OCRWM's Transportation Planning Update

Presented to:
Nuclear Waste Technical Review Board Panel on Waste Management
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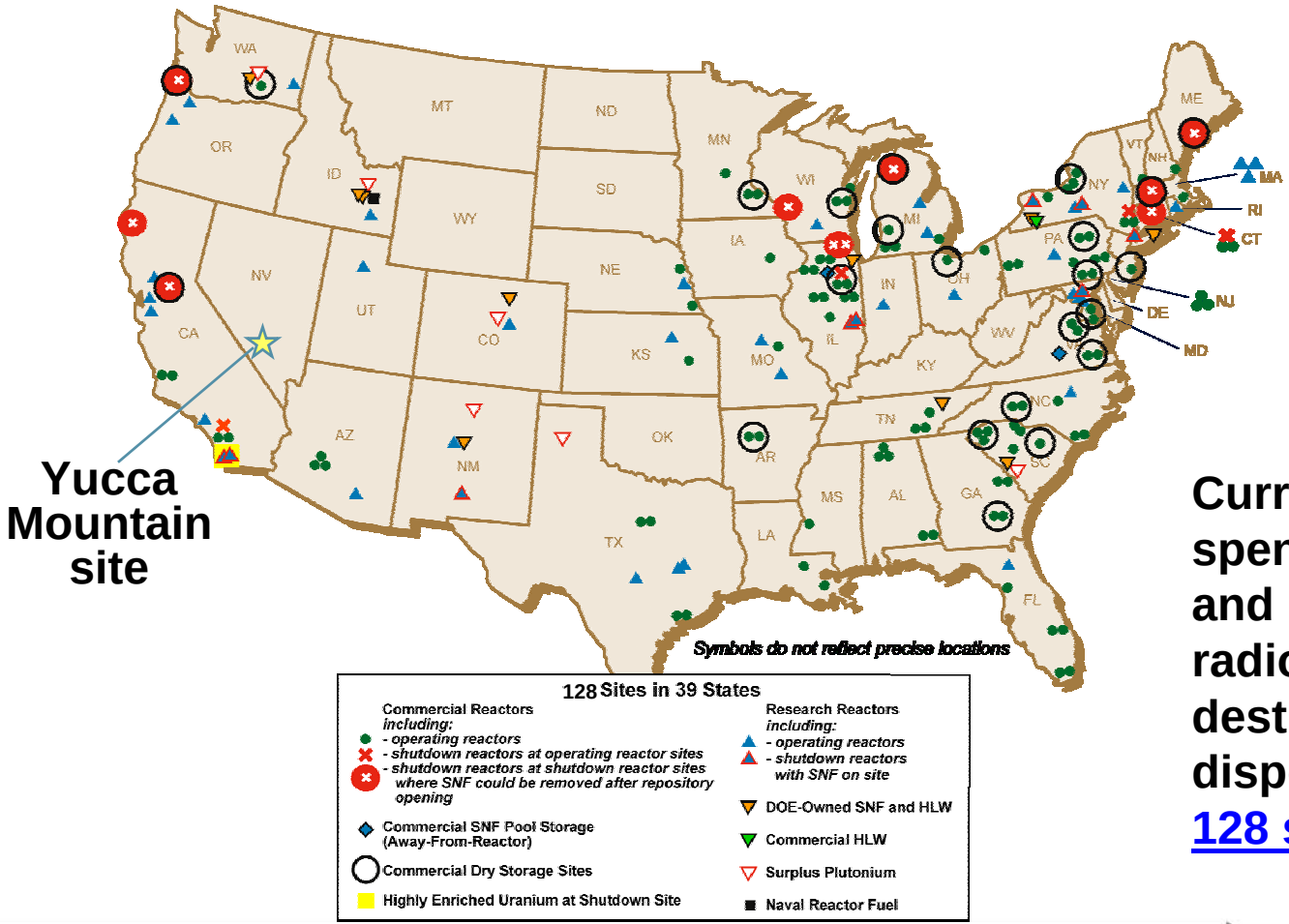
Recap of TRB Briefing on 9/17/03

