disposal
- Increase scheduled maintenance efforts to enhance facility lifetimes, reduce unanticipated repair costs, and provide an environment more conducive to professional scientific work.
- Integrating program-specific facility plans into the Laboratory's master plan.

Some of the planned facility construction projects shown in Table IV involve the reuse and rehabilitation of existing facilities or land to accommodate new or expanding programs and in support of nonnuclear consolidation programs. Programmatic sponsored upgrades of major facilities at the Laboratory are aimed primarily at taking advantage of unique Laboratory facilities.

A number of near-term and out-year major facility projects are included in the matrix and described more extensively in the Laboratory's Capital Assets Management Process (CAMP)/document and Environmental Restoration/Waste Management (ER/WM) Five Year Plan.

Transportation/Circulation - Develop and improve site circulation for efficient transportation, improved operations, reduced energy costs, and increased safety and security. The objectives for meeting this goal include the following

- Design technical areas and building sites for efficient circulation and parking to minimize pedestrian/vehicle conflicts and to maximize operational efficiency
- Improve connections between Laboratory technical areas
- Improve methods and routes for transporting hazardous materials
- Encourage safe and efficient multimodal transportation options for Laboratory employees
- Promote improved connections between the Laboratory and surrounding communities

Delays associated with road closures required during the movement of hazardous materials on some roads within the Laboratory are affecting most employees at one time or another. Over the past few years a number of suggestions and alternatives have been considered to address this issue.

The Laboratory is now proposing a comprehensive study of this issue. A number of short-term solutions, ranging from constructing certified packaging devices that permit transport of these materials over public access roads to other management alternatives need to be considered. A number of long-term solutions, identified in the Laboratory's SDP for co-locating hazardous material generating facilities or constructing alternative bypass roads need to be revisited or reevaluated.

Security/Safeguards - Maintain and strengthen security protection through long-term site development planning. This goal is accomplished through the following objectives.

- Consolidate secure functions and interests to the extent permitted by other Laboratory functional and technical requirements. Create industrial security as an option throughout the Lab
- Limit public access to, and visibility of limited security and category I & II special nuclear materials (SNM) areas.
- Minimize public proximity to secured areas by locating public interface functions at the perimeters of the sites, and
- 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

Utilities - Improve and develop utility systems efficiently and cost effectively to support program operations. This goal can be accomplished through the following objectives.

- Define, develop, and reserve utility corridors to minimize costs and conflicts with other site improvements.
- Modernize utility systems to provide safe, reliable, and cost-effective services for Laboratory facilities

- Develop stable funding sources that can be used to modernize Laboratory utilities.

Selected utilities systems such as water are being studied for possible transfer of ownership to Los Alamos County as part of plans for elimination of DOE assistance payments. Table V summarizes existing capacities, future demand, and shortfalls over 30 years.

TABLE V. 30-YEAR UTILITY LOADS AND DISTRIBUTION / COLLECTION SYSTEMS

	Existing Capacity	FY2025 Demand	Shortfall
Water System	10 Mgd firm	12 Mgd firm	2 Mgd
Electric System	71 MW	100 MW	29 MW
Nat. Gas System	12 MM cfd	17-18 MMcfd	5-7 MMcfd
Steam System	396,000 Klb/Hr	282,000 Klb/Hr	0-
San. Wastewtr. Sys.	1.0 Mgd	1.0 Mgd	-0-
San. Landfill	300,000 yd^3 3 yr life	600 000 yd^3	300,000 yd^3

Environment, Safety and Health - Continue to improve the protection of the environment, the public, and Laboratory personnel and facilities. This goal can be accomplished through the following objectives:

- Minimize the effect of Laboratory operations on the environment.
- Minimize safety risks to protect Laboratory personnel and the public.
- Minimize the amount of waste being generated by the Laboratory.
- Continue Laboratory health monitoring and regulatory compliance efforts.

Corrective Activities and Environmental Restoration (ER) Operable Zones are located throughout the Laboratory and adjacent areas. Zone remediation activities are conducted on an as needed basis. Environmental programs include waste management, environmental restoration, and environmental protection and preservation.

A part of the Laboratory's ER program is to retain waste on-site so that wastes would remain on DOE property under federal institutional control, worker exposure would be minimized, and the total program would be more cost-effective. With a permit issued under the Resource Conservation and Recovery Act, the Laboratory proposes to construct and operate a Mixed Waste Storage and Disposal Facility to receive this waste.

