Y/MOD-012, Rev. 9
August 2008

Y-12 TEN-YEAR SITE PLAN

FY 2009 – FY 2018

Y-12 National Security Complex
Ten-Year Site Plan

FY 2009–2018

August 2008

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Executive Summary

This Ten-Year Site Plan (TYSP) presents the FY 2009–2018 facility and infrastructure requirements to maintain progress in achieving the overall Complex Transformation vision for the Y-12 National Security Complex (Y-12 NSC). The FY 2009–2018 requirements expressed herein are within the Future Years National Security Program (FYNSP) targets for the Y-12 NSC. The long range vision is consistent with the preferred alternative of the Draft Supplemental Programmatic Environmental Impact Statement (SPEIS). Achieving Complex Transformation at Y-12 will no doubt be a challenge from a budget and schedule perspective. As such, the TYSP also identifies, in Chapter 2, the facility and infrastructure gaps that will impact Y-12's transformation if not addressed adequately.

The National Nuclear Security Administration (NNSA) released its Draft SPEIS in December 2007. Within the Draft SPEIS a preferred alternative has been expressed prior to its completion and the subsequent Record of Decision (ROD) scheduled for late 2008. In the preferred alternative, the role of Y-12 is expressed as follows:

> Y-12 would continue as the uranium center providing component and canned subassembly production, surveillance, and dismantlement. Independent of the SPEIS, NNSA is completing construction of the Highly Enriched Uranium Material Facility (HEUMF) and consolidating HEU storage at that facility. The preliminary design of a Uranium Processing Facility (UPF) that could be located at any of the sites under consideration in the SPEIS will proceed until the final ROD.

The future Y-12 NSC, a smaller, modernized national security enterprise.

Although not totally implemented by FY 2018, the preferred alternative has further established the following site-specific goals for the Y-12 NSC:

- 90% reduction in the high security area,
- 60% reduction in the nuclear operations footprint,
- 50% reduction in the total building footprint (an approximate 3.1 million gross square foot reduction), and
- 20–30% reduction in the Defense Programs staff.

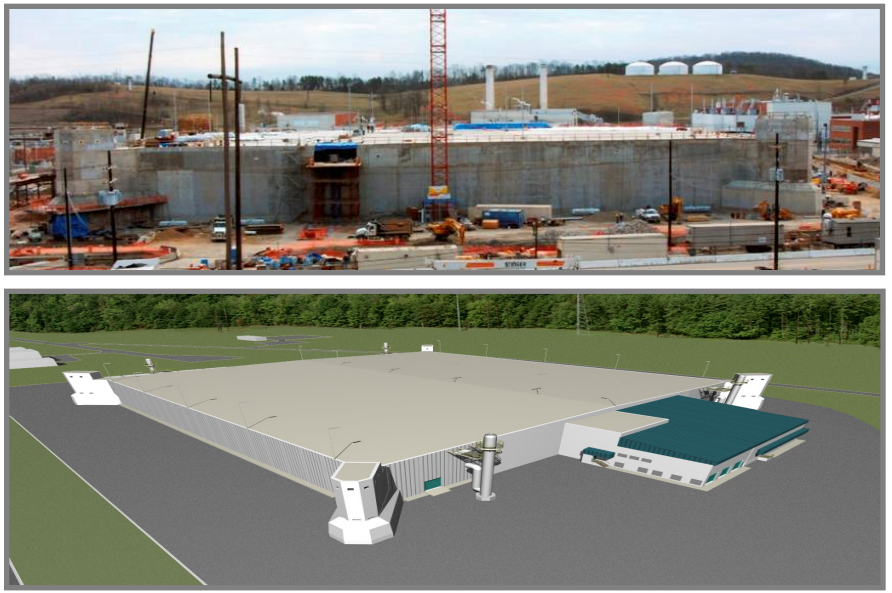
From Y-12's perspective, NNSA's Complex Transformation addresses meeting global national security threats through a smaller, more efficient and responsive infrastructure, but also enables reliable and affordable problem solving to address the ever-changing risks to homeland security and other national security challenges. As stated in the B&W Y-12 Strategic Plan, the Y-12 NSC will embrace and expand its role in Complex Transformation as the internationally recognized Uranium Center of Excellence, continuing to perform the following roles:

- manufacturing, dismantlement, and assessment of nuclear weapon secondaries, cases, and other weapons components;
- safely and securely storing and managing special nuclear material (SNM);
- supplying SNM for use in naval reactors;
- promoting international nuclear safety and nonproliferation; and
- reducing global dangers from weapons of mass destruction.

For over 15 years, Y-12 has been modernizing and transforming in support of site goals to consolidate operations and modernize its facilities and infrastructure. These actions are consistent with and supportive of NNSA Complex Transformation planning. Through various modernization projects, deferred maintenance reduction, enhanced security measures, technology enhancements, infrastructure reduction, and innovative ways of doing business, the Y-12 NSC is becoming a more responsive and cost-effective enterprise, as evidenced by:

- HEUMF, Y-12's first major enriched uranium (EU) modernization project, is 75% complete and scheduled for construction completion in FY 2008 and for operations in FY 2010.
- UPF, which will consolidate all EU operations into a second designed-denial facility near the HEUMF, is currently in preliminary design. When operational and when the Protected Area Reduction Project is also completed, the high-security area can be reduced by 90%, enabling annual operating cost reduction of approximately $150 million per year and showing a return on investment within 5 years. UPF is scheduled for construction completion in FY 2016 and operations in FY 2018. Building 9212 will continue to be operational until full production is achieved in UPF in late FY 2022.

***(upper)* Work on the new HEUMF is 75% complete, with operations expected to begin in 2010.**
***(lower)* Artist's rendering of the UPF.**

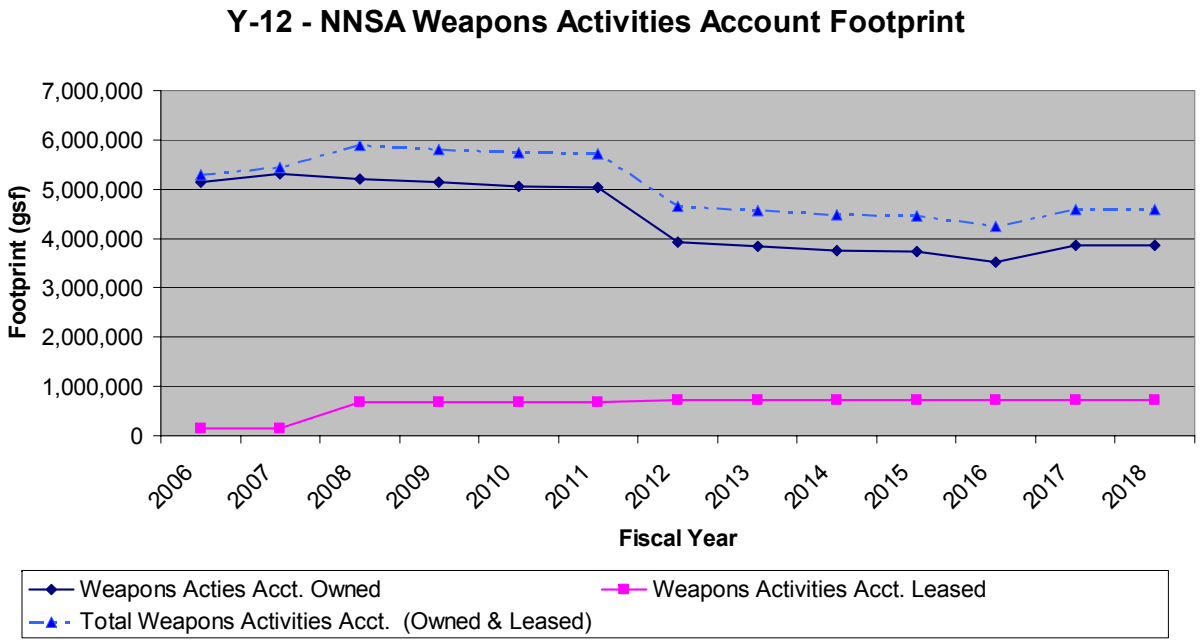


- The Quality Evaluation and Depleted Uranium (DU)/Binary relocations from Buildings 9201-5 and 9204-4 have been completed. Theses consolidations have essentially rendered Buildings 9201-5 and 9204-4 excess to Y-12's production mission needs. In FY 2008, activities are in place to begin the reduction of the hazard category of these facilities. Ultimately, NNSA's goal is to transfer the buildings to the U.S. Department of Energy Office of Environmental Management.
- Dismantlement is being accelerated to reduce space requirements for the storage of SNM. This effort is vital to Y-12's material protection strategies and to ensure that the new HEUMF can accommodate the storage of all Category I and II SNM by maximizing can storage and minimizing drum storage.
- Y-12 is building on the previous successful efforts of the Y-12 Throughput Improvement Plan (YTIP). YTIP focuses on ensuring we can meet our customer commitments while continuously improving productivity. Y-12 has joined the NWC Lean Six Sigma working group to ensure collaboration and integration of productivity initiatives.
- Using private sector financing, two new technical/administrative facilities were completed in 2007. The Jack Case Center and the New Hope Center now house over 1400 employees from B&W Y-12 and the NNSA Y-12 Site Office. Construction of these facilities is facilitating the demolition of over 149,000 ft^2 in FY 2008 and the cancellation of several off-site leases.
- Supported by funding from the Facilities and Infrastructure Recapitalization Program (FIRP), Y-12 is continuing its integrated program to reduce excess facilities. By the end of FY 2008, Y-12 will have demolished an additional 149,357 ft^2 of banked floor space. Since FY 2001 and including the FY 2008 square footage, Y-12's total footprint reduction will be 1,257,750 ft^2 (banked and nonbanked). At the end of FY 2007 FIRP funding has reduced over $200 million in deferred maintenance from the original FY 2003 baseline.

Demolition of Building 9720-6 *(upper)* and the new, alternatively financed Jack Case Center *(lower)*.

- FIRP is providing line item funding to finish the Steam Plant Life Extension and the Potable Water System Upgrades projects.
- Y-12 continues to make excellent progress in implementing the DBT policy. Work has been completed to enhance protection of EU material storage, and protection of EU manufacturing and processing areas is well under way. Through close coordination with NNSA, Y-12 gained approval for a cost-effective, risk-based, design basis threat implementation plan that is scheduled for completion in FY 2011.
- Y-12 is proposing an alternative financing project to construct a new Complex Command Center (CCC) by FY 2010. The CCC will consolidate and significantly improve the operations that ensure emergency management–type activities (fire response, and command and control of accidents and incidents).

Consistent with the Y-12 transformation plans, a summary of gross square footage at the site during this planning period is shown here in tabular and graphical form.



Gross Square Footage Summary Table for the Y-12 National Security Complex

	FY 2006 Site Baseline *Based on FIMS snapshot at end of FY 2005* (gsf)	Net Change from FY 2006 through December 2008 *Based on FIMS snapshot at end of FY 2007* (gsf)	Cumulative Changes from FY 2008 to FY 2018		Projected Footprint in FY 2018 (gsf)	Change from FY 2006 to FY 2018 (gsf)
			Cumulative Additions (Construction, New Leases, Transfers) (gsf)	Cumulative Reductions (Disposition, Sale, Transfer, Lease Termination) (gsf)		
OWNED GROSS SQUARE FOOTAGE						
Weapons Activities Account Owned	5,139,010	388,918	487,088	-1,833,868	4,181,148	-957,862
Other NNSA Owned (NA-20)	0	0			0	0
Other DOE Owned	2,107,283	-231,802		-1,801,717	73,764	-2,033,519
Non-DOE Owned					0	0
Total	7,246,293	157,116			4,254,912	157,116
LEASED GROSS SQUARE FOOTAGE						
Weapons Activities Account Leased	146,778	534,533	48,000		729,311	582,533
Other NNSA Leased (NA-20)	0	0			0	0
Other DOE Leased	0	0			0	0
Non-DOE Leased					0	0
Total	146,778	534,533			681,311	534,533
OWNED & LEASED GROSS SQUARE FOOTAGE						
Weapons Activities Account Owned & Leased	5,285,788	923,451	535,088	-1,833,868	4,910,459	-375,329
Other NNSA Owned & Leased (NA-20)	0	0	0	0	0	0
Other DOE Owned & Leased	2,107,283	-231,802	0	-1,801,717	73,764	-2,033,519
Non-DOE Owned & Leased	0	0	0	0	0	0
Total	7,393,071	691,649	0	0	4,936,223	691,649

Notes:
Data provided in "FY 2006 Site Square Footage Baseline" column is derived from the FIMS snapshot taken at the end of FY 2005.
Data provided in "Net Change from FY 2006 through December 2008" column is derived from the FIMS snapshot taken at the end of FY 2007.
Leased Gross Square Footage includes both DOE Leased and Contractor Leased space.

While significant progress has been made, six key facility and infrastructure gaps have been identified that will impact Y-12's ability to successfully achieve Complex Transformation over the long term. The six gaps are summarized below and further explained in Sect. 2.6.

1. **Sustaining the mission critical equipment and infrastructure during transformation**—ensuring that mission critical facilities, infrastructure and equipment can bridge the gap to new, modernized facilities that will not be operational until 2018 or beyond.
2. **Dispositioning legacy facilities and material**—ensuring that an ever increasing legacy footprint of facilities and material is adequately addressed to reduce the risk of environmental, safety, and health concerns or possible mission impacts resulting from continued legacy building degradation.
3. **Upgrading and modernization of utility infrastructure systems**—ensuring that Y-12's vast utility infrastructure systems remain reliable, while also planning for a site that will have fewer buildings and reduced utility capacities.
4. **Completing the transition to the new EU facilities**—ensuring that key projects are completed so that projected operations and security savings are fully realized.
5. **Modernizing the mission dependent and support facilities and infrastructure**—ensuring that mission critical operations are supported by modern, efficient, mission dependent and support facilities that should be located in facilities designed for their current and projected use.
6. **Nuclear workforce of the future—**ensuring that Y-12 has the professional, skilled, and managerial resources to meet the challenging requirements of Complex Transformation.

In many respects this FY 2009–2018 TYSP is transformational. From B&W Y-12's perspective, the totality of real property requirements over the next 20–25 years is important to understand. It is also understood that some uncertainty exists until the SPEIS process, and even more detailed planning, are completed. Transforming from a Nuclear Weapons Complex to an Integrated National Security Enterprise will require increased interaction between NNSA and the eight sites that will make up the smaller, safer, more secure and less expensive enterprise.

While footprint reduction will continue, many of Y-12's existing facilities must be maintained during transformation to a smaller, modernized site.

1 Introduction

1.1 Overview

This Ten-Year Site Plan (TYSP) for FY 2009–2018 describes the missions and programs of the Y-12 National Security Complex (Y-12 NSC or Y-12), along with their corresponding facilities and infrastructure investment needs and gaps, to achieve Complex Transformation as defined in the preferred alternative of the Draft Supplemental Programmatic Environmental Impact Statement (SPEIS). The TYSP contains four chapters and Appendices as described here.

Chapter 1, Introduction, provides an overview of the content of the TYSP and outlines the foundation upon which the site's long-range facilities and infrastructure planning needs are based. This foundation is based principally on the assumptions provided and the integration of the National Nuclear Security Administration (NNSA) and B&W Y-12 Complex Transformation vision for the Y-12 NSC.

Chapter 2, Mission Needs and Program Descriptions, describes the site's missions and related programs for both NNSA and non-NNSA, consistent with Complex Transformation and other relevant strategic planning guidance. The emphasis is on current or future changes to program missions that impact facility and infrastructure activities or requirements, with particular focus on mission critical facilities. Facility and infrastructure gaps affecting Complex Transformation also are described.

Chapter 3, Real Property Asset Management, provides the master site plan vision for Y-12 and information on the planning process, real property management, condition, utilization, site footprint management, maintenance, deferred maintenance (DM), and security infrastructure in the context of current and future (10-year) expectations.

Chapter 4, Overview of Site Project Prioritization and Cost Profile, describes the project and cost projections for Readiness in Technical Base and Facilities (RTBF), Facilities and Infrastructure Recapitalization Program (FIRP), Safeguards and Security (S&S), and other non-NNSA infrastructure investments on Y-12 NSC for the 10-year planning horizon. Significant project deletions and additions from the previous TYSP are identified, and Attachment A of the TYSP Guidance, Facilities and Infrastructure Cost Projection Spreadsheets, is included.

Appendices provide the other TYSP Guidance-required attachments that are referenced in various chapters of this document.

1.2 ASSUMPTIONS

This TYSP, consistent with the preferred alternative for Complex Transformation, assumes the Record of Decision will conclude that Y-12 will remain NNSA's distributed center of excellence for uranium manufacturing and research and development. It is further assumed that NNSA will implement Complex Transformation within its funding targets and constraints of the Future Years National Security Plan (FYNSP).

Significant investment will be required to implement Transformation across the Complex while continuing to meet annual programmatic; environment, safety, and health (ES&H); and S&S requirements and deliverables. B&W Y-12 believes that only a major reconfiguration of Y-12 can achieve the future S&S, operational safety, and operating cost reductions that Complex Transformation requires. The long-range vision for Y-12 is based on the assumptions that follow.

Capabilities

Y-12 must possess and maintain the capabilities (people, facilities, and infrastructure) to ensure the following:

- modification, repair, or replacement of uranium, lithium, and other components and radiation cases;
- production of hardware to support design laboratory tests required for stockpile certification;
- surveillance of weapons through disassembly, inspection, and electronic documentation of findings;
- dismantlement, storage, and disposition of nuclear weapon materials and components returned from the stockpile;
- management and secure storage of nuclear materials and other strategic assets designated for national security purposes and/or pending disposition;
- supply of special nuclear material (SNM) for use in naval reactors;
- processing of weapon materials—including chemical recovery, purification, and conversion to a form suitable for safe, secure, long-term storage, disposition, and future use; and
- management, technical, and applied technology expertise in support of Nonproliferation, Homeland Security, and other programs of national importance.

Capacity and Work Scope

Y-12 capacity and workload requirements will be established through the following:

- Near-term production readiness and capacity will be driven by Production and Planning Directives (P&PDs) and, as deemed necessary, other workload planning guidance received from NNSA.
- Workload at Y-12 would involve the following over the next 10 years:
  - The Life Extension Programs (LEPs) will be completed for the B61 and initiated for the W76.
  - The production of joint test assembly (JTA) units is expected to decrease in FY 2010 and thereafter be sustained at the newly established level.
  - Quality evaluation (surveillance) rates are expected to remain at current levels.
  - Dismantlement will sustain the high throughput levels established in FY 2006.
  - Naval Reactors work is steady at current rates.
  - Work associated with National Security Programs, Complementary Work, and NNSA's nonproliferation mission areas are projected to increase.

Planning

The following planning, project, and facility and infrastructure assumptions are guiding the long-range Complex Transformation planning and the shorter-range 10-year plan at Y-12:

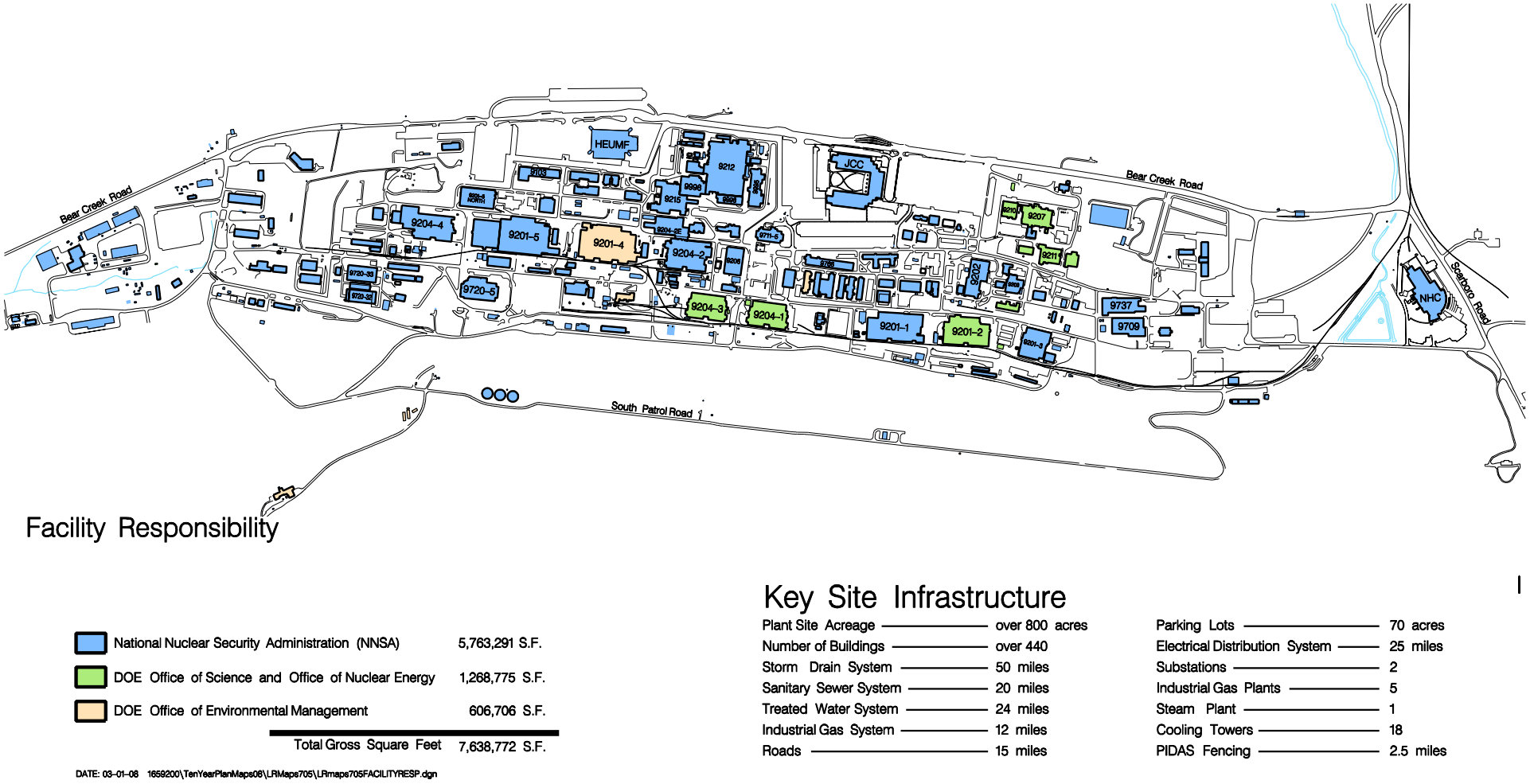
- The land requirements will generally remain stable. While some disposition of land will occur to support alternative financing projects or possible joint ventures related to solving national security challenges, Y-12 will continue to require security and emergency response buffers that preclude release of any real estate for public use.
- The Uranium Processing Facility (UPF), the Security Improvements Project (SIP), and the Protected Area Reduction Project (PARP) will be funded. PARP is required to achieve the significant cost savings associated with consolidating enriched uranium (EU) operations and reducing its high-security area by 90%.
- Continued infrastructure funding is expected from FIRP through FY 2013. Funding will be in the areas of utility line items, general plant projects (GPPs), capital equipment, and DM reduction. FIRP funding for excess facility demolition will cease in FY 2008 and be replaced by the Transformation Disposition (TD) program. Recapitalization of mission critical facilities and utility infrastructure systems will be the primary drivers in the prioritization of FIRP projects in support of Complex Transformation.
- The use of TD funding will become acceptable for performing NNSA-required work to achieve the stable and safe condition in facilities such as 9201-5, 9204-4, and 9206 prior to their transfer to the U.S. Department of Energy Office of Environmental Management (DOE-EM).
- When Complex Transformation is achieved, the total operating space required to perform the NNSA and non-NNSA missions and functions will be approximately 50% less than today. Ultimately, this translates into an active footprint of approximately 2.9 million square feet versus the 5.8 million square feet today.
- The impacts of infrastructure modernization and technology improvements, the optimization of S&S operations, and the streamlining of requirements should result in the reduction of resources to support the DOE Office of Defense Programs (DP) missions to approximately 2000–2500 people sometime after the completion of EU consolidation. It is possible that some of this reduction will be offset by work for others that is not DP funded.
- The Integrated Facility Disposition Project (IFDP) is being planned, allowing for the decontamination and decommissioning (D&D) of over 3.8 million square feet of NNSA, DOE Offices of Science and Nuclear Energy (DOE-SC/NE), and DOE-EM excess space over the next 15 to 20 years. The project has received CD-0 approval and submitted the CD-1 for approval. The full IFDP project is not required to reduce the NNSA-owned footprint.
- Based on Complex Transformation's timeline, the transition to a smaller, more responsive Y-12 NSC will require that many of the existing mission critical facilities be operated and maintained for 10 years or longer.
- Upgrades or replacements of S&S systems and equipment must be considered until the Highly Enriched Uranium Materials Facility (HEUMF) and UPF are operational. S&S concerns will be addressed using a graded approach and working with NNSA-HQ on graded implementation.

1.3 CURRENT SITUATION

To support the development and understanding of the transformation of Y-12 over the next 10 years, the following baseline facility and infrastructure information is provided as an overview of Y-12's current situation. Figure 1 also provides summary level data on the Y-12 NSC. Data shown is the situation as of October 1, 2007, the start of FY 2008. The projected 5-, 10-, 15-, and 20-year states for the Y-12 NSC are described in Chapter 3, Real Property Asset Management.

- A B&W Y-12 workforce of approximately 4500 people supports mission-related activities in 393 facilities in various states of utilization that total approximately 5.8 million square feet of NNSA-owned space and leased space. This represents 75% of the total Y-12 site footprint. The Jack Case and New Hope Centers, completed in July 2007 and totaling 549,595 ft^2, have been included in this total, albeit NNSA utilized but leased, space.
- DOE-SC/NE is responsible for 21 buildings containing approximately 1.3 million square feet of space. The vast majority of the DOE-SC/NE facilities have no active missions and can be considered excess to their mission needs.
- DOE-EM is responsible for approximately 0.6 million square feet on the Y-12 site. This total includes 41,786 ft^2 of operational facilities supporting cleanup missions at Y-12 and 564,200 ft^2 of excess facilities that ultimately will be dispositioned under IFDP.
- Within the next 5 years, the current and projected excess DOE and NNSA footprint on the Y-12 NSC will total over 2.6 million square feet. Of this total, over 2 million square feet of NNSA, DOE-NE/SC, and DOE-EM is excess today. This legacy footprint will require actions to ensure these facilities are placed in a stable and safe condition for transfer to DOE-EM and, ultimately, disposition under IFDP.
- The HEUMF project is 75% complete [total project through Critical Decision 4 (CD-4)].
- While infrastructure improvements and DM reduction has occurred, investment is required to sustain the mission critical facility and utility infrastructure while implementing Complex Transformation.
- Mission support infrastructure, such as laboratory, maintenance, warehousing, and emergency command center space, is in need of upgrades or replacement. Innovative approaches such as private sector financing will be evaluated to meet these needs.
- The efficiency of vehicular and pedestrian circulation (workflow) has been affected by ever-increasing security requirements and the utilization of existing parking lots for consolidating uranium operations. Funding will be required to modify access roads and construct new parking lots within the next 2 years.
- Some gaps exist in both capability and capacity to prepare for future mission requirements. Budgets for processes and equipment maintenance and repair must be sufficient while restoring and enhancing technologies and manufacturing processes.
- The steam plant and potable water projects are under way in FY 2008.

Figures 2 and 3 contain other information about Y-12 facilities and infrastructure.



Facility Responsibility

National Nuclear Security Administration (NNSA)	5,763,291 S.F.
DOE Office of Science and Office of Nuclear Energy	1,268,775 S.F.
DOE Office of Environmental Management	606,706 S.F.
Total Gross Square Feet	7,638,772 S.F.

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Key Site Infrastructure

Plant Site Acreage	over 800 acres	Parking Lots	70 acres
Number of Buildings	over 440	Electrical Distribution System	25 miles
Storm Drain System	50 miles	Substations	2
Sanitary Sewer System	20 miles	Industrial Gas Plants	5
Treated Water System	24 miles	Steam Plant	1
Industrial Gas System	12 miles	Cooling Towers	18
Roads	15 miles	PIDAS Fencing	2.5 miles

Fig. 1. Y-12 NSC has about 7.6 million square feet of floor space, including 549,595 ft^2 of onsite leased space.

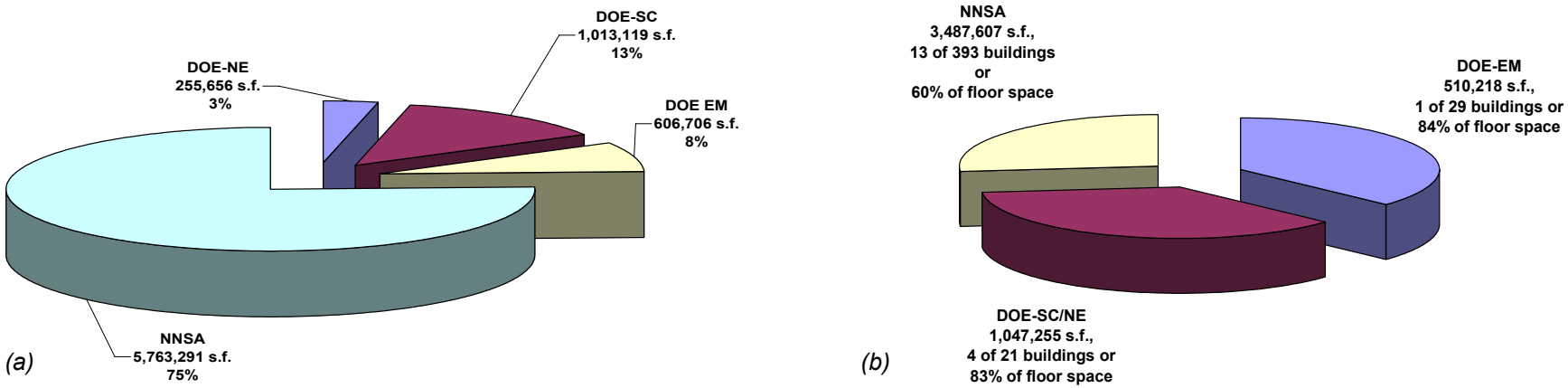


Fig. 2. *(a)* DOE/NNSA program responsibility for Y-12 NSC facilities and *(b)* percentage of program footprint consisting of buildings greater than 100,000 ft^2.

