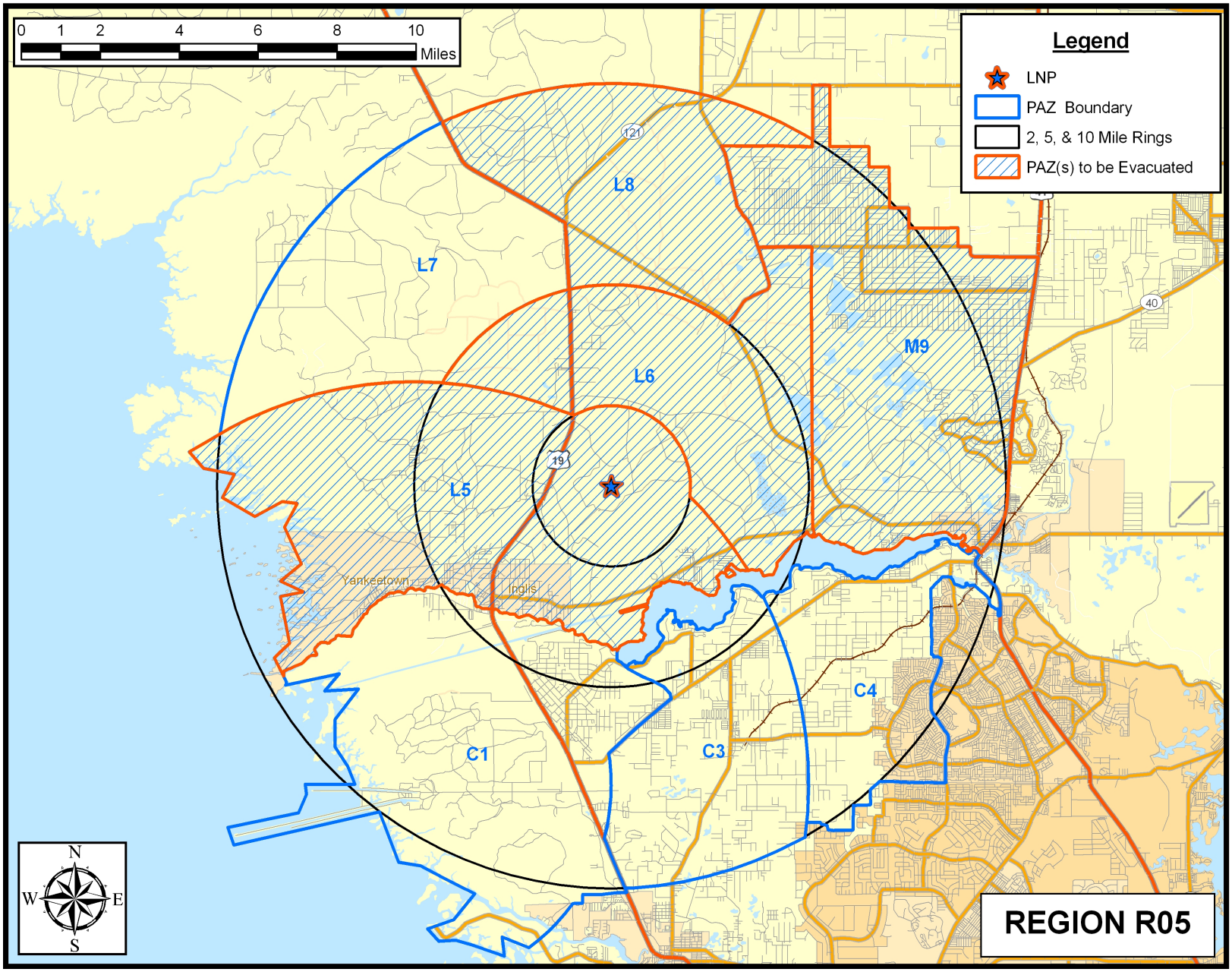
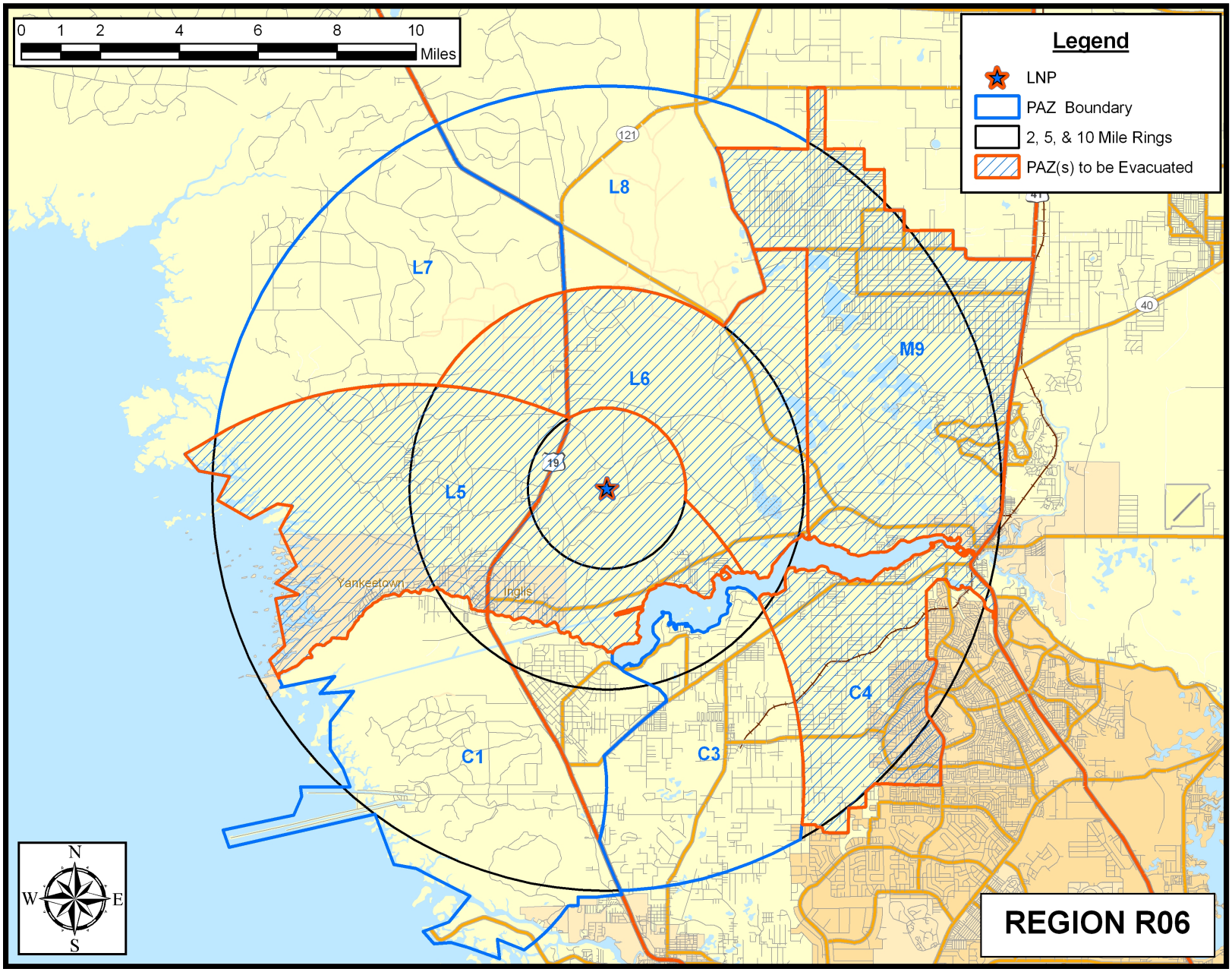
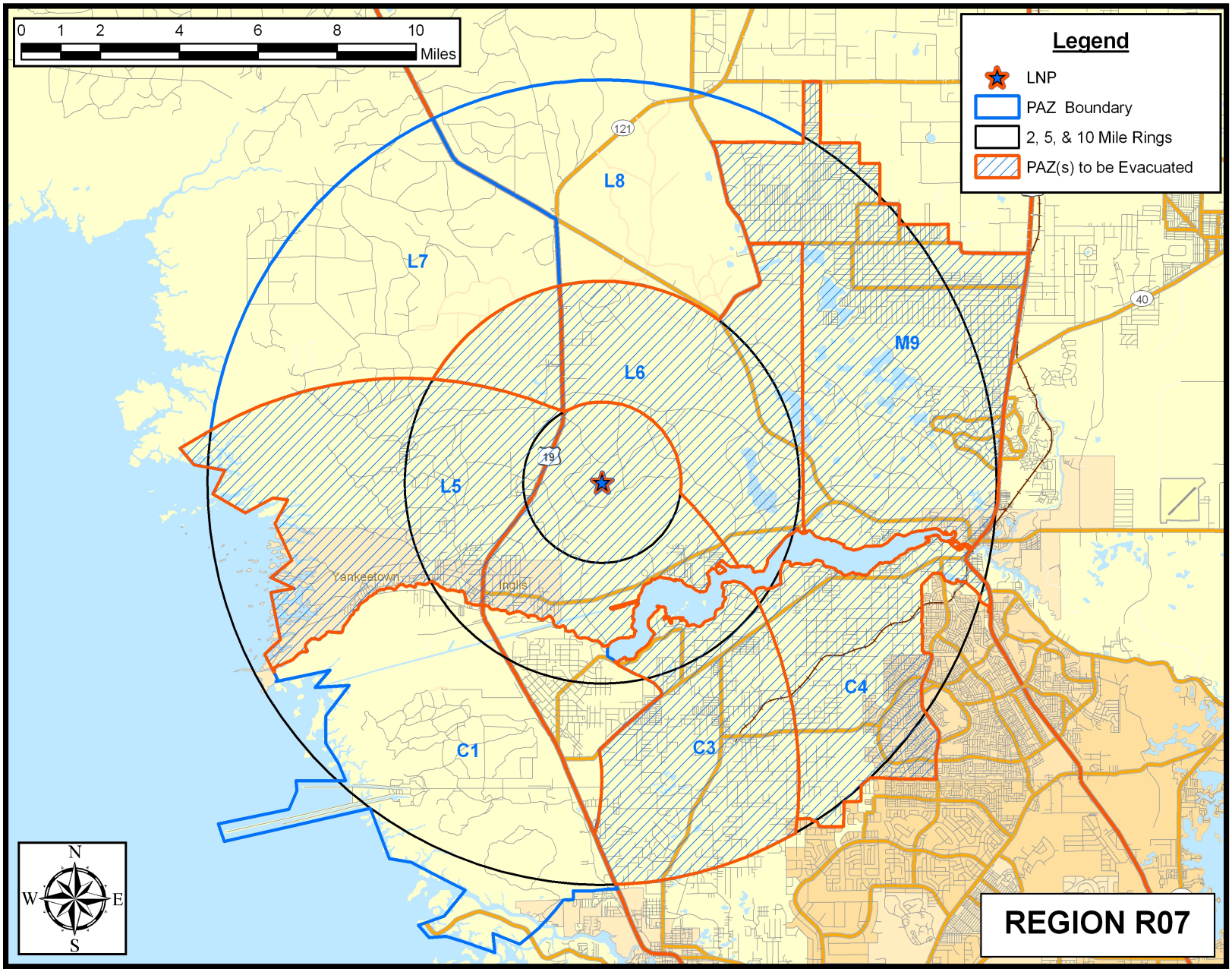
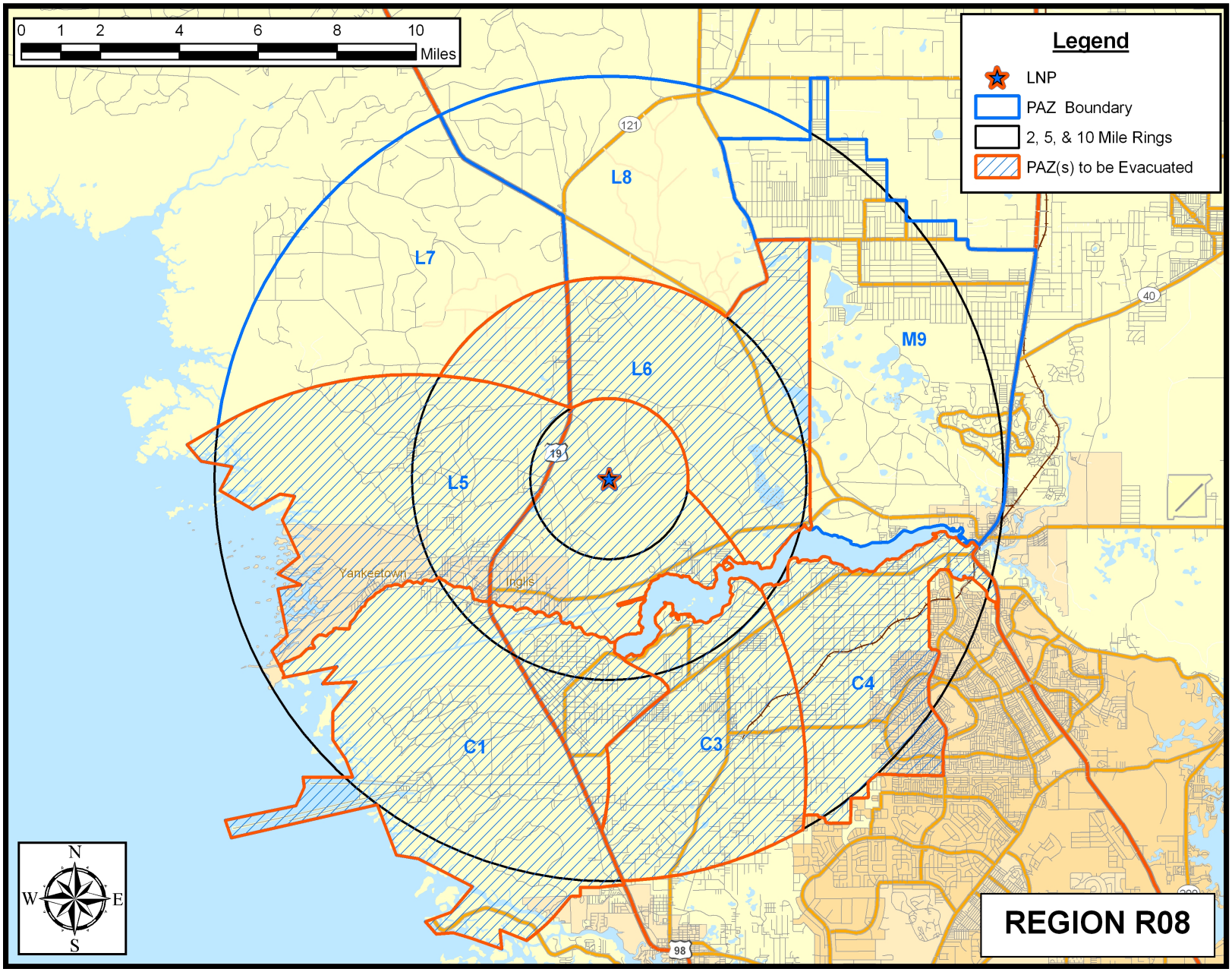
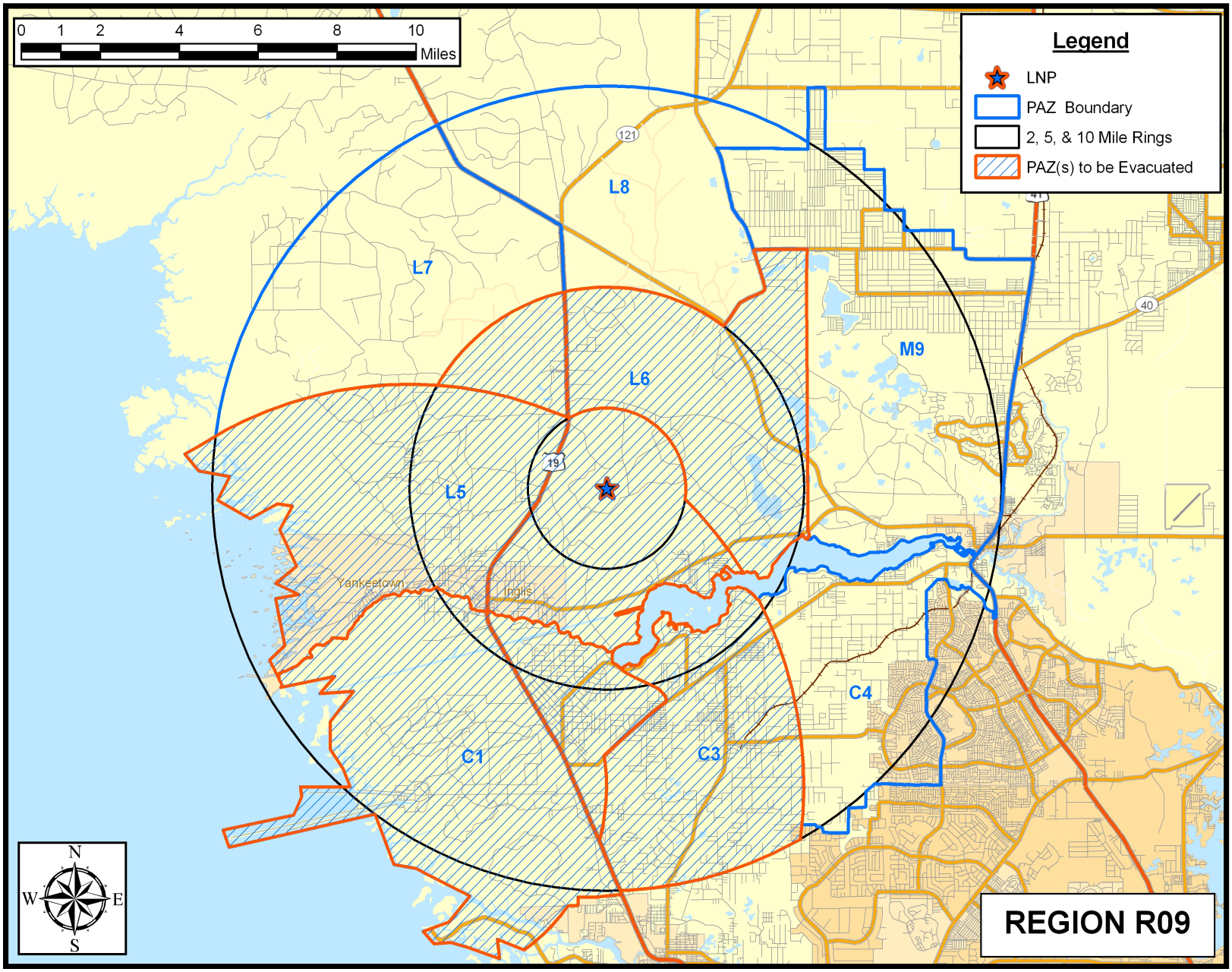
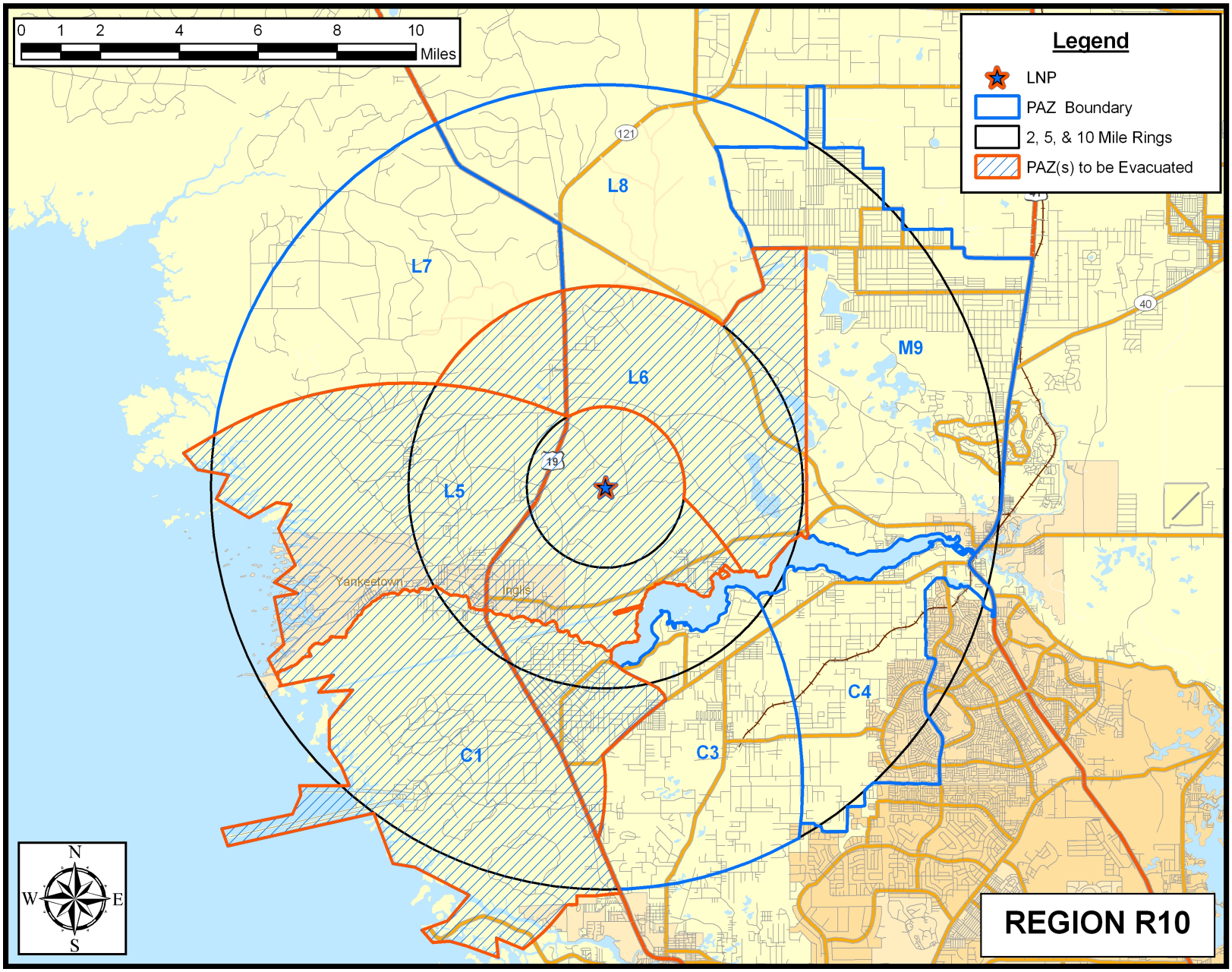

