

# IFDP at Y-12 Scope of the First Five Years

Future

An aerial photograph of the Y-12 facility, showing a complex of buildings, roads, and a large open area. The image is presented as a cutaway view, revealing the underlying terrain and infrastructure. The facility is situated on a hillside, with a large open area in the foreground. The buildings are mostly white and grey, with some blue roofs. The terrain is green and hilly, with a large open area in the foreground. The image is presented as a cutaway view, revealing the underlying terrain and infrastructure.

John W. Krueger, B&W Y-12  
Senior Director, WM/IFDP  
March 4, 2009

# Y-12 The Oak Ridge Reservation and Y-12

- The Y-12 National Security Complex was originally constructed in 1943 for purposes of uranium enrichment using electromagnetic separation (1,152 calutrons)



- Alpha complex enriched to 15% U235; Beta complex enriched to weapons-grade material
- Today, Y-12 is an internationally recognized Uranium Center of Excellence, with expertise in manufacturing, dismantlement, and assessment of nuclear weapon secondaries and other components; safely and securely storing and managing SNM; supplying SNM for naval reactors; and nuclear safety and non-proliferation.



## Scope of IFDP at Y-12

- The Integrated Facilities Disposition Project (IFDP) is a proposed, EM-funded project to complete the scope of cleanup work at Y-12 and ORNL
  - DOE-EM is proposing to address cleanup scope at Y-12 and ORNL by extending level funding (approximately \$500M/yr) beyond completion of the ETTP Accelerated Closure Project (ACP)
- Scope at Y-12 includes:
  - Deactivation and demolition of 112 excess contaminated facilities
  - Cleanup of 118 soil and groundwater contamination areas
  - Waste disposal and facility operations
  - As defined in CD-1, scope also includes utility reroutes, non-mission legacy material removal, and facility construction and improvements necessary for execution of IFDP



# Y-12 Excess Facility Conditions



# Y-12 Project is Urgent!

- Necessary for worker and mission risk reduction
- The sooner we get to work, the more operations and maintenance costs can be avoided
- Necessary to transform Y-12 to a future configuration which enables lean manufacturing
- Portions of the project are currently driven by regulatory agreements, and all of it will be eventually under CERCLA (Superfund)
- The scope of work is not optional!







# Footprint Reduction at Y-12



YGG 07-0070R4

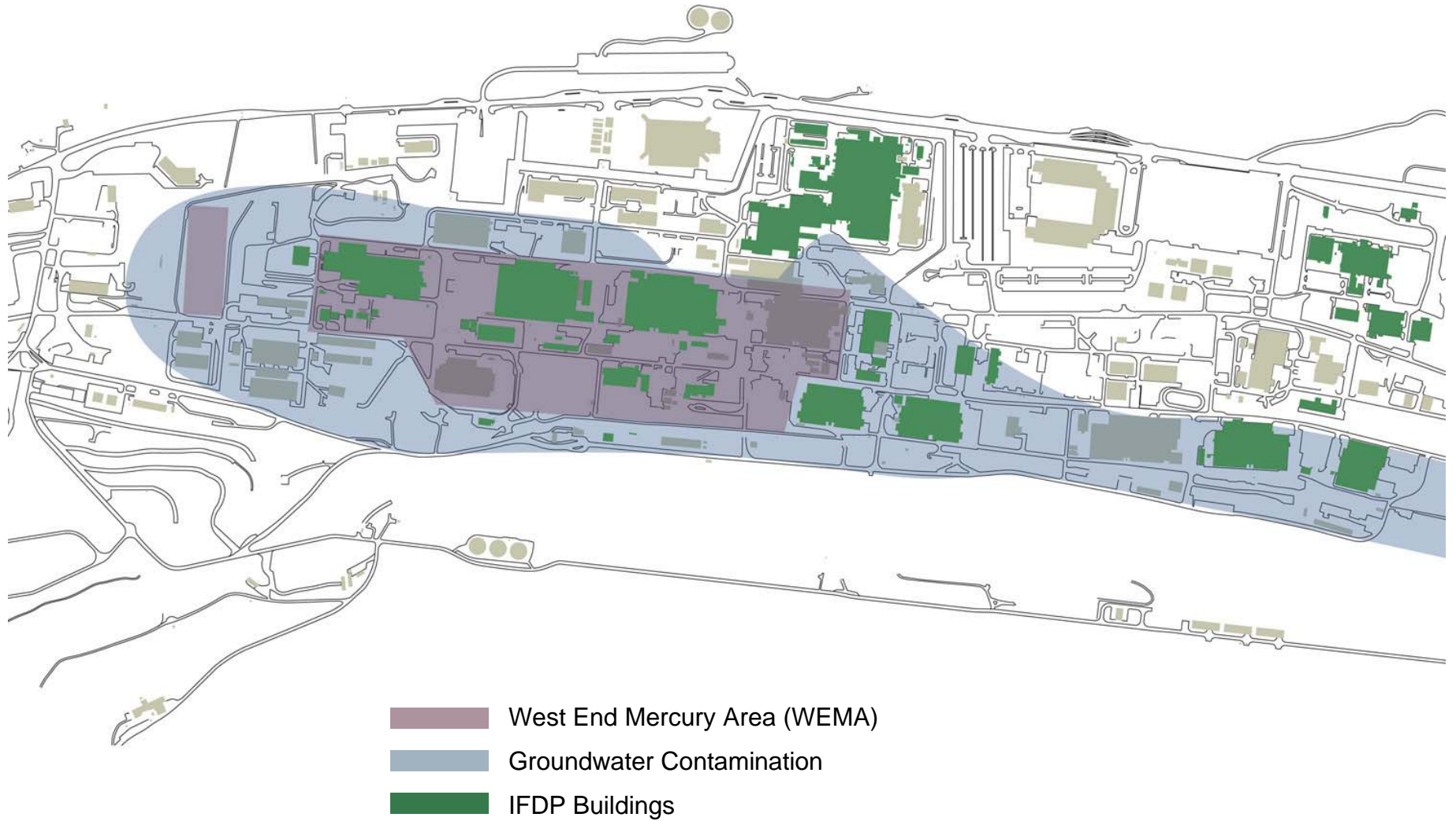
	Number of Bldgs.	Gross Square Footage
NNSA Demolition Through FY07	265	1,108,000
NNSA Demolition Through FY08-09	21	260,000
D&D Funded in EM Baseline (now IFDP)	4	563,000
D&D Proposed in IFDP	108	3,237,00
Totals	409	5,168,000

