

Ensuring Sufficient Waste Disposal Capacity for the Oak Ridge Reservation

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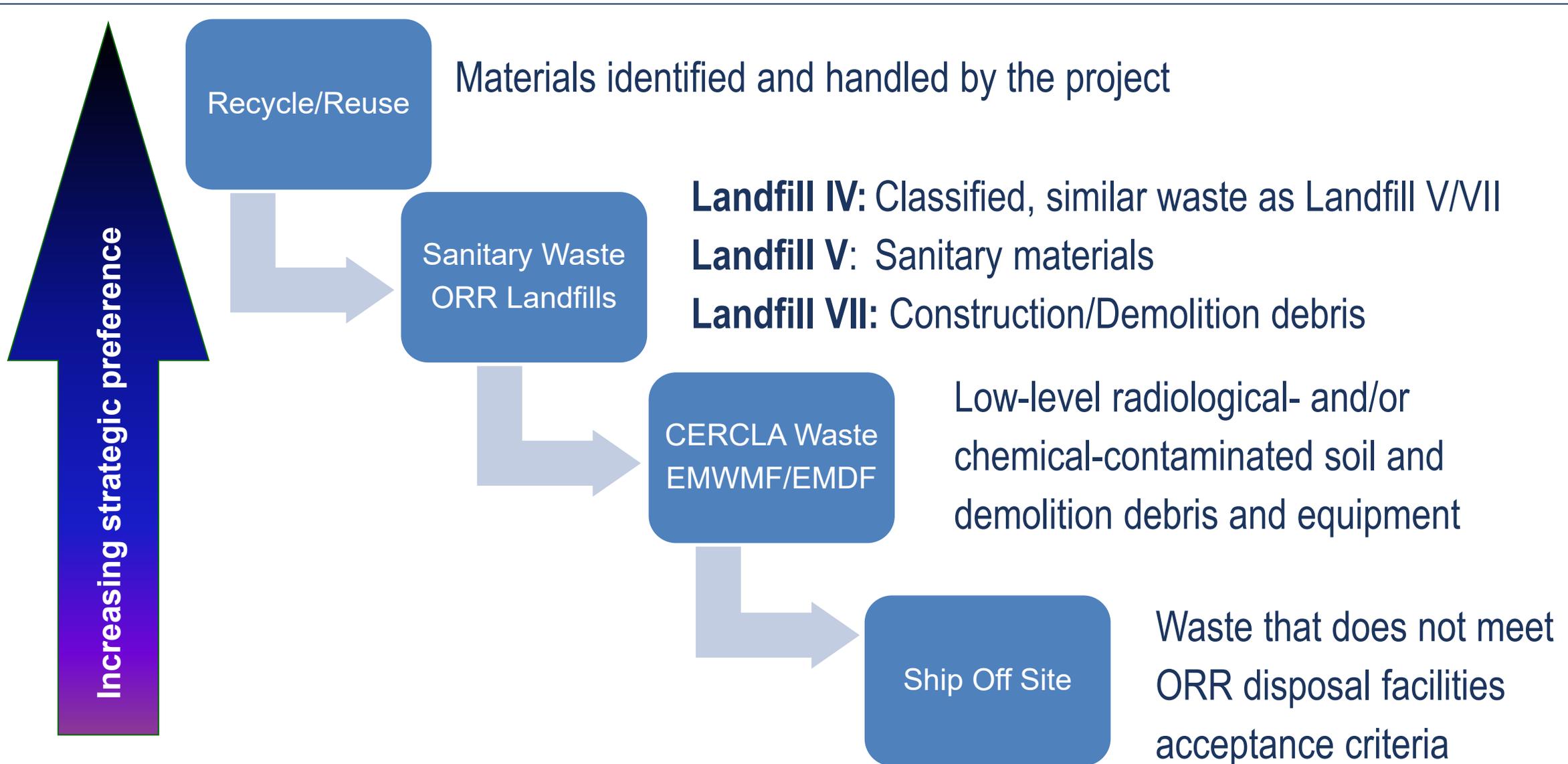
February 8, 2023

