APPENDIX I

Evacuation Sensitivity Studies

APPENDIX I: EVACUATION SENSITIVITY STUDIES

A sensitivity study was performed to determine whether changes in the estimated trip generation time have an effect upon the evacuation time estimate for the entire EPZ. The case considered was Scenario 1, Region 3; a summer, midweek, midday, good weather evacuation for the entire EPZ. Table I-1 presents the results of this study.

Table I-1. Evacuation Time Estimates for Trip Generation Sensitivity Study

	Evacuation Time Estimate		
Trip Generation Period	**2-Mile Region**	**5-Mile Region**	**Entire EPZ**
3 Hours	3:00	3:10	3:30
4 Hours (Base)	4:00	4:05	4:10
5 Hours	5:00	5:05	5:10

As the mobilization time is reduced, some additional congestion forms in the area around Scottsboro, as indicated in the ETE for the entire EPZ with a 3 hour trip generation. However, this congestion is short-lived.

The results confirm the importance of accurately estimating trip generation times. The evacuation time estimates closely mirror the values for the time the last evacuation trip is generated. The reason for this is the lack of significant traffic congestion during an evacuation. The results indicate that programs to educate the public and encourage them toward faster responses for a radiological emergency can considerably enhance county emergency planning programs.

A sensitivity study was conducted to determine the effects on Evacuation Time Estimates (ETE) of changes in the percentage of people who decide to relocate from the Shadow Region. The movement of people in the shadow region has a potential to impede vehicles evacuating from an Evacuation Region within the EPZ.

Table I-2 presents the evacuation time estimates for each of these cases. The ETE for all regions remain unchanged as the percentage of people who decide to relocate from areas within the shadow region increases from 15% to 60%. The population density within the shadow region is not sufficient to delay the departure of evacuees from the EPZ.

Table I-2. Evacuation Time Estimates for Shadow Sensitivity Study

	Evacuation Time Estimate		
Percent Shadow Evacuation	**2-Mile Region**	**5-Mile Region**	**Entire EPZ**
15	4:00	4:05	4:10
30 (Base)	4:00	4:05	4:10
60	4:00	4:05	4:10

APPENDIX J

Evacuation Time Estimates for All Evacuation Regions and Scenarios

And

Evacuation Time Graphs for Region R3, for all Scenarios

APPENDIX J: EVACUATION TIME ESTIMATES FOR ALL EVACUATION REGIONS AND SCENARIOS

AND

EVACUATION TIME GRAPHS FOR REGION R3, FOR ALL SCENARIOS

This appendix presents the ETE Results for all 22 Regions and all 12 Scenarios (Tables J-1A through J-1D).

Plots of Evacuating Population vs. Elapsed Time leaving the 2-mile and 5-mile circular areas around BLN and the entire EPZ for Region R3, for all 12 scenarios are presented. Each plot has points indicating the evacuation times corresponding to the 50th, 90th, and 95th percentiles of evacuated population.

J.1 Guidance on Using ETE Tables

Tables J-1A through J-1D present the ETE values for all 22 Evacuation Regions and all 12 Evacuation Scenarios. They are organized as follows:

Table	Contents
J-1A	ETE represents the elapsed time required for 50 percent of the population within a Region, to evacuate from that Region.
J-1B	ETE represents the elapsed time required for 90 percent of the population within a Region, to evacuate from that Region.
J-1C	ETE represents the elapsed time required for 95 percent of the population within a Region, to evacuate from that Region.
J-1D	ETE represents the elapsed time required for 100 percent of the population within a Region, to evacuate from that Region.

The user first determines the percentile of population for which the ETE is sought. The applicable value of ETE within the chosen Table may then be identified using the following procedure:

1. Identify the applicable **Scenario**:
    - The Season
        1. Summer
        2. Winter (also Autumn and Spring)
    - The Day of Week
        3. Midweek
        4. Weekend
    - The Time of Day
        5. Midday
        6. Evening
    - Weather Condition
        7. Good Weather
        8. Rain
        9. Ice
    - Special Event (if any)
        10. New Plant Construction

While these Scenarios are designed, in aggregate, to represent conditions throughout the year, some further clarification is warranted:

- The conditions of a summer evening (either midweek or weekend) and rain are not explicitly identified in Tables J-1A through J-1D. For these conditions, Scenario (4) applies.
- The conditions of a winter evening (either midweek or weekend) and rain are not explicitly identified in Tables J-1A through J-1D. For these conditions, Scenario (10) applies.
- The seasons are defined as follows:
    - Summer implies that public schools are *not* in session.

- Winter (also Spring and Autumn) implies that public schools *are* in session.
- Time of Day: Midday implies the time over which most commuters are at work.

2. With the Scenario identified, now identify the **Evacuation Region**:
   - Determine the projected azimuth direction of the plume (coincident with the wind direction). This direction is expressed in terms of compass orientation: *towards* N, NNE, NE, …
   - Determine the distance that the Evacuation Region will extend from the Bellefonte Nuclear Plant. The applicable distances and their associated candidate Regions are given below:
     - 2 Miles (Region R01)
     - 5 Miles (Regions R02 and R04 through R11)
     - to EPZ Boundary (Regions R03 and R12 through R22)
   - Enter Table J-2 and identify the applicable group of candidate Regions based on the distance that the selected Region extends from BLN. Select the Evacuation Region identifier in that row from the first column of the Table.

3. Determine the **ETE for the Scenario** identified in Step 1 and the Region identified in Step 2, as follows:
   - The columns of Table J-1 are labeled with the Scenario numbers. Identify the proper column in the selected Table using the Scenario number determined in Step 1.
   - Identify the row in this table that provides ETE values for the Region identified in Step 2.
   - The unique data cell defined by the column and row so determined contains the desired value of ETE expressed in Hours:Minutes.

Example

It is desired to identify the ETE for the following conditions:

- Sunday, August 10th at 4:00 AM.
- It is raining.
- Wind direction is *to* the northeast (NE).
- Wind speed is such that the distance to be evacuated is judged to be 10 miles (to EPZ boundary).
- The desired ETE is that value needed to evacuate 95 percent of the population from within the impacted Region.

Table J-1C is applicable because the 95-percentile population is desired. Proceed as follows:

1. Identify the Scenario as summer, weekend, evening and raining. Entering Table J-1C, it is seen that there is no match for these descriptors. However, the clarification given above assigns this combination of circumstances to Scenario 4.

2. Enter Table J-2 and locate the group entitled "Evacuate 5-Mile Ring and Downwind to EPZ Boundary". Under "Wind Direction", identify the NE (northeast) azimuth and read REGION R14 in the first column of that row.

3. Enter Table J-1C to locate the data cell containing the value of ETE for Scenario 4 and Region R14. This data cell is in column (4) and in the row for Region R14; it contains the ETE value of **2:40**.

Table J-1A. Time To Clear The Indicated Area of 50 Percent of the Affected Population

	Summer		Summer		Summer		Winter			Winter		Winter		Summer
	Midweek		Weekend		Midweek Weekend		Midweek			Weekend		Midweek Weekend		Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	Scenario:	(6)	(7)	(8)	(9)	(10)	(11)	Scenario:	(12)
Region Wind Toward:	Midday		Midday		Evening	Region Wind Toward:	Midday			Midday		Evening	Region Wind Toward:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Ice	Good Weather	Rain	Good Weather		New Plant Construction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01 2-mile ring	1:05	1:05	0:55	0:55	0:55	R01 2-mile ring	1:05	1:05	1:05	0:55	0:55	0:55	R01 2-mile ring	1:25
R02 5-mile ring	1:20	1:25	1:05	1:05	1:00	R02 5-mile ring	1:25	1:25	1:35	1:05	1:05	1:00	R02 5-mile ring	1:40
R03 Entire EPZ	1:40	1:45	1:20	1:25	1:10	R03 Entire EPZ	1:40	1:45	1:50	1:20	1:25	1:10	R03 Entire EPZ	1:50
2-Mile Ring and Downwind to 5 Miles														
R04 N, NNE, NNW	1:10	1:10	0:55	0:55	0:55	R04 N, NNE, NNW	1:10	1:10	1:10	0:55	0:55	0:55	R04 N, NNE, NNW	1:25
R05 NE	1:10	1:10	0:55	0:55	0:55	R05 NE	1:10	1:10	1:10	0:55	0:55	0:55	R05 NE	1:25
R06 ENE	1:15	1:15	0:55	0:55	0:55	R06 ENE	1:15	1:15	1:15	0:55	0:55	0:55	R06 ENE	1:25
R07 E, ESE	1:10	1:10	0:55	0:55	0:55	R07 E, ESE	1:10	1:10	1:15	0:55	0:55	0:55	R07 E, ESE	1:25
R08 SE, SSE	1:10	1:10	0:55	0:55	0:55	R08 SE, SSE	1:10	1:10	1:15	0:55	0:55	0:55	R08 SE, SSE	1:25
R09 S, SSW, SW	1:20	1:25	1:05	1:05	1:00	R09 S, SSW, SW	1:20	1:25	1:35	1:00	1:05	1:00	R09 S, SSW, SW	1:40
R10 WSW, W, WNW	1:20	1:25	1:05	1:05	1:00	R10 WSW, W, WNW	1:20	1:25	1:30	1:05	1:05	1:00	R10 WSW, W, WNW	1:40
R11 NW	1:05	1:05	0:55	0:55	0:55	R11 NW	1:05	1:05	1:05	0:55	0:55	0:55	R11 NW	1:25
5-Mile Ring and Downwind to EPZ Boundary														
R12 N, NNW	1:30	1:30	1:10	1:15	1:05	R12 N, NNW	1:30	1:35	1:40	1:05	1:10	1:05	R12 N, NNW	1:45
R13 NNE	1:30	1:35	1:10	1:15	1:05	R13 NNE	1:30	1:35	1:40	1:05	1:10	1:05	R13 NNE	1:45
R14 NE	1:25	1:30	1:05	1:05	1:00	R14 NE	1:25	1:30	1:35	1:05	1:05	1:00	R14 NE	1:40
R15 ENE	1:25	1:30	1:05	1:05	1:00	R15 ENE	1:25	1:30	1:35	1:05	1:05	1:00	R15 ENE	1:40
R16 E	1:25	1:30	1:05	1:05	1:00	R16 E	1:25	1:30	1:35	1:05	1:05	1:00	R16 E	1:40
R17 ESE	1:25	1:30	1:05	1:05	1:00	R17 ESE	1:25	1:30	1:35	1:05	1:05	1:00	R17 ESE	1:40
R18 SE, SSE	1:25	1:30	1:05	1:05	1:00	R18 SE, SSE	1:25	1:30	1:35	1:05	1:05	1:00	R18 SE, SSE	1:40
R19 S	1:25	1:30	1:05	1:05	1:00	R19 S	1:25	1:30	1:35	1:05	1:05	1:00	R19 S	1:40
R20 SSW, SW	1:35	1:40	1:15	1:15	1:10	R20 SSW, SW	1:35	1:40	1:45	1:15	1:15	1:05	R20 SSW, SW	1:45
R21 WSW, W, WNW	1:40	1:45	1:20	1:25	1:10	R21 WSW, W, WNW	1:40	1:45	1:50	1:20	1:25	1:10	R21 WSW, W, WNW	1:50
R22 NW	1:25	1:30	1:10	1:15	1:05	R22 NW	1:25	1:30	1:40	1:05	1:10	1:05	R22 NW	1:45

Table J-1B. Time To Clear The Indicated Area of 90 Percent of the Affected Population

