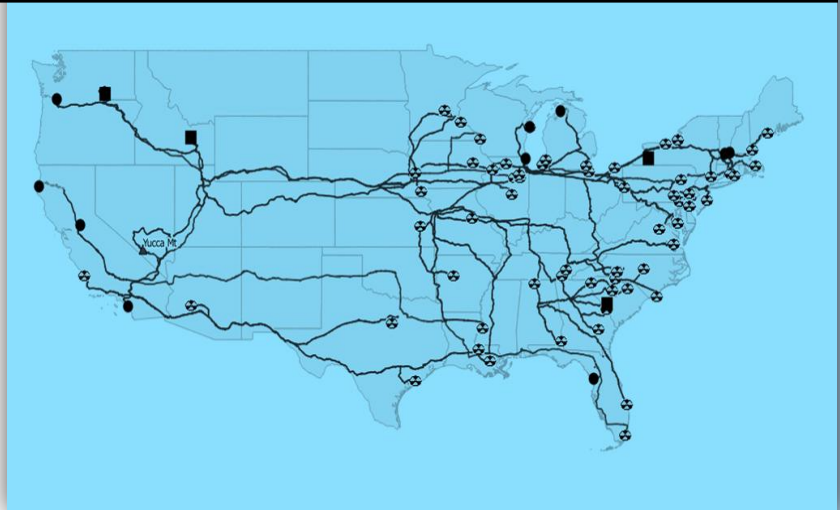


2015

States Potentially Affected by Shipments to Yucca Mountain, Nevada



Fred Dilger PhD.

Black Mountain Research

5/1/2015

Background

On June 16 2008, the Department of Energy (DOE) released the *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (FSEIS). The FSEIS identified and evaluated what DOE called “representative routes” that “it could use” for rail and highway shipments of spent nuclear fuel and high-level radioactive waste to the proposed repository at Yucca Mountain, Nevada. DOE included state maps showing these representative routes, and tables estimating the number of rail and highway shipments through each state, in Appendix G of the FSEIS. The FSEIS assumed approximately 2,800 rail shipments (9,500 casks), and assumed approximately 2,700 highway shipments, to Yucca Mountain.

In 2008, DOE submitted the FSEIS to the U.S. Nuclear Regulatory Commission (NRC) in support of its application for a license to construct the Yucca Mountain Repository. The NRC Atomic and Safety Licensing Boards admitted 46 transportation-related contentions, some of which directly challenge DOE’s identification of “representative routes” and regions of influence¹ in the FSEIS. DOE terminated the Yucca Mountain project in 2010, and the NRC suspended the licensing proceeding in 2011. In August 2013, the U.S. Court of Appeals for the District of Columbia Circuit ordered NRC to resume the licensing proceeding. The NRC issued an order directing its staff to restart the non-adjudicatory portion of the proceeding in November 2013. Resumption of the full legally-mandated proceeding could occur in 2015 or 2016. In that event, DOE’s identification of potential shipment routes to Yucca Mountain, required under the National Environmental Policy Act (NEPA), would be an important part of the proceeding.

In admitting the transportation contentions submitted by the States of California and Nevada, and other parties, the NRC administrative law judges wrote: “Transportation of nuclear waste is a foreseeable consequence of constructing a nuclear waste repository. ... there can be no serious dispute that the NRC’s NEPA responsibilities do not end at the boundaries of the proposed repository, but rather extend to the transportation of nuclear waste to the repository. The two are closely interdependent. Without the repository, waste would not be transported to Yucca Mountain. Without transportation of waste to it, construction of the repository would be irrational. Under NEPA, both must be considered.”²

In order to assess the potential impacts on States and Counties, the author of this report converted the representative routes into a format used by the Mapitude Geographic Information System software developed by Caliper Corporation. The State and County data was obtained from the Census Department. The routes were overlaid onto the State and County layers and those areas that are traversed by FSEIS routes were selected. Those areas that are traversed by the FSEIS rail and/or highway routes are identified in this report. This report was prepared for the State of Nevada Agency for Nuclear Projects.

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¹ The FSEIS identifies the region of influence for radiological impacts of incident-free transportation as 0.5 miles on either side of the route centerline, and for radiological impacts of transportation accidents and sabotage, 50 miles on either side of the route centerline.

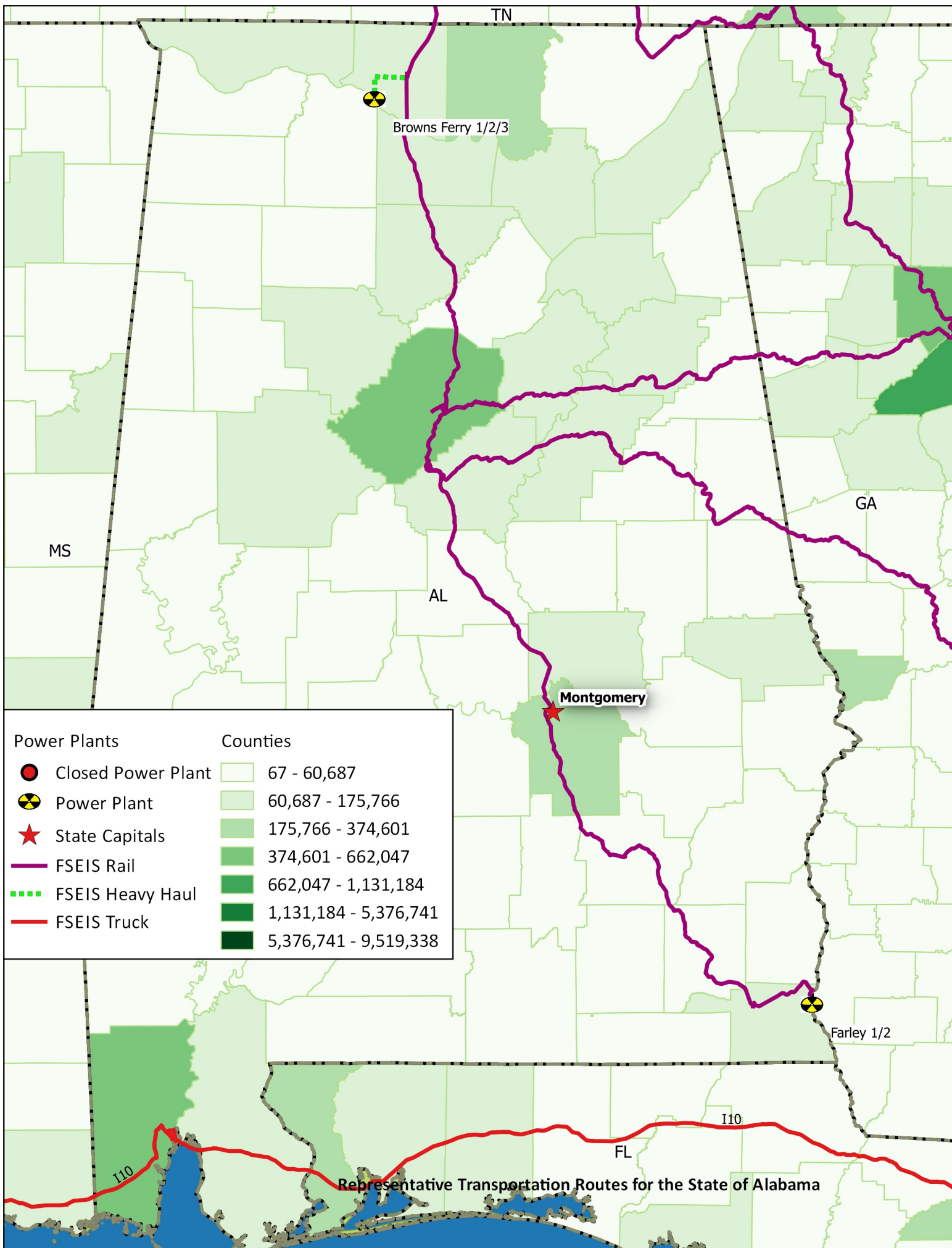
² NRC, Atomic Safety and Licensing Boards, Memorandum and Order Identifying Participants and Admitted Contentions, Docket NO. 63-001-HLW (May 11, 2009).

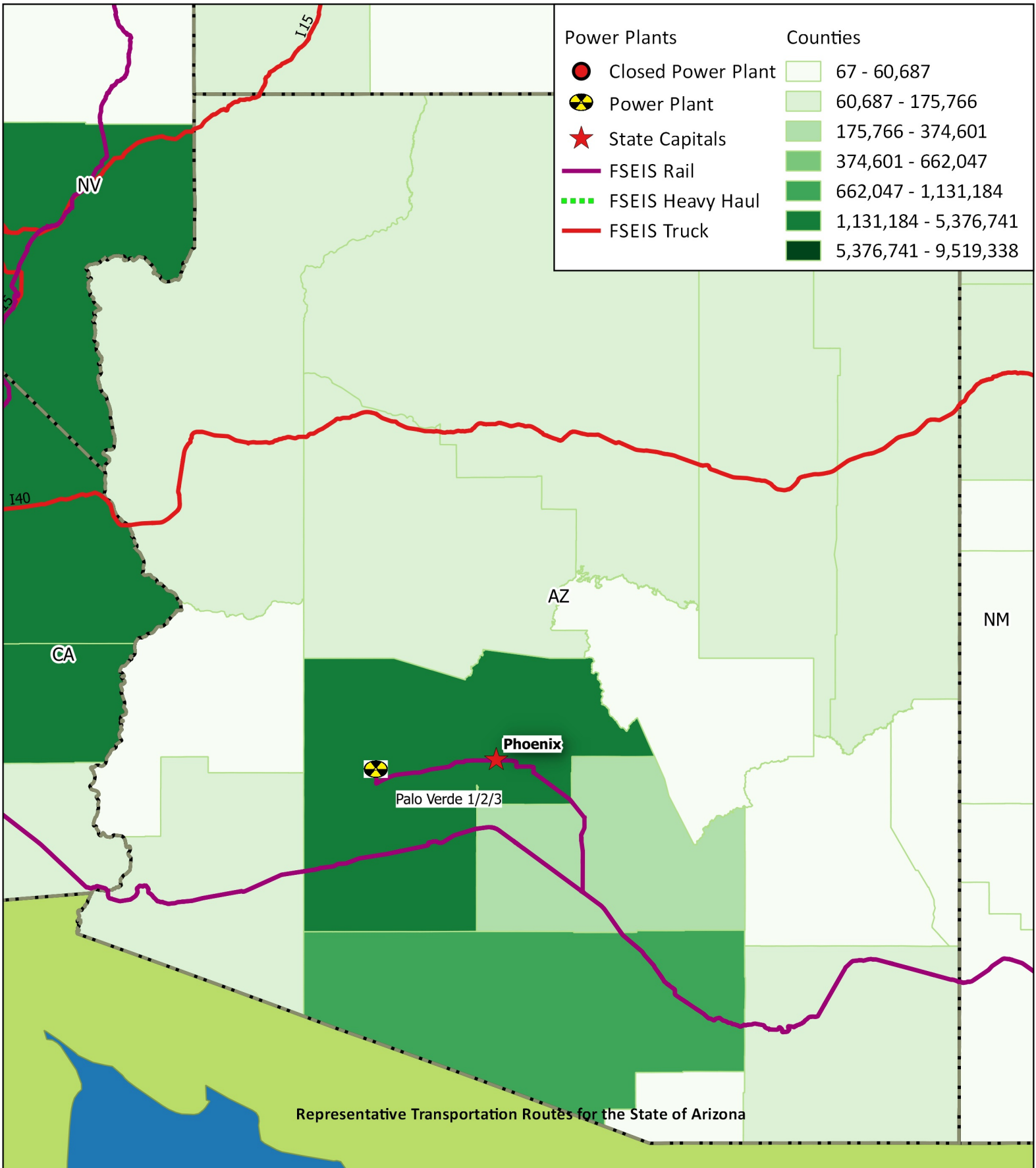
Yucca Mountain Estimated Transportation Impacts by State
Shipments of Spent Nuclear Fuel and High-Level Radioactive waste

| State | Rail Casks | Truck Casks | Total Casks |
|----------------------|------------|-------------|-------------|
| Alabama | 1,514 | 857 | 2,371 |
| Arizona | 456 | 2,650 | 3,106 |
| Arkansas | 227 | 0 | 227 |
| California | 755 | 857 | 1,612 |
| Colorado | 6,739 | 0 | 6,739 |
| Connecticut | 216 | 344 | 560 |
| District of Columbia | 255 | 0 | 255 |
| Florida | 138 | 857 | 995 |
| Georgia | 1,672 | 0 | 1,672 |
| Idaho | 2,001 | 4 | 2,005 |
| Illinois | 6,069 | 1,752 | 7,821 |
| Indiana | 4,887 | 1,425 | 6,312 |
| Iowa | 3,066 | 1,789 | 4,855 |
| Kansas | 3,574 | 0 | 3,574 |
| Kentucky | 2,663 | 0 | 2,663 |
| Louisiana | 233 | 857 | 1,090 |
| Maine | 60 | 0 | 60 |
| Maryland | 255 | 0 | 255 |
| Massachusetts | 415 | 344 | 759 |
| Michigan | 132 | 768 | 900 |
| Minnesota | 153 | 37 | 190 |
| Mississippi | 170 | 857 | 1,027 |
| Missouri | 3,574 | 0 | 3,574 |
| Nebraska | 6,739 | 1,789 | 8,528 |
| Nevada | 9,495 | 2,650 | 12,145 |
| New Hampshire | 110 | 0 | 110 |
| New Jersey | 276 | 0 | 276 |
| New Mexico | 257 | 857 | 1,114 |
| New York | 827 | 657 | 1,484 |
| North Carolina | 502 | 0 | 502 |
| Ohio | 2,314 | 657 | 2,971 |
| Oklahoma | 227 | 857 | 1,084 |
| Oregon | 1,307 | 3 | 1,310 |
| Pennsylvania | 2,036 | 657 | 2,693 |
| South Carolina | 1,365 | 0 | 1,365 |
| South Dakota | 44 | 0 | 44 |
| Tennessee | 2,663 | 0 | 2,663 |
| Texas | 357 | 857 | 1,214 |
| Utah | 8,740 | 1,793 | 10,533 |
| Vermont | 199 | 0 | 199 |
| Virginia | 390 | 0 | 390 |
| Washington | 1,274 | 3 | 1,277 |
| West Virginia | 255 | 0 | 255 |
| Wisconsin | 152 | 37 | 189 |
| Wyoming | 6,354 | 1,789 | 8,143 |

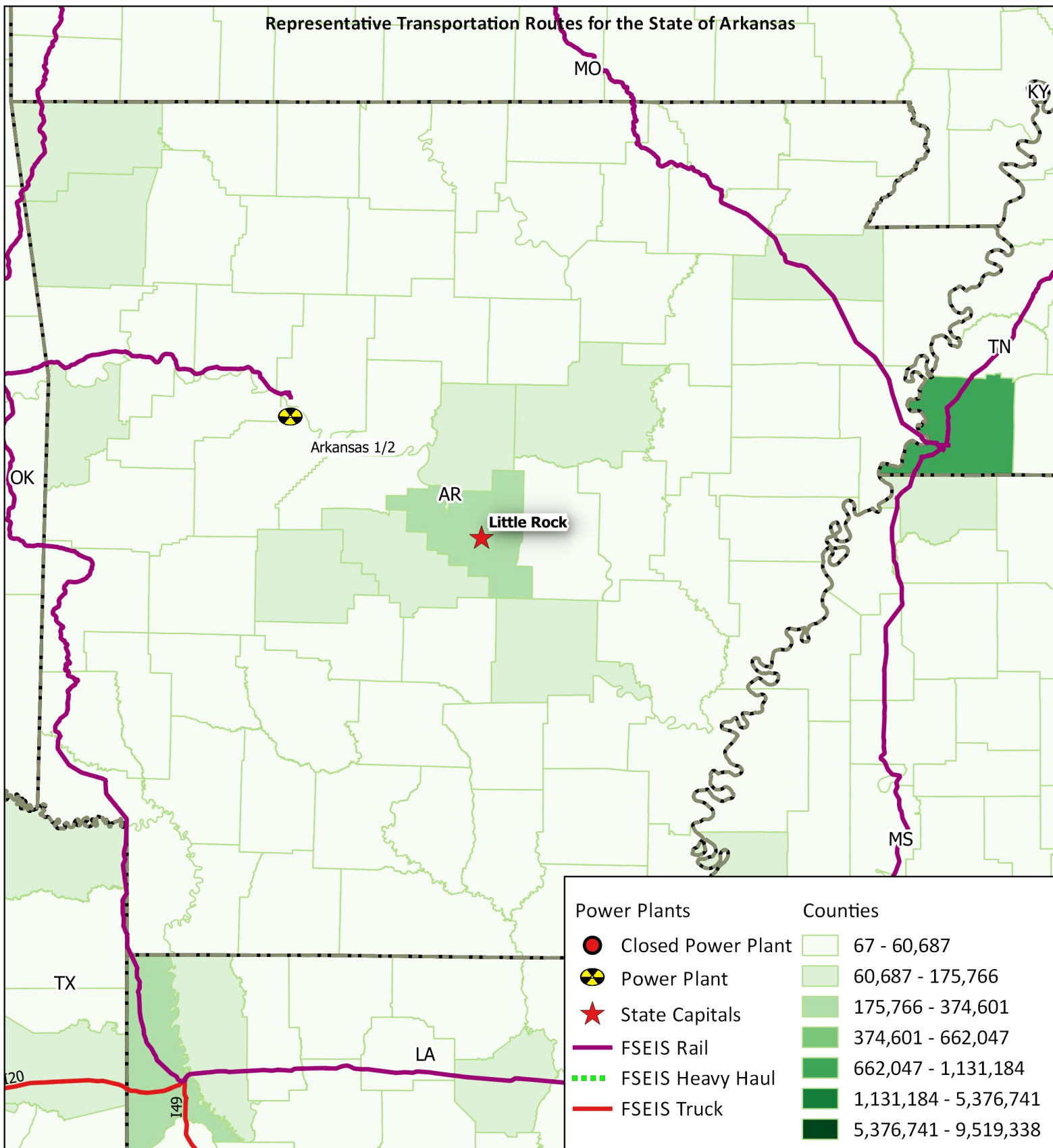
Source: FSEIS (2008), Appendix G, Pages G-60 to G-150

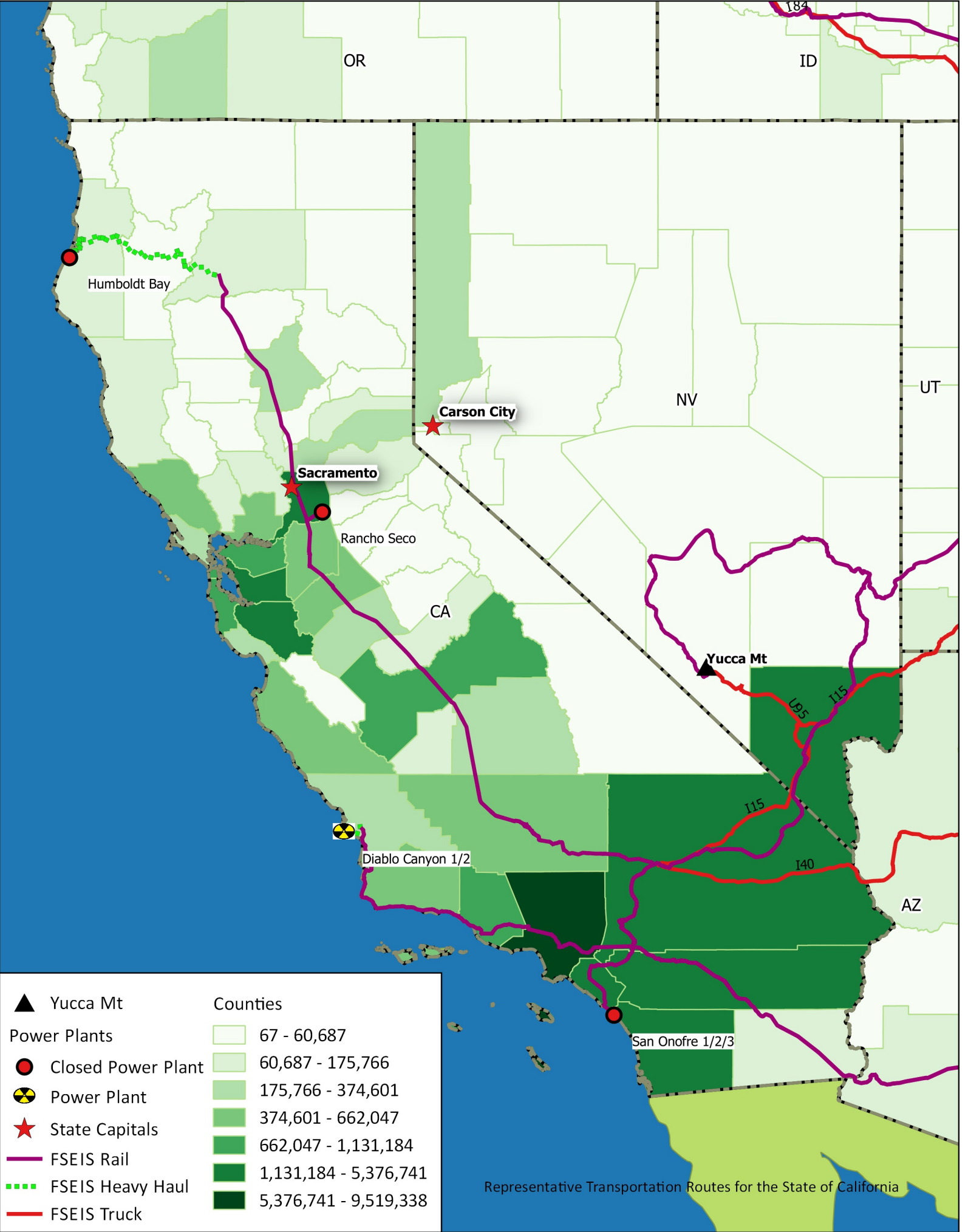
Appendix A: Representative Transportation Routes for Individual States

