LOS ALAMOS NATIONAL LABORATORY

Ten-Year Site Plan Limited Update • FY 2015

Los Alamos NATIONAL LABORATORY EST. 1943

NNSA National Nuclear Security Administration

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INTRODUCTION

In a memorandum dated March 27, 2014, the Office of Infrastructure and Operations (NA-00) provided modified guidance for the fiscal year (FY) 2015 Ten Year Site Plan (TYSP) in an effort to alleviate demands on contractor planning and infrastructure staff concurrently tasked with the Laboratories Operating Board (LOB) Infrastructure Assessment. As such, this TYSP is a limited update, consisting of the following sections:

- significant changes since the last submission,
- a prioritized list of proposed real property investments (FY 2014–2016), and
- a 2-year projected accounting of office and warehouse space in support of the "Freeze-the-Footprint" (FTF) initiative.

SIGNIFICANT CHANGES FROM FY14 TYSP

INFRASTRUCTURE RISK TO MISSION

Future Capabilities and Capacity Gaps

The Laboratory will continue to ensure the safety, security, and effectiveness of the United States (U.S.) nuclear deterrent and provide experience in nuclear weapons science, technology, and engineering (ST&E) that supports international stability and national security, consistent with the Laboratory's national security missions. However, the physical infrastructure supporting both direct-funded facilities and underlying ST&E capabilities requires recapitalization to provide continuing support for the nation's defense and global security. Without a vital infrastructure, the Laboratory's ability to perform experimentation, modeling, simulation, design, engineering, and production will be placed at risk, possibly creating gaps in our ability to certify the U.S. stockpile and our ability to support other important national security priorities.

Facility Operations and Maintenance

It is critical that the Laboratory receives adequate funding, on an annual basis, to support day-to-day facility operations and maintenance and continue construction activities to modernize and replace aging structures. Current and out-year budget targets in the Readiness in Technical Base and Facilities (RTBF) program are not adequate to support the level of operations support and maintenance needed to ensure that facilities will be available to meet programmatic requirements, including critical Life Extension Program work. The Laboratory will continue to drive improved utilization efficiency within the existing facility portfolio, balance infrastructure risks within available budget, and minimize impacts to deferred maintenance. However, ongoing budget reductions will require difficult decisions related to the continued availability of mission critical (MC)/mission dependent (MD) facilities.

FUTURE VISION AND CORE CAPABILITIES

Weapons Programs

Plutonium Strategy: The Laboratory has developed a Plutonium Strategy following the deferral of the Chemistry and Metallurgy Research (CMR) Replacement Nuclear Facility (CMRR-NF) project in FY 2012 that has been adopted by the National Nuclear Security Administration (NNSA) and endorsed by the Nuclear Weapons Council. The Laboratory is currently pursuing a three-step infrastructure approach to transfer capabilities from CMR and begin reducing operational risks in the Plutonium Facility (PF)-4. The strategy to terminate operations in CMR includes maximizing the use of the Radiological Laboratory Utility and Office Building (RLUOB) by installing additional equipment and re-purposing underused laboratory space in PF-4. A third future step may include constructing modular additions to the Technical Area (TA)-55 facility network to avoid developing a PF-4 replacement project. Based on recent direction from NNSA, the Laboratory has started planning the first two steps as new sub-projects to the CMRR line item project. The third step would be a separate line item project to be submitted at a later date.

TA-55 Reinvestment Project (TRP) II: This project will revitalize aging mechanical, safety, facility controls, and other systems. Phases A and B are complete; Phase C completed final design and is preparing for construction.

Transuranic (TRU) Waste Facility: This project will provide a replacement facility needed to stage, characterize, and certify newly generated TRU waste due to the TA-54, Area G closure. Phase A (infrastructure and site improvement) is complete; Phase B completed final design and is preparing for construction.

Radioactive Liquid Waste Treatment Facility (RLWTF): This project will replace radioactive liquid waste (RLW) treatment capabilities at TA-50. The low-level-waste capability for this project is completing final design.

Electrical Infrastructure Upgrades: This project will replace the TA-3 substation and expand electrical distribution systems for mission loads at TA-3 and the Metropolis Center. Critical decision (CD)-1 was attained, but the project is currently on hold pending capital funding in FY 2016.

