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National Nuclear Security Administration
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MEMORANDUM FOR JEFFERSON G. UNDERWOOD
DIRECTOR
OFFICE OF INFRASTRUCTURE AND CAPITAL PLANNING

FROM: MICHAEL BROWN 
ASSISTANT MANAGER
FOR SUSTAINABILITY AND INFRASTRUCTURE

SUBJECT: Transmittal of the Fiscal Year 2015 Ten-Year Site Plan, Limited Report, for the Lawrence Livermore National Laboratory

REFERENCE: Memorandum (J. McConnell/Distribution), *Requirements Modification to Create Resources for Laboratories Operating Board Infrastructure Assessments*, dated March 27, 2014

Attached is the Pre-Decisional Fiscal Year 2015 Ten-Year Site Plan (TYSP), Limited Report, for the Lawrence Livermore National Laboratory (LLNL) for your review and acceptance/comment. This plan was approved by the LLNL Director and concurred by the Livermore Field Office. Any Headquarters comments to this plan will be incorporated into a final version for acceptance, per the guidance.

This limited plan was developed using the National Nuclear Security Administration (NNSA) guidance included in the reference document. My staff has worked with LLNL to assure this plan meets and is consistent with the requirements and assumptions of the guidance. The TYSP supports the Program of Record for the tactical future (within ten years) and the strategic planning horizon (twenty-five years).

This plan also satisfies the requirements of Executive Order 13327, *Federal Real Property Asset Management* and Department of Energy (DOE) Order 430.1B, *Real Property Asset Management*, Congressional and DOE real property reporting requirements, and NNSA's Planning, Programming, Budgeting and Evaluation process.

If you should have any questions or need assistance towards your acceptance of this document, please contact Tony Sy at (925) 422-0900.

Attachment

cc (w/att.):

L. Bridges, NA-00-20

M. Brown

T. Sy

C. Shang

P. Chu

J. Farrell

Lawrence Livermore National Laboratory

Ten Year Site Plan Limited Report

May 2014

FY15



UCRL-AR-143313-14





Lawrence Livermore National Laboratory
FY2015 Ten Year Site Plan
Limited Report
May 4, 2014

Approved by:

William H. Goldstein, Director
Lawrence Livermore National Laboratory

Concurrence:

N. Nicole Nelson-Jean, Manager (Acting)
Livermore Field Office
National Nuclear Security Administration
US Department of Energy

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Introduction

This FY2015 Ten Year Site Plan (TYSP) Limited Report summarizes LLNL's significant changes since the FY2014 submission. This Limited Report, together with the LLNL FY2014 TYSP, lays out a balanced infrastructure lifecycle portfolio of acquisition, modernization and sustainment, consolidation, repurposing, and transition and disposition. The plan and the proposed investments embrace both real property, and special facilities and equipment. Facility and infrastructure management and stewardship are required to sustain Lawrence Livermore National Laboratory's (LLNL) core capabilities and expertise. The format of this report follows the FY2014 TYSP.

Section 1: Executive Summary

The Lawrence Livermore National Laboratory is dedicated to the national security mission. By applying world-class science, technology, and engineering, LLNL maintains the U.S. strategic deterrent and enhances national defense; reduces the global threat from terrorism, weapons of mass destruction, and nuclear proliferation; and, more broadly, responds to scientific issues of national importance.

The Laboratory's resources and capabilities fully align with the National Nuclear Security Administration mission and program plans. The Laboratory is committed to deliver on a safe, secure, and reliable nuclear weapons stockpile, and to address the challenges associated with nuclear nonproliferation through innovation and excellence in science, technology, and engineering. Investments are required in facilities and infrastructure to sustain core capabilities and expertise.

This TYSP lays out a balanced infrastructure lifecycle portfolio of acquisition, modernization and sustainment, consolidation, repurposing, and transition and disposition. The plan and the proposed investments embrace both real property, and special facilities and equipment.

The plan describes LLNL's integrated strategy to modernize and sustain enduring infrastructure to support continuing mission, repurpose quality facilities to optimize utilization, replace buildings when they are well beyond end-of-life, and dispose of legacy facilities to mitigate risk.

The implementation of national policy, stakeholder requirements and the program of record suggest the following investment priorities within the planning horizon.