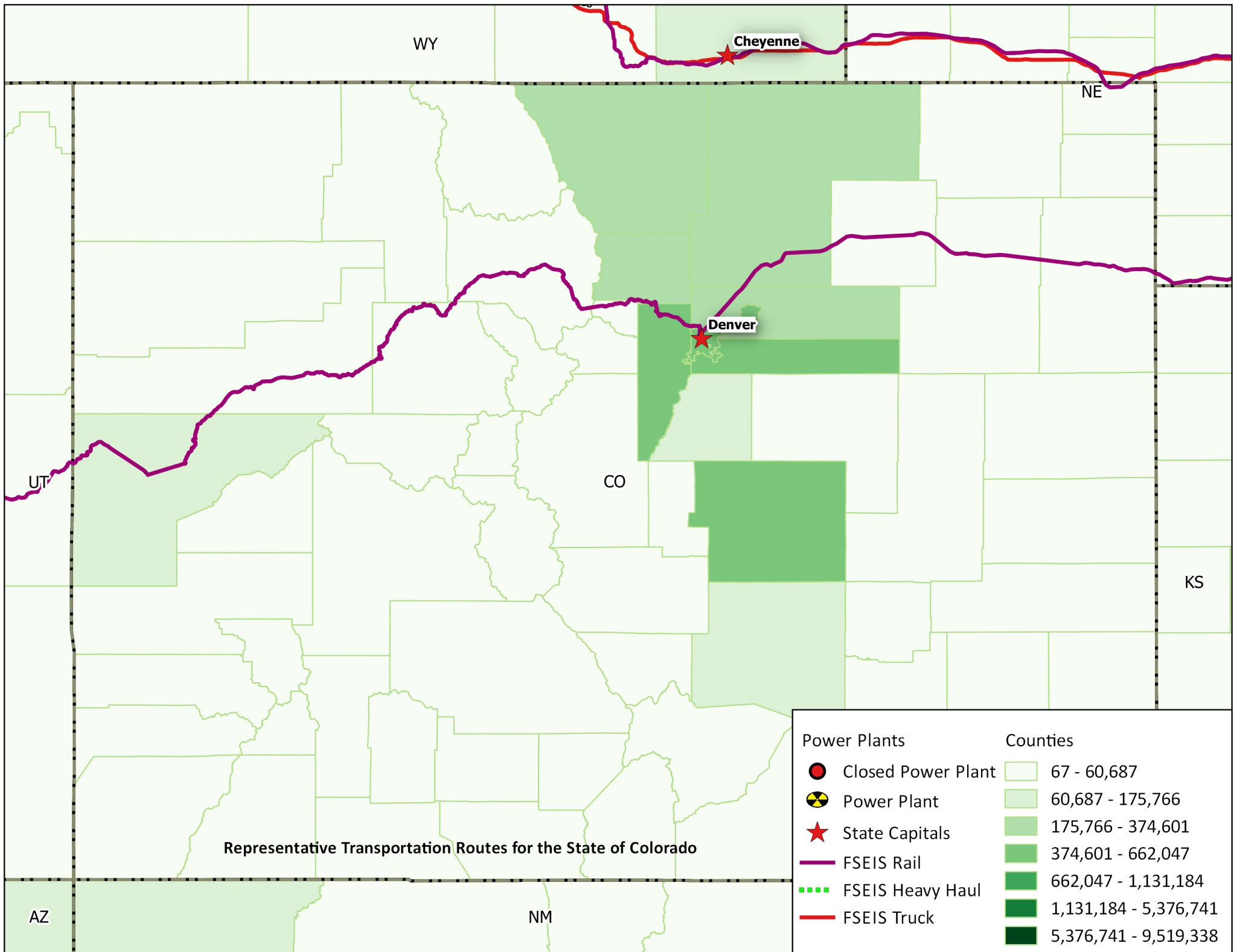


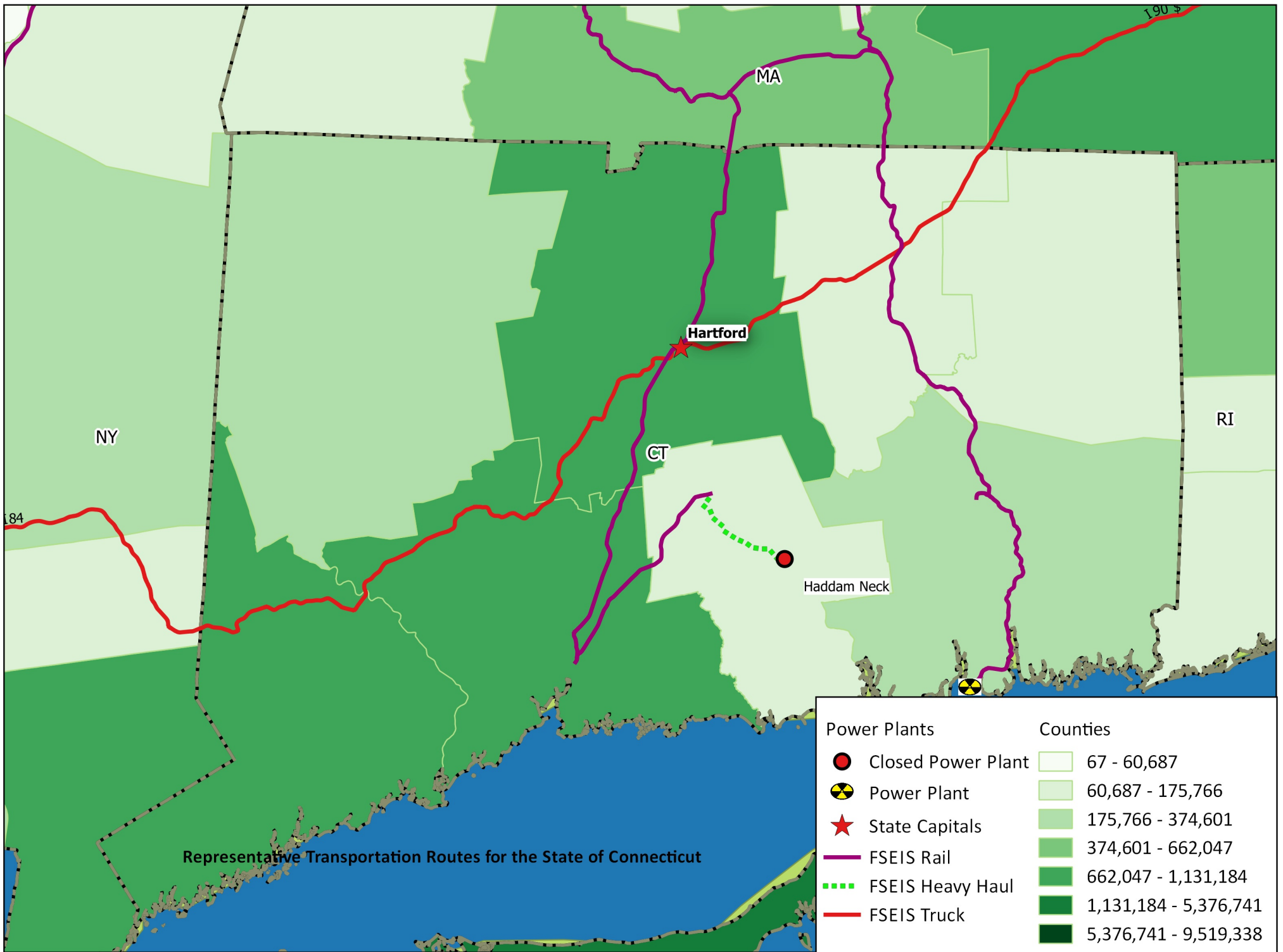


Representative Transportation Routes for the State of Arkansas

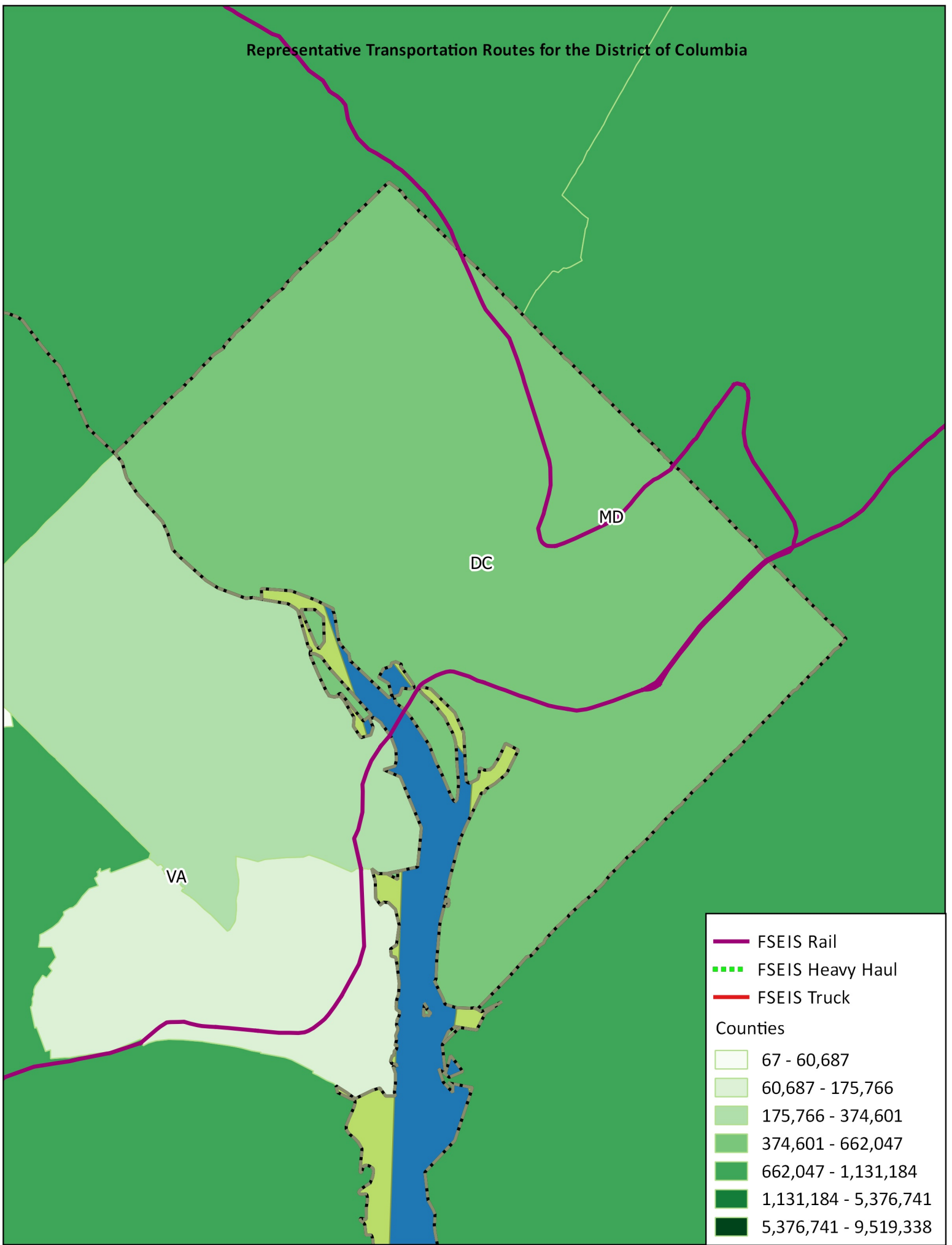


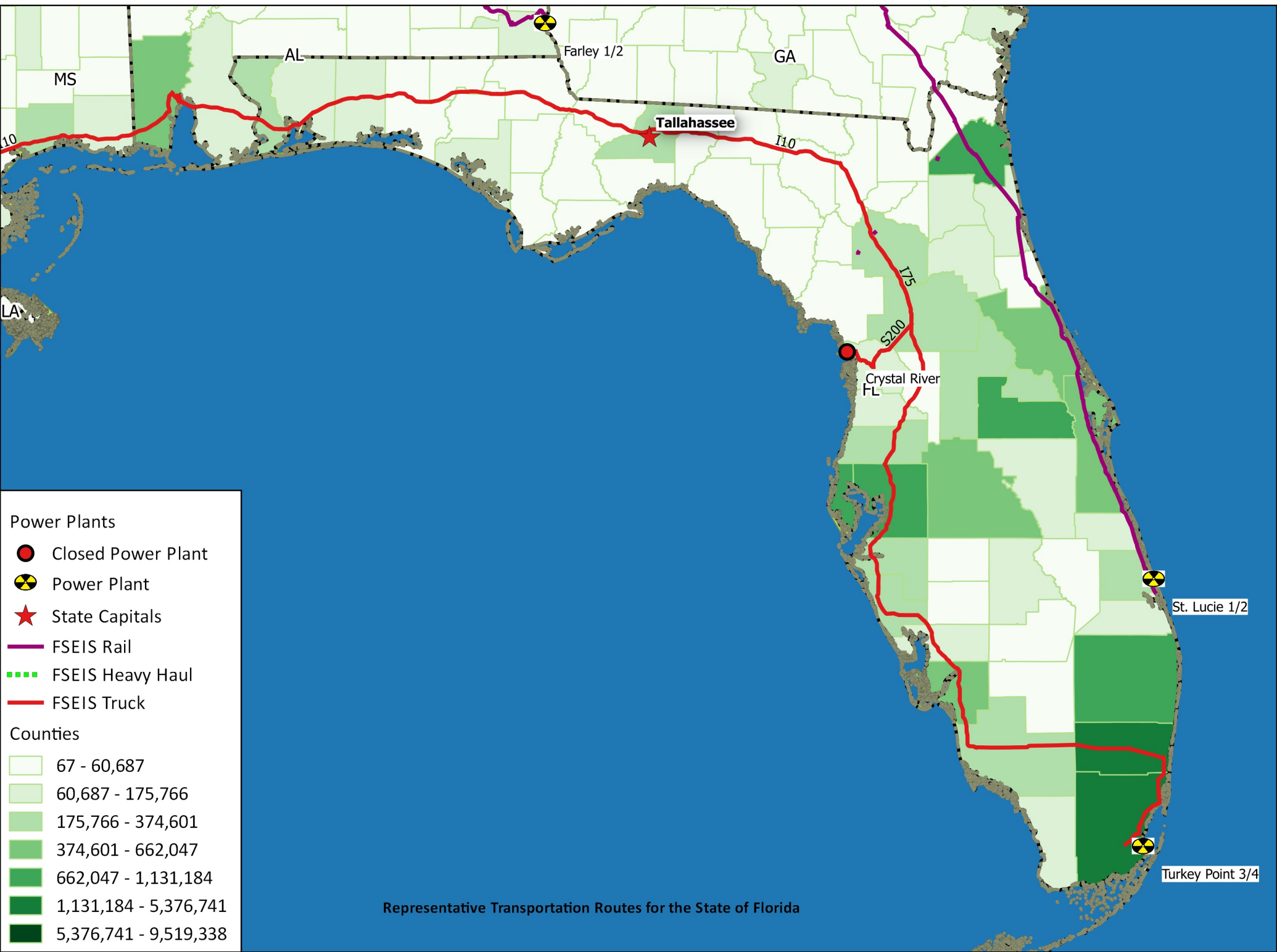


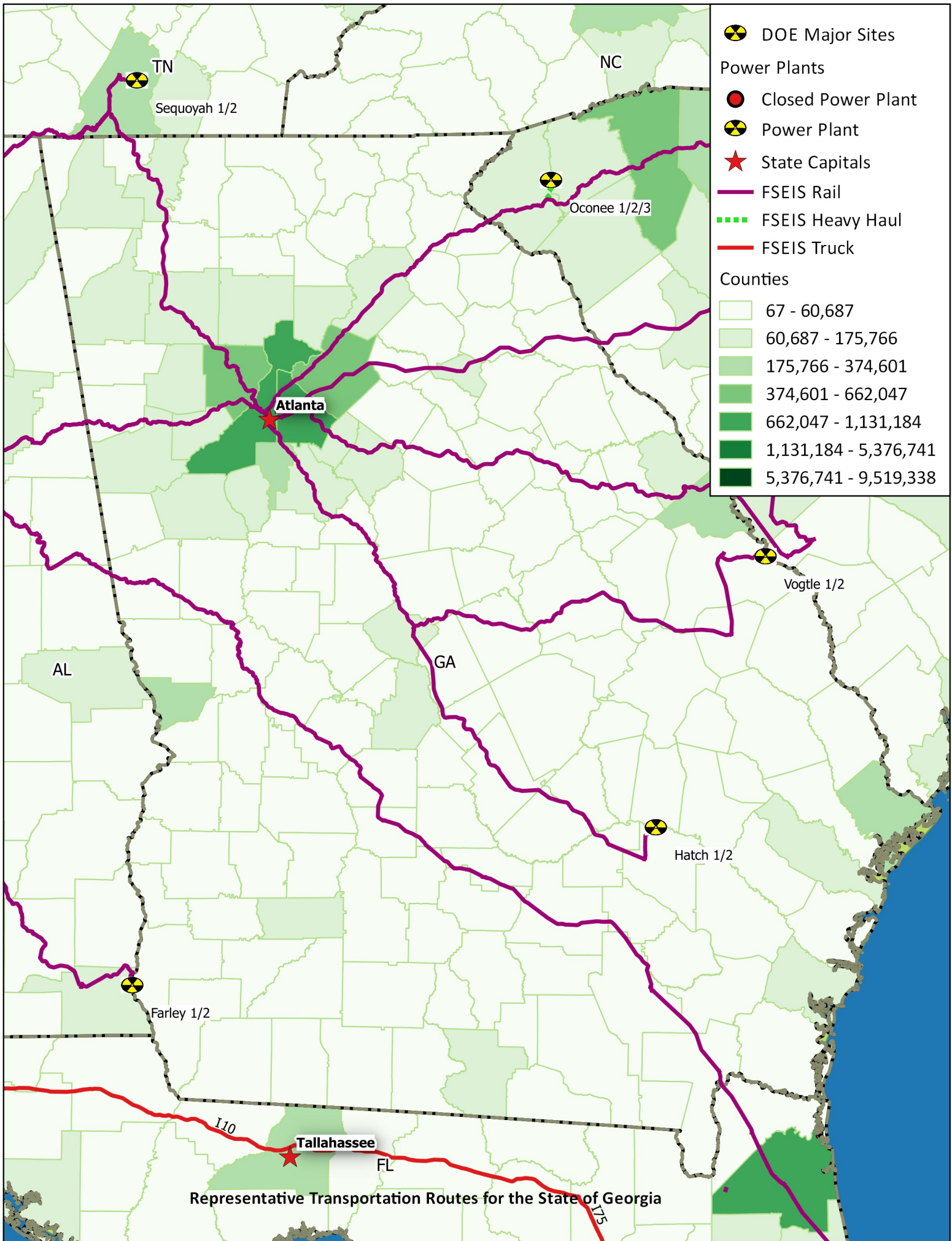


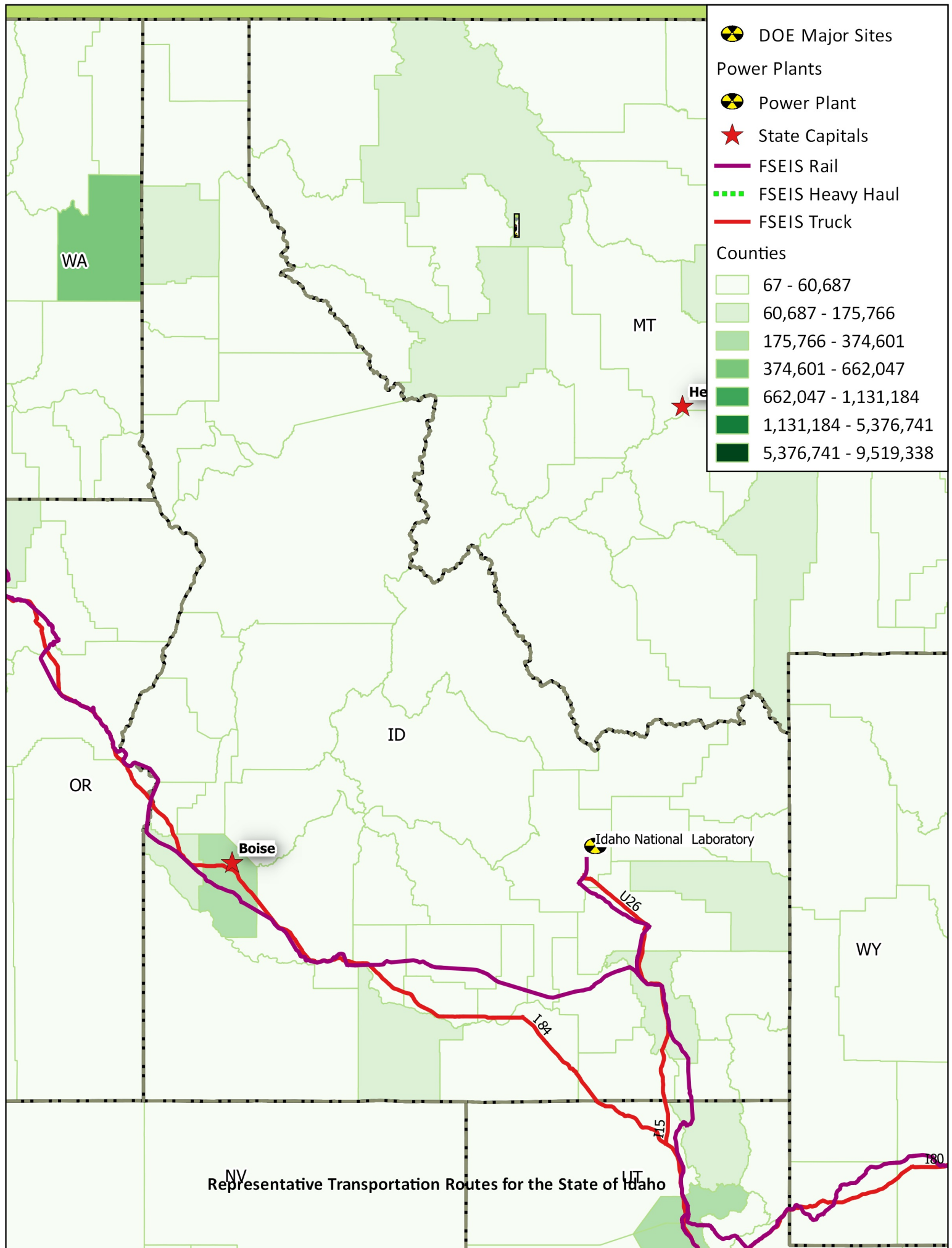


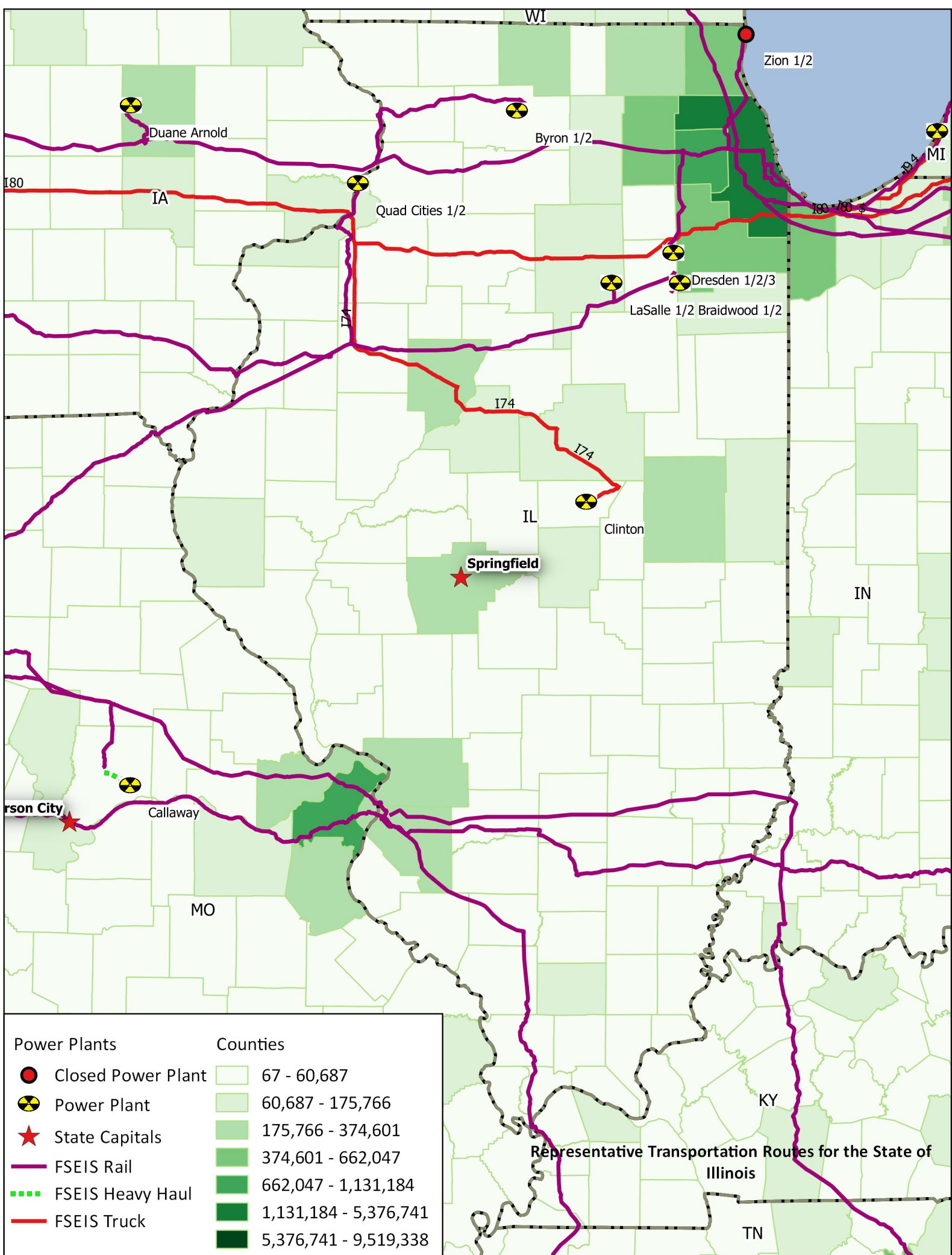
Representative Transportation Routes for the District of Columbia






















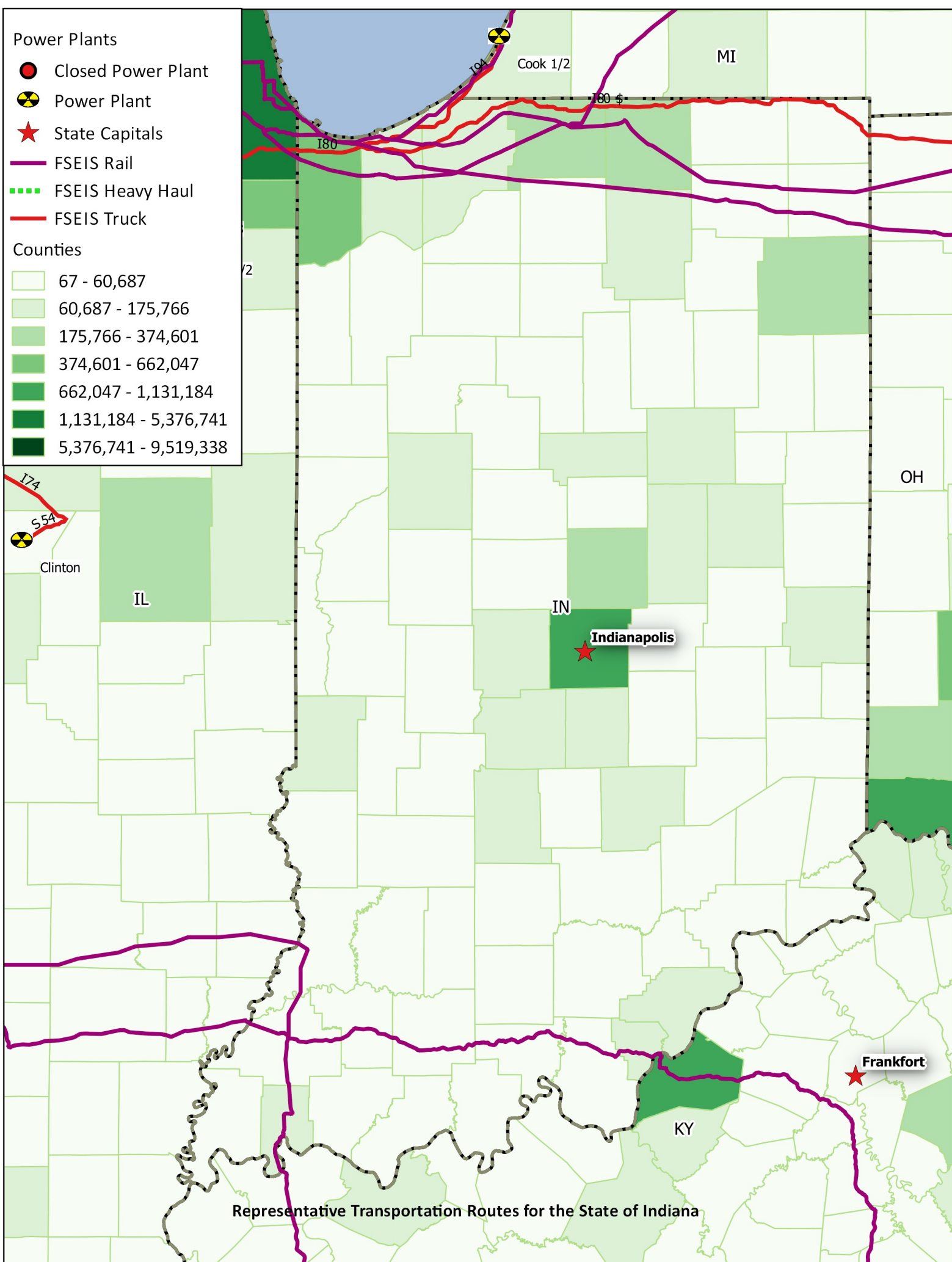


