National Governors' Association
FFCAct State Mixed Waste Task Force
FAX Cover Sheet

To: Benito Garcia		From : John Thomasian
Fax Number : (505) 827-1544		Company : National Governors' Association
Date : 5/3/96	Time : 1:05:28 PM	For Information Call: 202-624-7881
Subject : May 9 conference call on TRU analysis		Fax Number : 202-624-5313

Please note that we will hold a conference call next Thursday, May 9, at our standard time of 12:00 noon EDT (the call-in number is still 703-736-7324; ask for the "NGA federal facilities" call). The purpose of the call will be to review early results from analyses concerning the National TRU Management Plan. States with DOE facilities storing TRU waste should receive a packet of information from DOE Carlsbad in preparation for the call. States without sites not planning to ship TRU waste may elect not to join the call (no other business is scheduled at this time).

We are still planning to hold future calls on the Waste Management PEIS and Draft PEIS for "Storage and Disposition of Weapons-Usable Fissile Materials" within the next few weeks.

Please call me if you have any questions.

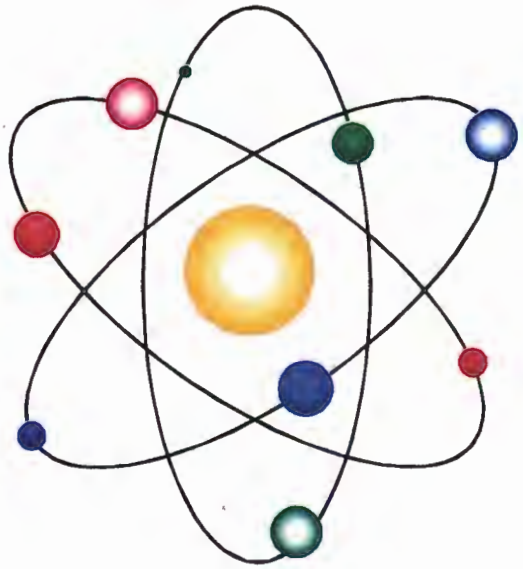
Thanks.

960508

To Benito Steve Z

WIPP Library

National TRU Waste Management Plan



Development Status

Prepared by U.S. Department of Energy
Carlsbad Area Office, National TRU Program
May 1996

National TRU Waste Management Plan

Development Status

National TRU Program

Carlsbad Area Office

National Governors Association Briefing

May 9, 1996

National TRU Waste Management Plan

- National TRU Waste Management Plan
  - » Process
  - » Current Status
  - » Path Forward
- National TRU Waste System Model
  - » Modeling Scenarios
  - » Modeling Results
  - » Path Forward

Carlsbad Area Office

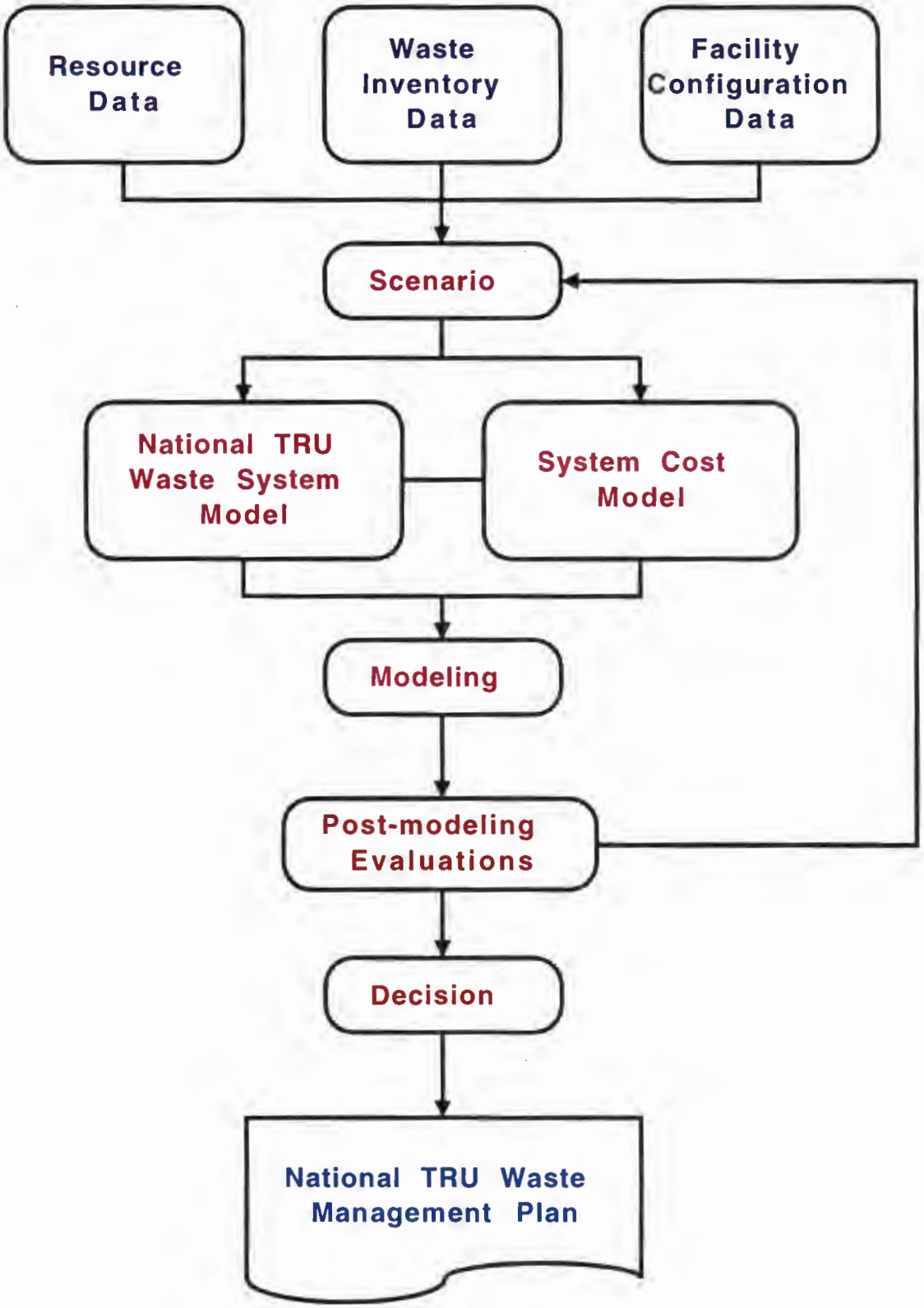
National TRU Waste Management Plan

National TRU Program System Process Overview

National TRU Waste Management Plan

- Ensures TRU waste management programs are integrated, coordinated, and prioritized
- Systematically prioritize enabling projects
- Focus activities for maximum use of WIPP disposal
- Facilitate FFCAct STP implementation
- Provide generator sites annual guidance for effective operations planning

National TRU Waste Management Plan Development Process



National TRU Waste Management Plan

- Management Plan will describe:
  - » Existing Facilities Baseline
  - » FFCAct Compliance/WIPP Disposal Plan
  - » Alternative Scenarios
- Resulting in a Recommended Configuration
  - » Near-term (< 5 years) activities and site specific projects
  - » Long-term programs
  - » Relative Cost/Disposal Throughput Benefit

National TRU Waste Management Plan

- Schedule:
  - » A Work in Progress with DOE Involvement
  - » Annotated Outline - Complete
  - » Prototype Draft - May
  - » DOE Review Draft - June
  - » External Review Draft - July
  - » Final Draft - August
  - » Final Plan Distributed - September

Stakeholder Interactions

- Goal:
  - » Build Stakeholder Acceptance into Plan by Involvement in the Process
  - » Briefings on the Process
  - » Informal Discussions
  - » Modeling Results
  - » Post-Modeling Evaluations
  - » Review of Management Plan

Stakeholder Interactions

- Current Stakeholder Involvement:
  - » Generator Sites via Steering Committee and Executive Committee
  - » DOE Headquarters
  - » National Govenors Association
  - » Western Governors Association
  - » Southern States Energy Board
  - » Government Accounting Office

National TRU Waste System Model

National TRU Waste System Model

- A computer simulation model used to evaluate waste management system configurations
- Integrates cost, schedule, and throughput for a given waste management system configuration
- Provides a defensible decision process to enhance stakeholder acceptance
- Supports Management Plan development

National TRU Waste System Model

- Current Status
  - » Two Modeling Scenarios Completed
    - – Existing Facilities Baseline
    - – FFCAct Compliance/WIPP Disposal Plan
- Inputs & Process Flow Validated by Generator Sites
  - » All data points have documented references

Existing Facilities Baseline

- Process Flow limited to existing facilities and process capability within the DOE Complex
- Does not represent a "No Action" or "Safe Storage" Alternative
- Assumptions:
  - » WIPP 35-year Operational Life beginning in 4/98