	Summer		Summer		Summer		Winter			Winter		Winter		Summer
	Midweek		Weekend		Midweek Weekend		Midweek			Weekend		Midweek Weekend		Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	Scenario:	(6)	(7)	(8)	(9)	(10)	(11)	Scenario:	(12)
Region Wind Toward:	Midday		Midday		Evening	Region Wind Toward:	Midday			Midday		Evening	Region Wind Toward:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Ice	Good Weather	Rain	Good Weather		New Plant Construction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01 2-mile ring	2:00	2:00	1:40	1:45	1:45	R01 2-mile ring	2:00	2:00	2:00	1:40	1:45	1:45	R01 2-mile ring	2:40
R02 5-mile ring	2:40	2:40	2:00	2:05	2:10	R02 5-mile ring	2:40	2:45	3:00	2:00	2:05	2:10	R02 5-mile ring	3:05
R03 Entire EPZ	3:05	3:15	2:35	2:45	2:30	R03 Entire EPZ	3:05	3:20	3:35	2:35	2:45	2:30	R03 Entire EPZ	3:30
2-Mile Ring and Downwind to 5 Miles														
R04 N, NNE, NNW	2:20	2:20	1:45	1:50	1:50	R04 N, NNE, NNW	2:20	2:20	2:20	1:45	1:50	1:50	R04 N, NNE, NNW	2:45
R05 NE	2:20	2:20	1:45	1:50	1:50	R05 NE	2:20	2:20	2:20	1:45	1:50	1:50	R05 NE	2:40
R06 ENE	2:40	2:40	1:50	1:50	2:00	R06 ENE	2:40	2:40	2:40	1:50	1:50	2:00	R06 ENE	2:45
R07 E, ESE	2:30	2:30	1:50	1:50	1:50	R07 E, ESE	2:30	2:30	2:30	1:50	1:50	1:50	R07 E, ESE	2:45
R08 SE, SSE	2:30	2:30	1:50	1:50	1:50	R08 SE, SSE	2:30	2:30	2:30	1:50	1:50	1:50	R08 SE, SSE	2:45
R09 S, SSW, SW	2:40	2:40	2:00	2:05	2:00	R09 S, SSW, SW	2:40	2:40	2:55	1:55	2:05	2:00	R09 S, SSW, SW	3:05
R10 WSW, W, WNW	2:30	2:35	1:55	2:05	2:00	R10 WSW, W, WNW	2:30	2:40	3:00	1:55	2:05	2:00	R10 WSW, W, WNW	3:05
R11 NW	2:10	2:10	1:45	1:45	1:50	R11 NW	2:10	2:10	2:10	1:45	1:45	1:50	R11 NW	2:40
5-Mile Ring and Downwind to EPZ Boundary														
R12 N, NNW	2:50	2:50	2:30	2:30	2:30	R12 N, NNW	2:50	2:55	3:05	2:20	2:30	2:30	R12 N, NNW	3:10
R13 NNE	2:50	2:55	2:30	2:30	2:30	R13 NNE	2:50	2:55	3:05	2:20	2:30	2:30	R13 NNE	3:10
R14 NE	2:50	2:50	2:05	2:10	2:10	R14 NE	2:50	2:55	3:05	2:05	2:10	2:10	R14 NE	3:10
R15 ENE	2:50	2:50	2:05	2:10	2:10	R15 ENE	2:50	2:55	3:05	2:05	2:10	2:10	R15 ENE	3:10
R16 E	2:50	2:50	2:10	2:20	2:20	R16 E	2:50	2:55	3:05	2:10	2:10	2:20	R16 E	3:10
R17 ESE	2:50	2:55	2:10	2:20	2:20	R17 ESE	2:50	2:55	3:05	2:10	2:20	2:20	R17 ESE	3:10
R18 SE, SSE	2:50	2:55	2:10	2:20	2:20	R18 SE, SSE	2:50	2:55	3:05	2:10	2:20	2:20	R18 SE, SSE	3:10
R19 S	2:50	2:55	2:10	2:20	2:20	R19 S	2:50	2:55	3:05	2:10	2:20	2:20	R19 S	3:10
R20 SSW, SW	3:05	3:15	2:30	2:40	2:20	R20 SSW, SW	3:05	3:15	3:35	2:30	2:40	2:20	R20 SSW, SW	3:30
R21 WSW, W, WNW	3:05	3:15	2:35	2:45	2:30	R21 WSW, W, WNW	3:05	3:20	3:35	2:35	2:45	2:30	R21 WSW, W, WNW	3:30
R22 NW	2:50	2:50	2:20	2:30	2:30	R22 NW	2:50	2:55	3:05	2:20	2:30	2:30	R22 NW	3:10

Table J-1C. Time To Clear The Indicated Area of 95 Percent of the Affected Population

	Summer		Summer		Summer		Winter			Winter		Winter		Summer
	Midweek		Weekend		Midweek Weekend		Midweek			Weekend		Midweek Weekend		Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	Scenario:	(6)	(7)	(8)	(9)	(10)	(11)	Scenario:	(12)
Region Wind Toward:	Midday		Midday		Evening	Region Wind Toward:	Midday			Midday		Evening	Region Wind Toward:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Ice	Good Weather	Rain	Good Weather		New Plant Construction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01 2-mile ring	2:50	2:50	2:00	2:00	2:30	R01 2-mile ring	2:50	2:50	2:50	2:00	2:00	2:30	R01 2-mile ring	2:55
R02 5-mile ring	3:20	3:20	2:40	2:40	2:40	R02 5-mile ring	3:20	3:20	3:20	2:40	2:40	2:40	R02 5-mile ring	3:20
R03 Entire EPZ	3:30	3:30	2:50	3:00	2:50	R03 Entire EPZ	3:30	3:35	3:50	2:50	2:55	2:50	R03 Entire EPZ	3:50
2-Mile Ring and Downwind to 5 Miles														
R04 N, NNE, NNW	3:10	3:10	2:30	2:30	2:40	R04 N, NNE, NNW	3:10	3:10	3:10	2:30	2:30	2:40	R04 N, NNE, NNW	3:10
R05 NE	3:10	3:10	2:30	2:30	2:40	R05 NE	3:10	3:10	3:10	2:30	2:30	2:40	R05 NE	3:10
R06 ENE	3:20	3:20	2:40	2:40	2:40	R06 ENE	3:20	3:20	3:20	2:40	2:40	2:40	R06 ENE	3:20
R07 E, ESE	3:10	3:10	2:30	2:30	2:40	R07 E, ESE	3:10	3:10	3:10	2:30	2:30	2:40	R07 E, ESE	3:10
R08 SE, SSE	3:10	3:10	2:30	2:30	2:40	R08 SE, SSE	3:10	3:10	3:10	2:30	2:30	2:40	R08 SE, SSE	3:10
R09 S, SSW, SW	3:20	3:20	2:40	2:40	2:40	R09 S, SSW, SW	3:20	3:20	3:20	2:40	2:40	2:40	R09 S, SSW, SW	3:20
R10 WSW, W, WNW	3:10	3:10	2:40	2:40	2:40	R10 WSW, W, WNW	3:10	3:10	3:15	2:40	2:40	2:40	R10 WSW, W, WNW	3:20
R11 NW	3:00	3:00	2:20	2:20	2:40	R11 NW	3:00	3:00	3:00	2:20	2:20	2:40	R11 NW	3:00
5-Mile Ring and Downwind to EPZ Boundary														
R12 N, NNW	3:30	3:30	2:50	2:50	2:50	R12 N, NNW	3:30	3:30	3:30	2:50	2:50	2:50	R12 N, NNW	3:30
R13 NNE	3:30	3:30	2:50	2:50	2:50	R13 NNE	3:30	3:30	3:30	2:50	2:50	2:50	R13 NNE	3:30
R14 NE	3:30	3:30	2:40	2:40	2:50	R14 NE	3:30	3:30	3:30	2:40	2:40	2:50	R14 NE	3:30
R15 ENE	3:30	3:30	2:40	2:40	2:50	R15 ENE	3:30	3:30	3:30	2:40	2:40	2:50	R15 ENE	3:30
R16 E	3:30	3:30	2:50	2:50	2:50	R16 E	3:30	3:30	3:30	2:50	2:50	2:50	R16 E	3:30
R17 ESE	3:30	3:30	2:50	2:50	2:50	R17 ESE	3:30	3:30	3:30	2:50	2:50	2:50	R17 ESE	3:30
R18 SE, SSE	3:30	3:30	2:50	2:50	2:50	R18 SE, SSE	3:30	3:30	3:30	2:50	2:50	2:50	R18 SE, SSE	3:30
R19 S	3:30	3:30	2:50	2:50	2:50	R19 S	3:30	3:30	3:30	2:50	2:50	2:50	R19 S	3:30
R20 SSW, SW	3:30	3:30	2:50	2:55	2:50	R20 SSW, SW	3:30	3:35	3:50	2:50	2:55	2:50	R20 SSW, SW	3:50
R21 WSW, W, WNW	3:30	3:30	2:50	3:00	2:50	R21 WSW, W, WNW	3:30	3:35	3:50	2:50	2:55	2:50	R21 WSW, W, WNW	3:50
R22 NW	3:30	3:30	2:45	2:50	2:50	R22 NW	3:30	3:30	3:30	2:40	2:50	2:50	R22 NW	3:30

Table J-1D. Time To Clear The Indicated Area of 100 Percent of the Affected Population

	Summer		Summer		Summer		Winter			Winter		Winter		Summer
	Midweek		Weekend		Midweek Weekend		Midweek			Weekend		Midweek Weekend		Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	Scenario:	(6)	(7)	(8)	(9)	(10)	(11)	Scenario:	(12)
Region Wind Toward:	Midday		Midday		Evening	Region Wind Toward:	Midday			Midday		Evening	Region Wind Toward:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Ice	Good Weather	Rain	Good Weather		New Plant Construction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01 2-mile ring	4:00	4:00	4:00	4:00	4:00	R01 2-mile ring	4:00	4:00	4:00	4:00	4:00	4:00	R01 2-mile ring	4:00
R02 5-mile ring	4:05	4:05	4:05	4:05	4:05	R02 5-mile ring	4:05	4:05	4:05	4:05	4:05	4:05	R02 5-mile ring	4:05
R03 Entire EPZ	4:10	4:10	4:10	4:10	4:10	R03 Entire EPZ	4:10	4:10	4:30	4:10	4:10	4:10	R03 Entire EPZ	4:30
2-Mile Ring and Downwind to 5 Miles														
R04 N, NNE, NNW	4:05	4:05	4:05	4:05	4:05	R04 N, NNE, NNW	4:05	4:05	4:05	4:05	4:05	4:05	R04 N, NNE, NNW	4:05
R05 NE	4:05	4:05	4:05	4:05	4:05	R05 NE	4:05	4:05	4:05	4:05	4:05	4:05	R05 NE	4:05
R06 ENE	4:05	4:05	4:05	4:05	4:05	R06 ENE	4:05	4:05	4:05	4:05	4:05	4:05	R06 ENE	4:05
R07 E, ESE	4:05	4:05	4:05	4:05	4:05	R07 E, ESE	4:05	4:05	4:05	4:05	4:05	4:05	R07 E, ESE	4:05
R08 SE, SSE	4:05	4:05	4:05	4:05	4:05	R08 SE, SSE	4:05	4:05	4:05	4:05	4:05	4:05	R08 SE, SSE	4:05
R09 S, SSW, SW	4:05	4:05	4:05	4:05	4:05	R09 S, SSW, SW	4:05	4:05	4:05	4:05	4:05	4:05	R09 S, SSW, SW	4:05
R10 WSW, W, WNW	4:05	4:05	4:05	4:05	4:05	R10 WSW, W, WNW	4:05	4:05	4:05	4:05	4:05	4:05	R10 WSW, W, WNW	4:05
R11 NW	4:05	4:05	4:05	4:05	4:05	R11 NW	4:05	4:05	4:05	4:05	4:05	4:05	R11 NW	4:05
5-Mile Ring and Downwind to EPZ Boundary														
R12 N, NNW	4:10	4:10	4:10	4:10	4:10	R12 N, NNW	4:10	4:10	4:10	4:10	4:10	4:10	R12 N, NNW	4:10
R13 NNE	4:10	4:10	4:10	4:10	4:10	R13 NNE	4:10	4:10	4:10	4:10	4:10	4:10	R13 NNE	4:10
R14 NE	4:10	4:10	4:10	4:10	4:10	R14 NE	4:10	4:10	4:10	4:10	4:10	4:10	R14 NE	4:10
R15 ENE	4:10	4:10	4:10	4:10	4:10	R15 ENE	4:10	4:10	4:10	4:10	4:10	4:10	R15 ENE	4:10
R16 E	4:10	4:10	4:10	4:10	4:10	R16 E	4:10	4:10	4:10	4:10	4:10	4:10	R16 E	4:10
R17 ESE	4:10	4:10	4:10	4:10	4:10	R17 ESE	4:10	4:10	4:10	4:10	4:10	4:10	R17 ESE	4:10
R18 SE, SSE	4:10	4:10	4:10	4:10	4:10	R18 SE, SSE	4:10	4:10	4:10	4:10	4:10	4:10	R18 SE, SSE	4:10
R19 S	4:10	4:10	4:10	4:10	4:10	R19 S	4:10	4:10	4:10	4:10	4:10	4:10	R19 S	4:10
R20 SSW, SW	4:10	4:10	4:10	4:10	4:10	R20 SSW, SW	4:10	4:10	4:30	4:10	4:10	4:10	R20 SSW, SW	4:30
R21 WSW, W, WNW	4:10	4:10	4:10	4:10	4:10	R21 WSW, W, WNW	4:10	4:10	4:30	4:10	4:10	4:10	R21 WSW, W, WNW	4:30
R22 NW	4:10	4:10	4:10	4:10	4:10	R22 NW	4:10	4:10	4:10	4:10	4:10	4:10	R22 NW	4:10

