

# Ensuring Sufficient Waste Disposal Capacity for the Oak Ridge Reservation

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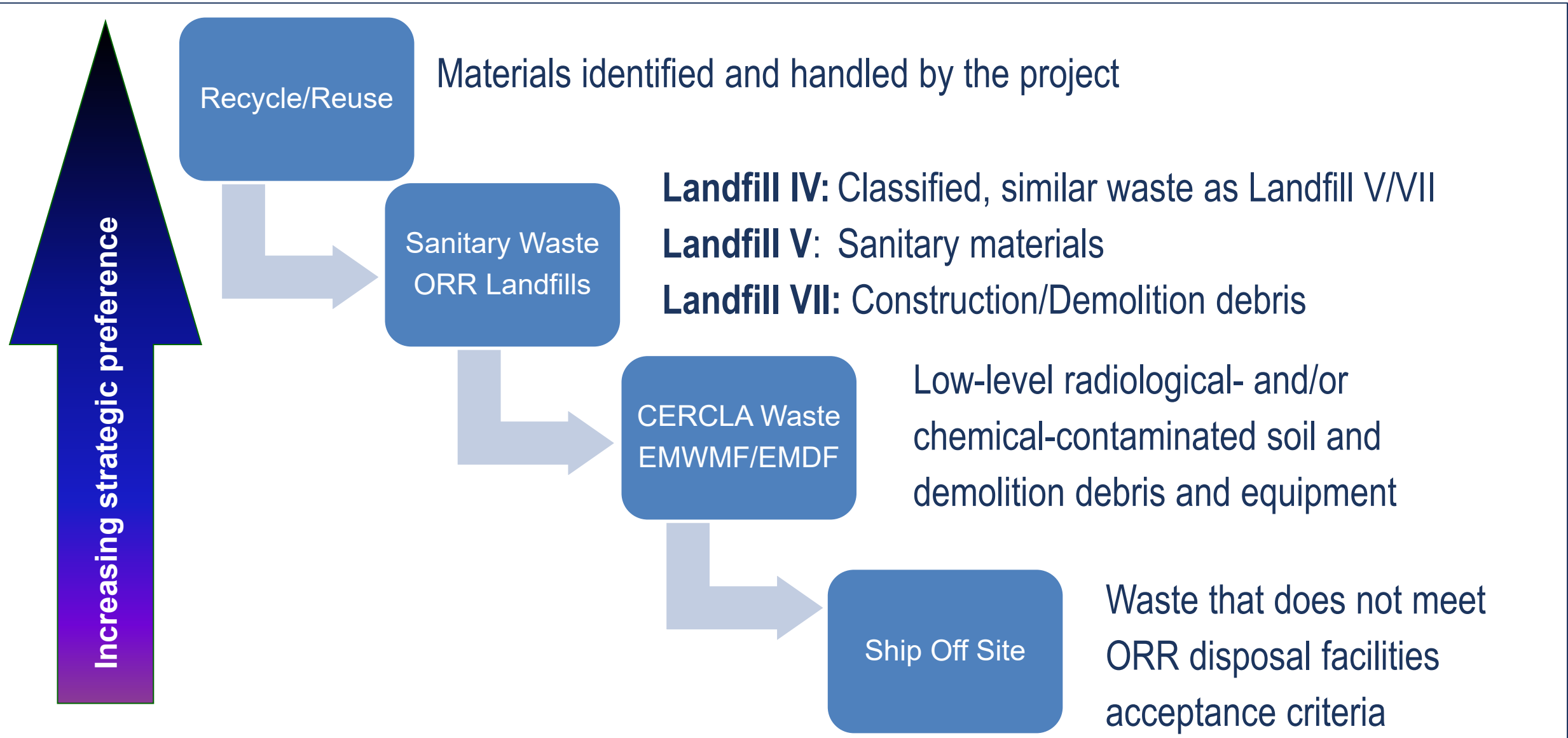
February 8, 2023