0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
121
19
40
Yankeetown
Inglis
N
W
E
S
REGION R05

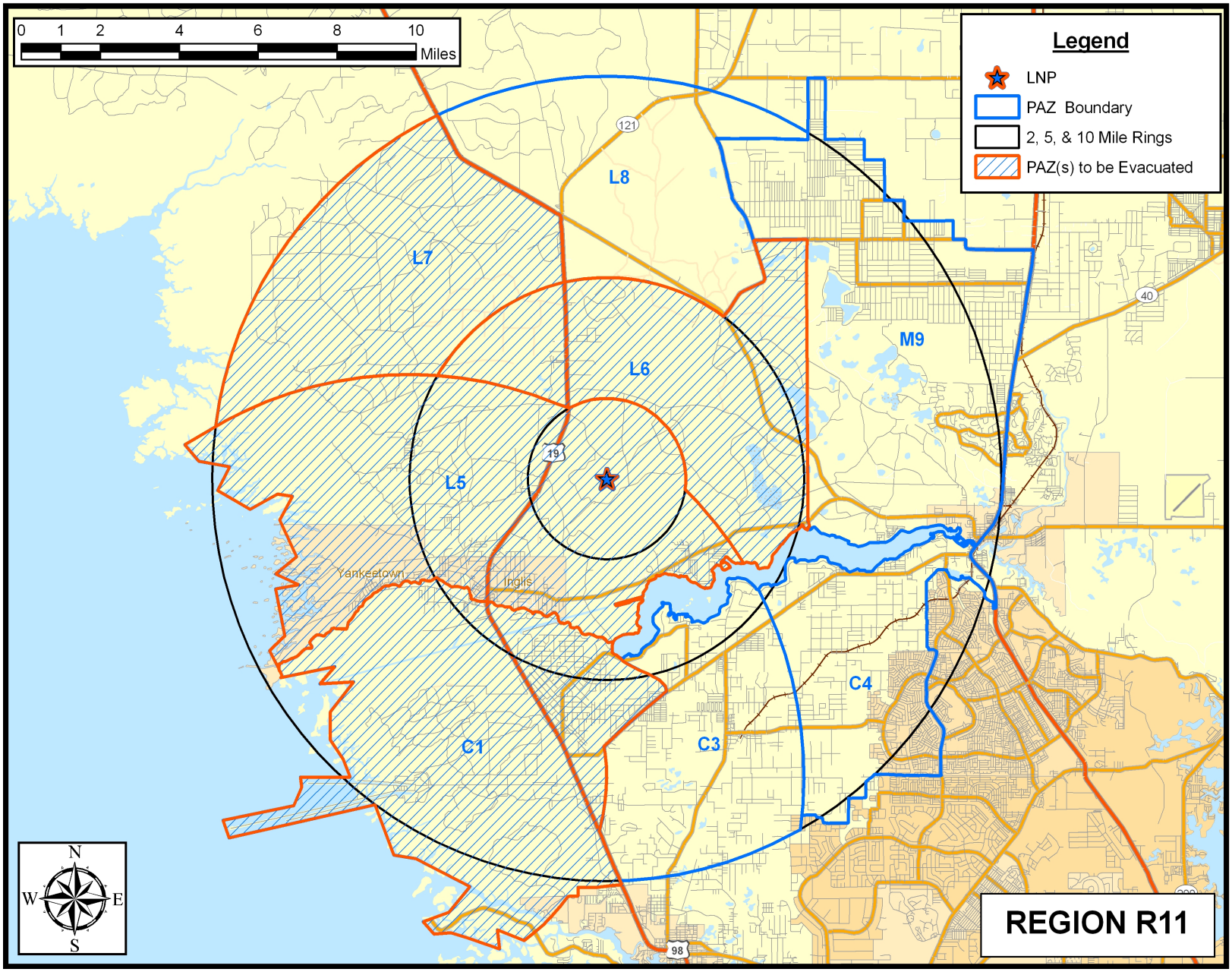

0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
Yankeetown
Inglis
121
19
40
N
W
E
S
REGION R06