Modernization and sustainment revitalization priorities

- Replacement and modernization of equipment to support warhead assessment and life extension programs
- High explosives enterprise
- Nuclear/radiochemistry
- Precision fabrication and advanced engineering manufacturing
- Special nuclear materials—plutonium and tritium
- High performance computing

Acquisition priorities

- Electrical distribution system rehabilitation
- Emergency operations center replacement
- Site 300 revitalization to support nuclear security mission
- Engineering and materials replacement building to support stockpile life extension programs

Consolidation and repurposing priorities

- Precision targets and diagnostics
- Engineering enduring capability consolidation

Institutional priorities

- Livermore Valley Open Campus
- Facilities and infrastructure sustainment
- Environmental and site stewardship

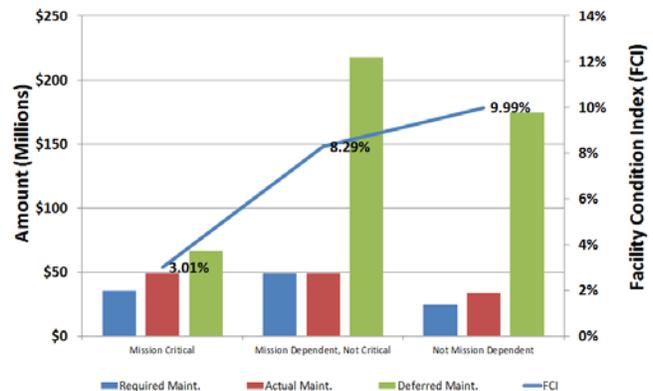
This infrastructure plan enables the Laboratory to lead the nation in nuclear weapons stockpile science, modernization, and sustainment; be the foremost national security laboratory for addressing the nation’s most challenging problems; and be the premier destination for the very best scientists and engineers.

Section 2: Site Overview and Snapshot

N. Nicole Nelson-Jean is the acting Livermore Field Office Manager.

Real property—Site 200 and Site 300:

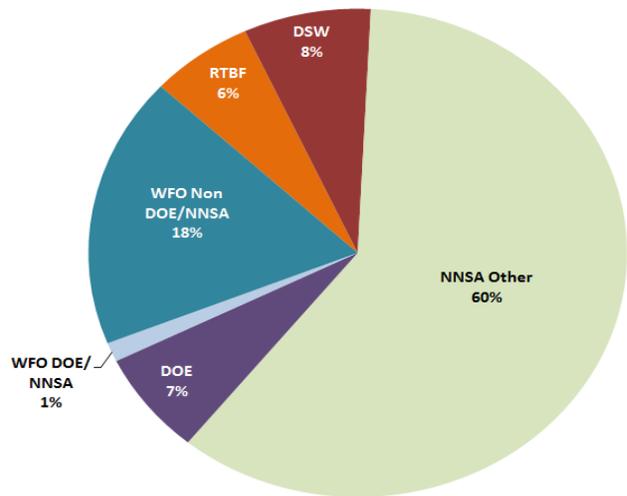
- Acres (owned): 7,727
- Active buildings/trailers: 454
- Total GSF: 6,647,646
- Replacement plant value: \$6,595,639,781
- Deferred maintenance: \$458,930,483
- Facility condition index (FCI): 6.96%
 - Mission critical: 3.01%
 - Mission dependent: 8.29%



Maintenance and FCI by mission dependency. Includes Site 200 and Site 300.

FY2013 funding by source:

- Total site operating cost: \$1,545.7M
- Total NNSA funding: \$1,119.1M
- Total DOE (non-NNSA) funding: \$103.6M
- Total other funding: \$291.4M



Section 3: Assumptions

No update.

Section 4: Changes from Prior Year TYSP

This section highlights significant changes to LLNL FY2014 TYSP.

General Plant Projects (GPP)

In FY2014, LLNL worked with its programmatic stakeholders, the senior management team, and subject matter experts to gather, review and prioritize the institutional requirements for GPP investments. These activities support facility sustainment, upgrades, and modernization of the infrastructure and assets to support Laboratory programs. Thirteen priority projects have been identified within the Future Years Nuclear Security Program (FYNSP) timeframe with a total project cost of \$60M over FYNSP. These include investments in HVAC, electrical infrastructure, mechanical infrastructure, and high security and laboratory space. LLNL programs worked with NNSA to establish priority and phasing for these projects.

An institutional general plant project, the [East Campus Site Improvements](#) project, was completed in FY2014 that improved the safety, reliability, and availability of utilities in the north and east sections of Site 200.

Recapitalization Projects

FIRP sunseted in FY2013 achieving a \$260M backlog reduction at LLNL over the past twelve years. A new [NNSA recapitalization program](#) will continue to address needs at LLNL, including planning and aligning future recapitalization investments, as well as addressing LLNL's highest priority projects.

