



# Environmental Programs at Los Alamos National Laboratory

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**Federal Project Director, Environmental Projects Office**  
**and**  
**Michael Graham**  
**Associate Director for Environmental Programs**  
**May 30, 2012**

# Presentation Overview

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- Organization
- Program Overview
- Clean-up Progress
- Framework Agreement
- Budget Request
- Top Issues/Challenges
- Path Forward

# Los Alamos Site Office

Kevin W. Smith  
Site Office Manager



## Office of the Manager



Juan Griego  
Deputy Manager

### Quality Assurance



Anita Leivo  
Manager

### Chief Counsel



Silas DeRoma  
Site Counsel

### Contract Administration



Bob Poole  
Supervisor

### National Security Missions



George J. Rael  
Assistant Manager

### Environmental Projects



Pete Maggiore  
Assistant Manager

### Safeguards and Security



Michael Duvall  
Assistant Manager

### Safety Operations



C. H. Keilers, Jr.  
Assistant Manager

### Field Operations



John Krepps  
Assistant Manager

### Business Administration



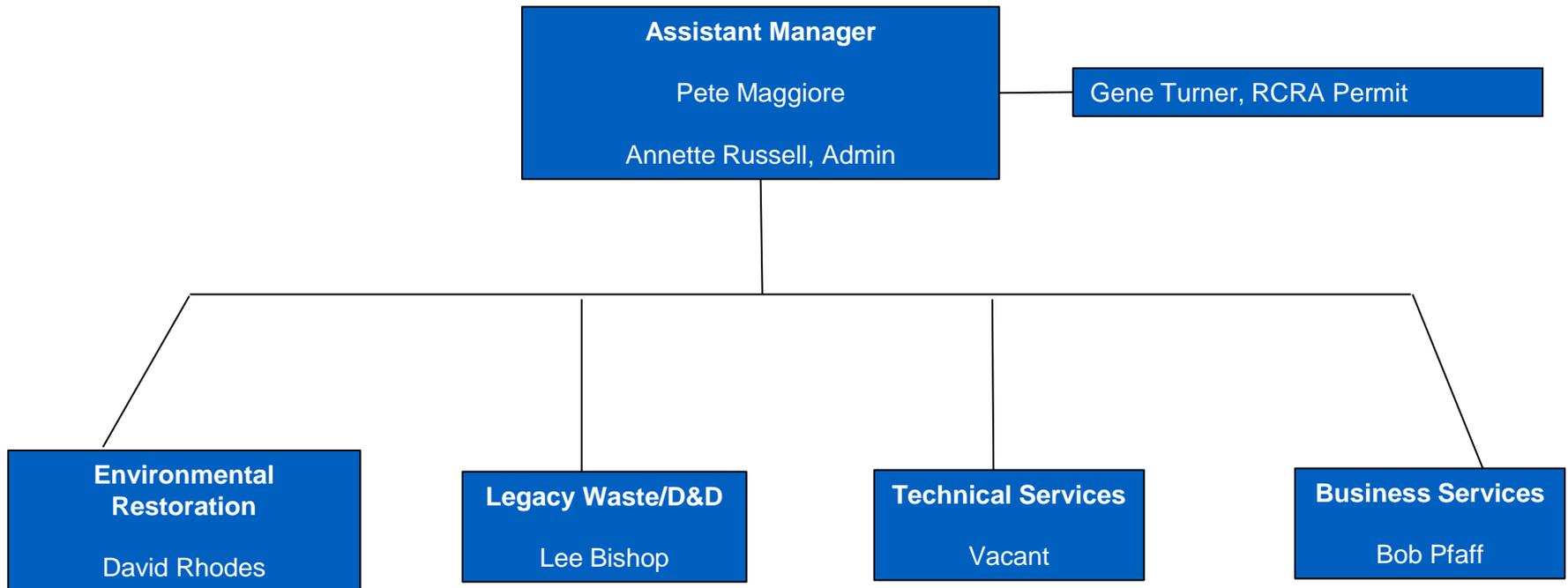
Timothy O'Leary  
Assistant Manager

### CMRR Project Office

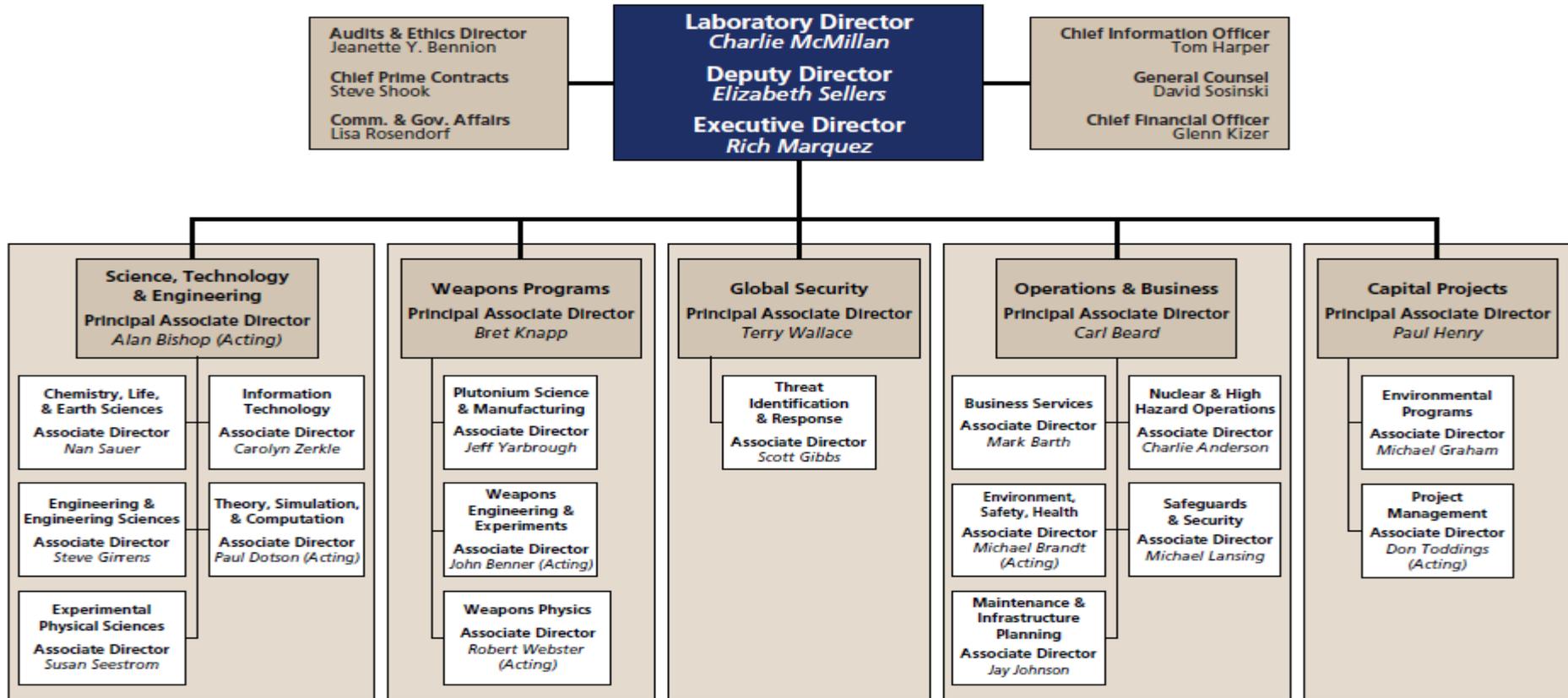


Herman C. Le-Doux  
