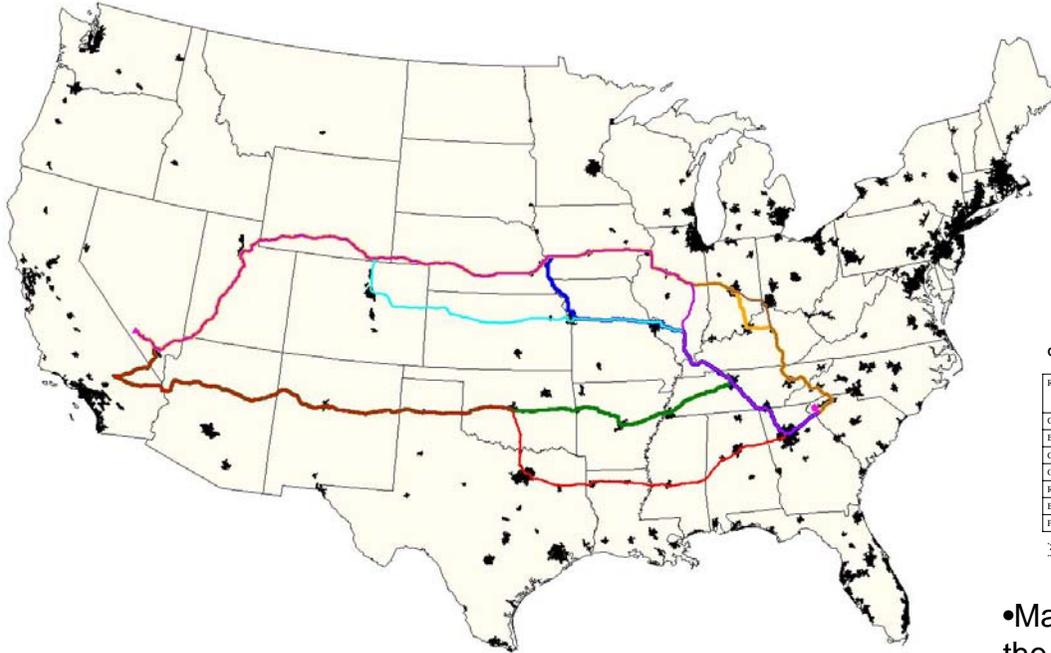


Alternative truck routes from commercial reactor and DOE sites to Yucca Mountain

Truck route alternatives from Oconee to Yucca Mountain



- All routes are based on HRCQ requirements
- Routes include State preferred route designations filed with FMCSA
- Differences in driving times and other route attributes are being identified

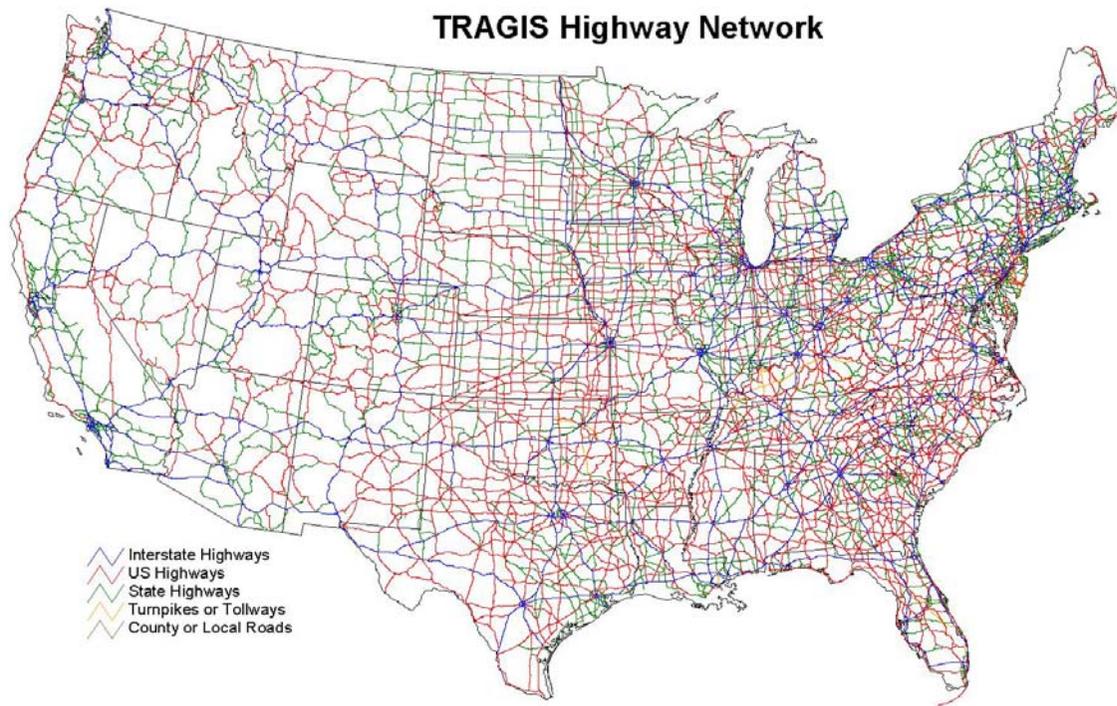
Overview of Routes between Oconee and Yucca Mountain.