- ☑ **Reorganize the Office of National Transportation with a project management focus**
  - **Develop Project Logic and Assign Project Managers**
- ☑ **Develop appropriate FY 04 transportation scope based on available budget**
- ☑ **Issue the Transportation Strategic Plan**
- ☑ **Begin working with state regional groups on substantive issues**
- ☐ **Begin building the infrastructure (equipment, facilities, agreements, operating contracts etc.). Required to begin shipments in 2010**

OCRWM Program Mission

The OCRWM mission is to implement the federal policy for permanent disposal of high-level radioactive waste and spent nuclear fuel, in order to protect public health, the environment, and to enhance national security.

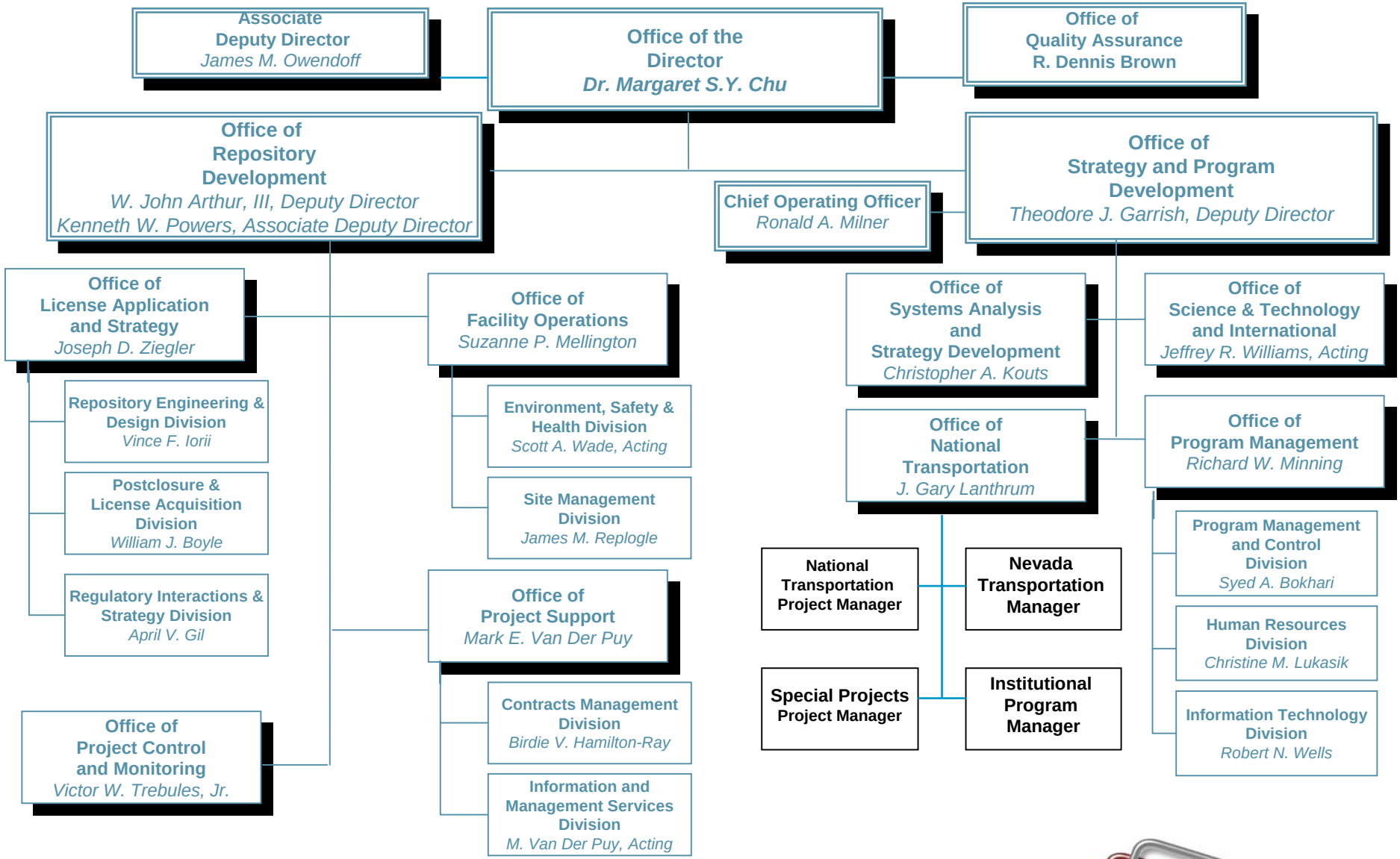


Current locations of spent nuclear fuel and high-level radioactive waste destined for geologic disposal:
128 sites in 39 states