Additional activities of the waste management include the development, design and construction of new facilities, which will enable these functions to operate more efficiently within regulatory guidelines. Facilities being developed include the Radioactive Liquid Waste Treatment Facility, and the TRU-Waste (transuranic waste) Characterization/Processing Facility.

SPECIAL CONSIDERATIONS

I. POTENTIAL LAND TRANSFERS AND RELATED LAND-USE ISSUES

In the past year, DOE/LAAO and Los Alamos County have discussed the possible transfer of DOE/Laboratory land to the County. Complex-wide DOE initiatives affecting present and future land use are interwoven with this local assistance payment issue. The outcome of the complex-wide nonnuclear and nuclear reconfiguration is uncertain at this time and therefore, land and facilities requirements at the Laboratory are also uncertain. While encouraging development opportunities at the County level is certainly an important local economic objective, the Laboratory must not lose sight of its primary goal --to be responsive to national needs. In this context that means making land-use decisions that are consistent with current and potential programmatic directions and plans. Thus, complex-wide DOE needs must be weighed against local economic issues to produce decisions that are mutually beneficial yet will not potentially restrict or eliminate the Laboratory's current or future programmatic viability. Recent recommendations of the Galvin Commission support the retention of most remaining developable land.

Solutions

Potential Land Transfers - Coordinated planning and participatory decision making processes involving DOE, the Laboratory, and Los Alamos County are the key to finding workable solutions to the land transfer and related land-use issues, specifically:

- Actively involve Laboratory management in land transfer discussion and proposals.
- Based on the Laboratory Leadership Council's strategic planning guidance, evaluate programmatic and land-use impacts on the Lab before proposed land transfer, and follow prescribed DOE planning process.
- The Laboratory must continue to update comprehensive planning that demonstrates what lands are needed to support current and proposed missions over the long term (20 year horizon) and what lands could either be excessed or made available to the County.
- The Laboratory, DOE, and the County during the next year will continue to study and determine what land and facilities may be appropriate for conditional transfer to Los Alamos County based on additional information on operational and environmental impacts.

- Incorporate deed restrictions where appropriate to ensure present and future compatibility with DOE Laboratory mission requirements.

II. FUTURE SITE USE PLANNING INITIATIVE

The Future Site Use Planning Integration Team (FSUPIT) is a Laboratory response to a DOE Headquarters (HQ) initiative to integrate the planning of the use of land and facilities, environmental impacts and restoration, Laboratory strategic planning, and stakeholder involvement in the current and future planning processes of the Laboratory. The FSUPIT charter outlines a mission to develop with the assistance and support of Laboratory personnel, the general public, and other stakeholders, a Comprehensive Plan that will propose to the DOE-LAAO Manager and the Laboratory Director a forecasts recommending uses of Laboratory sites and facilities for a 30-year period and appropriate cleanup levels for contaminated areas. The FSUPIT is to review and consider existing long range planning documents, including the Laboratory's Strategic Plan, the Capital Assets Management Plan, the Site Development Plan, the Implementation Plan for the Site-Wide Environmental Impact Statement, the DOE-LAAO Land Transfer Plan, the DOE Albuquerque Operations Office Strategic Plan, and the DOE-LAAO Strategic Plan.

General requirements of the DOE directive includes a description of the current and future site mission, a determination of land and facility requirements, a discussion of environmental constraints, recommended future uses of ER sites and engagement of the public and stakeholders in this process. DOE goals are to establish acceptable risk and remediation levels for environmental restoration clean up, the planning and siting of new facilities to address Departmental missions, to preserve land and buildings for current and future Departmental missions and other national research needs, to identify opportunities for transfer or lease of surplus land and buildings to other federal, tribal, state and local governments or private sector use, and incorporate meaningful stakeholder involvement.

The FSUPIT has established four team goals to foster integrated planning at the Laboratory with the DOE Future Site Use Planning Initiative. The first goal is to meet the current DOE initiative and be positioned for imminent new directives and orders. The second goal is to be a catalyst to integrate physical, environmental and strategic planning at the institutional level, improving communication and sharing resources. The third goal is to initiate or improve stakeholder and public involvement in Laboratory planning. The fourth goal is to engage senior management in the ownership of institutional comprehensive planning and stakeholder involvement.