Federal Project Director

# Environmental Projects Office

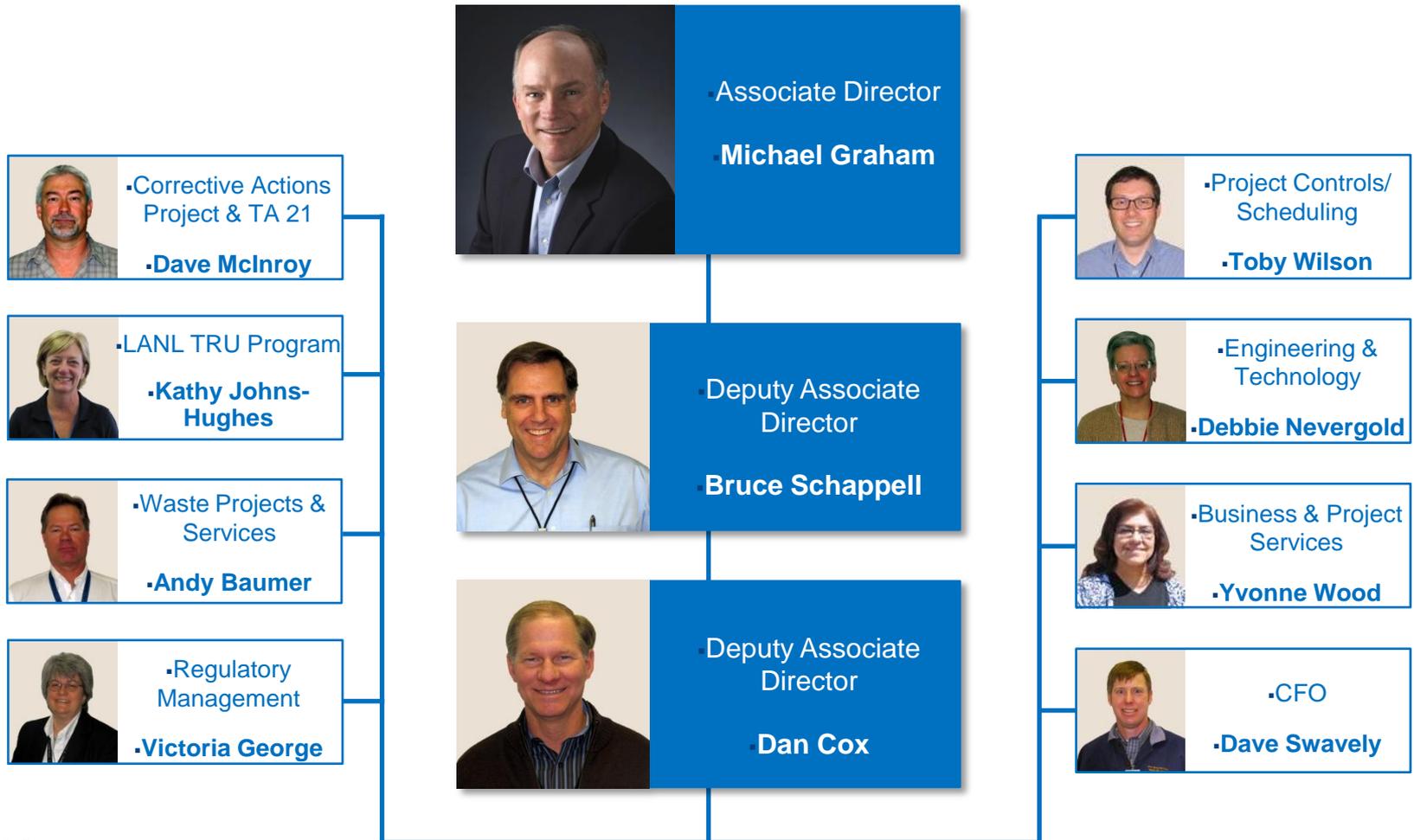


# Los Alamos National Security



05/21/12

# Associate Directorate Environmental Programs



# EM Cleanup Approach

- Conduct quality work in a safe and secure manner while protecting workers, communities and the environment
- Perform strategic reviews of site cleanup approaches to ensure maximum return on taxpayer investment
- Focus technology development and deployment investments on near-term solutions to address our most challenging problems
- Prioritize work based on risk and compliance
- Improve contract and project management