## IFDP will build on the successful legacy of IR by:

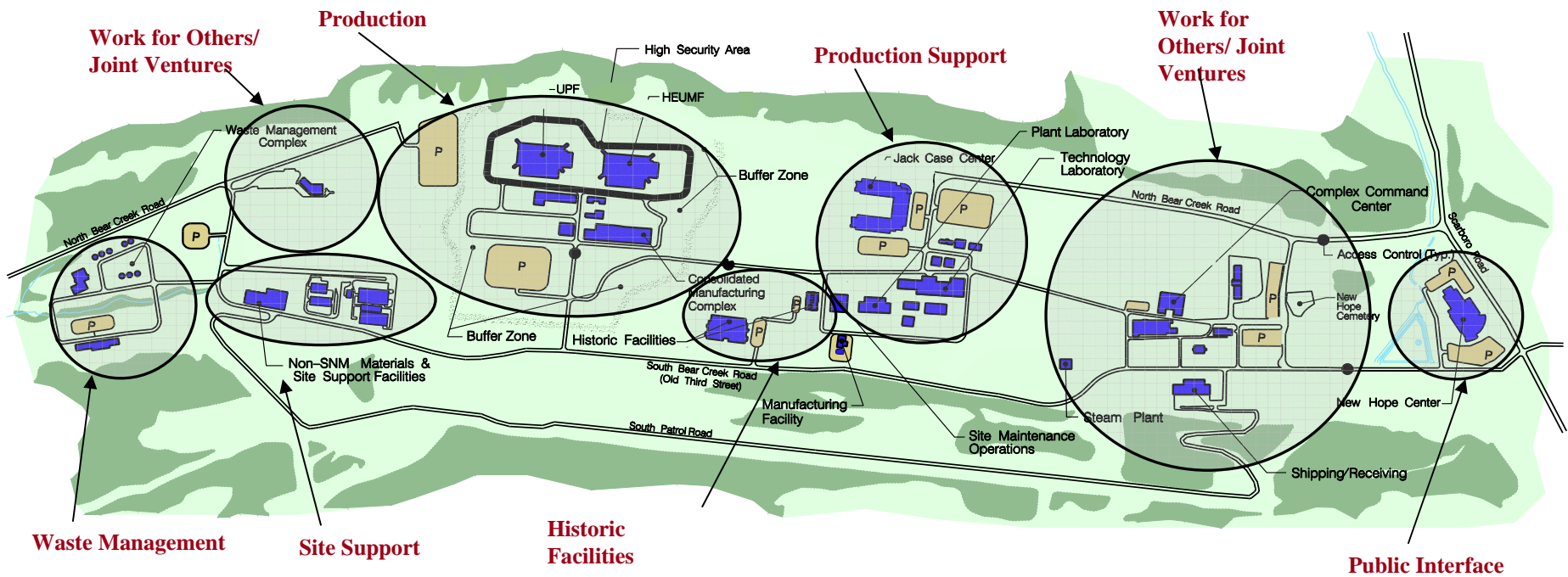
- Eliminating significant human health and environmental risks associated with excess materials, hazardous and radioactive material holdup in facility systems, and contamination from past spills and operations.
- Eliminating substantial risk to the Y-12 national security mission by mitigating the potential for fires and other risks of serious injury or hazardous material release posed by outdated, unneeded, contaminated buildings.
- Saving many millions of dollars in annual surveillance and maintenance costs, while paving the way for modernization and footprint reduction.