Office of National Transportation Mission

MISSION: **The mission of the Office of National Transportation is to provide the OCRWM and the public with safe, secure and efficient transportation. This includes planning, developing and operating a transportation system. This system will be used to move spent fuel and high level waste from private and federal facilities and storage sites to a repository at Yucca Mountain.**

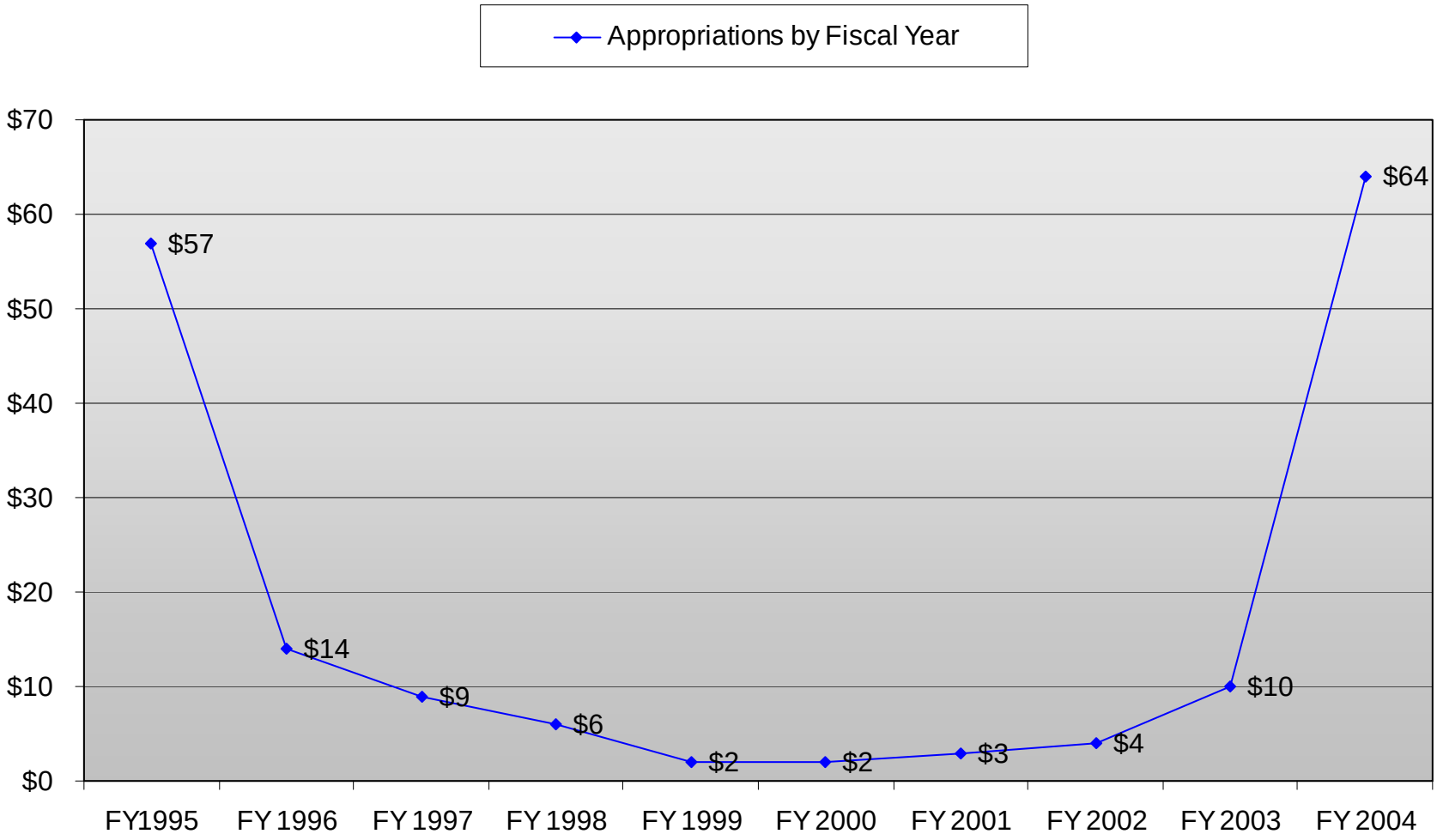
Office of Civilian Radioactive Waste Management



