



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**



# Radioactive and Hazardous Materials Committee Environmental Management Los Alamos Field Office Update



**ENVIRONMENTAL MANAGEMENT**  
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE

**Doug Hintze, Manager**  
**Environmental Management Los Alamos Field Office**  
**September 21, 2017**





# Los Alamos National Laboratory at a Glance



❑ Los Alamos National Laboratory (LANL) is the oldest, most complex, and second largest National Nuclear Security Administration site

- ~ 40 square miles
- 11,171 federal employees and contractors
- 1,169 buildings
- 9 million gross square feet
- 268 miles of roads (100 paved)





# What Is Los Alamos National Laboratory?

- ❑ Established in 1943 as Site Y of the Manhattan Project to design/build the atomic bomb
  - Formerly owned by the Federal Department of War, then the Atomic Energy Commission, then the Energy R&D Administration (ERDA), now the U.S. Department of Energy (DOE)
- ❑ Operated by the University of California from 1943 through 2005
  - NNSA was established by Congress in 2000 as a separately organized agency within DOE focused on Defense Programs; DOE transitioned oversight of 8 sites to the NNSA, including LANL
- ❑ Los Alamos National Security LLC (LANS) won the Management and Operating (M&O) contract in 2005 to present
  - Responsible for implementation of NNSA mission and environmental cleanup activities at LANL
  - LANS = Bechtel National Inc., Babcock & Wilcox Technical Services Group Inc., University of California, and AECOM (formerly URS)





# Los Alamos National Laboratory: Unique Facilities



- ❑ Nuclear facilities address critical stockpile stewardship challenges
- ❑ Supercomputing facilities
- ❑ DARHT allows researchers to study weapons performance
- ❑ Nanotechnology center drives critical research programs
- ❑ LANSCE draws international scientists studying materials