Route	Estimated Driving Time	Driving Time Increase	Distance (miles)	Number of States	# of Urbanized Areas*	Tribal Land # and Distance	Population**
Green	43:02	-	2,512.9	10	11	10 - 90.2	722,480
Blue	44:10	2.6%	2,604.2	12	12	3 - 13.9	798,163
Cyan	44:10	2.6%	2,577.0	12	13	3 - 13.9	836,321
Orange	45:22	5.4%	2,641.6	12	17	3 - 13.9	666,825
Red	45:23	5.5%	2,594.0	11	12	6 - 88.0	821,140
Brown	45:24	5.5%	2,645.1	13	17	3 - 13.9	663,897
Purple	45:45	6.3%	2,668.0	11	15	3 - 13.9	693,864

*2000 Census defined urbanized areas with population over 100,000 residents.
 **Population is calculated within 800 meters either side of the route using LandScan USA 15 arc-second 2000 Census data.

- Many origin/destination pairs (especially the sites in the eastern US) have alternative routes within 10% of the transit time of the quickest route
- Patterns quickly develop following several Interstate corridors

TRAGIS Highway Network



- Interstate Highways
- US Highways
- State Highways
- Turnpikes or Tollways
- County or Local Roads

- Over 235,000 miles of roads
 - All Interstate highways
 - Most US highway
 - Important state highways
 - Access roads to point of interest
- Network includes nuclear facilities
 - All DOE sites
 - Commercial power reactors
 - Research reactors
- Developed from 1:100,000-scale data

Alternative rail routes from commercial reactor and DOE sites to Yucca Mountain

Rail route alternatives from Summer to Yucca Mountain



- All alternatives are operationally viable rail routes
- No regulatory routing requirements exist for SNF rail shipments
- Differences in travel times and other route attributes are being identified

Overview of Rail Routes between Summer and Yucca Mountain.

Route	Estimated Travel Time	Travel Time Increase	Distance (miles)	# of RRs	Number of States	# of Urbanized Areas*	Tribal Land # and Distance	Population**
Green	123:45	-	3,013.2	3	13	10	1 - 2.6	850,370
Blue	125:07	1.1%	3,045.4	3	13	13	1 - 2.6	852,088
Cyan	126:15	2.0%	2,921.0	4	13	10	1 - 2.6	773,506
Orange	126:54	2.5%	3,001.3	3	11	10	1 - 2.6	844,348
Red	127:14	2.8%	3,146.8	3	14	12	1 - 2.6	902,197
Brown	127:27	3.0%	3,091.3	3	13	10	1 - 2.6	935,931
Purple	129:41	4.8%	3,125.5	3	12	11	1 - 2.6	906,767

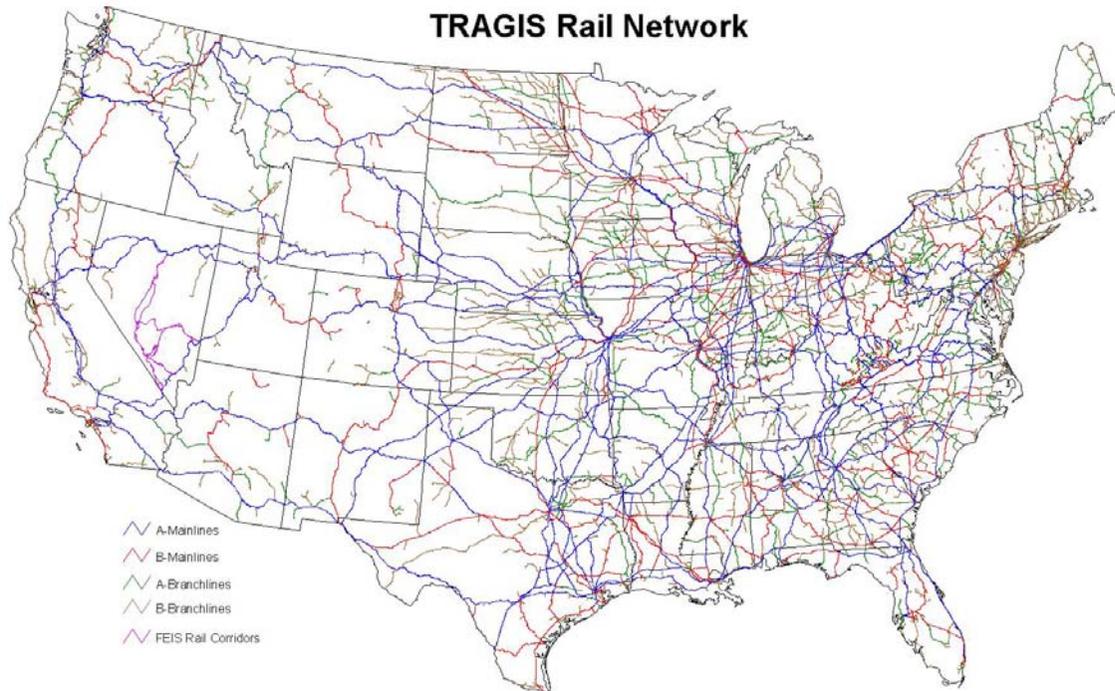
*2000 Census defined urbanized areas with population over 100,000 residents.
 **Population is calculated within 800 meters either side of the route using LandScan USA 15 arc-second 2000 Census data.

Intermodal options also being examined

- Heavy-haul to rail
- Barge to rail

- Many origin/destination pairs (primarily in the eastern US) have alternative routes within 10% of the transit time of the quickest route
- Due to the limitations of the rail network, variations primarily occur in eastern and central portions of the country

TRAGIS Rail Network



- Over 150,000 miles of railroads in continental US
- Network divided into 97 rail systems
- Route selection
 - Maximizes high traffic volume track
 - Minimizes the number of rail companies used
 - Preference given to originating railroad
- Nuclear facilities with rail access identified in database
- Developed from 1:100,000-scale data