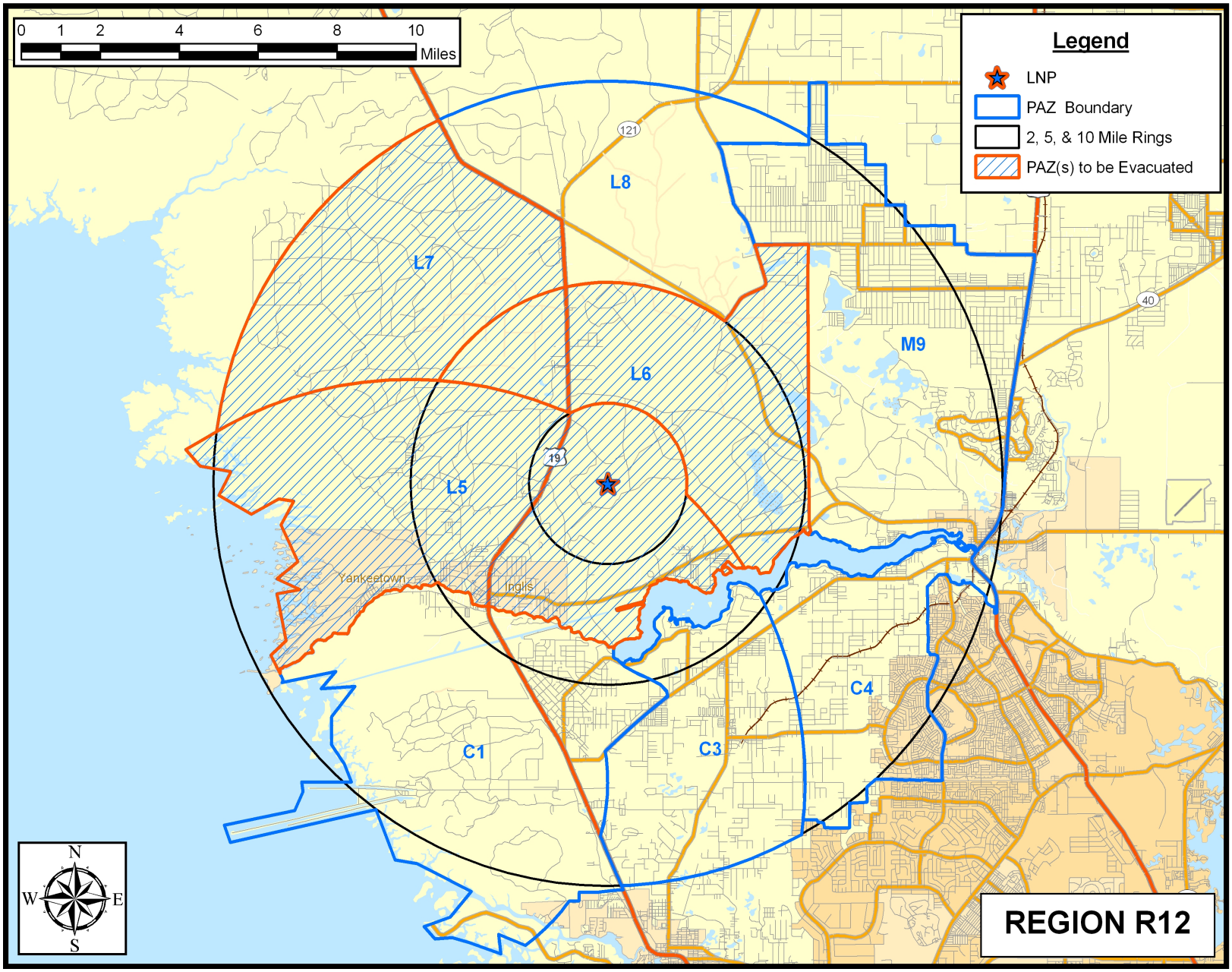

0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
M9
L5
C4
C1
C3
Yankeetown
Inglis
121
40
19
N
W
E
S
REGION R07

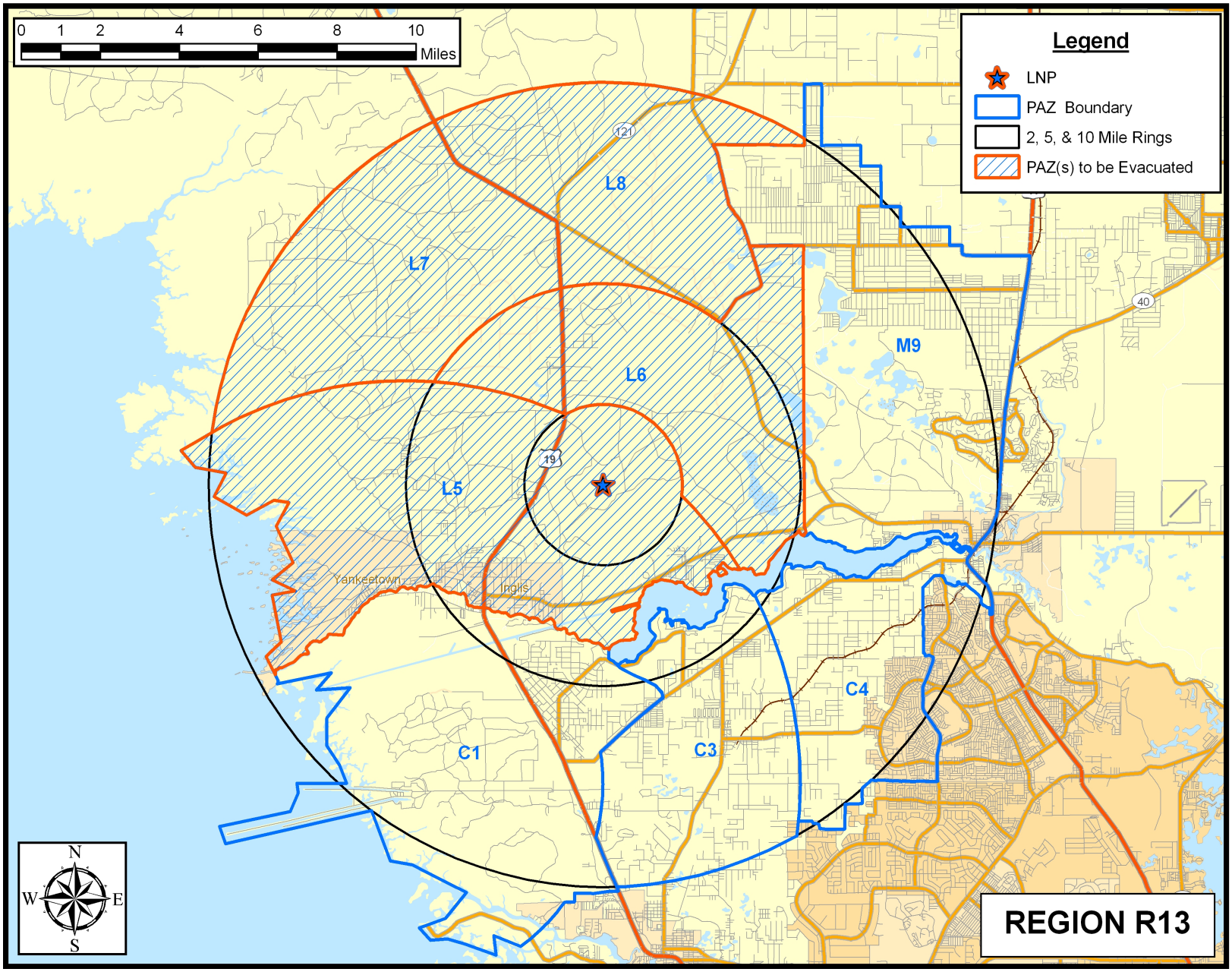

0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
121
19
40
98
Yankeetown
Inglis
N
W
E
S
REGION R08


0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C4
C1
C3
Yankeetown
Inglis
121
19
40
N
W
E
S
REGION R09


0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C4
C3
C1
Yankeetown
Inglis
121
19
40
N
W
E
S
REGION R10


0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
Yankeetown
Inglis
121
19
40
98
N
W
E
S
REGION R11


0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
121
19
40
Yankeetown
Inglis
N
W
E
S
REGION R12


0 1 2 4 6 8 10
Miles
Legend
LNP
PAZ Boundary
2, 5, & 10 Mile Rings
PAZ(s) to be Evacuated
L8
L7
L6
L5
M9
C1
C3
C4
Yankeetown
Inglis
121
19
40
N
W
E
S
REGION R13

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 (ETE) for the entire EPZ. The case considered was Scenario 8, Region 3; a winter, weekend, 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

Trip Generation Period	Evacuation Region		
	2-Mile Region (R01)	5-Mile Region (R02)	Entire EPZ (R03)
4 Hours	4:00	4:10	4:10
5 Hours (Base)	5:00	5:10	5:10
6 Hours	6:00	6:05	6:10

As the mobilization time is reduced, the change in traffic loading does not cause congestion. Hence the ETE reflects the duration of trip generation. The results confirm the importance of accurately estimating the 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 prolonged 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 also conducted to determine the effects on 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 the 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%. There are a total of 50,324 people (29,520 vehicles) within the Shadow Region.

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

Shadow Data			Evacuation Region		
Percent Shadow Evacuation	**Number of Shadow Residents**	**Number of Shadow Resident Vehicles**	**2-Mile Region (R01)**	**5-Mile Region (R02)**	**Entire EPZ (R03)**
15	7,549	4,428	5:00	5:10	5:10
30 (Base)	15,098	8,856	5:00	5:10	5:10
60	30,196	17,712	5:00	5:10	5:10

APPENDIX J

Evacuation Time Estimates for All Evacuation Regions and Scenarios
and
Evacuation Time Graphs for Region R03, for all Scenarios

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

AND

EVACUATION TIME GRAPHS FOR REGION R03, FOR ALL SCENARIOS

This appendix presents the ETE Results for all 13 Regions and all 11 Scenarios (Tables J-1A through J-1D).

Plots of Evacuating Vehicles vs. Elapsed Time leaving the 2-mile and 5-mile circular areas around the Levy Nuclear Plant and the entire EPZ for Region R03, for all 11 scenarios are presented. Each plot has points indicating the evacuation times corresponding to the 50th, 90th, and 95th percentiles of evacuated vehicles.

J.1 Guidance on Using ETE Tables

Tables J-1A through J-1D present the ETE values for all 13 Evacuation Regions and all 11 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
        - Summer (schools not in session)
        - Winter (also Autumn and Spring)
    - The Day of Week
        - Midweek (work-day)
        - Weekend, Holiday

- The Time of Day
  - Midday (work and commuting hours)
  - Evening
- Weather Condition
  - Good Weather
  - Rain
- Special Event (if any)
  - 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 (9) applies.
- The seasons are defined as follows:
  - Summer implies that public schools are *not* in session.
  - Winter, Spring and Autumn imply that public schools *are* in session.
- Time of Day: Midday implies the time over which most commuters are at work.

2. With the Scenario (and column in the Table) 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 Levy Nuclear Plant. The applicable distances and their associated candidate Regions are given below:
     - 2 Miles (Region R01)
     - 5 Miles (Region R02)
     - to EPZ Boundary (Regions R03 through R13)
   - Enter Table J-2 and identify the applicable group of candidate Regions based on the wind direction and on the distance that the selected Region extends from LNP. 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 *toward* 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 95th-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 Towards:”, identify the NE (northeast) azimuth and read REGION R05 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 R05. This data cell is in column (4) and in the row for Region R05; it contains the ETE value of **3:10**.