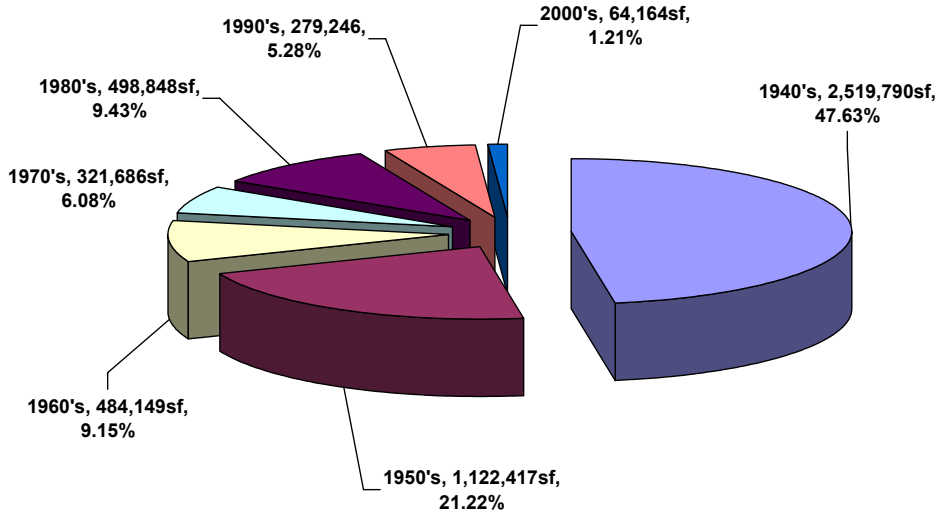


Fig. 3. Y-12 NSC construction chronology.

2 Mission Needs and Program Descriptions

The purpose of this section is to emphasize current and/or future changes to NNSA and non-NNSA program missions that impact facility and/or infrastructure activities or requirements. The bases for understanding missions, programs, and workload are the NNSA workload planning documents, other non-NNSA planning documents, and the draft preferred alternative for Complex Transformation contained in the Draft SPEIS.

This following material has been categorized into (1) NNSA missions and programs, (2) non-NNSA missions and programs, (3) other NNSA missions and programs (non-weapons related), and (4) potential facilities and infrastructure impacts of future Nuclear Weapons Complex planning.

2.1 NNSA Missions and Programs

As stated in the B&W Y-12 Strategic Plan, Y-12 NSC will embrace and expand its role in Complex Transformation as the internationally recognized Uranium Center of Excellence, continuing to perform the following NNSA missions:

- manufacturing, dismantlement, and assessment of nuclear weapon secondaries, cases, and other weapons components;
- safely and securely storing and managing SNM;
- supplying SNM for use in naval reactors;
- promoting international nuclear safety and nonproliferation; and
- reducing global dangers from weapons of mass destruction.

2.1.1 Life Extension Programs

The Directed Stockpile Work (DSW) program provides resources to perform maintenance and retrofit activities on weapon systems in the enduring stockpile. LEP activities are directed toward the production of refurbished, replaced, and/or redesigned weapons components. Activities include, but are not limited to, producing War Reserve materials and parts, supporting direct manufacturing specifications and procedures, and training personnel needed to meet steady-state production rates. LEPs depend on Y-12's capability to sustain and refurbish all nuclear weapons in the active and active reserve stockpile. This capability includes performing design, development, and production for authorized refurbishment programs; providing the required production capability to refurbish weapons on a schedule negotiated with the Department of Defense (DoD); and sustaining production competence to support production needs.

LEPs over the next 10 years are composed of the following systems:

B61 Alt 357

The B61 Alt 357 program will deliver War Reserve hardware through FY 2008. In FY 2008, production equipment and facilities must be maintained. In addition, tooling and procedures will be reworked, as necessary.

W76

Plans for the W76 LEP include preparation for an NWC-wide first production unit (FPU) in FY 2009. In FY 2009 and 2010, production quantities will ramp up to a near steady-state level. Production will be ongoing for more than 10 years.

W78

The W78 LEP currently has an FPU date of FY 2023. In light of congressional holds placed on the Reliable Replacement Warhead (RRW) program and changes in the Nuclear Weapons Enterprise strategy, the likelihood of a W78 LEP has increased. The program continues on the NNSA long-range schedule.

2.1.2 Stockpile Systems

The Stockpile Systems Program is conducted to detect and evaluate potential problems in the nuclear weapons stockpile that could affect safety, use control, and reliability. These evaluations are performed on materials and components used in weapon manufacturing, newly built weapons, weapons that have been retrofitted or upgraded, and weapons withdrawn from the stockpile. This evaluation or surveillance activity is a mainstay of the DSW work scope.

Stockpile Systems consists of four programmatic elements: Limited Life Component Exchange (LLCE), quality evaluation (QE), shelf-life evaluation, and JTA production.

LLCE components are those that degrade with age and must be replaced periodically. Replacement components are obtained from storage or from new production. NNSA requires that B&W Y-12 maintain and/or provide capabilities to meet stockpile maintenance requirements for enduring systems as defined by the latest P&PD.

Quality evaluation is a material performance activity conducted on a sampling of War Reserve or War Reserve–like components and assemblies to evaluate their functionality. The sampled materials may come from stockpiled weapons; retrofit evaluation systems test (REST) units, which are randomly selected during production, contain newly produced materials, and are tested in a laboratory; stockpile flight test (SFT) units, which are randomly selected from the stockpile and evaluated by flight tests; stockpile laboratory test (SLT) units, which are selected from the enduring stockpile and evaluated; and production samples.

QE activities are expected to remain relatively constant during the 10-year planning period although NNSA budgets are decreasing in future years. Through the Surveillance Transformation Project and the Enhanced Surveillance Campaign, efforts will be made to decrease traditional QE disassemblies. The Enhanced Surveillance Campaign will attempt to implement new technologies that will allow system evaluations to take place in a nondestructive mode. However, any decrease in traditional QE disassemblies is expected to be offset by new surveillance work on upcoming LEPs and the RRW.

Shelf-life evaluation is conducted on War Reserve or War Reserve–like components and assemblies stored for extended periods in a defined environment and evaluated on a scheduled or as-needed basis to determine their long-term functionality. Long-term storage material includes samples from War Reserve production held for evaluation for more than 6 months; aging studies material; and production of representative sample material.

JTA production is an activity to supply materials built to specifications developed jointly by the design laboratory and the DoD that include, to the extent possible, War Reserve components minus the nuclear package. The physical appearance and characteristics of a JTA approximate a War Reserve unit to the maximum practical and possible extent.

The JTA program will provide flight test assemblies and components in accordance with schedule requirements defined by Lawrence Livermore National Laboratory (LLNL) and Los Alamos National Laboratory (LANL) and implemented through the NNSA program control documents. JTA production is expected to decrease in FY 2010 and thereafter be sustained at the newly established level.

Y-12 must maintain and/or provide the capabilities to meet QE, shelf-life, and/or test hardware program requirements for the following weapons systems on the basis of schedules provided by NNSA.

B61	W88
B83	W76 High Fidelity JTA-9
W76	W76 JTA- 1, 2, 7
W78	W78 JTA- -5,6
W80	W87 JTA- 3,4
W87	W88 JTA-1,2,3,4

2.1.3 Retired Weapons

Retired Weapons Program resources provide for the receipt, dismantlement, and disposition of weapons systems components returned from the nuclear stockpile. Weapons components returned to Y-12 are received primarily from the Pantex Plant following initial dismantlement.

Dismantlement includes all activities associated with weapons retirement, disassembly, component characterization, and disposition of materials and components.

Administrative, operational, security, and safety procedures are developed, and tooling is designed and fabricated for each dismantlement system. Components may require demilitarization, sanitization, and/or decontamination depending on the disposition path. Efforts continue to primarily dispose of classified, contaminated components at the Nevada Test Site.

Dismantlement, storage, and disposition have provided an ongoing workload for Y-12, driven primarily by material reuse requirements, stockpile reduction, and treaty obligations.

Y-12 must maintain and/or provide the capability to perform dismantlement and disposition on the following weapons systems based on schedules provided by NNSA.

B43	W62	W79
B53	W68	W80
B61	W69	W84
B83	W70	W87
W48	W71	W88
W49	W76	
W59	W78	

Current projections show weapon receipts from Pantex will rise in 2009 and then fall to a fairly steady rate throughout the 10-year planning period. Implementation of the NPR recommendations and continued pressure to reduce the stockpile are expected, which will impact this workload. Continued initiatives to increase capacity are expected. Overall, dismantlements are expected to be sustained at a high level to address material demands, storage issues, and treaty requirements. Similarly, demilitarization, sanitization, and disposition activities will increase to reduce the space required for the storage and security of excess materials and classified parts generated by dismantlement operations.

2.1.4 Reliable Replacement Warheads

At this time, RRW-1 activities across the Nuclear Weapons Complex (NWC) have been suspended until further notice. Early planning prior to this suspension concluded that some equipment and processes would need to be upgraded or procured and some facility modifications would be required. Should RRW program activities be restarted, further planning related to facility and infrastructure needs will become clearer. Documentation prepared to date has been placed under configuration control should RRW-1 activities be resumed.

2.1.5 Nuclear Materials Management, Storage, and Disposition

RTBF's Nuclear Materials Management, Storage, and Disposition Program ensures that the development of strategic materials supply and demand analyses is accurate and timely in support of the DP mission for replacement of limited-life components for the stockpile and other missions including Naval Reactors Fuel Program requirements. The program also ensures safe, secure, and compliant storage of the nation's strategic reserve of HEU and lithium, as well as all other nuclear materials at Y-12. Y-12 is designated as DOE's national repository for HEU.

The Material Access Area (MAA) storage footprint is approximately 100,000 ft^2 and can accommodate approximately 12,000 drums and approximately 10,500 cans of stored material. The increase in can storage capacity is due to the utilization of Rackable Can Storage Boxes and reclaimed tube vault space. These initiatives prevented a potential shortfall in can storage capacity. Currently, there are approximately 800–1000 empty drum spaces.

Requirements for MAA storage are projected to peak at the end of FY 2010 with an expected downward trend as a result of weapons dismantlement and various material disposition activities. Based on current projections for material receipts, dismantlement rates, outgoing shipments, and sustained material recycle and recovery operations, adequate storage space should be available for the near future.

Plans are being accelerated for the transfer of materials into the new HEUMF, scheduled to be operational by March 2010. The initial transition will occur over 18 months, completing at the end of September 2011. The new facility will enable NNSA to consolidate HEU into a modern storage facility and reduce costs associated with facilities that can be vacated or the storage footprint reduced through other material consolidation and material disposition initiatives.

Non-MAA storage in multiple facilities is consuming approximately 120,000 ft^2. These facilities are used to store a wide variety of nuclear and nonnuclear materials primarily associated with DP missions. Non-MAA storage also provides compliant long-term storage for classified materials required to be held. The program funds and manages two large, free-standing vault-type rooms (VTRs) for such storage. Currently, contingency plans are being developed to convert MAA storage facilities made available when materials are transferred to HEUMF into compliant, non-MAA storage facilities. While it is hoped that vigorous efforts toward material disposition will make the need for additional space unnecessary, reassignment of existing space will be required to meet future storage needs.

The accelerated deinventory prior to 2010 of Buildings 9201-5 and 9204-4 will impact non-MAA storage needs and capacity and will require that additional storage options be developed prior to the availability of former MAA storage areas. In addition, planned disposition of elemental mercury has been halted, and it is likely that a long-term mercury storage area will need to be developed.

2.1.6 Material Recycle and Recovery

Material recycle and recovery (MRR) activities include those necessary to

- recycle and recover EU from various forms of material generated from the production, dismantlement, or quality evaluation of weapons parts;
- perform chemical conversion of various forms of lithium to lithium chloride; and
- store in-process materials until they can be further processed for long-term reuse, storage, or disposition.

All activities required for this mission, from maintaining its processing equipment to operating the equipment, are included in the MRR program. The major facilities supporting MRR are 9212 and 9204-2.

The primary EU recycle and recovery tasks include the processing of salvage materials from the production areas into a measurable form, purification of uranyl nitrate and conversion to

oxide, conversion of oxide to purified metal (if needed), processing of salvage materials in the EU recovery areas, cleaning of machining chips, and consolidation of scrap metal from the LEPs or Dismantlement.

MRR will operate wet chemistry, oxide conversion facility, and reduction to produce purified uranium metal in support of national security mission needs. Additional significant processing efforts will center on support of dismantlement initiatives, lithium processing, and backlog reduction.

Although backlogged HEU oxide and liquids can now begin to be processed, it should be noted the entire metal production system produces salvage materials such as slag, ash, filters, and combustibles that require dispositioning through off-site disposal or on-site processing. An initiative to enable off-site discard of low quantities of HEU is under way to reduce the amount of salvage material awaiting chemical recovery.

There are two other independent projects within MRR that support the NNSA complex: the DOE Business Center for Precious Metals Sales and Recovery (BCPMS&R) and the Central Scrap Management Office (CSMO).

B&W Y-12 staffs and manages the BCPMS&R. The Business Center recovers precious metals from uncontaminated and Resource Conservation and Recovery Act (RCRA) scrap metal and excess equipment, making this metal available to DOE and its prime contractors at no cost. The Business Center also places contracts with private sector companies to refine precious metals to commercial grade. The Business Center maintains its business office and a repository for staging precious metals scrap at Y-12.

The CSMO provides operations and technical support for centralized management for DOE-owned HEU scrap, including receipts, processing, and packaging and disposition activities. This function is essential to ensure that HEU scrap is controlled, used, and reused only for authorized and intended purposes and dispositioned in accordance with NNSA policy, priorities, and plans.

2.2 Non-NNSA Missions and Programs

As stated in Chapter 1, there are facilities located on the Y-12 NSC that belong to other DOE programs, described below.

2.2.1 DOE Offices of Science and Nuclear Energy Programs at Y-12

UT-Battelle has essentially executed its plan to relocate all active Oak Ridge National Laboratory (ORNL) programs from the Y-12 site to ORNL's main campus in Bethel Valley. Many of the large buildings that ORNL occupied at Y-12 were originally constructed for the enrichment of uranium during the Manhattan Project. For all facilities that are assigned to ORNL, UT-Battelle is responsible for surveillance and maintenance (S&M) until their programmatic transfer or ultimate disposition. In some cases, Y-12 has assumed ownership of DOE-SC buildings, such as Building 9201-3. Y-12 also currently has temporary operational responsibility for Building 9204-1, which is used primarily for some residual office, maintenance, and storage space. While DOE-SC retains ownership, NNSA is paying for the operation and maintenance of this facility until the space is no longer required to support NNSA needs—projected to be early FY 2009. At that time Y-12 will have vacated the facility and DOE-SC will resume complete ownership responsibility.

During the next 10 years, DOE-SC/NE does not anticipate spending any significant funding for any D&D activities and does not plan to make any capital investments in their assigned facilities located on the Y-12 site. Over 500,000 ft^2 of the DOE-SC Biology Complex at Y-12 is shut down today. These facilities are located adjacent to Y-12's new administrative and technical support facilities and will continue to deteriorate and detract from Y-12's new vision for this area of the site. The DOE-SC and DOE-NE facilities that are, or will become, excess on the Y-12 site are included in the IFDP. This currently unfunded project, discussed in more detail in Chapter 3, is a DOE-EM project whose scope includes the D&D of NNSA and DOE-SC/NE excess facilities located on the Y-12 site.

2.2.2 DOE Office of Environmental Management Program at Y-12

B&W Y-12 formally initiated the transition of the newly generated waste scope from DOE-EM to NNSA effective November 2005. Congress authorized this action in finalizing the budget process, and B&W Y-12 accelerated the execution of their previously approved Transition Plan. As a result the Newly Generated Waste Scope was effectively managed by B&W Y-12 with continued execution by Bechtel Jacobs Company via a Memorandum Purchase Order. This allowed continuity of operations during FY 2006 and initiation of required actions to fully bring this scope under the management of B&W Y-12. Ownership of and responsibility for the appropriate facilities were clarified by B&W Y-12, with final approval of the official list being offered by NNSA-YSO, and concurrence was gained from the DOE Oak Ridge Office (DOE-ORO). Over 193,478 ft^2 of space was transitioned back to NNSA. Planning for these facilities, including their long-term maintenance requirements, recapitalization, and replacement, will now be integrated with ongoing real property management planning of NNSA's other assets. The DOE-EM program will retain a presence on the Y-12 site for the foreseeable future, conducting D&D of current or former NNSA and DOE-SC facilities transferred many years ago and conducting environmental remediation actions on the Y-12 site. Assuming the IFDP project is funded, significant increases in on-site D&D activities could occur over the next 10 years. The magnitude of these activities and their impact on current facility and infrastructure needs remain uncertain until the IFDP project moves forward in the critical decision process. Some additional waste treatment facilities are likely given the D&D scope envisioned. These facilities would be included in the scope of IFDP.

2.3 Significant Other NNSA Missions and Programs (Non-Weapons Activities), Other DOE Work and Work for Others

The mission work and organization described in this section are managed within the National Security Programs (NSP) organization. All these organizations' support of outside organizations provides synergies, as lessons learned and new technologies are integrated into the primary site mission areas. Such work reduces costs by reducing nonproductive personnel charges during DP schedule valleys and by sharing the overhead burden. As such work grows, the work helps to attract and retain personnel with key or critical skills and helps ensure that sufficient qualified personnel are available to meet overall needs. This work will not create a detrimental future burden on DOE/NNSA resources. Work is full cost recovery. If such work requires regular use of facilities and infrastructure, Service Cost Centers are established to ensure that full facility and infrastructure costs (including maintenance) are covered. Typically, any facility utilization would be in existing structures, and if they were no longer needed for DP missions, such work would enable DP cost avoidance prior to any D&D. If any new facilities are required to support this work, mechanisms will be established (and approved by DOE/NNSA) to ensure no added future DOE/NNSA burden.

Most of the NSP work does not require use of facilities, beyond a few office spaces, since the organization primarily sells Y-12 expertise versus facilities and equipment. Facility utilization to date has consisted of using available facilities and/or equipment without causing any significant impact on existing mission work. One facility, Building 9213, is being used exclusively by NSP to provide a Nuclear and Radiological Field Training Center. This facility does not even have electricity and is awaiting D&D. The demand for this type work is increasing, and it is expected that additional, similar facilities will be needed to support this urgent demand. Other potential buildings for such training include Buildings 9207, 9210,

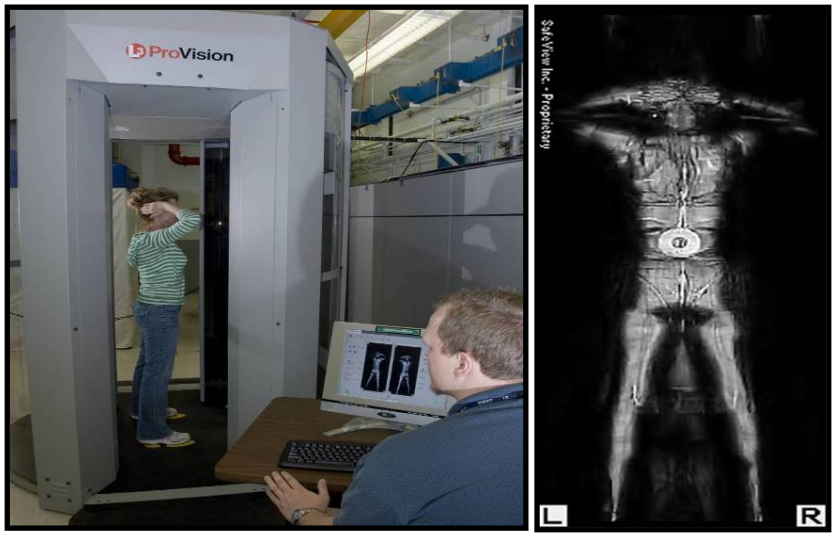
and 9211. Ultimately, a new facility may be required to support this activity, as most currently excess facilities are scheduled for demolition over the next 10–15 years.

2.3.1 International & Homeland Security

The Y-12 Safeguards and Security (S&S) program has a long history of excellence in the S&S field and has excelled in most programmatic aspects to become a model program for DOE. The NNSA Office of Defense Nuclear Nonproliferation and other federal organizations have the ability to access Y-12's comprehensive and rigorous S&S program. International & Homeland Security (IHS) targets domestic and foreign organizations related to homeland security, homeland defense, and nonproliferation. Typical work in this area includes support for the NNSA Office of International Materials Protection and Cooperation, DoD agencies such as the Defense Threat Reduction Agency, and various agencies under the Department of Homeland Security.

2.3.2 Nuclear Technology & Nonproliferation

Nuclear Technology & Nonproliferation (NTN) focuses on Y-12's core competencies related to nuclear expertise and technologies to address emerging market needs (Figs. 4 and 5). The NTN programs cover activities associated with the nuclear power industry; nuclear threat reduction; the NNSA Defense Nuclear Nonproliferation Offices of Global Threat Reduction, Nonproliferation & International Security, and Nonproliferation Technology Research and Development (R&D); and special projects for intelligence work.



(top) **Fig. 4. The Nuclear and Radiological Field Training Center conducts customized, realistic, scenario-based hands-on training using significant quantities of varied nuclear materials.** Here is a photo of a training exercise being conducted in the 9213 facility. Such training can be provided for varied federal, state, and municipal agencies.

(bottom) **Fig. 5. The Technology Applications Center (TAC) develops and performs independent operational testing of varied security technologies using statistically valid techniques.** Here the TAC is testing the ProVision™ Scanner, a new personnel screening technology.

2.3.3 Manufacturing and Technology

This business area focuses on tasks related to machining, fabrication, and inspection. Y-12 has been designated as the National Prototype Center, and this organization focuses efforts to use Y-12's manufacturing and prototyping skills to address urgent needs from other government agencies that cannot be sufficiently dealt with elsewhere. In addition, this organization is available to assist DOE/NNSA sites in accelerating technologies to application and/or to produce working prototypes. An example of a unique capability is the large-chamber scanning electron microscope, which is a capability not available anywhere else in the nation. Y-12 has more than 75 technologies available for licensure. Only a handful of these technologies have resulted in royalty revenues. Funds from royalties are flexible and may be used to buy equipment or materials to further technology development. Y-12's information technology focus, managed by this group, provides expertise related to cyber security, custom applications development and e-Government–based initiatives.

2.3.4 HEU Disposition and Uranium Supply

This business area is responsible for disposition of the domestic surplus HEU and for supplying uranium and other nuclear materials to NNSA-approved customers. The HEU Disposition Program Office (HDPO) is responsible for making surplus HEU unusable for weapons and for disposing of it in a safe, secure, and environmentally acceptable manner. HDPO develops disposition plans and provides project management and technical integration services for the disposition of the domestic surplus HEU. The Uranium Supply Program manages projects that provide feedstock to naval reactors and domestic and foreign research reactors and supplies other nuclear materials when requested. This organization supports the NNSA Office of Naval Reactors by acting as the supplier of SNM feedstock for the Naval Nuclear Propulsion Program. Specifically, Y-12 supplies HEU feedstock and conducts limited developmental work for naval reactors.

2.4 Facilities and Infrastructure Impact in Support of Information Technology

Facility revisions resulting from construction of new buildings, the destruction of old buildings (i.e., Infrastructure Reduction), and the resulting migration of both mission activities and staff require revisions to the information technology infrastructure. Information technology infrastructure enhancements or new technology introductions required to meet facility missions include

- introduction of high-volume data networks (either physical cable or wireless) within buildings and campus-wide, data center enhancements (and resulting utilities revisions) to meet new and more efficient multi-user computer (i.e., server) technologies such as "blade" or virtual servers;
- revisions to campus computing support methods to reflect changing staff locations and concentrations; and
- planning for new production facility construction.

The increasing automation of the Y-12 work environment, along with the resulting evolution of the information technology environment, requires continual review and updating/upgrading of information technology support utilities. New technologies in multi-user computer technologies concentrate equipment into small footprints, which affect heating, ventilation, and air conditioning; uninterruptible power supply sizing; electrical feeds; continuity of operations power support (backup generators or other approaches); general electrical availability and reliability in data centers; and a need for electrical reliability when facility infrastructure improvements—not associated with information technology—are under way.

2.5 Potential Facilities and Infrastructure Impacts Related to Future Nuclear Weapons Complex Planning

As stated in the preferred alternative, Y-12 will continue as the Uranium Center of Excellence, providing component and canned subassembly production, surveillance, and dismantlement. For more than 15 years, strategic and modernization plans have been addressing the facility and infrastructure needs to transform the Cold War–era Y-12 into a more modern and responsive complex supporting the missions and programs described above. This prior activity, now supportive of the SPEIS, resulted in the following major facility and infrastructure projects and improvements:

- consolidation of Quality Evaluation and DU/Binary operations;
- construction of the HEUMF;
- demolition of over one million square feet;
- major recapitalization projects and DM reduction via FIRP;
- Compressed Air, Potable Water System Upgrades, and Steam Plant line item projects; and
- CD-1 approval of UPF.

Although Y-12 is on a path to achieve Complex Transformation, a number of additional facilities and infrastructure projects are required to transform Y-12. Table 1 (Attachment B of the TYSP Guidance) identifies the potential impacts of ongoing and projected future transformation associated with its mission area of "Uranium Manufacturing and R&D."

Table 1
Attachment B
NNSA Potential Facilities and Infrastructure Impacts of Future Nuclear Weapons Complex Planning for Y-12 NSC, FY 2009–2018

Mission Area	Mission Dependency Program	Site Impact[1]	Potential Facility Impact[2]	Project or Facility Number	Project or Facility Name	GSF Eliminated	GSF Added	Within FYNSP?[3]	Start/ Needed Date	Estimated Completion Date	Total Estimated Funding	Notes
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	01-D-124	Highly Enriched Materials Uranium Facility		110,000	Yes	2001	2010	$543.5M	Construction complete in FY 2008, operational in 2010
Uranium Manufacturing and R&D	DSW	Ongoing Operations	New Construction	10-D-XXX, 06-D-140	Uranium Processing Facility		350,000	Partial	2005	2018	$1.2B–3.5B	Construction funding uncertain
Uranium Manufacturing and R&D	DSW	Ongoing Operations	Renovation	05-D-402, 02-D-103.8	Be Capability		0	Yes	2005	2010	$36.1M	Nearing completion
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	08-D-602, 06-D160.4	Potable Water System Upgrades		3,888	Yes	2008	2010	$62.6M	Under construction
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	06-D-603, 05-D160.2	Steam Plant Replacement		15,000	Yes	2008	2010	$61.5M	Under construction
Uranium Manufacturing and R&D	DSW	Ongoing Operations	New Construction	11-D-140	Consolidated Manufacturing Complex		150,000	No	2015	2022	$835M	In ICPP as placeholder
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	09-D-xxx, 05-D-170.2	Security Improvements Project (SIP)		4,000	Partial	2005	2010	$76.5M	Construction funding has been cut
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	TDB	Protected Area Reduction Project (PARP)		TBD	No	2012	2020	$382.9M	Preconceptual planning stage
Uranium Manufacturing and R&D	RTBF	Ongoing Operations	New Construction	11-D-xxx, 10-D-140	Complex Command Center		48,000	Yes	2008	2010	$85.6M	Project being pursued through Alternative Financing

Notes:

1. Site Impacts include: (1) Donor; (2) Receiver; (3) Ongoing Operations; (4) Discontinue Operations.
2. Potential Facility Impacts include: (1) Demolition; (2) Shutdown; (3) Sale; (4) Transfer; (5) Lease (New or Termination); (6) Renovation; (7) New Construction.
3. Existing or planned project identified in TYSP Attachment A or E (within Site FYNSP constraints).

2.6 Facility and Infrastructure Gaps in Achieving Complex Transformation at Y-12

In support of NNSA Complex Transformation, B&W Y-12 has identified six significant facility and infrastructure gaps that require discussion and ultimately resolution to ensure implementation of the SPEIS preferred alternative. Each gap, its risk, consequences, and suggested actions are summarized here. The gaps will continue to be refined, communicated to NNSA, and collectively resolved to support continued progress and, ultimately, completion of Complex Transformation for Y-12.

Gap 1. Mission Critical Facilities Sustainment

Description: The Y-12 NSC has 13 mission critical facilities, which total over 2,700,000 ft^2. With the exception of Buildings 9201-5 and 9204-4, almost 100% of the remaining space is required to support mission requirements for at least the next 10 to 15 years. Buildings 9201-5 and 9204-4 are described in the Legacy Facility and Materials Disposition Gap. Over 2,400,000 ft^2 of mission critical facilities were constructed prior to 1950, and the combined DM is $135 million. Over the next 10 to 15 years, the Y-12 vision, consistent with Complex Transformation, is to consolidate the EU operations within HEUMF and UPF and to construct a Consolidated Manufacturing Complex to consolidate DU, lithium, and general machining operations. During this 10- to 15-year period, the existing mission critical facilities will require maintenance, repair, and recapitalization while continuing to operate in anticipation of newer, smaller, more modern facilities. Table 2 shows the FY 2008 required and planned maintenance for the mission critical facilities. Budget constraints and the totality of all Y-12 maintenance requirements suggest that planned maintenance will be over $100 million lower than required maintenance in FY 2009 and FY 2010.

Table 2. FY 2008 Mission Critical Required vs Planned Maintenance

Mission Dependency Category	Required Maintenance	Planned Maintenance
Mission Critical	$54M	$16.9M

Mission critical facilities include 9202, 9203, 9215, 9201-1, 9201-5N, 9201-5W, 9204-2, 9204-2E, 9225-3, 9720-5, 9212, 9201-5, and 9204-4.

Risk: Given the age and condition of various facilities and their subsystems, processes, and equipment, some production operations could be shut down prior to new facilities becoming operational.

Consequences: Depending on severity, extended losses of operations could jeopardize mission deliverables, result in cumulative cost impact in excess of $1 million, and possibly have ES&H impacts.

Actions: Several actions are being taken; however, the funding constraints appear to still exist over the next several years.