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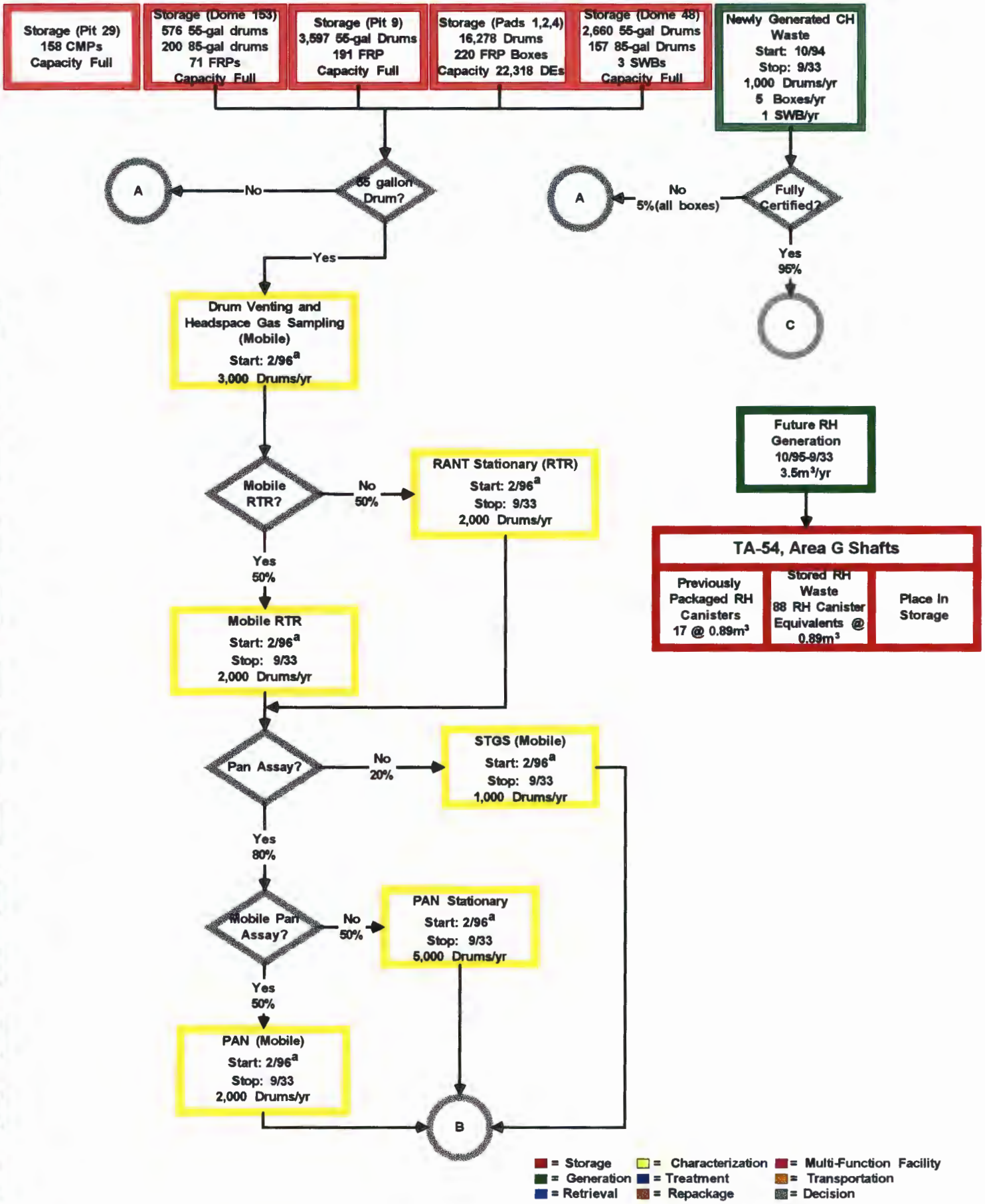
Existing Facilities Baseline

Scenario 00.00.00



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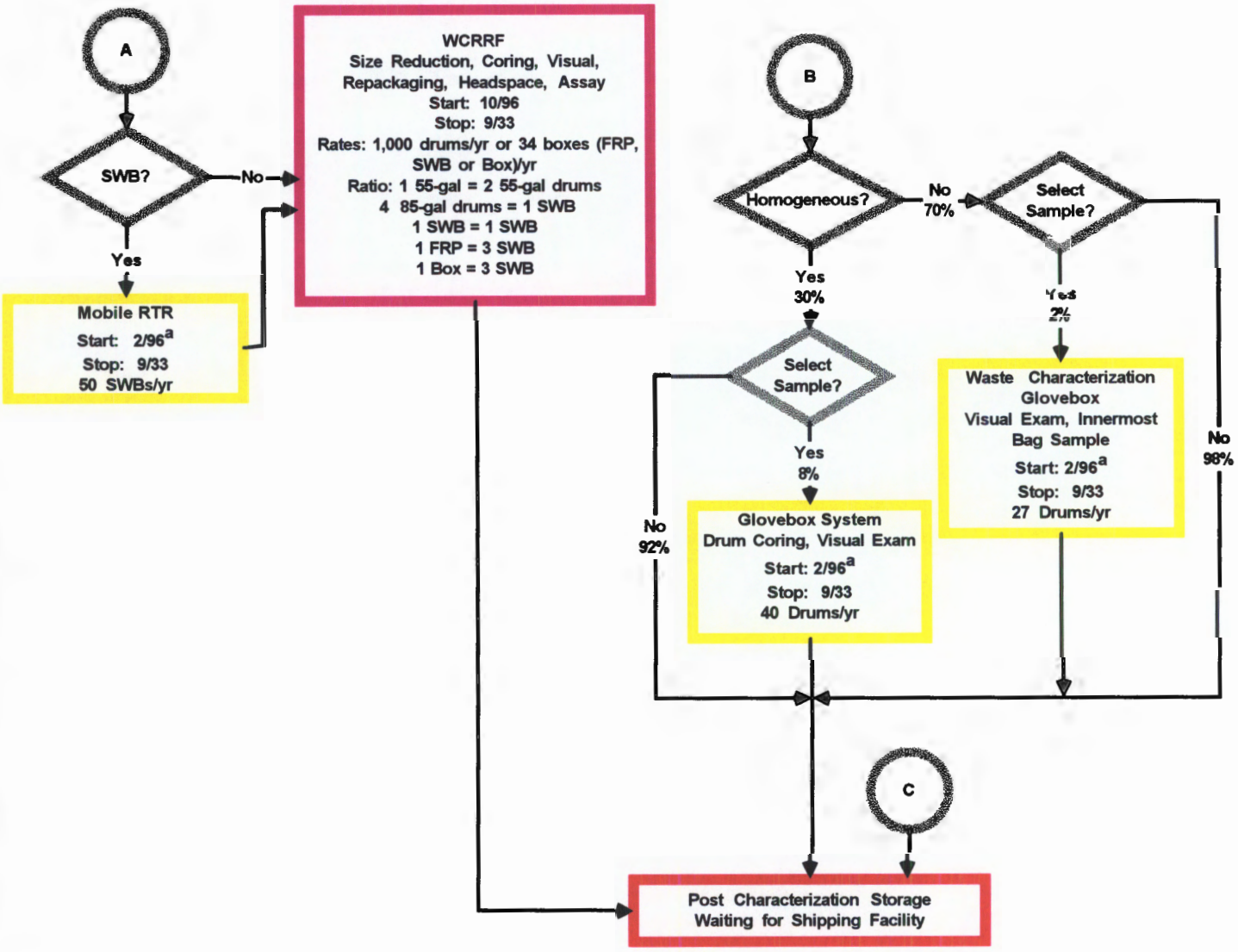
Existing Facilities Baseline

Scenario 00.00.00



Note:

* This flow diagram is based on the TRU Waste Management Data Package and confirmation from a site representative.
* Inventory was provided by the BIR Rev. 2