*•Transuranic waste being shipped for permanent disposal*

# Progress to Date and Challenges Ahead

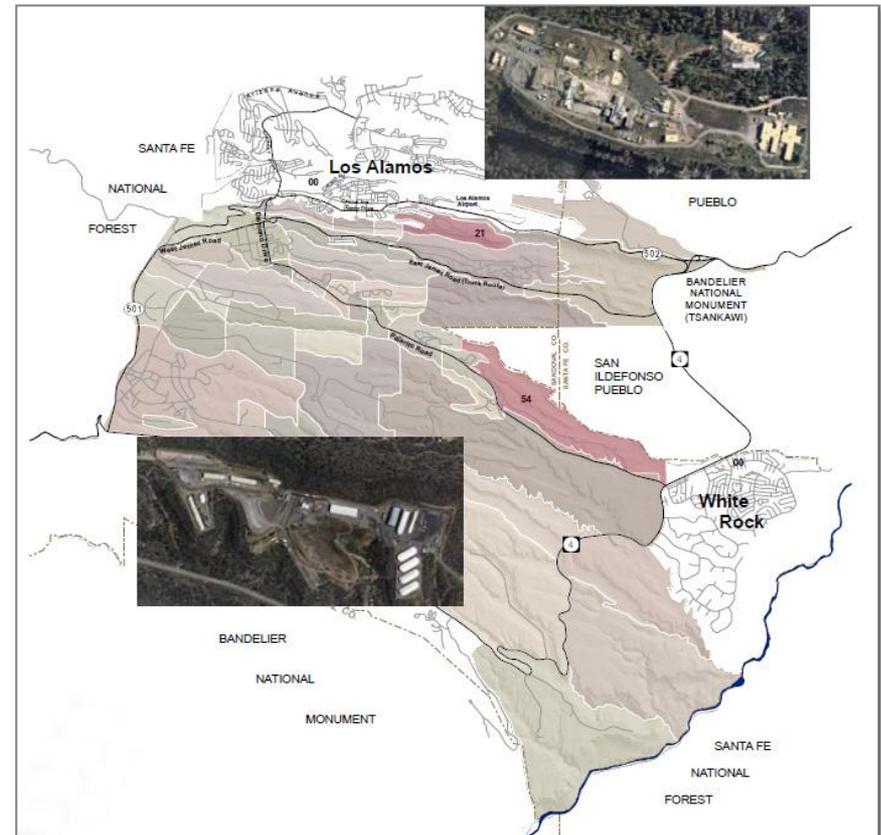
- In 1989, cleanup was required at **107 sites** with a total area of **3,125 square miles** across **35 states**.
- At the end of FY 2011, the remaining cleanup covers **17 sites** with a total area of **318 square miles** across **11 states**.
- The program's toughest challenges are still ahead, including processing liquid tank waste and deactivating and decommissioning a large number of facilities.
- These challenges require innovative technical solutions and scientific approaches.



*EM cleanup sites as of the end of FY 2011*

# LANL Environmental Programs Overview

- The mission:
  - Repack and ship legacy transuranic waste containers
  - Investigate and remediate Cold War (legacy) hazardous and radioactive waste areas
  - Demolish unused buildings
  - Disposition solid waste from Laboratory operations
  - Lifecycle cost nearly \$3 billion



# Consent Order Governs Much of Our Work

- Compliance Order on Consent (known as “Consent Order”)
  - Signed in March 2005
  - Mechanism for implementing RCRA corrective action
  - Signed by New Mexico Environment Department, NM Attorney General, DOE, and LANS (as successor)
  - Covers 2100+ legacy sites (large material disposal areas to small potential release sites)

STATE OF NEW MEXICO  
ENVIRONMENT DEPARTMENT

IN THE MATTER OF:

THE UNITED STATES DEPARTMENT OF ENERGY AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	)	COMPLIANCE ORDER ON CONSENT
	)	
	)	PROCEEDING UNDER
	)	THE NEW MEXICO
LOS ALAMOS NATIONAL LABORATORY)	)	HAZARDOUS WASTE
LOS ALAMOS COUNTY, NEW MEXICO,	)	ACT § 74-4-10 AND THE
	)	NEW MEXICO SOLID
RESPONDENTS.	)	WASTE ACT § 74-9-36(D)