1. Ensure that any available funding is prioritized to address the most critical needs in mission critical facilities and infrastructure.
2. Clearly and continuously communicate the funding gap that exists in the TYSP, RTBF Execution Plan, and all budget presentations and strategic planning meetings with NNSA.
3. Beginning in FY 2009 and through FY 2013, utilize all available FIRP funding for recapitalization of mission critical facilities and infrastructure. In addition, propose that GPP levels for FIRP recapitalization projects be raised to the $10 million level to facilitate increased flexibility in addressing system-level problems.
4. In concert with the NWC sites and NA-52, communicate the need to continue a FIRP recapitalization program to help sustain mission critical facilities and infrastructure during Complex Transformation.

5. Propose a similar program within DSW to ensure that process and production equipment can be sustained until the UPF and CMC projects are constructed.

Gap 2. NNSA Legacy Facilities and Materials Disposition

Description: Currently, there are four NNSA process-contaminated facilities, totaling over 1 million square feet, not required to support Y-12 mission requirements. The most visible and of significant concern are Buildings 9201-5, 9204-4, and 9206. Building 9769 is the fourth facility. In addition, there are 8000 items of unneeded materials and chemicals and 350,000 ft^3 of excess classified materials remaining on the Y-12 site (Table 3). Over the next 10 to 15 years, an additional 733,000 ft^2 of floor space will become excess to NNSA needs, including Building 9212. All current and projected excess facilities must be transitioned to a safe and stable condition and dispositioned as appropriate. Disposition can include one or all of the following phases: deactivation, decontamination, decommissioning, and demolition. Insufficient funding has resulted in building and systems degradation in 9201-5. This constrained funding trend will likely result in similar conditions in 9204-4. While some D&D has occurred in 9206, RTBF funding constraints and currently higher plant priorities have severely slowed progress.

Table 3. Current Legacy Facilities and Materials

Current excess facilities	1,004,628 ft^2
Current unneeded materials and chemicals	8,000 items
Current excess classified materials inventory	350,000 ft^3 (as of 9/30/07)

Risk: With respect to excess facilities, continued degradation could result in serious ES&H events. More serious events include a fire and subsequent release of radioactive materials, roof deterioration and resulting flooding of radiological areas, and utility system failures with their associated flooding or other consequences.

Consequences: Depending on probability and severity, these risks could jeopardize mission deliverables, result in cumulative cost impacts in excess of several million dollars, and adversely affect nuclear regulation compliance [see Price-Anderson Amendments Act (PAAA)]. With respect to unneeded materials, chemicals, and classified materials, the cost to manage these inventories will continue to increase until they are dispositioned.

Actions: Several actions are being taken; however, the funding constraints appear to still exist over the next several years.

1. The IFDP is currently in the CD-1 phase. If approved, this project will address the current and projected excess facilities and the legacy materials within these facilities.
2. A multi-year plan is in place to reduce the hazard category of 9201-5 and 9204-4 from their current hazard category levels to less than a Category 3 by 2010 and 2009 respectively.
3. Collaboration is ongoing with the NNSA TD program to show the benefit of addressing the transition of buildings such as 9201-5, 9204-4, 9206, and 9769 to DOE-EM.
4. While funding exists for unneeded materials and chemicals inventory reduction, continue to communicate the need to maintain or possibly increase this funding.

Gap 3. Utility Infrastructure Sustainment and Modernization

Description: The Y-12 NSC has over 20 utility distribution systems and 6 utility plants supporting the facilities necessary to meet mission deliverables. The last significant utilities restoration program occurred during the late 1970s and early 1980s. Over the past 6 years, FIRP funding has been utilized to address three systems via line item project funding: Compressed Air, Steam Plant, and Potable Water System. FIRP funding at the GPP level also has been used to address utility infrastructure recapitalization. Although successful, FIRP has only touched the surface of the overall utility infrastructure recapitalization and modernization needs. There is

currently over $200 million in utility systems DM. Storm drainage systems are in poor condition, steam distribution systems continue to age and steam loss through leaks increases, the demineralized water plant is in need of replacement, and some fire protection concerns still exist and must be addressed.

Risk: Given the magnitude of Y-12's vast utility systems and the limited funding applied to their life cycle recapitalization, replacement, and modernization over the past 25 years, the probability of a utility system disruption over the next 10 years is increasing.

Consequences: Depending on the system and severity, the loss of service could jeopardize mission deliverables, result in cumulative cost impacts in excess of several million dollars, have ES&H impacts, and adversely affect nuclear regulation compliance (PAAA).

Actions: Several actions are being taken; however, the funding constraints appear to still exist over the next several years.

1. Ensure that any available funding is prioritized to address the most critical utility system needs, especially those supporting the mission critical facilities.
2. Clearly and continuously communicate the funding gap that exists in the TYSP, the RTBF and FIRP Execution Plans, and other budget presentations.
3. Beginning in FY 2009 and through FY 2013, utilize FIRP funding for recapitalization of critical utility system infrastructure. In addition, propose that GPP levels for FIRP recapitalized projects be raised to the $10 million level to facilitate increased flexibility in addressing system-level problems. Table 4 summarizes the top five projects that Y-12 proposes for FIRP line item funding.

Table 4. Y-12 High Priority Proposed FIRP Line Items

Project Title	Driver	Estimated Funding Range	PED Funding Year / Amount	DM Eliminated
Nuclear Facility Risk Reduction Project	Project will address facility risk issues in Building 9212 and 9204-2E to sustain operations until UPF is operational	$55–70M	FY10 / $5M FY11 / $5M	$13.1M
EST III Fire Alarm System Project	Project will replace critical system components that are no longer available from vendor	$10–13M	FY10 / $3M	$3.2M
Demineraillized Water Plant Replacement Project	Project will construct new plant adjacent to the new steam plant currently under construction	$10–14M	FY11 / $3.5M	$4.92M
Cooling Tower 9409-22E Replacement Project	Project will replace badly deteriorated, unreliable tower supporting mission critical Building 9212	$11–13M	FY12 / $3M	$7K
Storm Drain System Upgrades	Project will upgrade/replace badly deteriorated sections of system across the site that contribute to flooding problems	$10–14M	FY11 / $3.5M	$4.8M

4. Update the April 2002 Utility Infrastructure Plan for the Y-12 NSC to identify the short- and long-range scope of utility systems funding needs.
5. Utilize, to the maximum extent feasible, the Energy Savings Performance Contact (ESPC) venue to execute projects that will modernize Y-12 utilities infrastructure and return a savings to the ESPC contractor.
6. Continue to support NNSA's proposed extension of FIRP-funded utility line projects.

Gap 4. Enriched Uranium Transition

Description: To achieve the security cost reductions that helped justify the consolidation of EU operations, the Protected Area Reduction Project (PARP) must be completed. While UPF and HEUMF achieve operational cost reductions through consolidation, new technologies, and modern facilities, the security cost reduction (principally guards) cannot be achieved without PARP. The PARP completes the final leg of the smaller Perimeter Intrusion Detection and Assessment System (PIDAS) footprint, allowing the larger 150-acre PIDAS system to be deactivated. Related to the reduction of the current PIDAS is the decertification of the existing MAAs in 9212, 9204-2E, and 9215. To decertify the MAAs, any remaining EU must be reduced to levels commensurate with S&S criteria.

Risk: If PARP is not funded, and the funding to deactivate the MAAs is unavailable, major cost reductions will not occur. PARP has been proposed as an FY 2012 project start.

Consequences: Security costs are not minimized as the guard force must stay at an appreciable size to provide protection for HEUMF, UPF, and the former complex. Cost to maintain and/or replace components of the current PIDAS will increase as the system will have aged significantly since its installation in the 1980s.

Actions:

1. Clearly and continuously communicate the need for PARP.
2. Cleary define the scope and cost to decertify the 9212, 9215, and 9204-2E MAAs. These costs will need to be incorporated into future budgets.
3. Clearly and continuously communicate the need to fund material backlog reduction (RTBF MRR) in Building 9212.

Gap 5. Mission Dependent and Support Facility and Infrastructure Modernization

Description: The Y-12 NSC has several mission dependent, not critical (by NNSA definition) facilities which house operations that support the mission critical operations of Y-12. Several facilities such as the Plant Laboratory (9995), Maintenance Operations (9201-3), the Fire Station (9710-2), and the Plant Shift Superintendents office (9706-2) will require modernization or replacement. In addition, functions such as shipping and receiving and non-SNM material storage occupy 60-year-old warehouse space or were located off-site to support demolition of their high-maintenance, former facilities.

Risk: Line item funding will not be available to support the replacement of aging, oversized, mission dependent facilities.

Consequences: Over the next 10 to 15 years, the cost to maintain aging facilities will continue to increase significantly. Major recapitalization of building systems is likely given the previous years of inadequate capital funding. The loss of operations in these facilities due to facility conditions could affect mission deliverables, result in cumulative cost impacts in excess of several million dollars, and possibly have ES&H impacts associated with building systems failure.

Actions: Given the need to use line item funding for mission critical facility and infrastructure needs, utilize private sector investment to fund mission dependent facility and infrastructure replacements. Several actions are under way:

1. A Complex Command Center (CCC) has achieved CD-0 and is anticipating CD-1 approval later this fiscal year. This private sector–constructed facility on the Y-12 site will house emergency management operations crucial to protecting the safety, health, and welfare of employees and the public.
2. A project is being conceived that would provide new facilities for Technology Development, Plant Laboratory, Maintenance, and warehousing operations. This project would be similar in scale to the Jack Case and New Hope Centers project that constructed over 500,000 ft^2 of leased space through private sector involvement. Preconceptual planning has started, and assuming approval, a project could be completed within the next 3–5 years.
3. Continue to stress the importance of private sector investment on DOE/NNSA sites as a means to achieve Complex Transformation. Leveraging private sector investment with line item funding will achieve Complex Transformation in a shorter time, reaping the benefits sooner.
4. Continue to stress the importance of a streamlined and seamless process to obtaining approval for alternatively financed projects.

Gap 6. Nuclear Workforce of the Future

Description: The Complex Transformation for Y-12 involves changing the workforce as well as the facilities. Human Capital has identified the significant challenges or gaps in meeting workforce needs as being an aging workforce and shortages of critical professional skills and skilled crafts. These gaps, if not closed, would significantly impact the NNSA Complex Transformation by compromising Y-12's ability to meet its future missions.

Risks/Consequences:

Aging Workforce. Currently, 52% of the total workforce at Y-12 is age 51 or over; 49% of the employees in critical skills positions are 51 or over. Of the critical skills positions, 23% of the employees are eligible to retire today; 43%, in 2012; and 59%, in 2017. Knowledge and experience are walking out the door, and if new employees cannot be recruited, retained, and developed in time, Y-12's programs and projects could see a reduction in skilled staff.

Shortage of Professional Critical Skills and Skilled Crafts. Y-12 also faces a potential shortage of employees with either professional technical skills or skilled crafts experience. The private sector can often offer better pay progression and compensation than can a government facility. A government facility such as Y-12 also contends with strict security requirements, lengthy time to get security clearance, and cultural issues (use of personal electronic or media devices, different work expectations) that challenge its ability to hire.

Engineers with the following critical professional skills will be needed for Y-12's future workforce: nuclear criticality safety, facility safety, fire protection, and mechanical design with glovebox and/or mechanical hardware specialties.

Skilled crafts are also in demand, both locally and regionally. Competition for both college professional and skilled crafts is expected to increase, as Clinch River, Watts Bar, TVA, and ORNL compete with Y-12 for personnel.

Actions:

1. Y-12 is implementing an integrated human capital strategy to recruit, retain, and develop a highly skilled, flexible, and diverse workforce. We are recruiting both mid-career and new college hires to maintain critical skills and minimize the gap between very experienced employees retiring and inexperienced new employees coming on board. Y-12 is also changing the way we think about employee needs, expectations, and turnover rates as different generations enter the workforce.

2. Emphasize college co-op and intern programs; expand new college hires program; target Historically Black Colleges and Universities (HBCUs) for graduates; restructure compensation and benefits plans to increase retention; and continue knowledge retention and transfer programs as skilled workers retire.
3. Expand on-the-job training and training development for employees to prepare them for the jobs of the future. We are increasing our community outreach, manufacturing partnership program, and apprenticeship programs with labor unions and area schools to create the skilled crafts talent pool for future essential skills.
4. Work with DOE/NNSA to act on recommendations to the Defense Science Board to ensure the essential workforce of the future, allow the contractor expanded latitude and flexibility in personnel matters, implement a 120-day clearance process, and continue to invest in Human Capital's plans for employee development to create a cross-trained and highly flexible workforce able to adapt to changing needs and respond to Y-12's future missions.

3 Real Property Asset Management

B&W Y-12 recognizes the vital importance of strategically and tactically integrating its long-range planning for real property asset management with the preferred alternative for Complex Transformation. Integrated planning is fundamental to effectively and efficiently achieving NNSA's site-specific transformation goals for the Y-12 NSC. To help facilitate this integration, the responsibilities for strategic planning, transformation, master planning, and the TYSP are consolidated under the B&W Y-12 Strategic Planning and Transformation (SP&T) Manager. The SP&T manager reports to the Senior Vice President of Transformation and Projects and is also B&W Y-12's site champion for NNSA's Complex Transformation planning.

Achieving Complex Transformation is B&W Y-12's goal. As outlined in Chapter 2, a number of projects are under way and moving Y-12 along the road to transformation. Also identified are several "transformational issues" or gaps that must be integrated within the overall real property asset management and FYNSP process. To communicate and address B&W Y-12's real property asset management programs, plans, and gaps, this chapter provides information on the following:

- **Transformation Vision –** the physical expression of a desired end state for Y-12 and the 5-, 10-, 15, and 20-year plans required to achieve its implementation.
- **Site Footprint Management/Excess Facilities Disposition –** a summary of Y-12 efforts to date and the issues associated with an increasing legacy facility and materials footprint.
- **Future Space Needs –** a summary of space needs required to achieve the transformation vision.
- **Maintenance –** an assessment of Y-12's maintenance requirements as a percentage of replacement plant value (RPV), facility risk, and growth of DM.
- **Deferred Maintenance Reduction/Facility Condition –** the progress to date in addressing the FY 2003 baseline of DM and Y-12's facility condition as measured by facility condition index (FCI).
- **Security/Security Infrastructure –** overviews of Y-12's effort related to Design Basis Threat (DBT) policy implementation and longer range security planning.

3.1 TRANSFORMATION VISION

For over 10 years, Y-12 has developed, initiated, and continued to refine its long range transformation vision. The vision, or master plan, transforms the Cold War–era site and facilities into a modern, more cost effective enterprise. This process involves the continual translation of NNSA's strategic plan and vision for its Nuclear Weapons Complex. More recently, master planning now involves integrating NNSA's Complex Transformation strategies and Y-12 site-specific goals into an overall vision for the facilities and infrastructure necessary to achieve the SPEIS preferred alternative.

The transformation vision presented herein will continue to be a work in progress. With respect to the Y-12 NSC uranium mission and the SPEIS preferred alternative, the vision is well understood. Although continued planning is required, any of the projects necessary to achieve the vision are known. More detailed planning is necessary, such as the long-range plans and needs for the right-sized utility infrastructure that will support continued operation of Y-12 and the future, significantly reduced footprint. Likewise, Y-12 is now beginning to address the mission support facility and infrastructure modernization necessary to support its missions. Finally, as the legacy footprint grows, Y-12, NNSA, and DOE must address the disposition of excess facilities and materials that will ultimately produce a footprint like or similar to the vision shown in Fig. 6. Tactical plans and budgets must naturally address the short-term needs and gaps to ensure that Y-12 meets its commitments and obligations to its NNSA customers. At the same time, NNSA and B&W Y-12 must continuously evaluate and aggressively pursue the productivity, process, and business systems improvements that will generate savings and/or cost avoidance that can be "returned" to help meet the budgetary requirements of Complex Transformation.

The narrative and graphics that follow provide an overview of the current Y-12 site configuration and illustrate the future site vision for the Y-12 NSC, along with the 5-, 10-, 15- and 20-year plans focused on achieving the vision.

Figure 6 represents a desired end state (post 2018) that achieves the transformation of Y-12 consistent with the SPEIS preferred alternative and Y-12's long-range master site planning activities. The plan presents a layout of the *major facilities* that will be required to support the current and future national security missions of Y-12. More specifically, it represents NNSA's preferred alternative for uranium manufacturing and research and development; achieving the following NNSA site-specific goals for Y-12:

- 90% reduction in the high security area,
- 60% reduction of the nuclear operations footprint,
- 50% reduction in the total building footprint, and
- 20–30% reduction in Defense Programs staff.

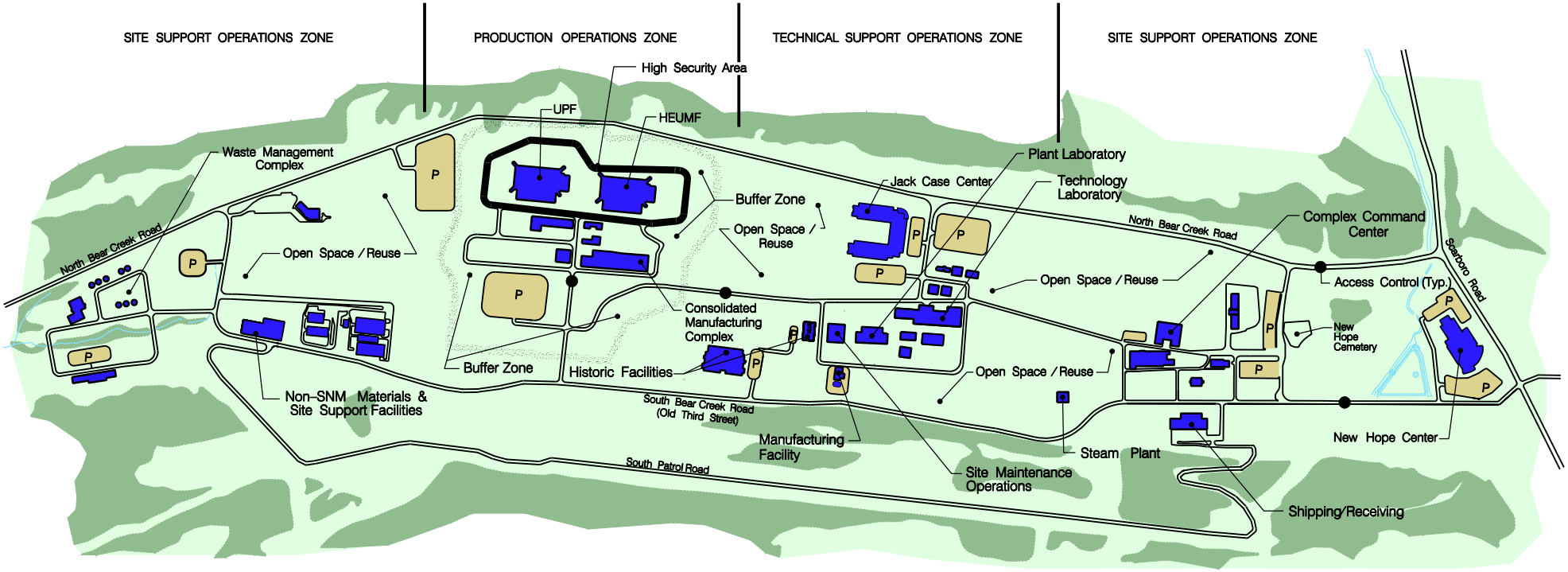


Fig. 6. Master site plan vision for Y-12 NSC.

Description and Key Features of the Transformation Vision

From a land-use planning perspective, B&W Y-12 envisions a site that will ultimately consist of four functional zones in a linear configuration. The linear configuration is indicative of a modernization-in-place, or brown field, approach to redevelopment. The approach must incorporate realistic funding for new facilities and for the D&D of excess facilities that render areas of the plant usable for redevelopment within the zones while at the same time continuing to operate the existing plant. For these reasons, while the facility footprint of Y-12 will decline, the land area requirement will likely remain in support of S&S requirements. There will be potential for land area to be released for private sector investment at Y-12 in support of NNSA missions.

The vision has incorporated the disposition of all buildings that will no longer be required to support the Y-12 missions. The total site footprint is envisioned to be around 3,000,000 ft^2. Two facilities are envisioned to remain as national historic landmarks, Buildings 9204-3 and 9731. The four zones are described below. While the locations of some proposed buildings are fixed, it should be noted that projects like the Consolidated Manufacturing Complex (CMC), or technology laboratory, are subject to change as more detailed master planning matures during Complex Transformation.

Production Operations

This zone is dominated by the consolidation of all EU operations into HEUMF (under construction) and UPF (currently in preliminary design). By consolidating all EU into these two facilities, the high-security area that now consists of approximately 150 acres can ultimately be reduced to about 15 acres—significantly reducing security costs. The first phase of this consolidation is under way with construction of HEUMF, currently scheduled for operation in FY 2010. The second facility, UPF, is in the preliminary design stage. Based on the CD-1 submittal, UPF is planned for completion in 2016 and for operation in 2018. The D&D of one of the EU facilities rendered surplus by UPF has been included within the IFDP. The IFDP has received CD-0 approval from DOE. The IFDP planning process attests to Y-12's approach to incorporate life cycle real property asset management principles into its long-range master planning for facilities and infrastructure.

The production operations zone would also include a facility to consolidate lithium, DU, special materials, and general manufacturing operations. Currently, these operations are dispersed in several Manhattan Project–era and/or pre-1960 facilities. While some facility upgrades, minor consolidations, and maintenance of these facilities will continue in the short term, B&W Y-12 envisions that a small complex, or possibly a single facility, should be designed and engineered to consolidate these various operations. The CMC, along with the consolidation of EU operations in HEUMF and UPF, would complete the consolidation of all mission-related manufacturing/processing operations into one significantly smaller area. This project has been identified in the Integrated Construction Program Plan (ICPP). If supported, the assumption is for an operational CMC in FY 2022.

Also contained within the mission operations zone are existing and proposed technical and site support operations. These would house functions such as production support, program management, and quality assurance.

Technical Support Operations

This zone is dominated by the Jack Case Center (completed in 2007) and several other existing structures. Today, this zone has over 20 major facilities, many of which are Manhattan Project–era structures not designed for their current use as office buildings. Transformation envisions a zone that will contain Jack Case Center and retain several of the more permanently constructed buildings such as 9106, 9109, 9115, 9116, 9710-3, and 9733-5. The Jack Case Center, a leased facility, was constructed with private sector money and houses over 1000 people. Ongoing site planning activities are evaluating additional facilities in this zone, possibly through private

sector investment. These include an R&D Center, Plant Laboratory, Maintenance facility, and warehousing.

Site Support Operations

These zones, located in the eastern and western portions of the existing Y-12 site, will contain various site support functions such as materials management, vehicle maintenance, fire station, and emergency management operations. Also included in this area of the complex is New Hope Center, completed in 2007. This facility contains information technology, the Y-12 visitor center, conference and training facilities, light laboratories, and offices for functions that do not require a higher security level, such as benefit plans. A new Steam Plant, funded by FIRP, will be constructed in this area, and another FIRP-funded project, the Potable Water System Upgrades project, will also make improvements in this area.

The western site support operations zone also houses several on-site waste management facilities, including the west end treatment facility, tank farms, and tanker terminal. This land would continue to be used to support Y-12 operations and cleanup actions.

Other Key Features of the Transformation Vision

Open Space Reuse

As implied by the site vision, there will be a significant amount of real estate that can generally be described as open space. The space is generated as a result of legacy facility and material disposition and site cleanup over time. This land area will provide, as some of it does today, potential reuse or reindustrialization opportunities to support future NNSA or non-NNSA related programs. Y-12 is well suited to provide technical expertise in solving national security–related challenges or, as suggested here, providing real estate for the colocation of other government, non-NNSA, or private sector facilities that would be in close proximity to the talented technical resources and physical assets that Y-12 utilizes in performing its missions.

Buffer Zones

The buffer zone is an area surrounding the future production operations zone. This zone would be restricted from use for new facilities, structures, or other uses that would defeat its purpose—providing unobstructed physical distance from Y-12 higher security, classified operations. The absence of buffer zones today has caused Y-12 to make security adjustments to its existing site and facilities that have impacted movement of people and materials. While future events are not predictable, buffer zones are classic land use planning approaches that provide added flexibility in addressing security and/or health and safety concerns.

Site Access and Parking

The consolidation of EU operations and implementation of the DBT policy is requiring that B&W Y-12 and NNSA rethink how access to Y-12 is provided and how parking will be accommodated. The consolidation of uranium operations will consume all of the remaining parking lots that provide reasonably close proximity to work areas located in the west end of Y-12. The loss of these parking lots could come as early as FY 2010. The DBT implementation, now scheduled for completion in FY 2011, will close a portion of Bear Creek Road to east-west traffic flow. Considering that over 1400 people now travel this road to park in the west end, major improvements in access and parking will be necessary within 2 to 3 years. Several options are being explored to deal with this challenge. One option would be to construct a new Bear Creek Road (as shown in Fig. 6) to the north at a sufficient distance to meet DBT requirements.

In concert with the analysis of east-west access to the site, Y-12 is also evaluating alternatives to construct new parking to replace the loss of nearly 1500 spaces resulting from UPF construction and DBT implementation. Alternatives include parking structures and surface parking lots at sites as close as possible to work locations. Given the physical conditions of the Y-12 site, parking locations are becoming more remote, necessitating an increase to shuttle service operations.

One of the preferred options is to open up the property protected area for access (with no guard portals) to Y-12 employees.

Historic Facility Preservation

Two Manhattan Project–era facilities are being nominated for National Historic Landmark status. These are Buildings 9731 and 9204-3. Building 9731 is an NNSA facility, and 9204-3 is a DOE-NE building. The transformation vision proposes these two buildings be preserved. At some point in the future, these buildings could become accessible, under controlled conditions, to the public. Making them accessible will require the resolution of any operational, ES&H, and security issues governing public access to an active nuclear weapons component manufacturing site.

FY 2008, 5-, 10-, 15- and 20-Year Plans

The narrative and graphics that follow present the physical footprint plans and changes projected over the next 20 years. The 5- and 10-year plans are based on the FYNSP budgets and/or other TYSP Guidance requirements. The 15- and 20-year plans are based on unconstrained funding assumptions outlined in the plan descriptions.

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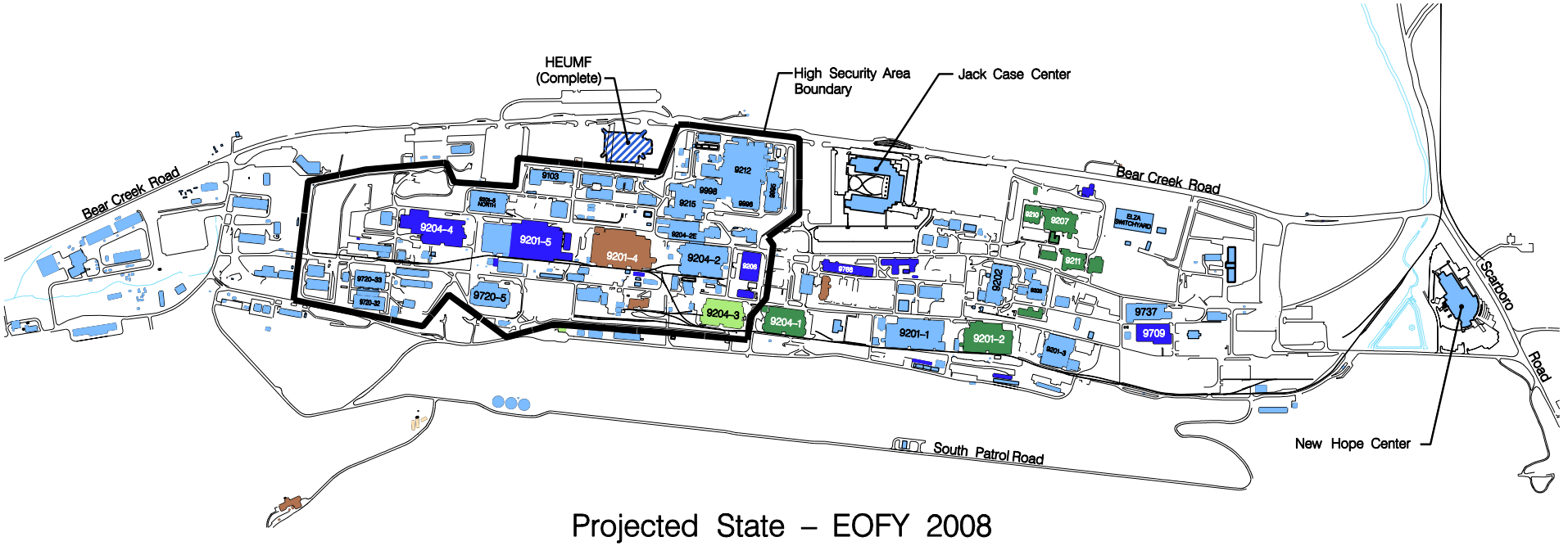
Projected State, FY 2008

Figure 7 represents the projected site configuration at the end of FY 2008. This site configuration is based on funded activities that affect real property facilities and infrastructure improvements from various funding programs. In some cases, descriptions below may not be shown on the various maps but are noteworthy with respect to Y-12 transformation and modernization plans. To track the change in site footprint, a table is provided.