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 (EMWWMF) 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

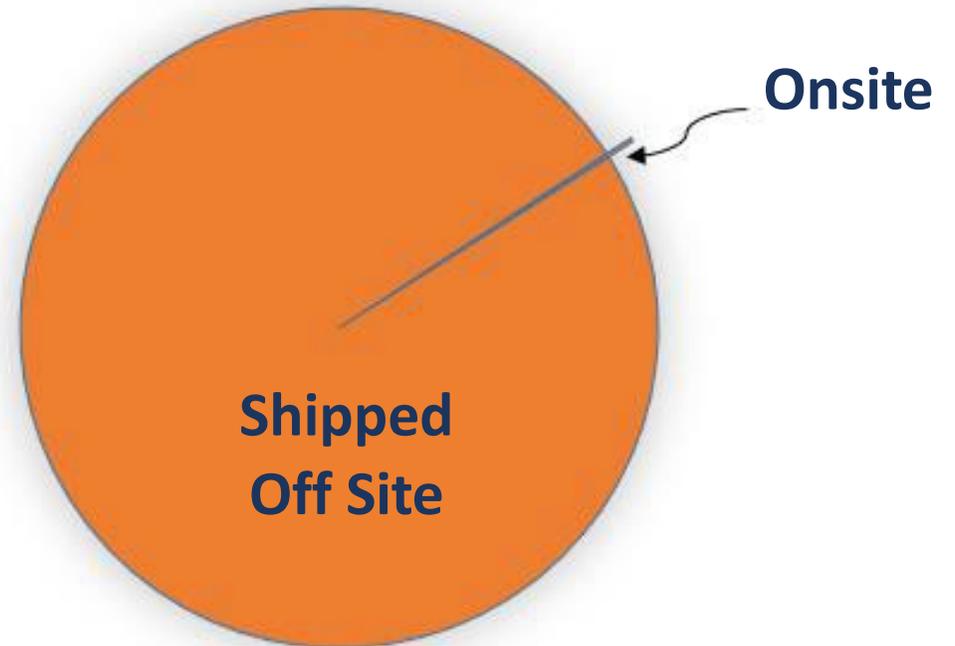
DOE waste disposal decisions follow waste hierarchy