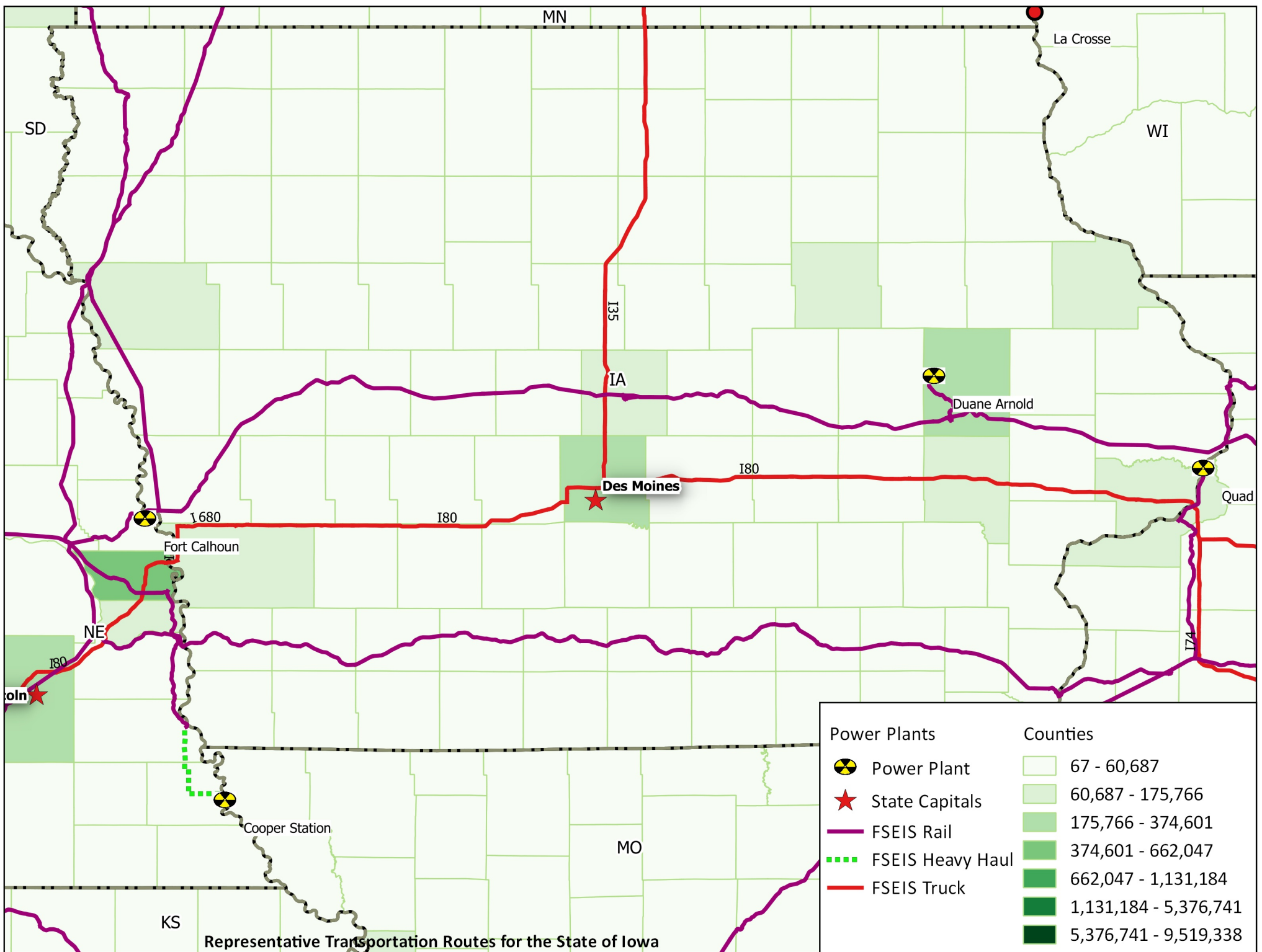
Power Plants

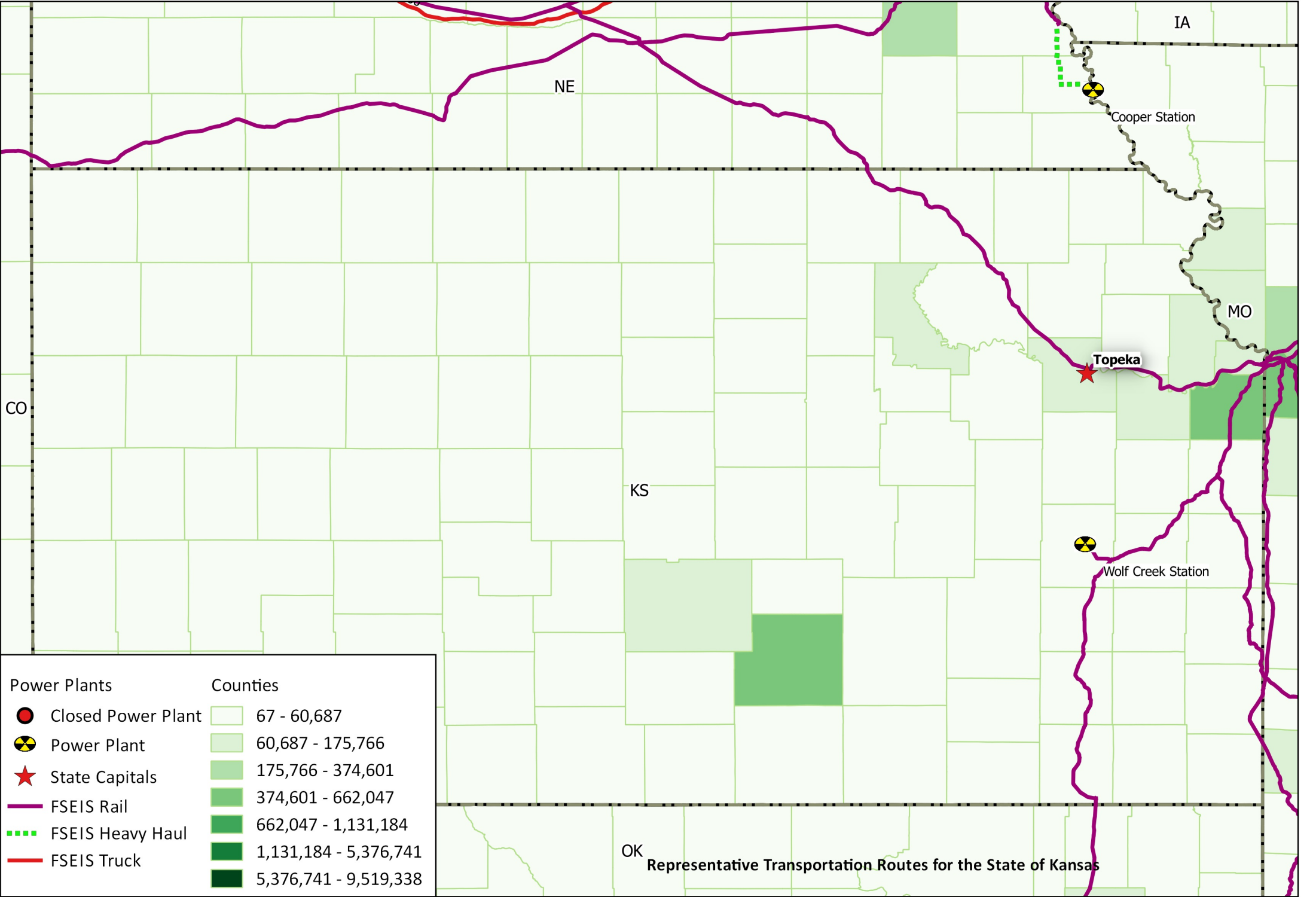
-  Closed Power Plant
-  Power Plant
-  State Capitals
-  FSEIS Rail
-  FSEIS Heavy Haul
-  FSEIS Truck

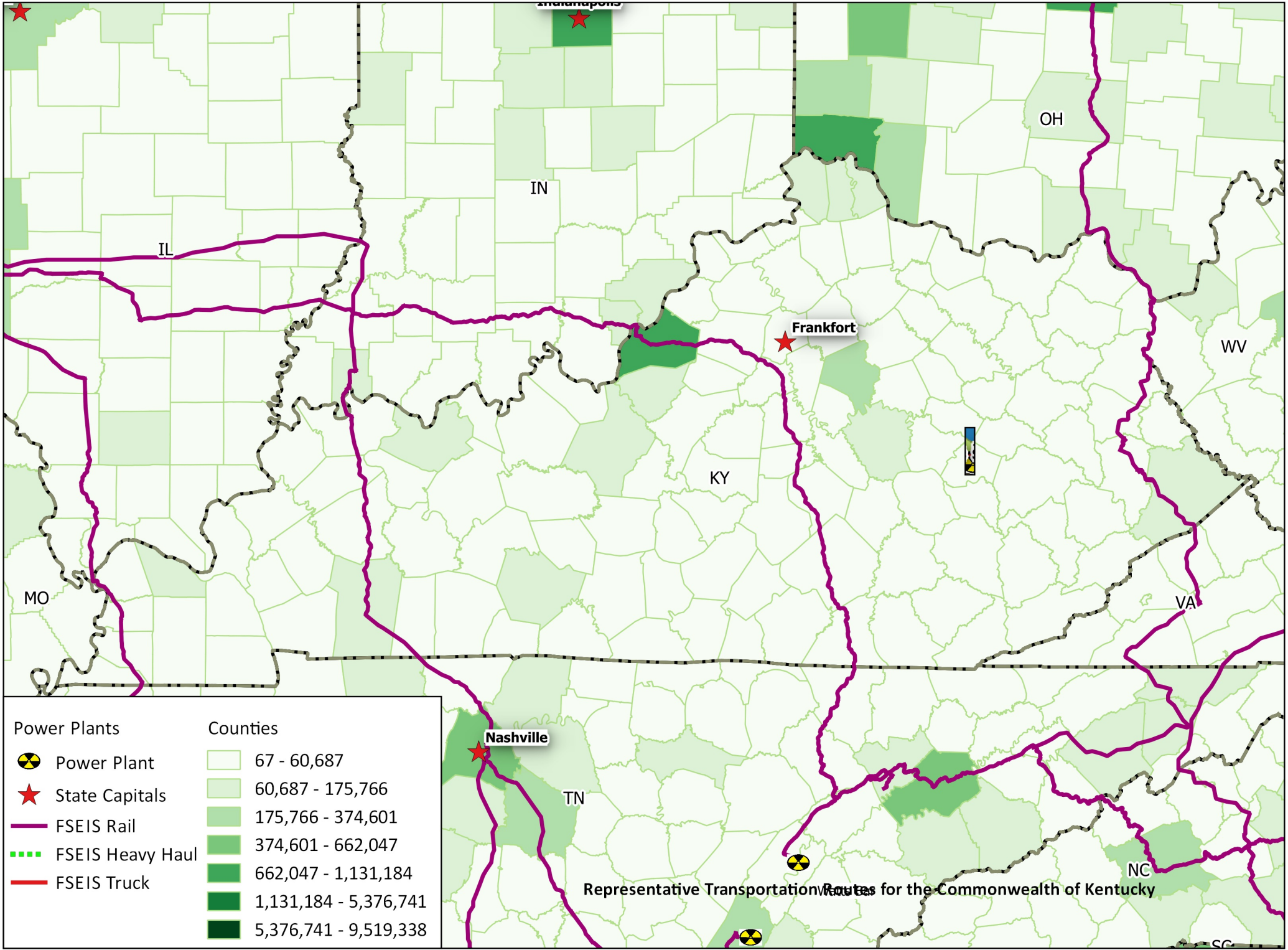
Counties

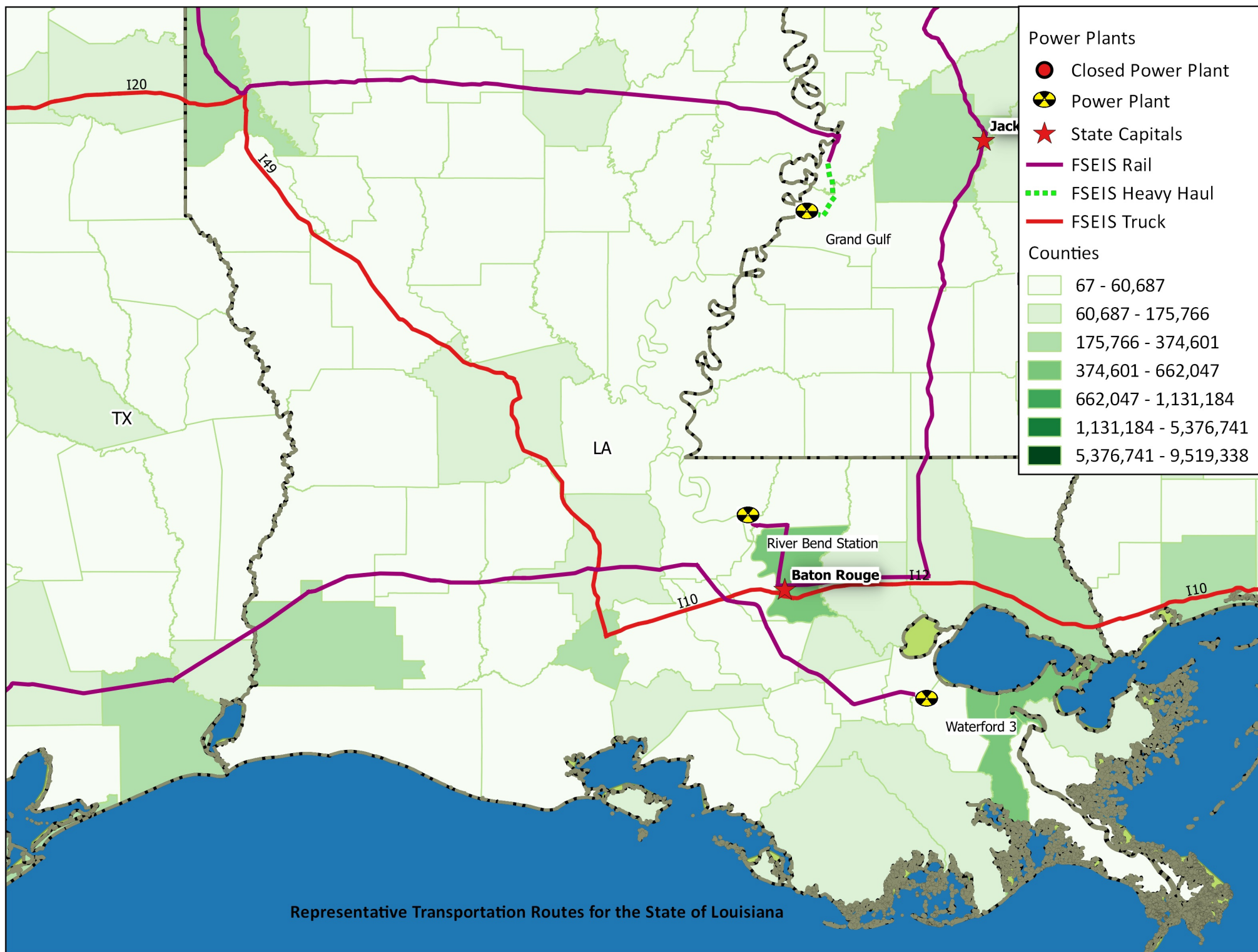
-  67 - 60,687
-  60,687 - 175,766
-  175,766 - 374,601
-  374,601 - 662,047
-  662,047 - 1,131,184
-  1,131,184 - 5,376,741
-  5,376,741 - 9,519,338






