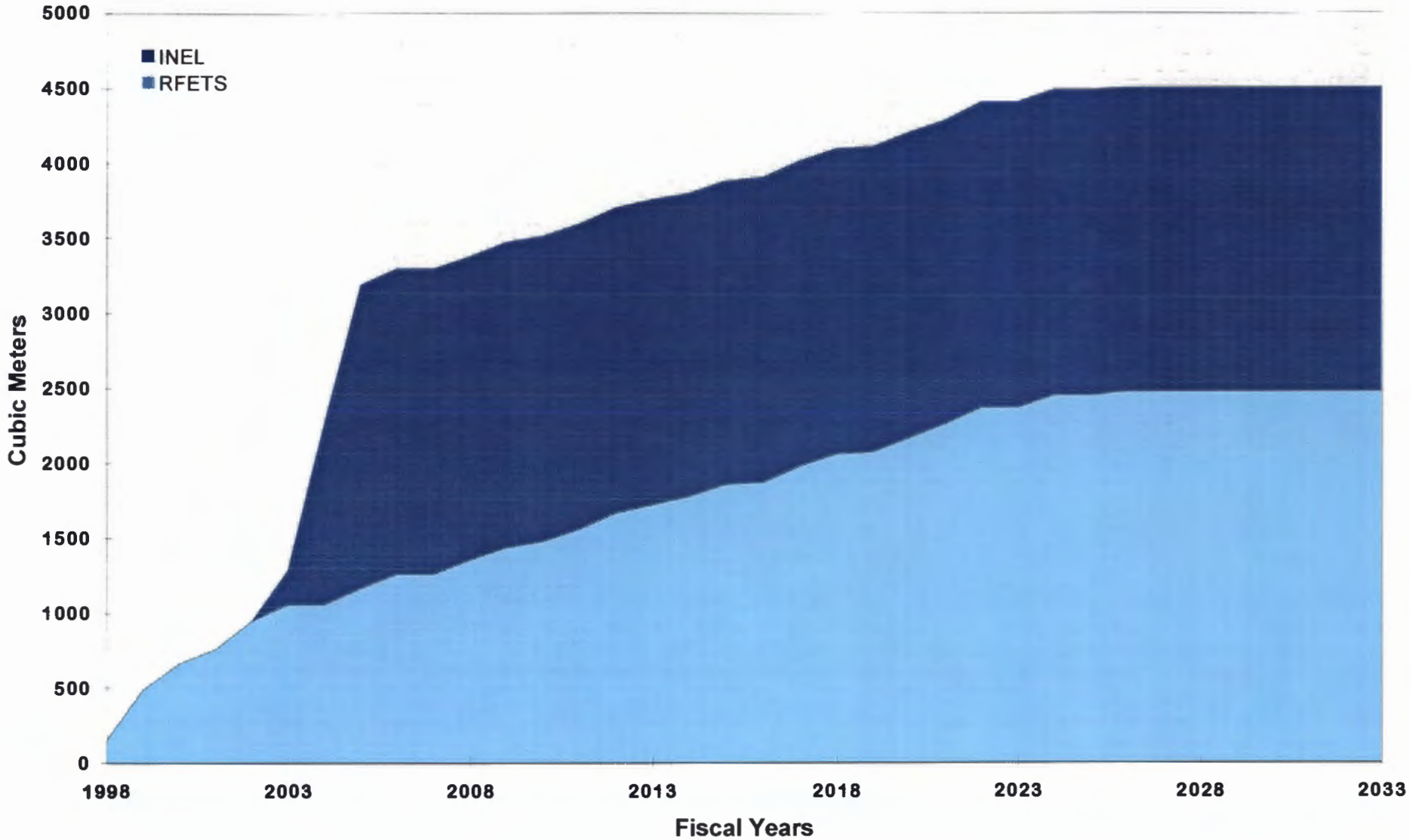
a. Date is based on a DOE approved QAPJP.

Storage | Characterization | Multi-Function Facility
Generation | Treatment | Transportation
Retrieval | Repackage | Decision

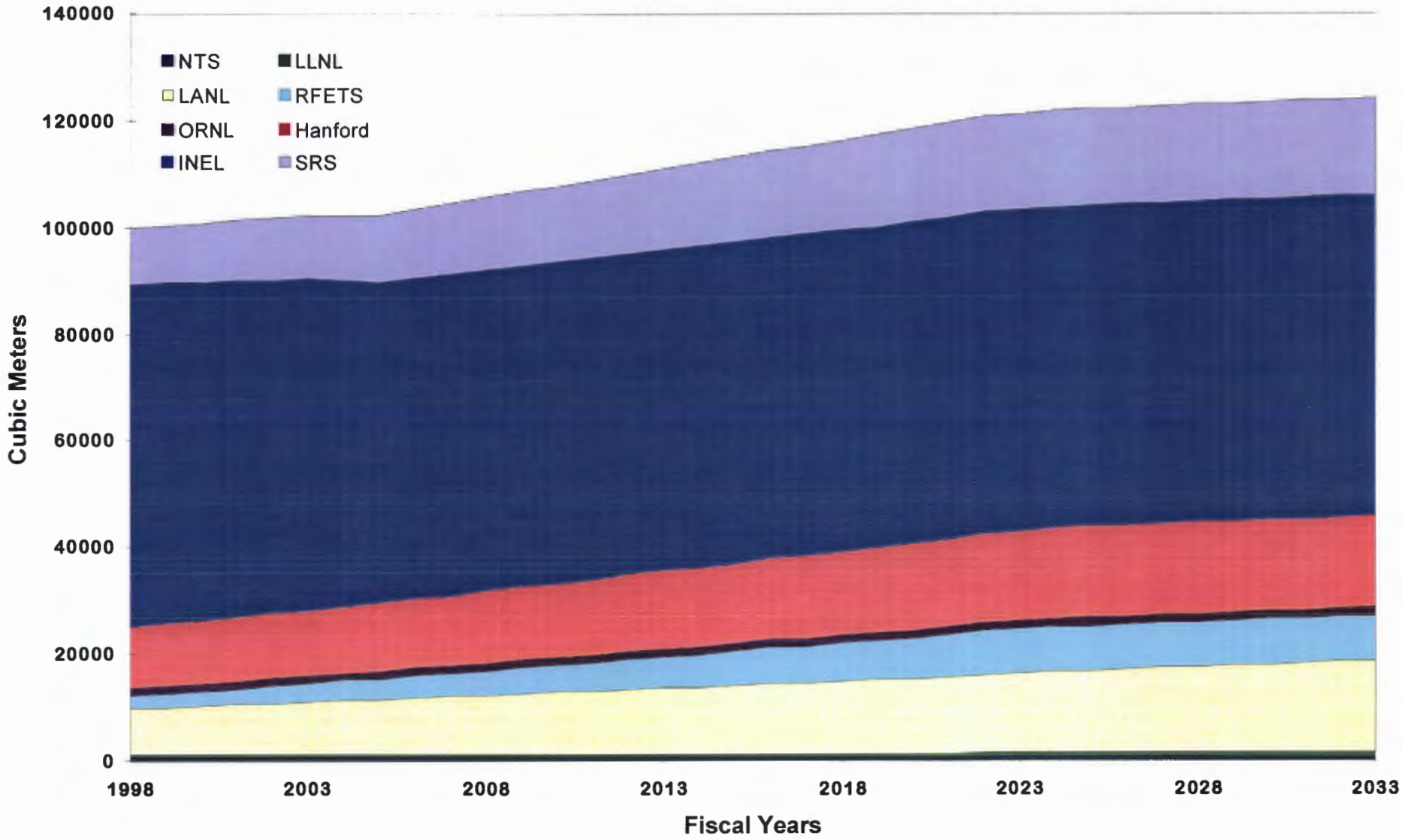
Existing Facilities Baseline

- Results:
  - » Only INEL and RFETS have the facilities to characterize, certify, and ship waste to WIPP
  - » Total Waste Volume Disposed
    - 4505 m^3 CH
    - 0 m^3 RH
    - 4505 m^3 Total
  - » DOE TRU Complex Model Life Cycle Cost
    - ≈ $18.847B

Existing Facilities Baseline
CH Waste Volume Disposed



Existing Facilities Baseline
CH Waste Volume Remaining



FFCAct Compliance/WIPP Disposal Plan

- Process Flow based upon facilities listed in the FFCAct Site Treatment Plans, Consent Orders, and facility planning information from generator sites
- Designed to achieve compliance with FFCAct requirements and disposal at WIPP

FFCAct Compliance/WIPP Disposal Plan

- Assumptions:
  - » Transportation Corridors - Routes and Schedules
  - » Planned facility schedules consistent with Consent Orders and Site Treatment Plans
  - » Infrastructure in place to begin RH Disposal in FY 2002

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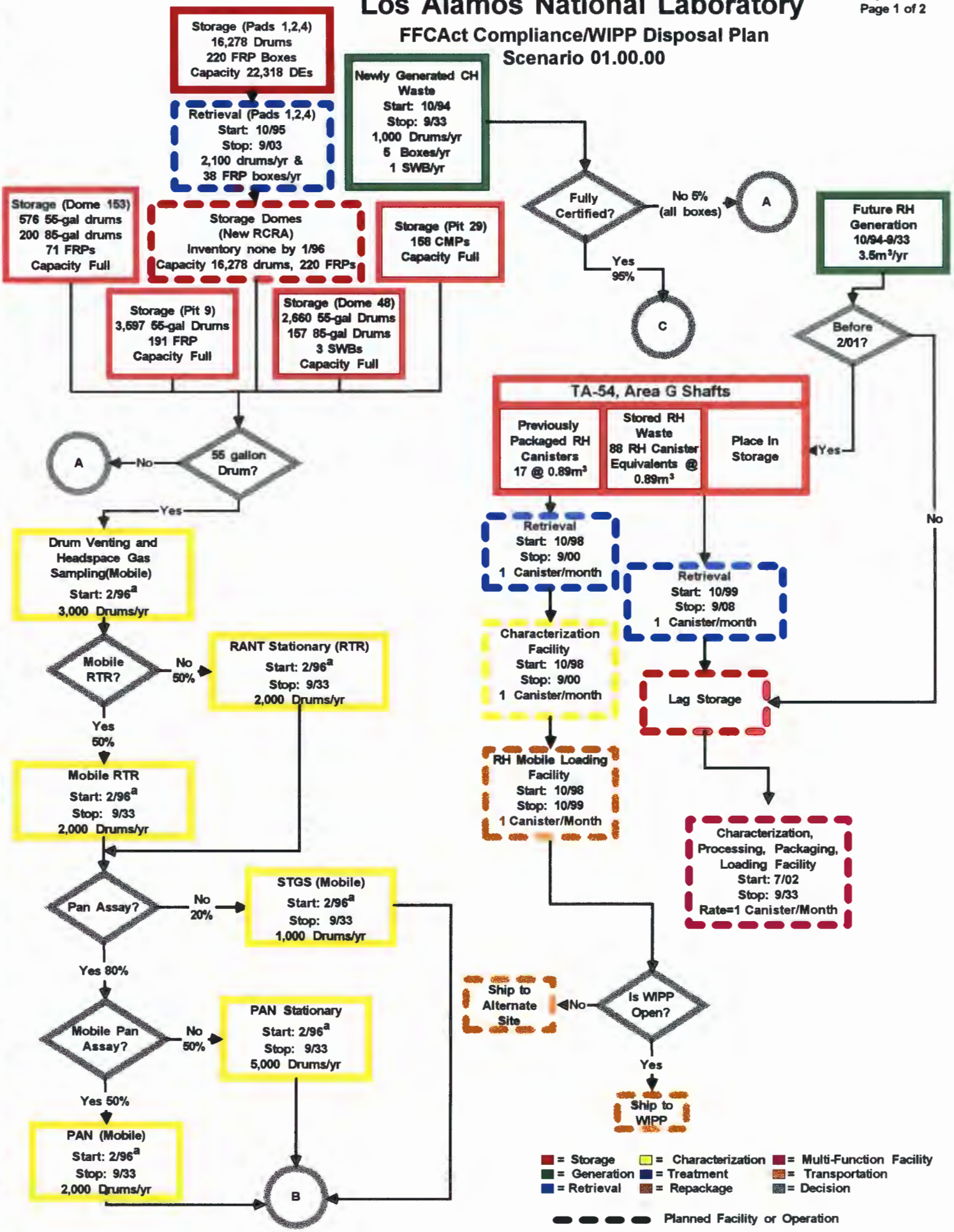
FFCAct Compliance/WIPP Disposal Plan
Scenario 01.00.00