Table J-2. Description of Evacuation Regions														
		ERPA												
Region	Description	1	2	3	4	5	6	7	8	9	10	11	12	13
R01	2 mile ring	■												
R02	5-mile ring	■	■	■	■	■	■							
R03	Full EPZ	■	■	■	■	■	■	■	■	■	■	■	■	■
Evacuate 2 mile ring and 5 miles downwind														
		ERPA												
Region	Wind Direction	1	2	3	4	5	6	7	8	9	10	11	12	13
R04	N,NNE,NNW	■	■				■							
R05	NE	■	■	■										
R06	ENE	■	■	■	■									
R07	E,ESE	■		■	■									
R08	SE,SSE	■			■									
R09	S,SSW,SW	■			■	■								
R10	WSW,W,WNW	■				■	■							
R11	NW	■					■							
Evacuate 5 mile ring and downwind to EPZ boundary														
		ERPA												
Region	Wind Direction	1	2	3	4	5	6	7	8	9	10	11	12	13
R12	N,NNW	■	■	■	■	■	■	■					■	
R13	NNE	■	■	■	■	■	■	■	■				■	
R14	NE	■	■	■	■	■	■	■	■					
R15	ENE	■	■	■	■	■	■	■	■	■				
R16	E	■	■	■	■	■	■		■	■				■
R17	ESE	■	■	■	■	■	■		■	■	■			■
R18	SE,SSE	■	■	■	■	■	■			■	■			■
R19	S	■	■	■	■	■	■				■			
R20	SSW,SW	■	■	■	■	■	■				■	■		
R21	WSW,W,WNW	■	■	■	■	■	■					■	■	
R22	NW	■	■	■	■	■	■						■	

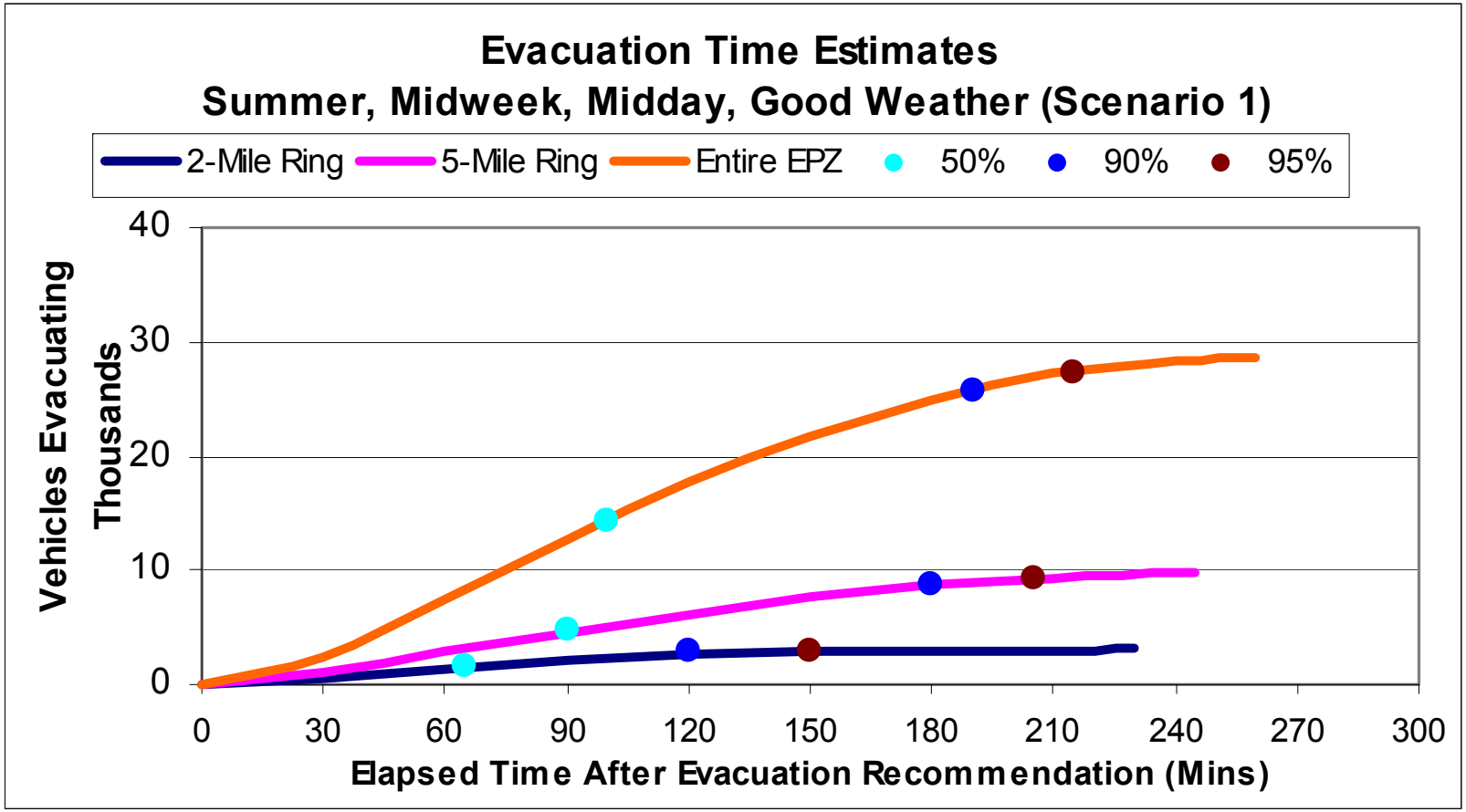

Figure J-1. Evacuation Time Estimates – Scenario 1 for Region R3 (Entire EPZ)

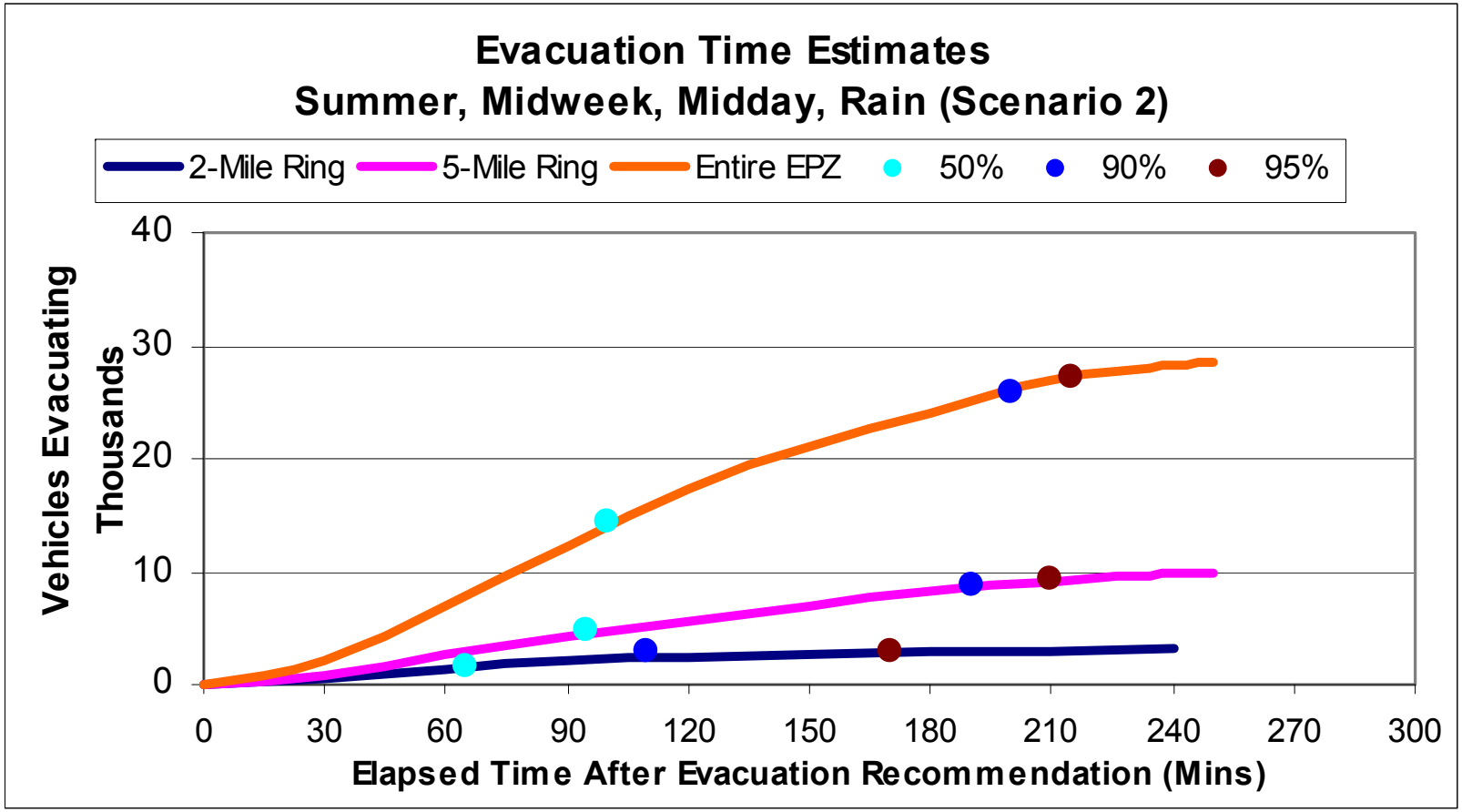

Figure J-2. Evacuation Time Estimates – Scenario 2 for Region R3 (Entire EPZ)

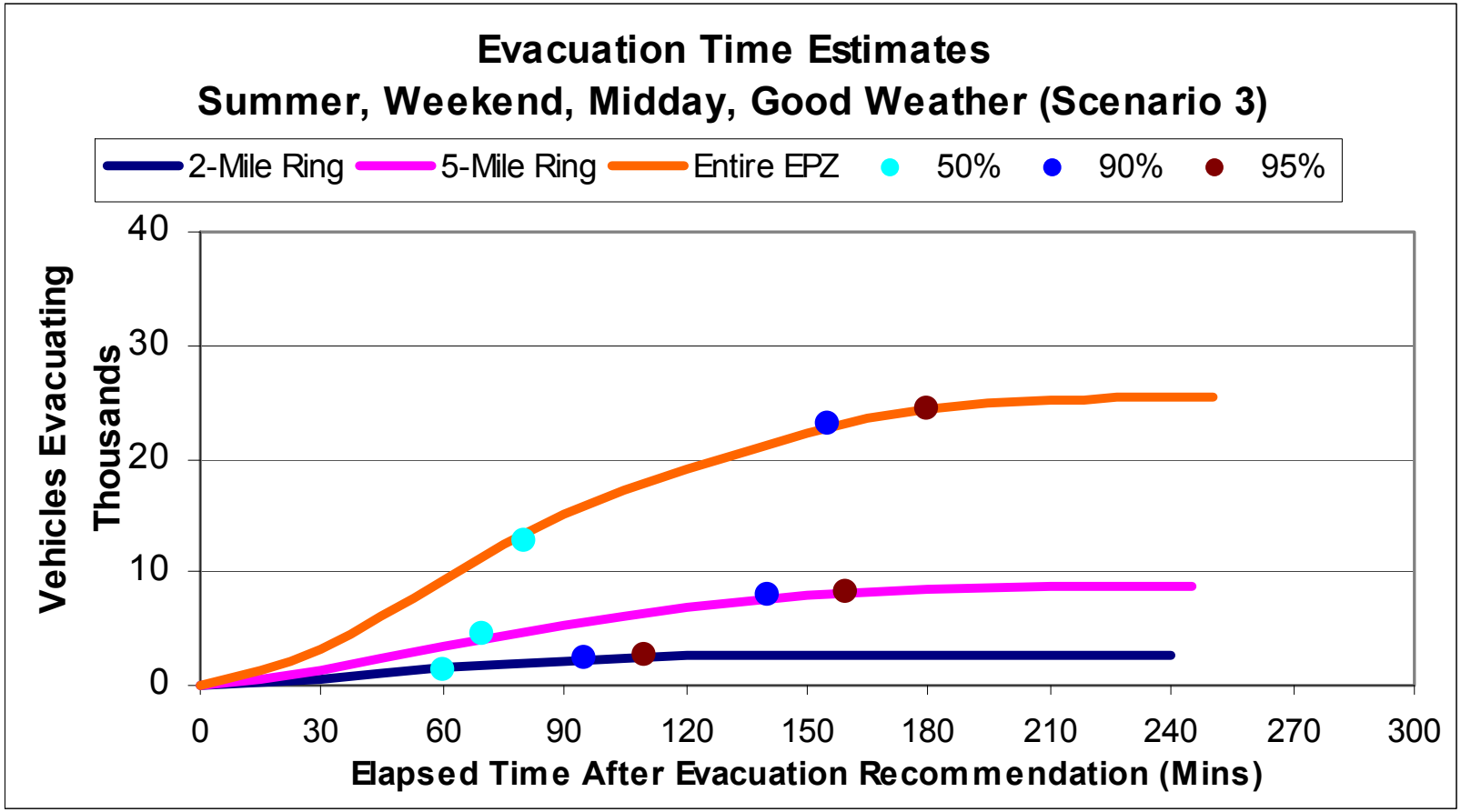

Figure J-3. Evacuation Time Estimates – Scenario 3 for Region R3 (Entire EPZ)