MARCH 1, 2005  
(Revised June 18, 2008)

# Cleanup Progress to Date

- 2100+ original sites (approximately 1450 sites currently on LANL Permit)
  - Approximately half of the sites are completed
  - Of the remaining sites, completed initial investigation on approximately 90%
- 26 original Material Disposal Areas (MDAs)
  - Completed removal / cleanup on 10 (7 since 2007)
  - Completed investigation of 5 major MDAs (C,G,H, L & T)
  - Selecting remedies for MDAs G, H & L
  - Remainder in investigation phase
- Groundwater monitoring network in place
- Substantial monitoring and sediment controls installed
- Waste Isolation Pilot Plant Shipments
  - Over the last 3 years, transported more than 450 shipments safely to WIPP
  - New records for LANL TRU shipments were set each year



# Recovery Act Funds Provided a Boost

- Completed environmental remediation projects funded by the American Recovery and Reinvestment Act
  - \$212 million in ARRA funding provided boost to already-planned work
  - Decontamination and demolition of 24 Manhattan Project and Cold War-era buildings
  - Cleanup of about 6 acres to residential standards
  - Installation of 16 regional groundwater monitoring wells
  - Reduced footprint by ~175,000 square feet



# Excavation of Material Disposal Area B

- Part of ARRA work was excavation of MDA-B, an early Laboratory radioactive waste disposal area (1944-1948)
  - Contaminated clothing, lab materials and hazardous chemicals
  - Excavated about 45,000 cubic yards of contaminated soil and debris
  - Safely removed approximately 115 PE-Ci of plutonium from the 6-acre site



# Las Conchas Fire

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- June 2011: the largest fire in New Mexico history
- Transuranic waste at the Laboratory's Technical Area 54 received significant public and media attention
- Governor Martinez visited LANL during the fire



# Partnering with DOE/NNSA and NMED on Priorities



- Made the shift from lower-risk activities to address highest-risk above-ground TRU waste
- Continuing priority on protecting groundwater and surface water
- Extensions approved by regulator, plus streamlined approaches to work, has significantly reduced compliance costs so far in FY12
  - Similar steps under way for FY13



# Framework Agreement with NMED

- Increased attention to TRU waste stored above ground led to establishment of a new Framework Agreement with the New Mexico Environment Department
- Objective: remove 3,706 cubic meters of non-cemented above-ground TRU waste by June 30, 2014
- Provides a clear path forward
- Resources have been shifted to address agreed-upon priorities
- After progress has been demonstrated, DOE hopes to open Consent Order for realignment and extension