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

	Summer		Summer		Summer		Winter		Winter		Winter		Winter
	Midweek		Weekend		Midweek Weekend		Midweek		Weekend		Midweek Weekend		Weekend
Scenario:	(1)	(2)	(3)	(4)	(5)	Scenario:	(6)	(7)	(8)	(9)	(10)	Scenario:	(11)
Region Wind Towards:	Midday		Midday		Evening	Region Wind Towards:	Midday		Midday		Evening	Region Wind Towards:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Good Weather	Rain	Good Weather		New Plant Construction
Entire 2-Mile Region, 5-Mile Region, and EPZ													
R01 2-mile ring	1:15	1:15	1:05	1:10	1:05	R01 2-mile ring	1:15	1:15	1:05	1:10	1:05	R01 2-mile ring	1:25
R02 5-mile ring	1:15	1:20	1:05	1:10	1:05	R02 5-mile ring	1:15	1:20	1:05	1:10	1:05	R02 5-mile ring	1:15
R03 Entire EPZ	1:20	1:25	1:10	1:15	1:10	R03 Entire EPZ	1:20	1:25	1:10	1:15	1:10	R03 Entire EPZ	1:35
2-Mile Ring and Downwind to 5 Miles													
Same As R01 SSE, S, SSW, SW, WSW, W	1:15	1:15	1:05	1:10	1:05	Same As R01 SSE, S, SSW, SW, WSW, W	1:15	1:15	1:05	1:10	1:05	Same As R01 SSE, S, SSW, SW, WSW, W	1:25
Same As R02 WNW, NW, NNW, N, NNE, NE, ENE, E, ESE, SE	1:15	1:20	1:05	1:10	1:05	Same As R02 WNW, NW, NNW, N, NNE, NE, ENE, E, ESE, SE	1:15	1:20	1:05	1:10	1:05	Same As R02 WNW, NW, NNW, N, NNE, NE, ENE, E, ESE, SE	1:15
5-Mile Ring and Downwind to EPZ Boundary													
R04 N	1:20	1:25	1:10	1:15	1:10	R04 N	1:20	1:25	1:10	1:15	1:10	R04 N	1:25
R05 NNE, NE	1:20	1:25	1:10	1:15	1:10	R05 NNE, NE	1:20	1:25	1:10	1:15	1:10	R05 NNE, NE	1:25
R06 ENE, E	1:20	1:25	1:10	1:15	1:10	R06 ENE, E	1:20	1:25	1:10	1:15	1:10	R06 ENE, E	1:25
R07 ESE, SE	1:20	1:25	1:10	1:15	1:10	R07 ESE, SE	1:20	1:25	1:10	1:15	1:10	R07 ESE, SE	1:15
R08 SSE	1:15	1:20	1:05	1:10	1:05	R08 SSE	1:15	1:20	1:05	1:10	1:05	R08 SSE	1:25
R09 S, SSW	1:15	1:20	1:05	1:10	1:05	R09 S, SSW	1:15	1:20	1:05	1:10	1:05	R09 S, SSW	1:15
R10 SW, WSW	1:15	1:20	1:05	1:10	1:05	R10 SW, WSW	1:15	1:20	1:05	1:10	1:05	R10 SW, WSW	1:15
R11 W	1:15	1:20	1:05	1:10	1:05	R11 W	1:15	1:20	1:05	1:10	1:05	R11 W	1:15
R12 WNW	1:20	1:20	1:10	1:10	1:10	R12 WNW	1:20	1:20	1:10	1:10	1:10	R12 WNW	1:20
R13 NW,NNW	1:20	1:25	1:10	1:10	1:10	R13 NW,NNW	1:20	1:25	1:10	1:10	1:10	R13 NW,NNW	1:20

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

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

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

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

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

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

Table J-2. Description of Evacuation Regions									
Region	Description	PAZ							
		C1	C3	C4	L5	L6	L7	L8	M9
R01	2 mile ring								
R02	5-mile ring								
R03	Full EPZ								
Evacuate 2 mile ring and 5 miles downwind									
Region	Wind Direction Towards:	PAZ							
		C1	C3	C4	L5	L6	L7	L8	M9
Refer to R02	WNW, NW, NNW, N, NNE, NE, ENE, E, ESE, SE								
Refer to R01	SSE, S, SSW, SW, WSW, W								
Evacuate 5 mile ring and downwind to EPZ boundary									
Region	Wind Direction Towards:	PAZ							
		C1	C3	C4	L5	L6	L7	L8	M9
R04	N								
R05	NNE, NE								
R06	ENE, E								
R07	ESE, SE								
R08	SSE								
R09	S, SSW								
R10	SW, WSW								
R11	W								
R12	WNW								
R13	NW, NNW								

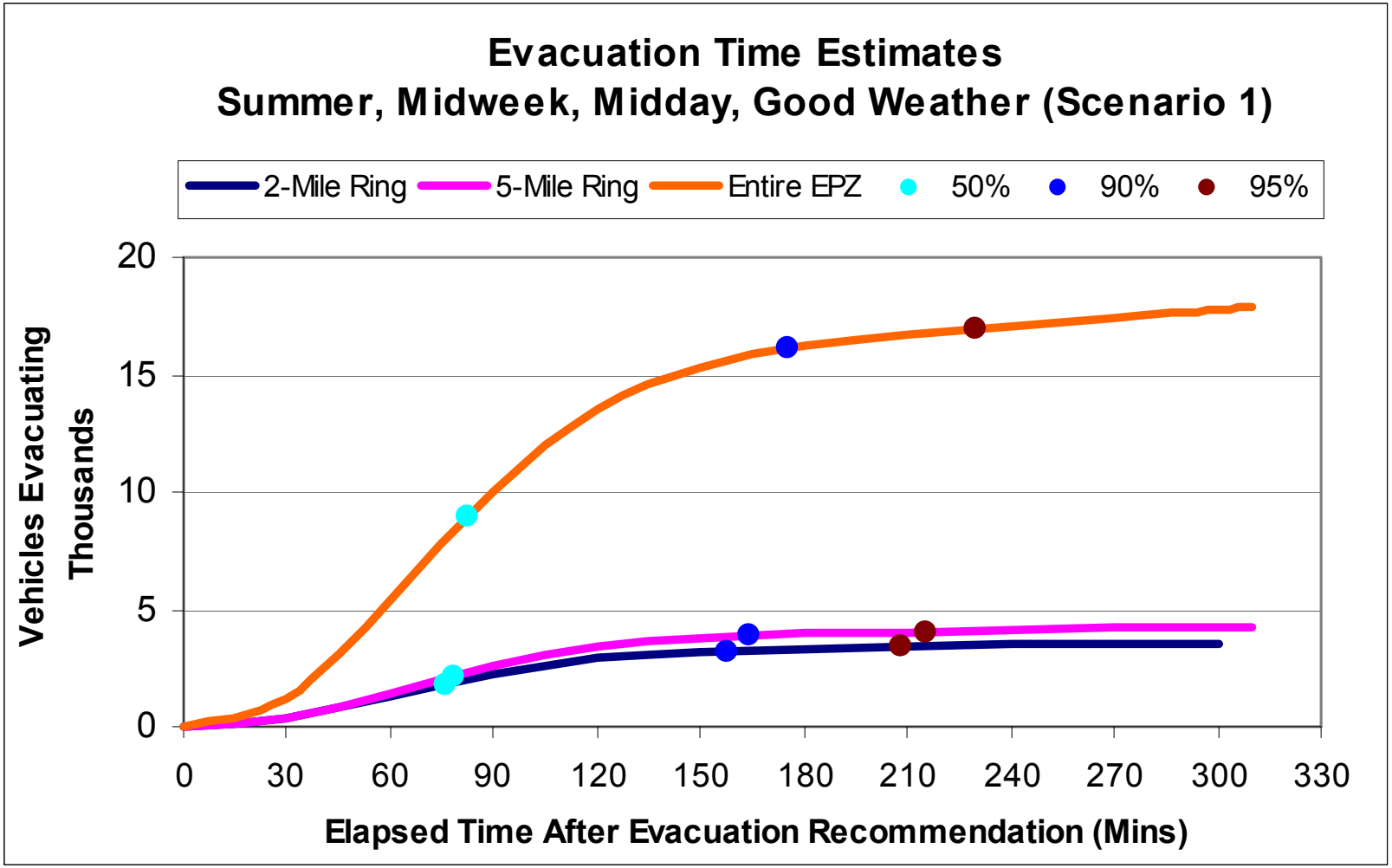


Figure J-1. Evacuation Time Estimates – Scenario 1 for Region R03 (Entire EPZ)

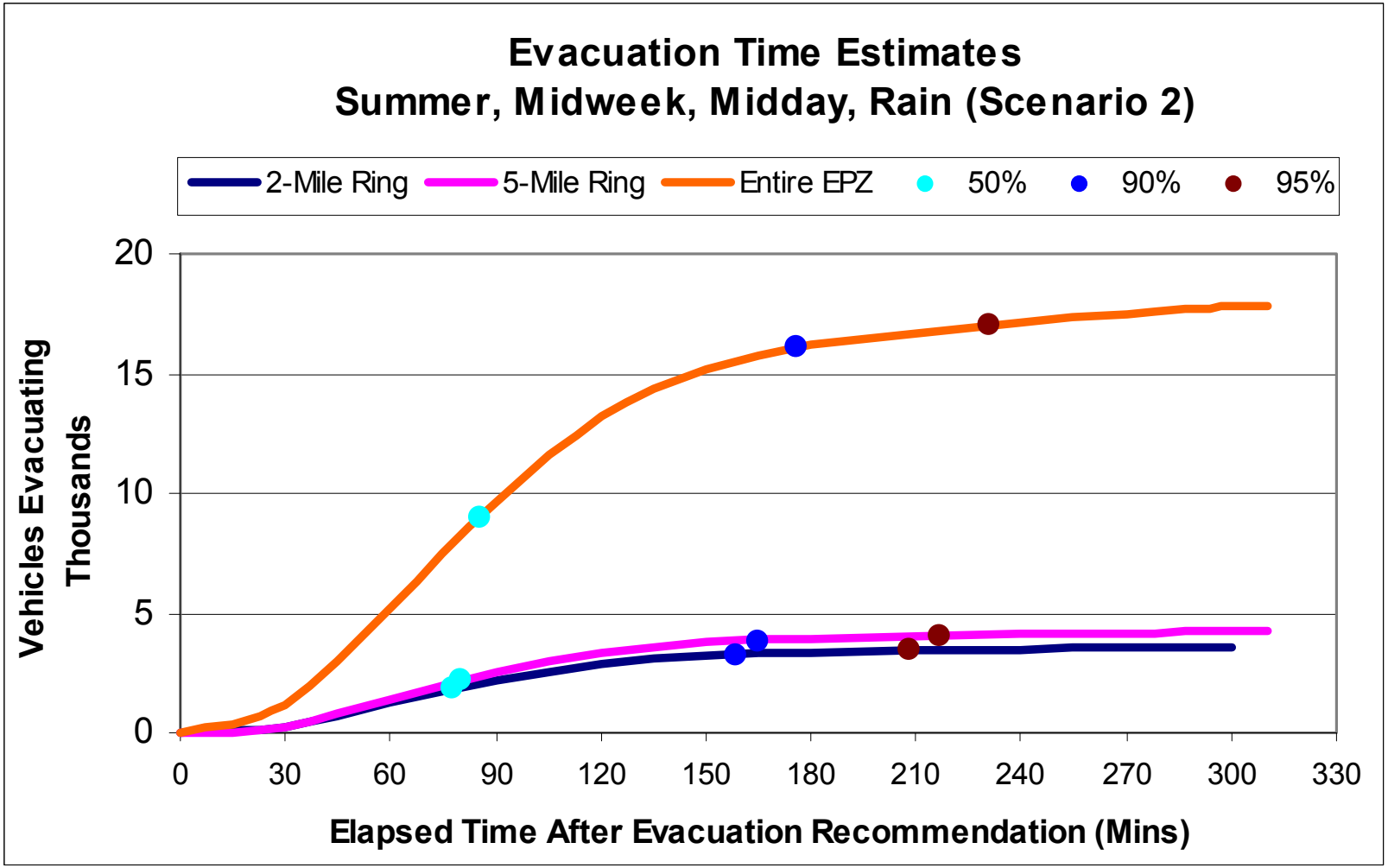


Figure J-2. Evacuation Time Estimates – Scenario 2 for Region R03 (Entire EPZ)