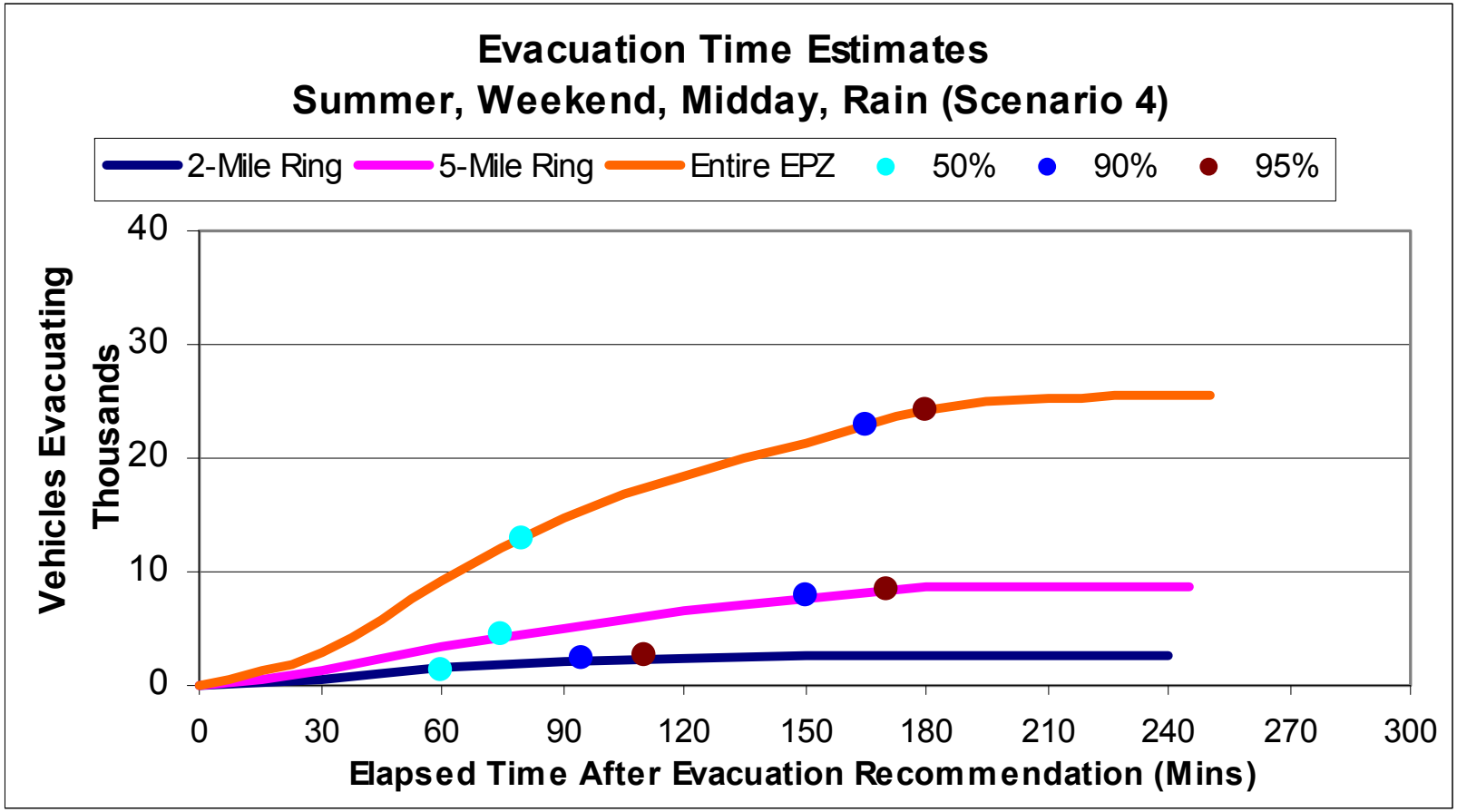

Figure J-4. Evacuation Time Estimates – Scenario 4 for Region R3 (Entire EPZ)

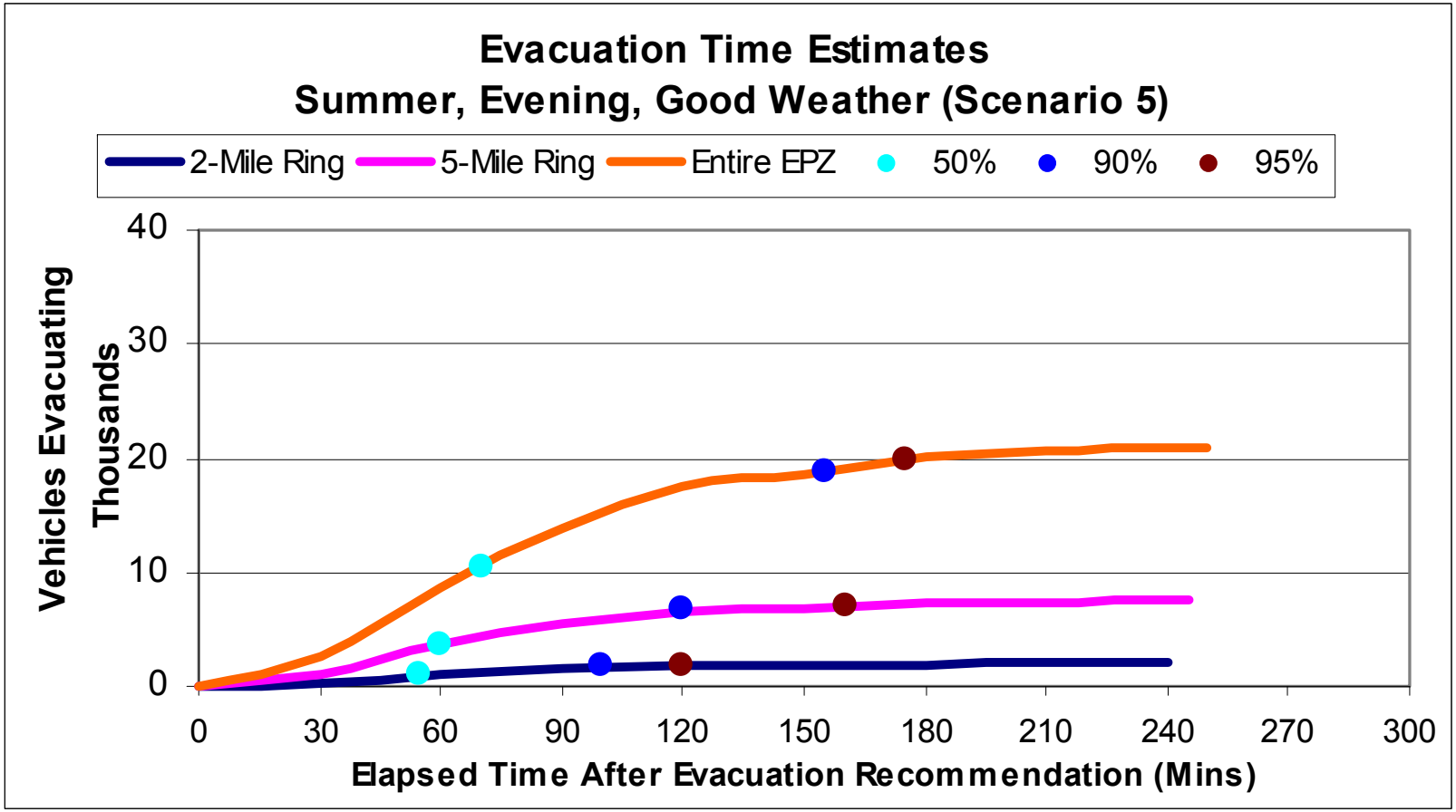

Figure J-5. Evacuation Time Estimates – Scenario 5 for Region R3 (Entire EPZ)

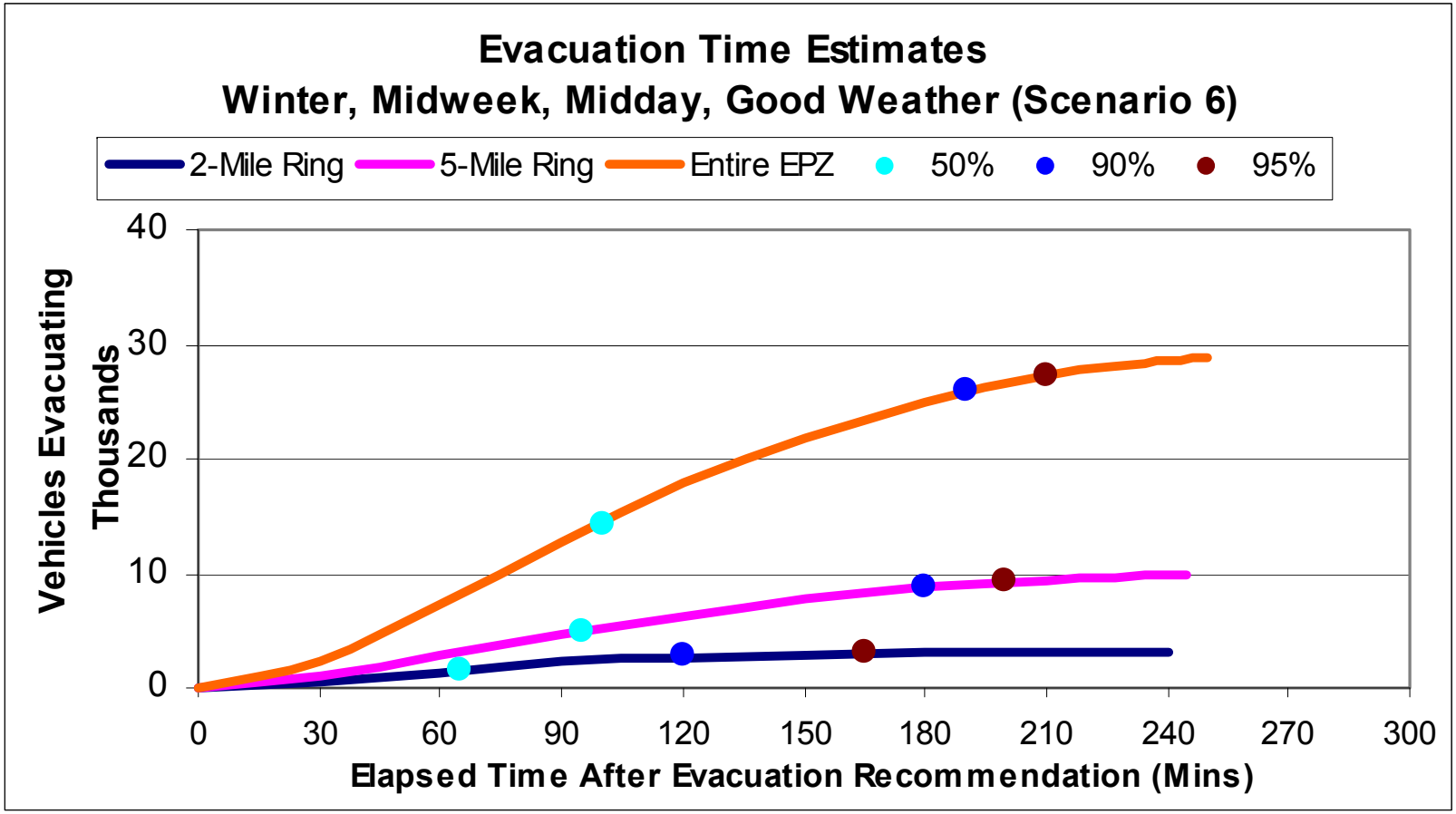

Figure J-6. Evacuation Time Estimates – Scenario 6 for Region R3 (Entire EPZ)