# FY 2013 Framework Oriented Budget ~\$239M

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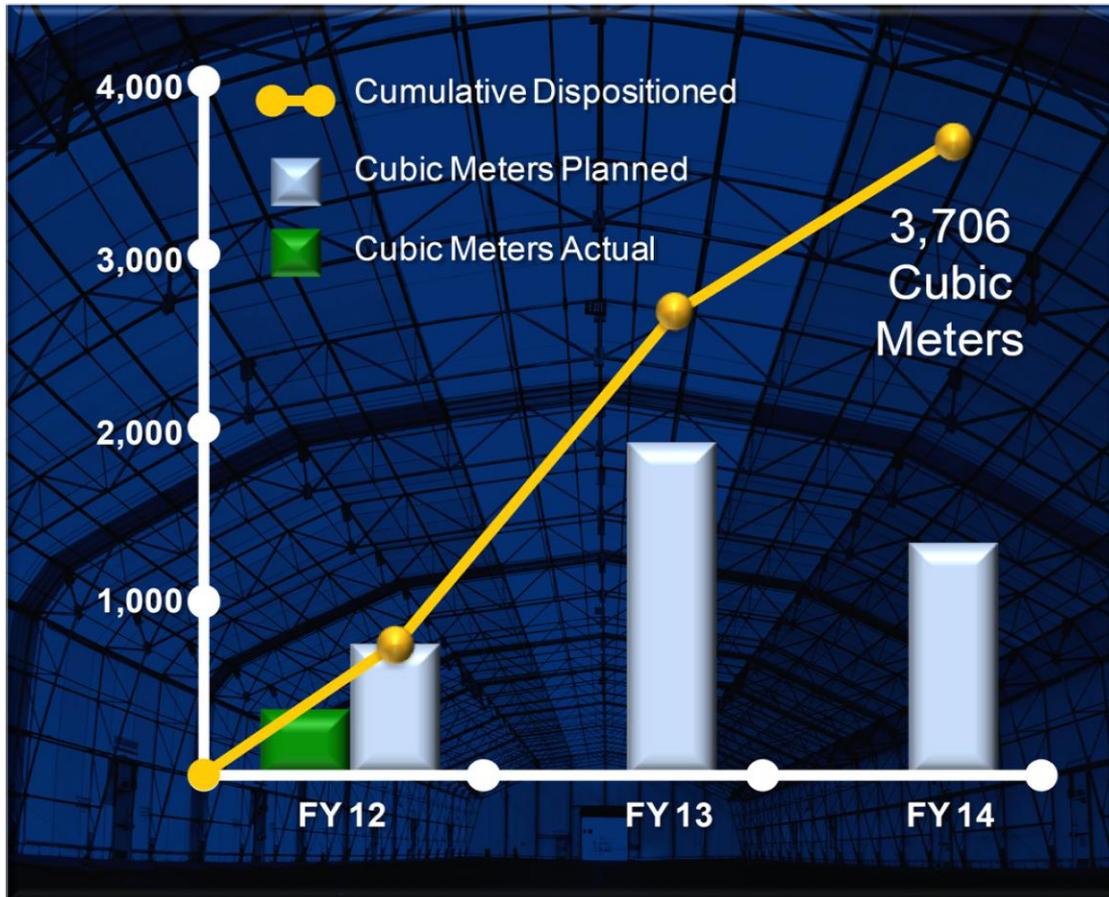
- Transuranic and Mixed/Low-Level Waste Disposition
  - Supports expedited de-inventory and disposal of above-ground transuranic waste
  - Continue operation of new oversize modular box line and disposition of excess materials
  - Continue accelerated de-inventory and disposal of mixed low-level waste/low-level waste (600 cubic meters) and of transuranic waste (1,800 cubic meters)
  - Five Operating Lines plus additional Super High-Efficiency Neutron Counter
- Soil and Groundwater Remediation
  - Continue protection of Ground Water and Surface Water
  - Complete remediation of Townsites
  - Material Disposal Area B D&D Enclosures
  - Compliant with Environmental Protection Agency Individual Permit
    - Installation of Controls
  - Cañon de Valle
    - TA-15 and TA-16 Investigations
    - Surface and Subsurface Water Corrective Measures
  - Material Disposal Area C Landfill Cover Design