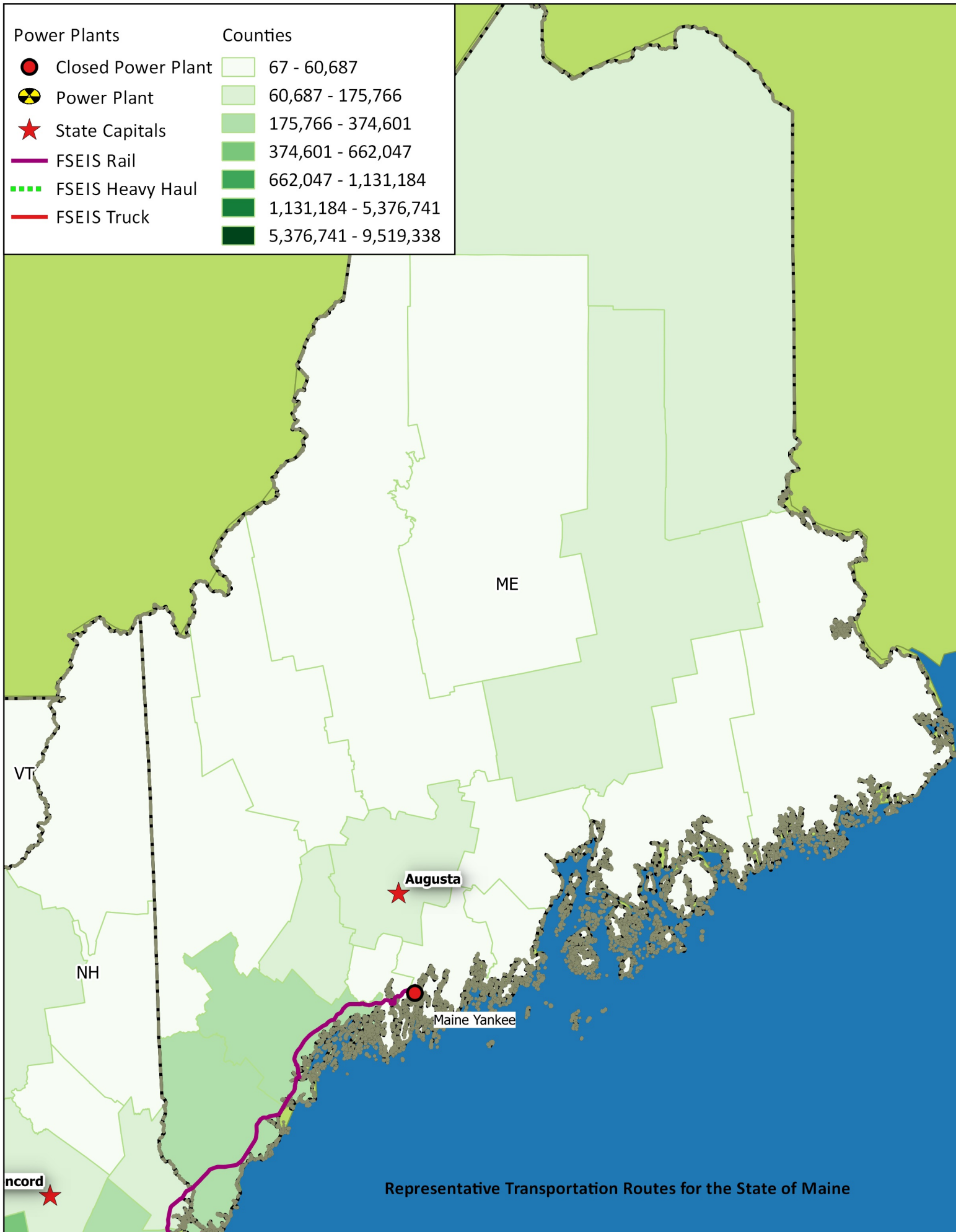


Power Plants

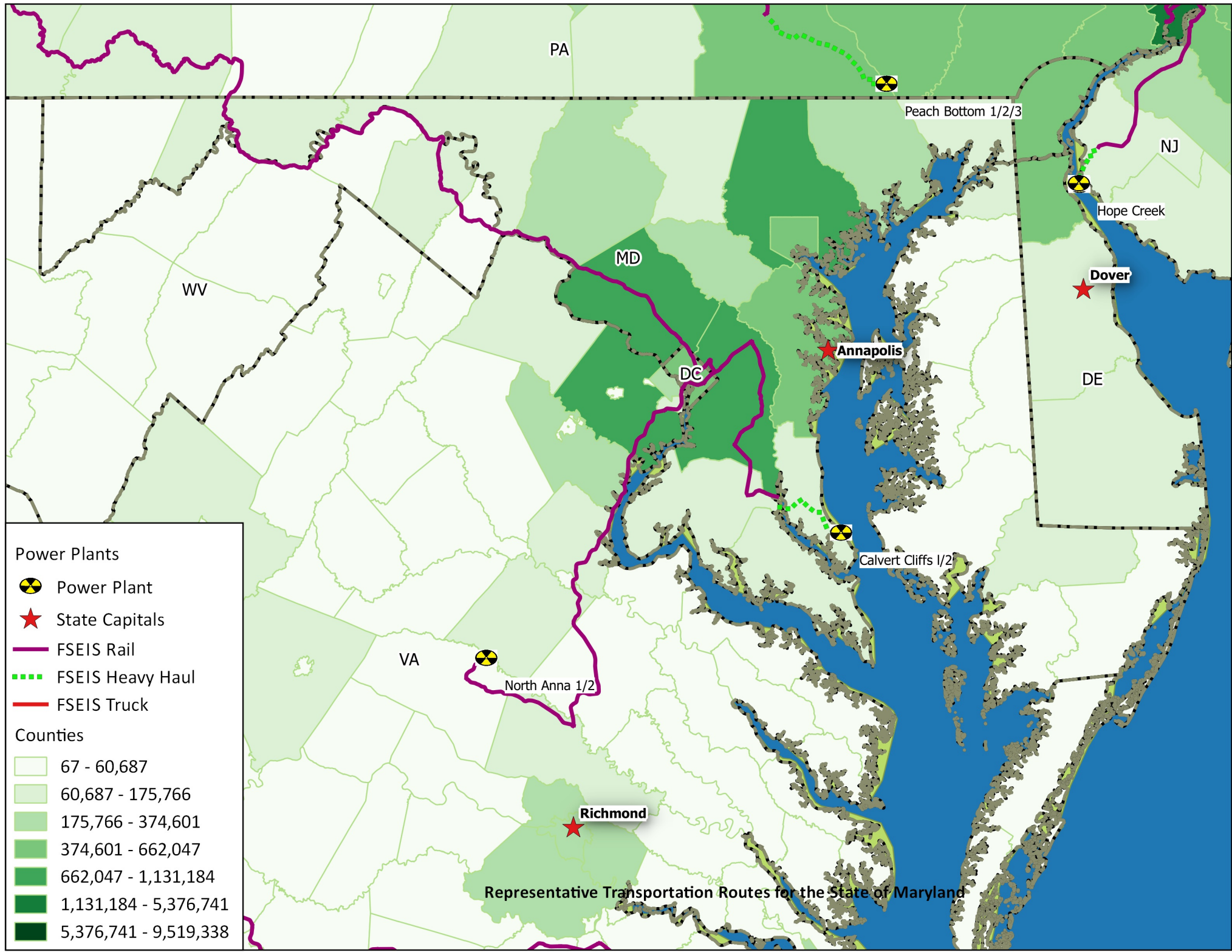
-  Closed Power Plant
-  Power Plant
-  State Capitals
-  FSEIS Rail
-  FSEIS Heavy Haul
-  FSEIS Truck

Counties






-  67 - 60,687
-  60,687 - 175,766
-  175,766 - 374,601
-  374,601 - 662,047
-  662,047 - 1,131,184
-  1,131,184 - 5,376,741
-  5,376,741 - 9,519,338










Representative Transportation Routes for the State of Maine

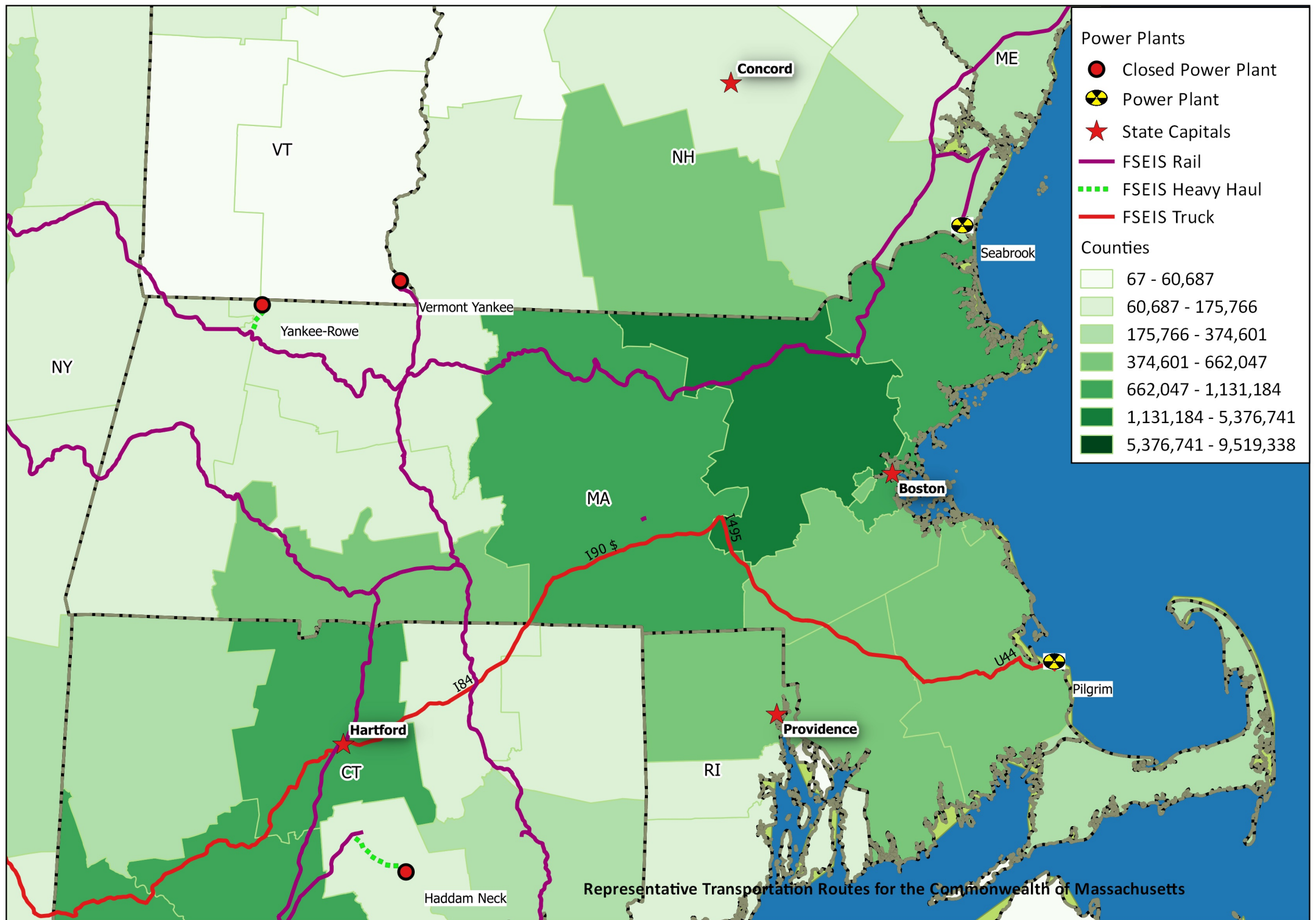


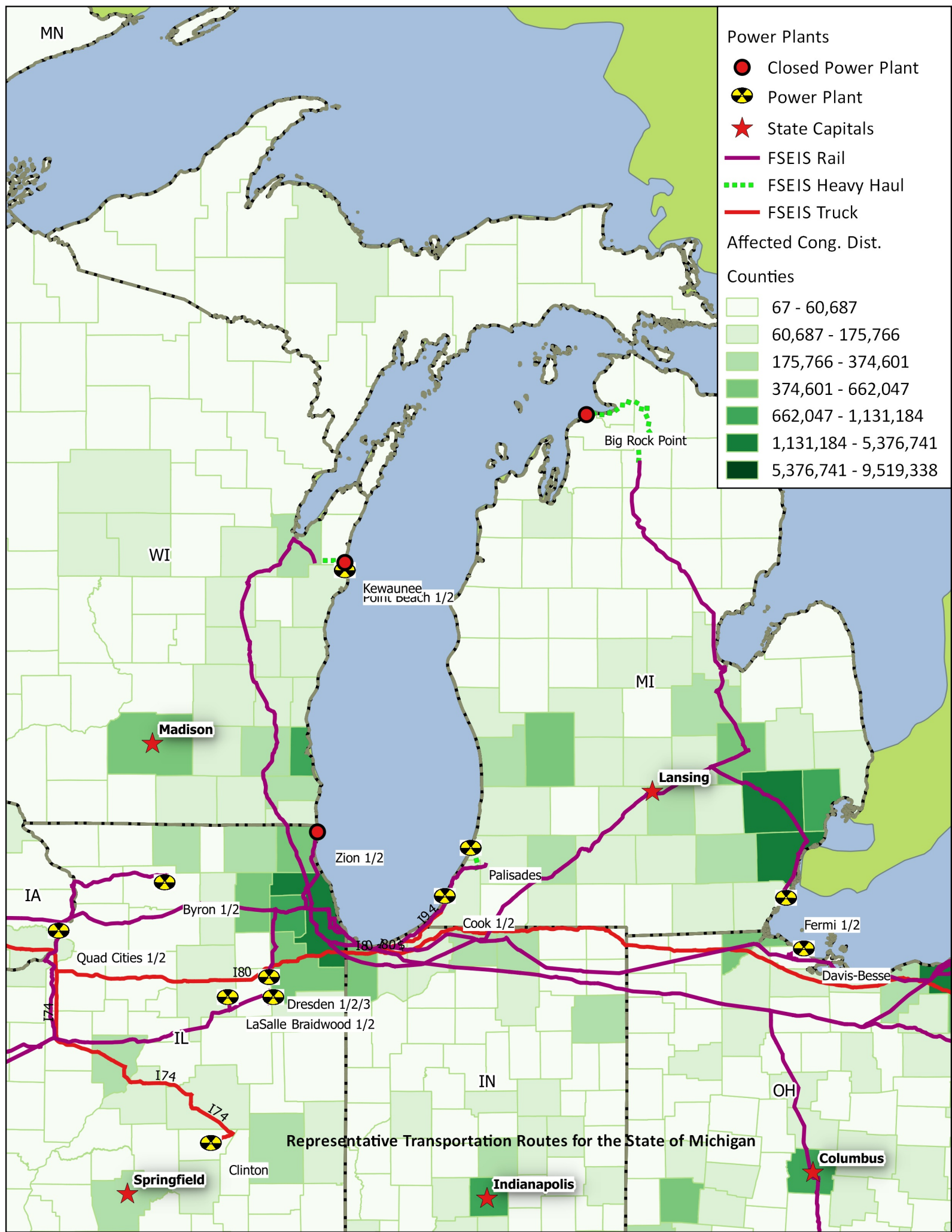
Power Plants

-  Power Plant
-  State Capitals
-  FSEIS Rail
-  FSEIS Heavy Haul
-  FSEIS Truck