# Current and planned disposal capacity is sufficient to meet needs



- DOE operates several engineered landfills for safe and compliant disposal of Oak Ridge Reservation (ORR) remediation, demolition, and sanitary waste
  - Landfills IV, V, and VII are permitted by Tennessee Division of Solid Waste Management
  - The Environmental Management Waste Management Facility (EMWMF) and planned Environmental Management Disposal Facility (EMDF) fall under the regulatory requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Each landfill/waste disposal facility has established waste acceptance criteria to determine whether waste is acceptable for disposal

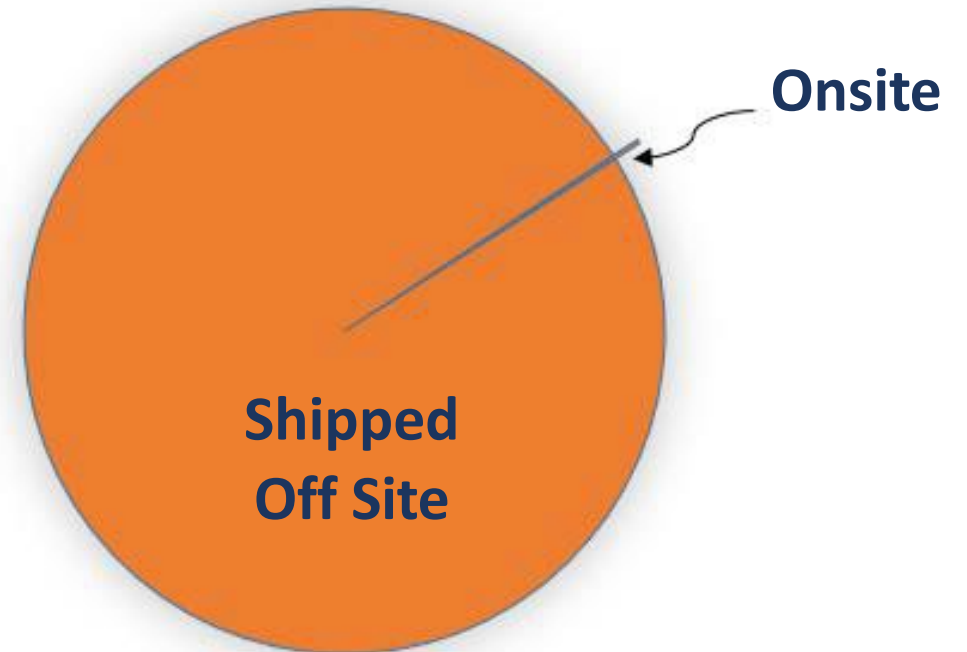
# DOE waste disposal decisions follow waste hierarchy