Fiscal Year 2004 Budget and Key Activities

- **$580 million total appropriation; $11 million below request**
- **Transportation nearly fully funded ($3 million reduction)**
  - **National Transportation: $44 million**
  - **Nevada Transportation: $18 million**
  - **Project Management: $1.8 million**
- **FY 2004 key activities**
  - **Issue Transportation Strategic Plan**
  - **Maintain cooperative agreement activities & define collaborative projects**
  - **Initiate substantive collaboration on development of transportation system**
  - **Assess cask requirements and refine acquisition approach**
  - **Engage cask vendor industry regarding design and fabrication activities**
  - **Develop approach for acquisition of rail rolling stock**
  - **Support safeguards & security studies**
  - **Decisions on mode of transportation and corridor if mostly rail is chosen as the mode in Nevada**
    - **Development of related Nevada transportation infrastructure**

Budget Appropriation for Waste Acceptance and Transportation from FY 1995 to FY 2004



Organizing Transportation Into Project Elements

- **Organize key work elements and collaborate with stakeholders:**
  - **Fleet Acquisition Project – Define acquisition approach and needs for cask systems, rolling stock and auxiliary equipment**
  - **Fleet Management Facility Project – Define maintenance and overall management and operating strategies for Transportation Fleet**
  - **Operational Infrastructure – Define, develop, mobilize and demonstrate the operational infrastructure needed to support waste transportation and fleet maintenance**
  - **Institutional – work collaboratively with stakeholders to develop the transportation system**
  - **Nevada Transportation Project – Develop any transportation infrastructure that may be needed in Nevada**
- **Ensure integration among transportation projects & between transportation and repository operations**

Fleet Acquisition Project

- **Cask fleet acquisition**
  - **The first steps in DOE's project management process are to approve the mission need and approve the project strategy. The final EIS and subsequent site recommendation established the mission need. The cask acquisition strategy is currently undergoing internal review.**
  - **We intend to obtain input from the stakeholders in the cask industry on technical options to build the infrastructure.**
  - **Initial procurements for conceptual designs are expected this CY.**
  - **Documentation of the project scope, schedule and resource requirements for building the cask infrastructure is being developed.**
- **Rolling stock acquisition**
  - **Developing the acquisition approach for rolling stock procurement**
  - **Reviewing impact of AAR Standard S-2043 on rolling stock procurement**

Fleet Management Facility Project

- **Finalize Fleet Management Facility (FMF) functional requirements such as:**
  - **Cask fleet maintenance & storage**
  - **Rolling stock light maintenance & storage**
  - **Inventory control and inspection**
  - **Integration with cask procurement strategy**
  - **FMF capacity and turnaround time will affect fleet size**
- **Determine most appropriate location for siting the FMF**
  - **Integration with repository needs**
- **Develop acquisition approach for the FMF**
- **Hold integration & technical exchange meetings in support of the FMF project with YM staff**