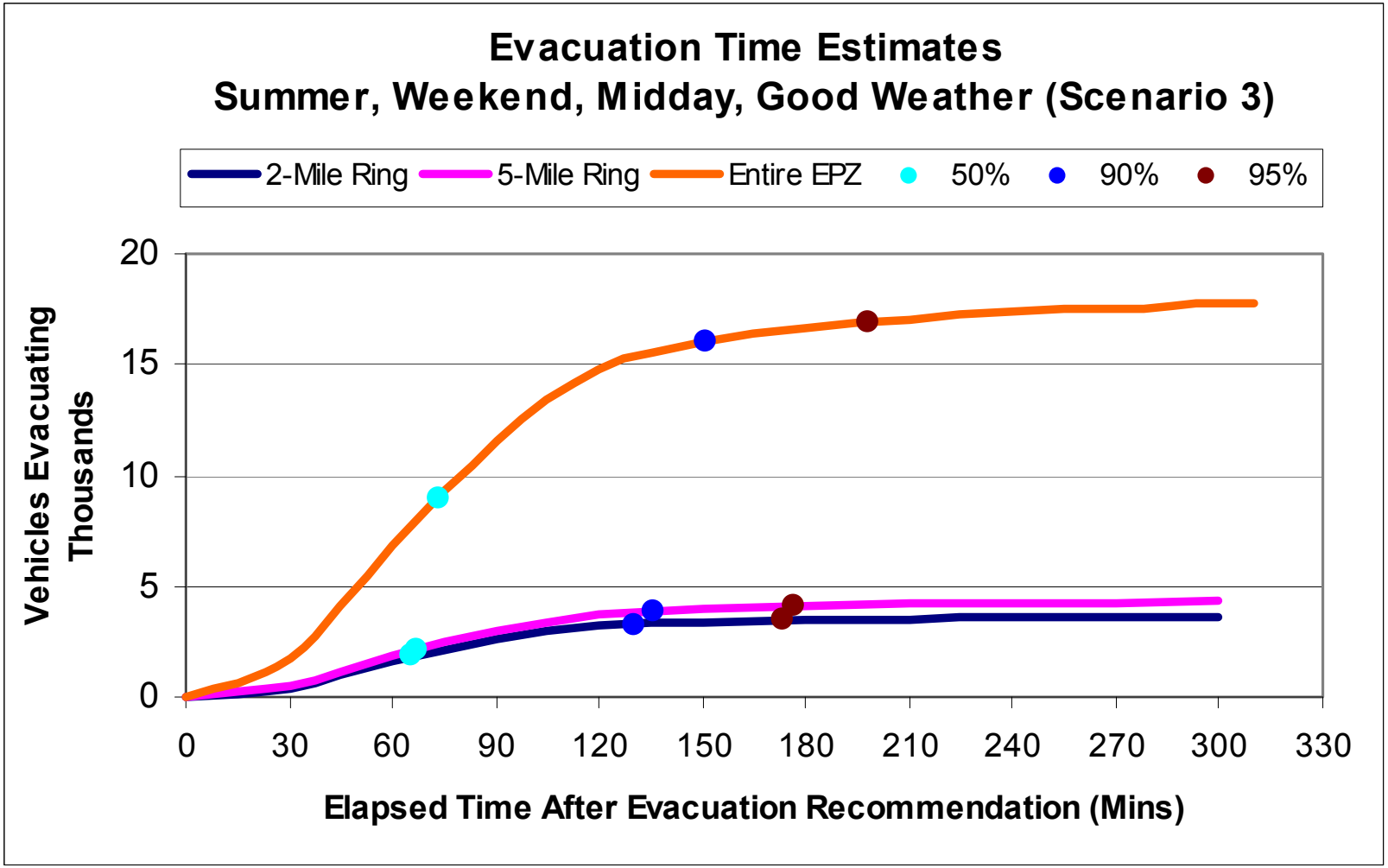


Figure J-3. Evacuation Time Estimates – Scenario 3 for Region R03 (Entire EPZ)

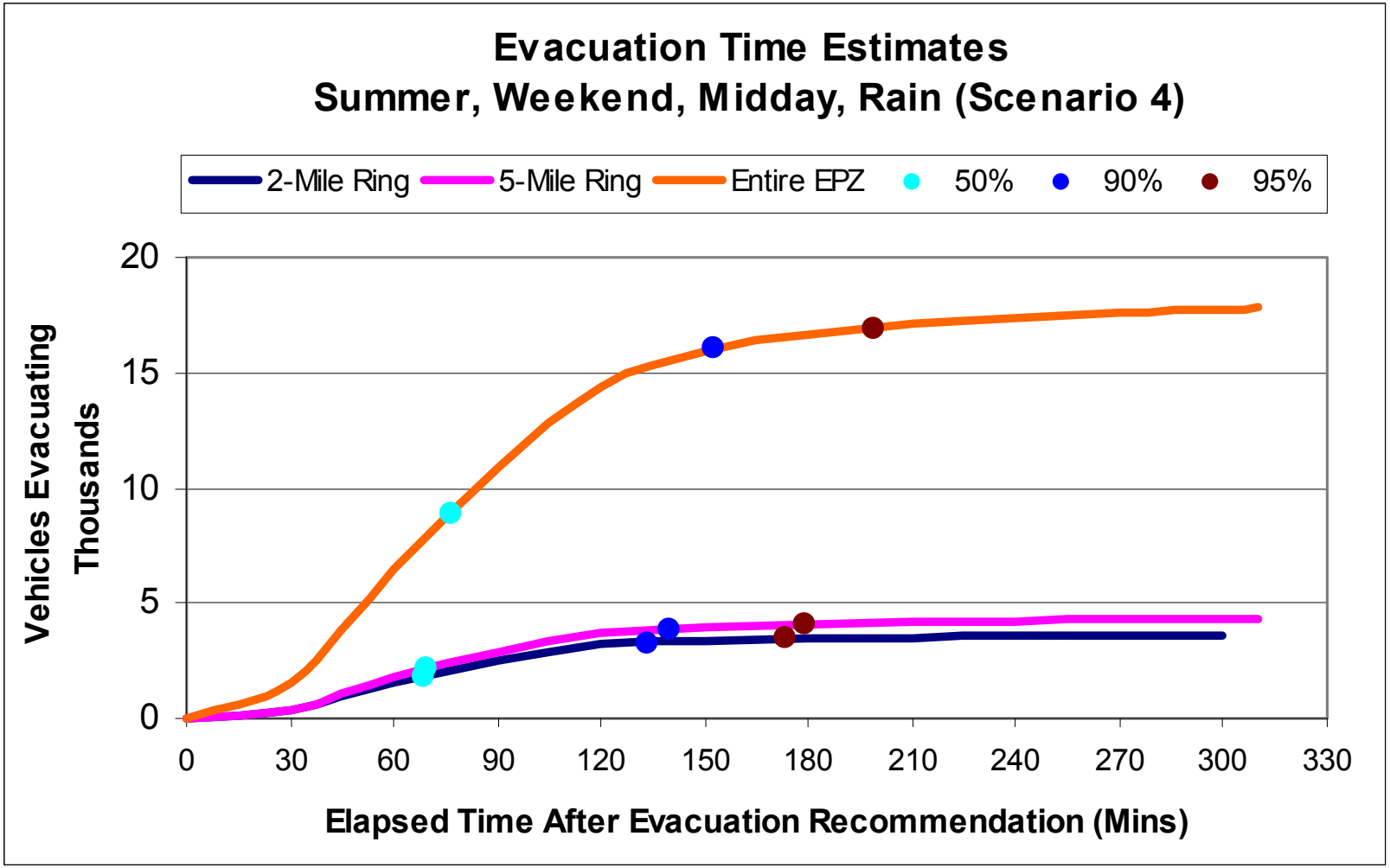


Figure J-4. Evacuation Time Estimates – Scenario 4 for Region R03 (Entire EPZ)

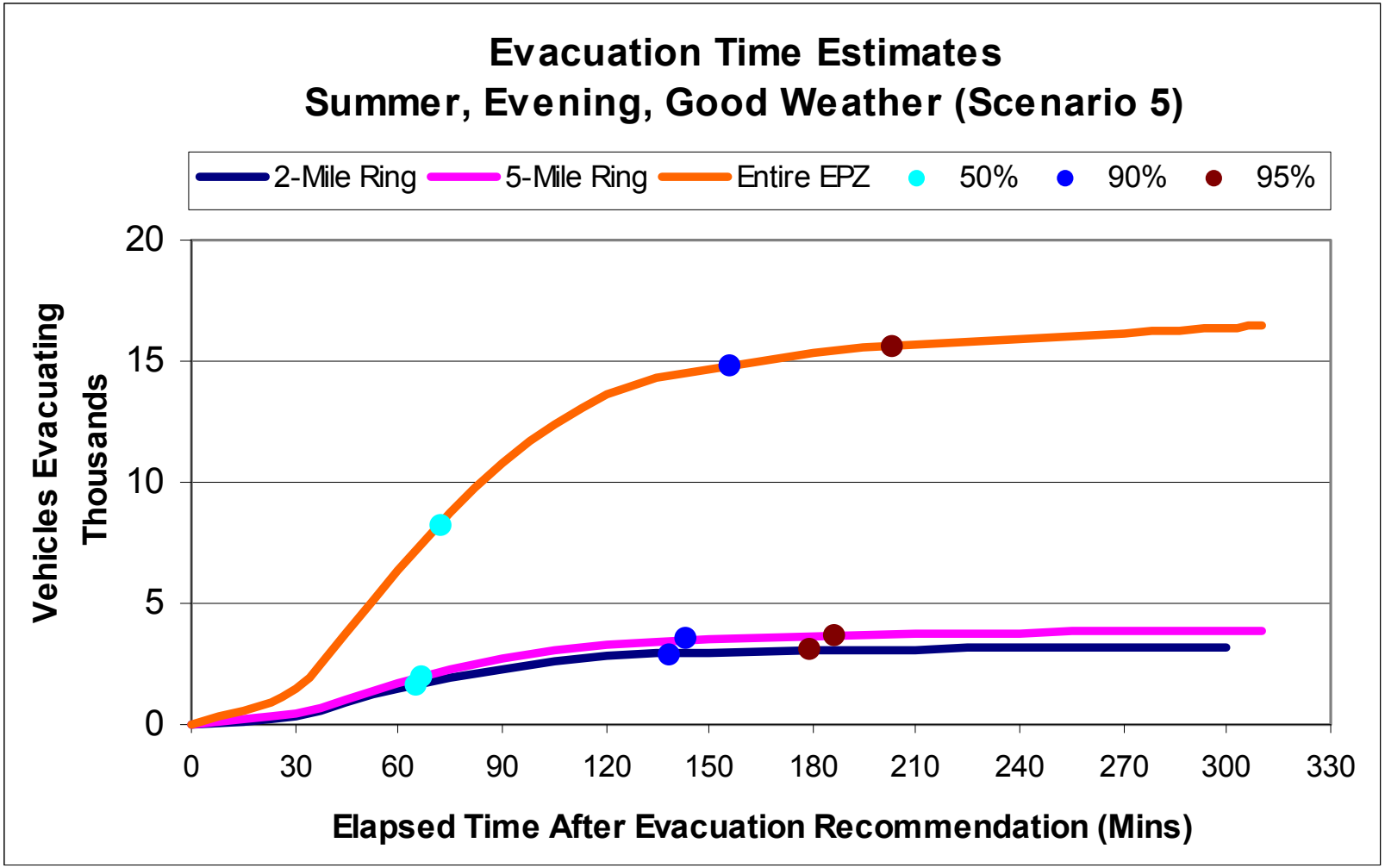


Figure J-5. Evacuation Time Estimates – Scenario 5 for Region R03 (Entire EPZ)

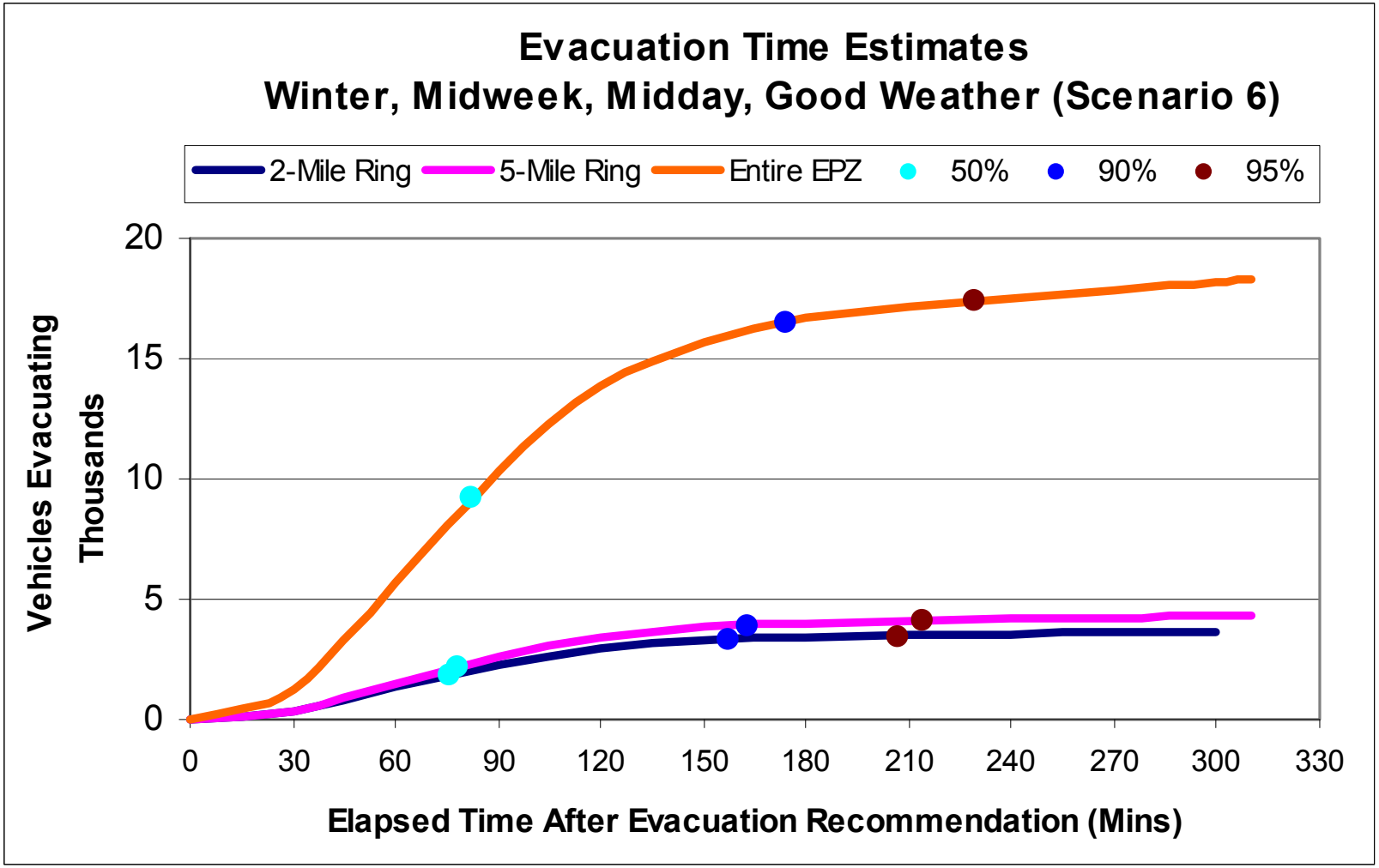


Figure J-6. Evacuation Time Estimates – Scenario 6 for Region R03 (Entire EPZ)