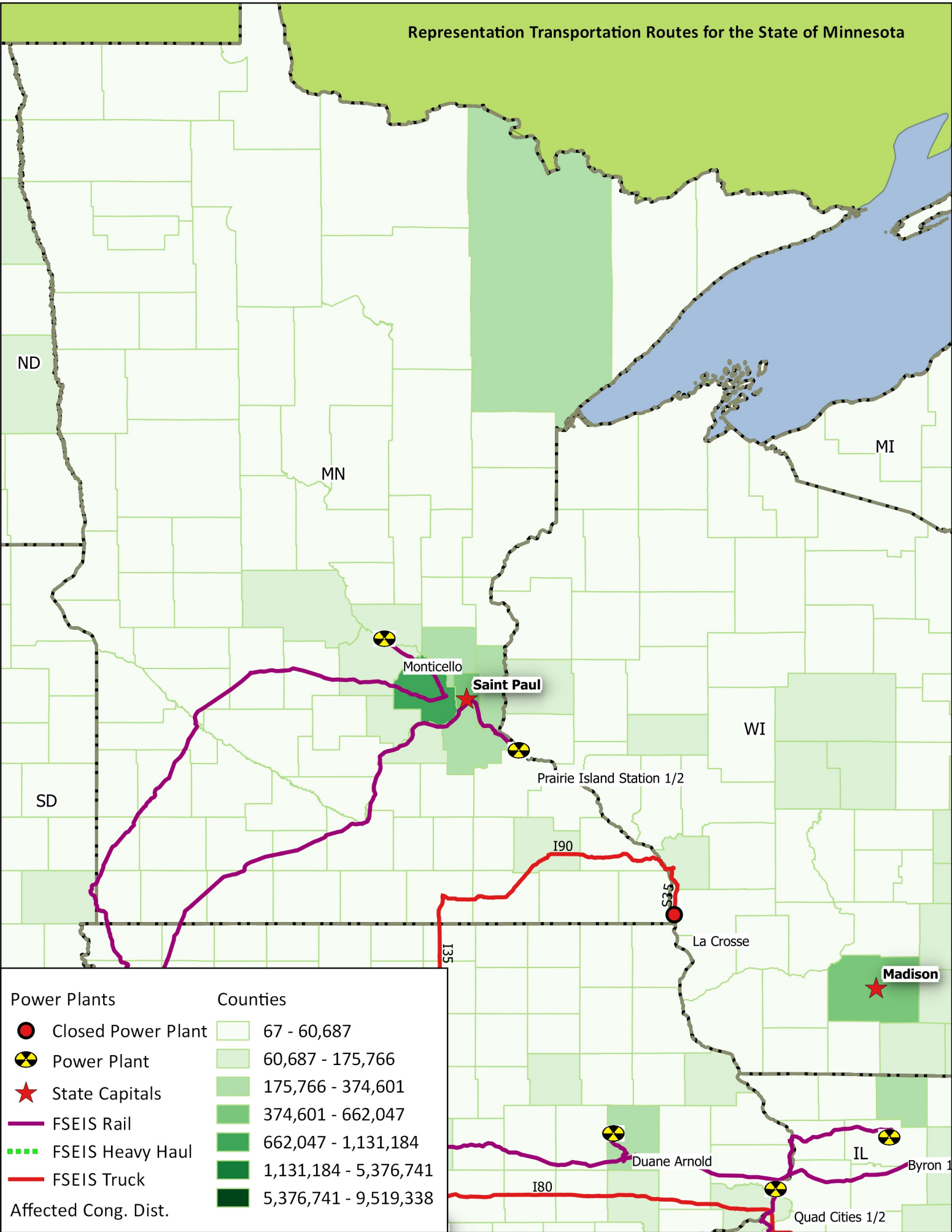
Counties

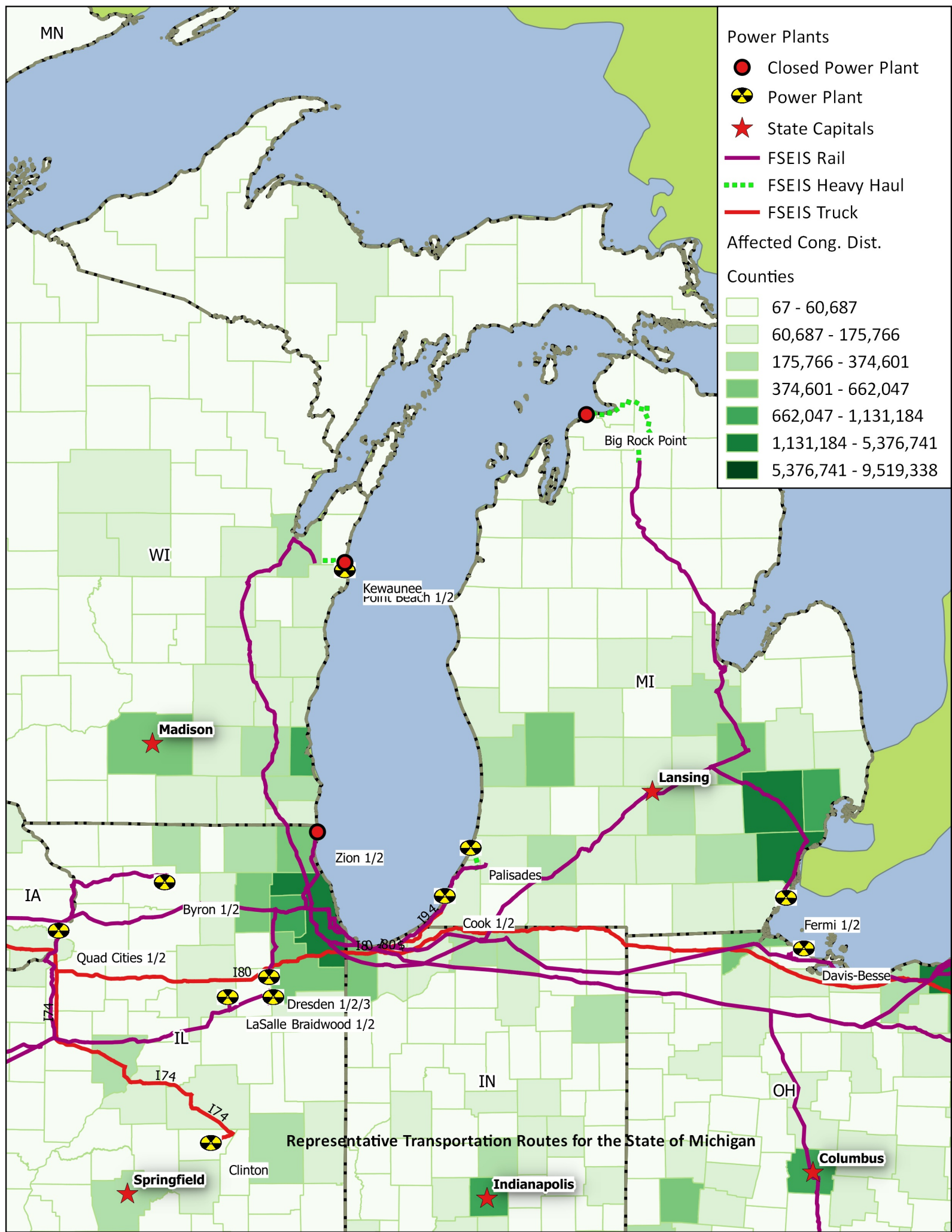
-  67 - 60,687
-  60,687 - 175,766
-  175,766 - 374,601
-  374,601 - 662,047
-  662,047 - 1,131,184
-  1,131,184 - 5,376,741
-  5,376,741 - 9,519,338



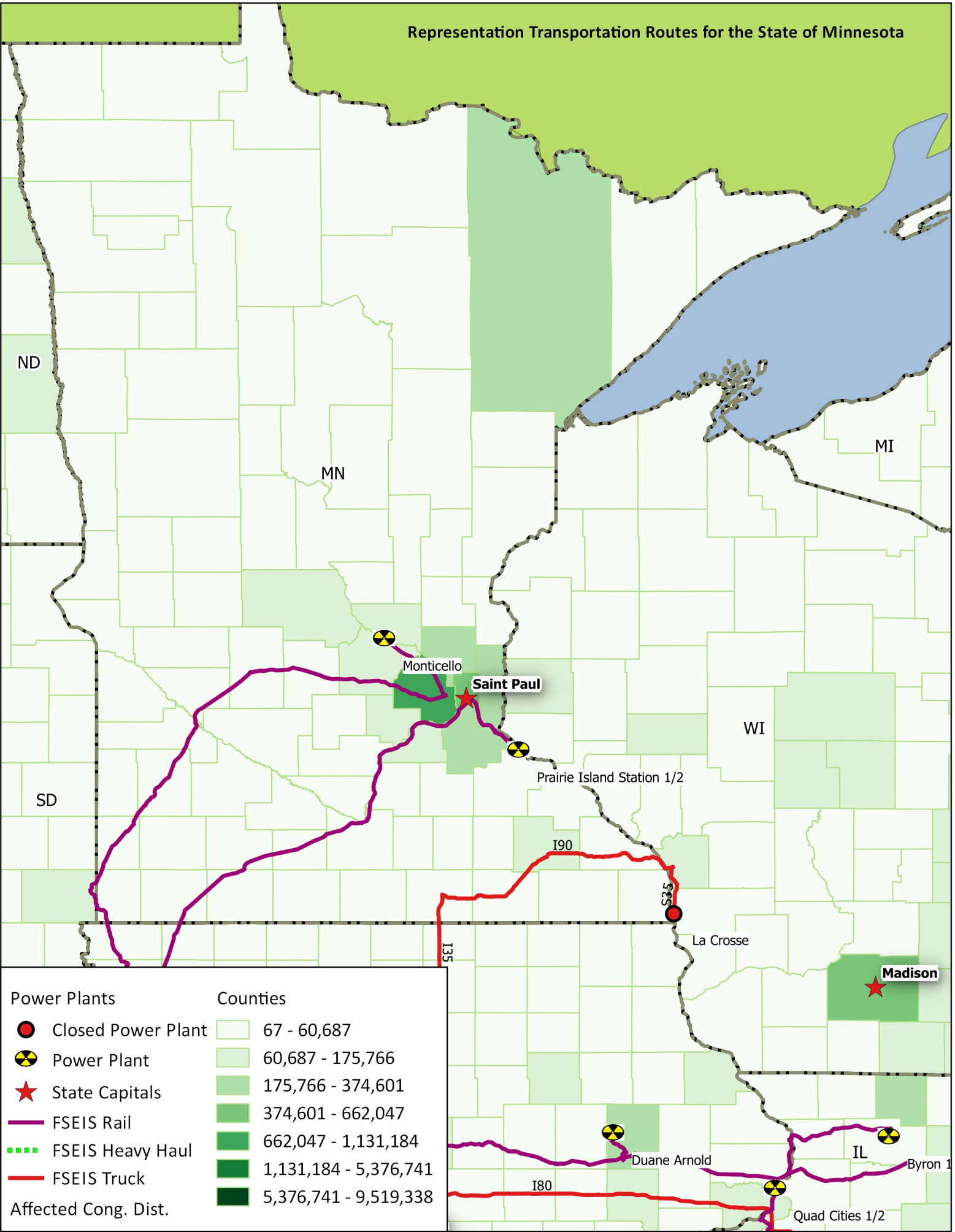


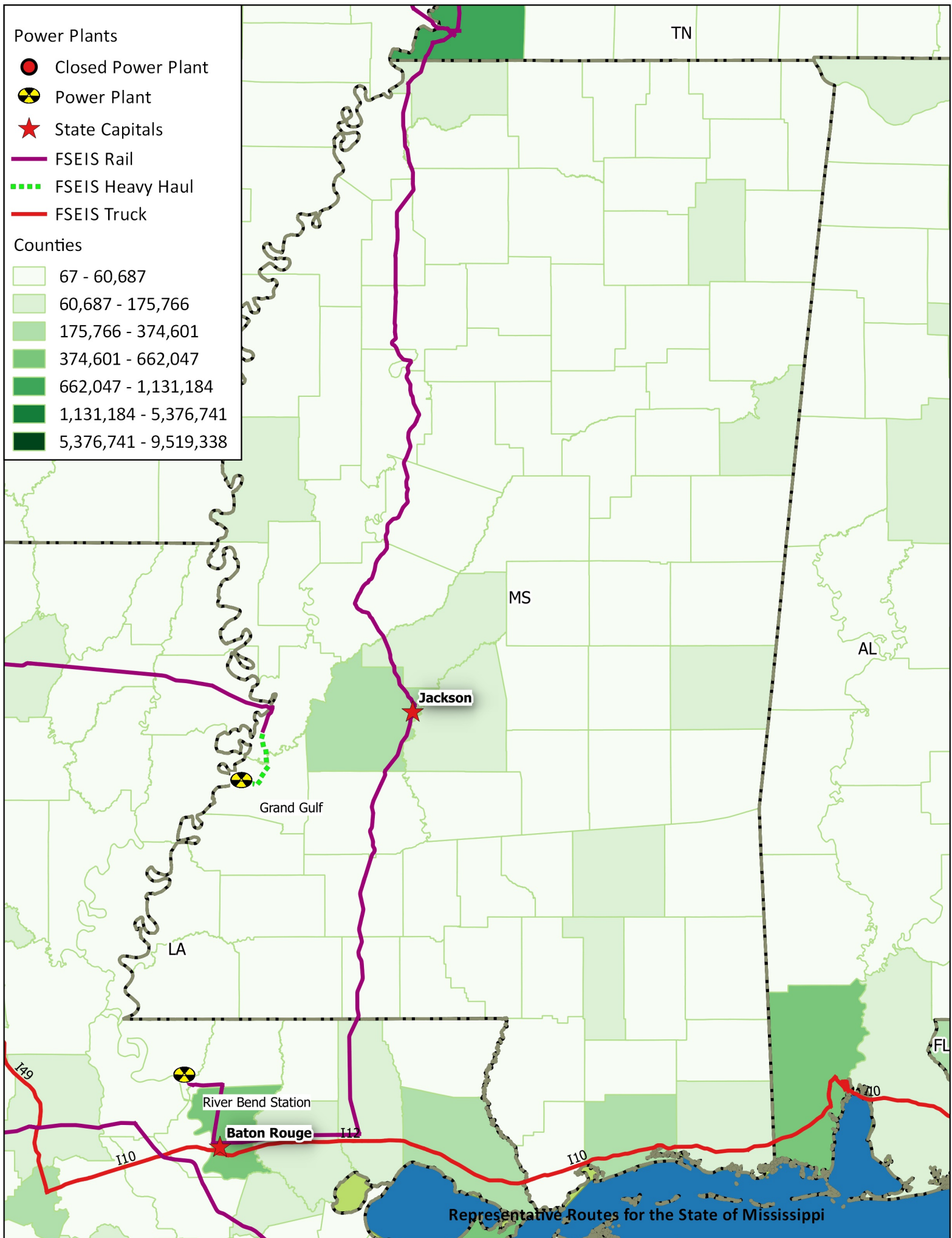
Representation Transportation Routes for the State of Minnesota

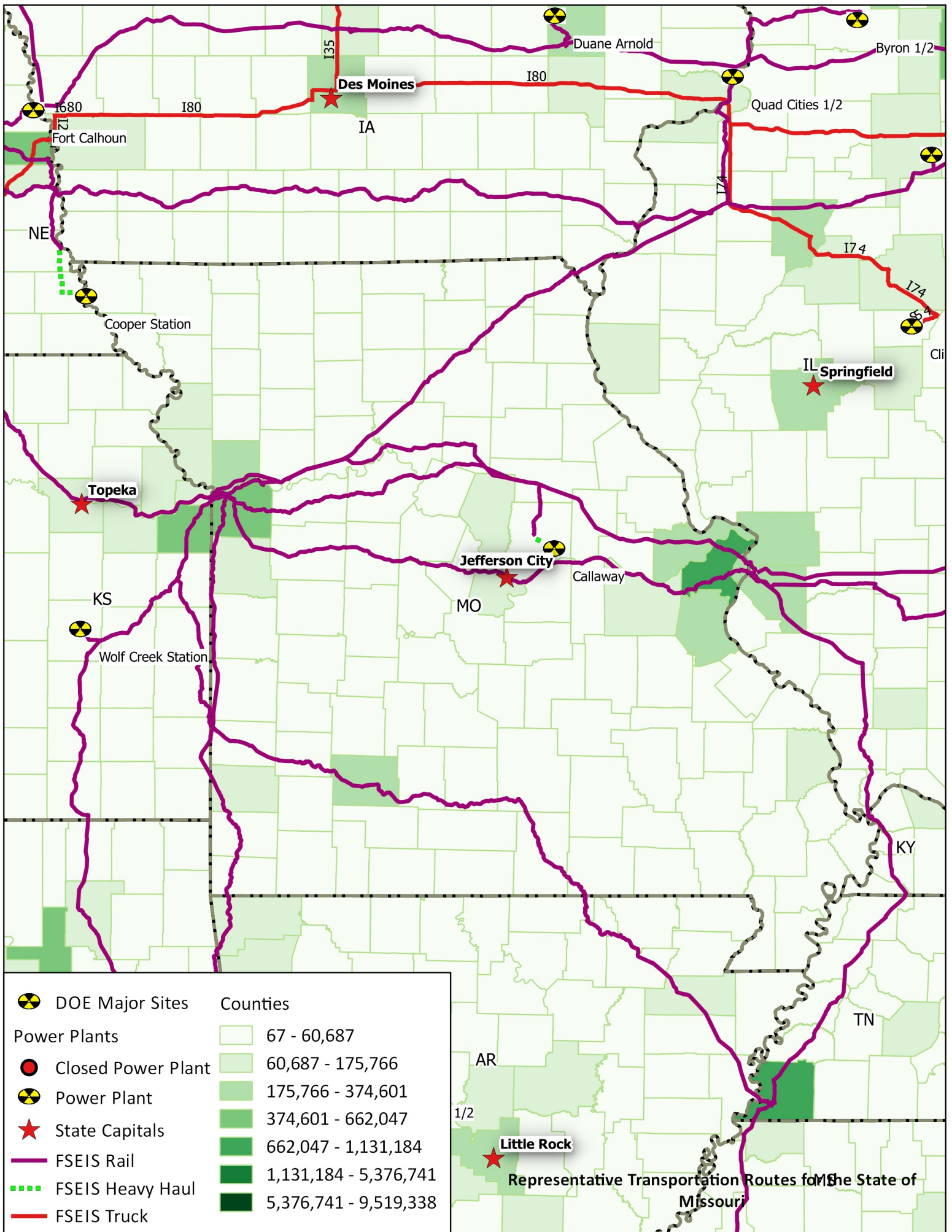


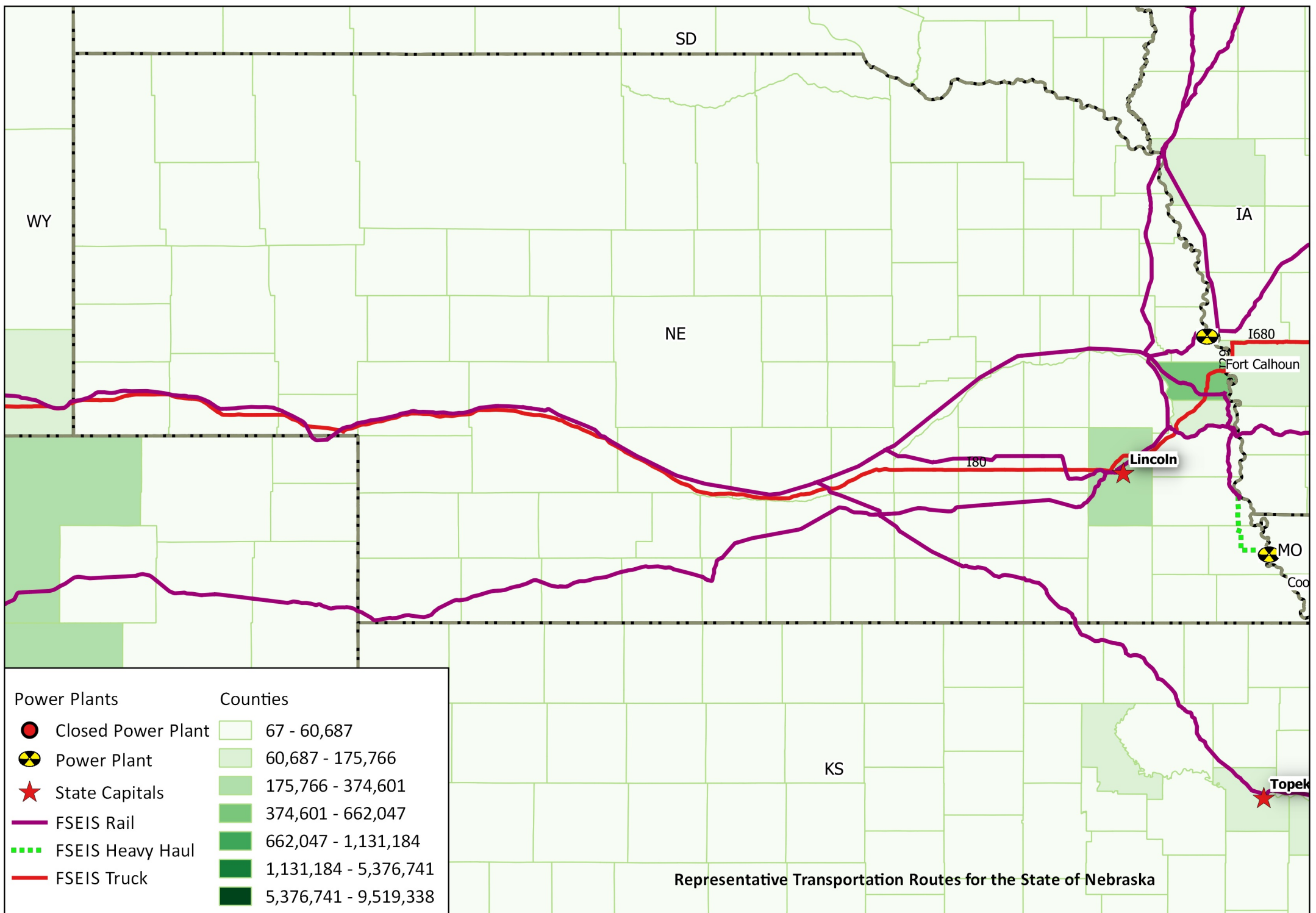


Representation Transportation Routes for the State of Minnesota

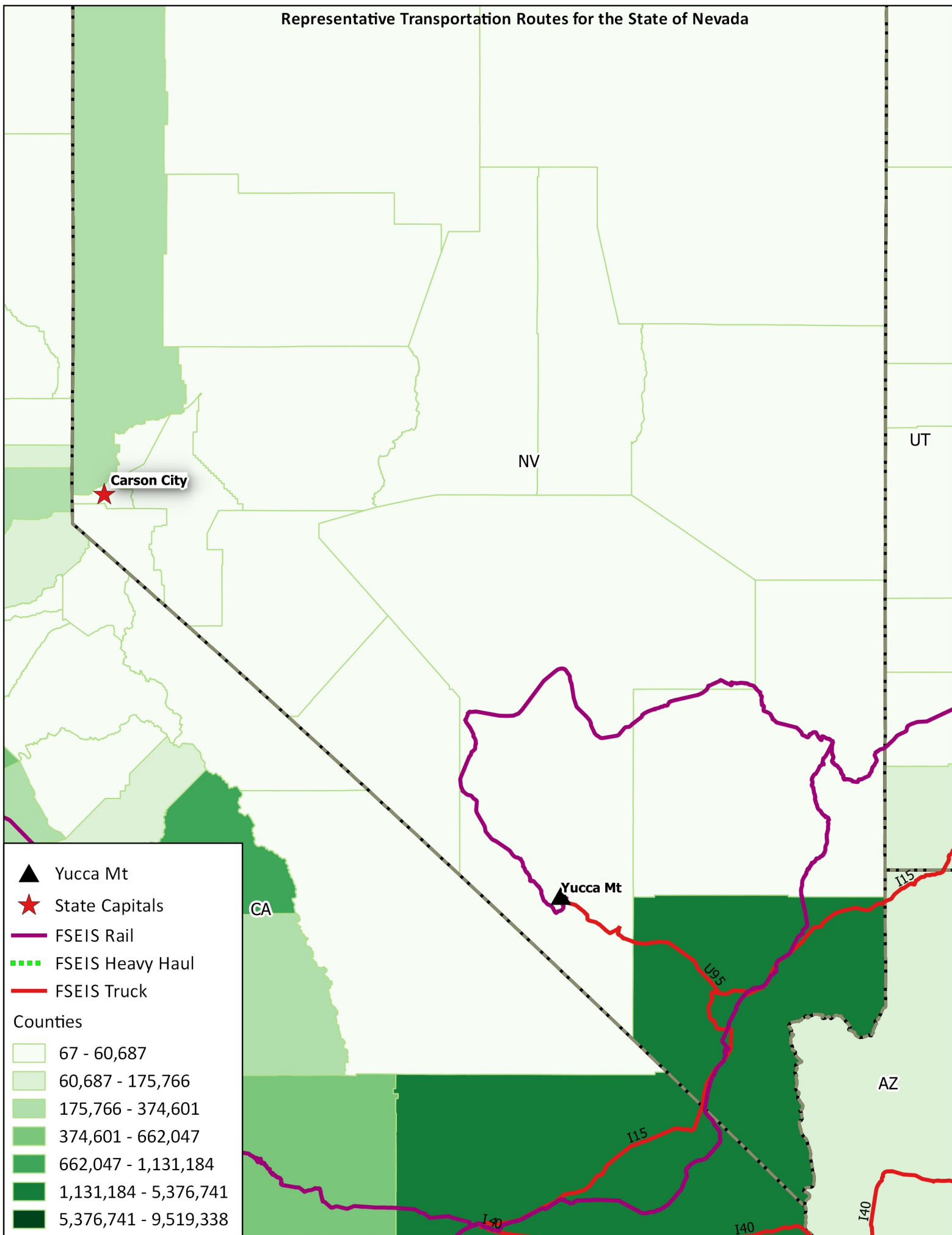











Representative Transportation Routes for the State of Nevada




Representative Transportation routes for the State of New Hampshire

Power Plants








-  Closed Power Plant
-  Power Plant
-  State Capitals

 FSEIS Rail

 FSEIS Heavy Haul

 FSEIS Truck

Counties

-  67 - 60,687
-  60,687 - 175,766
-  175,766 - 374,601
-  374,601 - 662,047
-  662,047 - 1,131,184
-  1,131,184 - 5,376,741
-  5,376,741 - 9,519,338