# Soil and GW Remediation



# Y-12 Y-12 Transformation Vision





# Today's Focus

- Anticipated Phase A scope of IFDP at Y-12
- Potential ARRA projects at Y-12
- Current status
  - IFDP CD-2 preparation
  - Y-12 ARRA projects

# Y-12 Phase A Scope (first 5 years)

- Prepare Alpha-5 for demolition
  - Initiate CERCLA documentation
    - EE/CA and AM will cover all Y-12 buildings
    - Waste handling plan (WHP) for legacy material removal will allow for on-site use of the CERCLA cell (EMWMF)
    - WHP for decontamination and demolition (D&D)
  - Remove legacy material (50% complete in Phase A)
  - Prepare Sampling and Analysis Plan (SAP) and conduct characterization
  - Perform D&D engineering and procurement

# Y-12 Building 9201-5 (Alpha-5)



- Operated 1944-2007
- 613,000 square feet
- 1.1M cubic ft of legacy material
- Hub for various utilities
  - Steam and brine leaks are common
- PCOCs: dU, Be, Hg, Li, Th





## Y-12 Phase A Scope (cont.)

- Prepare Beta-4 for demolition
  - Initiate CERCLA documentation
    - Prepare WHP for legacy material removal
  - Remove legacy material (60% complete in Phase A)
- Prepare Building 9206 for demolition
  - Used in the past for uranium recovery
  - Initiate CERCLA documentation
    - Prepare WHP for legacy material removal
  - Remove legacy material (100% complete in Phase A)
  - Characterization complete



# Beta-4 and Building 9206

**Building 9204-4 (Beta-4)**  
313,000 sq. ft.



**Building 9206**  
58,000 sq. ft.



# Y-12 Y-12 Phase A Scope (cont.)

- Removal Actions

- West End Mercury Area (WEMA) storm sewer inspection and cleanup completed in Phase A

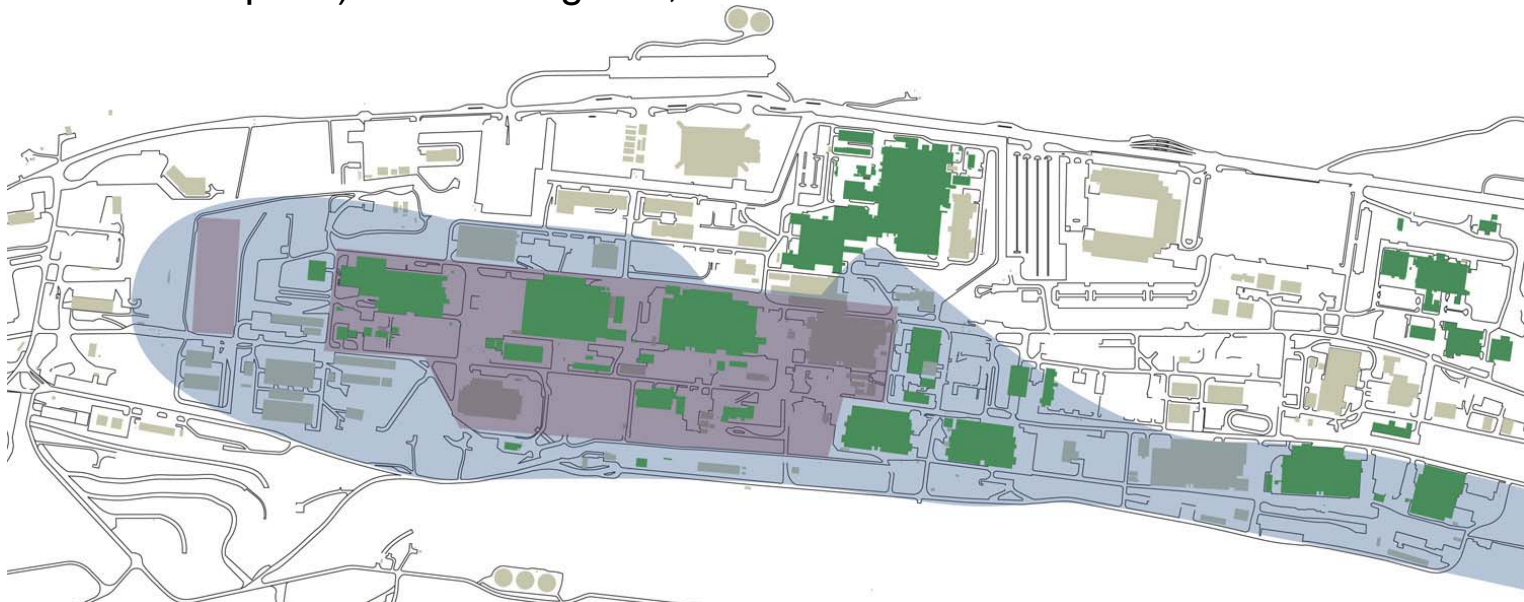
- Degraded storm sewers are serving as a conduit for Hg transport to the surface water pathway