Global Security Programs

International Atomic Energy Agency (IAEA) Training Schoolhouse: TA-66-1 is currently being re-purposed from office space to office, laboratory, training, and meeting spaces. With expected completion in the third quarter of FY 2014, these renovations will provide Global Security with a dedicated home for its specialized in-house training and hosting requirements.

Science, Technology, and Engineering Programs

Los Alamos Neutron Science Center (LANSCE): LANSCE provides the scientific community with intense sources of neutrons supporting both civilian and national security applications. The principal sponsors of LANSCE include the Department of Energy (DOE), NNSA, Office of Science (SC), and Office of Nuclear Energy (NE).

For well over a decade, the Lujan Center at LANSCE has been supported by a partnership between NNSA and SC Basic Energy Sciences (BES).The President's FY 2015 budget to Congress includes a $10M decrease in funding for the operational costs of the Lujan Center. Specifically, it states, "The BES operations of the Lujan Neutron Scattering Center will cease and funding is requested for safe storage of facility components."

Biological Sciences Laboratory (BSL): The BSL is awaiting the approval and release of the Environmental Impact Statement (EIS), which would allow for the issuing of a record of decision (ROD) for the facility. If the ROD is favorable, startup could begin by FY 2015.

Environmental Programs

Remediation Work: The soil and water remediation scope under the Consent Order will include the installation of additional groundwater monitoring wells, aquifer testing to assess remedies for the chromium in groundwater, and interim measures [such as soil-vapor extraction at select material disposal areas (MDAs)].

Waste Disposition: Disposition of the high-risk legacy TRU waste is on track to remove 3706 cubic meters of aboveground, non-cemented waste (the 3706 Campaign) by June 30, 2014. Most of the waste has been dispositioned at the Waste Isolation Pilot Plant (WIPP); however, because of the current inoperability of WIPP, the remainder will be staged at an off-site storage facility until WIPP is again operational.

Enabling Infrastructure

Steam Plant Replacement: The Laboratory has completed preliminary engineering and economic feasibility studies that support an Energy Savings Performance Contract (ESPC) to replace the 60-year-old Steam Plant with a high-efficiency, combined cycle heat and power system. A scope of work and execution approach have been developed. The Laboratory is seeking Field Office approval to use an ESPC to finance an estimated $115 million in material and construction costs over a 23-year period.

Omega Bridge Refurbishment: The Omega Bridge is annually inspected by a certified Federal Highway Administration (FHWA) inspector. Maintenance activities are planned based on the annual inspection reports. For FY 2015 and beyond, the Laboratory's current inspection-based reinvestment plan identifies projects in the order of risk-based priority. Highest-priority needs are planned in FY 2015 for ~$4M, medium-priority needs are planned in FY 2016–2017 for ~$3M, and lower-priority needs are planned in FY 2018 and beyond for ~$11M. Annual budget constraints could impact this reinvestment plan.

REAL PROPERTY ASSET MANAGEMENT

Site Footprint/Leasing Strategy

The Laboratory's business strategy to eliminate non-enduring real property assets is consistent with the goals of the Congressional one-for-one footprint reduction mandate from 2002 and the most recent FTF directive. From the end of FY 2005 to the end of FY 2013, the Laboratory has reduced owned buildings by 3% [~250k gross square foot (gsf)], whereas several major construction projects were completed (current portfolio of 7.95M gsf). Trailers/transportables have been reduced by 45% (currently 265k gsf), and leases have been reduced by 13% (currently 434k gsf).

Although acknowledging the aging owned portfolio is problematic for support of the missions, the Laboratory's integrated strategy of improving space in support of the missions has resulted in consolidated functions, better-quality space, and removal of less-sustainable facilities. Funding for infrastructure operations is then targeted for enduring structures. A key strategic component is using lease space acquisition for flexibility without the burden of long-term commitment to long-term maintenance and operations.

Sustainability/Energy

The Laboratory's Site Sustainability Plan establishes projects and goals in alignment with the DOE's Strategic Sustainability Performance Plan (SSPP) to reduce energy intensity, greenhouse gas (GHG) emissions, water consumption, and waste. To meet the sustainability goals, the Laboratory will pursue a combination of additional investments in renewable energy, green construction practices, and operational improvements for energy

efficiency. In particular, the steam plant replacement project mentioned above (Enabling Infrastructure) will address needed site upgrades, improve the effective use of primary energy from 31% to 54% in meeting about half of both the Laboratory's electrical and heating demands, and reduce GHG emissions by up to 140,000 metric tons of CO_2 per year. In FY 2014, $3.5M has been allocated to energy and water reduction efforts.