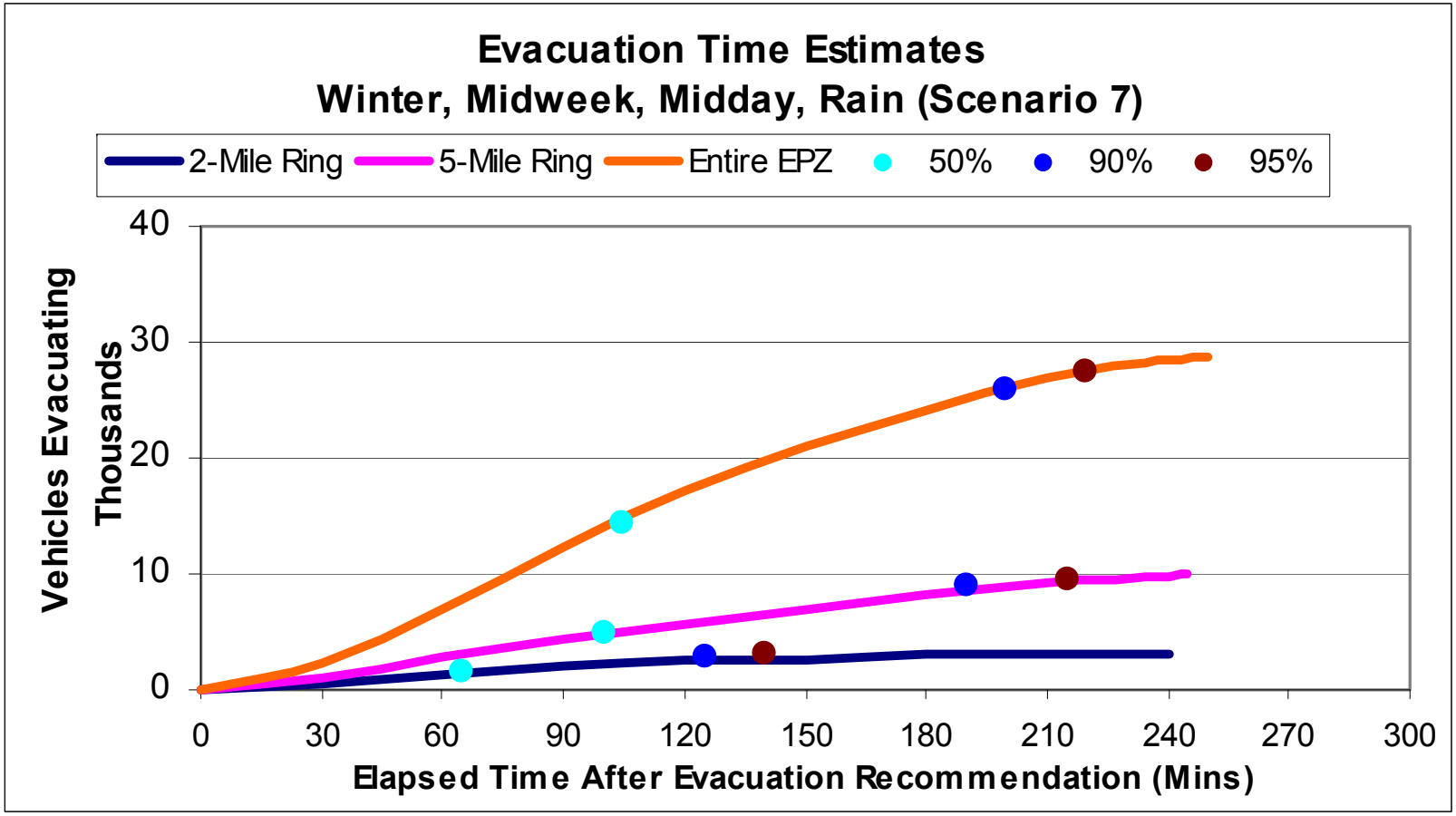

Figure J-7. Evacuation Time Estimates – Scenario 7 for Region R3 (Entire EPZ)

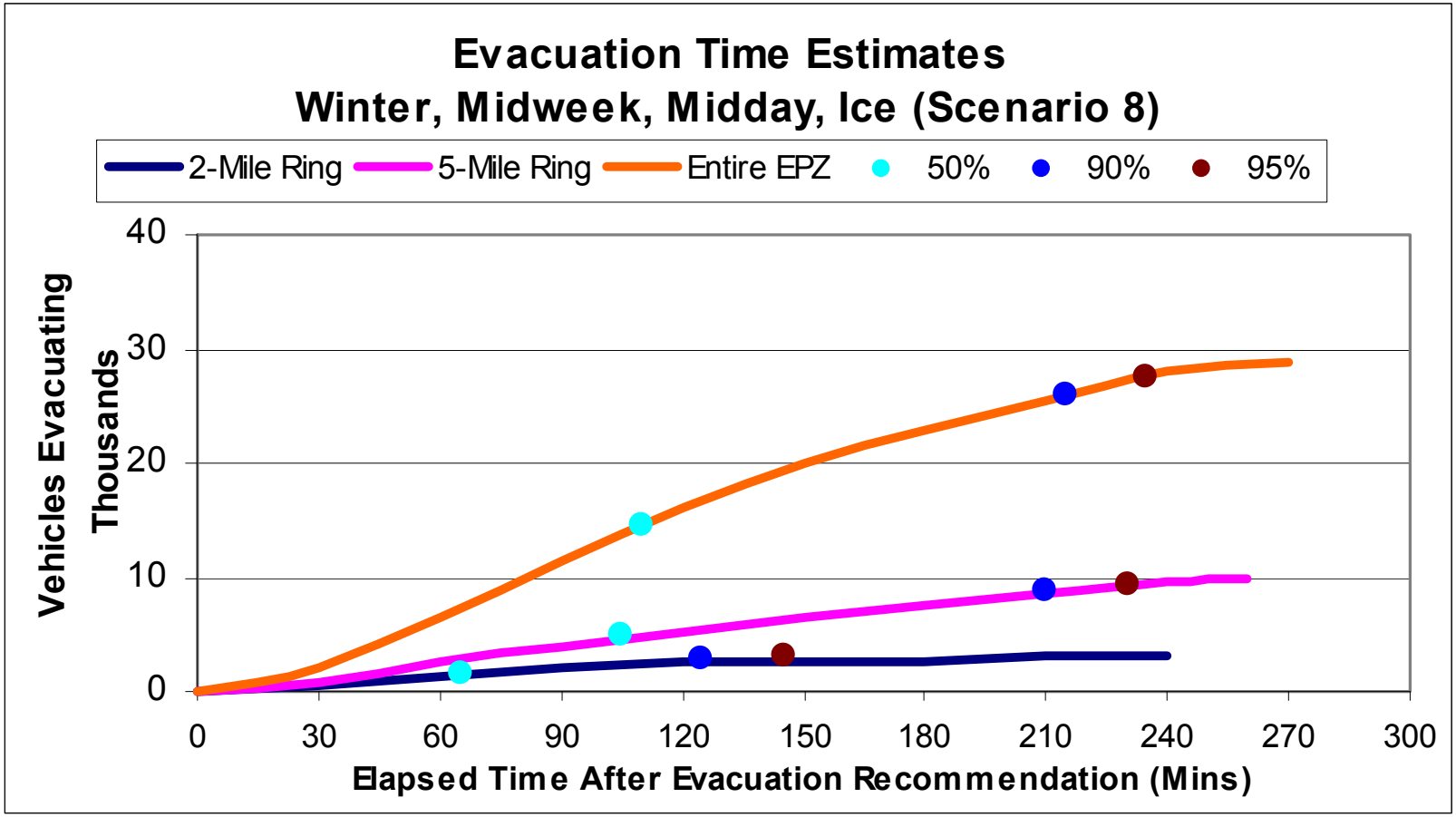

Figure J-8. Evacuation Time Estimates – Scenario 8 for Region R3 (Entire EPZ)

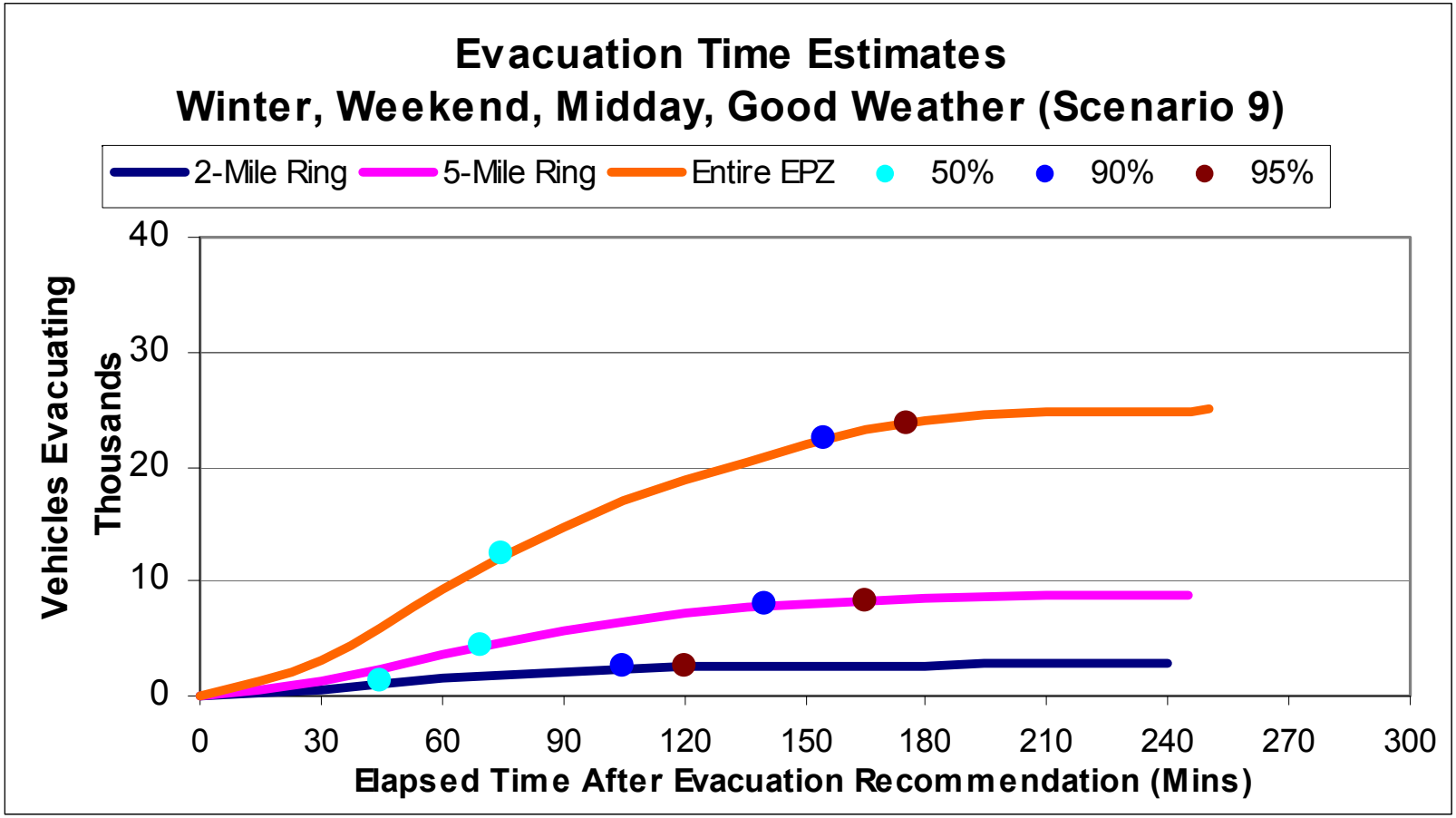

Figure J-9. Evacuation Time Estimates – Scenario 9 for Region R3 (Entire EPZ)