- Scope includes:

- remote control visual inspection of 25,000 linear feet of degraded storm sewer in the WEMA

- engineering study proposing remedial actions based on inspection results

- cleaning of 11,500 linear feet, disposition of Hg-contaminated soil (thermal desorption) and relining of 2,650 linear feet

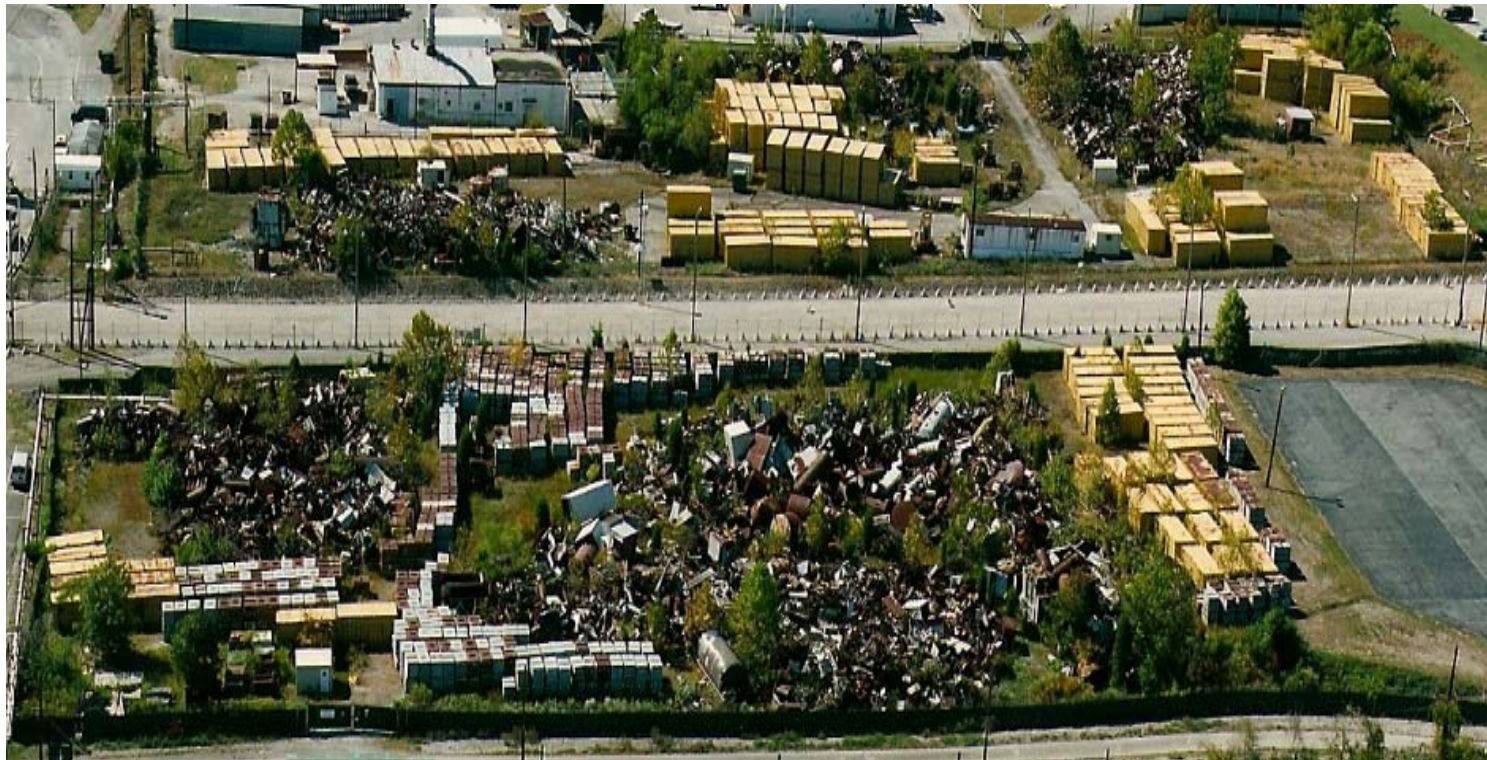






# Environmental Management Salvage Yard

- Removal Actions (cont.)
  - Salvage yard removal action completed in Phase A
    - Scope includes removal of 31,000 cubic yards or scrap
      - Includes 261 sealands and 545 B-25 boxes
    - Operated from early 1970s through October, 1999
    - Handled radioactively contaminated scrap in open piles, and later (after 1995) in containers