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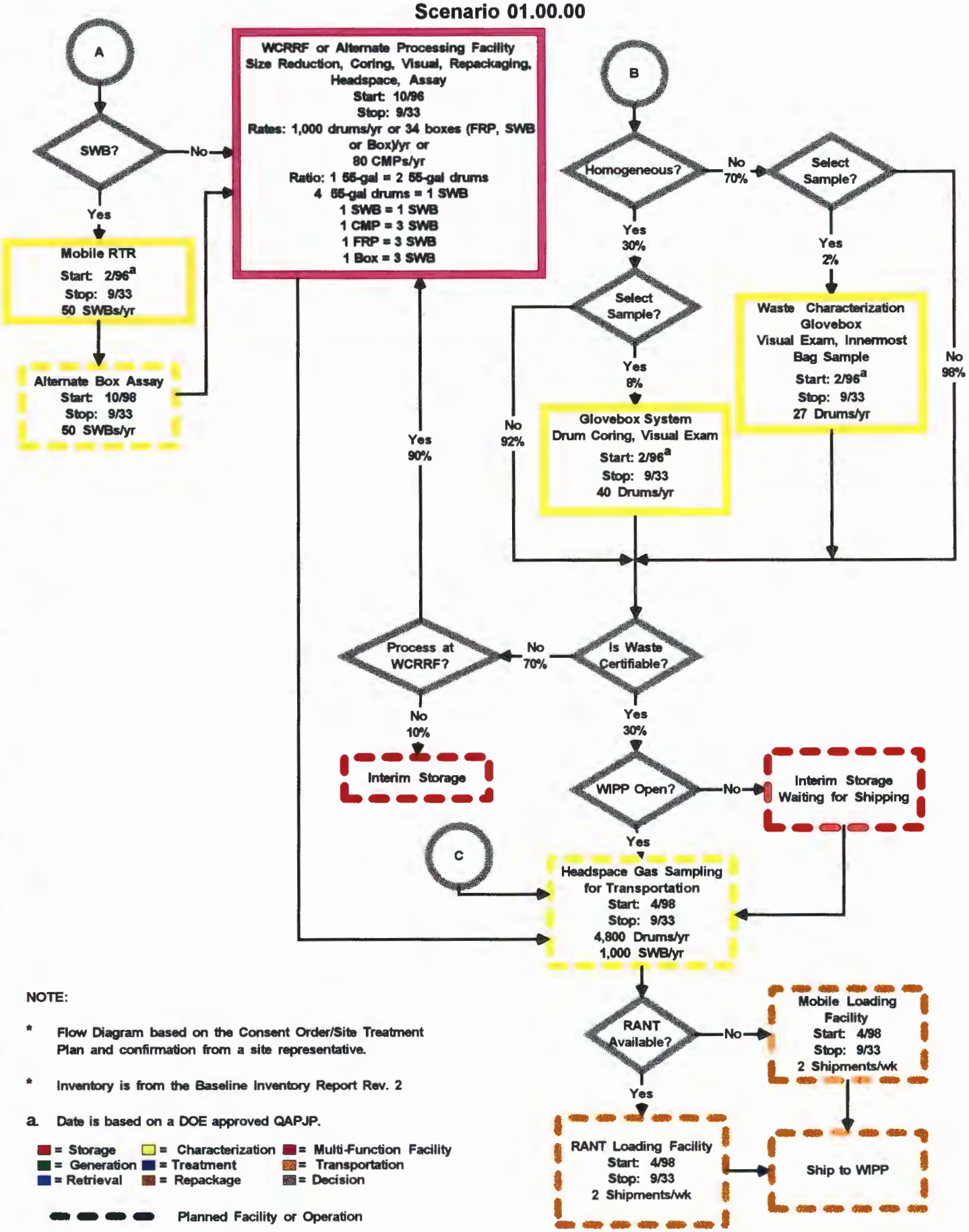
FFCAct Compliance/WIPP Disposal Plan

Scenario 01.00.00



NOTE:

* Flow Diagram based on the Consent Order/Site Treatment Plan and confirmation from a site representative.

* Inventory is from the Baseline Inventory Report Rev. 2

a. Date is based on a DOE approved QAPJP.

= Storage = Characterization = Multi-Function Facility
= Generation = Treatment = Transportation
= Retrieval = Repackage = Decision

Planned Facility or Operation

FFCAct Compliance/WIPP Disposal Plan

Site	QAPjP Approved	Site Certified	Corridor Open
INEL	Jul 96	Nov 96	Apr 98
LANL	Feb 96	Aug 97	Apr 98
RFETS	Feb 96	Dec 97	Apr 98
SRS	Jan 97	Mar 98	Apr 98
ORNL	Feb 96	July 98	Oct 98
LLNL	Feb 96	Sept 98	Oct 99
NTS	Oct 96	Nov 98	Oct 99
Hanford	Sept 99	May 00	Sep 00