# The high hazard radioactive waste is disposed off site by DOE

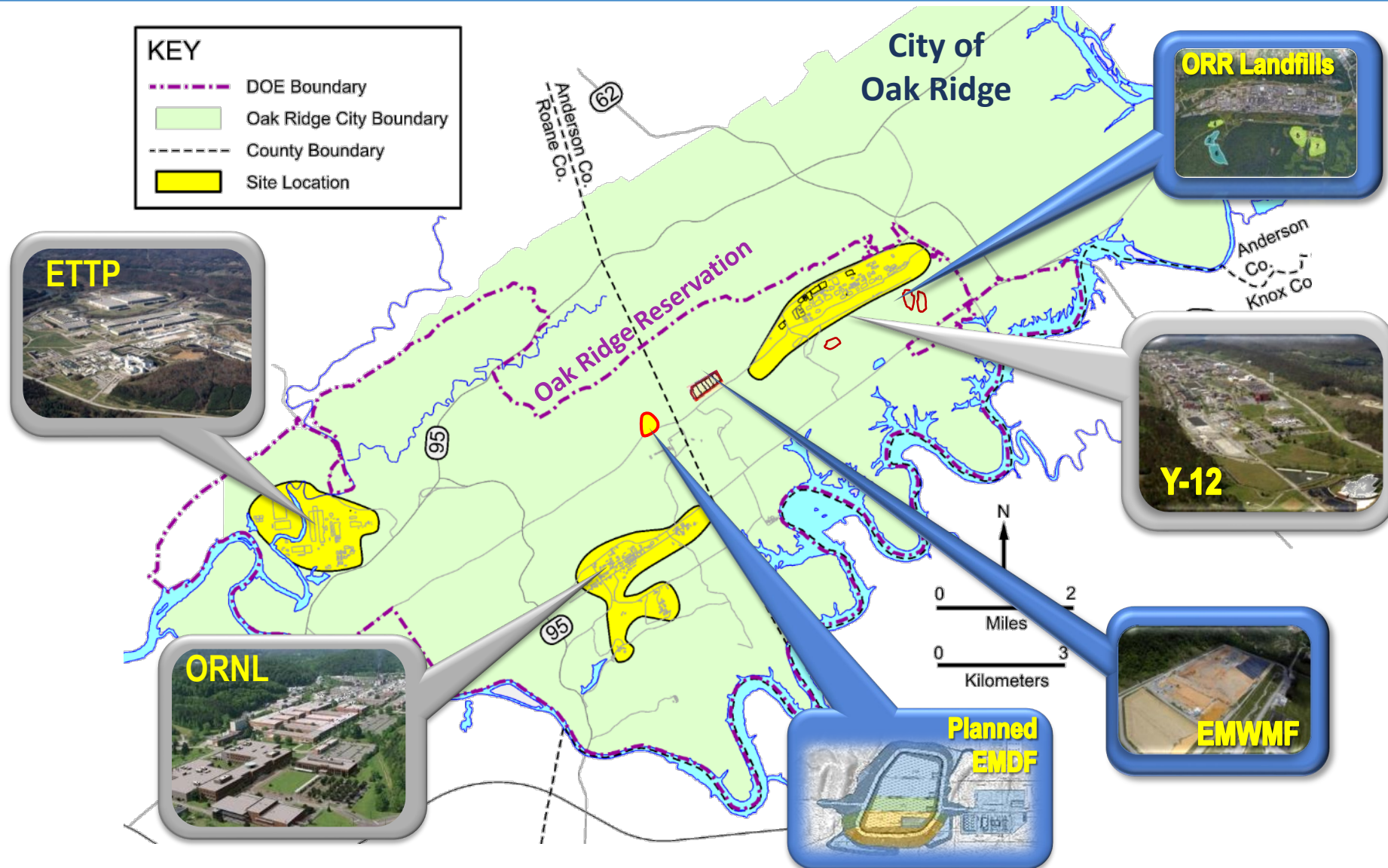


**By Volume**



**By Radiological Activity**

# DOE uses multiple onsite disposal facilities to support cleanup operations





# Landfills/EMWMF are located within DOE-controlled areas



-  Operational Facilities
-  Closed Facilities



# Onsite disposal availability has been key to the successful cleanup of ETTP



ETTP Before Cleanup



ETTP After Cleanup



# EMWMF remaining capacity supports completion of East Tennessee Technology Park cleanup

- 28-acre disposal facility, opened in 2002
- Lined disposal cells receive low-level radiological and chemical waste from CERCLA cleanup of Oak Ridge Reservation
- Approximate total capacity of 2.3 million cubic yards
  - Currently about 83% full
  - Projected to be full in late 2020s