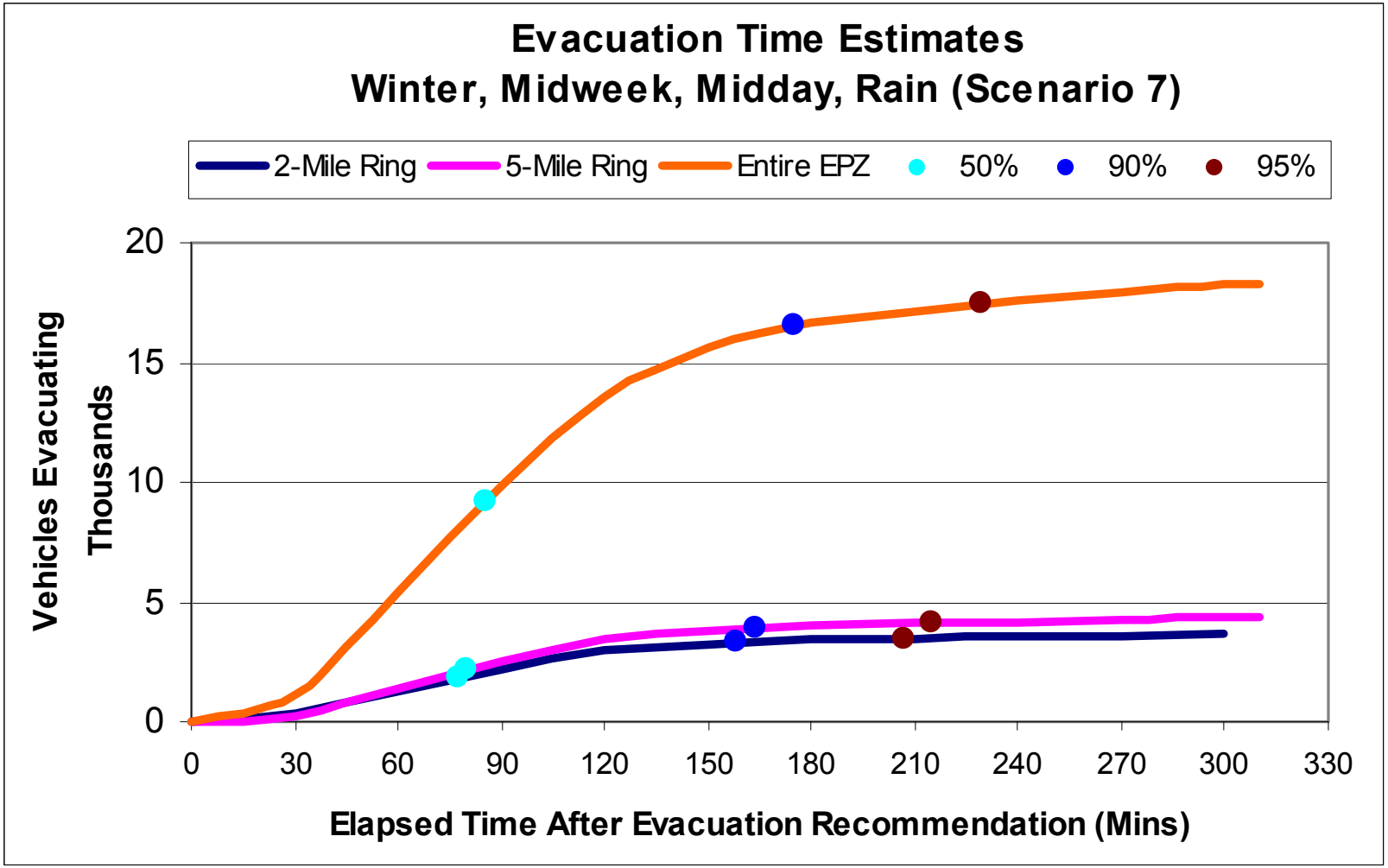


Figure J-7. Evacuation Time Estimates – Scenario 7 for Region R03 (Entire EPZ)

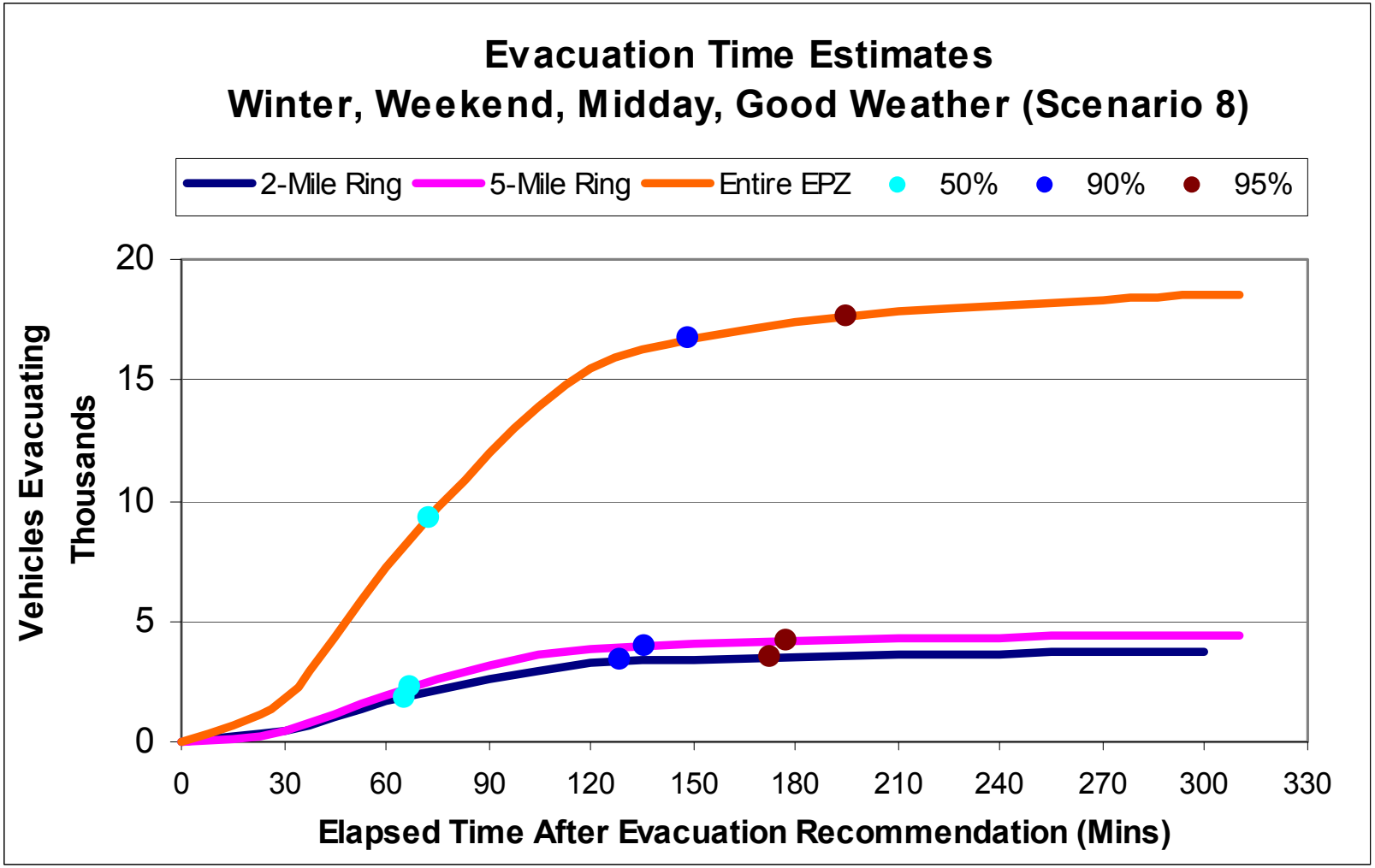


Figure J-8. Evacuation Time Estimates – Scenario 8 for Region R03 (Entire EPZ)

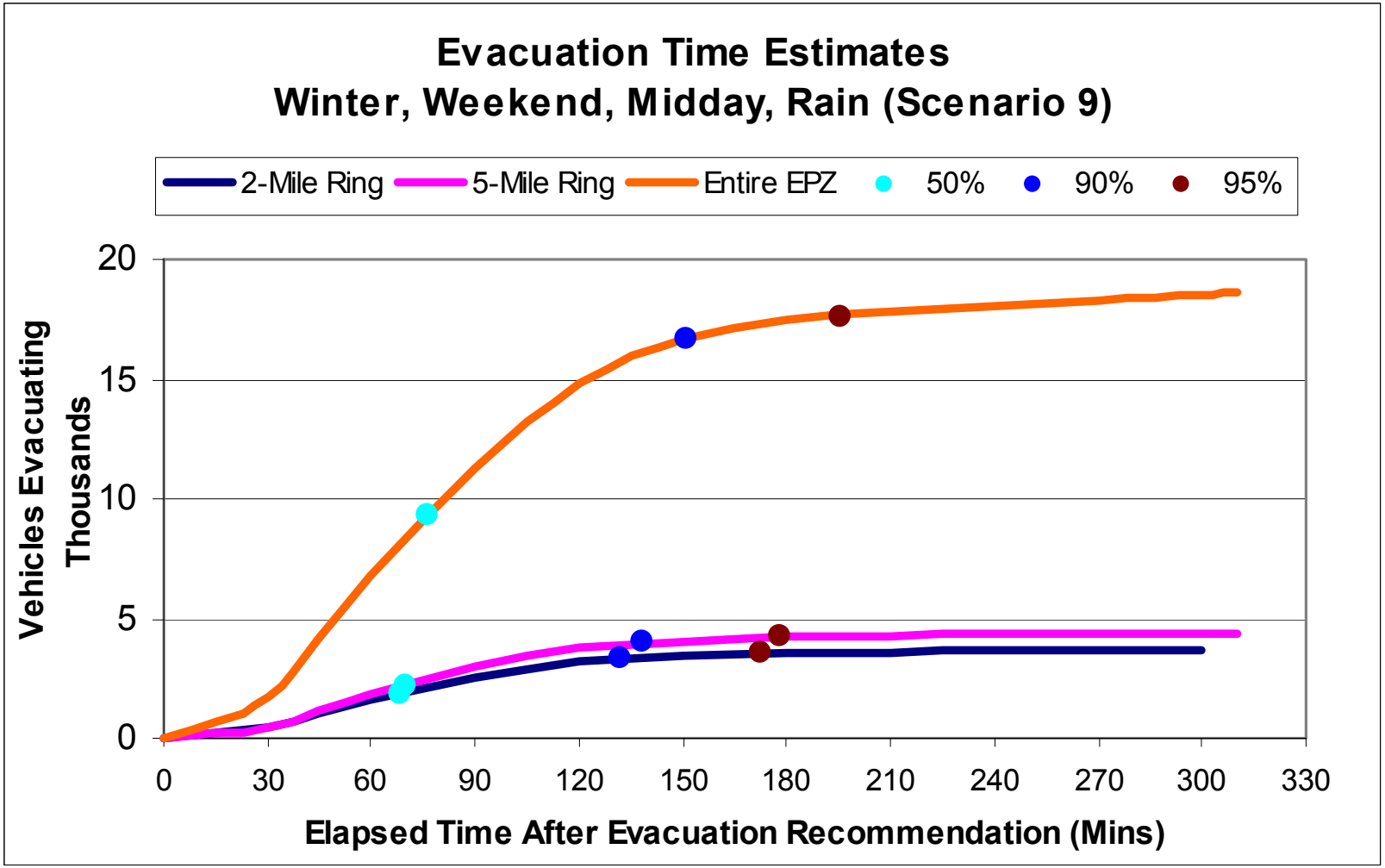


Figure J-9. Evacuation Time Estimates – Scenario 9 for Region R03 (Entire EPZ)