The high hazard radioactive waste is disposed off site by DOE

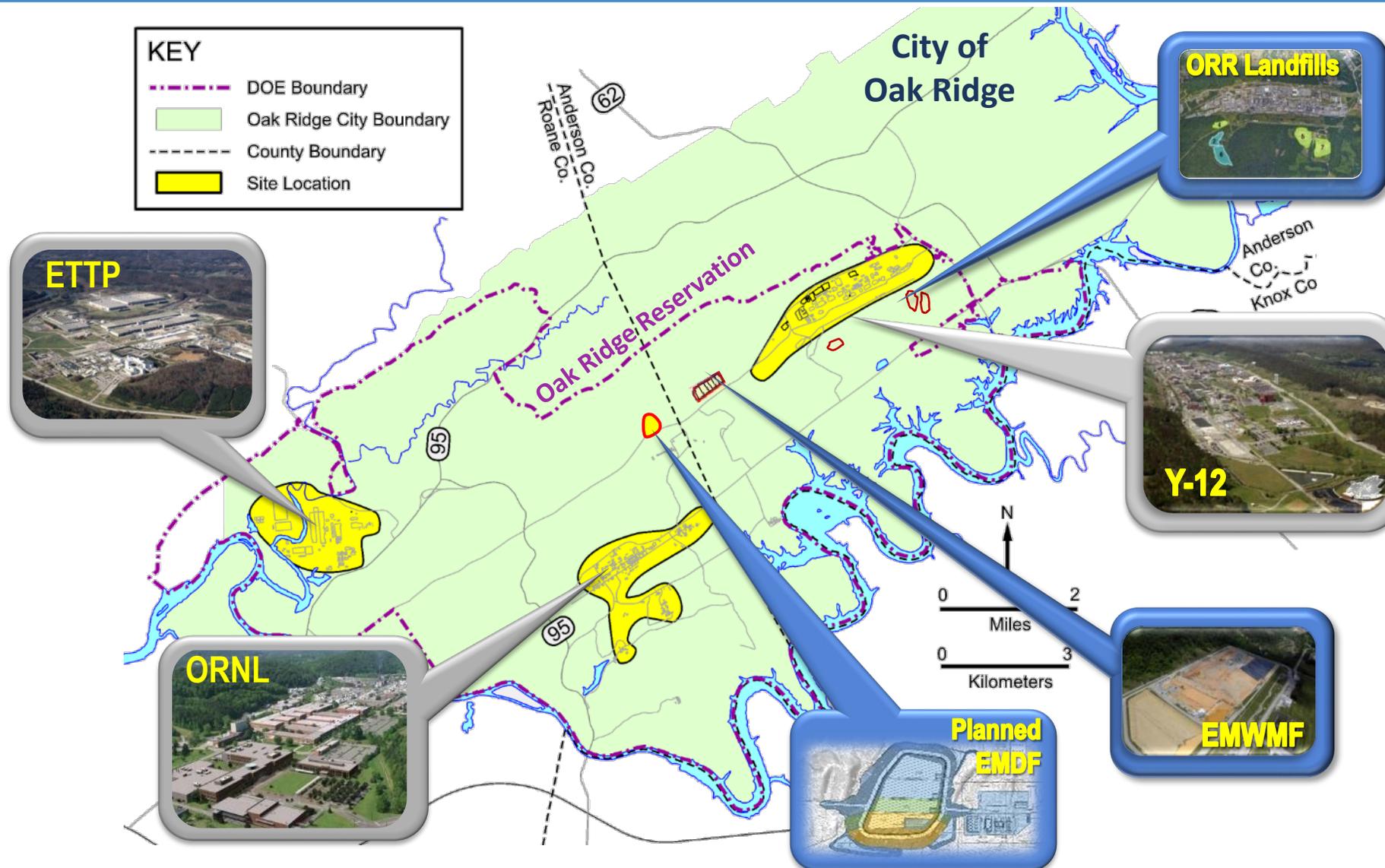


By Volume