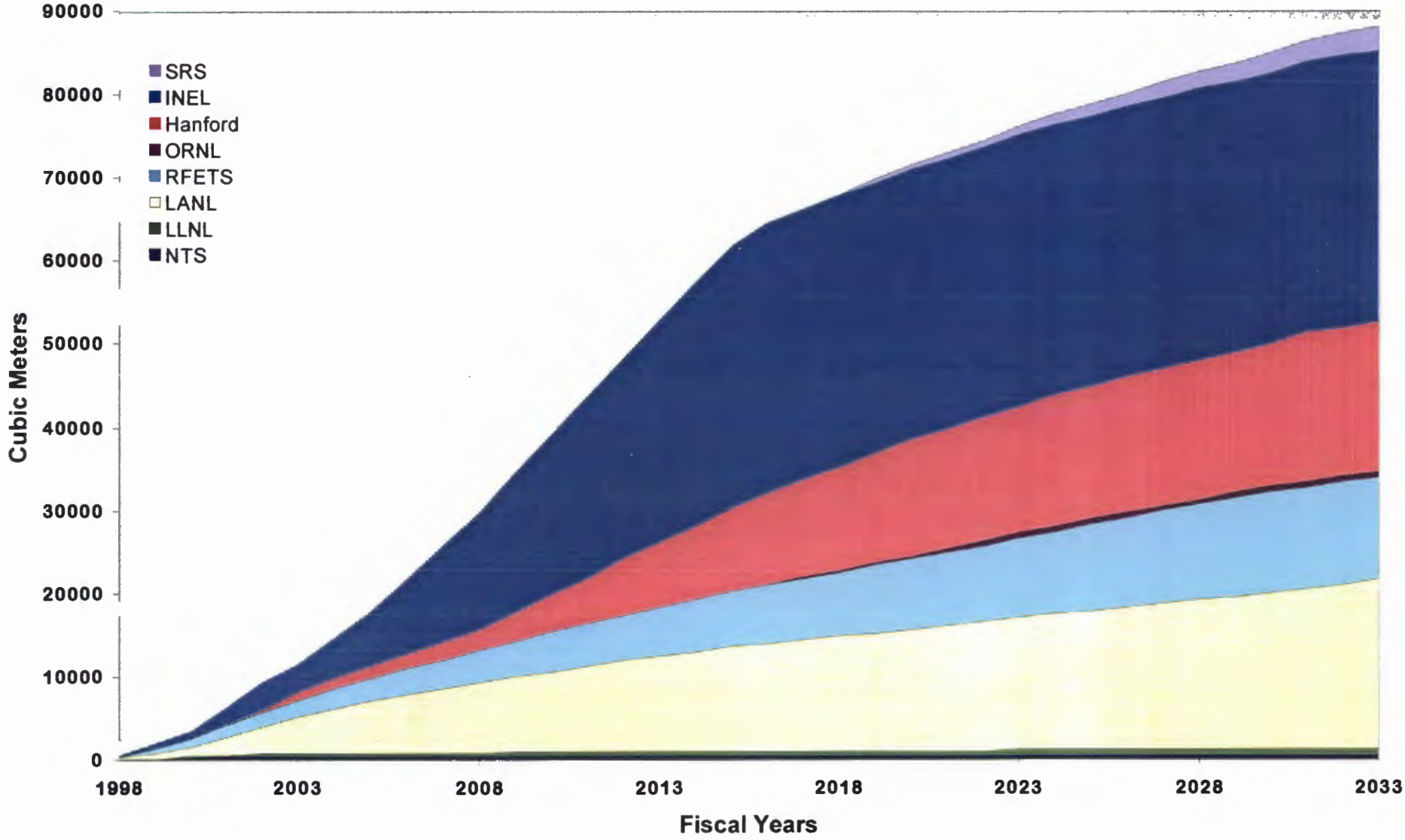
FFCAct Compliance/WIPP Disposal Plan

- DOE Complex Modifications:
  - » Characterization Facilities at:
    - – Hanford, INEL, LLNL, NTS, ORNL, SRS
  - » Repackaging Facilities at:
    - – Hanford, INEL, LANL, LLNL, ORNL, NTS, SRS
  - » Treatment Facilities at:
    - – Hanford, INEL, ORNL, RFETS, SRS
  - » Transportation Loading Facilities at:
    - – Hanford, INEL, LANL, LLNL, NTS, ORNL, SRS
  - » Mobile Waste Characterization & Transportation Loading Units at:
    - – LANL

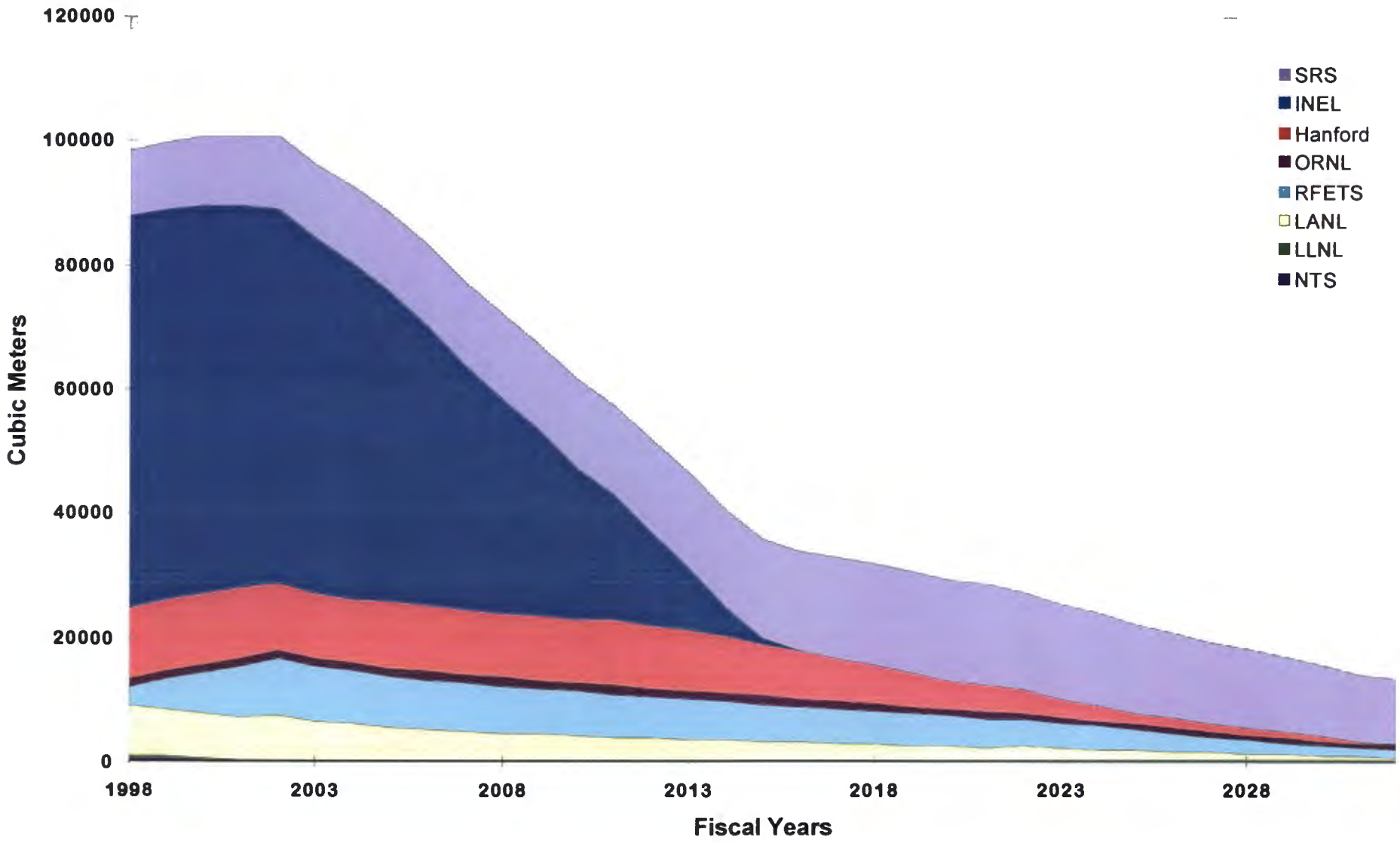
FFCAct Compliance/WIPP Disposal Plan

- Results:
  - » All Major Sites have the facilities to characterize, certify, and ship waste to WIPP
  - » Total Waste Volume Disposed
    - 88055 m^3 CH
    - 3297 m^3 RH
    - 91352 m^3 Total
  - » DOE TRU Complex Model Life Cycle Cost
    - ≈ $39.969B

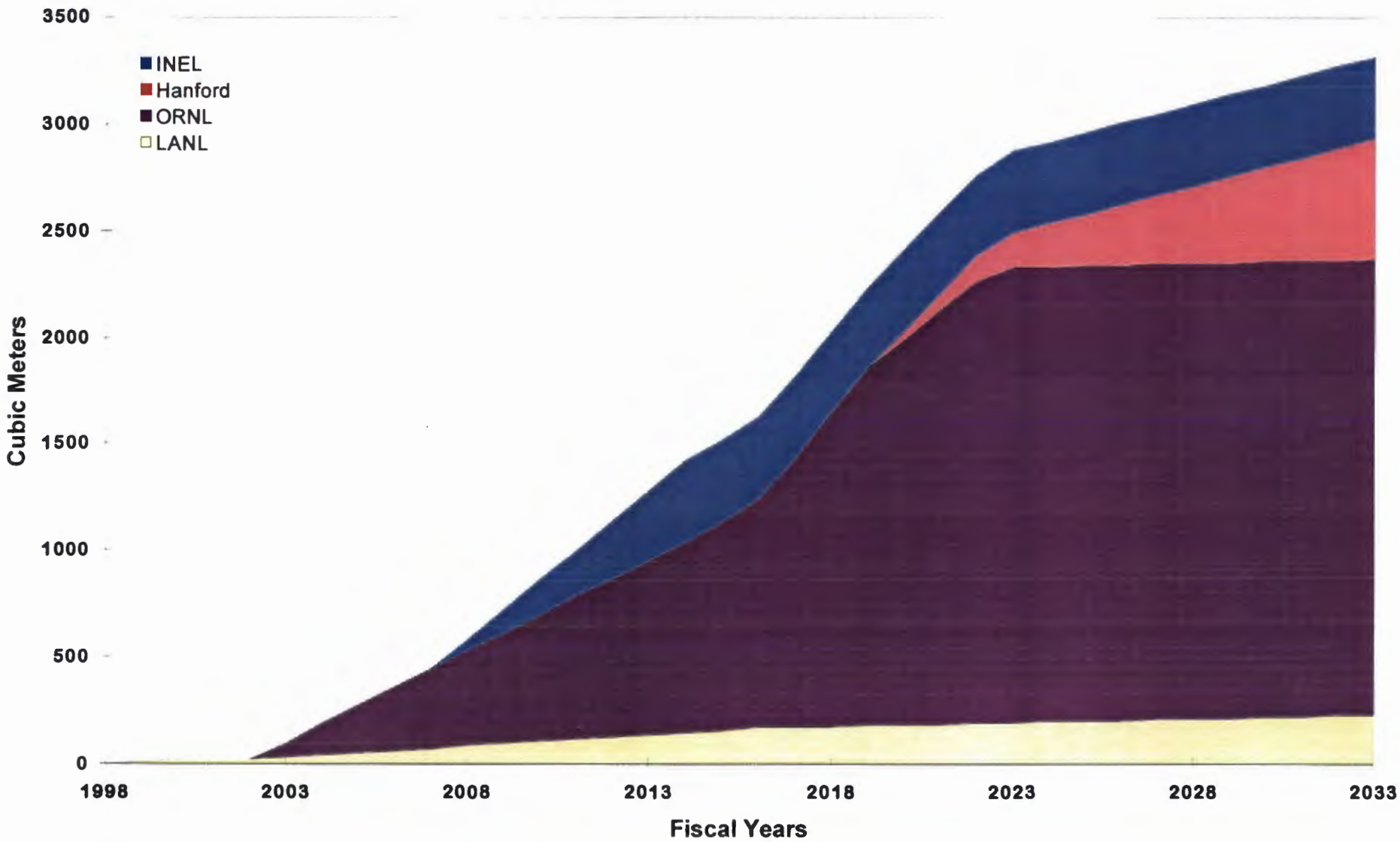
FFCAct Compliance/WIPP Disposal Plan
CH Waste Volume Disposed