III. LAND AND FACILITY USE POLICY

The Secretary of Energy issued a new Land and Facility Use Policy in December 1994. The policy is intended to greatly improve the Department of Energy's (DOE) stewardship of their land. The policy is to encourage local economies, cut costs and redtape, and ensure public participation in the planning process. The new policy states

> *It is the Department of Energy policy to maximize all of its land and facilities as valuable national resources. Our stewardship will be based on the principles of ecosystem management and sustainable development. We will integrate mission, economic, ecological, social and cultural factors in a comprehensive plan for each site that will guide land and facility use decisions. Each comprehensive plan will consider the site's larger regional context and be developed with stakeholder participation. This policy will result in land and facility uses which support the Department's critical missions, stimulate the economy, and protect the environment.*

To implement this new policy, several (as many as 17) DOE orders are being combined into one simpler order due to be released later this year. The Comprehensive Planning Process section of the order will require things such as

1) an evaluation of the site's ecologic, economic, social, cultural factors, and regional context,
2) integration of information from the National Environmental Policy Act (NEPA), interagency and intergovernmental, and other activities which may affect the comprehensive plan,
3) development and analysis of land and facility use options based on stakeholder future use preferences, mission requirements, corporate facilities management inputs, ecosystem sustainability goals, economic sustainability goals, NEPA decisions, and other inputs,
4) selection of use options through a facilitated process,
5) preparation of a Comprehensive Plan to guide subsequent land and facility decisions in order to realize the goals of the selected options, and
6) implementation of the Comprehensive Plan requires the incorporation of land and facility use guidance into the site and program strategic planning processes, and budget process.

LEGEND

- ENVIRONMENTAL RESEARCH /BUFFER (ER)
- PHYSICAL SUPPORT AND INFRASTRUCTURE (PSI)
- EXPERIMENTAL SCIENCE (EX)
- HIGH EXPLOSIVES R&D AND TESTING (HE)
- SPECIAL NUCLEAR MATERIALS R&D (SNM)
- PUBLIC AND CORPORATE INTERFACE (PC)
- ADMINISTRATIVE AND TECHNICAL SERVICES (ATS)
- WASTE MANAGEMENT (WM)
- THEORETICAL AND COMPUTATIONAL SCIENCE (TC)
- NON-DOE LAND : POTENTIALLY PSI
- HIGH EXPLOSIVES ADMINISTRATIVE AND TECHNICAL SUPPORT AREA
- 03 TECHNICAL AREA NUMBERS
- PAVED ROADS
- DOE BOUNDARY

Occupational Medi

High-Power Detonato
Nuclear Consolidatio

TA-16 Steam Plant
Conversion

Neutron Tube Target
Loading / Non
Nuclear
Consolidation

High Explosives Waste Wa
Treatment Facility

Contained Explo
Testing Complex

DAI

LEGEND

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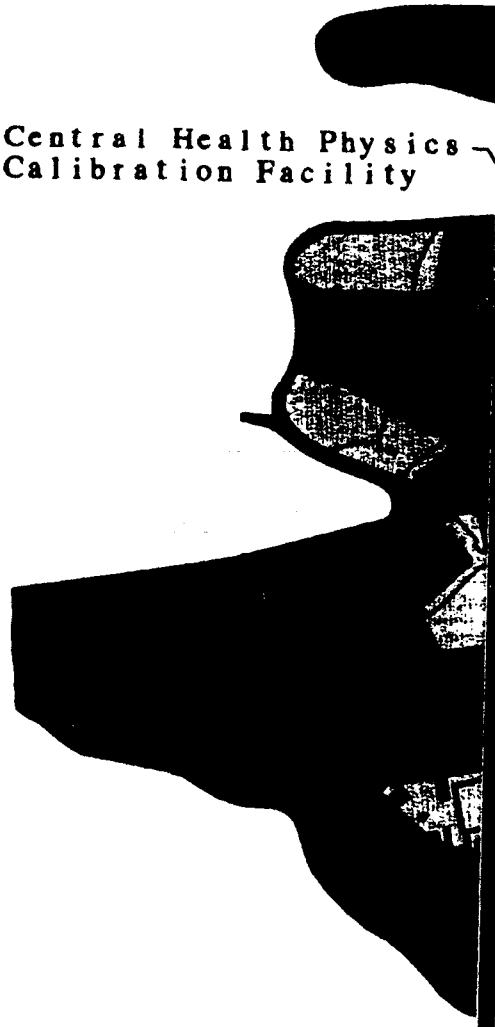

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- BUILDINGS

CMR Upgrades

LEGEND

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