

ANALYZING STATE HIGHWAY MAPS

Under the Nuclear Waste Policy Act of 1982 and its amendments, the U.S. Department of Energy (DOE) is responsible for the transportation of spent fuel and high-level radioactive waste to a monitored retrievable storage (MRS) facility and a permanent geologic repository. Three modes of transportation are being evaluated by DOE: Highway, rail, and barge. Route selection issues are being addressed by DOE in cooperation with the U.S. Department of Transportation (DOT) and variety of Federal, State, local, industry, and public agencies.

In 1982, the DOT established final routing regulations, amended in 1990, for highway transportation of hazardous materials, including radioactive materials. Under DOT regulations, carriers must use "preferred highway routes" in order to reduce the time in transit of the hazardous materials. Preferred routes include 1) the interstate highway system, including interstate bypasses and beltways around major cities; and 2) alternative routes selected by a "State routing agency."

In considering and alternate route, State routing agencies are required to follow certain DOT guidelines. The first consideration is the overall risk which the transportation of hazardous materials poses to the public. Alternate route planners attempt to minimize the public's risk during hazardous materials shipments by considering such factors as the total distance and time the waste travels in the State; the time of day, week, and year of the shipments; the density and type of population along the transportation route, the type of roads involved, and the probability of accidents along the route; and the anticipated emergency response time in the event of an accident along the route.

Directions: Using a highway map for your State, answer the following map orientation questions.

Part A

1. What is the scale of the map in inches to miles?

2. What symbol is used to represent national interstate highways?

3. What color is used to represent national interstate highways on the map?

4. Identify two different ways that you can calculate the mileage between two points on the map.

5. Identify two different ways that you can determine the relative sizes of towns and cities in your State.

6. In what directions can one generally travel while on an even-numbered interstate?

7. In what directions can one generally travel while on an odd-numbered interstate?

8. Identify the interstate highways in your State.

9. Identify the major State highways in your State.

10. What types of interstates have three-digit numbers?

Part B

Directions:

1. Assume that hazardous materials are to be shipped through your State. Which interstate(s) will they probably be transported on if they travel into your State from:

a. the south? _____

b. the north? _____

c. the east? _____

d. the west? _____

2. Calculate the number of miles that hazardous materials will travel on each of these interstates you listed above if a shipment passes directly through the State on the same interstate.

a. _____

b. _____

c. _____

d. _____

3. Approximately how long will it take the hazardous materials to travel through the State by these routes, assuming that the trucks travel 55 mph?

a. _____

b. _____

c. _____

d. _____

4. Name the major cities in your State that will be passed by if hazardous materials are transported on these interstates. Give the population for each city.