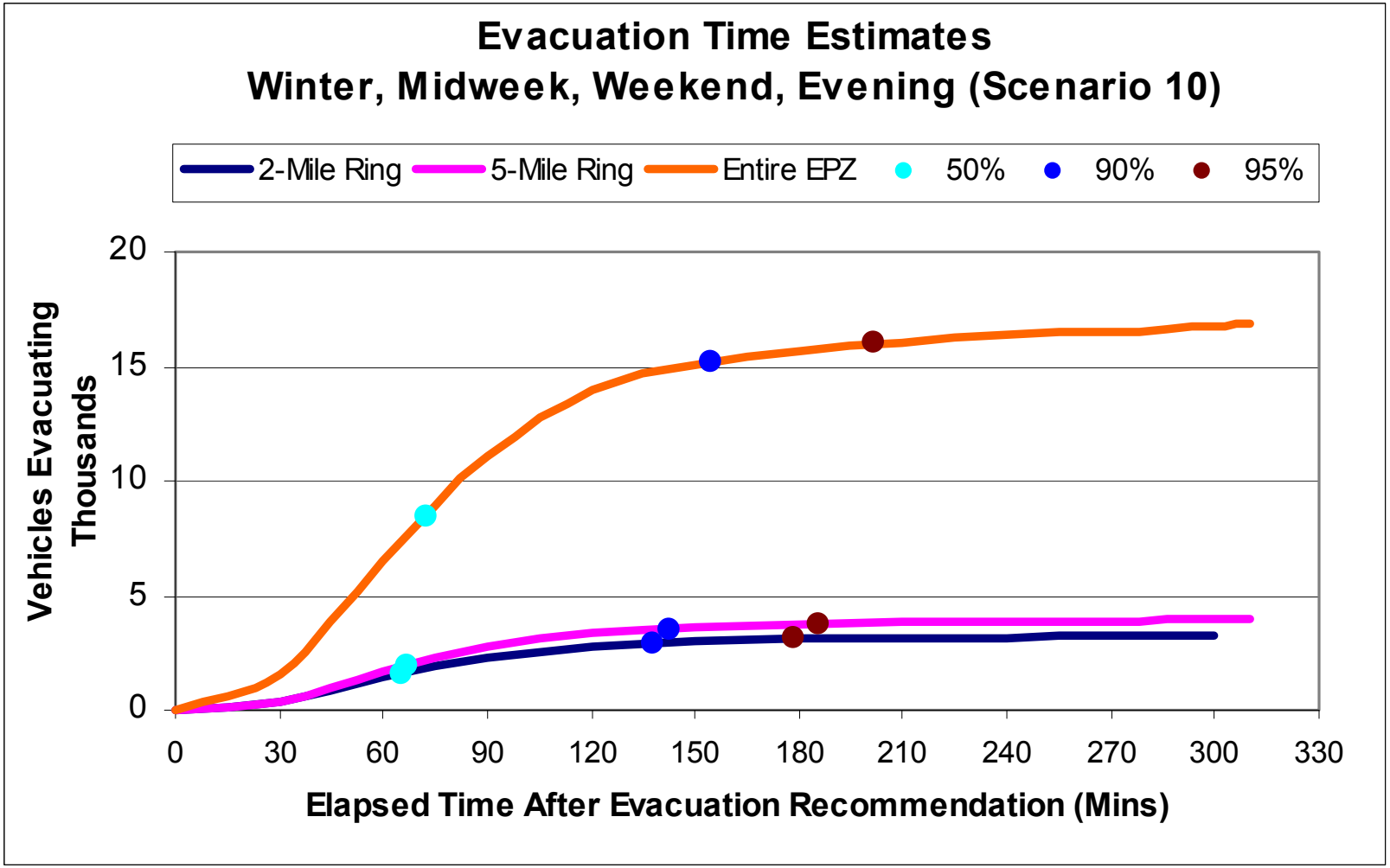


Figure J-10. Evacuation Time Estimates – Scenario 10 for Region R03 (Entire EPZ)

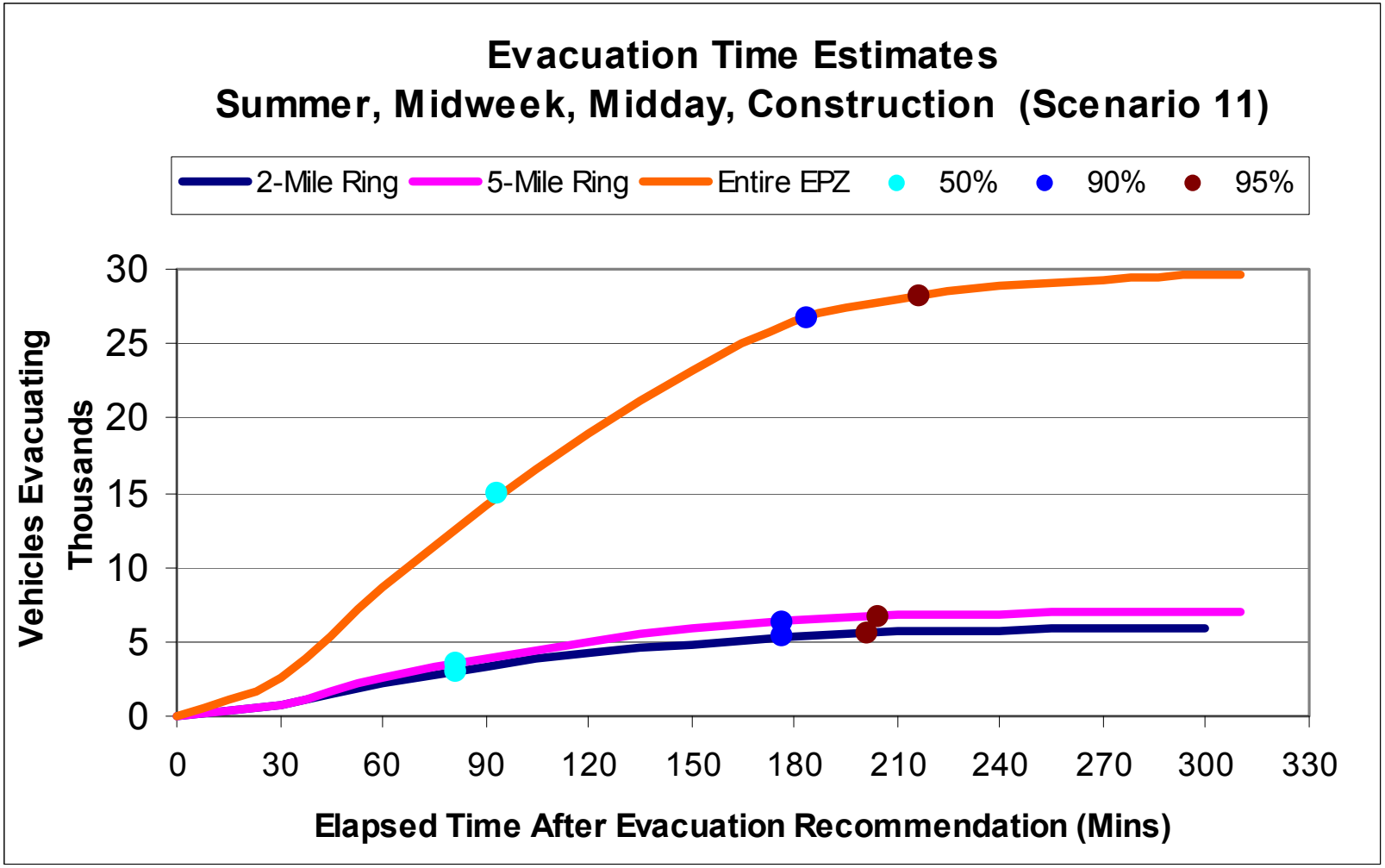


Figure J-11. Evacuation Time Estimates – Scenario 11 for Region R03 (Entire EPZ)

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	56	78	1	1714	40
1	276	54	1	1714	40
2	27	61	1	1895	60
2	266	76	1	1714	40
3	4	223	2	1895	50
3	314	58	2	1895	60
4	3	223	2	1895	60
4	5	59	2	1895	50
5	4	59	2	1895	50
5	6	67	2	1895	50
5	36	47	1	1714	50
6	5	67	2	1895	50
6	7	68	2	1895	50
7	6	68	2	1895	50
7	8	57	3	1895	50
8	7	57	3	1895	50
8	9	46	3	1895	50
9	8	46	3	1895	50
9	47	88	2	1714	40
9	89	20	2	1714	40
10	11	39	2	1895	50
10	89	25	2	1714	40
11	10	39	2	1714	40
11	12	54	2	1895	40
12	11	54	2	1895	50
12	13	25	3	1714	50
13	12	25	3	1714	40
13	58	185	2	1714	50
14	15	79	2	1714	40
14	58	180	2	1714	50
15	14	79	2	1714	50
15	16	25	2	1714	40
15	95	82	1	1714	40
16	15	25	2	1714	40
16	17	281	2	1895	50
17	16	281	2	1714	40
17	63	42	1	1714	50
18	19	71	2	1895	50

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
18	63	47	1	1714	50
19	18	71	2	1895	50
19	20	60	2	1895	50
19	331	139	1	1714	50
20	19	60	2	1895	50
20	259	95	2	1895	50
21	22	60	2	1895	50
21	259	98	2	1895	50
22	21	60	2	1895	50
22	23	169	2	1895	60
23	22	169	2	1895	50
23	24	28	2	1895	60
24	23	28	2	1895	60
24	25	33	2	1895	60
25	24	33	2	1895	60
25	26	367	3	1895	60
26	2	75	1	1895	60
26	25	367	2	1895	60
26	27	118	2	1714	60
27	26	118	2	1895	60
27	28	240	2	1895	60
28	27	240	2	1895	60
28	29	141	2	1895	60
29	28	141	2	1895	60
29	30	50	2	1895	60
30	29	50	2	1895	60
30	31	140	2	1895	60
31	30	140	2	1895	60
31	32	199	2	1895	60
32	31	199	2	1895	60
32	33	190	2	1895	60
33	32	190	2	1895	60
33	34	158	2	1895	60
34	33	158	2	1895	60
35	4	138	1	1714	50
36	5	47	1	1714	40
36	48	130	1	1714	60
37	7	90	1	1895	40

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
38	8	29	1	1895	40
39	6	20	1	1714	40
40	10	17	2	1714	40
40	42	85	1	1714	40
41	40	67	1	1714	40
42	40	85	1	1714	40
42	47	52	1	1714	40
43	44	104	1	1714	40
43	45	106	2	1714	50
43	220	142	1	1714	50
44	48	94	1	1714	50
45	46	142	1	1714	50
45	235	92	2	1714	50
46	45	142	1	1714	40
46	49	68	1	1714	50
47	9	88	2	1895	50
47	43	145	2	1714	50
48	36	130	1	1714	50
48	46	83	1	1714	50
49	50	31	1	1714	50
50	51	102	1	1714	50
51	308	41	1	1714	50
52	37	52	1	1200	50
53	52	88	1	1200	50
54	53	115	1	1200	50
55	54	111	1	1200	50
56	61	72	1	1714	40
57	79	77	1	1714	40
58	13	185	2	1714	50
58	14	180	2	1714	50
59	96	25	1	1714	40
60	95	149	1	1714	40
60	99	143	1	1714	40
61	23	50	1	1714	40
62	102	135	1	1714	50
62	103	177	1	1714	50
63	17	42	1	1714	50
63	18	47	1	1714	50

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
64	62	41	1	1714	40
70	19	38	1	1714	40
71	208	51	1	1714	40
72	209	55	1	1714	40
73	156	59	1	1714	40
79	21	74	1	1714	40
88	1	18	1	1714	40
89	9	20	2	1714	40
89	10	25	2	1714	40
90	89	6	1	1714	40
91	12	16	1	1714	40
92	13	49	1	1714	40
93	13	30	1	1714	40
93	41	45	1	1714	40
94	16	136	1	1714	40
95	15	82	1	1714	40
95	60	149	1	1714	40
96	94	139	1	1714	40
96	97	60	1	1714	40
97	98	173	1	1714	40
98	99	126	1	1714	40
99	60	143	1	1714	40
99	100	119	1	1714	40
100	101	201	1	1714	50
100	242	190	1	1714	50
101	100	201	1	1714	40
101	102	68	1	1714	50
101	241	130	1	1714	50
102	62	135	1	1714	40
102	101	68	1	1714	50
103	41	109	1	1714	50
104	32	62	1	1714	50
105	104	129	1	1714	60
106	105	111	1	1714	60
107	271	92	1	1714	60
108	273	58	1	1714	60
109	142	154	1	1714	60
110	109	194	1	1714	60