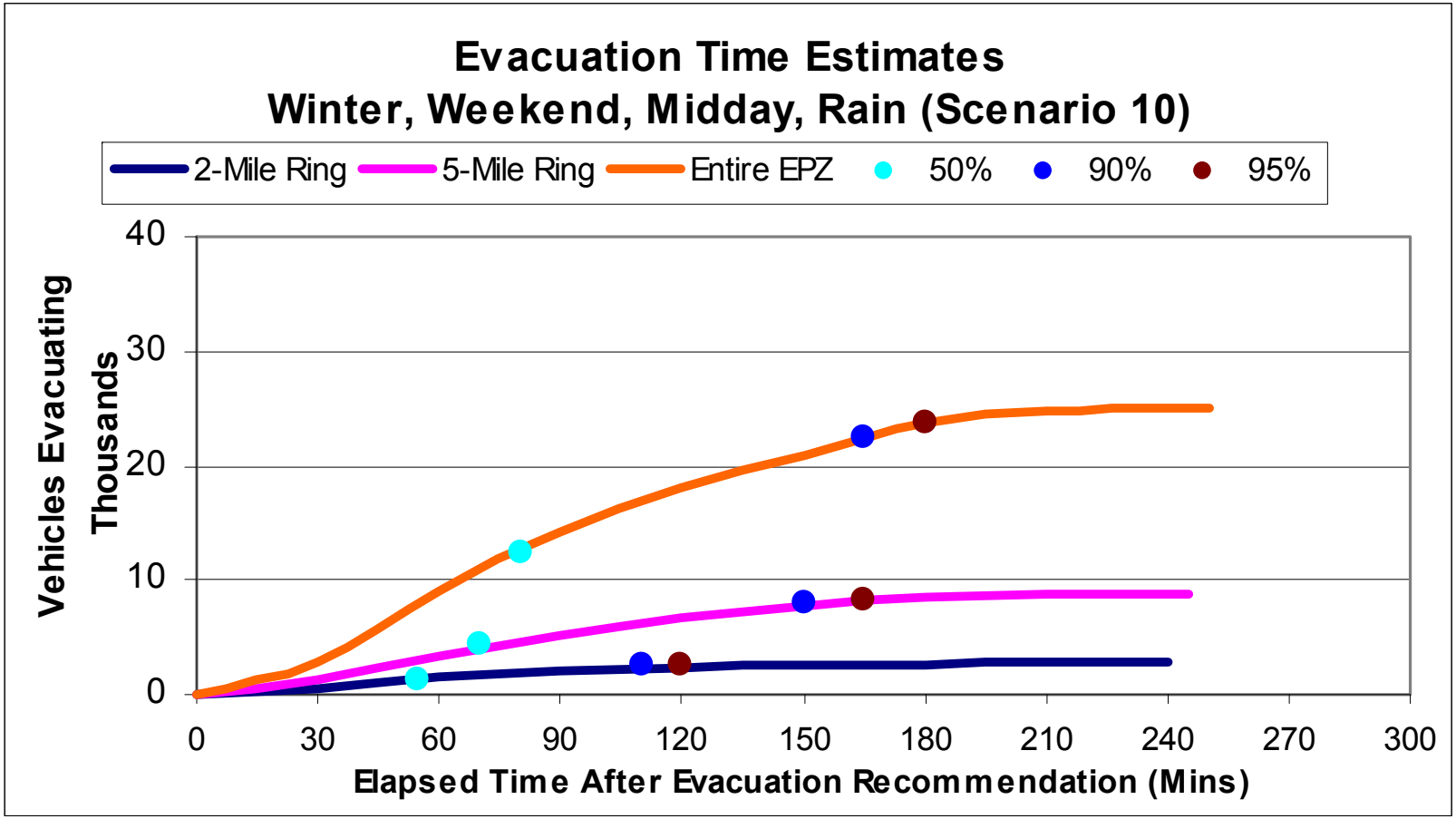

Figure J-10. Evacuation Time Estimates – Scenario 10 for Region R3 (Entire EPZ)

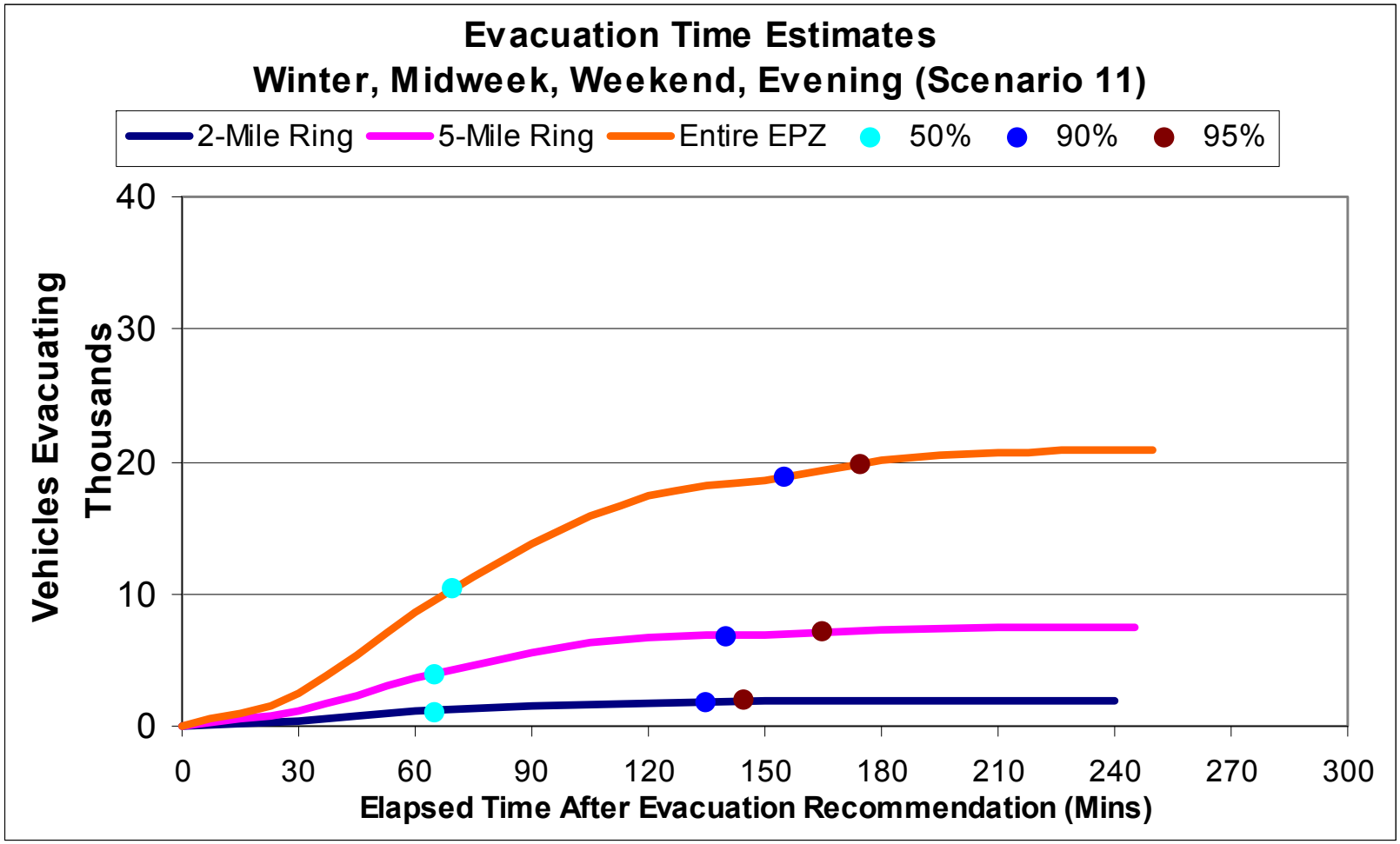

Figure J-11. Evacuation Time Estimates – Scenario 11 for Region R3 (Entire EPZ)

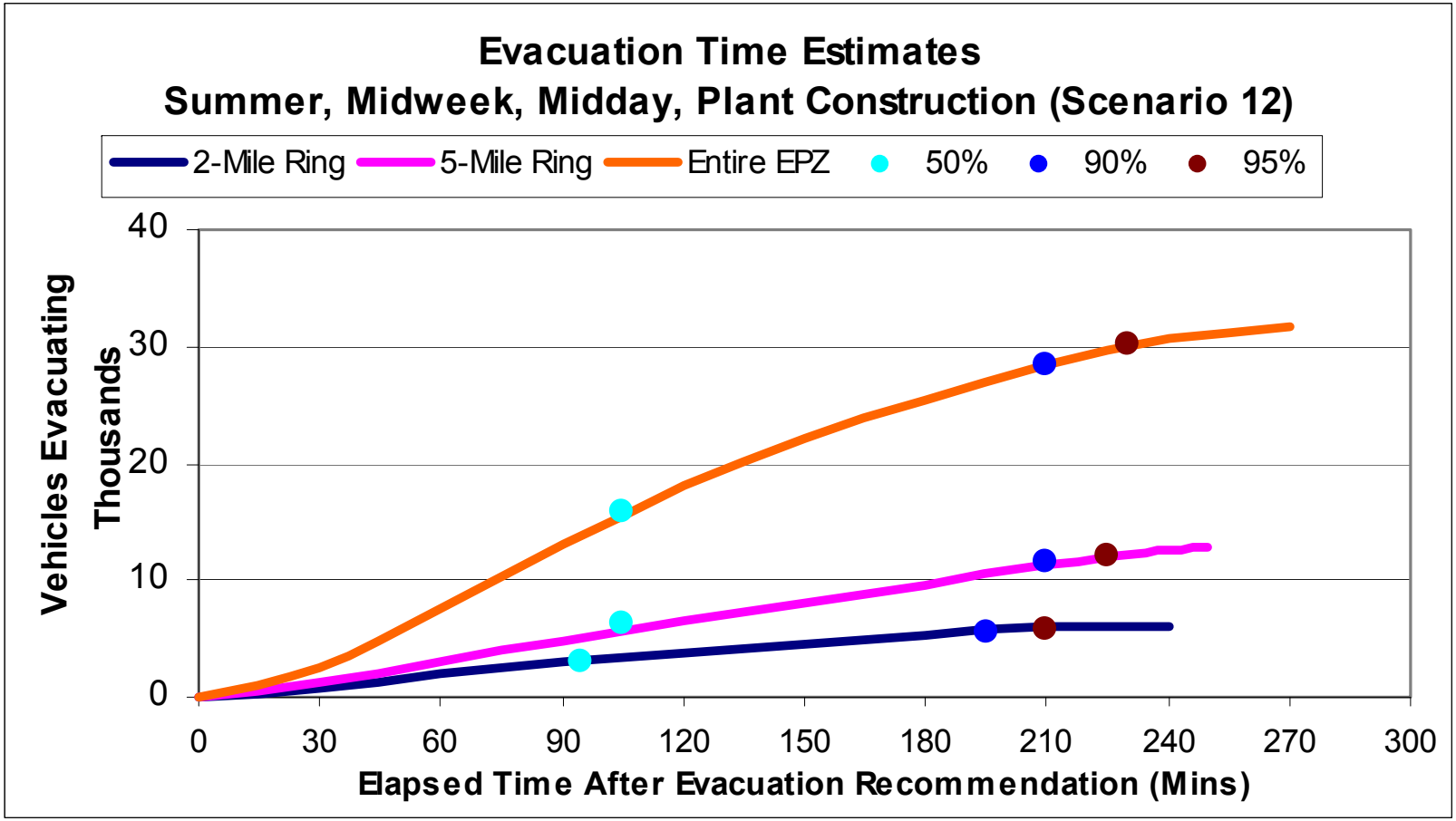

Figure J-12. Evacuation Time Estimates – Scenario 12 for Region R3 (Entire EPZ)

APPENDIX K

Evacuation Roadway Network Characteristics

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
1	281	26	1	1500	40
2	266	94	1	1714	50
2	267	50	1	1714	50
2	273	38	1	1714	50
3	4	21	1	1895	55
3	5	62	1	1895	60
3	6	131	2	2000	65
3	8	142	2	2250	65
4	3	21	1	1714	45
4	355	131	1	1895	55
5	3	62	1	1714	45
5	85	123	1	1895	60
6	7	94	2	2000	65
6	3	131	2	2000	65
7	6	94	2	2000	65
7	18	141	2	2000	65
8	3	142	2	2000	65
8	9	187	2	2250	65
9	8	187	2	2250	65
9	12	39	2	2250	65
10	14	52	2	1714	40
10	11	27	2	1714	40
10	13	27	1	1714	50
11	361	16	2	1714	40
11	12	23	1	1714	50
11	10	27	2	1714	40
12	9	39	2	2250	65
12	10	16	1	1714	40
12	13	30	2	2250	65
13	390	19	2	1714	50
13	12	30	2	2250	65
13	11	14	1	1714	40
14	15	107	2	1714	40
15	16	137	2	1714	50
16	355	22	2	1895	55
16	17	126	2	1714	50
17	19	134	2	1714	50
18	7	141	2	2000	65
19	20	136	2	1714	50
20	21	43	2	1714	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
21	22	84	1	1714	50
21	23	24	1	1714	50
24	410	33	2	1714	50
24	390	52	2	1714	50
25	28	12	1	1714	40
25	26	20	2	2250	65
25	410	52	2	2250	65
26	27	12	1	1714	40
26	404	37	2	1895	50
26	25	20	2	2250	65
27	25	12	1	1714	50
27	28	12	2	1714	45
27	393	15	2	1714	45
28	352	26	2	1714	45
28	26	11	1	1714	50
28	27	12	1	1714	45
29	404	81	2	1895	50
29	30	67	2	2250	65
30	29	67	2	2250	65
30	31	143	2	2250	65
31	33	23	2	2250	65
31	30	143	2	2250	65
33	34	33	1	1714	45
33	42	145	2	2250	65
33	31	23	2	2250	65
34	41	25	2	1895	55
41	121	75	2	1895	55
42	33	145	2	2250	65
42	43	152	2	2250	65
43	42	152	2	2250	65
43	44	170	2	2250	65
44	43	170	2	2250	65
44	45	117	2	2250	65
45	44	117	2	2250	65
45	46	95	2	2250	65
46	47	38	2	2250	65
46	45	95	2	2250	65
47	48	147	2	2250	65
47	46	38	2	2250	65
48	47	147	2	2250	65
48	49	155	2	2250	65