# Phase A NNSA Contributions

- To support Phase A, NNSA will:
  - Execute MOA commitments for Alpha-5
    - Utility re-routes and isolations
    - Radioactive material removal to reduce hazard category
    - Removal of containerized chemicals
    - Roof condition assessment
  - Negotiate MOAs with EM for transfer of Buildings 9206 and Beta-4
    - Initiate actions necessary to transfer ownership
  - Collapse high-security PIDAS into an “East Fort” to facilitate material movement and utilization of un-cleared resources
    - Optimize existing security configurations to support accelerated work (e.g., salvage yard “bubble”; creation of un-cleared islands)



# Y-12 Phase A Funding Profile

## CD-2 Planning Basis for the Y-12 IFDP Phase A Funding Profile (000s)

	2010	2011	2012	2013	2014	Total
Total IFDP Target Funding at Y-12	\$18,673	\$26,609	\$120,280	\$122,011	\$97,962	\$385,535

- Ramp up due to expenditures related to completion of ETTP closure
- Peak spending at Y-12, \$300-\$400M/yr, occurs during the 2020s according to CD-1



# Y-12 ARRA Projects

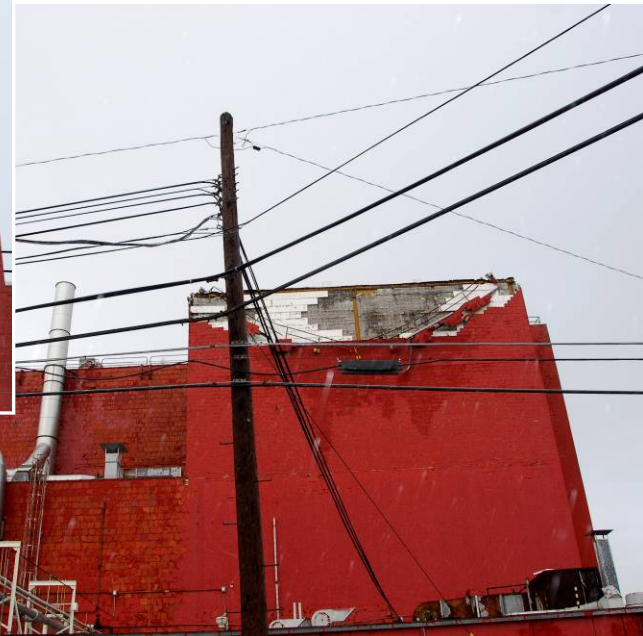
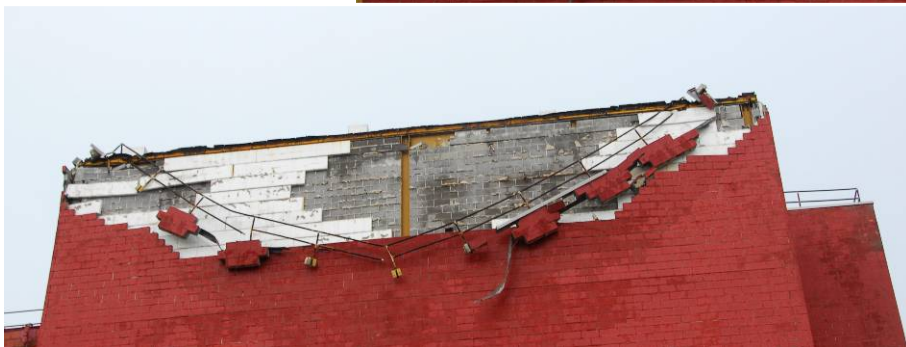
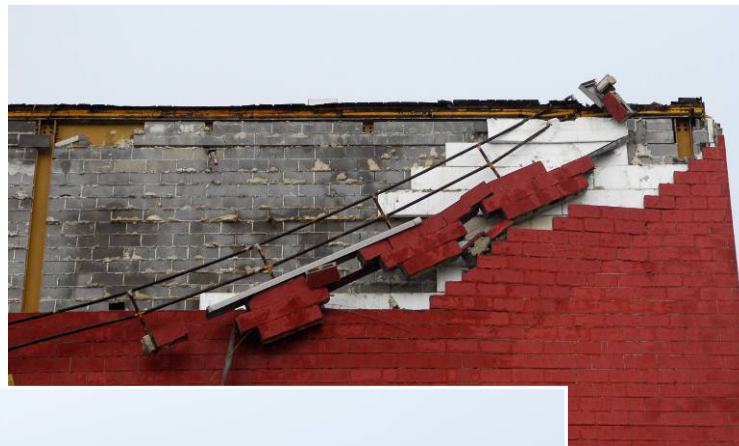
- Federal guidance remains dynamic
  - Unprecedented levels of reporting will be required
- Funds to be “obligated” by March 9??
  - Anticipated to be provided in a lump sum, which greatly facilitates planning and execution
  - Funds will last through September 2011, assuming adequate progress
- Y-12 is prepared to execute “shovel-ready” projects beginning on Day 1