Key elements related to the projected end of FY 2008 site configuration:

- Construction of HEUMF is complete, and operational readiness has begun.
- A total of 149,357 ft^2 floor space will have been demolished during FY 2008. FIRP funding for demolishing non–process contaminated facilities has ended. Between FY 2002 and FY 2008, B&W Y-12 will have demolished over 1.2 million square feet using FIRP and non-FIRP funds.
- Construction of the Steam Plant has started. This new gas-fired (with fuel oil backup) facility is a critical component of the Y-12 modernization plan. The aging coal-fired plant was an unacceptable liability to NNSA and B&W Y-12.
- The Potable Water System Upgrades project has started upgrading distribution lines, adding potable water capacity, and addressing fire protection–related concerns. This crucial modernization project is supporting Y-12's overall site transformation.
- Physical improvements continue to be made related to DBT around 9212, 9204-2, 9204-2E, 9215, 9998, and 9995.
- The Quality Evaluation and DU/Binary consolidations have been completed. These relocations will allow Y-12 to declare that Buildings 9201-5 and 9204-4 are not required to support DSW workload requirements. These buildings, however, are still considered active facilities undergoing transitional activities.
- Buildings 9201-5 and 9204-4 are essentially excess to mission requirements, albeit active NNSA facilitates with ES&H liabilities. A multi-year effort to reduce the hazard category of these facilities to less than a Category 3 by 2010 (9201-5) and 2009 (9204-4) is under way.
- The Biology Complex (Buildings 9207, 9210, 9211, etc.) is completely vacated, shut down, and awaits funding for demolition. This DOE-SC complex of buildings, which total approximately 450,000 ft^2, is deteriorating, and its demolition must be addressed.
- Building 9201-4, currently a DOE-EM responsibility, and Building 9206, an NNSA responsibility, are the only two facilities on the Y-12 site in the FIMS category of D&D in Progress. Although funding constraints continue to limit progress on Building 9206 D&D, the recently established RTBF Institutional Site Support program is allowing incremental progress in the D&D.
- The total Y-12 site footprint at the end of FY 2008 will be 7,599,415 ft^2. The total NNSA site footprint will be 5,723,934 ft^2, with 4,449,603 ft^2 defined as operating, 110,000 ft^2 defined as new, and 1,164,331 ft^2 defined as excess to mission need. The NNSA footprint *includes* the two leased facilities (Jack Case and New Hope Centers), which total 549,595 ft^2.The DOE-EM and DOE-SC/NE footprint data are also provided.



Projected State – EOFY 2008

NNSA
- Operating
- New Construction
- Excess To Mission Need

DOE SC / NE
- Operating
- Excess To Mission Need

DOE / EM
- Operating
- Excess To Mission Need

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Y-12 NSC FOOTPRINT AT EOFY 2008				
Status	NNSA	DOE EM at Y-12	DOE SC/NE at Y-12	Totals
Operating	4,449,603	42,506	269,352	4,761,461
New Construction	110,000	0	0	110,000
Excess to Mission Need	1,164,331	564,200	999,423	2,727,954
Footprint Demolished	149,357	0	0	149,357
Total Operating & New Space	4,559,603	42,506	269,352	4,871,461

Notes:
NNSA operating includes 549,595 of on-site leased space in Jack Case and New Hope Centers.
NNSA new construction is the HEUMF construction completed in 2008; operation is 2010.

Fig. 7. Configuration of Y-12 NSC, FY 2008.

5-Year State, FY 2009–2013

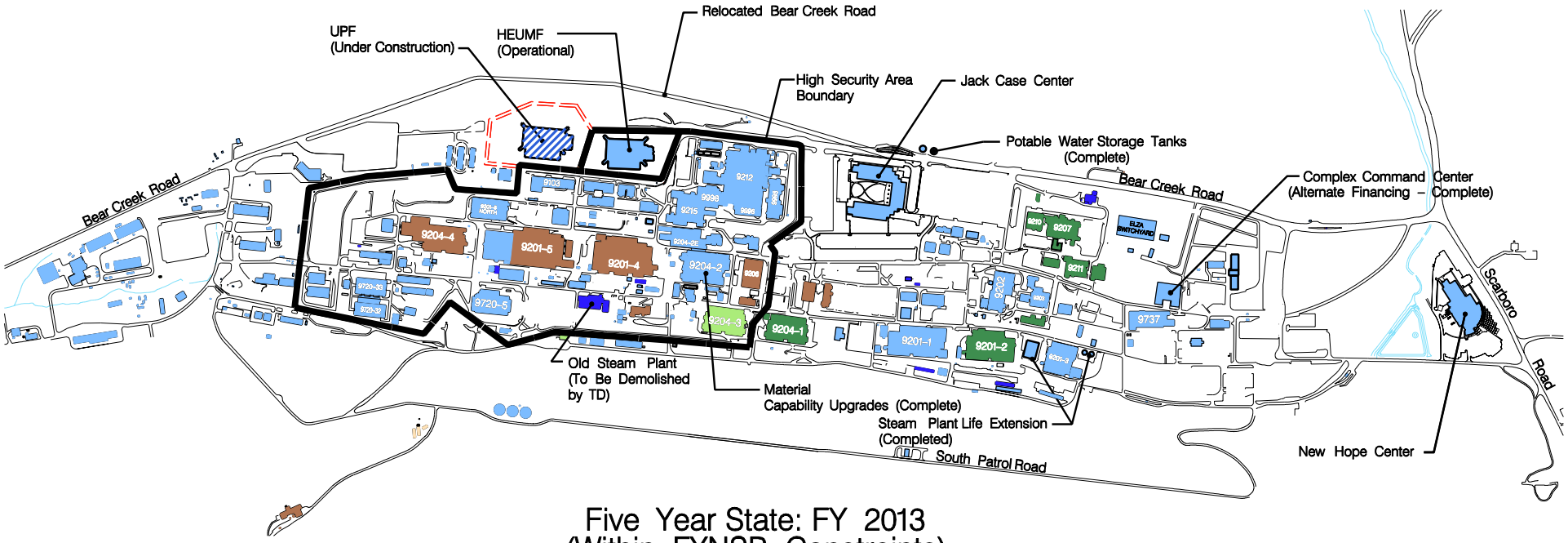
Figure 8 represents the projected site configuration at the end of FY 2013. This site configuration is based on funded activities that affect real property facilities and infrastructure improvements from FY 2007 through FY 2013. Gaps that were identified in Chapter 2 also have been mentioned where applicable to this 5-year timeframe. To track the change in site footprint, a table is provided.

Key elements related to the projected FY 2013 site configuration, within FYNSP:

- Initial HEUMF load-out is completed, and the facility became operational in 2010.
- Construction of UPF has begun, with construction completion scheduled for 2016 and operation in 2018. This is the second designed-denial facility that will result in the consolidation of all EU into two facilities (HEUMF being the other one).
- A total of 70,888 ft^2 of new space will be constructed between FY 2009 and FY 2013, consisting mainly of the new Steam Plant and the CCC. Some small amount of new space is needed in support of the Potable Water System Upgrades project and SIP.
- The Beryllium Capability upgrades have been completed.
- The new Steam Plant is complete in 2010. This crucial FIRP-funded project is replacing the current coal-fired plant with a natural gas-fired, fuel oil backup, facility. The aging current plant would not have lasted through transformation of Y-12.
- The Potable Water System Upgrades project funded by FIRP is complete in 2010.
- Interim security measures to meet the DBT guidance are completed in 2011. Included, among numerous other improvements, is the closure of a portion of Bear Creek Road as the site's main east-west access route.
- Between FY 2009 and FY 2013, an additional 301,825 ft^2 of floor space has been demolished using NNSA TD program funding. Y-12 is also assuming that TD funding will be used to transition 9201-5, 9204-4, 9206, 9731, 9401-3, and 9769 to DOE-EM. This would allow NNSA to "remove from its books," an additional 1,296,694 ft^2 of floor space.
- The total Y-12 site footprint at the end of FY 2013 will be 7,387,442 ft^2. The total NNSA site footprint will be 4,407,403 ft^2, with 4,311,326 ft^2 defined as operating, 20,989 ft^2 defined as excess to mission need, and 75,088 ft^2 defined as new construction. The NNSA footprint *includes* three leased facilities (Jack Case Center, New Hope Center, and CCC), which total 597,595 ft^2. The DOE-EM and DOE-SC/NE footprint data are also provided.

Key gaps related to the projected FY 2013 site configuration, not currently within FYNSP:

- SIP, which implements NNSA-chosen security systems, would not be completed.
- Unless supported in the ICPP, the Protected Area Reduction Project would not have achieved its CD-0. This project is needed to achieve the S&S savings associated with the consolidation of EU.
- A new Bear Creek Road and additional parking spaces are needed to replace the road and parking spaces lost to UPF and DBT implementation.
- The CCC does not have construction funding in sufficient time to support completion by FY 2010. Y-12 is pursuing completion by 2010 through private sector financing.
- By the end of FY 2013, a significant amount of the total Y-12 NSC footprint (over 2 million square feet) will be excess DOE-EM and DOE-SC/NE. This total assumes NNSA has transferred 9201-5, 9204-4, 9206, and 9769 to DOE-EM.
- Maintenance funding is insufficient in mission critical facilities and could possibly impact production operations.
- MRR backlog reduction and dismantlement development (big systems) are underfunded and needed to ultimately achieve the 90% footprint reduction.



Five Year State: FY 2013
(Within FYNSP Constraints)

NNSA
- Operating
- New Construction
- Excess To Mission Need

DOE SC /NE
- Operating
- Excess To Mission Need

DOE /EM
- Operating
- Excess To Mission Need

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Y-12 NSC FOOTPRINT AT EOFY 2013				
Status	NNSA	DOE EM at Y-12	DOE SC/NE at Y-12	Totals
Operating	4,311,326	42,506	269,352	4,633,203
New Construction	75,088	0	0	75,088
Excess to Mission Need	20,989	1,668,758	999,423	2,689,170
Footprint Demolished	301,825	0	0	301,825
Total Operating & New Space	4,386,414	42,506	269,352	4,708,291

Notes:
EM Excess to mission needs now includes 9201–5, 9204–4, 9206, 9769, & 9731.
NNSA operating now includes HEUMF.

Fig. 8. Configuration of Y-12 NSC, FY 2009–2013.

10-Year State, FY 2014–2018

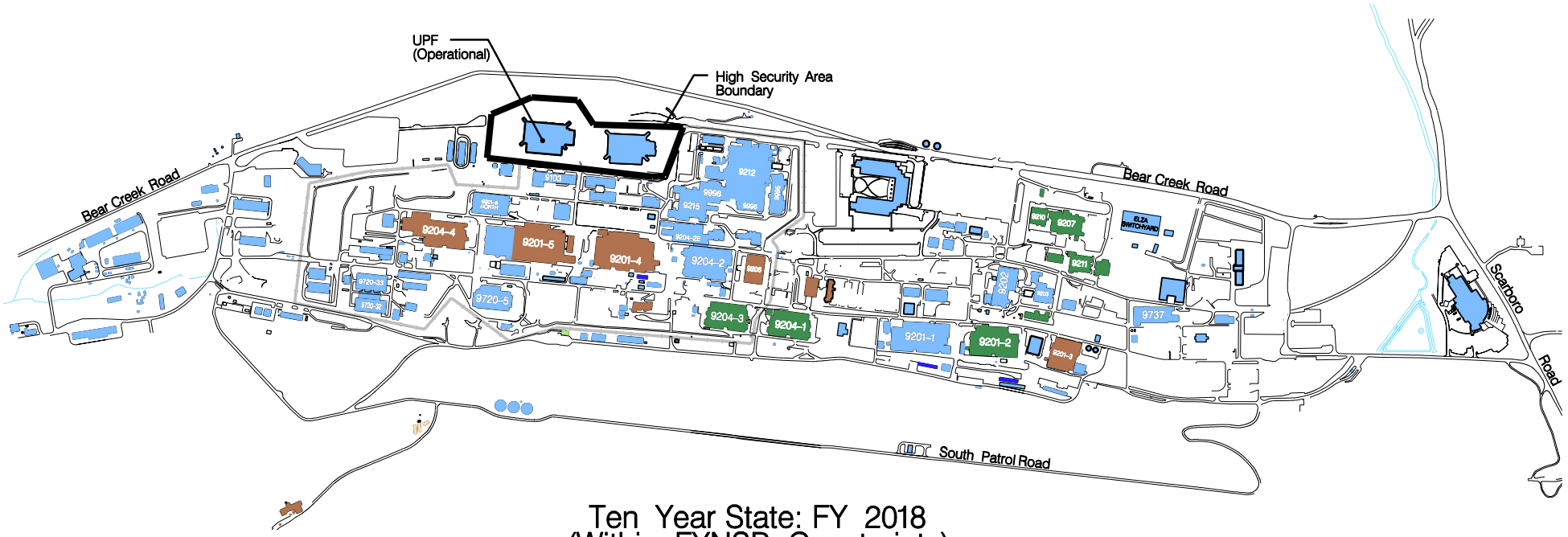
Figure 9 represents the projected site configuration at the end of FY 2018. This site configuration is based on FYNSP funded and budgeted activities that affect real property facilities and infrastructure improvements from FY 2014 through FY 2018. Gaps that were identified in Chapter 2 have also been mentioned where applicable to this 5-year timeframe. To track the change in site footprint, a table is provided.

Key elements related to the projected FY 2018 site configuration:

- UPF is operational in 2018. In concert with HEUMF, all EU operations are now housed in designed-denial facilities within a high-security perimeter that is 90% smaller than existed in 2008 assuming PARP is also funded.
- A total of 350,000 ft^2 of new space will be completed between FY 2014 and FY 2018, consisting of UPF.
- Based on planning and decisions made after DBT completion in 2011, additional changes could be made to the existing PIDAS footprint that improve access to the west end while maintaining adequate security. This could include collapsing sections of the existing PIDAS, or rethinking access to this area in light of the security improvements made to EU areas. An effect of these actions would be productivity increases related to movement of material and personnel.
- A total of 48,528 ft^2 will have been demolished by the TD program.
- The total Y-12 site footprint at the end of FY 2018 will be 7,684,493 ft^2. The total NNSA site footprint will be 4,512,476 ft^2, with 4,162,476 ft^2 defined as operating and 350,000 ft^2 defined as new construction. The NNSA footprint *now includes* three leased facilities (Jack Case Center, New Hope Center, and CCC), which total 597,595 ft^2. The DOE-EM and DOE-SC/NE footprint data are also provided.

Key gaps related to the projected FY 2018 site configuration, not currently within FYNSP:

- The Protected Area Reduction Project provides the final security infrastructure necessary to achieve the remaining, and substantial, security savings from the consolidation of EU.
- Funding for the deinventory of MAAs in Area 5 may not be available after UPF operations.
- The disposition of all excess facilities as defined in the IFDP is not funded. If IFDP continues to be unfunded, there will be increasing environmental, safety, and health concerns in legacy facilities.
- MRR is not adequately funded to reduce a backlog of material.
- A line-item project is not supported to provide a new maintenance facility that would facilitate excessing Building 9201-3. Y-12 will pursue an alternative financing approach to complete this project within the next 3–5 years.



Y–12 NSC FOOTPRINT AT EOFY 2018				
Status	NNSA	DOE EM at Y–12	DOE SC/NE at Y–12	Totals
Operating	4,162,476	42,506	0	4,204,982
New Construction	350,000	0	0	350,000
Excess to Mission Need	0	1,860,736	1,268,775	3,129,511
Footprint Demolished	48,528	0	0	48,528
Total Operating & New Space	4,512,476	42,506	0	4,554,982

Notes:
EM Excess to mission needs now includes 9201–3, assuming NNSA provides new maintenance facility.
New Construction is UPF.

Fig. 9. Configuration of Y-12 NSC, FY 2014–2018.

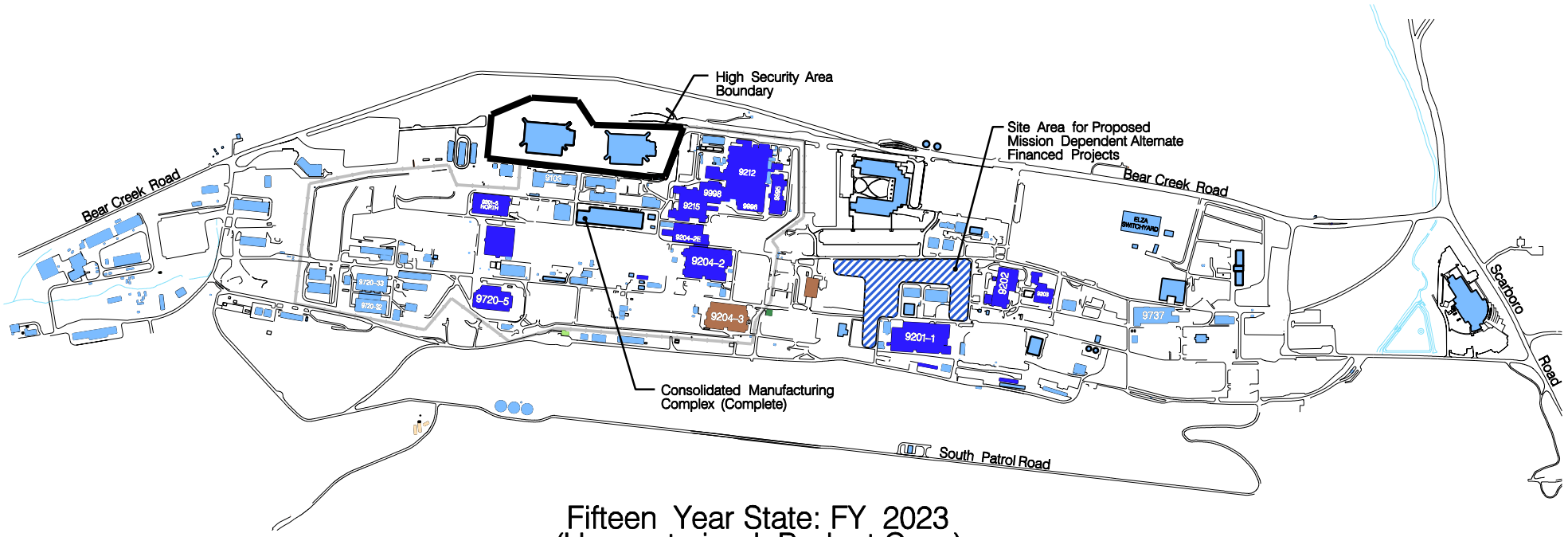
15-Year State, FY 2019–2023

Figure 10 represents the site vision at the end of FY 2023 based on an *unconstrained funding case* as described in four principal assumptions below.

1. All projects contained in the ICPP and all facility and infrastructure gaps identified in Chapter 2 have been resolved.
2. Alternative financing would have provided new mission dependent and support facilities earlier but were not shown in the FYNSP-constrained 5-year and 10-year states.
3. All process and non–process contaminated facilities defined in the IFDP have been removed, except for Building 9212, which will be removed after 2023. Building 9731 and 9204-3 will remain as historic facilities.
4. All utility systems have been reconfigured to support a smaller Y-12 NSC.

Key elements related to an unconstrained funding FY 2023 configuration:

- The consolidated Manufacturing Complex has been completed. This project will have rendered 1,291,115 ft^2 of floor space excess to NNSA mission needs. The assumption made above assumes this D&D scope would be added to the IFDP and these facilities would be dispositioned by 2028.
- Any NNSA demolition during this time period is assumed to be funded by RTBF; up to 318,757 ft^2 of demolition is possible.
- The Materials Handling and Maintenance Facility are completed by FY 2013–2015. The concept behind this project is to consolidate all shipping and receiving, material handling and storage operations not in MAAs and to consolidate maintenance operations not directly housed in manufacturing facilities. Buildings like 9201-3, 9720-5, 9720-12, and 9720-13 are the major facilities that become excess at completion of this new facility.
- The Plant Laboratory and R&D Center are completed. The concept behind this project is to relocate the current Plant Laboratory (Building 9995) and Technology Development operations from Building 9202 and 9203 to a new facility. Buildings 9995, 9202, and 9203 become excess to NNSA at completion of this new facility.
- Major utility systems have been upgraded as part of line items to replace and upgrade electrical, storm sewer, and other systems tailored to meet the needs of a downsized and modernized site configuration.
- The total Y-12 site footprint at the end of FY 2023 will be 5,304,040 ft^2. The total NNSA site footprint will be 4,968,719 ft^2, with 2,141,610 ft^2 defined as operating, 2,052,109 ft^2 defined as excess to mission need, and 775,000 ft^2 defined as new construction. The NNSA footprint *includes* leased facilities (Jack Case Center, New Hope Center, CCC, Plant Laboratory, R&D, Maintenance, and other mission dependent space), for a combined total of 1,222,595 ft^2. The DOE-EM and DOE-SC/NE footprint data are also provided.



Fifteen Year State: FY 2023
(Unconstrained Budget Case)

NNSA
- Operating
- New Construction
- Excess To Mission Need

DOE SC / NE
- Operating
- Excess To Mission Need

DOE / EM
- Operating
- Excess To Mission Need

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Y-12 NSC FOOTPRINT AT EOFY 2023				
Status	NNSA	DOE EM at Y-12	DOE SC/NE at Y-12	Totals
Operating	2,141,610	42,506	0	2,184,116
New Construction	775,000	0	0	775,000
Excess to Mission Need	2,052,109	292,815	0	2,344,924
Footprint Demolished	318,757	1,823,577	1,013,119	3,155,453
Total Operating & New Space	2,916,610	42,506	0	2,959,116

Notes:
NNSA excess to mission need is 9212 and all the depleted uranium, lithium, and general machining buildings.
NNSA new construction is CMC, and leased facility for development, plant lab, non-snm materials.
EM demolition is majority of IFDP scope except for 9212, which is demolished after 2023.
SC demolition is scope of EM IFDP except for 9204-3, which along with NNSA's 9731 are historic facilities.

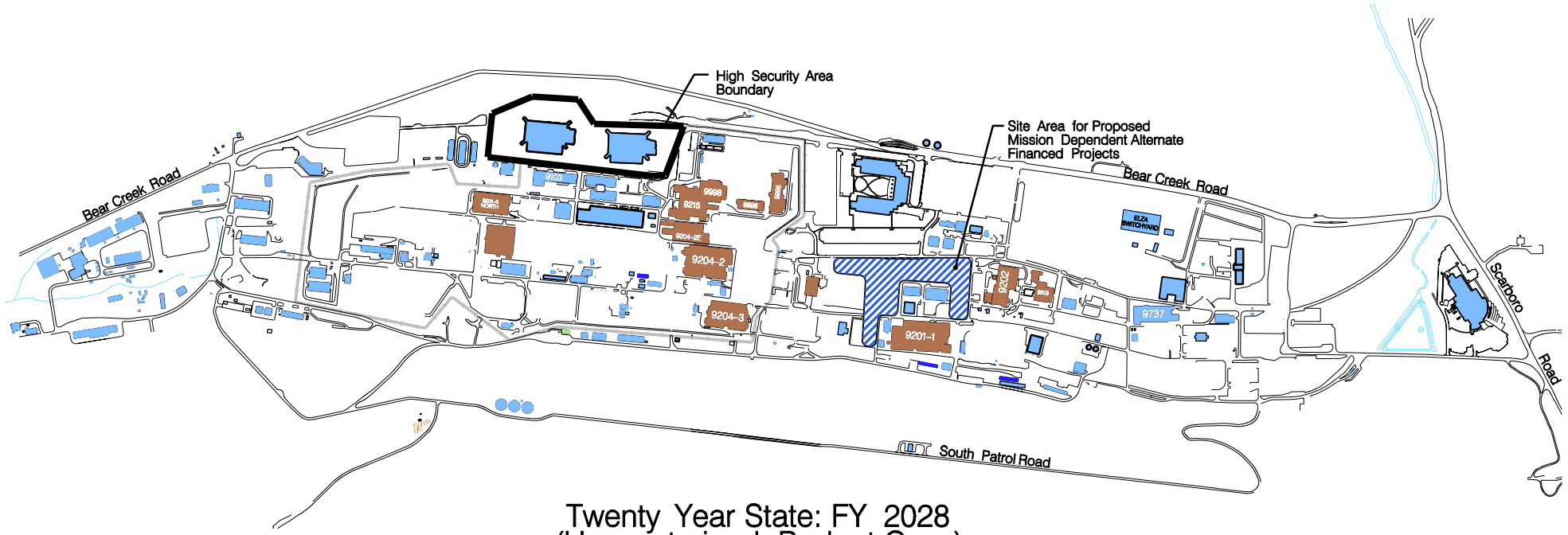
Fig. 10. Configuration of Y-12 NSC, FY 2019–2023.

20-Year State, FY 2024–2028

Figure 11 represents the site vision at the end of FY 2028 and is based on the same assumptions and continuation of activities described previously in the 15-year state. In essence, the vision for Complex Transformation at Y-12 is nearly achieved, except for the demolition of facilities shown as excess to DOE-EM.

Key elements related to an unconstrained funding FY 2028 configuration:

- All remaining NNSA facilities and infrastructure not required for Y-12 missions have been transitioned to DOE-EM. Building 9212, included in the IFDP, has been demolished. The remaining facilities shown in Fig. 11 as DOE-EM excess to mission need are former NNSA buildings that became excess based on the completion of the CMC and the assumption that an alternative financing project is completed for replacing 9202, 9203, and 9995 operations.
- All utility plant and distribution systems have been modernized and reconfigured to support the reduced footprint.
- The total Y-12 site footprint at the end of FY 2023 will be 4,833,416 ft^2. The total NNSA site operating footprint will be approximately 2,916,610 ft^2. The NNSA footprint *includes* leased facilities (Jack Case Center, New Hope Center, CCC, Plant Laboratory, R&D, Maintenance, and other mission dependent space), which total 1,222,595 ft^2. Other than Building 9204-3, a historic facility, all DOE-SC/NE space has been demolished. The DOE-EM excess to mission need space includes all former NNSA facilities that have been transferred between FY 2024 and FY 2028.



NNSA
- Operating
- New Construction
- Excess To Mission Need

DOE SC / NE
- Operating
- Excess To Mission Need

DOE / EM
- Operating
- Excess To Mission Need

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Y-12 NSC FOOTPRINT AT EOFY 2028				
Status	NNSA	DOE EM at Y-12	DOE SC/NE at Y-12	Totals
Operating	2,916,610	42,506	0	2,959,116
New Construction	0	0	0	0
Excess to Mission Need	0	1,874,300	0	1,874,300
Footprint Demolished	0	470,624	0	470,624
Total Operating & New Space	2,916,610	42,506	0	2,959,116

Notes:
EM demolition is 9212, which is in scope of IFDP.
EM excess to mission need is all NNSA buildings that have been transferred to EM after shutdown by NNSA.

Fig. 11. Configuration of Y-12 NSC, FY 2024–2028.

The 5- and 10-year state, albeit graphically, depict how B&W Y-12 and NNSA are making progress towards the implementation of Complex Transformation under FYNSP constrained budgets. These constrained budgets, however, have created, and will continue to create, facility and infrastructure gaps. The 15- and 20-year unconstrained states have assumed that all gaps described in this TYSP will be addressed and lead to a fully implemented Complex Transformation for Y-12.

While many of the larger projects such as UPF, IFDP, CMC, SIP, PARP, Complex Command Center, etc. have been defined or conceived, a significant strategic and tactical master planning effort remains. This planning is dynamic and will continue as Y-12 moves from its current state to the eventual vision portrayed in Fig. 12. Detailed planning will be required in a number of areas, including developing a utilities master plan that will migrate along with facility transformation. Other "migration plans" will be required for dispositioning future excess facilities and materials, site circulation and parking, production and site support facilities, and the ultimate security configuration post DBT implementation and enriched uranium consolidation (HEUMF and UPF).

Budget constraints are always present; however, NNSA and B&W Y-12 must continue to aggressively pursue all available options to create mechanisms that will achieve the vision. This vision is consistent with both NNSA and DOE missions to transform the Weapons Complex and complete environmental cleanup, stewardship, and management objectives concurrently. The cost savings to the taxpayer should be significant—on the order of 50% to 60% less (in today's dollars) for maintaining and operating a footprint of ~3 million square feet in ca. 2028, versus the ~7.6 million square feet today.

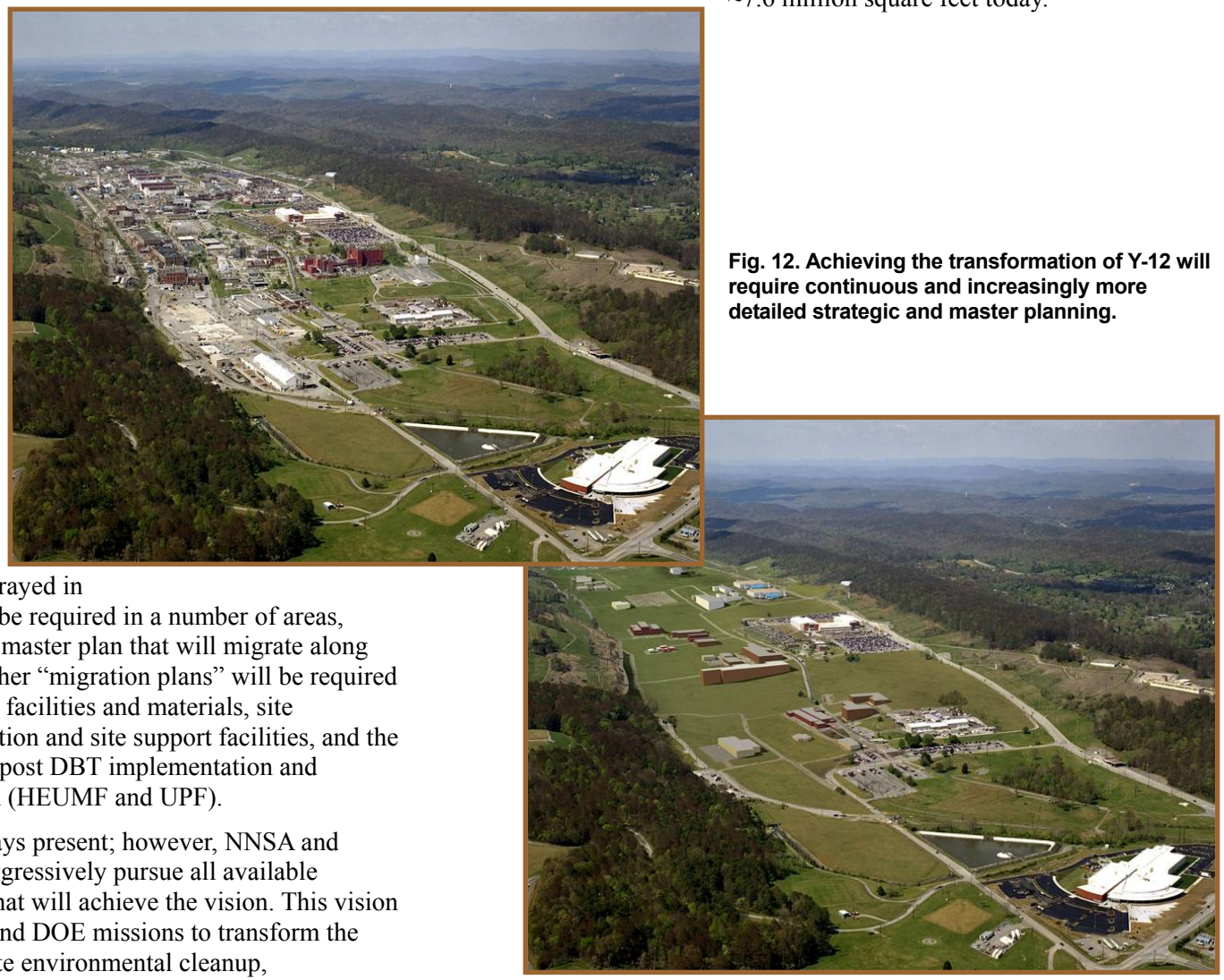

Fig. 12. Achieving the transformation of Y-12 will require continuous and increasingly more detailed strategic and master planning.