# FY 2014 – FY 2018 Framework Oriented Budget Request

Dollars in thousands

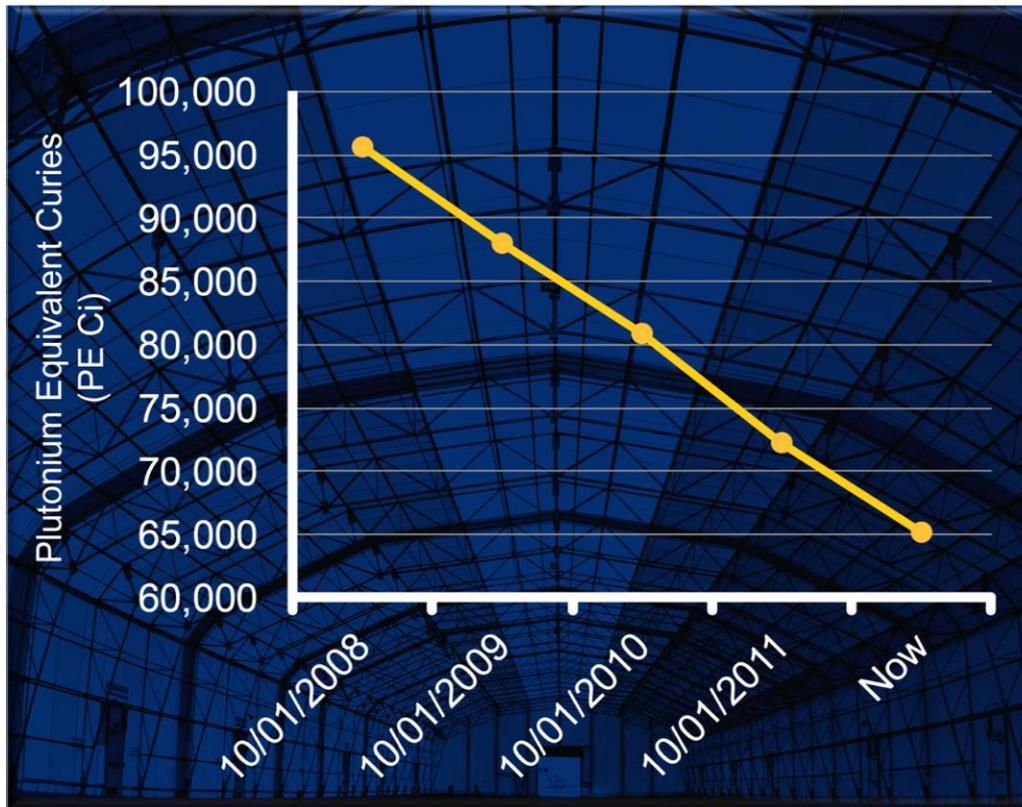
	FY 2012 Execution Plan	FY13 President's Request	FY14 Plan	FY15 Plan	FY16 Plan	FY17 Plan	FY18 Plan
Solid Waste Stabilization	90,000	120,000	103,953	90,908	96,450	116,120	96,812
Soil and Water Remediation	95,000	114,913	110,490	127,535	136,993	117,323	121,631
D&D	0	0	20,000	15,000	0	0	15,000
Agreement in Principle	3,561	4,230	4,700	5,700	5,700	5,700	5,700
<b>Los Alamos Site Total</b>	<b>188,561</b>	<b>239,143</b>	<b>239,143</b>	<b>239,143</b>	<b>239,143</b>	<b>239,143</b>	<b>239,143</b>