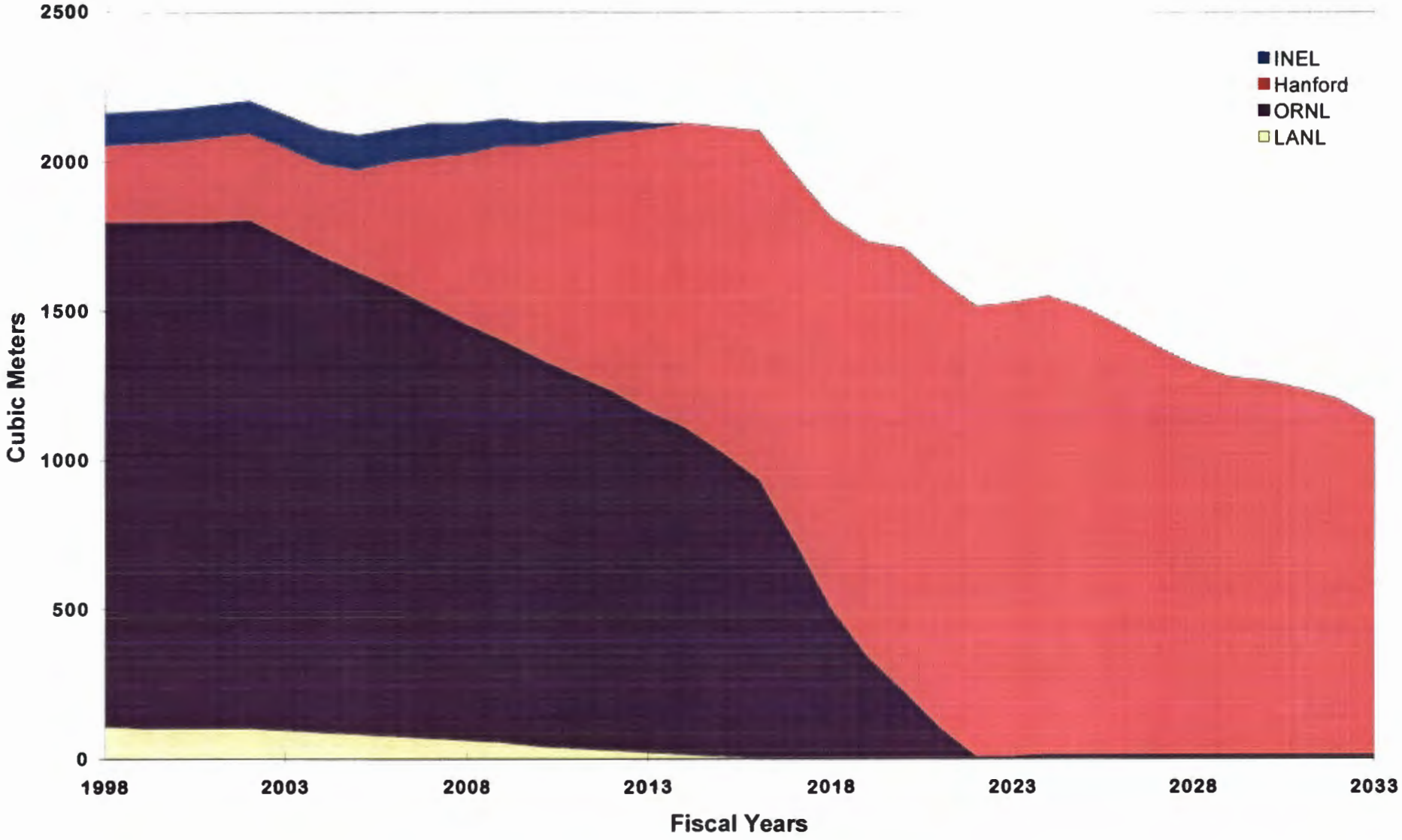
FFCAct Compliance/WIPP Disposal Plan
CH Waste Volume Remaining



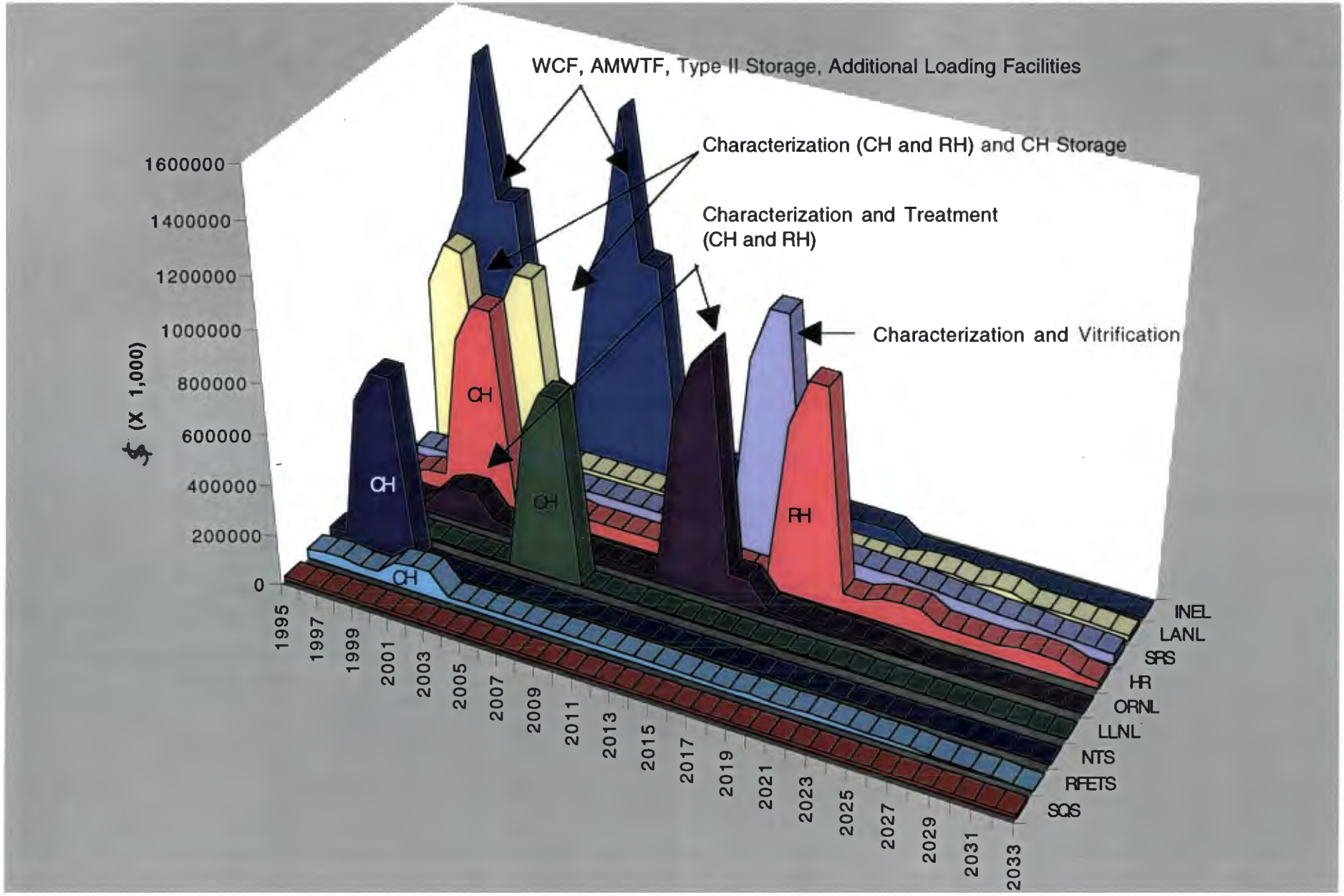
FFCAct Compliance/WIPP Disposal Plan
RH Waste Volume Disposed