RTBF LEP and Warhead Assessment Special Facilities Equipment project, started in FY2013, will revitalize and replace foundational and obsolete equipment required for the Weapons Program. Thirteen pieces of equipment were procured in FY2013, four of which have been commissioned thus far.

The **Boiler Replacement Project** is in its final stage. LLNL is in the process of replacing or retrofitting a total of 42 boilers site-wide in order to comply with Bay Area Air Quality Management District (BAAQMD) regulations. The regulatory compliance due date is January 1, 2015.

Line Item Projects

The implementation plan for the following Line Item projects has changed since the FY2014 TYSP.

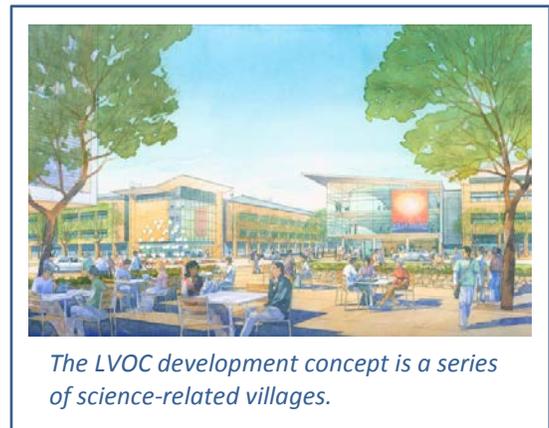
The **Electrical Infrastructure** project is the highest priority for LLNL and is critical to infrastructure. We are working with NNSA headquarters to explore options for a FY2015 start, however it has currently been delayed until FY2016. This project will increase the electrical power reliability to LLNL and neighboring Sandia/California and allow for future growth on the east side of LLNL's Site 200.

The **Emergency Operations Center** will be funded in FY2015. This project is part of a joint investment effort with Sandia and Y-12. This project was identified as the Emergency Management Facility in the FY2014 TYSP.

The **Nuclear Explosives Package (NEP) Engineering and Materials Complex Consolidation and Replacement** project has been added to the NNSA Integrated Priority List (IPL) in the FY2015 SSMP. A team has been formed to study the project requirements and analyze alternatives for a CD-0 package.

The **Site 300 Nuclear Security Complex Modernization** project was submitted to NNSA through the FY2013 Construction Working Group (CWG). The scope has been updated to include civil improvements to support safety, and modernization to support remote operations. This project supports infrastructure for LLNL's broad nuclear security mission.

The **Livermore Valley Open Campus (LVOC)** has made significant progress. Critical Decision-1 (CD-1) was prepared and submitted to NNSA and is currently in the final approval stages.



The **Electrical Reliability and Distribution** project is delayed until 2020. This project will update the electrical sub-stations and associated electrical distribution grids to address capacity shortcomings and reliability of the power systems supporting several mission critical facilities in the west, north, and south areas of LLNL's Site 200.

Section 5: Future Vision and Core Capabilities

No update.

Section 6: Real Property Asset Management

LLNL is supporting the DOE enterprise strategic infrastructure planning process through the **Laboratory Operations Board**. The process has been developed to ensure consistent, defensible, and repeatable data for decision makers to support the budgeting processes. LLNL has assembled a list of its mission unique facilities and is currently assessing the condition of the remaining infrastructure assets against new criteria. This activity provides an excellent opportunity for LLNL to benchmark infrastructure needs beyond just deferred maintenance and document its asset condition against issues such as environment, safety, and health, and/or risk, capability to perform current mission, ability to attract and maintain key staff, and the ability to meet DOE requirements.

The prime focus for the Lab-wide consolidation effort is to reduce building operating costs and right sizing our facilities portfolio focusing on office space to achieve a balanced footprint. As a secondary advantage point, these actions will closer align us with the **Office of Management and Budget's Freeze the Footprint initiative**.

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------------------|--------------|--------------|--------------|--------------|--------------|
| Contractor Leased | -- | -- | -- | -- | -- |
| DOE/NNSA Leased | 30 | 30 | 30 | 30 | 30 |
| Outgranted | -- | -- | -- | -- | -- |
| DOE/NNSA Owned | 6,797 | 6790 | 6785 | 6775 | 6769 |
| Total | 6,827 | 6,820 | 6,815 | 6,805 | 6,799 |

LLNL footprint projection (buildings and trailers). Numbers reflect GSF in thousands.