Operational Assumptions: Mode and Cask Fleet

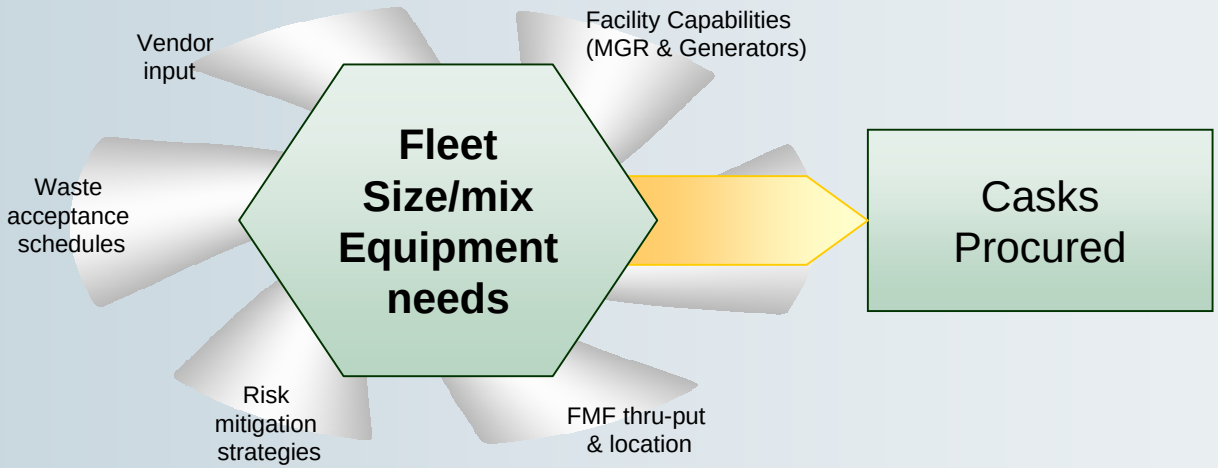
MOSTLY RAIL SCENARIO FROM EIS		
Summary of Estimated Number of Shipments for National Transportation		
	Truck	Rail
Proposed Action (24 years)	<1,100	<10,000 casks <3,300 trains*
Annual	≈45/yr	≈400 casks/yr ≈130 trains/yr*
Estimated Cask Fleet		
	Truck	Rail
Proposed Action	≈10	≈90

* Based on three rail casks per train shipment

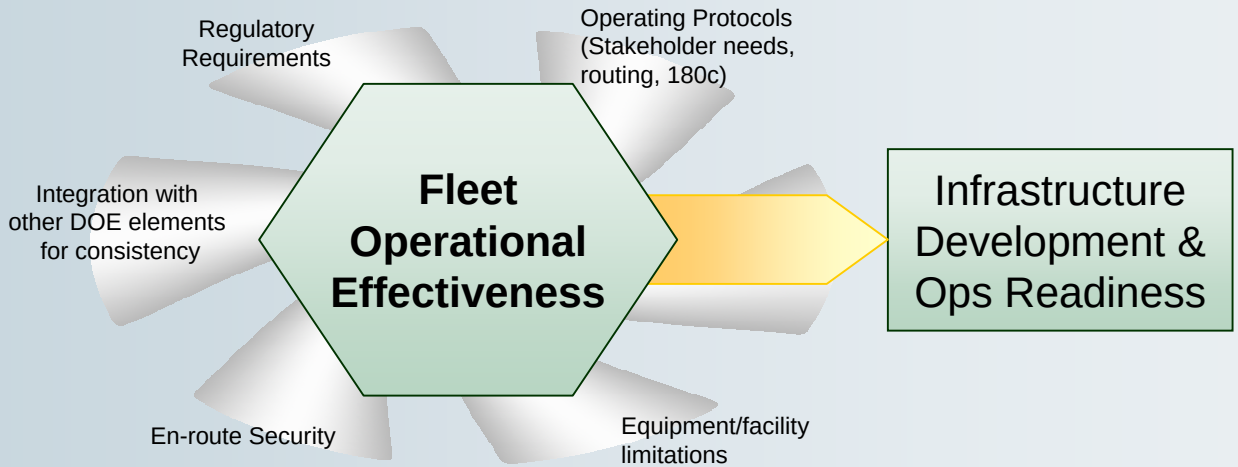
The FEIS included two transportation scenarios and stated preference for rail, both nationally and in Nevada.