# Considerable cleanup scope remains at ORNL and Y-12 requiring additional waste disposal capacity



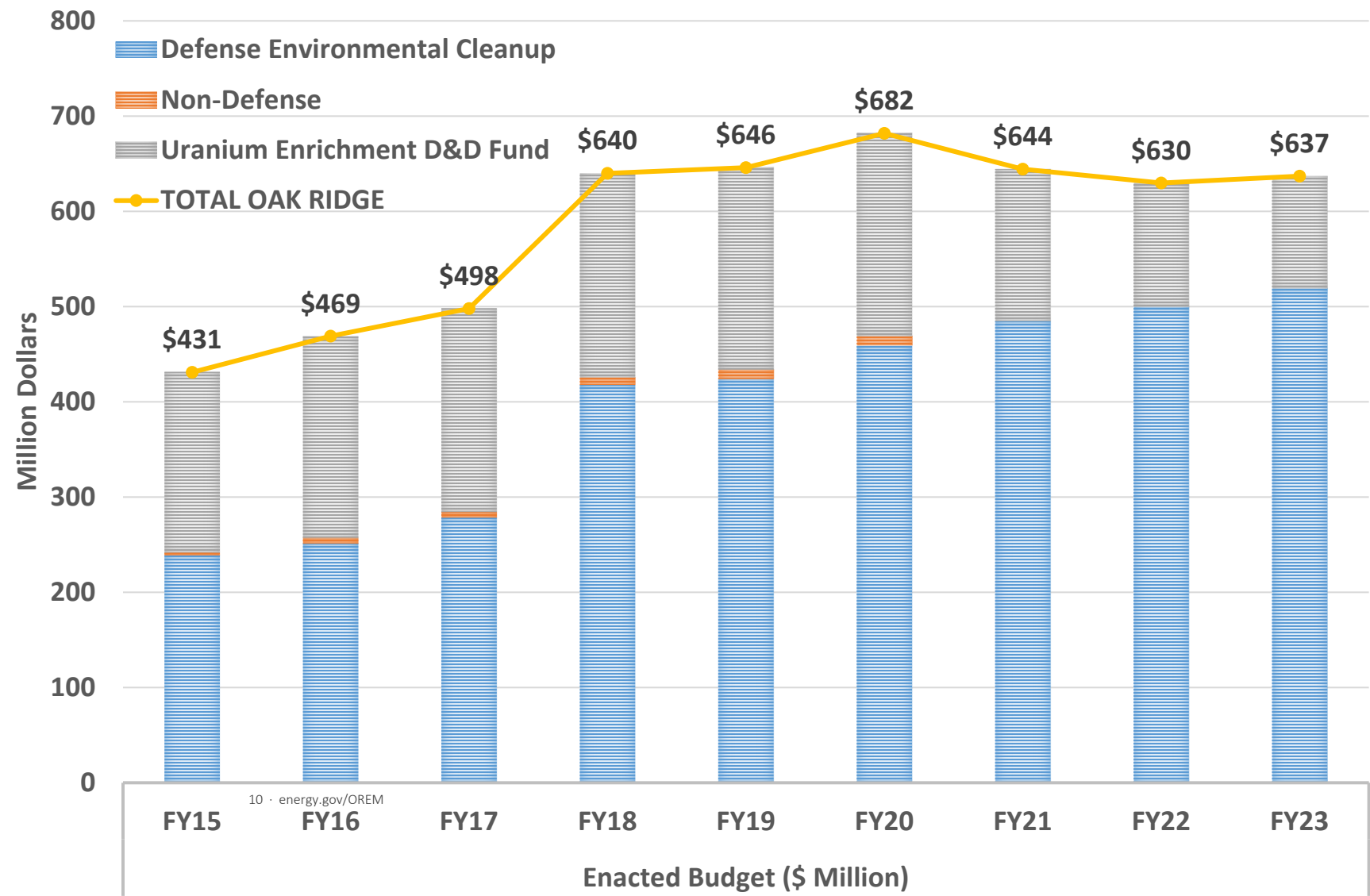
Excess Facilities at Y-12



Excess Facilities at ORNL

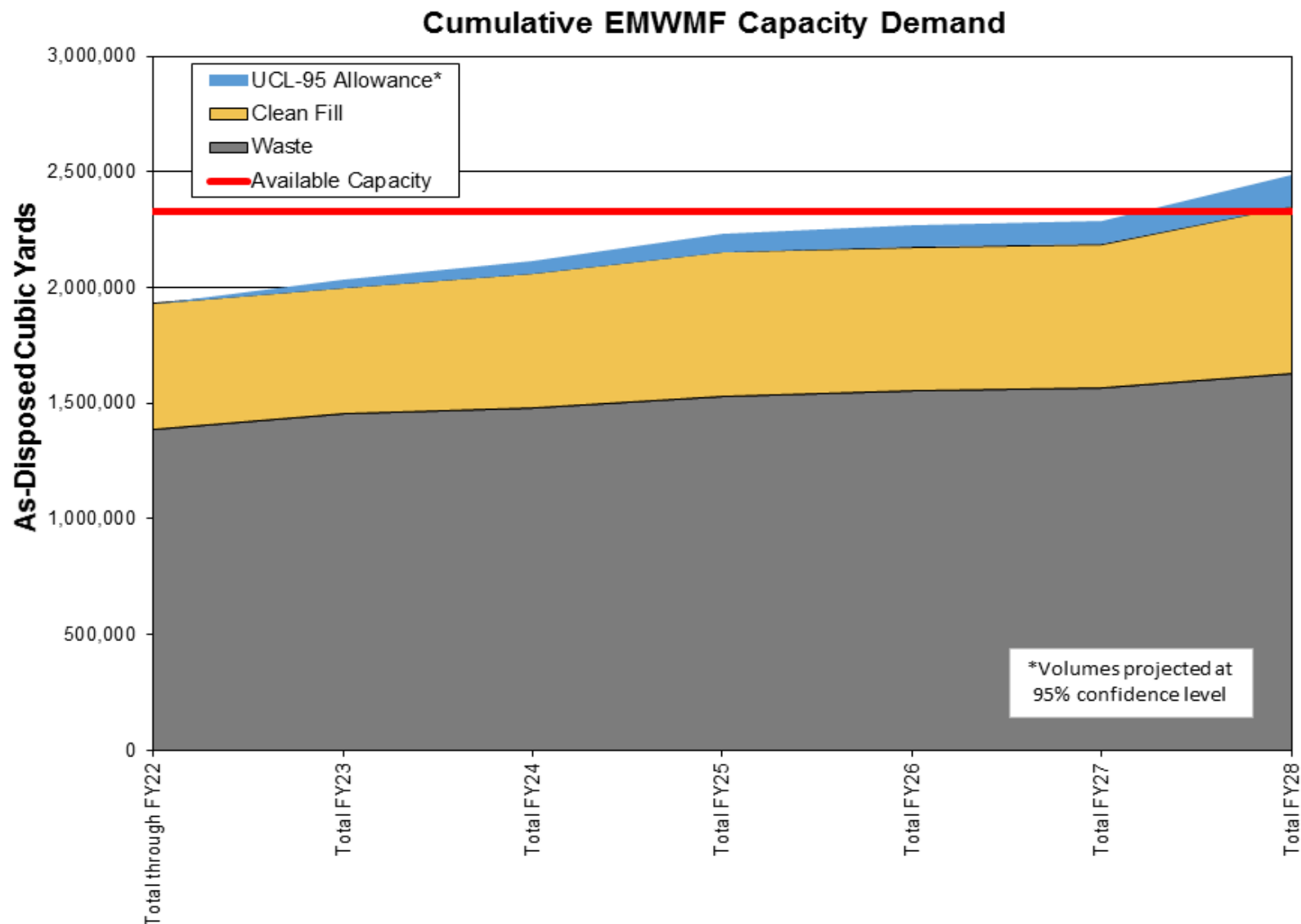
- Over 200 buildings to be demolished at Y-12 and ORNL
- Oak Ridge contains DOE's largest inventory of high-risk facilities
- Wide range of physical, chemical, and nuclear hazards that present risk to critical ongoing research and national security missions