Radiological Laboratory  
Utilities/Office Building



Dual Axis Radiographic  
Hydrodynamic Test Facility



Center for Integrated  
Nanotechnologies



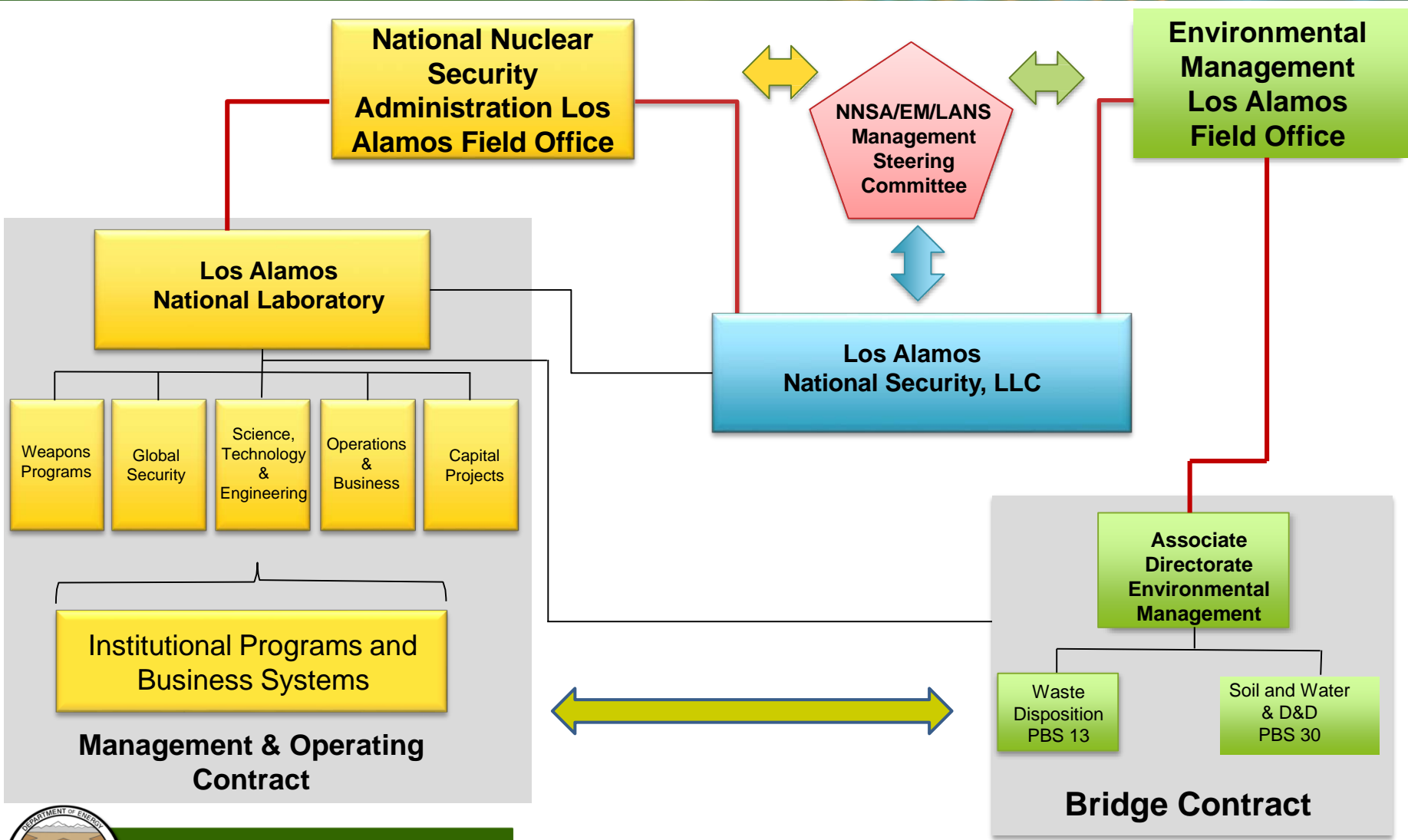
Nicholas C. Metropolis  
Center



ENVIRONMENTAL MANAGEMENT  
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE



# Los Alamos National Laboratory Organizational Structure

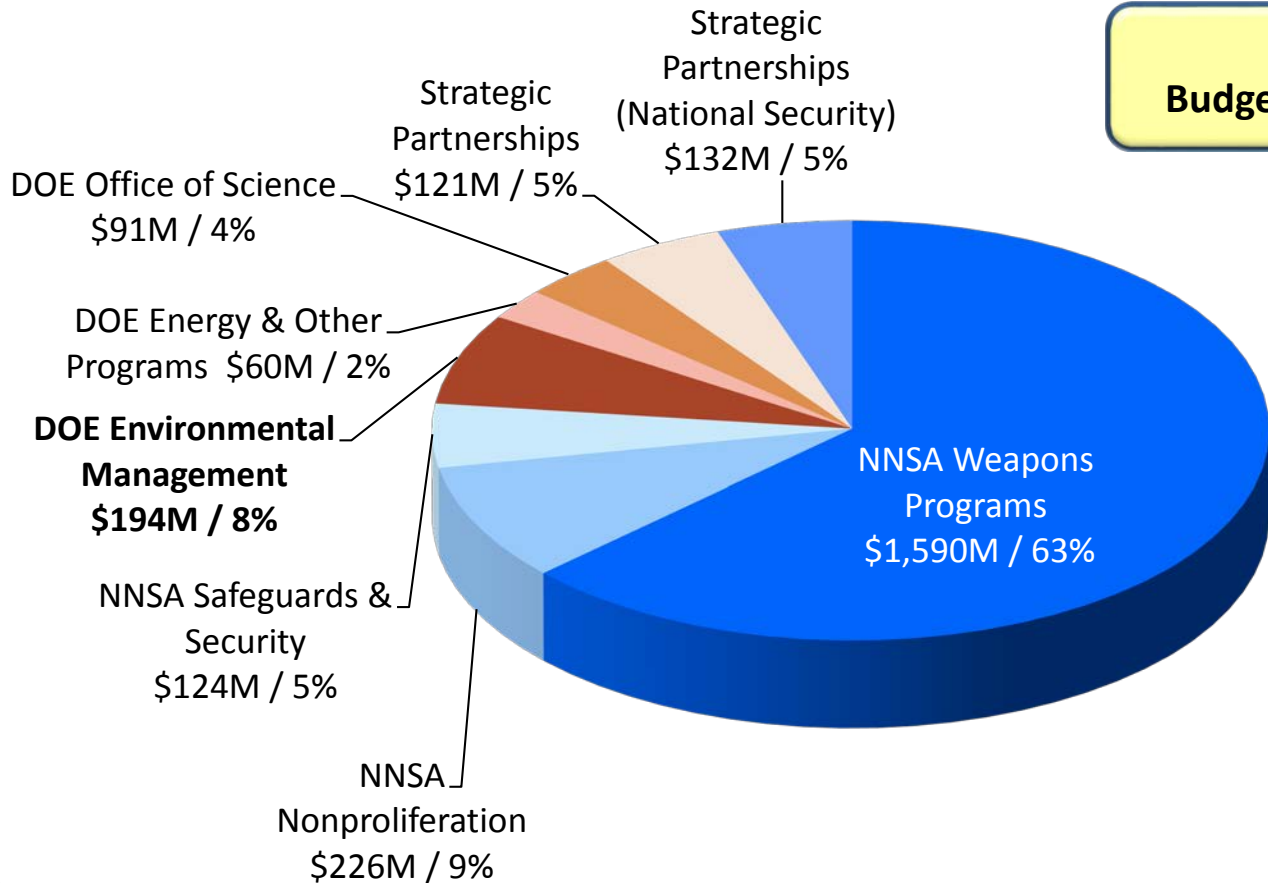






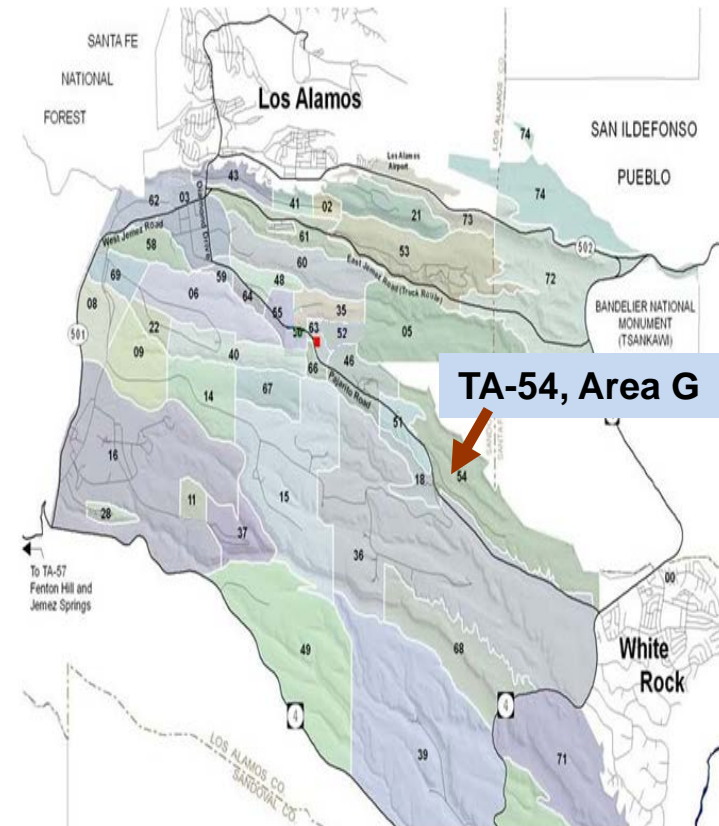
# LANL FY17 Programmatic Funding Portfolio

**FY17 LANL  
Budget Authority = \$2.5B**





- ❑ The EM-LA mission is to safely, efficiently, and with full transparency complete the cleanup of legacy contamination and waste (pre-1999) resulting from nuclear weapons development and government-sponsored nuclear research at the Los Alamos National Laboratory.
- Legacy waste is primarily located in Area G at Technical Area 54 (TA-54)
- Most of the remaining legacy waste is below-grade



Los Alamos National Laboratory





## Consent Order

- Chromium Interim Measure implementation
- RDX plume characterization
- Historical Properties Completion Campaign

## Legacy Waste Management and Storage

- RNS storage and treatment
- LANL waste at Waste Control Specialists in Andrews County, Texas

## Los Alamos Legacy Cleanup Contract

- Contract transition preparations







- ❑ **Safety is highest priority**
- ❑ **464 days without a recordable injury (as of September 20, 2017)**
- ❑ **Industrial Safety**
  - **Safely remediated 450-cubic yards of contaminated soil in Los Alamos Canyon along steep/high angle cliff face**
  - **Safely drilled 4 angled groundwater wells (>900 ft) and constructed miles of infrastructure to control chromium contamination**
- ❑ **Nuclear Safety**
  - **Completed a Federal Readiness Assessment to ensure the safe restart of the facility being used to treat the remediated nitrate salt drums.**





# Treatment of the Remediated Nitrate Salts

- ❑ **60 Remediated Nitrate Salt (RNS) Drums Are Stored at Area G**
- ❑ **Fiscal Year 2017 Activities**
  - Treatment started May 18, 2017
  - Treatment has completed on 37 of the 60 RNS drums
  - While the expected completion date has been pushed back, significant progress is being made
  - Safety of the workers, the public and the environment is our top priority



*Workers inside WCRRF operate different phases of the treatment process*



*Material inside the glove box at WCRRF*







*Workers use an angled drilling rig at the  
CrIN-4 site*



*The closed vault at injection well CrIN-5*

## ❑ Fiscal Year 2017 Activities

- Implementing an Interim Measure (IM) to control plume migration while a final remedy is being evaluated
- IM involves pumping and injection along the down-stream edge of the plume
- Infrastructure is in place to implement the protective interim measure
- Accomplishments include:
  - Drilling angled wells
  - Installing pumps, pipelines and treatment systems.
  - Well pads and pipelines are located to avoid sensitive cultural sites
- Final remedies are being investigated that would treat the chromium directly in the aquifer instead of through extensive (10-20+ year) pumping and treating





*Drilling activities continue year-round  
at R-68*

## □ Fiscal Year 2017 Activities

- Drill well R-68 to define extent of RDX plume
- Complete removal of permeable reactive barrier
- Complete report on aquifer and tracer testing







# Transition to Los Alamos Legacy Cleanup Contract

- Dedicated Environmental Management legacy cleanup contract**
- The evaluation of the follow-on cleanup contractor is underway**
- The selection process and the award timing will align with our goals  
for the cleanup work**
- A transition period will follow the award of the contract**





*Waste material has been removed from an RNS drum for processing.*



*Angled drilling at the injection well CrIN-4*

- **Complete treatment of RNS drums**
- **Complete treatment of 27 unremediated nitrate salt (UNS drums)**
- **Implement Chromium Interim Measure**
- **Ensure a smooth transition to the Los Alamos Legacy Cleanup Contract**