# Y-12 ARRA Projects

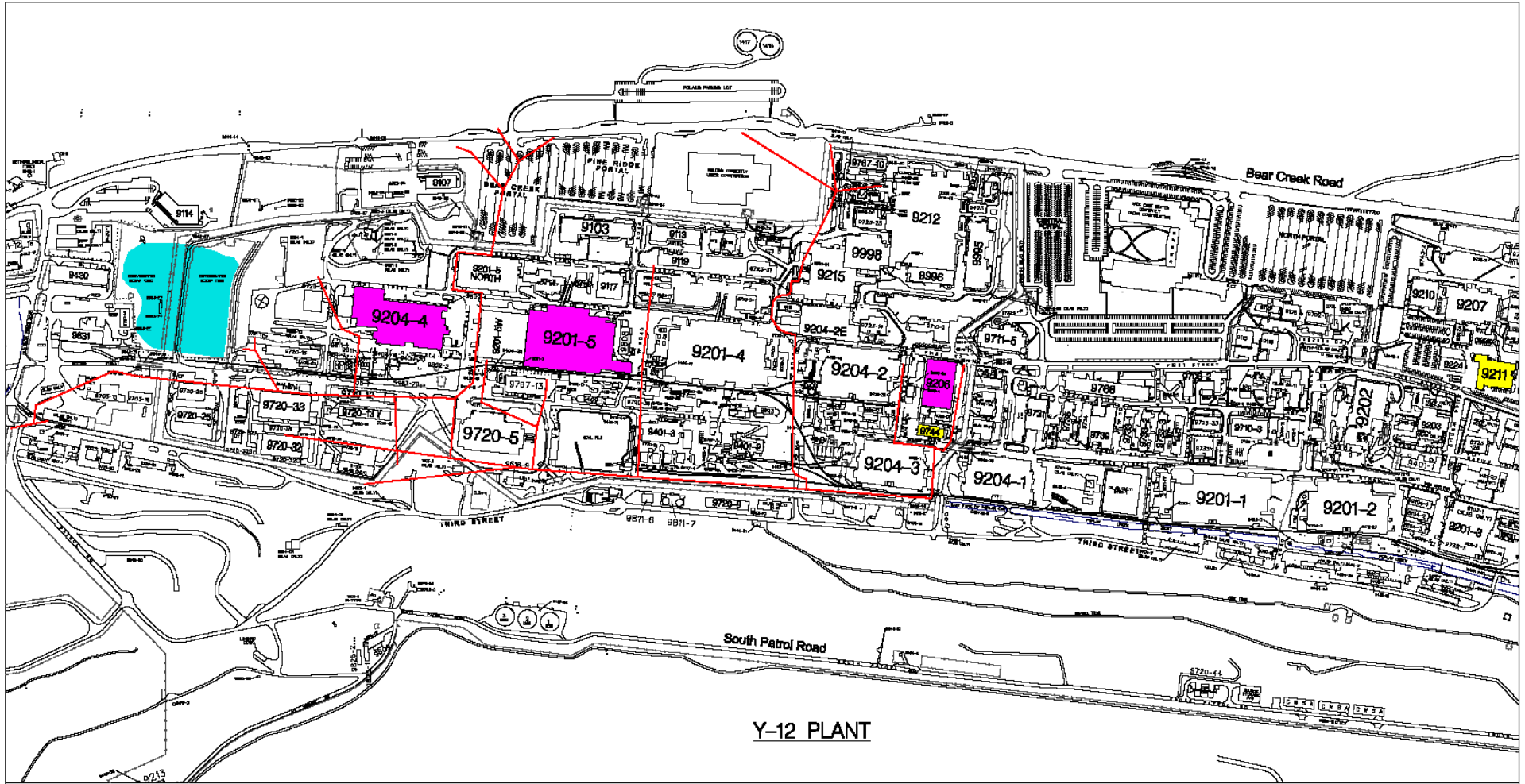
- Accelerate removal of legacy material from Alpha-5 and Beta-4
  - Completion of all legacy material disposition in Alpha-5 renders the facility ready for D&D seven years ahead of the CD-1 schedule
  - Results in immediate risk reduction, and accelerates ultimate D&D of Y-12's highest risk facilities
  - Enables the potential simultaneous demolition of Alpha-4, Alpha-5, and Beta-4
- Complete storm sewer (WEMA) and salvage yard remediation
  - Use freed IFDP funding in Phase A for other high-priority work
    - Allows further acceleration of work on high-priority buildings like Beta-4 and 9206
    - Permits high-priority soil characterization and remediation

# Y-12 Stimulus Projects (cont.)

- Complete Building 9744 demolition
  - Facilitates PIDAS collapse into the East Fort
- Begin demolition of the Biology Complex
  - Demolish Building 9211 (83,500 sq ft)



# Y-12 ARRA Projects

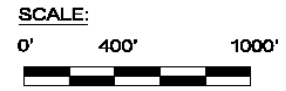
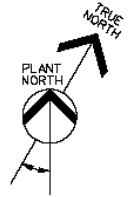