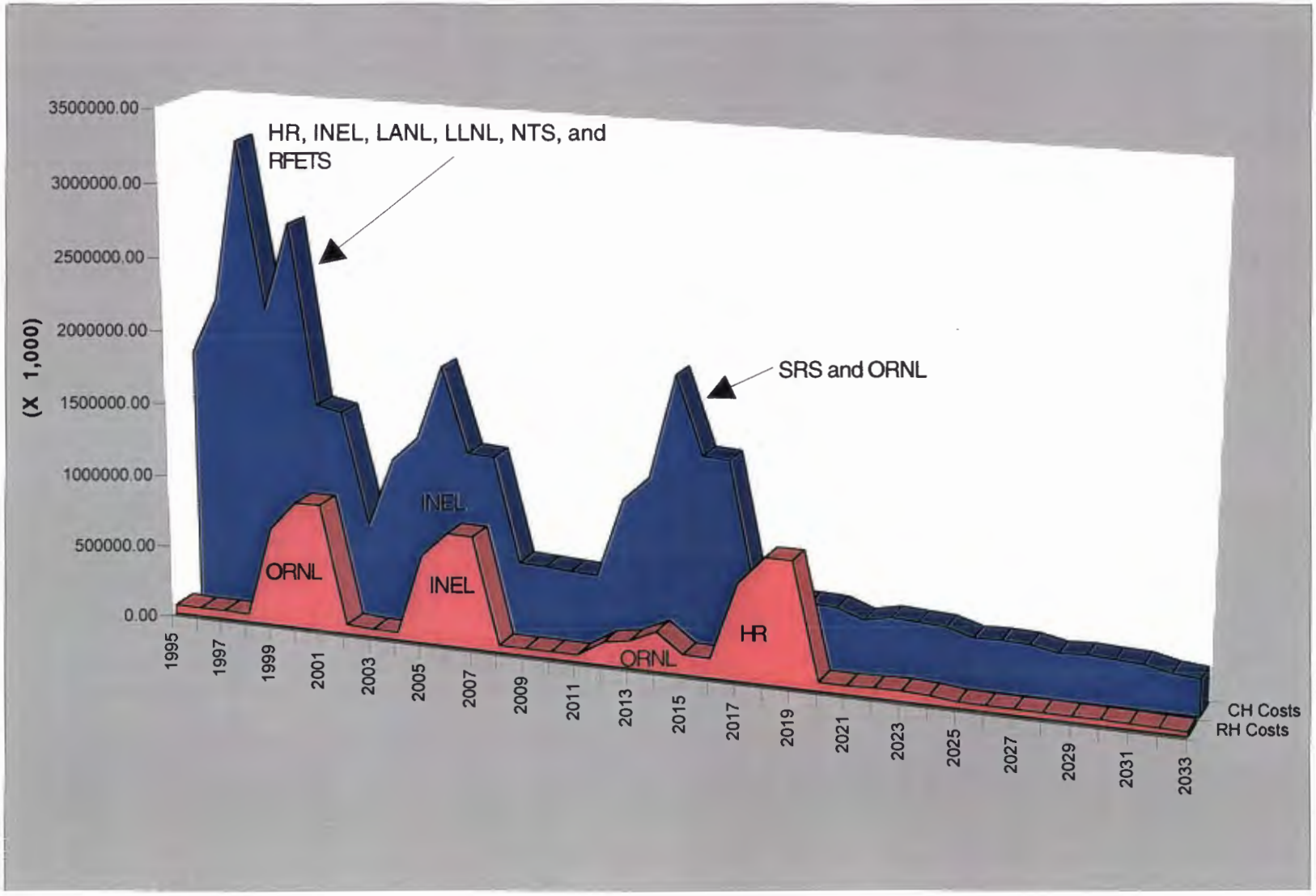
FFCAct Compliance/WIPP Disposal Plan
RH Waste Volume Remaining



FFCAct Compliance/WIPP Disposal Plan
(Generator Sites Only)



FFCAct Compliance/WIPP Disposal Plan
Annual Costs for the DOE Complex



Compliance Assessment

- Specific Consent Order/Site Treatment Plan Milestones:
  - » INEL:
    - ✓ 3100 m^3 shipped by 2002
    - ✗ 2000 m^3 shipped per year after 2002
      (milestone achieved if shipped volume is based on pre-treated ALLMW and TRU Waste volumes)
    - ✓ Initiate AMWTF Operations by March 2003
    - ✓ All waste removed by 2018

Compliance Assessment

» ORNL:

- ✓ Initiate treatment of RH sludges by June 2002
- ✓ Initiate shipment of RH sludges by September 2002
- ✓ Complete shipment of RH sludges by September 2023
- ✓ Initiate processing of RH solids by October 2014
- ✓ Initiate shipment of RH solids by March 2015
- ✓ Complete shipment of RH solids by September 2023

Compliance Assessment

» ORNL, cont.:

✓ Initiate processing of CH solids by October 2014

✓ Initiate shipment of CH solids by March 2015

✓ Complete shipment of CH solids by September 2023

» RFETS:

✓ Initiate shipment by September 1998

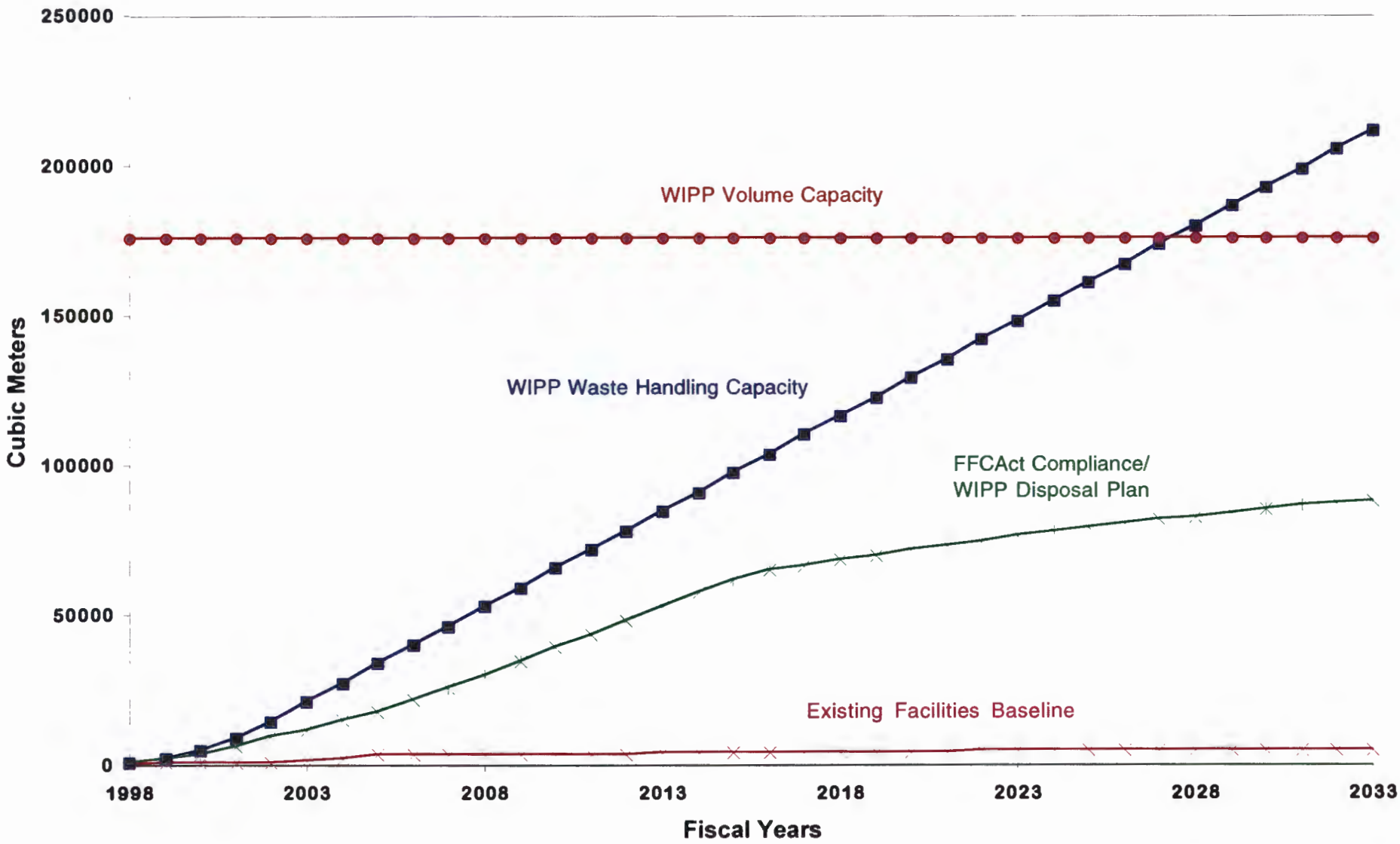
✗ Newly-generated waste stored less than 2 years