3.2 SITE FOOTPRINT MANAGEMENT/EXCESS FACILITIES DISPOSITION

B&W Y-12 has been implementing an aggressive footprint management and excess facilities disposition program since becoming the M&O contractor in FY 2000. Major actions include:

- DU consolidation,
- QE consolidation,
- material and personnel consolidations into existing facilities and excess material disposition, and
- construction of Jack Case and New Hope Centers.

The direct and indirect benefits of these and other actions over the past 8 years have enabled Y-12 to reduce its footprint in the following ways:

- Through FY 2007, Y-12 demolished NNSA facilities totaling 1,108,393 ft^2, with 899,607 ft^2 defined as "banked square footage" that offsets new construction.
- In FY 2008 and FY 2009 an additional 250,070 ft^2 of space will be demolished
- Buildings 9201-5 and 9204-4 are excess to future NNSA mission needs, albeit in serious need of addressing facility degradation issues, and with significant inventories of safety basis and hazardous materials remaining.

The success of these efforts is attributed to the Company's strong commitment to reduce the site's footprint and NNSA's commitment to provide the necessary funding through RTBF and FIRP. Y-12 represented 35% of the NNSA congressional commitment to reduce the NNSA footprint by 3 million square feet by FY 2009. In FY 2008, Y-12 will demolish another 149,357 ft^2 with the last year of FIRP demolition funding. FIRP demolition funding will be replaced in FY 2009 with a new program called Transformation Disposition (TD), discussed later in this section. A summary of the highly successful FIRP demolition program efforts can be found in Table 5.

Table 5. Footprint Reduction Through FIRP, FY 2001–2008

Fiscal Year	Banked Square Footage Eliminated*	OSF Square Footage Eliminated*	Total Square Footage Eliminated*
2001	0	22,676	22,676
2002	250,404	131,522	381,926
2003	117,838	24,938	142,776
2004	108,065	21,603	129,668
2005	207,830	6,594	214,424
2006	111,786	1,453	109,959
2007	103,684	0	103,684
2008	149,357	0	149,357
Total	**1,048,964**	**208,786**	**1,257,750**

*Footage eliminated equates to buildings demolished on the Y-12 site only.

Although FIRP has been immensely successful, a significant legacy footprint of facilities and materials remains on the Y-12 site and will continue to grow as Complex Transformation is implemented. Table 6 summarizes the current and projected legacy building footprint over the next 20 years.

Table 6. Current and Projected NNSA Excess to Mission Needs

	FY 2009	Additional over next 10 years (by 2018)	Additional over next 20 years (by 2028)	Total
Space Excess to NNSA Mission Needs	1,004,628	291,261	1,733,432	3,029,321

Notes:

FY 2009 space is 9201-5, 9204-4, 9206, and 9769.

FY 2018 space is 9731, 9201-3, and 9401-3 (Steam Plant).

FY 2028 space includes 9212 and assumes CMC is constructed, allowing an additional 1,291,115 ft^2 to become excess to mission needs.

Fig. 13. Steam leaks indicative of deteriorating safety conditions in Building 9201-5.

Fig. 14. Increasing safety concerns (note water on floor and numerous electrical panels) in Building 9204-4.

Addressing the current legacy footprint must become an increasing priority. An ever increasing risk to NNSA exists in several areas of legacy facilities and materials. For example, Building 9201-5 (Fig. 13) has the following conditions:

- significant quantities of classified parts and other materials;
- contaminated water in the sub-basement from brine leaks (which have been stopped); and
- signs of roof deterioration that, if not addressed, could lead to rainwater leaking onto contaminated areas.

Other facilities such as Buildings 9206 and 9204-4 (Fig. 14) have conditions that must be addressed to reduce the risk of significant surveillance and maintenance cost increases and/or ES&H-related incidents. The legacy materials footprint, if not addressed, increases the likelihood of ES&H noncompliances and associated risk with worker health and safety.

This legacy facilities and materials footprint must be addressed through multiple programs. Two programs specifically appear focused on similar objectives—NNSA's TD program and DOE-EM's IFDP as outlined below. The two efforts will help Y-12 and NNSA achieve significant footprint reduction over the next 10 years.

Transformation Disposition

The TD program mission is to eliminate excess facilities through the demolition, transfer, or sale of excess facilities. The goal is to develop and apply an integrated and prioritized inventory of excess facilities and infrastructure projects focusing on disposition by funding (1) the minor decontamination, dismantlement, removal, and disposal of excess facilities that have been deactivated, (2) the pre-transfer and pre-sale activities that would prepare facilities for transfer or sale to a third party, and (3) the deactivation planning, characterization, and negotiation for transfer of process-contaminated facilities to DOE-EM. The metric associated with this goal for the TD program has been stated as follows:

- By 2017, eliminate 5 million gross square feet of excess facility space (FY 2009 through FY 2017).

B&W Y-12 has assessed its current and projected excess facilities footprint, and the results are expressed in Appendix A (Attachment E-1 of the TYSP Guidance), Facilities Disposition Plan Within FYNSP/Out-year Planning Targets from FY 2009 through FY 2018. Attachment E-1 contains various assumptions and footnotes related to the TD program and the transition of several process-contaminated facilities to DOE-EM within the next 10 years. Appendix B (Attachment E-1a of the TYSP Guidance) is Facilities Disposition Plan Above FYNSP or Funding Is TBD. This summary identifies the current and projected excess facilities for which no D&D funding program has been formally authorized. For Y-12, Attachment E-1a is essentially composed of scope that can be found in the IFDP and includes NNSA, DOE-SC/NE, and DOE-EM facilities located on the Y-12 site. The IFDP, a proposed DOE-EM–funded project, has achieved CD-0 approval and is currently developing a CD-1 package. The IFDP scope includes D&D projects that extend beyond the 10-year period of this TYSP.

B&W Y-12 assessed the projected disposition actions over the next 10 years and concluded that approximately 350,000 ft^2 of actual demolition is likely. However, if RTBF and/or TD funding is used to prepare process-contaminated facilities for transfer to DOE-EM, an additional 1,358,844 ft^2 of NNSA footprint reduction (via transfer) is possible over the next 10 years. This total would represent almost one-third of the NNSA metric to achieve a 5 million square foot reduction by FY 2017. Table 7 is a summary of B&W Y-12's assessment.

Table 7. Footprint Reduction Projection at Y-12 NSC

Projected No. of Buildings Demolished	Gross Square Feet	Comments
Projected footprint reduction, FY 2009–2018, assuming no transfer of process-contaminated buildings to DOE-EM		
63	350,553	1. Average square foot per building is 6,400 2. ES&H risk reduction minimal
Projected footprint reduction, FY 2009–2018, assuming transfer of process-contaminated buildings to DOE-EM		
7 major facilities	1,358,884	1. Average square foot per building is 206,000 2. ES&H risk reduction significant
Total NNSA Footprint Reduction Possible	**1,709397**	

Projected transfers include 9201-5, 9204-4, 9769, 9206, 9201-3, 9401-3, and 9731.

Achieving the footprint reduction is Y-12's goal. Equally important is ensuring that ES&H liabilities are kept as low as reasonably achievable. The continued degradation of facilities such as Building 9201-5 is increasing the likelihood of an ES&H event. Achieving a safe and stable condition in buildings such as 9201-5 and 9204-4 will reduce the risk for NNSA and B&W Y-12. With RTBF budgets already constrained, any event will put Y-12 into a mode that could impact other plant priorities, including mission deliverables, while performing the triage to these buildings. NNSA and B&W Y-12 must work together to ensure that all available disposition funding programs work to address the most serious conditions of the legacy facility footprint.

Integrated Facility Disposition Project for the Oak Ridge Reservation

DOE-ORO, NNSA, B&W Y-12, and UT-Battelle have teamed to develop a project to achieve funding for the disposition of process-contaminated excess facilities at Y-12 and ORNL. This project, referred to as the IFDP, seeks to complete the Oak Ridge Environmental Management Cleanup mission and support the NNSA, DOE-SC, and DOE-NE mission in Oak Ridge. The scope includes:

- D&D of facilities at Y-12 and ORNL;
- treatment and disposition of legacy materials and waste, including remote-handled and transuranic material and waste;
- soil and groundwater remedial actions;
- reconfiguration of waste management facilities and utilities at ORNL and Y-12;
- surveillance and maintenance of excess facilities; and
- waste treatment and disposal operations.

Specifically for the Y-12 NSC, the project requests funding to disposition the NNSA, DOE-SC/NE, and DOE-EM facilities that are currently, or will become, excess to program needs over the next 10 years. Figure 15 identifies the major facilities that are proposed for DOE-EM funding in the IFDP. The ancillary facilities have not been shown. Table 8 provides summary data on these facilities.

While the full scope of IFDP is not required to reduce the NNSA-owned footprint, the project is important to the transformation of Y-12. The CD-0 for the IFDP was approved in 2007. A joint effort is producing the CD-1 package for submittal in May 2008. NNSA's TD program is equally important to Y-12 as it represents a funding resource to address the NNSA-required activities to achieve the safe and stable shutdown of operations in excess facilities. While the acceptance criteria for the transition of NNSA facilities to DOE-EM are a negotiated process, Y-12 has accomplished transfers in the past. While the transfer process does not require NNSA to deactivate facilities such as 9201-5, it must ensure that a safe and stable shutdown occurs and that adequate documentation of known conditions is provided.

The IFDP and TD programs must work together to address the complete disposition of Y-12's legacy facilities and materials. *As described earlier, using RTBF and/or TD funding over the next 3–6 years could result in the transfer of over 1 million square feet to DOE-EM.* Table 9 is a projection of the NNSA footprint that could be transferred to DOE-EM within the next 3–5 years. IFDP would complete the disposition by funding the D&D and demolition. This projected footprint reduction would be in addition to any buildings demolished by TD funding during the same 3- to 5-year period.

Fig. 15. Facilities included in the IFDP baseline *(red)*.

Table 8. Y-12 IFDP Facilities by Program Office

Y-12 IFDP Facilities	DOE-EM	DOE-SC	DOE-NE	NNSA	Totals
Gross Square Feet	622,473	1,003,030	255,656	1,969,160	3,850,319
No. of Facilities	17	17	1	77	147

Note: Includes all ancillary facilities (not shown due to small size) associated with larger buildings. The ancillary facilities square footage is only 173,440 in 41 buildings.

Table 9. Potential NNSA Footprint Transferred Within 3–5 years to DOE-EM Assuming RTBF/TD Funding Is Used to Ready Facilities for Transfer

Facility	Gross Square Footage
9206, Former Uranium Facility	57,812
9731, Former Pilot Plant	37,317
9769, Laboratory	20,050
9201-5, Alpha 5	613,642
9204-4, Beta 4	313,771
9201-3, Alpha 3*	191,978
9401-3, Steam Plant	62,124
Ancillary facilities to above buildings	62,150
Total	**1,358,844**

*The transfer of 9201-3 assumes a new maintenance facility is constructed.

NNSA and B&W Y-12 must begin to more aggressively address the increasing legacy facility and materials footprint. As described in Chapter 2, the inability to address these legacies is likely to result in the following:

- An increasing short-term likelihood of life safety concerns, environmental insults, or other issues related to facility degradation. Evidence of building degradation is already present in NNSA's Building 9201-5 and DOE-SC's Biology Complex.
- An increasing surveillance and maintenance budget that will drain resources and impact NNSA's ability to achieve Complex Transformation. Addressing some of the high-priority D&D actions would help reduce NNSA's liabilities now and avoid the increasing risk of higher cost actions later.

New Construction Footprint

Between FY 2009 and FY 2018, new construction on the Y-12 site will total 535,088 ft^2. Appendix C (Attachment E-2 of the TYSP Guidance), New Construction Footprint Added, provides the detailed information on new construction on the Y-12 NSC. The most significant new construction on the Y-12 site between FY 2009 and FY 2018 will be HEUMF and UPF. The amount of new space constructed is projected to be less than the amount of space demolished before FIRP demolition funding ends in FY 2008 and TD funding sunsets in FY 2017.

Appendix F (Attachment C of the TYSP Guidance) contains information on those facilities that will seek Leadership in Energy and Environmental Design (LEED) certification.

Leased Space

A summary of the leased space information is provided in Appendix D (Attachment E-3 of the TYSP Guidance).

Leased space is a key element of the Y-12 NSC modernization plan to achieve Complex Transformation. To achieve transformation, B&W Y-12 pursued the use of private sector funding to construct over 549,000 ft^2 of technical and administrative space in the Jack Case and New Hope Centers. These buildings replaced many 60-year-old facilities that were costly to maintain and not representative of a modern, cost-effective, responsive enterprise.

Another project using the alternative financing approach that B&W Y-12 is pursuing is the CCC, which will provide approximately 48,000 ft^2 of new space. CD-0 was approved in September 2007, and CD-1 approval is anticipated mid FY 2008. Several other mission dependent facilities also will be considered for replacement under an alternative financing approach, including a Maintenance Operations Center, a Materials Management Complex, and Laboratory/R&D Complex. These types of needs traditionally have been included as proposed projects in the ICPP process but have never been supported as line items. The use of alternative financing approaches will be explored as an alternative to accelerate construction and reduce costs of these support facilities by encouraging private sector investment in Y-12.

Footprint Tracking

Appendix E (Attachment E-4 of the TYSP Guidance) provides the footprint tracking data and charts covering data from FY 2002 through FY 2018. As requested in the TYSP Guidance, only those footprint reductions and additions that are within the FYNSP funding are included. Y-12 is assuming that RTBF and/or TD funding will support the transition of NNSA facilities to DOE-EM as expressed in Attachment E-1. Therefore, Attachment E-4 reflects footprint that will transfer to DOE-EM. As can be seen in Appendix E, there is a precipitous drop in NNSA space associated with transferring several facilities to DOE-EM by FY 2013.

3.3 Future Space Needs

Strategically, the overall facility and infrastructure objective for Y-12 is to reduce the site's overall square footage. Future space needs are a function of definitive population projections, workload, productivity, and other parameters—none of which, in totality, are definitive. B&W Y-12's assessment of future space needs focuses more on the strategic goals and objectives for the site than on specific, definitive space requirements. As such, the future space needs have been captured here.

- **Administrative Space.** With the construction of the Jack Case and New Hope Centers, Y-12 will correct most of the long-standing space capacity and functionality conditions that have plagued the site for over 20 years. The remaining challenges will be to address the space needs inside the high-security area prior to the completion of UPF. Several older office buildings remain in use. As the workforce transitions, some consolidation into more permanent facilities can occur. At this juncture, there is not a clear justification for any new office space. However, this asset group will continue to be reassessed.
- **Laboratory, Research, and Development Space.** The modernization vision for Y-12 includes upgrading its laboratory space through reuse and/or new construction. Functions like the Technology Service Organization and the Plant Laboratory are currently housed in 60-year-old facilities. Options will be explored to replace these facilities using private sector funding similar to the Jack Case Center project. Y-12 is also assuming that EU R&D missions currently located at other national laboratories will be relocated to Y-12, consistent with NNSA's Complex Transformation objectives. This could increase the need for additional R&D laboratory space. In addition, complimentary work and work for other national security initiatives are envisioned to increase the need for technology applications space and training space such as Nuclear and Radiological Field Training.
- **Industrial, Production, Process Space.** Assuming the completion of UPF and CMC, Y-12 does not anticipate the need for additional space in this category. This assumption can change based on NNSA decisions as to workload or mission changes.
- **Service/Support Space.** Space needs in this category are also related to providing modern facilities to replace the aging infrastructure while reducing the overall need for the amount of space required today. Several projects are currently envisioned but have not begun any planning. These include space for maintenance operations and shipping and receiving. As described earlier, the CCC is being pursued under an alternative financing approach.
- **Warehouse.** With the completion of HEUMF, Y-12 will have addressed its HEU material storage needs. B&W Y-12 envisions another effort to address the non-SNM material storage requirements. This effort would also include addressing the disposition of all non-SNM material not required for retention on the Y-12 site. This material should be removed from Y-12 and the remaining material housed in modern non-SNM facilities instead of being scattered across the site in World War II–era facilities. Y-12 will evaluate the using a private sector approach to address long-term non-SNM storage requirements.

3.4 MAINTENANCE

The primary responsibility for providing maintenance services resides in the Facilities, Infrastructure, and Services (FI&S) Division. The Y-12 Maintenance organization and administration within FI&S provides effective implementation and control of the maintenance program through the working relationship between the division managers of FI&S, Production, Engineering, and Quality Assurance.

Determining Maintenance Requirements

The National Academy of Sciences has historically recommended that 2–4% of a facility replacement value be spent each year to properly maintain the facility. The recommendation covers preventive, predictive, and corrective maintenance. B&W Y-12 has chosen the lower end of the 2–4% metric. This approach recognizes that a straight 2% funding does not correct the historic underfunding and resultant DM backlog or any site-specific facility evaluations that would justify increasing the value of maintenance requirements. An example of the latter is the Facility Risk Review (FRR) performed on several mission critical facilities (i.e., 9212) during FY 2007. The FRR was initiated to determine the scope and budget for maintenance and recapitalization needs to ensure that EU facilities can remain operational until UPF. The net result of Y-12's analysis of maintenance requirements was a model that utilizes 2% of replacement plant value (RPV), an adjustment for underfunded DM, and the incorporation of FRR conclusion.

Using this approach, maintenance requirements and expected planned maintenance budgets are shown in Table 10. There is a considerable difference between the derived requirements and planned maintenance. While it is important to recognize the magnitude of an acceptable maintenance program from a commercially acceptable standard, Y-12 will minimize maintenance investments in facilities that will become excess to NNSA in the near future, focus on mission critical facilities and risk mitigation, and determine areas of acceptable risk. Although stated as "required maintenance," logic would suggest that the site would have a difficult time spending and executing at this level and would require a distributed ramp-up over time until the requirements have been met.

Table 10. Maintenance Requirements vs Expected Maintenance Budget During Next 5 Years of FYNSP, FY 2009–2013 ($ in Thousands)

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Maintenance Requirements	144,000	148,000	132,000	134,000	137,000
Expected Maintenance Budgets	36,000	34,000	35,000	35,000	36,000

Note: Maintenance requirements represent 2% of the replacement plant value of all NNSA facilities, 70% of maintenance requirements from the FRR plan, and 10% for DM reduction in mission dependent, not critical facilities.

Funding Maintenance Requirements

Given all the requirements facing Y-12, the expectation to fund all maintenance requirements within the site's allocated FYNSP budget is not realistic. Although Y-12 continues to make productivity improvements via the Y-12 Throughput Improvement Program (YTIP), some level of increased funding is required to bridge the gap to Complex Transformation. The following alternatives should be explored.

- **Increase Y-12's allocation of the RTBF FYNSP.** Given that Y-12 has one of the largest RTBF footprints to maintain while it is modernizing and, ultimately, significantly reducing its footprint, NNSA, Y-12, and the other NWC sites should reassess the overall RTBF, DSW, Campaigns, and other funding programs to better determine priorities within a fully integrated and interdependent NWC.
- **Extend the FIRP program and increase Y-12's share of FIRP.** As described, the utility infrastructure requires an infusion of capital to reduce the large amount of DM and restore these assets

to industry standards. Y-12 originally proposed five utility-related line item projects to recapitalize various utility systems. A strong case can be made for extending beyond FY 2013 to specifically address utility infrastructure at Y-12 (and other sites). One option for using current FIRP funding through FY 2013 would be to obtain congressional authorization to extend the GPP level to $10 million for the express purpose of recapitalizing mission critical and mission dependent facility and utility infrastructure that support Complex Transformation.

- **Utilize the institutional general plant projects.** Although used at some other NNSA sites (mostly national laboratories), Y-12 has not used the overhead-funded approach to performing capital projects within the $5 million range. There are precedents that are set once a site uses this approach and ultimately the overhead rate is affected. Multi-program national laboratories seem to have greater opportunity to tax the programs for capital improvement.

Regardless of the outcome over alternatives to fund maintenance requirements, a shortfall does exist. Y-12 has requested, in previous TYSPs, minimal annual increases to its budget in the range of $20 million to $30 million. While less than the delta is needed, this increase could be put to use in addressing high-priority mission critical facility needs and strengthening preventive and predictive maintenance programs. Given the current capacity and capabilities of the maintenance work force, larger increases would require a ramp-up to execute but could be supported.

3.5 Deferred Maintenance Reduction/ Facility Condition

The FY 2009–2018 TYSP Guidance related to NNSA corporate facilities and infrastructure encompasses the following Complex-wide DM and facility condition goals:

- By 2008, annually maintain at 5% the NNSA FCI for Mission Critical facilities.
- By 2013, improve Mission Dependent, Not Critical facilities and infrastructure to an FCI level of 7%.
- Eliminate $900,000,000 of NNSA's legacy DM backlog by 2013.

FYNSP funding for FIRP and RTBF continues to be a primary driver behind reduction in DM. At the end of FY 2007, Y-12 had reduced DM by over $200 million from the original FY 2003 baseline. The results of the reduction are evident site-wide, as the physical condition of some facilities is improving and the site is looking significantly better due to facility demolition, which further reduces DM. Projected DM reduction over the period FY 2008–2013 is $205 million based on current FYNSP levels.

With respect to FCI, the FY 2008 Mission Critical FCI is projected to be 4.4% and the Mission Dependent, Not Critical FCI to be 7.1%. With FIRP now extended through FY 2013, Y-12 projects the NNSA Mission Critical FCI to be 3.7%, with a DM dollar value of approximately $102 million and the Mission Dependent, Not Critical FCI to be 4.2%, with a DM dollar value of approximately $128 million in FY 2013.

It is important to recognize that FCI is only one measure of the ability of a mission critical facility's ability to perform its defense program missions. Over the past 5 years, Y-12 has successfully invested millions of dollars through FIRP in traditional mission critical facility and infrastructure projects. There has been no similar infusion of funding into the processes and other manufacturing equipment maintenance, repair, and replacement. In fact, DSW production support funding and Campaigns funding have actually declined. Another component of mission critical facility performance is compliance—whether security or ES&H related as described in Facility Risk Review planning efforts on EU facilities. Although often treated as unrelated to physical condition, the transition from operations to shutdown (facility transition) must be considered a part of the overall facility health of any asset during its life cycle. In reality, a disregard for facility transition needs will always have an effect on physical facility degradation. All of these elements—physical condition, equipment condition, facility compliance, and facility transition—work in tandem to determine the strategic ability of any facility to continue to perform its mission and the expenditures required throughout its life cycle (Fig. 16). While NNSA chooses to fund the requirements through various programs, it is the totality of requirements that must be understood. A good FCI is only one component of the real condition or ability of any asset to perform its mission, whether active or inactive and awaiting disposition.

Y-12 utility plants and vast distribution systems pose significant challenges for NNSA and B&W Y-12. These systems and plants range from industrial gases to classical water, sewer, storm drainage, and electrical systems. There are two substations, a Steam Plant, and several smaller industrial gas plants. In the late 1980s and early 1990s, Y-12 upgraded several utility systems with line item projects under the Utility System Restoration and Facility Capability Assurance Program. These programs did not restore all of Y-12's distribution systems and utility plants, and given the life cycle of some systems, the previous upgrades are reaching the end of their useful life.

Fig. 16. Facility life cycle requirements.

The current level of DM associated with 13 of Y-12's utility systems is approximately $219 million. The inability to reduce this DM will affect Y-12's objectives to meet NNSA corporate goals for improving the overall condition of NNSA's facilities and infrastructure. In addition, the DM level is an indication of the degradation of systems that increases risk to mission objectives supported by those systems.

To support the early FIRP planning, Y-12 conducted a utility systems assessment to appraise, identify deficiencies, and provide recommended actions for future maintenance and recapitalization needs. FIRP funding has supported the reduction of utility system DM through funding the three line items listed below.

- Compressed Air Upgrade project
- Steam Plant Life Extension
- Potable Water System Upgrades project

With the extension of FIRP to FY 2013, Y-12 would support NNSA consideration to add utility line items that would address the highest priority needs. Y-12 has identified its highest priority utility needs, which are identified in Table 11.

Table 11. Y-12 High Priority Proposed FIRP Line Items

Project Title	Estimated Funding Range	DM Eliminated
Nuclear Facility Risk Reduction Project	$55–70M	$13.1M
EST III Fire Alarm System Project	$10–13M	$3.2M
Demineralized Water Plant Replacement Project	$10–14M	$4.92M
Cooling Tower 9409-22E Replacement Project	$11–13M	$7K
Storm Drain System Upgrades	$10–14M	$4.8M

While there is a significant amount of utility DM reduction that must occur, the long-term configuration of some utility distribution systems will be impacted by Y-12's overall modernization plan. An Integrated Utility System Modernization Plan is needed. This plan would address the transition to a smaller Y-12 and the associated short-, mid-, and long-term investment needs necessary to ensure that Y-12's utility systems are appropriately sized, configured, and modernized to meet the needs of Complex Transformation. Efforts to begin this Integrated Utility System Modernization Plan will begin in FY 2008, with completion planned in FY 2009. The absence of this plan does not negate the need to address DM and/or recapitalization of the utility system within the next 5 years as expressed in Table 11.

FIRP FY 2003 Legacy Deferred Maintenance Baseline and Projected Deferred Maintenance Reduction from Baseline

Table 12 (Attachment F-1 of the TYSP Guidance) reflects the DM reduction associated with the FY 2003 baseline as reported in the August 2003 Final FY 2004–2013 Ten-Year Comprehensive Site Plan. Per NNSA-HQ guidance, no growth in DM or escalation of DM costs is associated with the FY 2003–2013 baseline values.

Total Deferred Maintenance and Projected Deferred Maintenance Reduction

Table 13 (Attachment F-2 of the TYSP Guidance) reflects fully burdened values for project planning and execution. DM growth and escalation are included in Attachment F-2. Data for annual required maintenance has incorporated the Y-12 assessment of maintenance as a percentage of RPV as described further in this TYSP. The annual planned maintenance data reflects Y-12's assessment of work scope that should be included as maintenance costs and also ensure consistency of maintenance reporting with other NNSA sites.

Table 12

Attachment F-1

FIRP FY 2003 Deferred Maintenance Baseline and Projected Deferred Maintenance Reduction from Baseline for the Y-12 National Security Complex ($000s)

Category of Maintenance	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Actual)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1. FIRP DEFERRED MAINTENANCE (DM) BASELINE (Excludes Programmatic Real Property or Equipment)	568,300	408,084	352,238	313,640	282,944	255,633	233,096	215,676	159,428	139,253	121,018	114,902	106,278	99,890	93,362	86,690
2. DEFERRED MAINTENANCE (DM) BASELINE REDUCTION TOTAL		160,216	55,846	38,598	30,696	27,311	22,537	17,420	56,248	20,175	18,235	6,116	8,624	6,388	6,528	6,672
A. Reduction in DM Baseline (total due to FIRP ONLY) for all F&I		13,864	36,800	22,880	22,672	21,965	17,057	11,814	11,326	11,250	12,251					
i. Reduction in DM for Mission-Critical F&I (due to FIRP ONLY)				7,043	5,814	730	280	5,267	3,788	3,750	4,038					
ii. Reduction in DM for Mission Dependent, Not Critical F&I (due to FIRP ONLY)				10,368	14,609	18,816	16,777	6,547	7,538	7,500	8,213					
iii. Reduction in DM for Not Mission Dependent F&I (due to FIRP ONLY)				5,469	2,249	2,419										
3. REPLACEMENT PLANT VALUE (RPV) FOR NNSA FACILITIES & INFRASTRUCTURE																

Table 13
Attachment F-2
NNSA Total Deferred Maintenance and Projected Deferred Maintenance Reduction
for the Y-12 National Security Complex ($000s)

Category of Maintenance	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Actual)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1. ANNUAL REQUIRED MAINTENANCE for F&I	31,493	111,408	70,088	72,046	79,556	138,325	144,265	148,188	131,977	134,260	137,375	137,713	138,100	168,866	172,536	176,165
2. ANNUAL PLANNED MAINTENANCE TOTAL	30,780	48,202	60,865	52,449	35,835	38,552	35,767	33,749	34,514	35,274	36,050	36,843	37,653	38,482	39,328	40,193
A. Direct	18,605	19,935	21,542	22,976	35,835	16,925	13,578	11,005	11,247	11,495	11,747	12,006	12,270	12,540	12,816	13,098
B. Indirect	12,175	28,267	39,323	29,473		21,627	22,189	22,744	23,267	23,779	24,302	24,837	25,383	25,942	26,512	27,096
3. DEFERRED MAINTENANCE (DM) TOTAL (Excludes Programmatic Real Property or Equipment) *= Inflation Prior Year DM Total + DM New - Prior Year DM Reduction*	568,300	450,579	418,803	427,745	437,103	425,644	418,231	412,552	326,210	309,038	296,349	295,637	289,893	288,495	286,785	284,751
i. Backlog Inflation Rate (%)		2.3%	7.6%	6.5%	9.1%	2.6%	2.5%	2.3%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
ii. DM inflation		13,071	34,244	27,148	38,925	11,365	10,641	9,619	9,076	7,177	6,799	6,520	6,504	6,378	6,347	6,309
iii. DM new		10,000	18,006	13,059	31,653	10,000	10,000	8,000	6,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
A. DM, Mission Critical F&I ONLY				121,528	135,047	143,732	152,485	154,598	100,457	101,346	101,721	106,052	110,344	114,541	118,690	122,786
B. DM, Mission Dependent, Not Critical F&I ONLY				182,041	220,882	201,851	184,594	176,564	150,460	139,845	128,276	124,897	116,628	112,934	109,089	105,087
C. DM, Not Mission Dependent F&I ONLY				124,177	81,174	80,062	81,151	81,391	75,293	67,847	66,352	64,688	62,921	61,020	59,007	56,878
4. DEFERRED MAINTENANCE (DM) REDUCTION TOTAL	111,296	27,270	84,026	31,845	44,149	32,823	28,055	23,298	101,419	29,348	24,489	12,232	17,248	12,776	13,057	13,344
i. Reduction total attributed to FIRP ONLY		21,770	46,270	23,247	23,306	22,131	17,095	12,086	11,575	11,498	12,521					
A. Reduction in DM for Mission Critical F&I				12,830	6,591	1,998	1,567	6,697	61,678	5,200	5,524	1,428	1,460	1,492	1,525	1,558
1. Reduction attributed to FIRP ONLY				7,043	4,157	749	287	5,388	3,871	3,833	4,127					
B. Reduction in DM for Mission Dependent, Not Critical F&I				10,735	27,225	24,372	22,417	12,436	29,873	13,658	14,519	6,260	11,145	6,538	6,682	6,829
1. Reduction attributed to FIRP ONLY				10,735	16,558	18,900	16,808	6,698	7,704	7,665	8,394					
C. Reduction in DM for Not Mission Dependent F&I				8,280	10,333	6,454	4,071	4,165	9,867	10,490	4,446	4,543	4,643	4,745	4,850	4,957
1. Reduction attributed to FIRP ONLY				5,469	2,591	2,482										
5. REPLACEMENT PLANT VALUE (RPV) for Facilities and Infrastructure (F&I) *= Inflation of Prior Year RPV plus increase or decrease due to other causes*	4,606,871	4,706,336	4,914,176	5,259,332	5,978,742	7,026,887	7,137,434	7,326,145	6,369,640	6,472,360	6,614,752	6,760,276	6,828,987	8,179,225	8,359,168	8,543,070
A. RPV for Mission-Critical F&I ONLY				2,218,162	2,702,351	3,293,691	3,376,034	3,453,682	2,627,701	2,685,511	2,744,592	2,804,973	2,866,682	4,129,749	4,220,604	4,313,457
B. RPV for Mission-Dependent, Not Critical F&I				1,815,567	2,369,288	2,842,021	2,898,799	3,010,302	2,919,526	2,983,755	3,049,398	3,116,485	3,105,032	3,173,343	3,243,156	3,314,506
C. RPV for Not Mission-Dependent F&I				1,299,195	907,103	891,175	862,601	862,160	822,413	803,094	820,762	838,819	857,273	876,133	895,408	915,107
D. RPV Increase from prior year attributed to inflation				85,386	478,599	155,447	175,672	164,161	161,175	140,132	142,392	145,525	148,726	150,238	179,943	183,902
E. RPV Increase / decrease attributed to causes other than inflation*				259,770	240,811	892,697	(65,125)	24,550	(1,117,680)	(37,412)			(80,015)	1,200,000		

*Note: Row 5E increases to RPV are attributed to new construction. Decreases are attributed to building demolitions or transfers associated with TD Program or IFDP.