Y-12 PLANT

## Y-12 STIMULUS

- COMPLETE REMEDIAL ACTION
- COMPLETE D&D
- PARTIAL LEGACY MATERIAL DISPOSITION
- WEMA STORM SEWER REMEDIATION

AREAS NOT SHOWN ON MAP:  
LANDFILL EXPANSION  
EMWMF EXPANSION



DATE: 02/23/2009  
FILE NAME:  
FIGURE Y-12 WBS\_STIMULUS.DGN





# Y-12 ARRA Draft Milestones

	DATE	Amount (\$M)	Comments
NNSA-YSO issues interim Work Authorization Directive (WAD) authorizing Y-12 M&O contractor to initiate ARRA work; Complete subcontractor task order for support of container removal in the Salvage Yard.	3/6/2009		Requires YSO receipt of IEWO from DOE-ORO by 3/5/09. Day-for-day delay in milestone after 3/5.
Mobilize radcon and industrial hygiene teams in Alpha-5 and Beta-4 to initiate health and safety characterization; Mobilize subcontractor resources to the Salvage Yard.	3/13/2009		Requires M&O receipt of WAD by 3/6/09.
Begin removal of vegetative overgrowth in the Salvage Yard.	3/20/2009		
<b>Initiate legacy material removal from Alpha 5, Beta-4, and the Salvage Yard.</b>	3/27/2009		
Complete removal of vegetation in the Salvage Yard.	4/3/2009		
<b>Complete removal of enough excess nuclear material in Beta-4 to downgrade the facility to a non-nuclear facility (below Category III).</b>	4/10/2009		
Initiate container characterization and re-packaging operations in the Salvage Yard.	4/17/2009		
Issue RFP for inspection of WEMA storm sewers.	4/24/2009		
Initiate Alpha-5 Sampling and Analysis Plan.	5/1/2009		
Complete first off-site shipment of Salvage Yard Waste for disposal.	5/8/2009		
Complete first shipment of waste from Alpha-5 for disposal; Complete first shipment of waste from Beta-4 for disposal.	M-09		
Initiate visual inspection of WEMA storm sewers.	J-09		
Issue RFPs for subcontract support of demolition of Buildings 9744 and 9211.	J-09		
<b>Complete Visual Inspection of WEMA storm sewers.</b>	A-09		
Complete "Engineering Study" reporting on results of WEMA storm sewer inspection.	S-09		
<b>Complete removal of enough excess nuclear material in Alpha-5 to downgrade the facility to a non-nuclear facility (below Category III).</b>	O-09		
Initiate hazardous material abatement in Buildings 9744 and 9211.	N-09		
	D-09		
<b>Complete removal of all legacy material from the 4th floor of Alpha-5.</b>	J-10		
	F-10		
Complete removal of legacy material from the high bay and office areas on the second floor of Beta-4.	M-10		
Initiate demolition of Building 9744.	A-10		
Complete Remedial Action Work Plan for WEMA Storm Sewers.	M-10		Per FFA, due on 5/13/10.
Complete Salvage Yard Waste Handling Plan	J-10		Per FFA, due on 6/25/10.
<b>Complete removal of all legacy material from the 2nd floor of Alpha-5.</b>	J-10		
<b>Complete disposition of all containerized waste from the Salvage Yard.</b>	A-10		
<b>Complete demolition of Building 9744.</b>	S-10		
	O-10		
	N-10		
	D-10		
Initiate demolition of Building 9211.	J-11		
Complete removal of legacy material from the Production Storage and Work Area (PSWA) on the second floor of Beta-4.	F-11		
<b>Complete removal of all legacy material from the 3rd floor of Alpha-5.</b>	M-11		
	A-11		
	M-11		
	J-11		
Complete Waste Handling Plan for Alpha-5 legacy material.	J-11		Per FFA, due on 8/9/11. Requires completion of EE/CA (9/30/09) and AM (4/22/10) for all Y-12 buildings utilizing EM target funding.
<b>Complete characterization of Alpha-5.</b>	A-11		
<b>Complete legacy material disposition for Alpha-5; Complete demolition of Building 9211 and waste disposition; Complete disposition of all Salvage Yard material; Complete cleaning and re-lining of WEMA storm sewers; Complete disposition of all legacy material from the 2nd floor of Beta-4.</b>	S-11		



# Status of IFDP and Y-12 ARRA

- Status of IFDP:
  - CD-1 approved in November, 2008
  - CD-2 scheduled for delivery to EM-HQ in November, 2009
  - CD-2 annotated outline completed
  - Integrated teams are formed to baseline major projects and write sections of CD-2, and scoping is underway
  - CD-2 will need to be re-baselined based on effects of ARRA funding