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
49	48	155	2	2250	65
49	50	157	2	2250	65
50	51	182	2	2250	65
50	49	157	2	2250	65
51	54	58	2	2250	65
51	50	182	2	2250	65
51	52	22	1	1714	40
52	54	42	1	1714	50
52	53	36	1	1714	50
52	55	58	1	1714	50
53	56	104	1	1500	40
53	51	45	1	1714	50
53	52	36	1	1714	50
54	51	58	2	2250	65
54	53	20	1	1714	40
54	69	91	2	1895	55
55	52	58	1	1714	50
55	266	134	1	1714	50
56	53	104	1	1714	50
56	61	17	1	1500	40
56	59	58	1	1500	40
57	366	92	1	1500	40
58	366	18	1	1500	40
58	60	66	1	1714	45
58	59	78	1	1714	40
59	58	78	1	1714	40
59	60	103	1	1714	45
59	56	58	1	1500	40
60	71	16	1	1500	45
61	62	50	1	1714	40
62	63	89	1	1714	50
63	64	101	1	1714	50
64	65	25	1	1714	50
65	66	69	1	1714	50
66	67	85	1	1714	50
67	68	198	1	1714	50
69	366	32	2	1895	55
69	54	91	2	1895	55
70	366	86	2	1895	55
70	75	32	2	2250	65
70	74	22	1	1714	45

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
71	73	18	1	1714	45
73	74	23	1	1714	45
74	80	150	1	1714	45
75	70	32	2	2250	65
75	77	90	2	2250	60
77	78	146	2	2250	60
77	75	90	2	2250	65
78	77	146	2	2250	60
80	81	107	1	1714	45
81	82	90	1	1714	45
82	83	74	1	1714	45
85	86	66	1	1895	60
85	5	123	1	1895	60
86	85	66	1	1895	60
86	87	109	1	1895	60
87	357	101	1	1895	60
87	86	109	1	1895	60
88	357	29	2	1895	60
88	356	30	2	1895	60
88	89	128	1	1895	55
89	93	46	1	1895	55
90	91	153	1	1895	55
91	92	94	1	1895	55
93	90	58	1	1895	55
94	95	77	1	1895	60
94	356	83	1	1895	60
95	96	103	1	1895	60
95	94	77	1	1895	60
96	95	103	1	1895	60
96	97	85	1	1895	60
97	96	85	1	1895	60
97	98	54	1	1895	60
98	97	54	1	1895	60
98	369	110	1	1895	60
99	100	158	1	1895	60
99	369	43	1	1895	60
100	101	103	1	1895	60
101	102	143	1	1895	60
102	103	165	1	1895	60
103	104	53	1	1895	60
104	106	118	1	1895	60

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
104	105	88	1	1895	60
105	285	115	1	1895	60
106	107	90	1	1895	60
108	367	74	1	1500	40
109	362	8	2	1714	40
109	363	54	2	1714	40
110	412	15	1	1500	30
110	365	10	1	1714	30
110	116	43	1	1500	30
111	354	15	1	1500	35
112	113	41	1	1500	35
112	393	34	1	1714	40
113	112	41	1	1714	40
113	414	25	1	1500	35
114	400	63	2	1714	45
115	358	13	1	1500	35
116	110	43	2	1714	30
116	411	15	1	1500	30
117	118	104	2	1895	55
118	119	92	2	1895	55
119	88	70	2	1895	55
120	113	102	1	1200	20
121	114	140	2	1895	55
122	444	79	2	1895	55
122	352	56	2	1714	45
123	444	50	2	1895	55
123	124	98	2	1895	60
124	125	23	2	1895	60
124	123	98	2	1895	60
125	124	23	2	1895	60
125	126	60	1	1895	60
125	146	54	2	1200	40
126	125	60	1	1714	50
126	127	56	1	1895	60
127	126	56	1	1895	60
127	128	56	1	1895	60
128	127	56	1	1895	60
128	129	31	1	1200	30
129	128	31	1	1200	30
129	130	19	1	1200	30
130	129	19	1	1200	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
130	131	34	1	1200	30
131	130	34	1	1200	30
131	132	44	1	1714	30
132	133	43	1	1714	50
132	131	44	1	1714	50
133	132	43	1	1714	50
133	134	176	1	1714	50
134	133	176	1	1714	50
134	135	35	1	1714	50
135	134	35	1	1714	50
135	136	37	1	1714	50
136	137	52	1	1714	50
136	135	37	1	1714	50
137	138	54	1	1714	40
137	136	52	1	1714	50
138	140	16	1	1714	40
138	139	131	1	1895	60
138	137	54	1	1714	50
139	156	159	1	1895	60
139	403	187	1	1500	40
140	141	20	1	1714	40
141	142	69	1	1714	40
142	143	36	1	1714	50
143	144	50	1	1714	50
144	145	85	1	1714	50
145	189	76	1	1714	50
146	147	41	2	1200	40
147	148	54	2	1200	40
148	149	42	2	1200	40
149	150	35	2	1200	40
150	151	39	2	1200	40
151	152	42	2	1200	40
152	153	31	2	1200	50
153	154	68	1	1714	50
154	155	54	1	1714	40
155	161	187	2	1895	55
156	157	38	1	1200	25
156	159	166	1	1895	60
157	170	170	1	1500	40
157	158	34	1	1500	40
158	173	80	1	1500	40

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
159	160	148	1	1895	60
160	155	108	1	1714	45
161	162	185	2	1895	55
162	163	90	2	1895	55
163	164	41	2	1895	55
164	165	115	2	2000	65
165	166	139	2	2000	65
166	167	118	2	2000	65
167	168	70	2	1895	55
168	169	45	2	1714	45
169	212	51	2	1895	55
169	392	13	2	1714	55
170	171	183	1	1500	40
171	172	50	1	1500	40
172	163	14	1	1500	40
173	174	47	1	1500	40
174	175	175	1	1500	40
175	176	99	1	1500	40
176	333	75	1	1500	40
176	177	71	1	1500	40
177	178	114	1	1500	40
178	180	101	1	1500	45
178	179	84	1	1500	40
179	184	116	1	1500	40
180	181	88	1	1500	45
181	182	22	1	1500	40
182	183	112	1	1895	60
183	391	70	1	1714	45
184	182	175	1	1895	60
186	187	87	1	1500	40
187	188	109	1	1500	40
188	179	117	1	1500	40
189	190	155	1	1714	50
190	191	137	1	1714	50
191	192	43	1	1714	50
192	193	115	1	1714	45
193	194	88	1	1714	50
193	208	152	1	1895	60
193	243	92	1	1714	50
194	195	108	1	1714	50
195	201	103	1	1714	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
195	196	130	1	1714	50
196	197	114	1	1714	50
197	198	160	1	1714	50
198	199	28	1	1714	50
199	200	39	1	1714	50
201	202	65	1	1714	50
202	203	84	1	1714	50
203	204	98	1	1714	50
204	205	93	1	1714	50
205	206	62	1	1714	50
206	207	46	1	1714	50
208	209	151	1	1895	60
209	210	149	1	1895	60
210	211	114	1	1895	60
211	184	108	1	1895	60
214	230	92	1	1895	60
214	215	178	1	1895	60
215	216	46	1	1895	60
216	217	77	1	1895	60
217	218	74	1	1895	60
218	219	134	1	1895	60
219	138	28	1	1714	40
220	225	41	1	1714	40
220	224	35	1	1714	40
220	222	50	1	1714	40
221	220	18	1	1714	40
222	223	72	1	1714	40
223	217	120	1	1500	40
224	214	190	1	1714	40
225	226	86	1	1714	40
226	227	74	1	1714	40
227	228	71	1	1714	40
228	229	183	1	1714	40
229	230	156	1	1714	40
229	233	31	1	1714	40
230	231	123	1	1895	60
231	232	88	1	1895	60
231	343	29	1	1500	45
232	236	114	1	1895	60
233	234	82	1	1714	40
234	235	41	1	1714	40

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
235	232	49	1	1500	40
236	237	132	1	1895	60
237	238	104	1	1895	60
238	239	52	1	1895	60
239	240	32	1	1895	60
240	241	43	1	1895	60
241	242	127	1	1895	60
242	249	121	1	1895	55
242	261	101	1	1895	60
243	244	171	1	1714	50
243	193	92	1	1714	45
244	245	139	1	1714	50
244	243	171	1	1714	50
245	246	92	1	1714	50
245	244	139	1	1714	50
246	247	123	1	1714	50
246	245	92	1	1714	40
247	248	84	1	1714	50
247	246	123	1	1714	50
248	257	58	1	1714	50
248	253	133	1	1714	50
248	247	84	1	1714	50
249	250	74	1	1895	55
250	251	179	1	1714	50
251	252	65	1	1714	50
252	248	103	1	1714	50
253	254	128	1	1714	50
254	255	162	1	1714	50
255	256	50	1	1714	50
256	199	177	1	1714	50
257	258	136	1	1714	50
258	259	80	1	1714	50
258	260	84	1	1714	50
261	262	80	1	1895	60
262	263	103	1	1895	60
263	264	89	1	1895	60
264	265	116	1	1895	60
266	2	94	1	1714	50
266	55	134	1	1714	50
267	268	50	1	1714	50
267	2	50	1	1714	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
268	269	51	1	1714	50
268	267	50	1	1714	50
269	268	51	1	1714	50
269	270	34	1	1714	50
270	269	34	1	1714	50
270	271	181	1	1714	50
271	270	181	1	1714	50
271	272	128	1	1714	50
272	271	128	1	1714	50
273	274	73	1	1200	35
274	275	54	1	1200	35
275	276	51	1	1200	35
276	277	58	1	1200	35
277	278	141	1	1714	50
278	279	148	1	1714	50
279	280	172	1	1714	50
280	242	148	1	1895	55
281	282	42	1	1500	40
282	283	46	1	1500	40
283	284	36	1	1500	40
284	42	94	1	1500	40
286	296	121	1	1500	35
287	286	145	1	1714	50
287	460	81	1	1714	40
288	291	98	1	1714	50
289	120	173	1	1714	50
289	290	54	1	1714	50
290	288	87	1	1714	50
291	292	183	1	1500	40
292	293	155	1	1500	40
293	294	55	1	1200	40
294	370	12	1	1000	30
295	374	10	1	1000	30
296	291	121	1	1500	40
297	301	89	1	1500	40
298	384	27	1	1500	40
299	297	27	1	1500	40
300	388	18	1	1500	40
301	302	43	1	1500	40
302	303	63	1	1500	40
303	381	27	1	1500	40

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
304	305	89	1	1500	40
305	306	51	1	1500	40
306	307	47	1	1500	40
307	461	34	1	1500	40
308	309	136	1	1500	40
309	321	182	1	1500	40
309	310	89	1	1500	40
310	47	80	1	1500	45
311	312	175	1	1500	40
312	313	69	1	1500	40
313	314	139	1	1500	40
314	315	112	1	1500	40
315	316	120	1	1500	40
316	317	110	1	1500	40
317	63	58	1	1500	40
318	315	108	1	1500	40
319	318	54	1	1500	40
320	319	137	1	1500	40
321	322	168	1	1500	40
322	323	159	1	1500	40
323	62	124	1	1500	40
324	325	110	1	1500	40
325	326	115	1	1500	40
326	327	178	1	1500	40
327	154	66	1	1500	40
328	330	107	1	1500	40
329	327	176	1	1500	40
330	329	107	1	1500	40
331	165	129	1	1500	40
332	331	125	1	1500	40
333	165	170	1	1500	40
334	335	80	1	1500	40
335	336	75	1	1500	40
336	337	66	1	1500	40
337	338	167	1	1500	40
338	339	64	1	1500	40
339	2	97	1	1500	40
340	342	114	1	1500	40
341	340	90	1	1500	40
342	426	48	1	1500	40
343	344	91	1	1500	45