 Montpelier

VT

NH

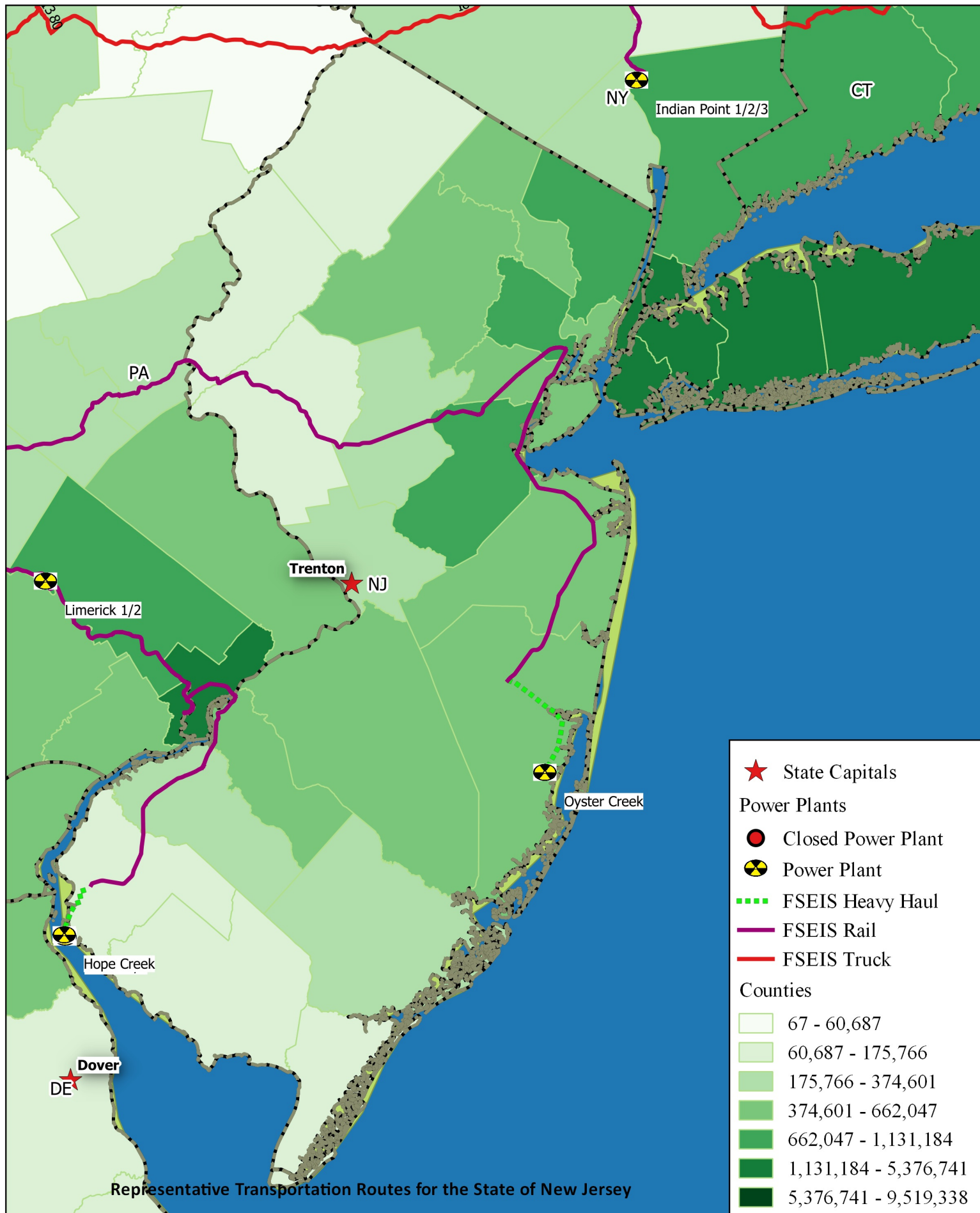
 Concord

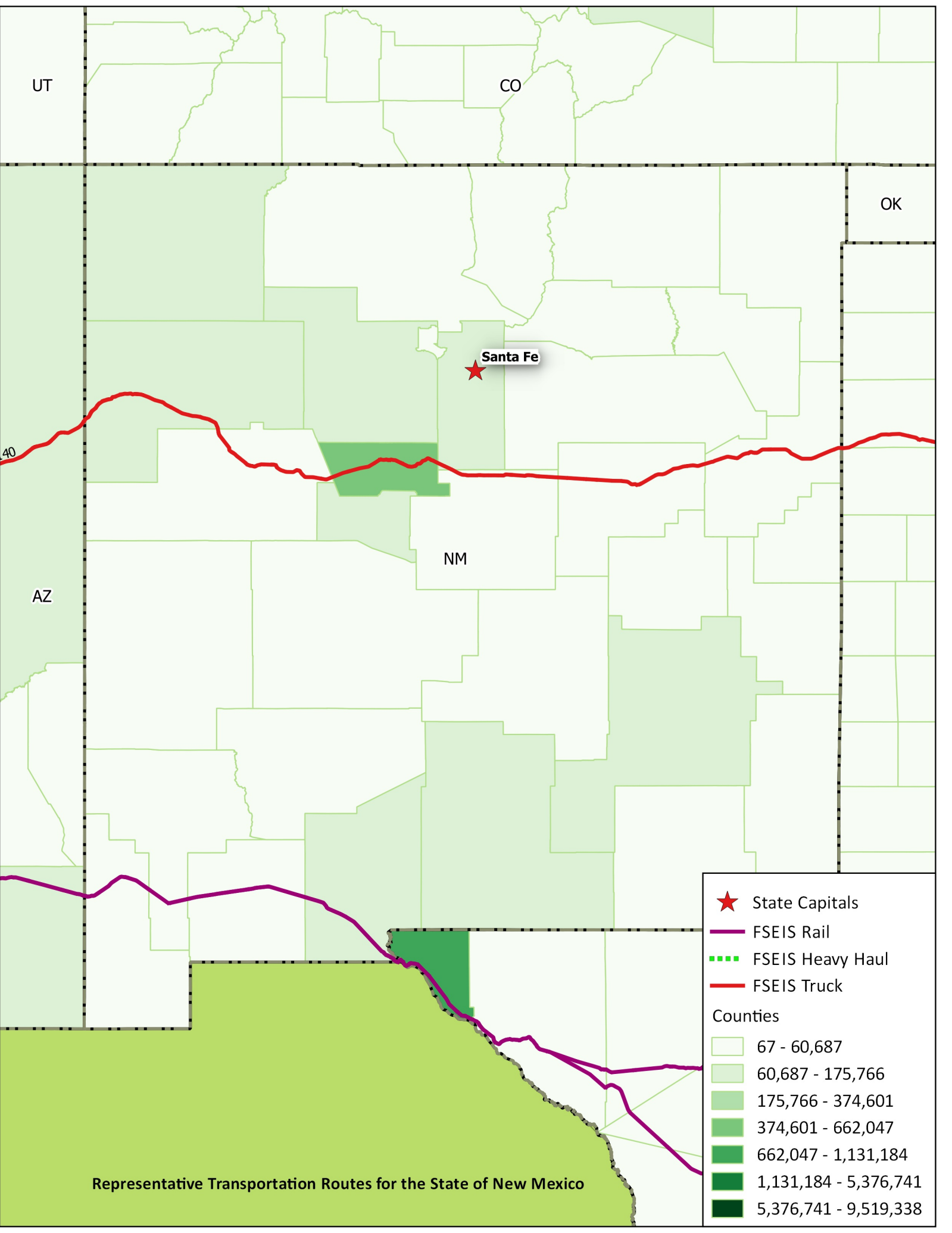
Seabrook

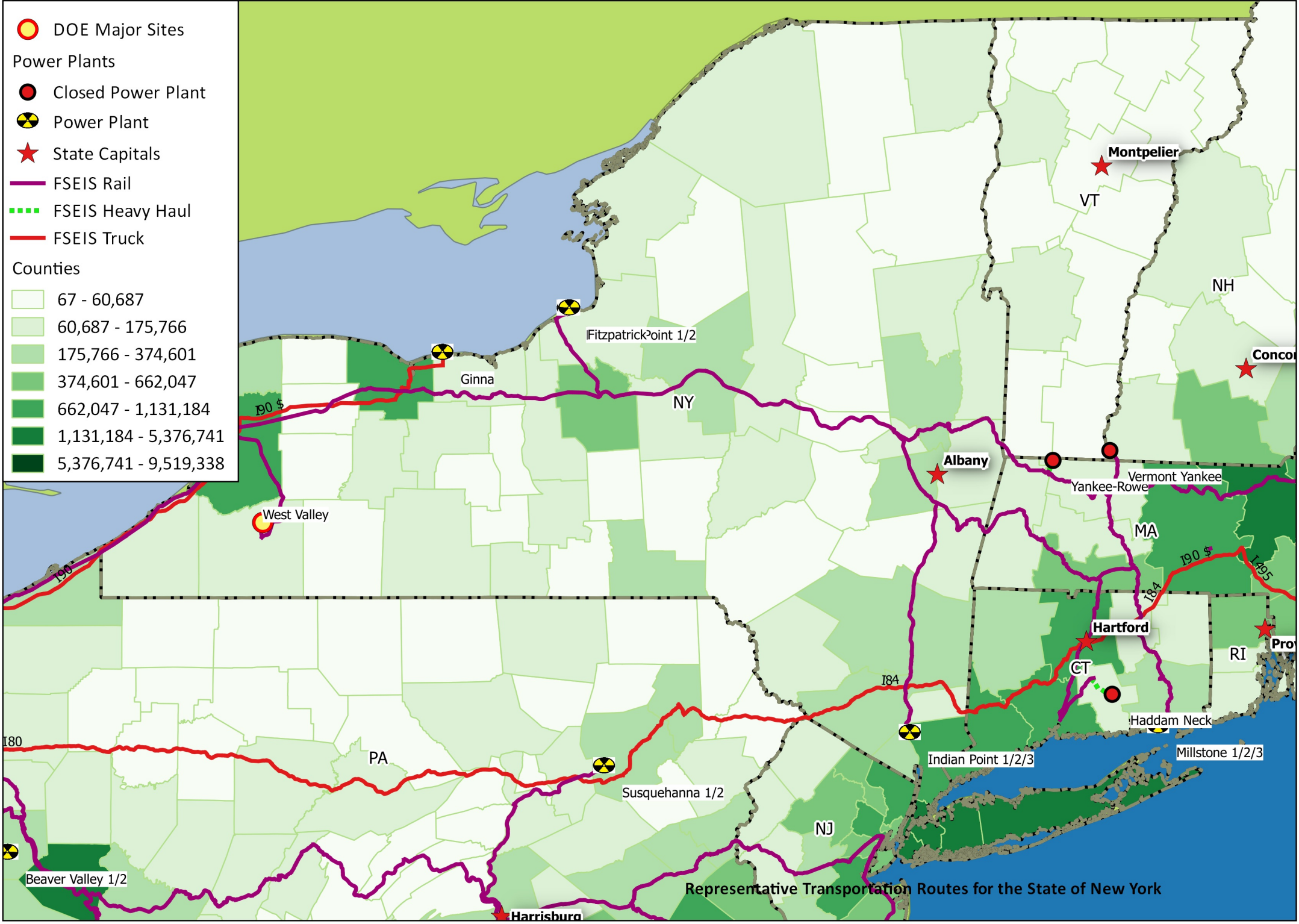
Vermont Yankee

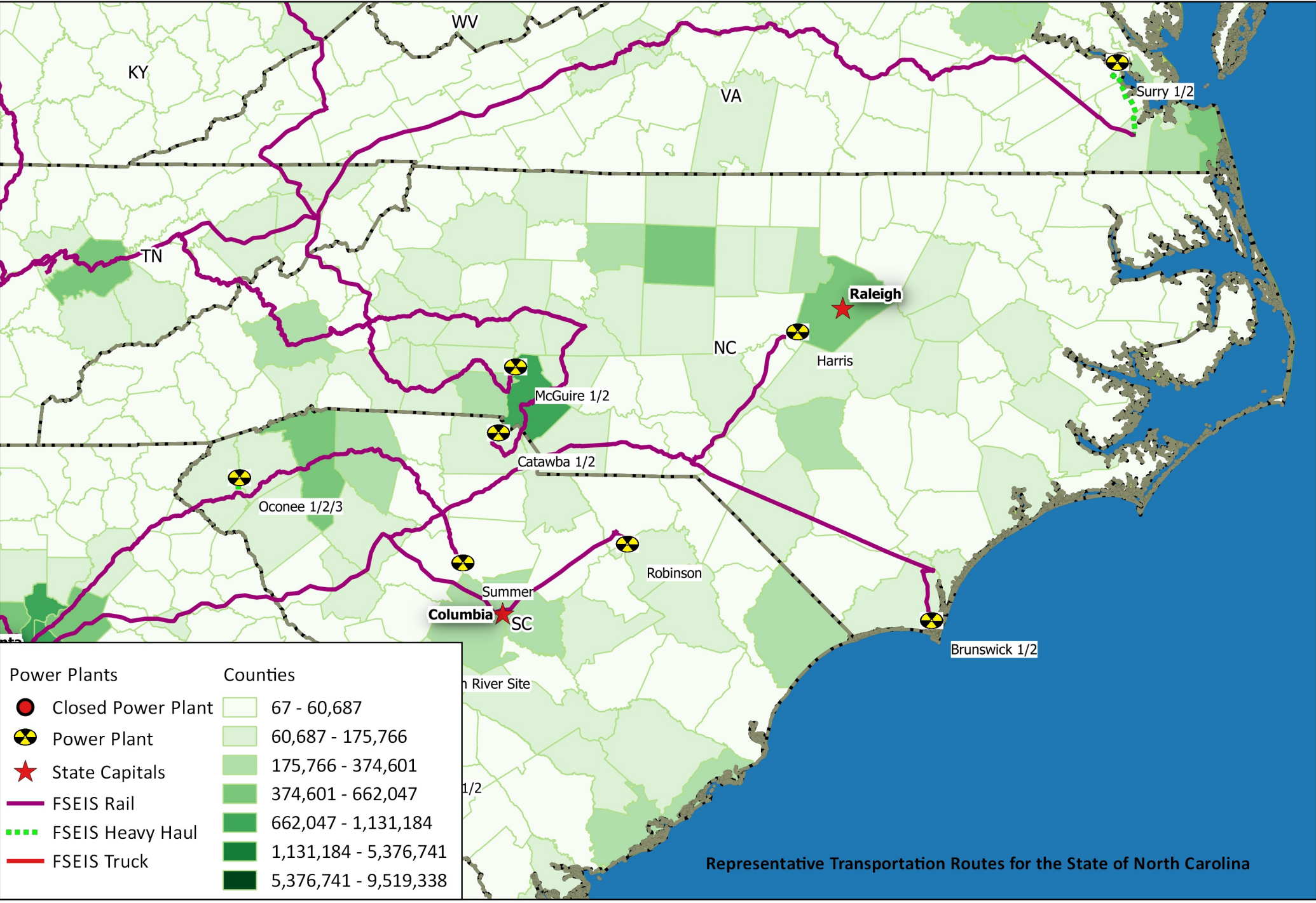
Yankee-Rowe

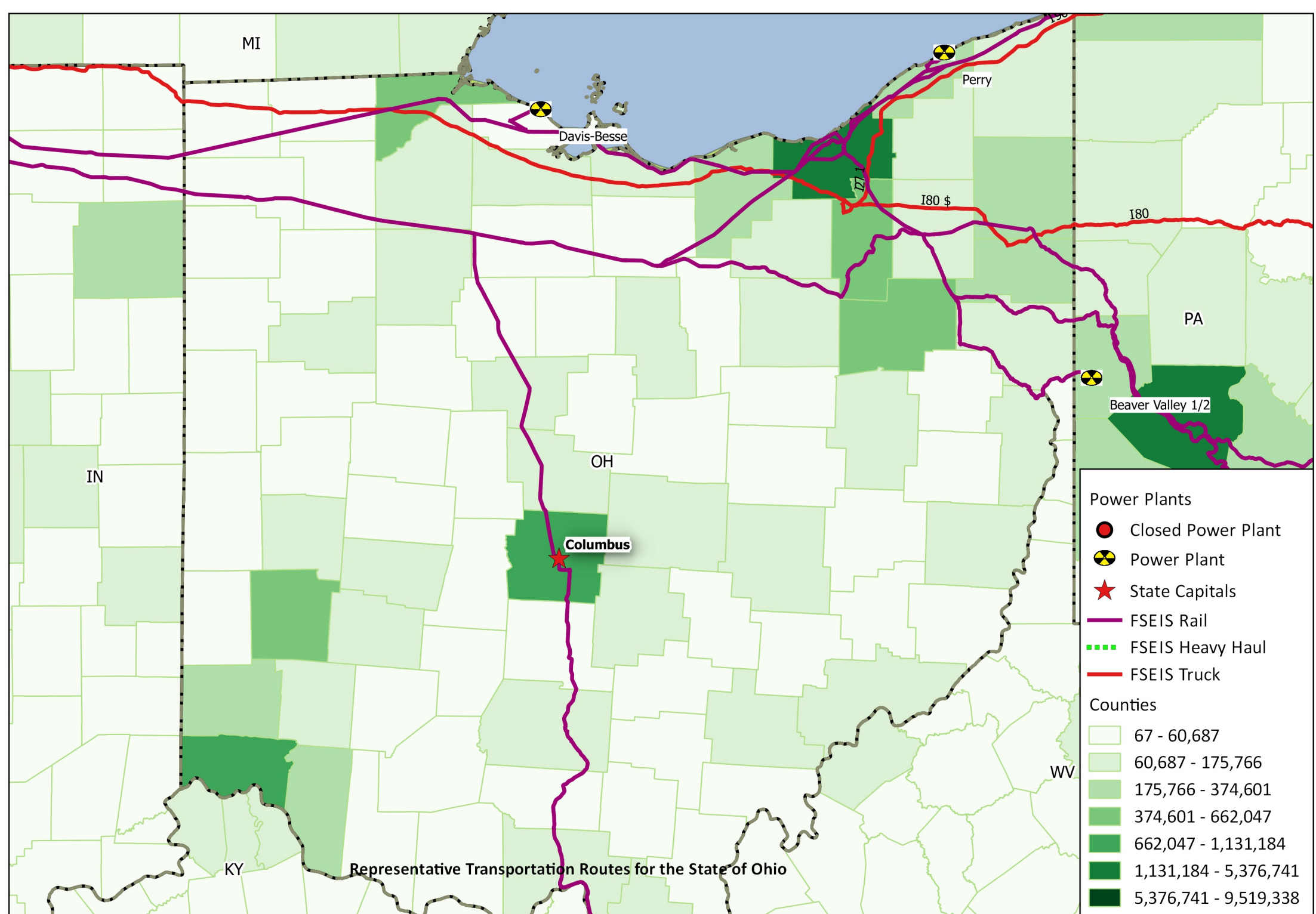
MA

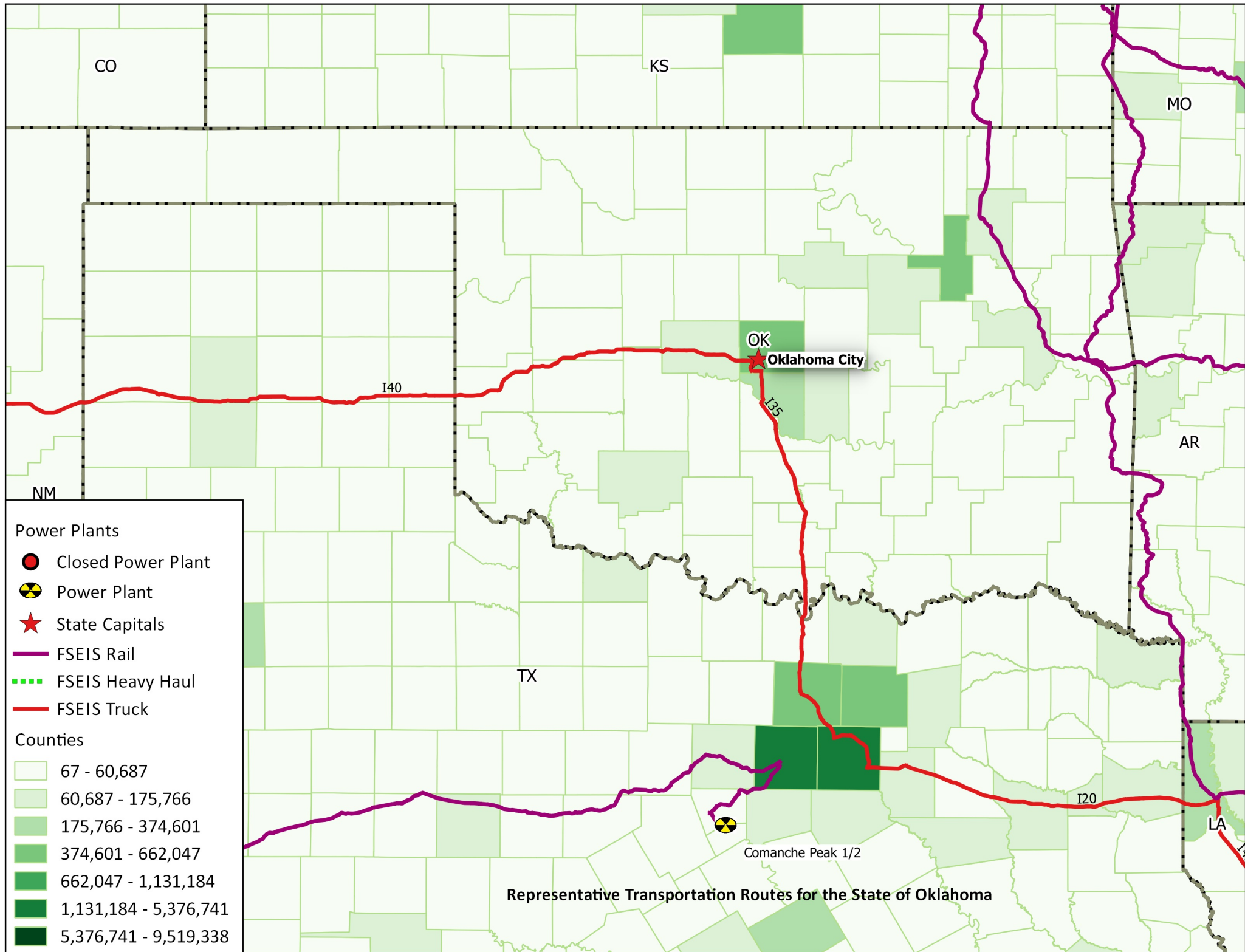


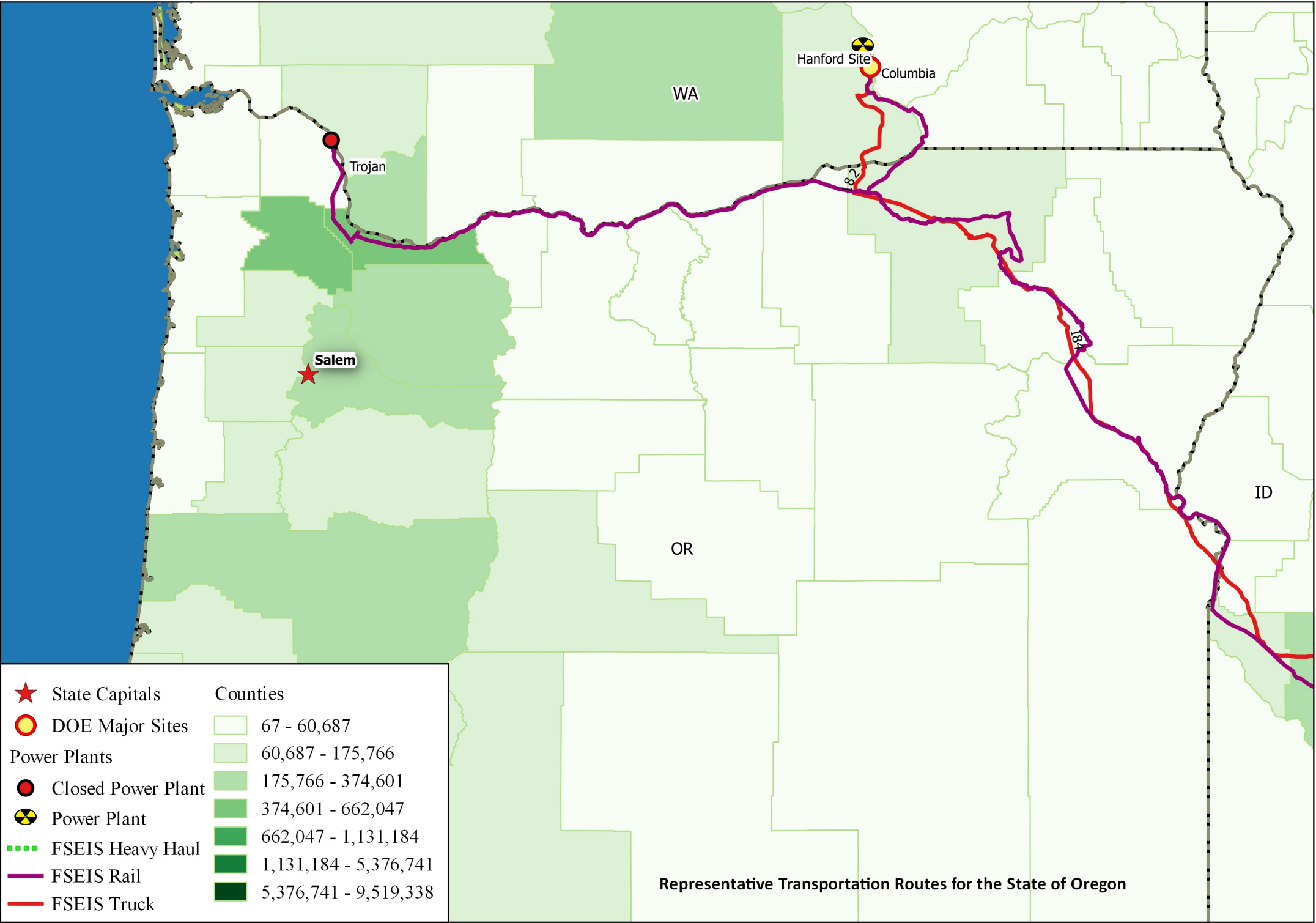


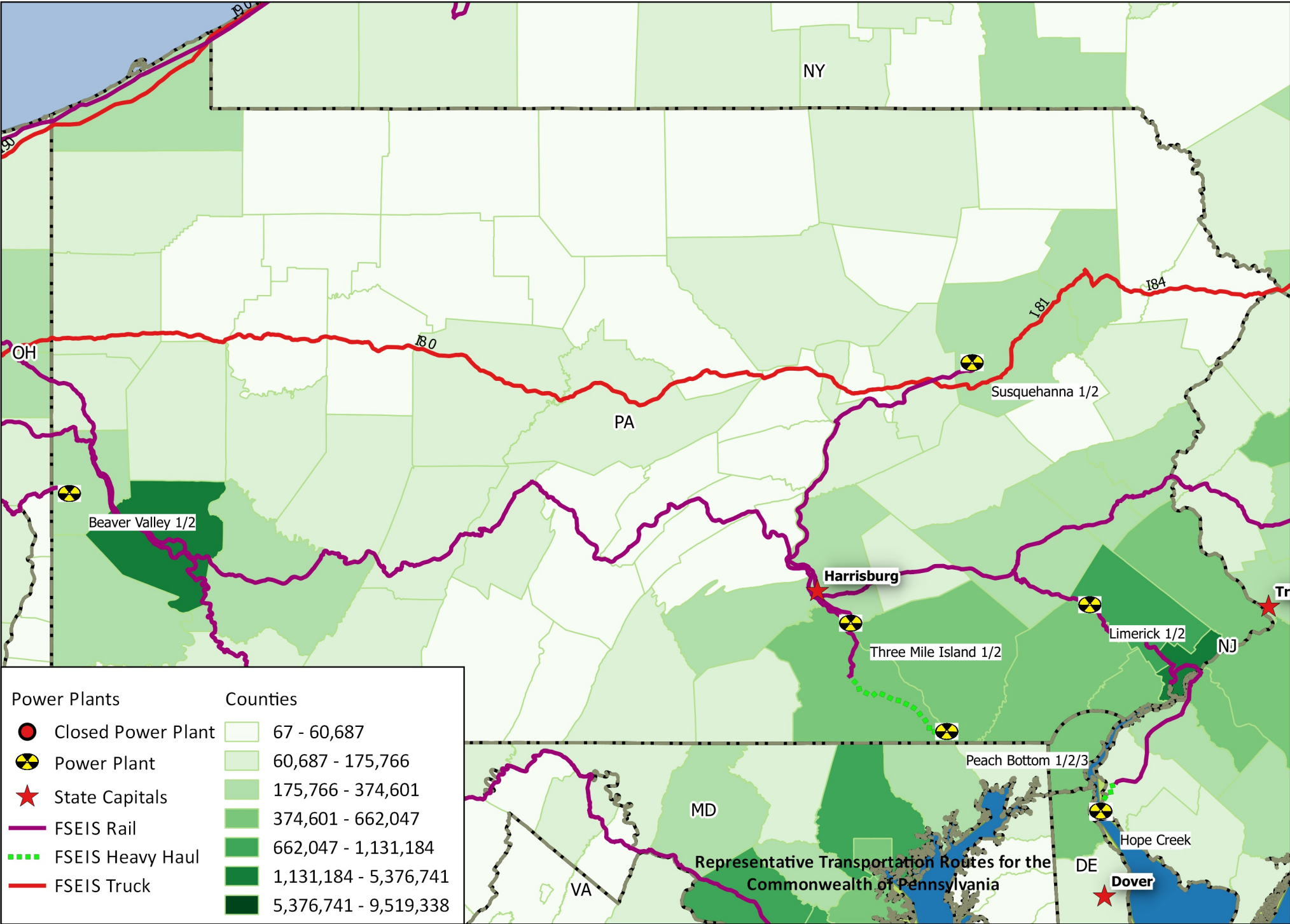