Procurements and Operations are Impacted by Many External Drivers

Key External Drivers on Procurements



Key External Drivers on Operations



Operations Project & Transportation Safety

- **Safety record for spent nuclear fuel shipments in U.S. and other industrialized nations is impressive and points the way to success.**
  - **Roughly 3,000 shipments in the U.S. during the past 30 years**
  - **738 Navy container shipments, over 1 million miles since 1957**
  - **Average 650 shipments per year in France and Britain**
  - **There has never been a release of radioactive material harmful to the public or the environment**
- **DOE will continue to review successful shipping programs to gain insights into practices that will help to ensure safe, secure, efficient, cost effective shipments.**

Shipment Security

- **OCRWM will work with state regional groups and tribes in developing approaches to securing the shipments.**

- **Escort and inspection activities will be addressed in addition to new security requirements for shippers and carriers promulgated since September 2001.**

- **Our collaboration will include the Department of Homeland Security and other federal agencies with security requirements.**

Routing

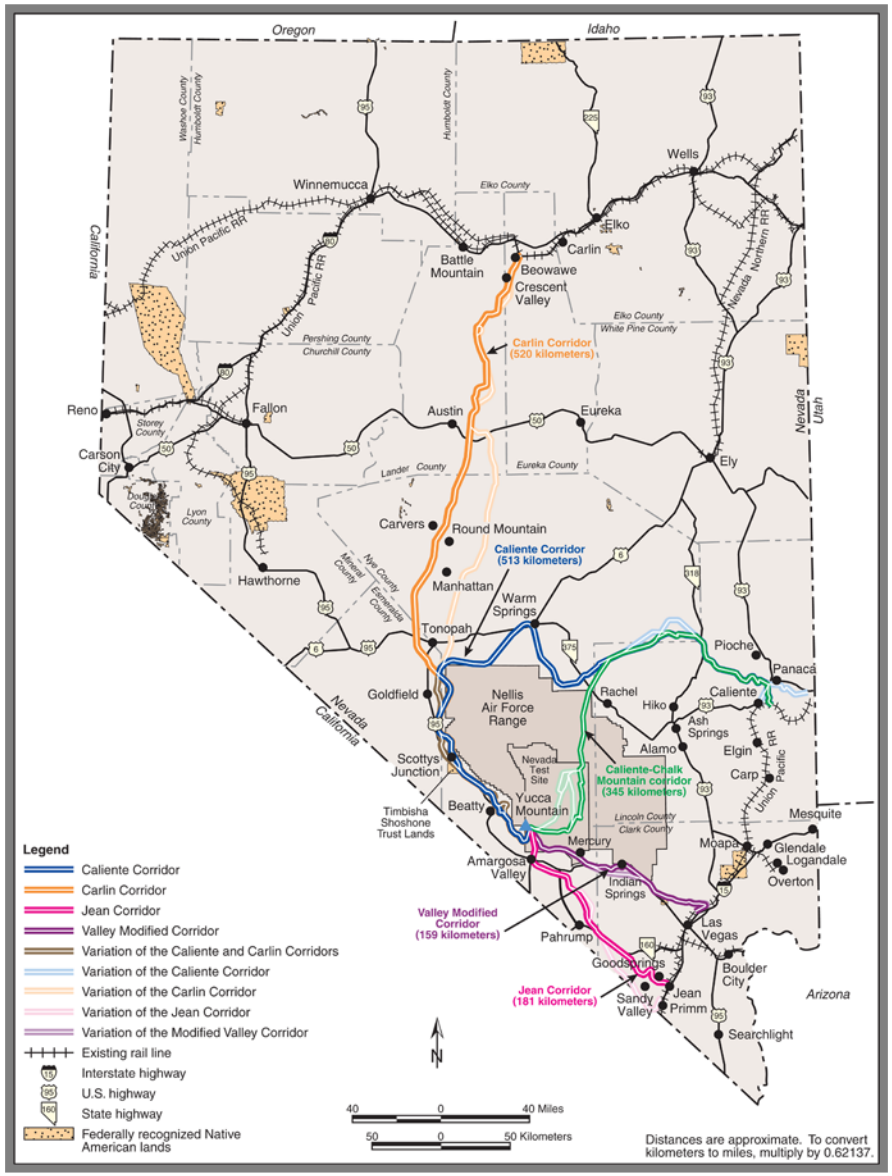
Highway

- DOT routing regulations
  - Routes are selected to reduce time in transit
  - Vehicles operate over preferred routes
    - Interstate highway system, including bypasses or beltways
    - A state or tribe may designate alternative routes in addition to or in lieu of the interstate system