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
111	110	382	1	1714	60
111	125	106	1	1714	60
111	268	77	1	1714	60
112	262	173	1	1714	60
112	263	144	1	1714	50
113	112	105	1	1714	50
114	2	483	1	1714	50
114	113	133	1	1714	60
115	114	210	1	1714	50
115	116	188	1	1714	50
116	117	150	1	1714	40
117	120	122	1	1714	60
118	260	165	1	1714	60
118	330	144	1	1714	60
119	329	140	1	1714	60
119	331	101	1	1714	50
120	121	226	1	1714	40
121	286	45	1	1714	40
122	141	162	1	1714	60
123	126	253	1	1895	60
123	139	213	1	1714	60
123	140	186	1	1895	60
124	122	321	1	1714	60
125	124	226	1	1714	60
126	123	253	1	1895	60
126	127	47	1	1895	60
126	138	171	1	1714	60
127	126	47	1	1895	60
127	128	187	1	1895	60
128	127	187	1	1895	60
128	129	105	1	1895	60
129	128	105	1	1895	60
129	130	328	1	1895	60
129	137	158	1	1714	60
130	129	328	1	1895	60
130	131	84	1	1895	60
131	130	84	1	1895	60
131	135	192	1	1895	60

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
132	248	157	1	1714	60
133	132	111	1	1714	60
133	134	110	1	1714	50
133	263	126	1	1714	50
134	133	110	1	1714	50
134	247	261	1	1714	60
135	131	192	1	1895	60
135	246	165	1	1714	60
135	249	88	1	1895	60
140	123	186	1	1895	60
143	144	54	2	1714	40
143	145	117	1	1714	40
143	282	40	2	1714	40
144	143	54	2	1714	40
144	151	102	1	1714	60
145	245	225	1	1714	60
146	147	118	1	1714	60
148	144	61	1	1714	40
149	148	109	1	1714	50
150	149	180	1	1714	50
151	144	102	1	1714	40
151	152	130	1	1714	60
151	177	77	1	1714	60
152	151	130	1	1714	60
152	153	124	1	1714	60
152	178	32	1	1714	40
153	152	124	1	1714	60
153	179	111	1	1714	40
153	189	52	1	1714	40
153	190	156	1	1714	60
154	73	56	1	1714	40
154	174	53	1	1714	50
155	152	91	1	1714	40
155	158	98	1	1714	50
156	157	111	1	1714	40
156	175	63	1	1714	50
157	158	87	1	1200	50
158	167	48	1	1714	50

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
159	157	58	1	1714	40
160	159	84	1	1714	40
160	161	51	1	1714	50
161	162	75	1	1714	50
161	198	100	1	1714	50
162	163	82	1	1714	50
163	164	65	1	1714	50
164	166	63	1	1714	50
164	195	91	1	1714	50
165	158	85	1	1714	50
165	164	85	1	1714	50
166	190	41	1	1714	50
167	153	32	1	1714	40
168	161	48	1	1714	50
169	168	74	1	1714	50
170	169	92	1	1714	50
170	171	110	1	1714	50
171	156	84	1	1714	50
172	156	62	1	1714	50
172	160	100	1	1714	50
173	166	82	1	1714	50
173	167	76	1	1714	50
174	155	63	1	1714	50
175	155	68	1	1714	50
176	154	72	1	1714	40
177	180	133	1	1714	60
178	177	105	1	1714	40
178	179	97	1	1714	40
179	180	38	1	1714	40
179	182	55	1	1714	40
180	181	107	1	1714	60
181	192	90	1	1714	60
182	183	58	1	1714	40
183	184	66	1	1714	40
184	181	64	1	1714	40
185	184	30	1	1714	40
186	185	64	1	1714	40
187	186	44	1	1714	40

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
187	188	60	1	1714	40
188	186	40	1	1714	40
188	190	43	1	1714	50
189	187	57	1	1714	40
190	153	156	1	1714	60
190	188	43	1	1714	40
190	191	108	1	1714	60
191	190	108	1	1714	60
191	194	152	1	1714	60
191	224	163	1	1895	60
192	193	96	1	1714	60
195	191	141	1	1714	60
195	196	123	1	1714	40
196	195	123	1	1714	50
196	205	55	1	1714	40
197	196	120	1	1714	50
198	197	103	1	1714	40
198	275	80	1	1714	40
199	198	161	1	1714	50
199	200	41	1	1714	40
200	201	75	1	1714	50
201	202	133	1	1714	40
201	223	57	1	1714	50
202	203	112	1	1714	50
202	216	88	1	1714	40
203	204	100	1	1714	50
204	206	30	2	1714	40
205	196	55	1	1714	50
205	204	42	2	1714	50
205	211	84	2	1714	50
206	71	42	1	1714	40
206	287	39	2	1714	40
207	72	44	1	1714	40
207	288	28	3	1714	40
208	209	57	1	1714	40
209	210	68	1	1714	50
210	212	80	2	1714	50
211	210	103	2	1714	50

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
212	213	126	1	1714	50
212	226	127	1	1714	50
213	212	126	1	1714	50
213	214	116	1	1714	50
214	213	116	1	1714	50
214	291	19	2	1714	60
215	290	14	3	1714	40
216	215	126	1	1714	40
217	216	104	1	1714	40
217	218	115	1	1714	40
218	219	99	1	1714	40
219	220	96	1	1714	50
220	243	149	1	1714	60
221	219	110	1	1714	40
222	221	78	1	1714	50
223	222	97	1	1714	50
224	191	163	1	1714	60
224	225	192	1	1895	60
225	224	192	1	1895	60
225	278	178	1	1895	60
226	227	126	1	1714	50
227	277	122	1	1714	50
229	230	68	1	1714	60
230	292	106	1	1714	40
231	233	86	2	1714	50
231	234	163	2	1895	60
232	231	52	2	1714	40
234	310	165	2	1714	60
235	244	148	2	1714	50
236	232	173	1	1714	50
237	125	224	1	1714	60
237	264	352	1	1714	60
238	124	329	1	1714	60
238	127	355	1	1714	40
239	122	212	1	1714	60
239	123	330	1	1714	60
240	170	101	1	1714	50
241	240	170	1	1714	50

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
242	150	151	1	1714	50
243	214	100	1	1714	50
244	232	99	2	1714	50
245	146	319	1	1714	60
246	136	230	1	1714	60
247	131	173	1	1714	60
248	130	173	1	1714	60
249	135	88	1	1895	60
249	250	45	1	1714	45
250	249	45	1	1714	45
250	251	49	1	1714	45
251	250	49	1	1714	45
251	252	57	1	1714	45
252	251	57	1	1714	45
252	253	26	1	1714	45
253	252	26	1	1714	45
253	280	55	1	1714	40
254	251	120	1	1714	40
254	253	143	1	1714	40
255	251	68	1	1714	40
255	252	77	1	1714	40
255	256	106	1	1714	40
256	249	62	1	1714	40
256	250	35	1	1714	40
257	250	114	1	1714	40
258	254	63	1	1714	40
258	257	67	1	1714	40
259	20	95	2	1895	50
259	21	98	2	1895	50
260	117	104	1	1714	60
261	14	183	1	1714	40
262	111	220	1	1714	60
263	112	144	1	1714	50
263	133	126	1	1714	50
264	128	193	1	1714	60
264	237	352	1	1714	60
265	109	227	1	1714	60
265	122	109	1	1714	60

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
266	2	76	1	1714	50
266	267	99	1	1714	60
266	269	464	1	1714	40
267	268	235	1	1714	60
268	111	77	1	1714	60
268	272	312	1	1714	40
269	270	284	1	1714	40
270	106	60	1	1714	60
270	107	85	1	1714	60
271	108	175	1	1714	60
272	273	195	1	1714	40
273	274	97	1	1714	60
274	109	95	1	1714	60
275	202	73	1	1714	40
276	57	56	1	1714	40
277	278	74	1	1714	50
278	225	178	1	1895	60
278	279	132	1	1895	60
279	278	132	1	1895	60
280	253	55	1	1714	40
280	281	44	2	1714	40
281	280	44	2	1714	40
281	282	52	2	1714	40
282	143	40	2	1714	40
282	281	52	2	1714	40
283	280	18	1	1714	40
284	281	15	1	1714	40
285	282	22	1	1714	40
286	143	21	1	1714	40
287	207	14	3	1714	40
288	215	15	3	1714	40
289	214	155	2	1714	50
290	289	22	2	1714	60
291	229	80	1	1714	60
292	231	15	2	1714	40
294	301	41	2	1714	40
294	318	13	2	1714	40
294	319	70	1	1714	60

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
295	294	60	1	1714	40
296	295	61	1	1500	30
297	296	120	1	1500	30
298	297	67	1	1500	30
299	300	136	1	1500	30
300	301	69	1	1714	40
301	294	41	2	1714	40
301	307	85	2	1714	50
302	303	91	2	1714	50
302	307	115	2	1714	50
303	302	91	2	1714	50
303	304	74	2	1714	50
304	303	74	2	1714	50
305	299	52	1	1500	30
306	305	98	1	1500	30
307	301	85	2	1714	40
307	302	115	2	1714	50
308	236	80	1	1714	50
308	315	74	1	1714	60
310	312	43	2	1895	60
311	310	63	1	1714	60
314	3	58	2	1895	60
314	318	67	2	1714	40
315	316	151	1	1714	60
316	317	125	1	1714	50
317	318	11	1	1714	40
318	294	13	2	1714	40
318	314	67	2	1714	40
319	320	75	1	1714	60
320	321	113	1	1714	60
321	322	96	1	1714	60
322	311	120	1	1714	60
323	35	103	1	1000	40
324	323	74	1	1000	40
325	324	134	1	1000	40
326	325	94	1	1000	40
327	328	29	1	1000	40
328	326	54	1	1000	40

Upstream Node Number	Downstream Node Number	Length (Miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
329	119	140	1	1714	50
329	330	154	1	1714	60
330	118	144	1	1714	60
330	329	154	1	1714	60
331	19	139	1	1714	50
331	119	101	1	1714	50

APPENDIX L

Protective Action Zone Boundaries

APPENDIX L: PROTECTIVE ACTION ZONE BOUNDARIES

Zone C1: Bound on the north by the Yankeetown town boundary and the Levy County boundary. Bound on the east by Lake Rousseau, a line from a point on the southwestern shore of Lake Rousseau, at approximately 82.61º West and 29.01ºNorth, to the northern end of Ira Martin Rd, a line between the northern end of Ira Martin Rd and the northern end of Cherry Hill Rd, a line between the northern end of Cherry Hill Rd and the intersection of Pomegranate Rd and Dunnellon Rd, Dunnellon Rd, the Crystal River Nuclear Plant's (CRNP) 5-mile boundary, USHY 19, the Crystal River town boundary, and State Park Rd. Bound on the south by the CRNP's 5-mile boundary. Bound on the west by the coastline.

Zone C3: Bound on the north by Lake Rousseau. Bound on the east by the CRNP's 10-mile boundary. Bound on the south by the Levy Nuclear Plant's (LNP) 10-mile boundary. Bound on the west by USHY 19, the CRNP's 5-mile boundary, Dunnellon Rd, a line between the intersection of Dunnellon Rd and Pomegranate Rd and the northern end of Cherry Hill Rd, a line between the northern end of Cherry Hill Rd and the northern end of Ira Martin Rd, and a line from the northern end of Ira Martin Rd to a point on the southwestern shore of Lake Rousseau, at approximately 82.61º West and 29.01ºNorth.

Zone C4: Bound on the north by Lake Rousseau. Bound on the east by USHY 41, the Citrus Springs town boundary, and Elkcam Rd. Bound on the south by the Pine Ridge town boundary. Bound on the west by the CRNP's 10-mile boundary.

Zone L5: Bound on the north by the CRNP's 10-mile boundary. Bound on the east by Lake Rousseau. Bound on the south by the Withlacoochee River/Levy County boundary, and the Yankeetown town boundary. Bound on the west by a line between the southwestern-most point of the Yankeetown boundary and the CRNP's 10 mile boundary.

Zone L6: Bound on the north by the LNP's 5-mile boundary, STHY 337, and 120th St. Bound on the east by Halfmoon Rd and the Levy County boundary. Bound on the south by Lake Rousseau. Bound on the west by the CRNP's 10-mile boundary and the LNP's 5 mile boundary.

Zone L7: Bound on the north by USHY 19. Bound on the east by STHY 121 and the Levy County boundary. Bound on the south by the CRNP's 10-mile boundary. Bound on the west by the LNP's 10-mile boundary.

Zone L8: Bound on the north by the LNP's 10-mile boundary. Bound on the east by Ridgewood Rd, 95th St, a line between the west end of 95th St and STHY 337, and STHY 337. Bound on the south by the LNP's 5-mile boundary. Bound on the west by USHY 19.

Zone M9: Bound on the north by a line between STHY 337 and the west end of 95th St, 95th St, Ridgewood Rd, County Rd 545, Buena Vista Rd, Falcon Ave, Terrapin Dr, Amberjack Ave, Timberlake Rd, Indian Hill Dr, Viburnum Rd, Pine Bluffs Rd, a line from the western end of Pine Bluffs Rd to Sea Cliff Ave, 210th Ave, and 36th St. Bound on the east by USHY 41. Bound on the south by Lake Rousseau. Bound on the west by the Marion County boundary, Halfmoon Dr, 120th St, and STHY 337.