# DOE's Oak Ridge 2023 Budget sustains cleanup momentum





# EMWMF projected capacity nears zero at end of 2020s



# Additional capacity is needed for Y-12 and ORNL CERCLA cleanup

- Permitted Oak Ridge Reservation Landfills
  - Constructed in phases to reach buildout of permitted capacity
  - Additional area at ORR Landfill V will be constructed in 2023
- EMDF (Low-Level CERCLA Cleanup Waste)
  - Chosen site is located at Central Bear Creek Valley
  - Projected disposal capacity is 2.2 M yd<sup>3</sup>
  - Record of Decision (ROD) was signed September 30, 2022
  - Projected to be operational by 2029



ORR Landfill V



# Systems Approach to Waste Disposal Provides Multiple Layers of Protection

## 1. Site Selection

- Siting
- Characterization

## 2. Design and Construction

- Engineered Barriers
- Construction QA/QC

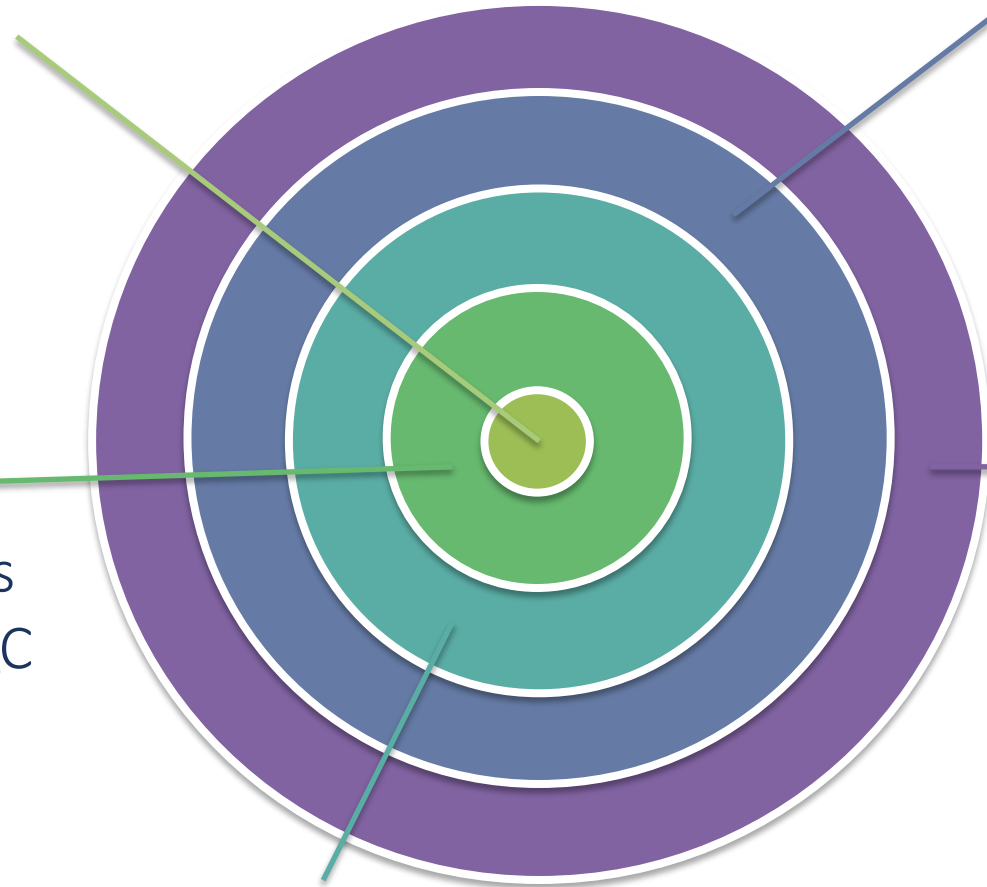
## 3. Performance Assessment

## 4. Site Operations

- Waste Acceptance Criteria
- Rigorous Waste Characterization
- Generator Certification Program
- Wastewater Management