Rail

- There are no federal rail routing regulations
- Standard rail industry practices
  - Minimize time, distance, number of carriers, interchange points
  - Maximize use of best track

Potential Nevada Rail Corridors



NV Rail Project: Comparison of Rail Corridors

Comparison of Rail Corridors

	CALIENTE	CARLIN	CALIENTE-CHALK MTN.	JEAN	VALLEY MODIFIED
Corridor length[1]	319 miles	323 miles	214 miles	114 miles	98 miles
Construction time	46 months	46 months	43 months	43 months	40 months
Travel time from junction with mainline to YM	10 hours	9 hours	8 hours	4 hours	3 hours
Est. life-cycle cost (2001 $)	$880 million	$821 million	$622 million	$462 million	$283 million
Land ownership	BLM >92% AF 5% DOE 2% Private <1%	BLM >86% AF 5% DOE 2% Private 7%	BLM 56% AF 16% DOE 27% Private 0.6%	BLM 83% AF 0% DOE 12% Private 5%	BLM >53% AF <11% DOE 32% Private 0.3% Fish & Wildlife 3%
Land use conflicts					
Tribal	Potential: one alt. bisects Shoshone land	Potential: one alt. bisects Shoshone land	None	None	None
Wilderness areas	Passes near	Might encroach	Passes near	Adjacent to	No official areas
Air Force	Resolve through alignment	Resolve through alignment	Significant national security issues	None	None
Counties impacted and population (2000 estimate)	Lincoln 4,200 Nye 32,500 Esmeralda 970	Eureka 1,650 Lander 7,100 Nye 32,500 Esmeralda 970	Lincoln 4,200 Nye 32,500	Clark 1.4 million Nye 32,500	Clark 1.4 million Nye 32,500 *
Population in NV within 0.5 mile of corridors	140	1280	31	520	75

[1] *Lengths vary with specific alignments, which can be used to mitigate impacts (e.g., tribal/Air Force land conflicts).*

* *Does not reflect recent acceleration of growth rate*

Sequence of Events for NV Corridor Selection

- **On December 23, 2003, DOE announced a corridor preference for the Caliente corridor with Carlin as a secondary preference.**
  - **Federal Register notice published on December 29, 2003**
  - **BLM issued Federal Register notice for land withdrawal along Caliente corridor**
- **Issue Mode and, as appropriate, Corridor Record of Decision.**
- **Additional NEPA work would be required for the specific rail alignment within any selected corridor.**

Institutional Project

- **Four State Regional Groups (SRG) attended institutional kick-off meeting with Under Secretary Robert Card, OCRWM Office Director Margaret Chu & Office of National Transportation Director Gary Lanthrum:**
  - **DOE Committed to working collaboratively with stakeholders to develop the OCRWM Transportation System**
  - **DOE requested and encouraged SRGs to submit project proposals to address their key areas of interest**
- **Transportation Strategic Plan Issued**
- **November meeting with Southern States Energy Board**
- **December meeting with Council of State Governments Midwestern Office and Eastern Regional Conference**
- **January meeting with Western Interstate Energy Board planned**

- **Fulfills a commitment by the Secretary to Issue a Plan in 2003**
- **The transportation mission—to develop a safe, secure and efficient transportation system that is operated in a way that the public can rely on without question—will be accomplished through three goals:**
  - **Conduct an open and collaborative planning process with interested parties**
  - **Develop a safe and secure transportation system and related infrastructure that is based on that planning**
  - **Complete transportation system validation in time to begin operations in 2010**

Collaborative Transportation Planning Process

- **Past DOE transportation programs—WIPP, Foreign Research Reactors, Naval Reactors—have proven that interaction with interested parties is critical to mission success.**