Table 13 (cont.)
Attachment F-2
NNSA Total Deferred Maintenance and Projected Deferred Maintenance Reduction
for the Y-12 National Security Complex ($000s)

Category of Maintenance	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Actual)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
FACILITY CONDITION INDEX (FCI)																
FCI TOTAL	12.3%	9.6%	8.5%	8.1%	7.3%	6.1%	5.9%	5.6%	5.1%	4.8%	4.5%	4.4%	4.2%	3.5%	3.4%	3.3%
FCI Mission Critical				5.5%	5.0%	4.4%	4.5%	4.5%	3.8%	3.8%	3.7%	3.8%	3.8%	2.8%	2.8%	2.8%
FCI Mission Dependent, Not Critical				10.0%	9.3%	7.1%	6.4%	5.9%	5.2%	4.7%	4.2%	4.0%	3.8%	3.6%	3.4%	3.2%
FCI Not Mission Dependent				9.6%	8.9%	9.0%	9.4%	9.4%	9.2%	8.4%	8.1%	7.7%	7.3%	7.0%	6.6%	6.2%
ASSET CONDITION INDEX (ACI)																
ACI TOTAL	0.88	0.90	0.91	0.92	0.93	0.94	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.96	0.97	0.97
ACI Mission Critical				0.95	0.95	0.96	0.95	0.96	0.96	0.96	0.96	0.96	0.96	0.97	0.97	0.97
ACI Mission Dependent, Not Critical				0.90	0.91	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.96	0.97	0.97
ACI Not Mission Dependent				0.90	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.93	0.93	0.93	0.94

3.6 SECURITY/SECURITY INFRASTRUCTURE

Figure 17 shows the current security zoning for Y-12. B&W Y-12 must provide effective protection for nuclear materials, classified information, employees, visitors, and government property. B&W Y-12 employs a security strategy based on establishing concentric layers of increasing protective measures. Each layer is more restrictive than the preceding one, providing the most stringent protective measures for the most sensitive assets. Moving from outside the plant inward are site perimeter (229 Boundary), the Property Protection Areas, the Protected Area, and MAAs. Limited Areas and a single Exclusion Area have been established to protect classified matter. Implementation of this layered protection methodology continues within the MAAs, where additional physical and other access control barriers provide protection for the most sensitive assets.

Armed security officers patrol all areas within Y-12 NSC. This security configuration protects property by controlling access to the site; protects information by controlling access to the Limited and Exclusion areas; and protects SNM through numerous, sophisticated access controls and physical barriers, including PIDAS, which delineates the Protected Area.

The DBT policy of 2005 has placed greater emphasis on each concentric protective layer to provide an increased detection and delay function, with a requirement for compliance with the policy by the end of FY 2008. However, to avoid unnecessary expenditure of funds for temporary upgrades, the Secretary of Energy has authorized an extension in the policy, with compliance to occur by the end of FY 2011. This will allow Y-12 to consolidate material into the HEUMF instead of making substantial upgrades to protect the material long-term in current storage locations. Material consolidation offers the greatest avoidance of capital expenditures as experienced with the 2006 decertification of Building 9204-4 MAA, which provided significant savings. The long-range plan for Y-12 is to consolidate all nuclear operations into two designed-denial facilities, HEUMF and UPF. To provide appropriate protection in the interim, Y-12 has adopted a concept of layered engagement, where each layer provides detection and delay to allow interruption of malevolent acts.

A significant portion of the Y-12 physical security infrastructure was designed and built during an era when expectations for security were less demanding than they are today. The facilities designed and constructed at that time did not include the kind of provisions needed today to help provide a robust level of security. Lacking these provisions, Y-12 has implemented a number of upgrades over the years to accommodate increasing security requirements. Historically, the security architecture for these upgrades emphasized only two primary themes: (1) detection using engineered systems and (2) intervention using the Protective Force.

Subsequent to the terrorist events of September 11, 2001, DOE/NNSA issued a revision to the DBT policy in May 2003 and indicated that compliance with the new guidance will be required after a defined implementation period. Subsequently, in April 2004, DOE/NNSA issued an additional policy, *Results of Design Basis Threat Annex Special Evaluation Team (U)*, which completely changed the protection requirements, placing great emphasis on implementing a “denial of access” philosophy. Additionally, DOE/NNSA provided an update to the DBT in October 2004 and November 2005. Based on an evaluation of the DBT policy requirements, Y-12 has determined that it is necessary and cost effective to adopt more robust security architecture. The revised security architecture will emphasize four primary themes:

1. consolidation of EU operations,
2. improved and expanded detection using engineered systems,
3. delay or denial using engineered systems, and
4. intervention using the Protective Force.

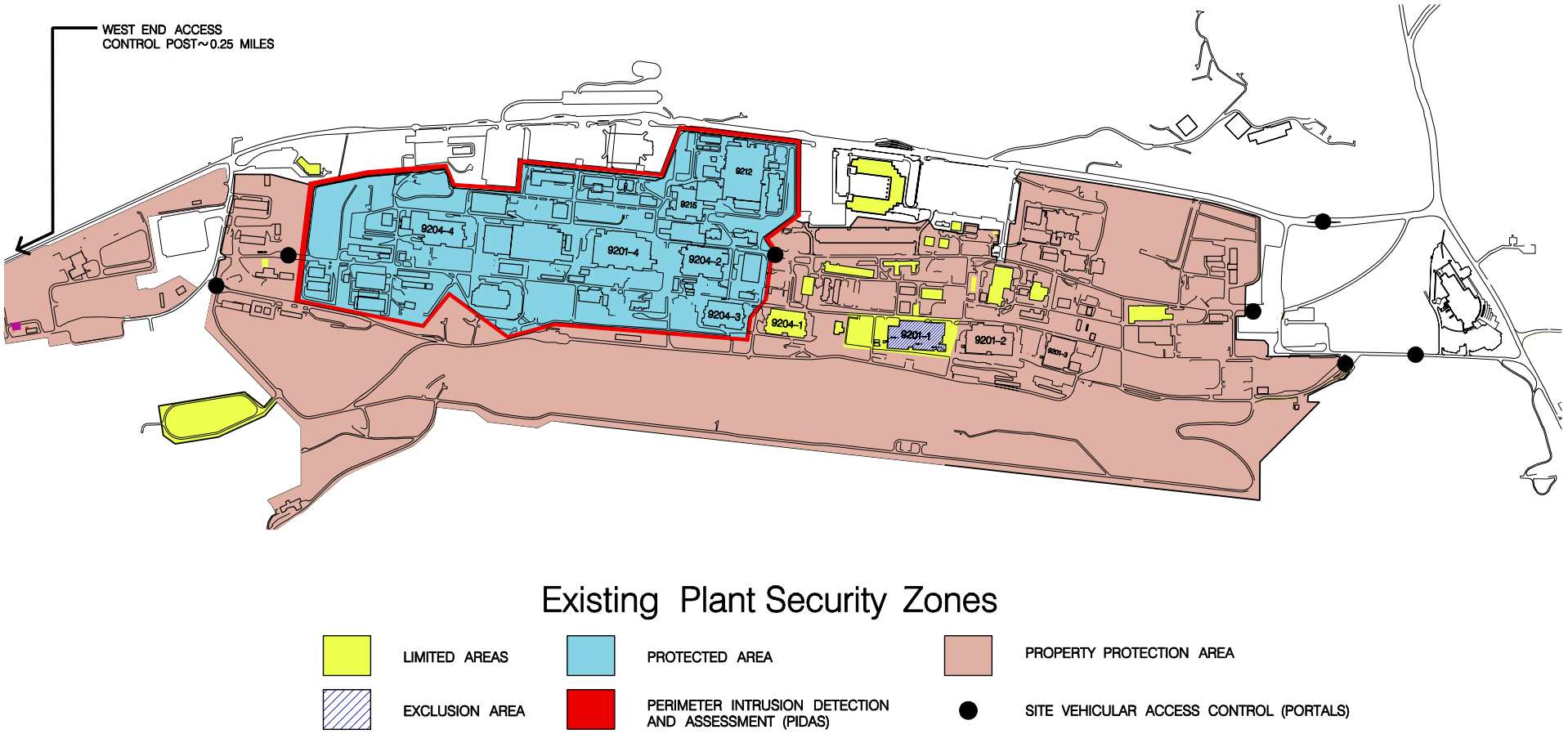

Fig. 17. Y-12 security zoning, determined by the security requirements of processes, materials, and information used and stored.

Prior to the release of the 2004 policies, B&W Y-12 proposed and implemented a series of steps to address the May 2003 DBT policy and by February 2004 was in compliance with the policy:

1. B&W Y-12 implemented a new Protective Force deployment strategy, with some immediate physical security modifications, to provide triage action necessary to address the 2003 policy. These immediate actions were not intended to be long-term corrective measures.
2. B&W Y-12 requested funding for near-term upgrades, selected to optimize confidence in the triage security measures. This funding was eventually provided in June 2004 through a congressional reprogramming effort.
3. Based on the 2003 DBT policy, B&W Y-12 requested a line item project to install a perimeter detection, delay, and engagement system to replace the existing PIDAS. Approval of CD-0 was received in January 2004. The proposed project would replace the existing PIDAS and incorporate additional delay capabilities in the PIDAS function. PIDAS would be constructed in phases based on need and the timing of other changes in the protected area. This project would eliminate the need to replace PIDAS for life cycle reasons.

However, the proposed new PIDAS would not be effective in addressing all the requirements contained in the 2004 policies or subsequent updates in the DBT. Therefore, the revised approach was developed with the most important aspect being consolidation of all EU operations into a new designed-denial facility, similar to the HEUMF. B&W Y-12 modified its line-item plans to focus on construction of UPF with a second security line-item to address life-cycle concerns with the existing PIDAS and provide necessary infrastructure upgrades to integrate the security systems for HEUMF, UPF, and balance of plant. Until UPF is operational, intermediate security upgrades are required. The scope of work to be executed with the funding previously requested for near-term upgrades was modified. Funding from the congressional reprogramming effort in FY 2004 and congressional “plus ups” in FY 2005 and FY 2006 provided a series of enhancements to improve detection, delay, and engagement capabilities. Additionally, plans call for expediting consolidation of material into HEUMF when construction is completed in FY 2008.

B&W Y-12 gained approval from the Secretary of Energy to extend the compliance date for the 2004 DBT policy. This action will avoid costly upgrades that would only be utilized until the HEUMF is complete. B&W Y-12 has been successful in relocating QE, which generated a cost avoidance of over $150 million. To provide intermediate protective measures until HEUMF and UPF are complete, Y-12 has already constructed a West Fort, relocated QE, extended perimeter detection, and increased Protective Force capabilities. Plans continue to construct an East Fort and provide additional security upgrades to improve the delay and engagement capabilities.

Today, the Protected Area is approximately 150 acres and houses the majority of manufacturing and process operations. The need for a Protected Area and resultant PIDAS is based on the requirements to protect EU operations and materials that today are decentralized within the Protected Area. The remaining non-HEU facilities in the Protected Area do not require the level of protection provided by a PIDAS, although some must be protected as a Limited Area. To support Complex Transformation, Y-12 is consolidating all HEU operations into the HEUMF and UPF, which negates the need to upgrade and maintain the current 2.5-mile-long PIDAS in the future. A much smaller Protected Area, approximately 15 acres, with modern technology will provide effective perimeter detection at lower initial capital cost and overall life cycle cost. The current Protected Area perimeter will later become a Limited Area, resulting in improved access and increased productivity. Some additional efficiency may be achievable by consolidating the classified processes in a smaller, discrete Limited Area.

3.6.1 Security Infrastructure

There are 59 security-related facilities located on Y-12 NSC. Fifty-eight of these fall into the general category of guard portals/towers.

The primary security-related facility on Y-12 NSC is the guard headquarters, a facility constructed in the mid-1980s—by NNSA standards, a relatively new facility. Through FIRP and other limited funding, the DM in this facility is being addressed based on overall DM prioritization policy. Implementation of the DBT is causing capacity issues in the existing guard headquarters. To address this need and meet DBT guidance for the protection of EU, Y-12 is proposing to change the use of the existing Fire Station, Building 9710-2. Building 9710-2 is located inside the Protected Area and its reuse to support the increased number of guards being hired to meet the DBT would negate the need to construct a new facility. The 9710-2 location is ideal and its functionality makes it very suitable for the Protected Area guard force and their related vehicles.

The need to address the hardware and software issues of aging security systems must also be addressed. A structured and fiscally supportable plan is essential to ensure that these systems remain acceptable until the new UPF is constructed and operational. B&W Y-12 identified upgrades and a replacement strategy for achieving this assurance with SIP. SIP received CD-1 in October 2007 and the project is performing CD-2 activities. Construction funding is currently at risk.

The projects in Attachments A-6a and A-6b of the TYSP Guidance (shown later in Sect. 4.3) will allow NNSA to integrate its corporate requirements for security infrastructure. This attachment identifies the security infrastructure (bricks and mortar) required to support the S&S mission at Y-12. With the relaxation of the compliance date for implementing the DBT, some of the projects previously shown in earlier TYSP submittals have been deferred to a later implementation date and do not appear in this revision of the TYSP. Analysis continues to identify the most cost-effective means of addressing the security challenges, and the scope of some projects will be modified to maintain a balanced security posture.

Security infrastructure located off Y-12 NSC includes the Central Training Facility and the Wackenhut Services headquarters. The later is a leased facility housing the DOE/NNSA prime contractor (Wackenhut) for security services on the Oak Ridge Reservation.

3.6.2 Establishment of Security Baseline

The Office of Defense Nuclear Security is establishing baselines of existing security areas as a mean of measuring the growth or reduction of the security footprint. Table 14 (Attachment D of the TYSP Guidance) provides the current baseline of security areas at the Y-12 NSC.

As part of Complex Transformation, Y-12 has undertaken an aggressive approach to reduce its security area footprint through the construction of HEUMF and UPF, ultimately reducing the current Protected Area by 90%. The number of Limited Areas and VTRs will continue to be evaluated to determine where consolidations would be beneficial and cost effective to implement. The current number of Limited Areas will be consolidated in the Jack Case Center and Building 9202. The disposition of legacy materials, including classified material, will help reduce the number of VTRs. However, funding constraints are limiting Y-12's ability in this area.

Table 14
Attachment D
Establishment of Security Baseline for Y-12 NSC

Facility/System Type	No. of Security Areas	Amount of Security Area		
		Gross Square Feet	Acres	Linear Feet
PIDAS protected area	1	NA	150	14,000
Other protected areas (excluding PIDAS protected area)	No other PA not covered in (1) above	No other PA not covered in (1) above	NA	NA
Limited areas	38	511,400	NA	NA
Exclusion areas	1	271,000	NA	NA
Material access areas	4	482,000	NA	NA
Vital areas	NA	NA	NA	NA
Functionally specialized security areas (i.e., SCIF, classified computer facilities, secure communication facilities)	4	24,453	NA	NA
Vault-type rooms	47	194,074	NA	NA

Notes:
The 38 limited areas include 9 off-site, totaling 51,500 ft^2.
The 47 vault-type rooms include 3 off-site, totaling 19,000 ft^2.

4 Overview of Site Prioritization and Cost Profile

Included herein is the B&W Y-12 forecast for the facility and infrastructure funding requirements necessary to implement Complex Transformation between FY 2009 and FY 2018. While these forecasts are mandated to be FYNSP constrained, *the next 5 years are extremely important to Complex Transformation at Y-12*. Delays to critical projects like the UPF, SIP, and PARP will have huge ramifications on future costs and EU capability as defined in the UPF life cycle cost analysis. FIRP and RTBF must continue to address recapitalization of existing mission critical facilities and infrastructure to bridge the 10 to 15 years to transformation. Without funding for legacy facility and material disposition, a huge footprint of excess facilities will remain on the Y-12 site among the modernized, transformed facilities and infrastructure. Assuming they are supported, key projects over the next 10 years include CMC, PARP, and SIP. Finally, the use of alternative financing mechanisms to build and lease mission dependent, not critical facilities must become a part of NNSA's Complex Transformation implementation portfolio of funding alternatives.

4.1 Overview of Site Prioritization

Project prioritization is an integral part of Y-12's baseline planning process, as shown in Fig. 18**.** Program managers are the primary sources for customer communications and coordination of priorities. B&W Y-12 has defined the organization to be program management centered, with all responsibility and accountability for cost performance, schedule performance, work scope definition, and customer relations resting with the program managers for DSW, RTBF, Campaigns, Security, and Complementary Work.

Justification and documentation for the customer's understanding are crucial to making the correct decision related to those projects that will be executed and the large number of important projects that require delay due to funding constraints.

Final project priority is ultimately established by interactions between B&W Y-12 and NNSA program managers and senior management.

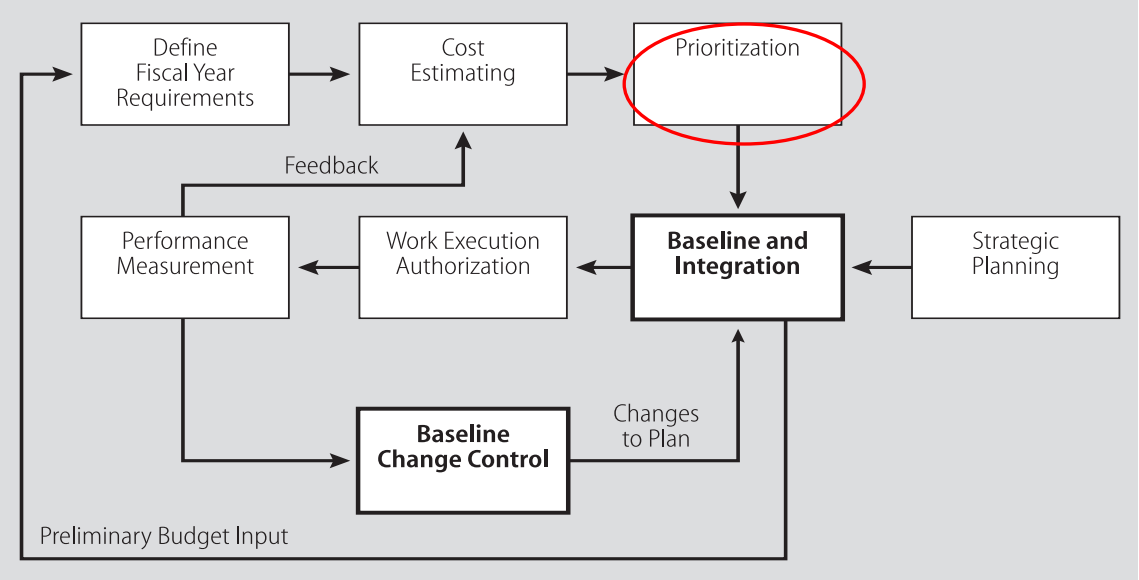

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Fig. 18. Project prioritization, an integral part of the B&W Y-12 baseline planning process.

B&W Y-12 is also in the process of augmenting current prioritization processes with the implementation of a procedure that defines the site-level approach to risk management use to ensure associate risks are identified and controlled to limit risk to an acceptable level. This *risk determination and acceptance* process will have direct applicability to many of the legacy facility and infrastructure issues described in this TYSP. The formal procedure is being issued in late March, and the process is now being used to evaluate a number of legacy issues such as infrastructure decay, environmental and waste management, and production-specific issues. Figure 19 shows the risk matrix used in this risk determination and acceptance process. Like the Capital Asset Management Process (CAMP) and other prioritization processes, this process uses probability and consequence to determine severity. The scale of probability (negligible to very likely) and consequence (insignificant to critical) are indicated in the figure. This process is different in the assignment of *acceptance*. At the appropriate point in the process, a risk level will be determined, assigned, and a handling strategy or activities determined. Examples of the latter include avoiding the risk, accepting the risk, mitigating the risk, and transferring the risk. The acceptance levels defined are outlined as follows:

- Very Low (20–16)—the line supervisor, subject matter expert, issue owner
- Low (15–11)—supervisor, operations manager
- Medium (10–6)—department or division manager
- High (5, 4)—senior manager
- High (3–1)—president (ESG) with site manager approval/acceptance as required

The process can be used to determine programmatic risk of potential events, evaluating risk of operation after the occurrence, prioritizing funding for “below the line” items, and management acceptance and notification of critical issues. This new risk management process will be a useful tool in the overall implementation of contractor assurance.

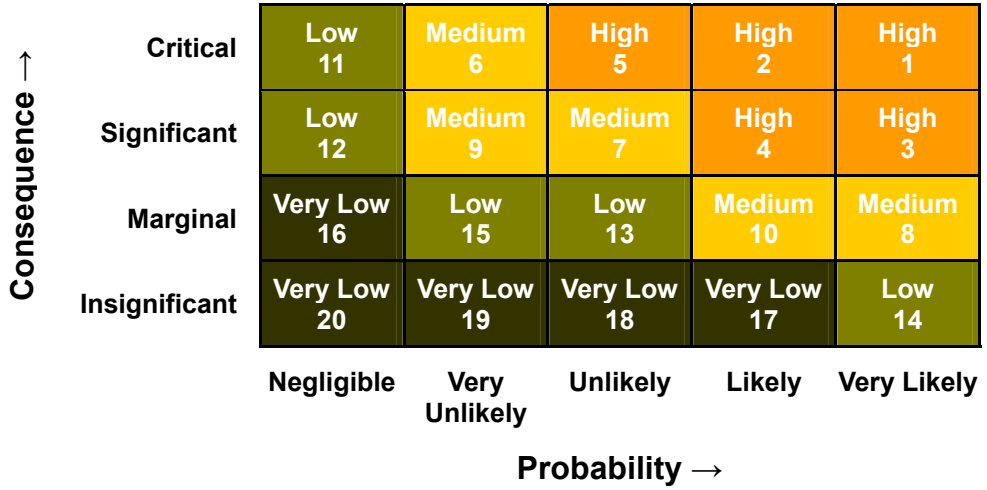


Fig. 19. Risk matrix used in the risk determination and acceptance process.

4.2 Significant Project Deletions and Additions

Significant project deletions and additions from the March 2007 TYSP include the following:

1. Y-12 would like to call attention to SIP being identified in the July 2007 ICPP but not supported within FYNSP levels. SIP is an integral part of the overall transition of operations and the reconfiguration of the Y-12 site. Failure to support SIP will result in increased costs in complying with DBT implementation.
2. The CMC, also identified in the July 2007 ICPP, is not included within FYNSP. The CMC has been identified as an integral part of the preferred alternative for Complex Transformation at Y-12. This project, assuming support in future FYNSP discussions, will significantly reduce the remaining manufacturing footprint associated with lithium, DU, and general manufacturing operations required to support production requirements.

4.3 Facilities and Infrastructure Cost Projection Spreadsheets and Tables

This section contains the following attachments:

- **Attachment A-1, Line Item Projects** (Table 15)—Cost projections for all approved line items at Y-12 within FYNSP constraints.
- **Attachment A-3, RTBF/Operations of Facilities** (Table 16)—Cost projections for discrete facility projects in RTBF buildings at Y-12, provided by the RTBF Facilities Program Manager.
- **Attachment A-4a, FIRP** (Table 17)—Cost projections provided by the Y-12 FIRP Program Manager, consistent with FYNSP and in recognition of FIRP completion in FY 2013.
- **Attachment A-4b, Other FIRP Projects** (Table 18)—Cost projections for an unconstrained list of Y-12 projects selected from the approved DM lists.
- **Attachment A-6a, Currently Funded Security Infrastructure Projects** (Table 19)—Cost projections for funded security infrastructure projects at Y-12.
- **Attachment A-6b, Unfunded Security Infrastructure Projects** (Table 20)—Cost projections for unfunded security infrastructure projects at Y-12.

Table 15
Attachment A-1
Facilities and Infrastructure Cost Projection Spreadsheet
Line Item Projects for Y-12 National Security Complex ($000s)

Priority	Project Name	Project Number	Deferred Maintenance Identifier(s)	Mission Dependency	Mission Dependency Program	Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years Funding	FY 2007	FY 2008	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
A. Readiness in Technical Base and Facilities (RTBF) Line Items																						
1	HEU Materials Facility	01-D-124	NA	MC	RTBF	0	110,000	OPC	76,915	27,995	4,367	10,831	18,269	15,453								
								PE&D	-													
								LI	466,630	280,220	110,882	75,528										
								Total (TPC)	543,545	308,215	115,249	86,359	18,269	15,453	-	-	-	-	-	-	-	-
2	Be Capability	05-D-402 02-D-103.8	NA	MC	DSW	0	0	OPC	7,112	2,563	579	1,085	1,757	1,128								
								PE&D	5,279	5,279												
								LI	23,730	11,221	7,494	-	5,015									
								Total (TPC)	36,121	19,063	8,073	1,085	6,772	1,128	-	-	-	-	-	-	-	-
3	Uranium Processing Facility	10-D-XXX 06-D-140	NA	MC	DSW	0	388,000	OPC	434,224	19,952	10,272	12,000	14,000	19,000	19,000	56,000	57,000	57,000	57,000	55,000	52,000	6,000
								PE&D	313,714	5,000	5,000	38,583	96,161	116,970	52,000							
								LI	1,452,100					56,000	173,900	265,870	316,365	332,000	302,100			
								Total (TPC)	2,200,038	24,952	15,272	50,583	110,161	191,970	244,900	321,870	373,365	389,000	359,100	55,000	52,000	6,000
4	Complex Command Center	11-D-XXX 10-D-140	NA	MD	RTBF	250	300,000	OPC	7,300					1,800	1,500	1,500	1,000	1,500				
								PE&D	12,080						4,000	4,000	4,080					
								LI	66,200						10,000	21,200	10,000	25,000				
								Total(TPC)	85,580					1,800	15,500	26,700	15,080	26,500				
5	Consolidated Manufacturing	11-D-140	NA	MD	DSW		150,000	OPC	75,000						2,000	8,000	10,000	12,000	12,000	12,000	12,000	7,000
								PE&D	60,000								25,000	35,000				
								LI	400,000									50,000	95,000	85,000	85,000	85,000
								Total(TPC)	535,000						2,000	8,000	35,000	97,000	107,000	97,000	97,000	92,000
B. Facilities and Infrastructure Recapitalization Program (FIRP) Line Items																						
1	Compressed Air Upgrade Project	05-D-601 04-D-203.2	NA	MD	RTBF	12,630	0	OPC	3,090	2,236	854											
								PE&D	3,970	3,970												
								LI	14,009	14,009												
								Total(TPC)	21,069	20,215	854	-	-	-	-	-	-	-	-	-	-	-
2	Steam Plant Life Extension **(1)**	06-D-603 05-D160.2	NA	MD	RTBF	21,250	0	OPC	5,358	2,617	1,078	1,045	600	18								
								PE&D	11,668	10,620	1,048	-										
								LI	44,144	722	17,811	14,733	10,878									
								Total(TPC)	61,170	13,959	19,937	15,778	11,478	18	-	-	-	-	-	-	-	-
3	Potable Water System Upgrades **(2)**	08-D-602 06-D160.4	NA	MD	RTBF	25,000	1,600	OPC	5,625	3,525	400	400	600	700	-							
								PE&D	6,767	4,067	2,700	-										
								LI	49,736			22,070	27,666	-	-							
								Total(TPC)	62,128	7,592	3,100	22,470	28,266	700	-	-	-	-	-	-	-	-

Table 15 (cont.)
Attachment A-1
Facilities and Infrastructure Cost Projection Spreadsheet
Line Item Projects for Y-12 National Security Complex ($000s)

Priority	Project Name	Project Number	Deferred Maintenance Identifier(s)	Mission Dependency	Mission Dependency Program	Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years Funding	FY 2007	FY 2008	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
C. Safeguards & Security (S&S) Line Items																						
1	Security Improvement Project	09-D-XXX 05-D-170.2	NA	MD	RTBF	0	0	OPC	16,177	4,700	918	878	802	8,879								
								PE&D	10,607	1,496		8,000	1,111									
								LI	58,601					34,579	11,500	8,300	4,222					
								Total(TPC)	85,385	6,196	918	8,878	1,913	43,458	11,500	8,300	4,222	-	-	-	-	-
D. Other Defense Programs Line Items (for example, Campaigns/Directed Stockpile Work (DSW))																						
	NA							OPC														
								PE&D														
								LI														
								Total(TPC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Costs for All NNSA Weapons Activities Account Line Items									**1,560,437**	**0**	**0**	**22,070**	**27,666**	**90,579**	**199,500**	**289,300**	**337,222**	**332,000**	**262,100**	**0**	**0**	**0**
E. Nuclear Nonproliferation (NN) Line Items																						
	NA							OPC														
								PE&D														
								LI														
								Total(TPC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Costs for All NNSA Site Line Items									**2,347,551**	**38,740**	**19,290**	**81,931**	**140,340**	**236,128**	**270,500**	**345,300**	**394,222**	**389,000**	**319,100**	**55,000**	**52,000**	**,6000**
F. Non-NNSA Line Items Program A																						
NA								OPC														
								PE&D														
								LI														
								Total(TPC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Costs for Program A									**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
G. Non-NNSA Line Items Program B																						
NA								OPC														
								PE&D														
								LI														
								Total (TPC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Costs for Program B									**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total Site Costs									**2,347,551**	**38,740**	**19,290**	**81,931**	**140,340**	**236,128**	**270,500**	**345,300**	**394,222**	**389,000**	**319,100**	**55,000**	**52,000**	**6,000**

Notes:

1. The Steam Plant Life Extension Project line item funding was reduced by a total of $287K in FY 2008 due to a recision and budget reduction. This action will require additional funding to be requested through the baseline change proposal (BCP) process. The line item funding shown in the FY 2008 column for this project reflects the $287K reduction.
2. The Potable Water System Upgrades Project line item funding was reduced by a total of $430K in FY 2008 due to a recision and budget reduction. This action will require additional funding to be requested through the BCP process. The line item funding shown in the FY 2008 column for this project reflects the $430K reduction.