Security Infrastructure

Nuclear Materials Safeguards and Security Upgrades Project(NMSSUP), Phase II: This project was completed during the second quarter of FY 2014. NNSA funding priorities may defer the remaining upgrades projects at TA-55 in the near term: (1) The Post-116 upgrades project, which would increase portal throughput and facilitate automated systems for material surveillance; and (2) PF-4 Compartmentation, which would enhance security by creating 20 security compartments based on material balance areas in PF-4.

Outdoor-Firing-Range Projects: An erosion control project is underway at the protective force outdoor-firing-range to stabilize the ground surrounding several of the ranges/facilities to prevent flood damage similar to that which occurred in FY 2013. The Outdoor-Firing-Range Upgrades project is currently on hold because of the Office of Defense Nuclear Security's (NA-70) funding shortfall that is anticipated during FY 2015 and the out-years.

Security Envelope Enhancement Project: This project addresses the creation of a hardened site envelope, which would provide enhanced protection against vehicle threats. The project would also allow for the rerouting of public vehicle traffic around the northern perimeter of the Laboratory. NA-00-30 approved funding of up to $1.5M for activities leading to the development of CD-1. The documentation package for CD-0 is complete and awaiting NA-70 approval. Following CD-0 approval, LANL anticipates proceeding with work on CD-1, aligning the project as an FY 2016 line-item new start.

Legacy Field Panel Replacements: Four separate projects would support the replacement of legacy field panels with modern Argus field equipment, which will upgrade the site's field panels to a current Argus configuration. No funding appears to be slated for these critical projects in the near term.

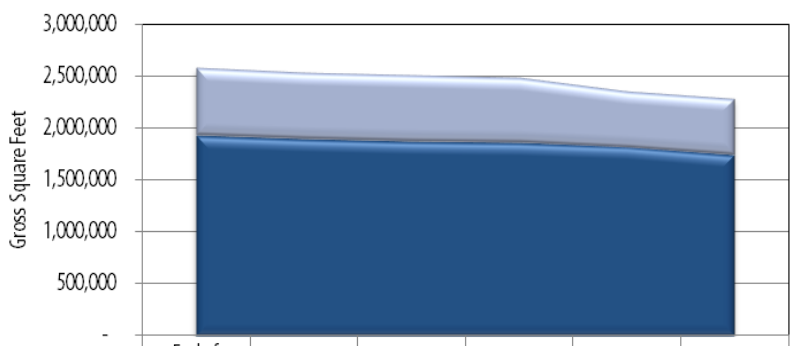
FY 2014–2016 PRIORITIZED REAL PROPERTY INVESTMENTS

In support of programmatic missions and the DOE's strategy for creating a smaller, safer, more secure and effective physical infrastructure, the following Line Item construction projects are the Laboratory's top real property investments planned over the next several years.

1. Plutonium Strategy
2. TRU Waste Facility
3. TA-55 Reinvestment Project II
4. TA-55 Reinvestment Project III
5. RLWTF—TRU Liquid Waste
6. RLWTF—Low-Level Liquid Waste
7. Electrical Infrastructure Upgrades —TA-3 Substation
8. Energetic Materials Characterization Facility (EMCF)

FREEZE-THE-FOOTPRINT INITIATIVE

Presidential Executive Order 13589, Promoting Efficient Spending, was issued in November 2011 and initiated the Office of Management and Budget's FTF initiative, restricting the growth in office and warehouse inventory. The Laboratory has already reduced non-enduring warehouse and office space by 2% of the FY 2012 baseline office (2.58M gsf) and plans to reduce it 11% by FY 2017. Much of this change is due to the Consent Order requirements, with enduring TA-54 solid waste management activities relocating to the new TRU Waste Facility, along with the continued reduction of non-enduring facilities. Figure 1 summarizes the past and projected accounting of office and warehouse space in support of the FTF initiative.



	End of FY2012 Baseline	Actual FY2013	FY2014	FY2015	FY2016	FY2017
Warehouse	648,350	638,619	637,034	613,678	531,025	540,266
Office	1,934,841	1,901,623	1,877,416	1,868,970	1,825,450	1,748,210

Figure 1: *Freeze the Footprint Summary*