- **OCRWM will work with interested parties, through a collaborative planning process, before developing specific policies and procedures and making transportation decisions.**

- **OCRWM is developing a quality oriented culture of compliance as the application for a repository NRC license is prepared. The transportation program is benefiting from this culture and will have stringent procedure configuration and compliance controls.**

Institutional Transportation Program Activities

- **Build on established regional planning process**
- **Participate in and support Transportation External Coordination / Working Group**
- **Cooperatively develop transportation institutional and communications approaches**
- **Work together on route assessment methodology and alternative route selection analyses**
- **Identify and summarize existing emergency response capabilities and available training**
- **Develop approach to Section 180 (c) funding and technical assistance**

Emergency Response: NWPA Section 180(c)

- **Requires the Department to provide technical assistance and funds to states and tribes for training public safety officials in safe routine transport and emergency response procedures**
- **Proposed Policy and Procedures published in the *Federal Register* on April 30, 1998, reflected input from over 10 years of interactions with stakeholders**
- **The Department will work with state regional groups and tribes to assess existing emergency response capabilities and training to ensure training for shipments to the repository are well integrated with existing programs**
- **The Department will finalize its Policy and Procedures, taking into account nationwide emergency response capabilities and stakeholder input**

Collaborating With State Regional Groups and Tribes

- **Communication will be two-way**
  - **Early and often**
- **OCRWM will build on past experiences—not reinvent the wheel unless it needs reinventing**
- **Lessons Learned from current transportation programs will be factored into development of OCRWM transportation system**
- **Analyzing past successes and challenges will be integral to transportation program development**
- **We will work with state regional groups, tribes, and TEC/WG to incorporate lessons learned from other DOE shipments into RW's planning process**

A Starting Point for Collaboration — New Issues Will Arise

- **Selection of Transportation Routes** - **OCRWM will work collaboratively with state regional groups and tribal governments on the process for selecting highway transportation routes.**
- **Emergency Response Planning and Training** - **OCRWM will work with states and tribes to evaluate current preparedness for routine shipments and emergency response capabilities.**
- **Operational Practices** - **OCRWM will review the Radioactive Material Transportation Practices Manual in concert with the regional groups and tribes.**

Moving Toward 2010: Transportation Priorities

- **FY 2004**
  - Issue Transportation Strategic Plan
  - Develop Transportation Project Management Approach
  - Define requirements
  - Maintain & expand cooperative agreement activities
  - Develop acquisition strategy & begin procurements
  - Develop interface with repository
- **FY 2005**
  - Continue cask system procurements with initial priorities on “long lead” systems
  - Update and evaluate utility site interface data and servicing needs
  - Work with SRGs and tribes on transportation planning
  - Develop any Nevada transportation infrastructure required by Records of Decision issued in 2004
- **FY 2006 and Beyond**
  - Develop transportation operational approach
  - Continue cask acquisition activities
  - Establish transportation routes
  - Begin 180(c) grant funding for state and tribe emergency responder training
  - Acquire transportation services
  - Acquire cask fleet maintenance capabilities
  - Complete operational readiness demonstrations

Status of Transportation Planning Efforts

- ☑ **Reorganize the Office of National Transportation with a Project Management focus**
- ☑ **Develop Project Logic, and Assign Project Managers**
- ☑ **Issue the Transportation Strategic Plan**
- ☑ **Begin working with state regional groups on substantive issues**
  - **Project proposals for specific transportation activities**
  - **Priority for projects from each group's perspective**
  - **Establish working groups to address specific project activities between the semi-annual meeting times**
- ☑ **Stated preference for Caliente corridor and Carlin as a secondary corridor**
- ☐ **Mode & final corridor selection through a Record of Decision, if needed**
- ☐ **Begin building the infrastructure required to begin shipments in 2010**
  - **Cask Acquisition**
  - **Rail Car Acquisition**
  - **Fleet Management Facility construction**
  - **Nevada transportation infrastructure construction**
  - **Stakeholder agreements & emergency preparedness training support**
  - **Operations management decisions**