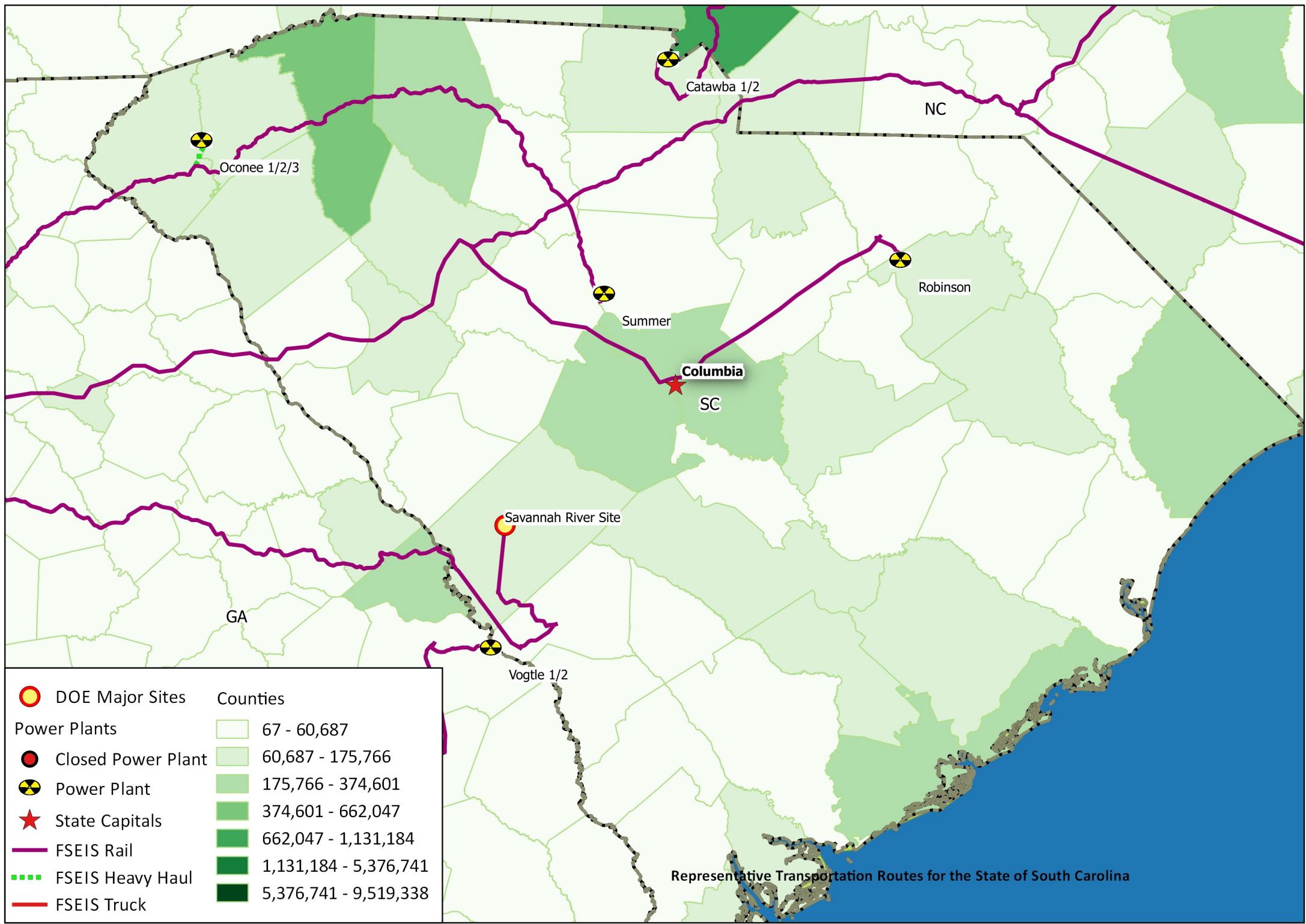


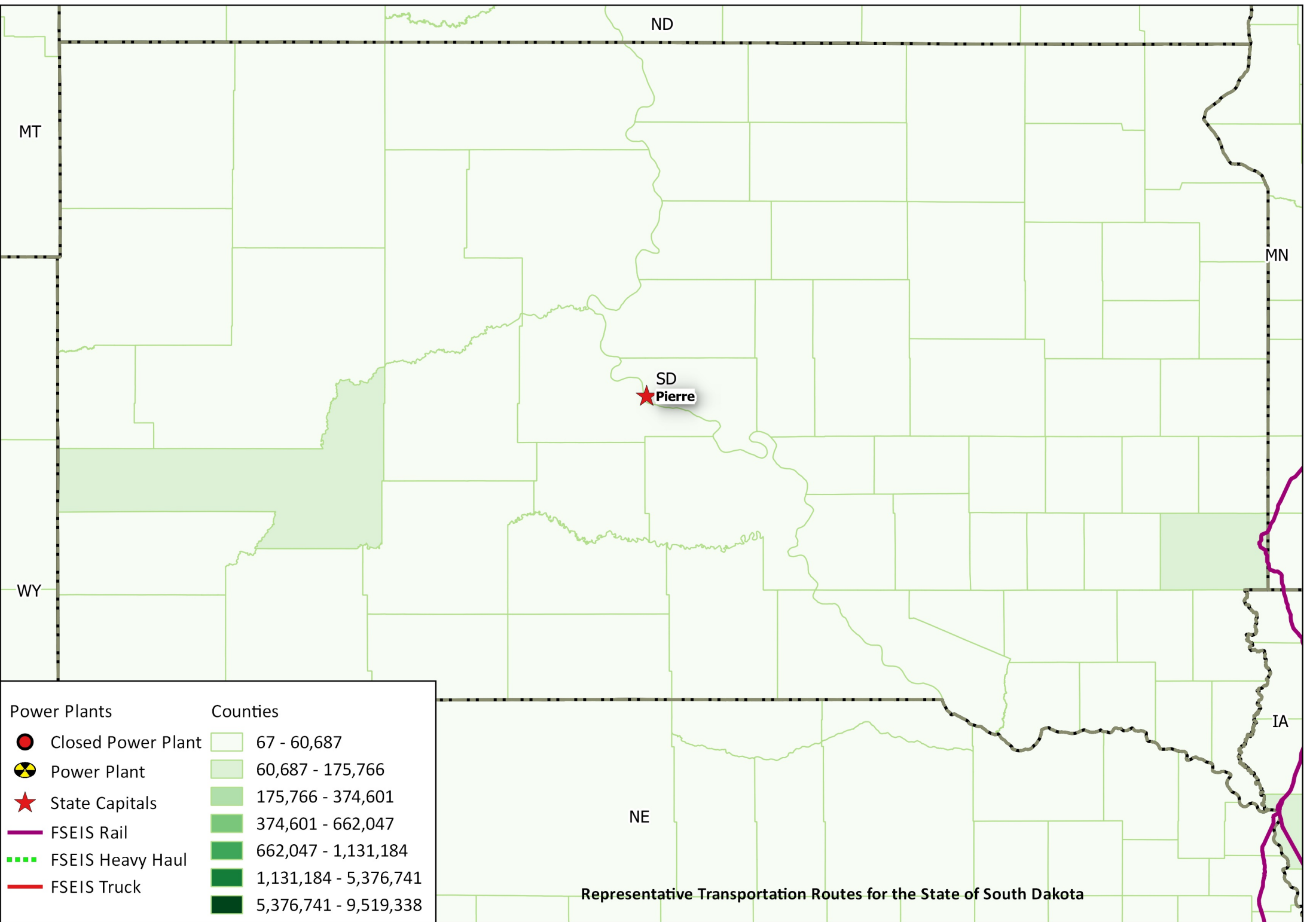


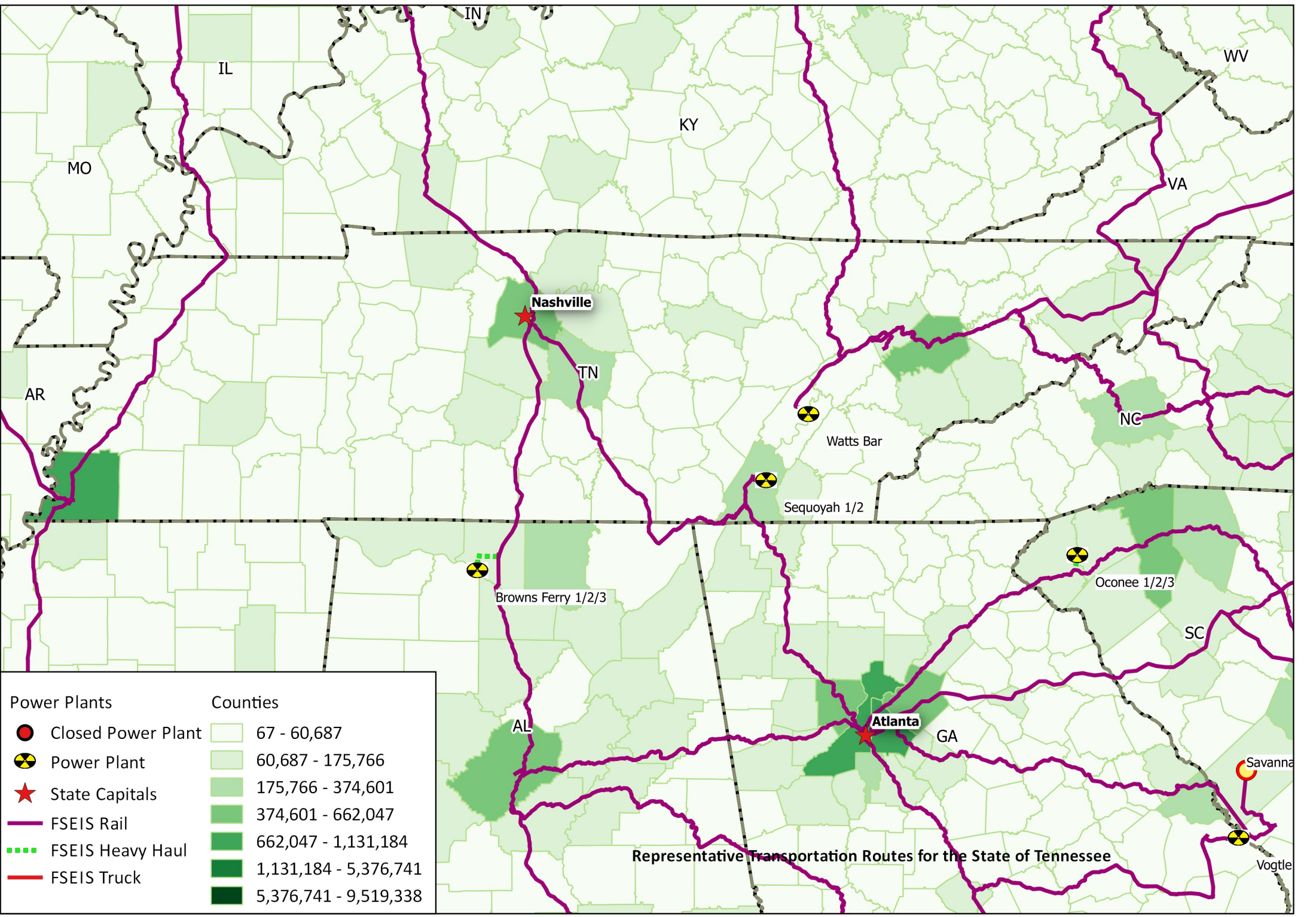




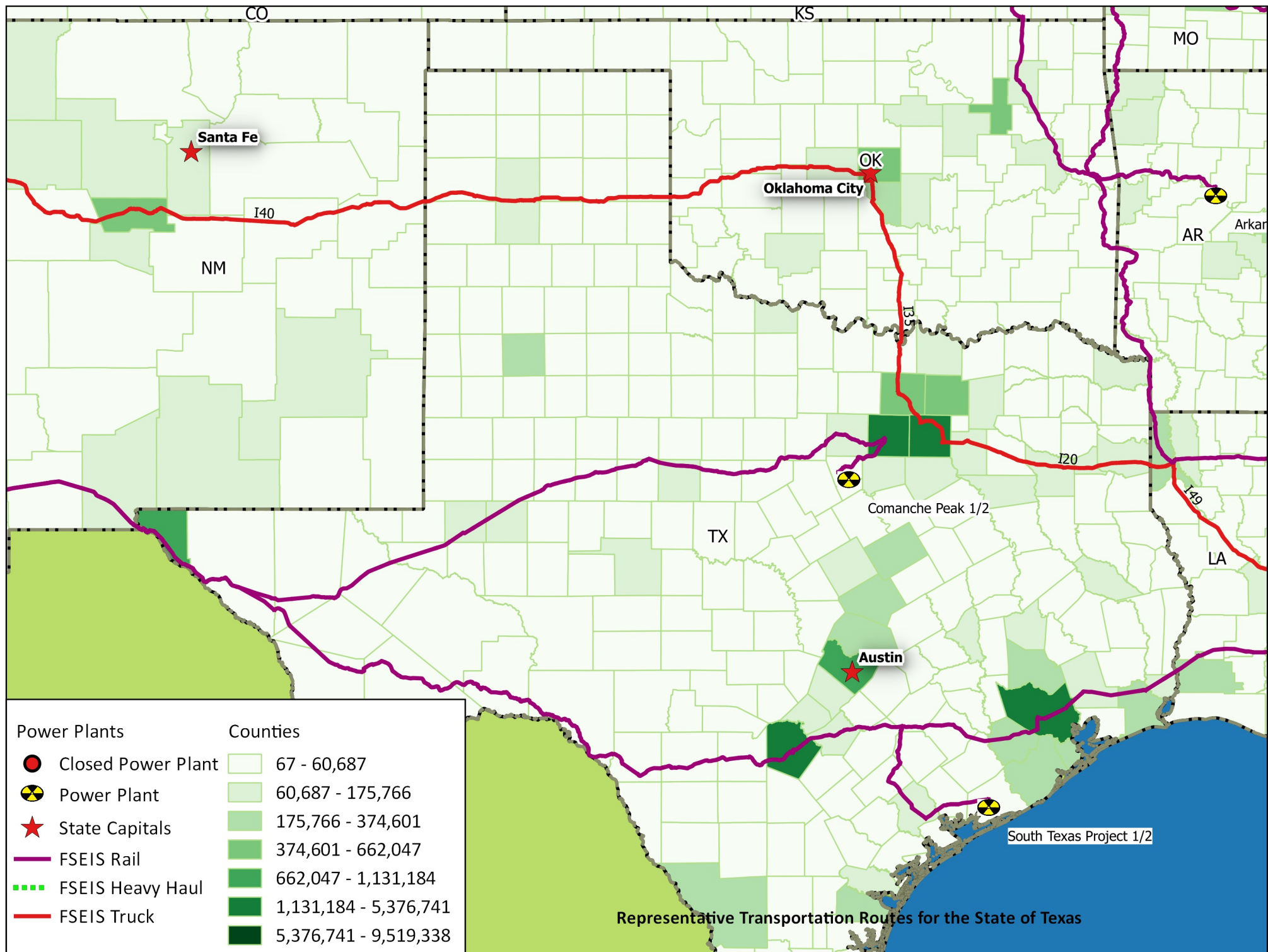


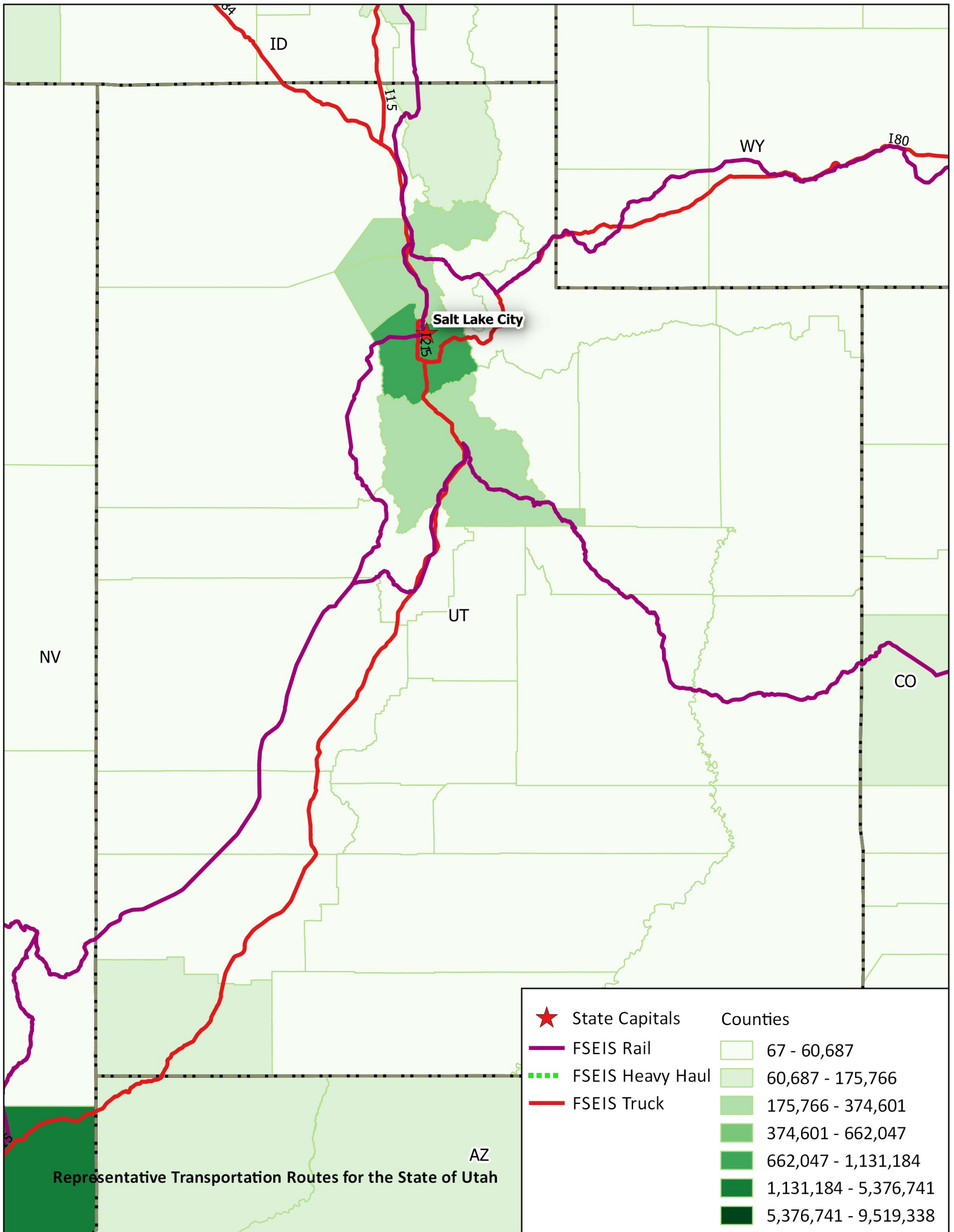




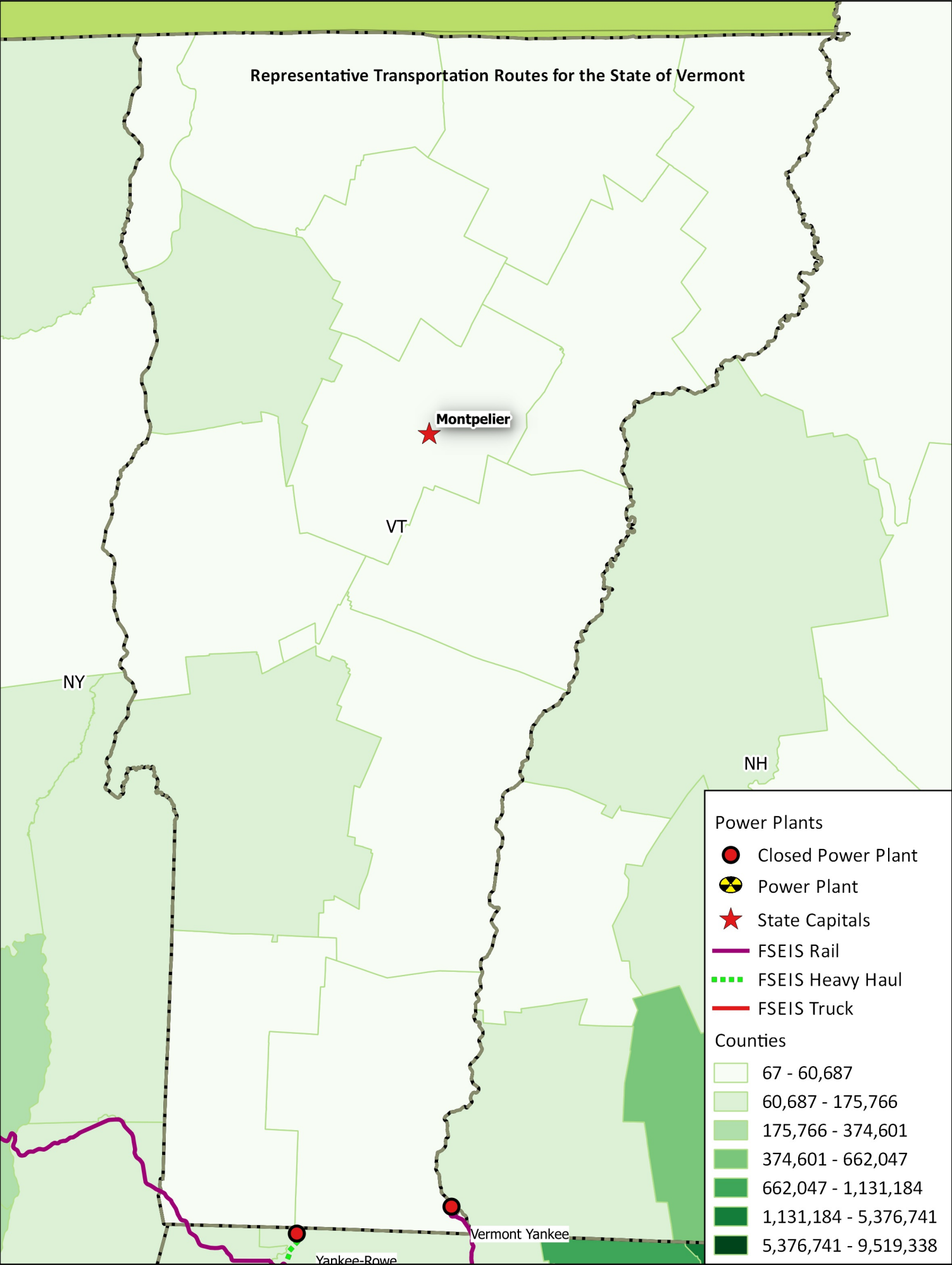


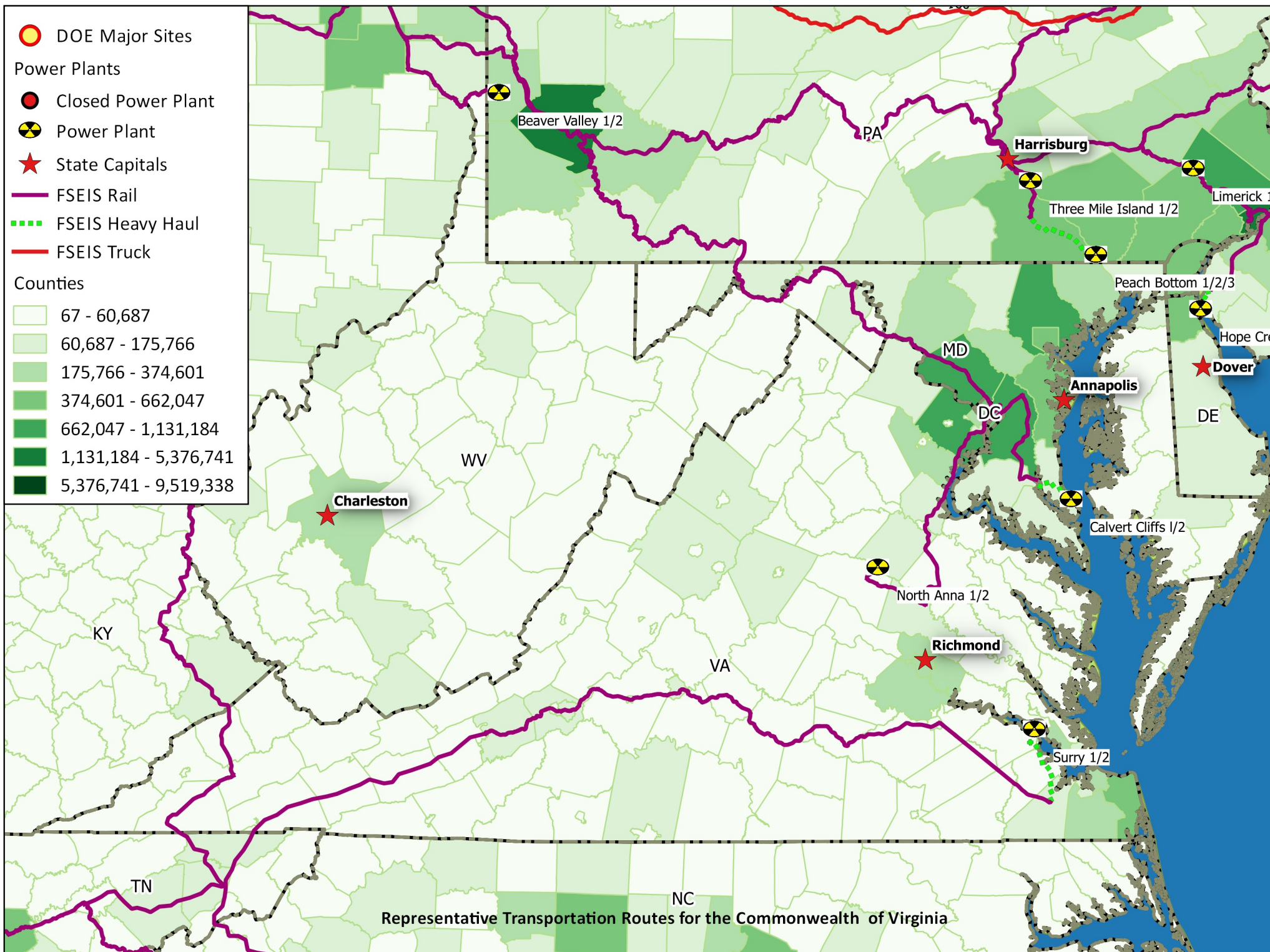
| Power Plants | Counties |
|--------------------|-----------------------|
| Closed Power Plant | 67 - 60,687 |
| Power Plant | 60,687 - 175,766 |