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



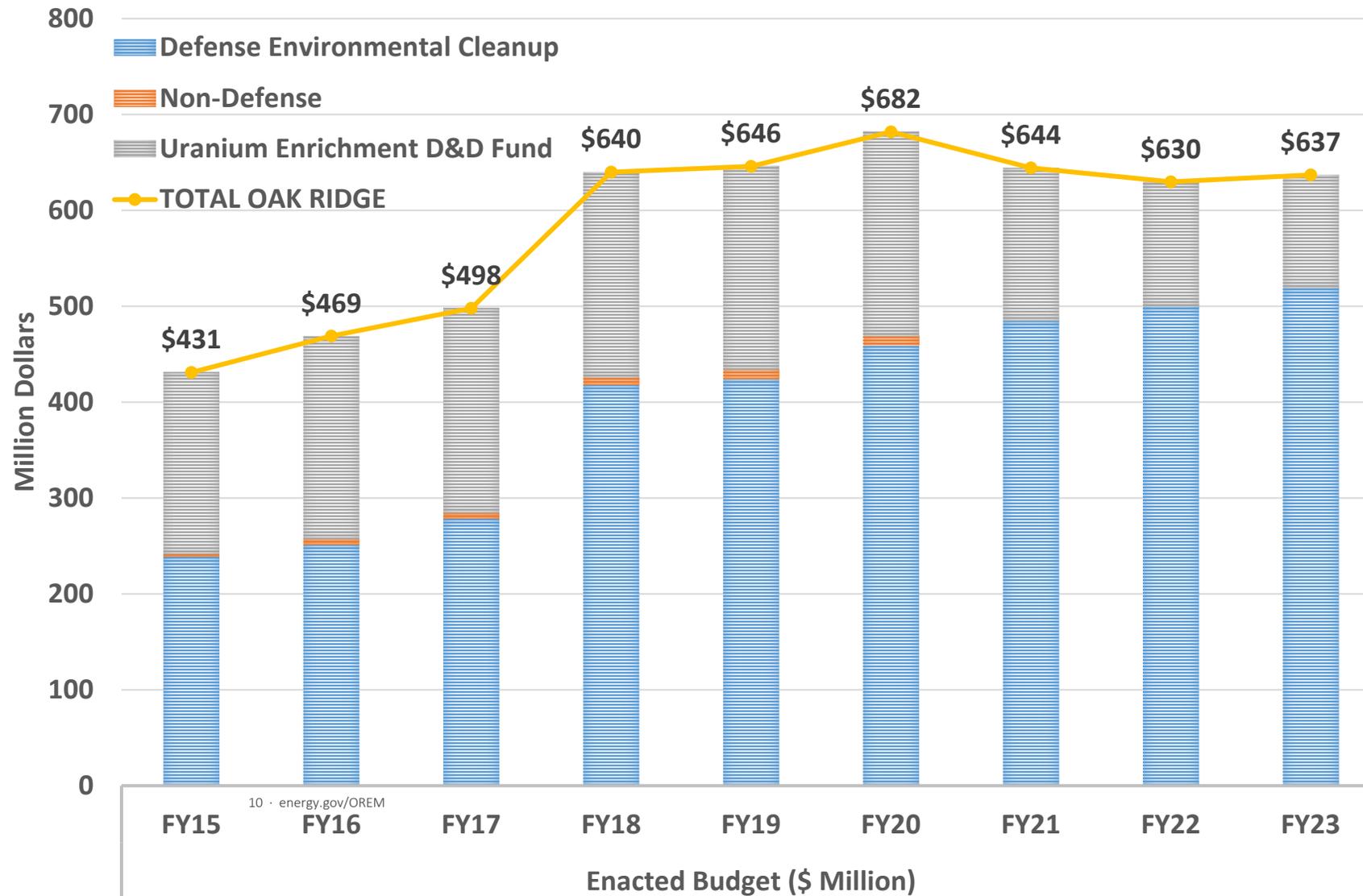
Excess Facilities at Y-12



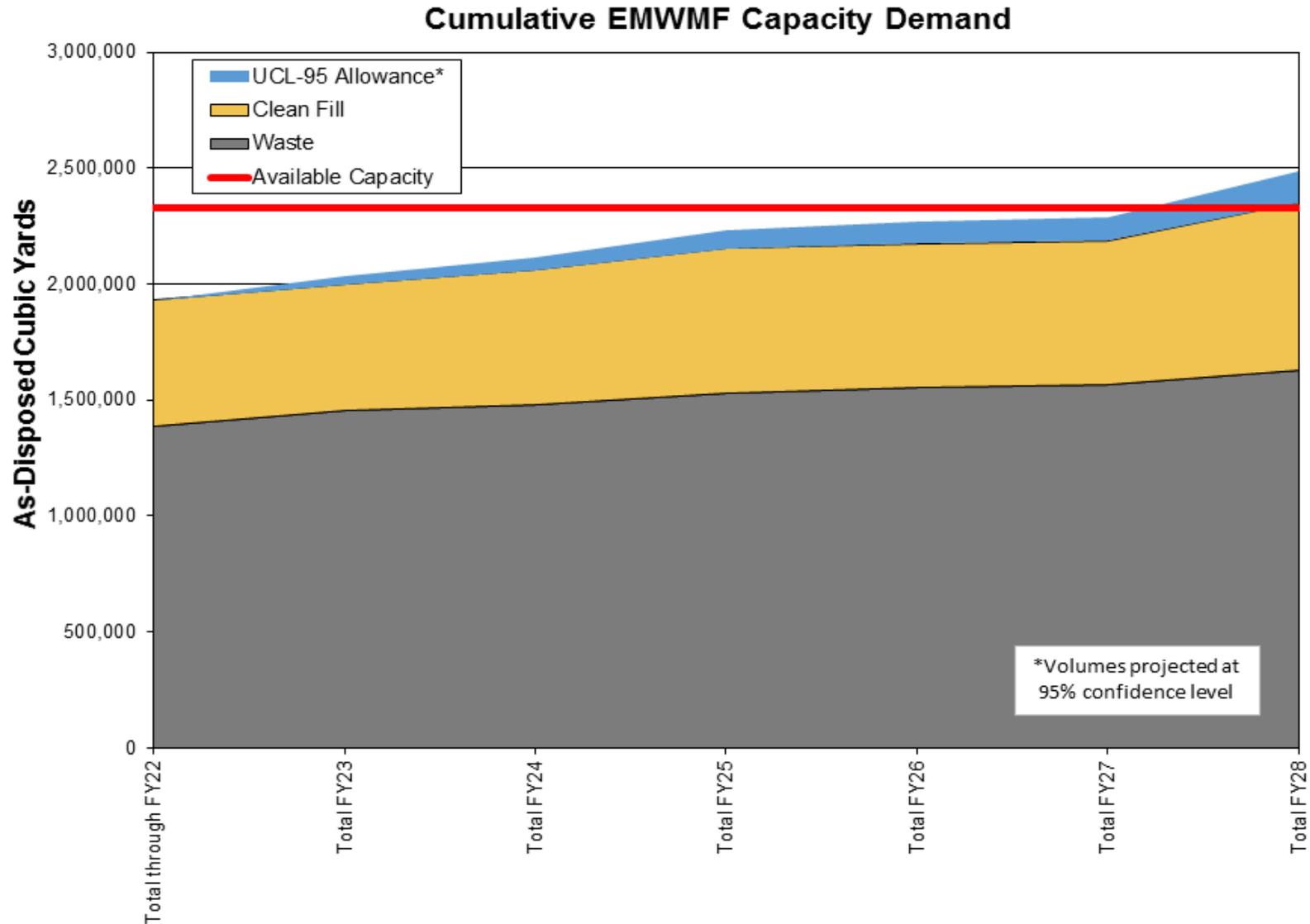
Excess Facilities at ORNL

- 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 yd³
 - 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