## 5. Performance Assurance

- CERCLA 5-Year Reviews; DOE Order 458.1, Radiation Protection of the Public and the Environment
- Active/Passive Institutional Controls
- Monitoring



# OREM is committed to continued outreach

- Meetings with members of the public began in 2015
- OREM offered an initial 120-day public comment period
  - Included public info sessions in Fall 2018
  - Formal public meeting in November 2018
  - Outreach with local government
- OREM offered a 30-day public comment period in Spring/Summer of 2022 that addressed:
  - Water quality protection
  - Site groundwater characterization
  - Waste acceptance criteria
- Most recent public information session – December 8, 2022
- More events planned as project advances



OREM hosted a poster session on EMDF  
in December 2022.



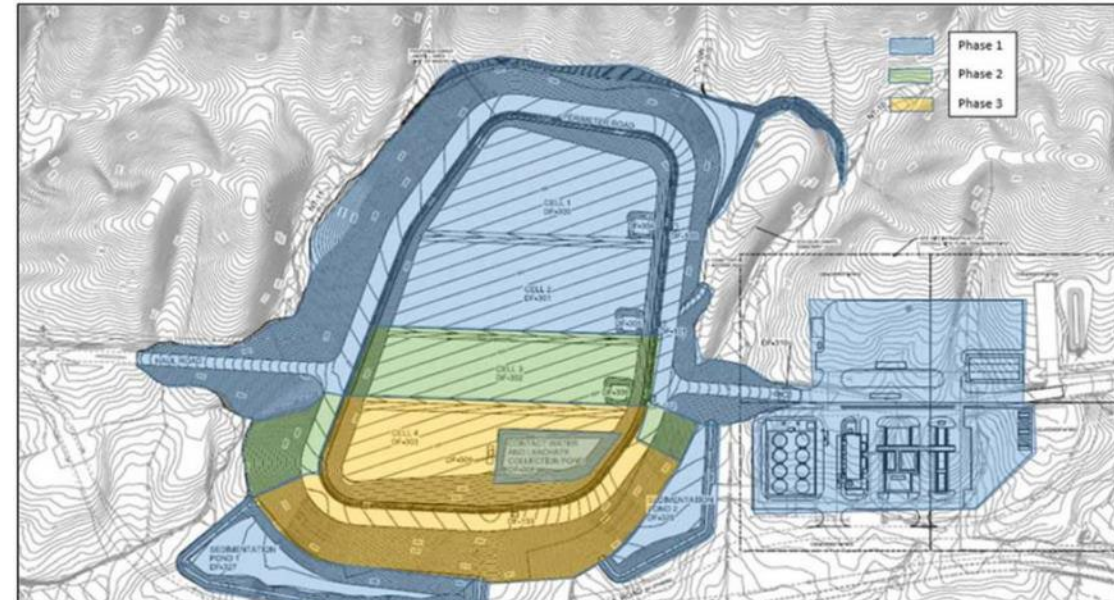
# Several steps remain before EMDF construction can begin

## DOE Order 435.1, Radioactive Waste Management

- Disposal Authorization Statements

## CERCLA Process

- EMDF D1 Early Site Preparation Remedial Design/Remedial Action Work Plan December 2022
- EMDF D1 Groundwater Field Demonstration Remedial Design Work Plan/Remedial Action Work Plan by May 2023
- EMDF D1 Landfill Remedial Design Work Plan by May 2024
- EMDF D1 Landfill Remedial Design Report/Remedial Action Work Plan by September 2026



EMDF Preliminary Design

# QUESTIONS?