✓ Complete treatment by September 2022

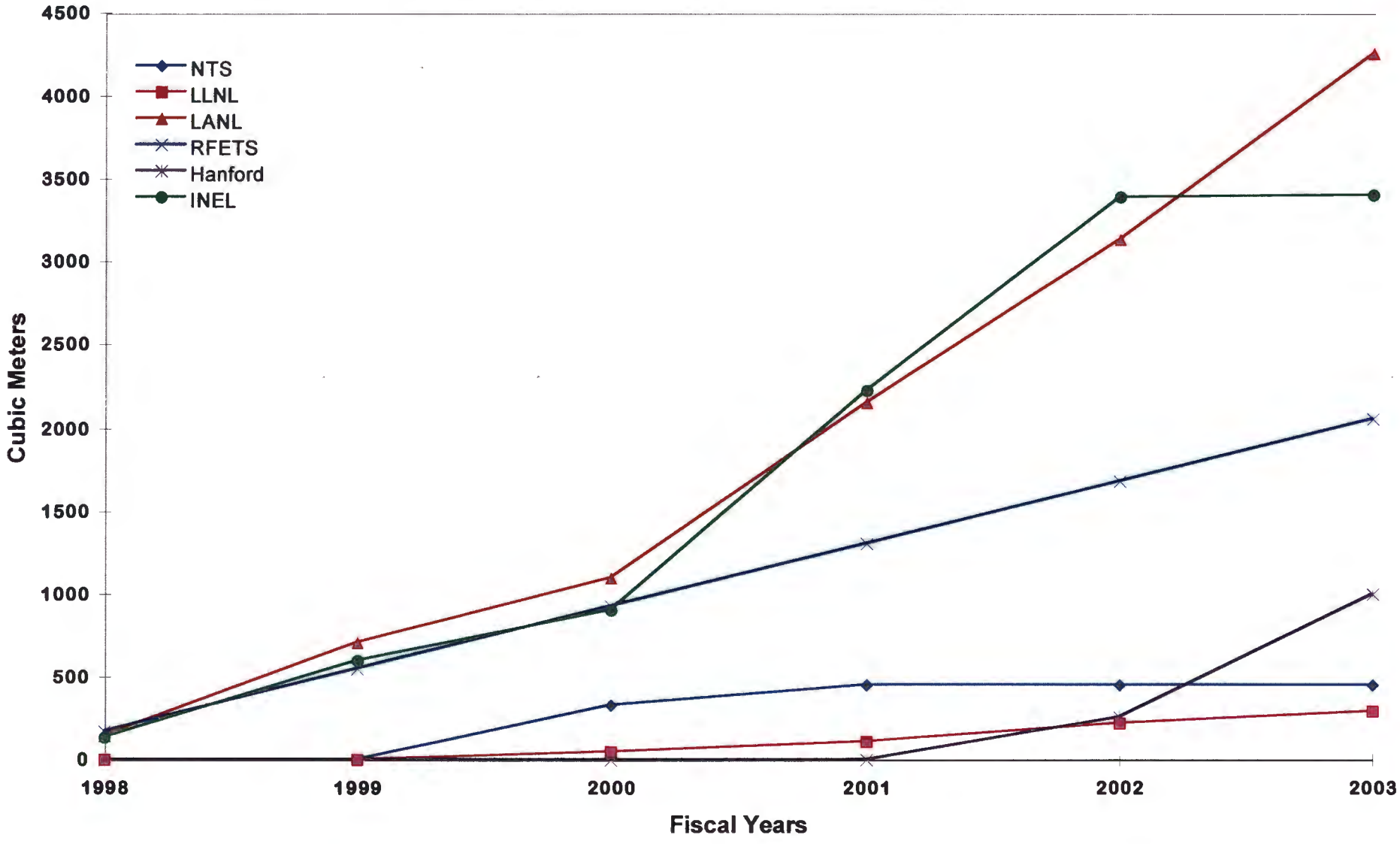
» LANL:

✗ Complete treatment by December 2010

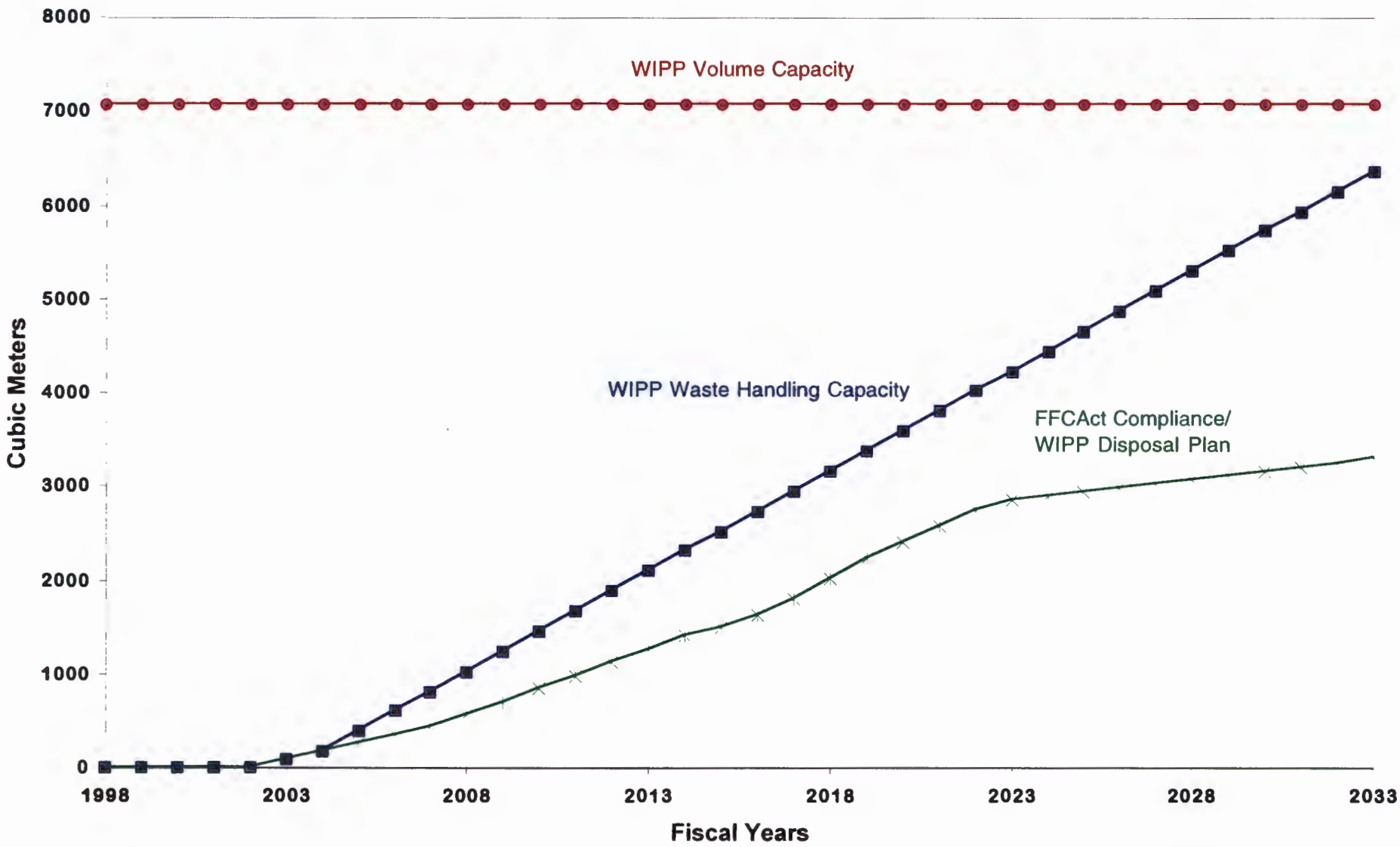
WIPP CH Waste Handling Capacity vs Scenario Throughput



FFCAct Compliance/WIPP Disposal Plan
CH Waste Volume Disposed by Site



WIPP RH Waste Handling Capacity vs Scenario Throughput



Path Forward - Modeling

- New Scenarios to be Developed and Modeled in May and June
  - » Maximize Waste Disposal
  - » Small Quantity Site Waste Workoff
  - » Address Projected Compliance Deficiencies
  - » Alternative Scenarios
- Post Modeling Evaluations in June

Options for Alternative Scenarios

- Options Identified from the Alternative Scenario Brainstorming Meeting:
  - » Regional/Centralized Treatment Facility
  - » Regional/Centralized Detailed Characterization Facility
  - » Full Treatment
  - » Mobile Characterization
  - » Rail Transportation
  - » Regional/Centralized Analytical Laboratory

PERFORMANCE MEASURE CRITERIA FOR REVIEW OF MODELING SCENARIOS AND POST MODELING EVALUATIONS

Scenario Evaluation Criteria

Cost Criteria

- Total system life cycle cost
- Total life cycle cost, by site, by functional element[1]
- Total system life cycle capital costs
- Total system life cycle operating costs
- Annual capital costs, total system and by site
- Annual operating costs, total system and by site
- Annual cost, by site, by functional element[1]
- Annual cost per waste volume disposed
- Average cost per waste volume disposed

Operations Criteria

- Volume of stored waste retrieved annually, by site
- Volume of waste generated annually, by site
- Volume of waste characterized annually, by site
- Volume of waste treated annually, by site
- Annual volume of waste disposed at WIPP
- Total volume of waste disposed at WIPP
- Volume of waste remaining in inventory, by site
- Number of shipments per year, total and per site
- Annual number of TRUPACT-IIs shipped, total and by site
- Utilization rates for transportation
- Utilization rates of site facilities
- Utilization rates for WIPP disposal operations

Schedule Criteria

- Number of sites that "worked off" waste per year
- Time required to "work off" waste at each site
- Average number of drums per TRUPACT per year
- Number of sites shipping waste per year
- Facilities under construction each year, by site
- Facilities coming on-line each year, by site

Programmatic Criteria

- Compliance with FFCA STP schedules
- Compliance with Consent Order schedules
- Status of technology development for each functional element[1]

[1]Elements:
Storage, Retrieval, Characterization, Certification, Treatment, Packaging, Shipment and Disposal