| State Capitals | 175,766 - 374,601 |
| FSEIS Rail | 374,601 - 662,047 |
| FSEIS Heavy Haul | 662,047 - 1,131,184 |
| FSEIS Truck | 1,131,184 - 5,376,741 |
| | 5,376,741 - 9,519,338 |

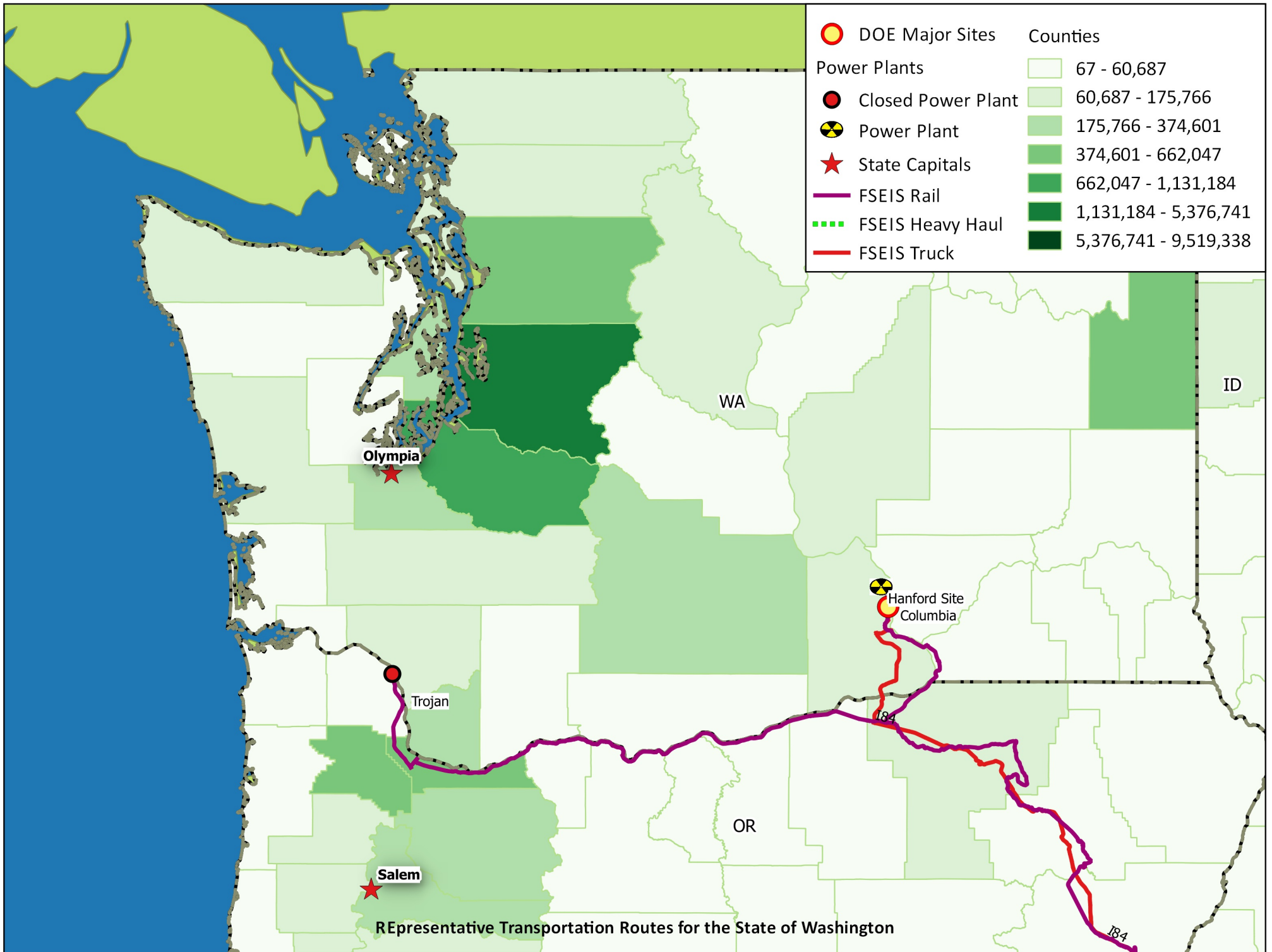


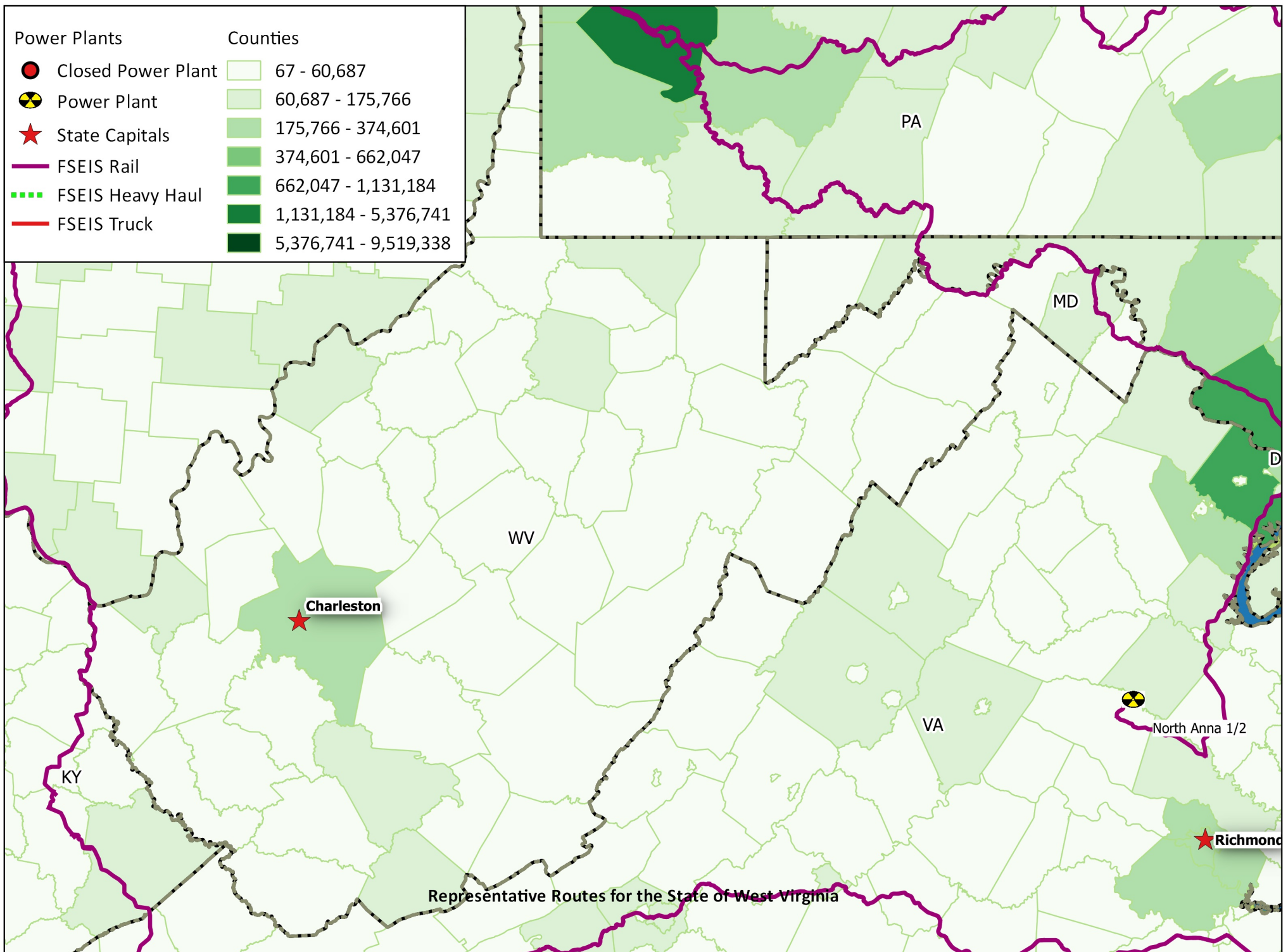


Representative Transportation Routes for the State of Vermont









Representative Transportation Routes for the State of Wisconsin