Table 16
Attachment A-3
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
RTBF/Operations of Facilities for Y-12 National Security Complex ($000s)

Priority	Project Name	Project Number	Mission Dependency	Mission Dependency Program	Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years' Funding	FY 2007	FY 2008 See Note	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	NMC&A - Ops/Fac	P88Y2940	MC	RTBF	0	0	GPP	912		712	200										
2	Consolidated Rubber Shop	P88Y3006	MC	RTBF	0	0	GPP	2,963			2,963										
3	New Sulfuric Acid System at WETF	P88Y2966	MD	RTBF	0	0	GPP	250		250											
4	JCC Televideo Conference Room	P88Y2983	Leased	RTBF	0	0	GPP	500		500											
TOTAL RTBF/Operations of Facilities (Facilities & Infrastructure reported under this category)								**4,625**	**0**	**1,462**	**3,163**										

Note: Projected costs for FY 2008 represent BA carried over from funding allocated through FY 2007 work authorizations.

Table 17
Attachment A-4a
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Facilities and Infrastructure Recapitalization Program (FIRP) for Y-12 National Security Complex ($000s)

FIRRS Priority	Project Name	FIRRS Score	Project Number	Deferred Maintenance Identifier	Mission Dependency	Mission Dependency Program	FY03 Baseline Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years' Funding	FY 2007	FY 2008	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP
1	FY07 Low Voltage Distribution System Deficiencies	65	Y12-R-07-01	Y12-DM-07-12	MDNC	RTBF	1,369	0	EXP	700		700						
2	FY07 Wood Pole Deficiencies	65	Y12-R-07-02	Y12-DM-07-102	MDNC	RTBF	736	0	EXP	700		700						
3	FY07 Interior Floor Deficiencies	65	Y12-R-07-03	Y12-DM-07-27	MC	RTBF	598	0	EXP	400		400						
4	FY07 RAMP Support	65	Y12-R-07-04	Multiple	MC/MDNC	RTBF	2,366	0	EXP	2,345		2,345						
5	9212 Roofing, BU Membrane Deficiencies	65	Y12-R-07-05	Y12-DM-07-53	MC	RTBF	0	0	EXP	10		10						
6	Exterior Paint Deficiencies	65	Y12-R-07-06	Y12-DM-07-76	MC/MDNC	RTBF	320	0	EXP/GPP	943	131	812						
7	FY07 Packaged HVAC Deficiencies	65	Y12-R-07-07	Y12-DM-05-10	MC/MDNC	RTBF	1,476	0	EXP/GPP	3,000		3,000						
Multiple	FY08 Excess Facility Demolition	Multiple	Multiple	Multiple	MDNC/NMD	RTBF	1,204	(103,681)	EXP	10,000		10,000						
N/A	Planning & Design of FY08 Recap Program	N/A	Y12-P-08-01	N/A	N/A	N/A	N/A	0	EXP	1,389		1,389						
							8,069	**(103,681)**		**0**								
1	FY08 NWC RAMP Project Support	65	Y12-R-08-01	Y12-DM-08-53	MC/MDNC	RTBF	1,460	0	EXP	2,750	0	750	2,000					
2	Nitrogen Plan Replacement Project	65	Y12-R-08-02	Y12-DM-08-109	MDNC	RTBF	2,500	0	GPP	4,400	0		4,400					
3	Roof Leak Repair Project	55	Y12-R-08-03	Multiple	MC/MDNC	RTBF	0	0	EXP	200	0		200					
Multiple	FY08 Excess Facility Demolition	Multiple	Multiple	Multiple	MDNC/NMD	RTBF	2,419	149,357	EXP	10,000	0		10,000					
N/A	Planning of Disposition Program	N/A	Y12-D-08-Prep	N/A	N/A	N/A	0	0	EXP	412	0		412					
N/A	Planning & Design of FY09 Recap Program	N/A	Y12-P-08-01	N/A	N/A	N/A	0	0	EXP	500	0		500					
							6,379	**149,357**										
1	FY09 RAMP Project Support	65	Y12-R-09-01	TBD	MC/MDNC	RTBF	560	0	EXP	1,400	0			1,400				
2	FY09 COE/SBI DM Reduction Project #1	65	Y12-R-09-02	TBD	MDNC	RTBF	960	0	EXP	2,400	0			2,400				
N/A	FY09 Program Support & Recap Planning for FY10	N/A	Y12-P-09-01	N/A	N/A	N/A	0	0	EXP	1,057	0			1,057				
							1,520	**0**										
1	9204-2E Hot Air Deficiencies (Kathabar 3320)	65	Y12-R-10-01	Y12-DM-10-42	MC	RTBF	1,329	0	GPP	4,500	0				4,500			
2	9737 Switchgear Replacement	65	Y12-R-10-02	Y12-DM-10-13	MDNC	RTBF	985	0	GPP	2,500	0				2,500			
3	FY10 9204-2 Roofing Deficiencies	65	Y12-R-10-03	Y12-DM-10-56	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
4	FY10 RAMP Project Support	65	Y12-R-10-04	TBD	MC/MDNC	RTBF	875	0	EXP	3,500	0				3,500			
5	FY10 Wood Pole Deficiencies Project	65	Y12-R-10-05	Y12-DM-10-102	MDNC	RTBF	625	0	EXP	2,500	0				2,500			
6	FY10 COE/SBI DM Reduction Project #1	65	Y12-R-10-06	TBD	MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
7	FY10 Roofing Deficiencies Project	65	Y12-R-10-07	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
8	FY10 HVAC Reduction	65	Y12-R-10-08	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			

Table 17 (cont.)
Attachment A-4a
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Facilities and Infrastructure Recapitalization Program (FIRP) for Y-12 National Security Complex ($000s)

FIRRS Priority	Project Name	FIRRS Score	Project Number	Deferred Maintenance Identifier	Mission Dependency	Mission Dependency Program	FY03 Baseline Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years' Funding	FY 2007	FY 2008	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP
9	FY10 Electrical DM Reduction	65	Y12-R-10-09	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
10	FY10 Mechanical DM Reduction	65	Y12-R-10-10	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
11	FY10 Structural DM Reduction	65	Y12-R-10-11	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
12	FY10 Utility DM Reduction	66	Y12-R-10-12	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0				4,000			
N/A	FY10 Program Support	N/A	Y12-P-10-01	N/A	N/A	N/A	0	0	EXP	2,000	0				2,000			
N/A	Recapitalization Planning for FY11	N/A	Y12-P-10-02	N/A	N/A	N/A	0	0	EXP	3,445	0				3,445			
							11,814	**0**										
1	FY11 RAMP Project Support	65	Y12-R-11-01	TBD	MC/MDNC	RTBF	875	0	EXP	3,500	0					3,500		
2	FY11 Wood Pole Deficiencies Project	65	Y12-R-11-02	TBD	MDNC	RTBF	625	0	EXP	2,500	0					2,500		
3	FY11 COE/SBI DM Reduction Project #1	65	Y12-R-11-03	TBD	MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
4	FY11 Roofing Deficiencies Project	65	Y12-R-11-04	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
5	FY11 HVAC Reduction	65	Y12-R-11-05	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
6	FY11 Electrical DM Reduction	65	Y12-R-11-06	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
7	FY11 Mechanical DM Reduction	65	Y12-R-11-07	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
8	FY11 Utility DM Reduction	65	Y12-R-11-08	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0					4,500		
9	FY11 Packaged HVAC Deficiencies	65	Y12-R-11-09	TBD	MC/MDNC	RTBF	1,075	0	EXP	4,300	0					4,300		
10	FY11 Structural Deficiencies DM Reduction	65	Y12-R-11-10	TBD	MDNC	RTBF	1,000	0	EXP	4,000	0					4,000		
11	FY11 COE/SBI DM Reduction Project #2	65	Y12-R-11-11	TBD	MDNC	RTBF	1,000	0	EXP	4,000	0					4,000		
N/A	FY11 Program Support	N/A	Y12-P-11-01	N/A	N/A	N/A	0	0	EXP	2,000	0					2,000		
N/A	Recapitalization Planning for FY12	N/A	Y12-P-11-02	N/A	N/A	N/A	0	0	EXP	4,826	0					4,826		
							11,325	**0**										
1	FY12 RAMP Project Support	65	Y12-R-12-01	TBD	MC/MDNC	RTBF	875	0	EXP	3,500	0						3,500	
2	FY12 Wood Pole Deficiencies Project	65	Y12-R-12-02	TBD	MDNC	RTBF	625	0	EXP	2,500	0						2,500	
3	FY12 COE/SBI DM Reduction Project #1	65	Y12-R-12-03	TBD	MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
4	FY12 Roofing Deficiencies Project	65	Y12-R-12-04	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
5	FY12 HVAC Reduction	65	Y12-R-12-05	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
6	FY12 Electrical DM Reduction	65	Y12-R-12-06	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
7	FY12 Mechanical DM Reduction	65	Y12-R-12-07	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
8	FY12 Utility DM Reduction	65	Y12-R-12-08	TBD	MC/MDNC	RTBF	1,125	0	EXP	4,500	0						4,500	
9	FY12 Packaged HVAC Deficiencies	65	Y12-R-12-09	TBD	MC/MDNC	RTBF	1,000	0	EXP	4,000	0						4,000	
10	FY12 Structural Deficiencies DM Reduction	65	Y12-R-12-10	TBD	MDNC	RTBF	1,000	0	EXP	4,000	0						4,000	

Table 17 (cont.)
Attachment A-4a
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Facilities and Infrastructure Recapitalization Program (FIRP) for Y-12 National Security Complex ($000s)

FIRRS Priority	Project Name	FIRRS Score	Project Number	Deferred Maintenance Identifier	Mission Dependency	Mission Dependency Program	FY03 Baseline Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	Prior Years' Funding	FY 2007	FY 2008	FY 2009 FYNSP	FY 2010 FYNSP	FY 2011 FYNSP	FY 2012 FYNSP	FY 2013 FYNSP
11	FY12 COE/SBI DM Reduction Project #2	65	Y12-R-12-11	TBD	MDNC	RTBF	1,000	0	EXP	4,000	0						4,000	
N/A	FY12 Program Support	N/A	Y12-P-12-01	N/A	N/A	N/A	0	0	EXP	2,000	0						2,000	
N/A	Recapitalization Planning for FY13	N/A	Y12-P-12-02	N/A	N/A	N/A	0	0	EXP	4,766	0						4,766	
							11,250	**0**										
1	FY13 RAMP Project Support	65	Y12-R-12-01	TBD	MC/MDNC	RTBF	875	0	EXP	3,500	0							3,500
2	FY13 Wood Pole Deficiencies Project	65	Y12-R-12-02	TBD	MDNC	RTBF	625	0	EXP	2,500	0							2,500
3	FY13 COE/SBI DM Reduction Project #1	65	Y12-R-12-03	TBD	MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
4	FY13 Roofing Deficiencies Project	65	Y12-R-12-04	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
5	FY13 HVAC Reduction	65	Y12-R-12-05	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
6	FY13 Electrical DM Reduction	65	Y12-R-12-06	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
7	FY13 Mechanical DM Reduction	65	Y12-R-12-07	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
8	FY13 Utility DM Reduction	65	Y12-R-12-08	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
9	FY13 Packaged HVAC Deficiencies	65	Y12-R-12-09	TBD	MC/MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
10	FY13 Structural Deficiencies DM Reduction	65	Y12-R-12-10	TBD	MDNC	RTBF	1,200	0	EXP	4,800	0							4,800
11	FY13 COE/SBI DM Reduction Project #2	65	Y12-R-12-11	TBD	MDNC	RTBF	1,150	0	EXP	4,600	0							4,600
N/A	FY13 Program Support	N/A	Y12-P-12-01	N/A	N/A	N/A	0	0	EXP	2,677	0							2,677
							12,250	0										
TOTAL (FIRP)										**248,620**	**131**	**20,106**	**17,512**	**4,857**	**50,445**	**52,126**	**51,766**	**51,677**

Table 18

Attachment A-4b

NNSA Facilities and Infrastructure Cost Projection Spreadsheet

Other Facilities and Infrastructure Recapitalization Program (FIRP) Projects for Y-12 National Security Complex ($000s)

FIRRS Priority	Project Name	FIRRS Score	Project Number	Deferred Maintenance Identifiers	Mission Dependency	Mission Dependency Program	FY04 Identified Deferred Maintenance Reduction	GSF Added or Eliminated	Funding Type	Total	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1	Steam Distr. Deficiencies in ME Facilities	65	Y12-DM-XX-45	Y12-DM-XX-45	MDNC	RTBF	200	0	EXP	700		700				
2	Roofing Deficiencies in ME Facilities	65	Y12-DM-XX-60	Y12-DM-XX-60	MDNC	RTBF	415	0	EXP	700		700				
3	Boiler Deficiencies in ME Utilities	65	Y12-DM-XX-84	Y12-DM-XX-84	MDNC	RTBF	588	0	EXP	550		550				
4	Steam Distr. Deficiencies in ME Utilities	65	Y12-DM-XX-89	Y12-DM-XX-89	MDNC	RTBF	620	0	EXP	1,250		1,250				
5	Raw Water Distribution Deficiencies in Asset # Y700269	65	Y12-DM-XX-112	Y12-DM-XX-112	MDNC	RTBF	4,922	0	EXP	8,200		8,200				
6	Domestic Water Deficiencies in ME Facilities	65	Y12-DM-XX-49	Y12-DM-XX-49	MC	RTBF	250	0	EXP	800		800				
7	Wood Pole Deficiencies in ME Utilities Systems	65	Y12-DM-XX-101	Y12-DM-XX-101	MDNC	RTBF	2,387	0	EXP	4,000		4,000				
8	Gas Distrib System Deficiencies in ME Utilities	65	Y12-DM-XX-108	Y12-DM-XX-108	MDNC	RTBF	430	0	EXP	700		700				
9	9995 Elevator Deficiencies	60	Y12-DM-XX-02	Y12-DM-XX-02	MDNC	RTBF	379	0	EXP	700		700				
10	9212 Low Voltage Distribution System Deficiencies	60	Y12-DM-XX-05	Y12-DM-XX-05	MC	RTBF	106	0	EXP	400		400				
11	FD/ID Fan Deficiencies in ME Utilities	60	Y12-DM-XX-83	Y12-DM-XX-83	MDNC	RTBF	790	0	EXP	600			600			
12	Low Voltage Distribution Sys Def in ME Facilities	60	Y12-DM-XX-12	Y12-DM-XX-12	MDNC	RTBF	1,420	0	EXP	2,900			2,900			
13	Air Handlers Deficiencies in ME Facilities	60	Y12-DM-XX-39	Y12-DM-XX-39	MDNC	RTBF	305	0	EXP	900			900			
14	Storm Drain Distribution Deficiencies Non-ME Utilities	60	Y12-DNM-XX-68	Y12-DNM-XX-68	NMD	RTBF	2,300	0	EXP	5,000			5,000			
15	9737 Medium Voltage Distribution System Deficiencies	55	Y12-DM-XX-13	Y12-DM-XX-13	MDNC	RTBF	985	0	EXP	1,500			1,500			
16	9995 Air Handler Deficiencies	55	Y12-DM-XX-37	Y12-DM-XX-37	MDNC	RTBF	657	0	EXP	1,500			1,500			
17	9201-5 Elevator Deficiencies	55	Y12-DM-XX-S01	Y12-DM-XX-S01	MC	RTBF	511	0	EXP	500			500			
18	Low Voltage Distribution Deficiencies Non-ME Buildings	55	Y12-DNM-XX-12	Y12-DNM-XX-12	NMD	RTBF	200	0	EXP	400			400			
19	Cooling Terminal Unit Deficiencies Non-ME Buildings	55	Y12-DNM-XX-30	Y12-DNM-XX-30	NMD	RTBF	600	0	EXP	700			700			
20	Roads and Walk Deficiencies Non-ME Utilities	55	Y12-DNM-XX-62	Y12-DNM-XX-62	NMD	RTBF	2,345	0	EXP	4,000			4,000			
TOTAL (FIRP)										**36,000**	**0**	**18,000**	**18,000**	**0**	**0**	**0**

Note: The purpose of this spreadsheet is to allow each site to propose/forecast additional high-priority NNSA FIRP projects with deferred maintenance deficiencies identified in FY 2004 for Headquarters consideration, if desired. THIS IS NOT A MANDATORY SPREADSHEET; therefore, no DM reduction is reflected in Attachment F.

Table 19
Attachment A-6a — FY 2008–2010
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Currently Funded Security Infrastructure Projects for Y-12 National Security Complex ($000s)

Priority	Project Name	Site-Specific Project Number	Mission Dependency	Mission Dependency Program	Estimated Total Project Cost	Planned Funding Source				DBT Related? Y or N
						Line Item	RTBF	FIRP	Other	
FY 2008 Projects										
1	Protected Staging Areas	TBD 1	NMD	DNS	$200				FS20	Y
2	Fences 4 and 5 Vehicle	TBD 2	NMD	DNS	$2,000				FS20	Y
3	Fences 6 and 7	TBD 3	NMD	DNS	$3,000				FS20	Y
4	Post 8 Pedistrian	TBD 4	NMD	DNS	$700				FS20	Y
5	MAA Inspection Upgrades	TBD 5	MC	DNS	$4,000		X			N
FY 2009 Projects										
Based on FYNSP, no security infrastructure projects are funded in FY 2009.										

Table 20
Attachment A-6b — FY 2009 and FY 2010 Unfunded
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Security Infrastructure Projects for Y-12 National Security Complex ($000s)

Priority	Prioritization Score	Project Name	Site-Specific Project Number	Mission Dependency	Mission Dependency Program	Total ($000s)	Proposed for Either FY09 or FY10 Funding	DBT Related? Y or N
1	60	Portal 24 Modifications	P88Y2853	NMD	DNS	2,500	FY07	Y
2	40	Secondary Pathways	TBD 2	NMD	DNS	400	FY07	Y
3	50	SAS Expansion	TBD 3	NMD	DNS	500	FY07	Y
4	50	Protected Staging Areas	TBD 4	NMD	DNS	1,000	FY07	Y
5	50	Protected Staging Areas	TBD 5	NMD	DNS	200	FY09	Y
6	60	Fences 6 and 7	TBD 6	NMD	DNS	2,000	FY09	Y
7	50	Post 8, Pedestrian	TBD 7	NMD	DNS	2,000	FY09	Y
8	60	9710-3 Standoff	TBD 8	NMD	DNS	500	FY09	Y
9	30	Strom Drain Upgrades	TBD 9	NMD	DNS	500	FY09	Y
10	50	Exterior Fighting Positions	TBD 10	NMD	DNS	3,500	FY09	Y
11	60	Fence 6, Vehicle Barrier	TBD 11	NMD	DNS	500	FY09	Y

Appendix

A

Attachment E-1, Facility Disposition Plan for Y-12 NSC Within FYNSP

Attachment E-1
Facilities Disposition Plan
(Within FYNSP/Outyear Planning Targets)

Funding Source	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Priority Score	Priority Rank	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Contaminated (Y or N)	Notes
FIRP	9102-01	Office Building 9102-01	RTBF	Completed	Completed	6,713	2006	2006	NA	$75	No	
FIRP	9102-02	Office Building 9102-02	RTBF	Completed	Completed	5,905	2006	2006	NA	$66	No	
FIRP	9206-00	Production (Rooms 21, 21A, 22, 23)	RTBF	Completed	Completed	4,522	2005	2006	NA	$50	Yes	9206 - Historic; FIRP funds demo after RTBF D&D
FIRP	9510-02	Disposal Pit	RTBF	Completed	Completed	787	2005	2006	NA	$9	No	
FIRP	9704-01	Office	RTBF	Completed	Completed	9,324	2006	2006	NA	$104	No	
FIRP	9711-01	Library & Office (Partial Bldg Demolition)	RTBF	Completed	Completed	22,665	2006	2006	NA	$252	No	
FIRP	9712-00	Garage & Stores	RTBF	Completed	Completed	33,444	2006	2006	NA	$372	No	9712 - New Garage
FIRP	9720-04	Storage & Maintenance	RTBF	Completed	Completed	13,330	2006	2006	NA	$148	No	9720-04 - New Records Facilities
FIRP	9738-00	General Shops	DSW	Completed	Completed	8,277	2006	2006	NA	$92	No	9738 - Historic
FIRP	9771-00	Old Mail Building	RTBF	Completed	Completed	2,241	2006	2006	NA	$25	No	
FIRP	9983-00	Radon Facility	RTBF	Completed	Completed	1,225	2006	2006	NA	$14	No	
FIRP	9985-00	Fire Alarm Monitor Sta.	RTBF	Completed	Completed	73	2006	2006	NA	$1	No	
						108,506				**$1,207**		
FIRP	9720-06	Maintenance & Lab	RTBF	Completed	Completed	74,555	2007	2007	$4,100	$829	No	9720-06 - Historic; Relocate Maintenance
FIRP	9104-01	Offices	RTBF	Completed	Completed	5,378	2007	2007	$450	$60	No	
FIRP	9104-02	Offices	RTBF	Completed	Completed	5,378	2007	2007	$450	$60	No	
FIRP	9104-03	Offices	RTBF	Completed	Completed	5,378	2007	2007	$450	$60	No	
FIRP	9720-03	Packing and Shipping	RTBF	Completed	Completed	12,512	2007	2007	$2,200	$139	No	9720-03 - Relocate Function
						103,201			**$7,650**	**$1,148**		
FIRP	9706-01	Office	RTBF	In progress	3	6,950	2008	2008	$348	$77	No	
FIRP	9706-01A	Office	RTBF	In progress	3	8,378	2008	2008	$419	$93	No	
FIRP	9711-05	Cafeteria, Plant Records	RTBF	In progress	2	56,382	2008	2008	$4,229	$627	Yes	
FIRP	9733-01	Offices	RTBF	In progress	2	14,841	2008	2008	$742	$165	No	9733-01 - Historic
FIRP	9733-02	Offices	RTBF	In progress	2	15,004	2008	2008	$750	$167	No	9733-02 - Historic
FIRP	9733-03	Offices	RTBF	In progress	2	11,775	2008	2008	$589	$131	No	9733-03 - Historic

Attachment E-1 (cont.)
Facilities Disposition Plan
(Within FYNSP/Outyear Planning Targets)

Funding Source	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Priority Score	Priority Rank	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Contaminated (Y or N)	Notes
FIRP	9734-00	Offices & Labs.	RTBF	In progress	2	11,748	2008	2008	$587	$131	No	9734 - Historic
FIRP	9739-00	Reproduction & Offices	RTBF	In progress	2	24,279	2008	2008	$1,214	$270	No	9739 - Historic
						149,357			**$8,877**	**$1,661**		
TD	9709-00	Training & Warehouse	RTBF	88	1	53,757	2008	2009	$4,500	$598	No	
TD	9766-00	Offices	RTBF	88	1	36,846	2008	2009	$5,526	$410	Yes	
TD	9404-04	Pumphouse	RTBF	76	2	5,525	2008	2009	$1,500	$61	No	9404-04 - Historic
TD	9404-02	Plant & Instr. Air Comps.	RTBF	76	2	4,585	2009	2009	$1,200	$51	No	
TD	9201-5	Production (Alpha 5)	RTBF	84	2	0	2009	2011	$8,000	$900,000	Yes	Assumes 9201-5 transfers to EM in 2011
TD	9204-4	Production (Beta 4)	RTBF	84	2	0	2009	2011	$5,000	$400,000	Yes	Assumes 9204-4 transfers to EM in 2011
TD	9206	Production	RTBF	80	3	0	2000	2011	$4,000	$300,000	Yes	Assumes 9206 transfers to EM in 2011
						100,713			**$29,726**	**$1,601,120**		
TD	9769-00	Laboratory	RTBF	76	2	20,050	2005	2010	$1,000	$0	Yes	Assumes 9769 transfers to EM in 2010
TD	9201-5	Production (Alpha 5)	RTBF	84	1	0	2009	2011	$12,000	$900,000	Yes	
TD	9204-4	Production (Beta 4)	RTBF	84	1	0	2009	2011	$7,000	$400,000	Yes	
TD	9206	Production (Remaining Portion)	RTBF	80	1	0	2000	2011	$2,000	$300,000	Yes	
TD	9993-00	Storage	RTBF	60	3	2,527	2010	2010	$200	$28	No	
TD	9983-FD	Office Space	RTBF	52	4	1,307	2010	2010	$196	$15	No	
TD	9983-FE	Office Space	RTBF	52	4	1,307	2010	2010	$196	$15	No	
TD	9983-FF	Office Space	RTBF	52	4	1,307	2010	2010	$196	$15	No	
TD	9983-FG	Office Space	RTBF	52	4	1,307	2010	2010	$196	$15	No	
						27,805			**$22,984**	**$1,600,086**		
TD	9201-5	Production (Alpha 5)	RTBF	84	1	613,642	2009	2011	$5,000	$900,000	Yes	Assumes 9201-5 has transferred to EM
TD	9204-4	Production (Beta 4)	RTBF	84	1	313,771	2009	2011	$11,000	$400,000	Yes	Assumes 9204-4 has transferred to EM
TD	9206	Production (Remaining Portion)	RTBF	80	1	57,812	2000	2011	$2,400	$300,000	Yes	Assumes 9206 has transferred to EM
TD	9401-3	Steam Plant	RTBF	80	1	62,124	2010	2011	$5,000	$691	No	Assumes 9401-3 has transferred to EM or TD funds demolition

Attachment E-1 (cont.)
Facilities Disposition Plan
(Within FYNSP/Outyear Planning Targets)

Funding Source	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Priority Score	Priority Rank	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Contaminated (Y or N)	Notes
TD	9720-17	Warehouse/Industrial	RTBF	84	2	4,314	2011	2011	$647	$48	No	9720-17 - Historic
TD	9706-02	Medical & Office	RTBF	92	2	27,475	2009	2011	$4,121	$306	Yes	9706-02 - Historic
TD	9727-04A	Annex Building for 9727-04	RTBF	84	2	977	2011	2011	$195	$11	No	
TD	9105-00	Fusion Eng Office Bldg	RTBF	80	4	7,667	2009	2011	$1,150	$85	No	
TD	9744-00	Utilities	RTBF	84	2	9,081	2011	2011	$1,362	$101	No	
TD	9422-12	Storm Drain Monitoring Station	RTBF	76	3	62	2011	2011	$16	$1	No	
TD	9416-14	Utilities	RTBF	56	3	44	2011	2011	$7	$0	No	
TD	9720-19	Rubber Shop	DSW	76	2	6,048	2010	2011	$907	$67	Yes	
TD	9720-19A	Rubber Shop	DSW	76	2	1,515	2010	2011	$227	$17	Yes	
TD	9720-19B	Rubber Shop	DSW	76	2	2,450	2010	2011	$368	$27	Yes	
TD	9720-46	Material Storage	RTBF	56	3	3,026	2011	2011	$454	$34	No	
						1,110,008			**$43,385**	**$1,601,388**		
TD	9731	Former Pilot Plant	RTBF		2	37,159	2010	2012	$3,200	$413	Yes	Assumes 9731 has transferred to EM
TD	9703-15	Storage, Fabrication & Offices	RTBF	56	4	13,050	2010	2012	$1,958	$145	No	9703-15 - Relocate Construction
TD	9703-16	Construction	RTBF	56	4	9,614	2010	2012	$1,442	$107	No	9703-16 - Relocate Construction
TD	9404-09	Rubber Shop	DSW	76	2	4,057	2012	2012	$609	$45	Yes	9404-09 - Historic
TD	9725-00	Machine Tool Storage	RTBF	76	1	6,435	2009	2012	$644	$72	No	9725 - Relocation Function
TD	9720-47	Shed - Sodium Hypochlorite	DSW	76	2	3,360	2012	2012	$504	$37	No	
TD	9805-01	Gas House	DSW	76	2	5,800	2012	2012	$870	$64	No	9805-01 - Historic
TD	9808-00	Maintenance	DSW	76	2	7,540	2012	2012	$1,131	$84	No	
TD	9976-00	Utilities	RTBF	76	2	2,797	2012	2012	$420	$31	No	
TD	9977-00	Utility	RTBF	76	2	248	2012	2012	$37	$3	No	9977 - Historic
TD	9611-02	Sewer Ejection Station	RTBF	52	3	81	2012	2012	$12	$1	Yes	
						90,141			**$7,626**	**$589**		
TD	9724-01	TSD Parking Facility	RTBF	84	1	298	2013	2013	$45	$3	No	
TD	9816-00	Training	RTBF	84	1	633	2013	2013	$95	$7	No	