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
344	345	94	1	1500	45
345	346	61	1	1500	45
346	347	36	1	1500	45
347	348	125	1	1500	45
347	349	73	1	1500	40
348	246	138	1	1500	45
349	350	60	1	1500	40
350	243	154	1	1500	40
351	251	114	1	1500	40
352	28	26	2	1714	45
352	122	56	2	1895	55
353	111	8	1	1500	35
354	115	30	1	1500	35
355	4	131	1	1895	55
355	16	22	2	1714	45
356	88	30	2	1895	60
356	94	83	1	1895	60
357	87	101	1	1895	60
357	88	29	2	1895	60
358	117	62	2	1714	40
361	11	16	2	1714	40
361	362	13	2	1714	40
362	109	8	2	1714	40
362	361	13	2	1714	40
363	365	28	2	1714	30
363	109	54	2	1714	40
364	111	14	1	1000	15
364	412	25	1	1500	30
365	110	10	1	1714	30
365	363	28	2	1714	40
366	69	32	2	1895	55
366	70	86	2	2250	65
367	368	13	1	1500	40
368	97	57	1	1500	40
369	99	43	1	1895	60
369	98	110	1	1895	60
370	371	10	1	1000	30
371	372	8	1	1000	30
372	373	33	1	1000	30
373	295	28	1	1000	30
374	375	11	1	1000	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
375	376	25	1	1000	30
376	377	22	1	1500	40
377	99	22	1	1500	40
378	105	79	1	1500	40
379	378	40	1	1500	40
380	379	45	1	1500	40
381	380	19	1	1500	40
382	383	26	1	1500	40
383	297	52	1	1500	40
384	382	24	1	1500	40
385	299	49	1	1500	40
386	385	48	1	1500	40
387	386	28	1	1500	40
388	387	23	1	1500	40
389	300	58	1	1500	40
390	24	52	2	1714	50
390	13	19	2	2250	65
391	169	19	2	1714	45
392	213	42	1	1895	55
393	112	34	1	1714	40
393	27	15	2	1714	45
395	353	39	1	1500	35
395	399	52	1	1500	30
395	412	10	1	1500	30
396	412	13	1	1500	30
396	354	40	1	1500	35
397	361	26	1	1500	30
398	397	13	1	1500	30
398	362	32	1	1440	25
399	363	10	1	1500	30
400	113	17	2	1500	35
402	390	60	1	1500	40
403	186	150	1	1500	40
404	26	37	2	2250	65
404	29	81	2	2250	65
406	402	31	1	1500	40
406	407	12	1	1500	40
407	408	24	1	1500	40
408	409	77	1	1500	40
409	410	16	1	1500	40
410	24	33	2	1714	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
410	25	52	2	2250	65
411	115	38	1	1500	35
411	396	31	1	1500	30
412	110	15	1	1714	30
412	364	25	1	1500	30
413	395	33	1	1500	30
413	415	11	1	1500	30
414	353	34	1	1500	35
415	112	29	1	1714	35
415	414	28	1	1500	35
416	417	24	1	1500	40
417	418	32	1	1500	40
418	419	36	1	1500	40
419	420	95	1	1500	40
420	421	124	1	1500	40
421	422	17	1	1500	40
422	423	33	1	1500	40
423	424	21	1	1500	40
424	425	73	1	1500	40
425	426	23	1	1500	40
426	280	72	1	1714	40
427	428	148	1	1500	40
428	429	61	1	1500	40
429	430	84	1	1500	40
430	420	36	1	1500	40
431	432	35	1	1500	40
432	443	39	1	1500	40
433	434	29	1	1500	40
434	435	100	1	1500	40
435	436	28	1	1500	40
436	437	32	1	1714	40
437	221	12	1	1714	40
438	439	55	1	1500	40
439	440	42	1	1500	40
440	441	98	1	1500	40
441	442	52	1	1500	40
442	437	103	1	1714	40
443	433	34	1	1500	40
444	122	79	2	1895	55
444	123	50	2	1895	60
445	444	48	1	1714	40

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
446	445	58	1	1714	40
447	446	75	1	1714	40
448	447	14	1	1500	40
449	448	15	1	1500	40
450	449	13	1	1500	40
451	450	11	1	1500	40
452	451	13	1	1500	40
453	452	40	1	1500	40
454	455	31	1	1500	40
455	456	39	1	1500	40
456	457	122	1	1500	40
457	458	24	1	1500	40
458	29	68	1	1500	40
459	42	54	1	1714	40
460	459	28	1	1714	40
461	308	51	1	1500	40

APPENDIX L

ERPA Boundaries

APPENDIX L: ERPA Boundaries

ERPA 1

- ERPA 1 is defined as the union of the town boundary of Hollywood and the 2 mile radial boundary of the Bellefonte Nuclear Plant (BLN).

ERPA 2

- Reference point: Intersection of Hollywood town boundary and northern portion of the 2 mile boundary
- Hollywood town boundary north to unnamed branch of Guntersville Lake
- Unnamed branch of Guntersville Lake north to shoreline of Guntersville Lake
- Shoreline of Guntersville Lake west to southern railway
- Southern railway south to unnamed branch of Guntersville Lake
- Unnamed branch of Guntersville Lake south to shoreline of Guntersville Lake
- Shoreline of Guntersville Lake east to CR 181
- CR 181 east to USHY 72
- USHY 72 south to CR 136
- CR 136 east to shoreline of Guntersville Lake
- Shoreline of Guntersville Lake south to 2 mile radial boundary of the BLN
- 2 mile radial boundary of the BLN west to Hollywood town boundary

ERPA 3

- Reference point: Intersection of CR 58 and CR 369
- CR 369 west to CR 57
- CR 57 west to CR 462
- CR 462 north to CR 369
- CR 369 west to intersection of 2 mile radial boundary of the BLN and eastern shoreline of Guntersville Lake
- Shoreline of Guntersville Lake north to Parton Branch
- Parton Branch south to CR 357
- CR 357 south to CR 58
- CR 58 west to CR 369

ERPA 4

- Reference point: Intersection of CR 58 and CR 369
- CR 58 south to Pisgah town boundary
- Pisgah town boundary south (clockwise) to Bryant Creek
- Bryant Creek south to Jacobs Creek
- Jacobs Creek south to STHY 71
- STHY 71 south to STHY 40
- STHY 40 west to STHY 35
- STHY 35 west to eastern shoreline of Guntersville Lake
- Shoreline of Guntersville Lake north to ERPA 1 boundary line

- ERPA 1 boundary line east to intersection of ERPA 1 and ERPA 3 boundary lines on the eastern shore of Guntersville Lake.
- Intersection of ERPA 1 and ERPA 3 boundary lines east to CR 369
- CR 369 east to CR 462
- CR 462 south to CR 57
- CR 57 north to CR 369
- CR 369 east to CR 58

ERPA 5

- Reference point: Intersection of STHY 35 and western shore of Guntersville Lake
- STHY 35 west to CR 21
- CR 21 north to Scottsboro town boundary
- Scottsboro town boundary east to Hollywood town boundary
- Hollywood town boundary south (counter-clockwise) to ERPA 1 boundary
- ERPA 1 boundary east to western shoreline of Guntersville Lake
- Shoreline of Guntersville Lake south to STHY 35

ERPA 6

- Reference point: Intersection of CR 21 and Scottsboro town boundary
- CR 21 north to unnamed stream
- Unnamed stream north to CR 31
- CR 31 east to branch of Pegues Branch
- Branch of Pegues Branch north to Pegues Branch
- Pegues Branch north to Robinson Creek
- Robinson Creek to Mud Creek
- Mud Creek to Guntersville Lake
- Intersection of Mud Creek and Guntersville Lake east to intersection of southern railway and Blue Spring Branch
- Southern railway south to southern shore of Guntersville Lake
- Southern shore of Guntersville Lake east to unnamed branch of Guntersville Lake
- Unnamed branch of Guntersville Lake south to Hollywood town boundary
- Hollywood town boundary west to CR 21

ERPA 7

- Reference point: Intersection of Blue Spring Brach and the southern railway
- Unnamed branch of Blue Spring Branch north to CR 42
- CR 42 north to CR 55
- CR 55 north to Big Coon Creek
- Big Coon Creek east to USHY 72
- USHY 72 north to STHY 117
- STHY 117 east to shoreline of Tennessee River
- Shoreline of Tennessee River south to CR 36
- CR 36 west to USHY 72
- USHY 72 north to CR 181

- CR 181 west to shoreline of Guntersville Lake
- Shoreline of Guntersville Lake west to unnamed branch of Guntersville Lake
- Unnamed branch of Guntersville lake north to southern railway
- Southern railway south to Blue Spring Branch

ERPA 8

- Reference point: Intersection of STHY 117 and eastern shore of Tennessee River
- STHY 117 east to unnamed branch of Tennessee River
- Unnamed branch of Tennessee River south to CR 682
- CR 682 south to CR 14
- CR 14 west to unnamed branch of Rocky Branch
- Unnamed branch of Rocky Branch to unnamed road
- South along unnamed roads to Warren Smith Creek
- Warren Smith Creek east to unnamed branch of Warren Smith Creek
- Unnamed branch of Warren Smith Creek east to an unnamed road
- Unnamed roads south to unnamed branch of Coon Creek
- Coon Creek east to Bailey Branch
- Bailey Branch south to intersection of CR 78 and CR 330
- CR 78 south to STHY 71
- STHY 71 west to CR 58
- CR58 west to CR 357
- CR 357 north to Parton Branch

ERPA 9

- Reference point: Intersection of STHY 71 and STHY 40
- STHY 71 north to Jacobs Creek
- Jacobs Creek north to Bryant Creek
- Bryant Creek north to Pisgah town boundary
- Pisgah town boundary north (counter clockwise) to CR 58
- CR 58 east to STHY 71
- STHY 71 south to CR 78
- CR 78 east to CR 778
- CR 778 south to New Hope Creek
- New Hope Creek west to CR 358
- CR 358 south to CR 260
- CR 260 east to Henagar town boundary
- Henagar town boundary south to STHY 40
- STHY 40 west to STHY 71

ERPA 10

- Reference point: Intersection of STHY 71 and STHY 40
- STHY 40 east to Henagar town boundary
- Henagar town boundary south to Sauty Creek
- Sauty Creek west to CR 122

- CR 122 west to CR 91
- CR 91 south to CR 562
- CR 562 north to unnamed branch of south Sauty creek
- Unnamed branch of south Sauty Creek south to CR 47
- CR 47 west to Jackson County boundary
- Jackson county boundary south to CR 247
- CR 247 west to CR 47
- CR 47 north to CR 120
- CR 120 west to Norwood St
- Norwood St west to Margaret St
- Margaret St north(counter clockwise) to Newman Ave
- Newman Ave west to STHY 35
- STHY 35 west to Section town boundary
- Section town boundary west (clockwise) to CR 265
- CR 265 west to Rose St
- Intersection of CR 265 and Rose street west to eastern shoreline of Guntersville lake
- Shoreline of Guntersville Lake north to STHY 35
- STHY 35 east to STHY 40
- STHY 40 east to STHY 70

ERPA 11

- Reference point: Intersection of STHY 35 and western shoreline of Guntersville Lake
- Shoreline of Guntersville Lake south (counter clockwise) to Porter St
- Porter St north to Roberts St
- Roberts St north to STHY 79
- STHY 79 north to CR 220
- CR 220 to CR 221
- Intersection of CR 220 and CR 221 east to Scottsboro town boundary
- Scottsboro town boundary east (clockwise) to Tupelo Pike
- Tupelo Pike south to STHY 35
- STHY 35 east to shoreline of Guntersville Lake

ERPA 12

- Reference point: Intersection of STHY 79 and CR 220
- STHY 79 to Skyline town boundary
- Skyline town boundary east (counter clockwise) to CR 219
- CR 219 north to CR 107
- CR 107 east to Latham St
- Intersection of CR 107 and Latham St east to unnamed branch of Mud Creek
- Unnamed branch of Mud Creek east to CR 111
- CR 111 north to unnamed stream
- Unnamed stream north to intersection of CR 33 and CR 39
- CR 39 north to CR 549

- Intersection of CR 39 and CR 549 east to unnamed branch of Big Coon Creek
- Unnamed branch of Big Coon Creek north to Big Coon Creek
- Big Coon Creek east to CR 55
- CR 55 south to unnamed branch of Blue Spring Branch
- Unnamed branch of Blue Spring Branch south to Blue Spring Branch
- Blue Spring Branch south to southern railway
- Intersection of southern railway and Blue Spring Branch west to union of Guntersville Lake and Mud Creek
- Mud Creek west to Robinson Creek
- Robinson Creek south to Pegues Branch
- Pegues Branch south to unnamed branch of Pegues Branch
- Unnamed branch of Pegues Branch south to CR 31
- CR 31 west to unnamed stream
- Unnamed stream south to CR 21
- CR 21 south to Scottsboro town boundary
- Scottsboro town boundary west to unnamed stream
- Intersection of unnamed stream and Scottsboro town boundary west to intersection of CR 220 and CR 221
- CR 220 west to STHY 79

ERPA 13

- ERPA 13 is the Town of Henagar, Alabama.