# Strategy for Removing Above-Ground TRU Waste

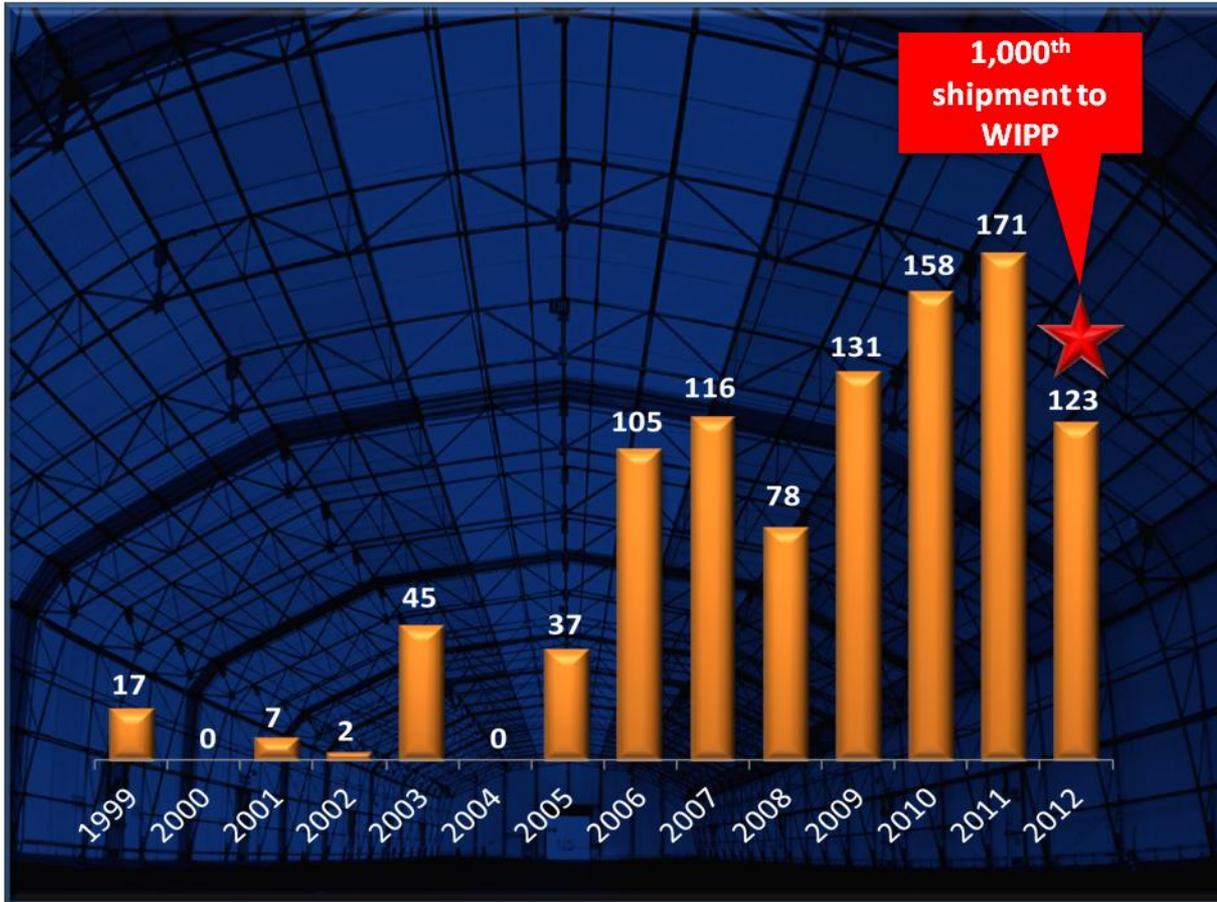


# Reducing Risk

## LANL Annual Risk Reduction through 4/29/2012



# TRU Waste Shipping Performance



# Another Priority: Protecting Water Resources

- Continuing to monitor area groundwater and surface water and protect watersheds
  - Mortandad Canyon (Chromium Plume)
- Beginning seasonal monitoring efforts
  - As monsoon season approaches, impacts of fire may be a concern
- Providing support for the Buckman Direct Diversion Project
  - Storm water runoff flows toward the Rio Grande (and Santa Fe)
  - Automated gauges at key points in canyon detect water flow levels, take samples, send wireless signals to Buckman operators



# Continuing Surface Water Protection

- Individual Permit for Storm Water issued by EPA on November 1, 2010
- Focused on managing monitoring and mitigating surface water contamination from legacy Solid Waste Management Units (SWMUs) – site wide
- Requires LANL to implement control measures and a comprehensive monitoring program to minimize pollutants in LANL's storm water discharges
- Scope of compliance includes:
  - Assessment and mitigation
  - Monitoring and reporting
  - Communications (including public)



# Continuing Cleanup of Townsites

- Cleanup of more than 200 sites is complete
- 26 sites scheduled for completion in 2012
  - Taking soil samples and removing contamination from sites in Upper Los Alamos Canyon Aggregate Area
  - Locations of former Lab operations such as laboratories, storage areas, and outfalls



# Top Issues/Challenges

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- Successfully disposition above-ground transuranic waste by June 2014
- Sustained funding to achieve cleanup objectives
- Protecting groundwater



# Summary

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- Teamwork, partnering to meet goals
  - Building on cleanup successes
  - Solving legacy waste problems
  - Protecting the area's environment
- Strong performance over the past three years
  - Credibility from four successful Recovery Act Projects
  - Met all Consent Order milestones
  - Successful ramp-up of TRU program
- Partnership between the National Nuclear Security Administration's Los Alamos Site Office, DOE Carlsbad Field Office, New Mexico Environment Department, and contractor staff enables unprecedented cleanup progress
- Continued focus on protecting water resources
- All consent order commitments delivered on time or ahead of schedule
- Development of 50-Year Environmental Stewardship Plan