Attachment E-1 (cont.)
Facilities Disposition Plan
(Within FYNSP/Outyear Planning Targets)

Funding Source	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Priority Score	Priority Rank	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Contaminated (Y or N)	Notes
TD	9111-00	Office-Engineering	RTBF	56	4	13,717	2009	2013	$2,743	$153	No	
TD	9112-00	Office-Engineering	RTBF	56	4	11,804	2009	2013	$2,361	$131	No	
TD	9723-14	Offices	RTBF	76	1	12,532	2009	2013	$1,880	$139	No	
TD	9817-01	Training	RTBF	84	1	824	2013	2013	$124	$9	No	
TD	9817-02	Fire & Drill Training Fac.	RTBF	84	1	617	2013	2013	$93	$7	No	
TD	9819-00	Records Storage	RTBF	84	1	835	2013	2013	$125	$9	No	
TD	9404-20	Pump House	DSW	76	2	2,751	2013	2013	$413	$31	No	
TD	9720-27	Reactive Metal Storage	RTBF	76	2	1,299	2013	2013	$195	$14	No	
TD	9420-00	Construction Shop	RTBF	56	3	27,341	2013	2013	$2,734	$304	No	
TD	9720-15	Paint Shop	RTBF	56	3	5,065	2013	2013	$760	$56	No	
						77,716			**$11,566**	**$864**		
TD	9201-3	Maintenance Operations (Alpha 3)	RTBF		1	0	2013	2015	$4,800	$2,135		Assumes new maintenance facility by 2013
TD	9722-02	Emergency Power	RTBF	84	1	663	2014	2014	$99	$7	No	9722-02 - Historic
TD	9219-00	Maintenance Shop	RTBF	76	2	7,370	2014	2014	$1,106	$82	No	
TD	9404-03A	Pumphouse	RTBF	76	2	1,063	2014	2014	$159	$12	No	
TD	9416-18	Utilities, 9416-18	RTBF	76	2	50	2014	2014	$8	$1	No	
TD	9416-21	Utilities, 9416-21	RTBF	76	2	44	2014	2014	$7	$0	No	
TD	9417-09	Dechlorination Fac, Monitor Sta	RTBF	76	2	100	2014	2014	$15	$1	No	
TD	9732-01	General Shops	RTBF	76	2	754	2014	2014	$113	$8	No	
TD	9732-03	Painter Facility	RTBF	76	2	2,447	2014	2014	$367	$27	No	9732-03 - Historic
TD	9989-00	So2 Monitor Station	RTBF	76	2	48	2014	2014	$7	$1	No	
						12,539			**$1,881**	**$139**		
TD	9201-3	Maintenance Operations (Alpha 3)	RTBF		1	191,978	2013	2015		$2,135		Assumes 9201-3 has transferred to EM
TD	9409-04	Cooling Tower	RTBF	60	3	0	2014	2015	$0	$0	No	
TD	1501-01	Elza Switchyard Equip. Room	RTBF	56	4	2,755	2014	2015	$413	$31	No	1501-01 - Historic

Attachment E-1 (cont.)
Facilities Disposition Plan
(Within FYNSP/Outyear Planning Targets)

Funding Source	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Priority Score	Priority Rank	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Contaminated (Y or N)	Notes
TD	9404-05	Paint Shop	RTBF	56	4	5,813	2014	2015	$872	$65	No	
TD	9404-24	Fire Water Pump House	RTBF	56	4	1,043	2014	2015	$156	$12	No	
TD	9701-05	Waiting Rm., E. Portal	RTBF	56	4	640	2014	2015	$96	$7	No	
TD	9702-00	Telephone & Telegraph	RTBF	56	4	1,860	2014	2015	$279	$21	No	
TD	9720-20	Maint. Shops & Offices	RTBF	56	4	5,164	2014	2015	$775	$57	No	
TD	9752-00	Utilities	RTBF	56	4	1,182	2014	2015	$177	$13	No	9752 - Historic
TD	9767-09	Transformer	RTBF	56	4	211	2014	2015	$32	$2	No	
TD	9826-00	Truck Scales	RTBF	56	4	1,494	2014	2015	$224	$17	No	
TD	9826-02	Computer Bldg. For Truck Scales	RTBF	56	4	90	2014	2015	$14	$1	No	
TD	9108-00	Office Building 9108	RTBF	76	1	7,544	2014	2015	$1,132	$84	No	
TD	9720-39	Cold Storage Warehouse	RTBF	52	5	8,193	2014	2015	$1,229	$91	No	
						227,967			**$5,398**	**$400**		

Appendix

B

Attachment E-1a, Facility Disposition Plan for Y-12 NSC Above FYNSP or Funding Is TBD

Attachment E-1a
Facilities Disposition Plan
(Above FYNSP/Funding Is "TBD")

HQ Program Office	Facility Identification Number (FIMS)	Facility Name	Mission Dependency Program	Gross Square Footage (gsf)	Excess Year	Estimated Disposition Year	TEC to Disposition ($000s)	Yearly S&M Costs ($000s)	Candidate for Transfer	Contaminated (Y or N)	Notes
DOE NE	9204-03	Isotope Separations	NE	255,656	TBD	TBD	TBD	$2,843	Yes	Yes	Deactivation Only / National Landmark Status
DOE SC	9743-02	Pigeon Quarters (Biology)	SC	2,731	2009	TBD	TBD	$30	Yes	Yes	9743-02 - Historic
DOE SC	9207-00	Biology	SC	264,768	2009	TBD	TBD	$2,944	Yes	Yes	9207 - Historic
DOE SC	9210-00	Mammalian Genetics (Biology)	SC	64,737	2009	TBD	TBD	$720	Yes	Yes	9210 - Historic
DOE SC	9220-00	Virus Control Lab (Biology)	SC	22,211	2009	TBD	TBD	$247	Yes	Yes	
DOE SC	9767-06	Utilities (Biology)	SC	400	2009	TBD	TBD	$4	Yes	Yes	
DOE SC	9770-02	Radiation Source Bldg. (Biology)	SC	155	2009	TBD	TBD	$2	Yes	Yes	9770-02 - Historic
DOE SC	9211-00	Co-Carcinogenesis (Biology)	SC	83,471	2009	TBD	TBD	$928	Yes	Yes	9211 - Historic
DOE SC	9224-00	Cell Fractionation System (Biology)	SC	10,080	2009	TBD	TBD	$112	Yes	Yes	
DOE SC	9204-01	Fusion Energy-Eng Tech	SC	210,491	TBD	TBD	TBD	$2,341	Yes	Yes	9204-01 - Historic
DOE SC	9201-02	Fusion Energy Building	SC	324,448	TBD	TBD	TBD	$3,608	Yes	Yes	9201-02 - Historic
NNSA	9731-00	Offices & Labs.	RTBF	37,159	2010	TBD	TBD	$413	Yes	Yes	Deactivation Only / National Landmark Status
NNSA	9769-00	Laboratory	RTBF	20,050	2005	TBD	TBD	$223	Yes	Yes	
NNSA	9206	Production (Remaining Portion)	RTBF	64,497	2000	TBD	TBD	$1,360	Yes	Yes	9206 - Historic; RTBF D&D Funding
NNSA	9204-04	Forming and Storage Operations	RTBF	313,771	2009	TBD	TBD	$3,489	Yes	Yes	9204-04 - Historic; Relocate Remaining Operations
NNSA	9201-05	Special Materials	RTBF	613,642	2009	TBD	TBD	$6,824	Yes	Yes	9201-05 - Historic; Relocate Remaining Operations
NNSA	9401-3	Steam Plant	RTBF	62,124	2010	TBD	TBD	$691	Yes	No	
NNSA	9201-03	Alpha 3, Eng Tech Div Ctr	RTBF	222,912	2013	TBD	TBD	$2,479	Yes	Yes	9201-03 - Historic
DOE EM	9735-00	Research Services	EM	15,043	2009	TBD	TBD	$167	No	Yes	9735 - Historic
DOE EM	9401-02	Plating Shop & Maint.	EM	13,673	2009	TBD	TBD	$152	No	No	9401-02 - Historic
DOE EM	9213-00	Development/Offices	EM	23,635	2009	TBD	TBD	$263	No	Yes	9213 - Historic
DOE EM	9201-04	Alpha 4-Gen. Plant Maint.	EM	510,218	2009	TBD	TBD	$5,674	No	Yes	9201-04 - Historic
EM, NNSA, SC/NE	Varies (41 total)	Ancillary Facilities	EM, NNSA, SC/NE	173,440	TBD	TBD	TBD	TBD	Yes	Yes	
			Total:	**2,786,157**							

Notes:

1. Attachment E-1a includes all NNSA facilities except for 9212, contained in the scope of the IFDP. Building 9212 disposition will occur after 2018. The IFDP project is currently in CD-1 development and, therefore, no definitive estimated disposition year or TEC information is available at this time.

2. The CD-0 for IFDP was approved in 2007.

3. The estimated disposition year and TEC to Disposition will be included with the CD-1 submission later in FY 2008.

Appendix

C

Attachment E-2, New Construction Added to Y-12 NSC

Attachment E-2
New Construction Footprint Added, FY 2006–2018 for Y-12 NSC

Funding Source	Project Number	Facility Name	Mission Dependency Program	Funding Type (LI, GPP, IGPP)	Project Area (GSF)	Year of Beneficial Occupancy	Notes
FIRP	FI04Y009	TSF 1, Building 9733-5	RTBF	GPP	12,720	2006	
FIRP	FI04Y007	East End Records Facility, Building 9720-94	DSW	GPP	9,087	2006	
FIRP	FI04Y010	Vehicle Maintenance Bays, Building 9712-1N	RTBF	GPP	19,971	2006	
NNSA	Unknown	OST Changehouse, Building 9723-35	STA	GPP	1,080	2006	
NNSA	Unknown	CTF 1654AA Range Training Facilityy	RTBF	GPP	12,000	2007	
NNSA	Unknown	9949-AE Guard Portal	STA	GPP	48	2007	
NNSA	Unknown	9949-AG Guard Portal	STA	GPP	48	2007	
NNSA	Unknown	9949-AN Guard Portal	STA	GPP	120	2007	
FIRP	06-D-603	Steam Plant	RTBF	LI	19,200	2009	
FIRP	06-D-160.4	Potable Water Tanks Support Bldgs.	RTBF	LI	3,888	2010	
RTBF	06-D-124	HEUMF	RTBF	LI	110,000	2008	
RTBF	TBD	Complex Command Center	RTBF	Alternate Financing	48,000	2010	
FS-20	09-D-xxx / 05-D-170.2	Security Improvement Project	RTBF	LI	4,000	2012	
RTBF	10-D-XXX / 06-D-140	Uranium Processing Facility	DSW	LI	350,000	2016	
Total					**590,162**		

Appendix

D

Attachment E-3, Leased Space at Y-12 NSC

Attachment E-3
FY 2008 Leased Space at Y-12 NSC

#	FIMS No.	Property Name	Mission Dependency Program	Mission Dependency	No. Occupants	Gross Square Footage	Rental Rate per Rentable s.f.	Annual Cost ($)	Lease Type	Lease Term (years)	Exp. Month/Year	Renewal Options
139597	1099 Commerce Park	Accounting, Comptroller	RTBF	NMC	101	50,078	$20.12	1,119,000	Full	5	Sept/2008	3
98123	113c Union Valley Rd	Oak Ridge Research Institute	RTBF	NMC	38	28,253	$27.04	1,338,897	Full	10	Oct/2010	10
201506	115 Union Valley Road	Materials Shipping/Receiving	RTBF	NMC	26	28,800	$10.04	289,263	Full	1	Feb/2009	-
201391	200 Summit Place	Records Storage Facility	RTBF	NMC	11	24,585	$26.72	726,965	Full	10	Oct/ 2017	5
204358	301 BCR	Jack Case Office Building	RTBF	MDNC	931	411,837	$34.61	15,023,292	Full	5	May/2012	3
204359	602 SCA	New Hope Center	RTBF	MDNC	268	137,758	$34.61	5,018,887	Full	5	May/2012	3
						681,311		**23,516,304**				

Appendix

E

Attachment E-4, Footprint Tracking Summary for Y-12 NSC

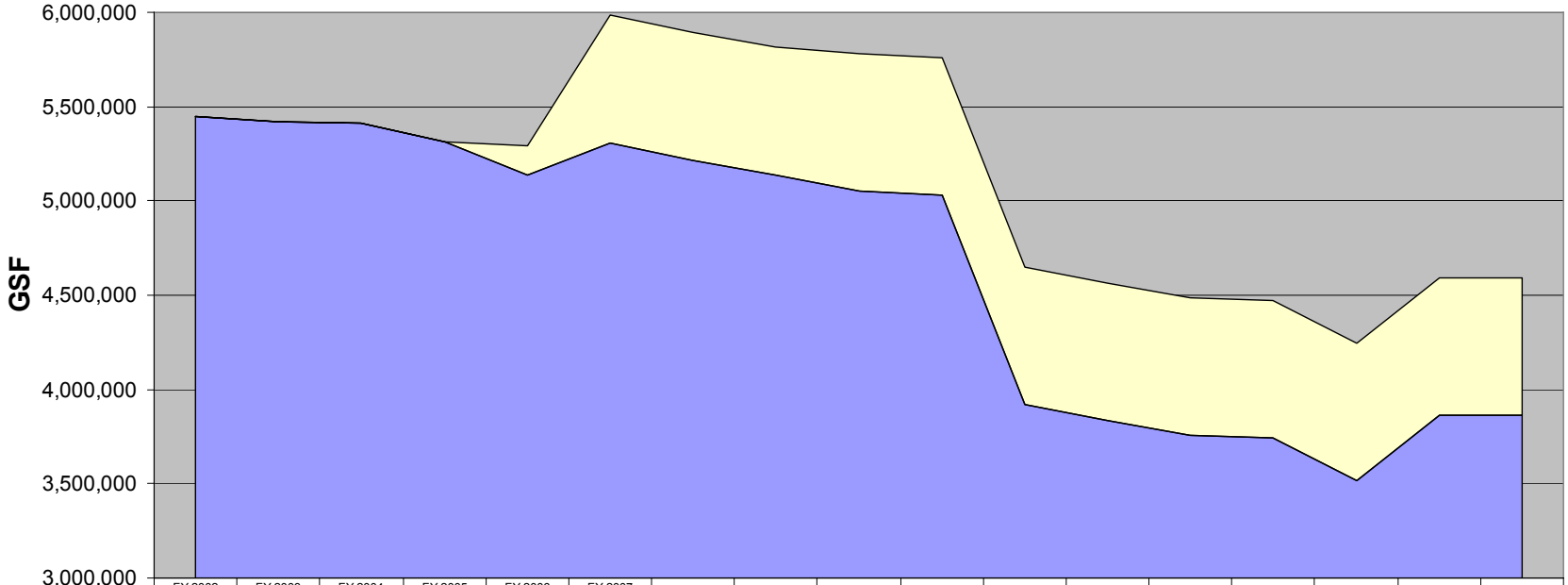
Attachment E-4a
Footprint Tracking Summary Spreadsheet
for the Y-12 National Security Complex – NNSA

Fiscal Year	Beginning Site Footprint (gsf	Excess Facilities Footprint Elimination (gsf)	New Construction/ Footprint Added (gsf)	Site Footprint Total by FY (gsf)	Footprint "Banked" (gsf)	Waiver/ Transfer (gsf) (See Notes)	Grandfathered Footprint Added (gsf)	Cumulative Grandfathered Footprint Added (gsf)	NNSA Site Total Footprint (gsf)	NNSA Leased Space	Weapons Activities Account (gsf)
FY 2002 Actual	5,448,657	-250,404	0	5,198,253	-250,404	220,989	0	0	5,198,253		N/A
FY 2003 Actual	5,419,242	-117,838	276	5,301,680	-367,966	111,592	0	0	5,301,680		NA
FY 2004 Actual	5,413,272	-108,065	6,700	5,311,907	-469,331	0	0	0	5,311,907		N/A
FY 2005 Actual	5,311,907	-207,830	18,185	5,122,262	-658,976	16,748	0	0	5,122,262		N/A
FY 2006 Actual	5,139,010	-108,506	42,858	5,073,362	-724,624	231,802	0	0	5,073,362	155,553	108,506
FY 2007 (Actual)	5,305,164	-103,684	12,216	5,213,696	-816,092	0	0	0	5,213,696	681,311	103,684
FY 2008	5,213,696	-149,357	110,000	5,174,339	-855,449	-40,835	0	0	5,174,339	681,311	149,357
FY 2009	5,133,504	-100,713	19,200	5,051,991	-936,962	0	0	0	5,051,991	681,311	100,713
FY 2010	5,051,991	-7,758	3,888	5,048,121	-940,832	-20,050	0	0	5,048,121	729,311	27,808
FY 2011	5,028,071	-62,659	0	4,965,412	-1,003,491	-1,047,349	0	0	4,965,412	729,311	1,110,008
FY 2012	3,918,060	-52,982	4,000	3,869,078	-1,114,597	-37,159	0	0	3,869,078	729,311	90,141
FY 2013	3,831,919	-77,716	0	3,754,203	-1,192,313	0	0	0	3,754,203	729,311	77,716
FY 2014	3,754,203	-12,539	0	3,741,664	-1,204,852	0	0	0	3,741,664	729,311	12,539
FY 2015	3,741,664	-35,989	0	3,705,675	-1,240,841	-191,978	0	0	3,705,675	729,311	227,967
FY 2016	3,513,697	0	350,000	3,863,697	-890,841	0	0	0	3,863,697	729,311	0
FY 2017	3,863,697	0	0	3,863,697	-890,841	0	0	0	3,863,697	729,311	0
FY 2018	3,863,697	0	0	3,863,697	-890,841	0	0	0	3,863,697	729,311	0

Notes:

1. Values in this column reflect programmatic transfers of facilities within the Y-12 NSC. "Beginning Site Footprint" has been modified to include this field in the calculation.
2. 111,592 GSF adjusted in FIMS to reflect field measurements.
3. 40,835 GSF are Office of Secure Transportation facilities not located on Y-12 site and are reflected in their FIMS site.

Attachment E-4a
Y-12 NSC Site Space Tracking Summary - NNSA



	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 (Actual)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
NNSA Leased Space (10)					155,553	681,311	681,311	681,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311
Beginning Site Footprint (gsf) (2)	5,448,657	5,419,242	5,413,272	5,311,907	5,139,010	5,305,164	5,213,696	5,133,504	5,051,991	5,028,071	3,918,063	3,831,922	3,754,206	3,741,667	3,513,700	3,863,700	3,863,700

Attachment E-4b
Footprint Tracking Summary Spreadsheet
for the Y-12 National Security Complex – Sitewide (Multi-Program)

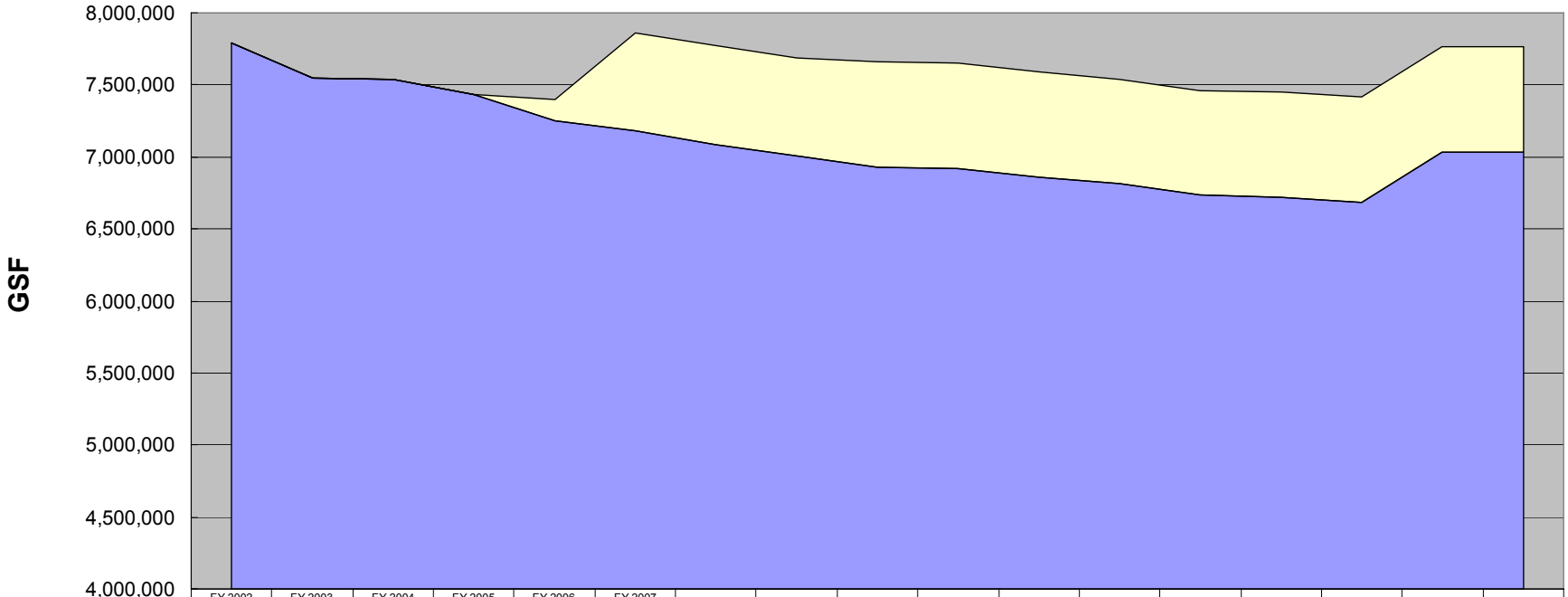
Fiscal Year	Beginning Site Footprint (gsf)	Excess Facilities Footprint Elimination (gsf)	New Construction Footprint Added (gsf)	Site Footprint Reduction by FY	Footprint "Banked" (gsf)	Waiver/Transfer (gsf) (See Notes)	Grandfathered Footprint Added (gsf)	Cumulative Grandfathered Footprint Added (gsf)	Site Total Footprint (Multi-Program) (gsf)	Leased Space
FY 2002 Actual	7,793,677	-250,404	0	7,543,273	-250,404		0	0	7,543,273	
FY 2003 Actual	7,543,273	-117,838	276	7,425,711	-367,966	111,592	0	0	7,425,711	
FY 2004 Actual	7,537,303	-108,065	6,700	7,435,938	-469,331		0	0	7,435,938	
FY 2005 Actual	7,435,938	-207,830	18,185	7,246,293	-658,976		0	0	7,246,293	
FY 2006 Actual	7,246,293	-108,506	42,858	7,180,645	-724,624		0	0	7,180,645	155,553
FY 2007 Actual	7,180,645	-103,684	12,216	7,089,177	-816,092		0	0	7,089,177	681,311
FY 2008	7,089,177	-149,357	110,000	7,049,820	-855,449	-40,835	0	0	7,049,820	681,311
FY 2009	7,008,985	-100,713	19,200	6,927,472	-936,962		0	0	6,927,472	681,311
FY 2010	6,927,472	-7,758	3,888	6,923,602	-940,832		0	0	6,923,602	729,311
FY 2011	6,923,602	-62,659	0	6,798,819	-1,065,615		0	0	6,798,819	729,311
FY 2012	6,798,819	-52,982	4,000	6,749,837	-1,114,597		0	0	6,749,837	729,311
FY 2013	6,749,837	-77,716	0	6,672,121	-1,192,313		0	0	6,672,121	729,311
FY2014	6,672,121	-12,539	0	6,659,582	-1,204,852		0	0	6,659,582	729,311
FY2015	6,659,582	-35,989	0	6,623,593	-1,240,841		0	0	6,623,593	729,311
FY 2016	6,623,593	0	350,000	6,973,593	-890,841		0	0	6,973,593	729,311
FY 2017	6,973,593	0	0	6,973,593	-890,841		0	0	6,973,593	729,311
FY 2018	6,973,593	0	0	6,973,593	-890,841		0	0	6,973,593	729,311

Notes:

1: 111,592 GSF adjusted in FIMS to reflect field measurements.

2: 40,835 GSF are Office of Secure Transportation facilities not located on Y-12 site and are reflected in their FIMS site.

Attachment E-4b
Y-12 NSC Footprint Tracking Summary - Sitewide (Multi-Program)



	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Actual	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY2014	FY2015	FY 2016	FY 2017	FY 2018
Leased Space (10)					155,553	681,311	681,311	681,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311	729,311
Beginning Site Footprint (gsf) (2)	7,793,677	7,543,273	7,537,303	7,435,938	7,246,293	7,180,645	7,089,177	7,008,985	6,927,472	6,923,602	6,860,943	6,811,961	6,734,245	6,721,706	6,685,717	7,035,717	7,035,717

Note: IFDP demolitions are currently unfunded. The above graph reflects the status of the site footprint after transfer of facilities from NNSA to DOE-EM but without required funding for their demolition.

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Appendix

F

Attachment C, Projects Seeking or Registered for LEED Certification

Attachment C

DOE New Building and Major Renovation Projects Seeking or Registered for Leadership in Energy and Environmental Design (LEED) Certification

Program	NNSA	NNSA	NNSA
Site	Y-12 NSC	Y-12 NSC	Y-12 NSC
Project Title	**Uranium Processing Facility**	**Complex Command Center**	**Alternative Financing Project**
USGBC or Equivalent Project ID	TBD	NA	TBD
FIMS Property ID CD-4 and Higher	NA	NA	602 SCA
FIMS Property Description CD-4 and Higher	Uranium Processing Facility	Complex Command Center	New Hope Center
LEED or Equivalent Rating System	TBD	LEED NC	LEED NC
Critical Decision Level	CD-1	CD-0	CD-5
Gross Square Footage	350,000	50,000	137,758
Building Construction Cost	$1.2B–3.5B	$42M–137M	$49.4M
USGBC or Equivalent Registration Date	NA	NA	April-06
Estimated Occupancy Date	2018	2010	Aug-07
Planned LEED or Equivalent Certification Level	TBD	Gold	Silver
LEED or Equivalent Certification Level Met and Date	TBD	NA	TBD
Notes	This project is under review for inclusion in meeting this requirement	Will be a leased facility	Onsite leased facility

Attachment C has been reformatted for the document. The Guidance-required Excel spreadsheet can be found on the compact disks provided with the transmittal of the TYSP.

Appendix

G

Abbreviations

ADAPT, Advanced Design and Production Technologies

B&W Y-12, Babcock & Wilcox Technical Services Y-12, LLC

BCPMS&R, DOE Business Center for Precious Metals Sales and Recovery

CAMP, Capital Asset Management Process

CCC, Complex Command Center

CD, critical decision

CMC, Consolidated Manufacturing Complex

CSMO, Central Scrap Management Office

D&D, decontamination and decommissioning

DBT, design basis threat

DM, deferred maintenance

DoD, U.S. Department of Defense

DOE, U.S. Department of Energy

DOE-EM, DOE Office of Environmental Management

DOE-HQ, DOE Headquarters

DOE-NE, DOE Office of Nuclear Energy

DOE-ORO, DOE Oak Ridge Operations Office

DOE-SC, DOE Office of Science

DP, Defense Programs

DP, DOE Office of Defense Programs

DSW, Directed Stockpile Work

DU, depleted uranium

ES&H, environment, safety, and health

ESPC, energy savings performance contact

EU, enriched uranium

FCI, facility condition index

FI&S, Facilities, Infrastructure, and Services

FIMS, Facility Information Management System

FIRP, Facilities and Infrastructure Recapitalization Program

FPU, first production unit

FRR, facility risk review

FY, fiscal year

FYNSP, Future Years National Security Plan

GPP, general plant project

GSF, gross square footage

HDPO, HEU Disposition Program Office

HEU, highly enriched uranium

HEUMF, Highly Enriched Uranium Materials Facility

ICPP, Integrated Construction Program Plan

IFDP, Integrated Facility Disposition Project

IHS, International & Homeland Security

JTA, joint test assembly

LANL, Los Alamos National Laboratory

LEP, Life Extension Program

LLCE, Life Component Exchange Program

LLNL, Lawrence Livermore National Laboratory

M&O, management and operating

MAA, material access area

MRR, material recycle and recovery

NNSA, National Nuclear Security Administration
NNSA-HQ, NNSA Headquarters
NNSA-YSO, NNSA Y-12 Site Office
NPR, Nuclear Posture Review
NSC, National Security Complex
NSP, National Security Programs
NTN, Nuclear Technology & Nonproliferation
NWC, Nuclear Weapons Complex
ORNL, Oak Ridge National Laboratory
ORR, Oak Ridge Reservation
OSF, other structure and facility
OST, Office of Secure Transportation
P&PD, Production and Planning Directive
PAAA, Price-Anderson Amendments Act
PARP, Protected Area Reduction Project
PIDAS, Perimeter Intrusion Detection and Assessment System
QE, quality evaluation
R&D, research and development
RCRA, Resource Conservation and Recovery Act
REST, retrofit evaluation systems test
RPV, replacement plant value
RRW, Reliable Replacement Warhead
RTBF, Readiness in Technical Base and Facilities
S&M, surveillance and maintenance
S&S, safeguards and security
SCIF, Special Compartmented Information Facility
SFT, stockpile flight test
SIP, Security Improvements Project
SLT, stockpile laboratory test
SNM, special nuclear material
SP&T, strategic planning and transformation
SPEIS, supplemental programmatic environmental impact statement
TD, transformation disposition
TYSP, Ten-Year Site Plan
U.S., United States
UPF, Uranium Processing Facility
VTR, vault-type room
Y-12, Y-12 National Security Complex
YTIP, Y-12 Throughput Improvement Plan

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