# Status of IFDP and Y-12 ARRA

- Status of Y-12 ARRA projects:
  - Informal communication and preparations initiated in January by B&W
    - Security, procurement, HR, ES&H, union leadership, commercial sector
  - Planning authorized on February 19
  - New B&W Y-12 program office populated on February 23 to formally initiate planning in cooperation with internal executing organizations
  - Project baseline development initiated according to OMB/DOE guidance and existing CD-1 information (POPs due 3/31?)
  - B&W ready to pull the trigger on immediate hire of as many as 48 ATLC laborers to assist with cleanout of Alpha-5 and Beta-4
  - B&W Y-12 will be ready to award task orders to immediately start work on day one at the salvage yard, Alpha-5, and Beta-4



# Strategies for Y-12 ARRA Projects

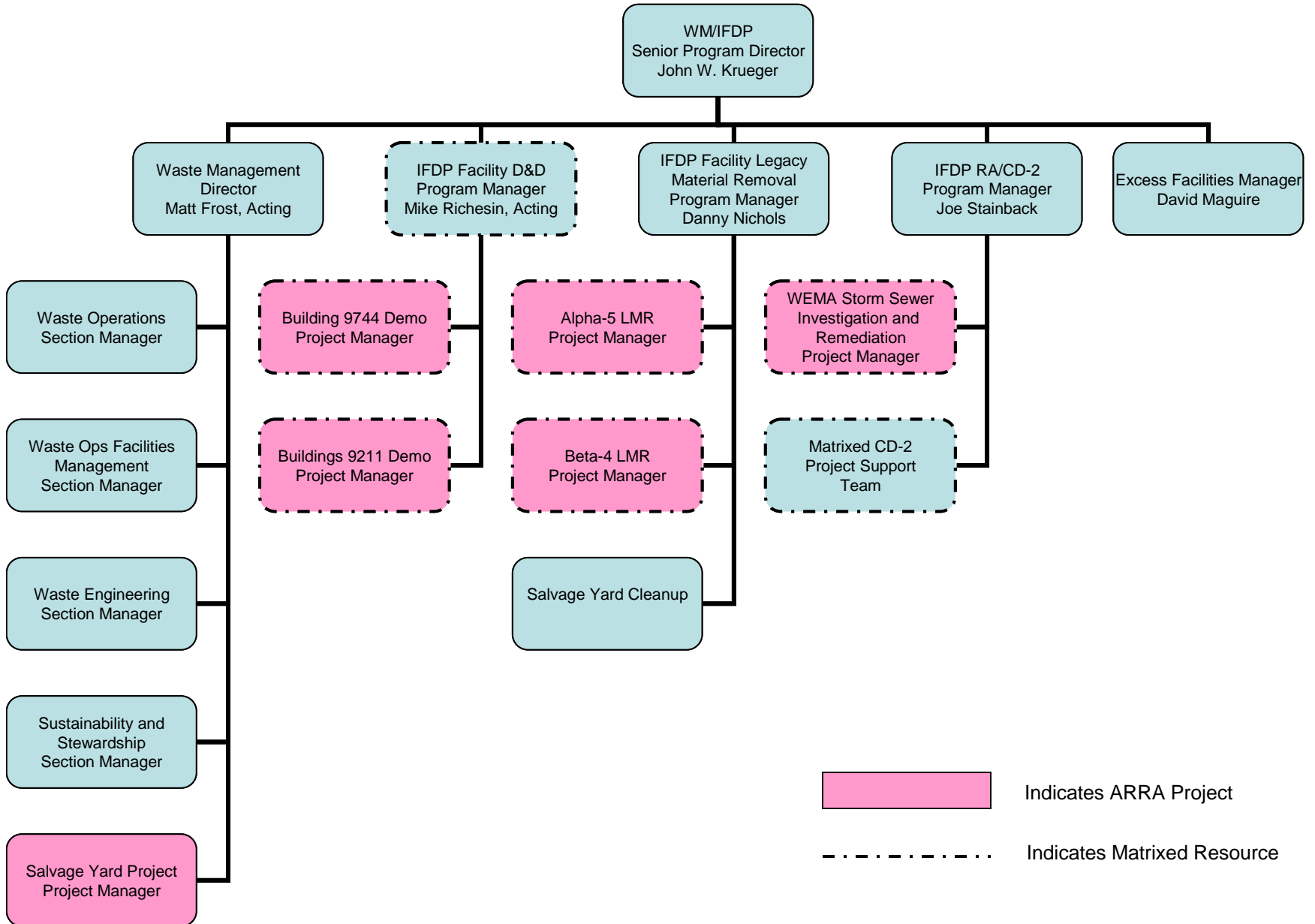
- Y-12 will maximize the use of existing subcontractor base early on to expedite productive expenditure of ARRA funds

<b><u>ARRA Project</u></b>	<b><u>Strategy</u></b>
Alpha-5 LMR	Combination of Self-Perform and Subcontracted Support
Beta-4 LMR	Combination of Self-Perform and Subcontracted Support
WEMA Storm Sewer Inspection and Cleanup	Subcontracted
Salvage Yard Cleanup	Subcontracted
Building 9744 Demo	Subcontracted
Buidling 9211 Demo	Subcontracted





# B&W Y-12 WM/IFDP Organization





# Questions??