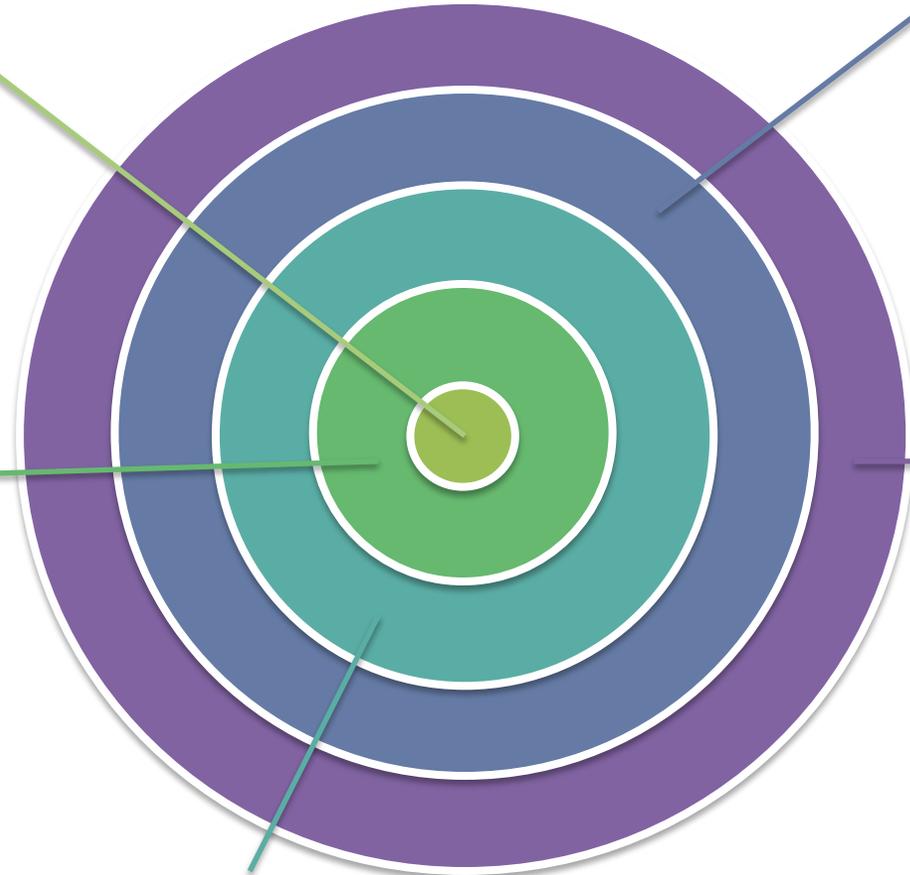
1. Site Selection

- 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

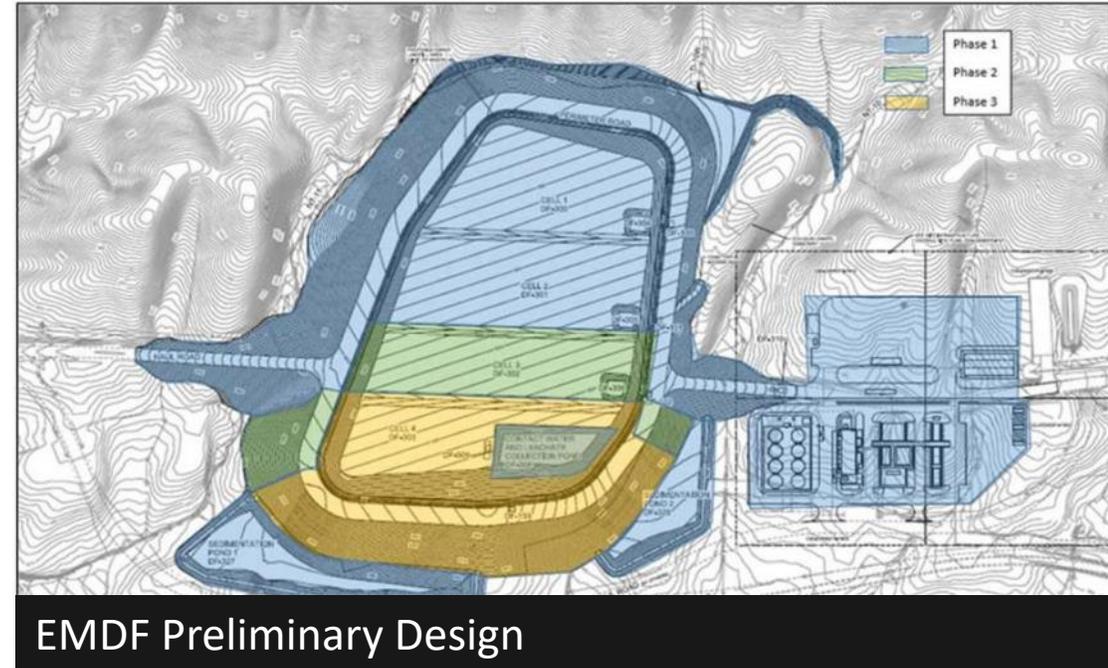
- EMDF D1 Early Site Preparation Remedial Design/Remedial Action Work Plan

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



QUESTIONS?