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 1, Region 3; a summer, midweek (workday), midday (morning also), and 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 (Mobilization) Period	Evacuation Region		
	2-Mile Region (R01)	5-Mile Region (R02)	Entire EPZ (R03)
3 Hours	5:50	5:50	6:00
4 Hours (Base)	5:50	5:50	6:10
5 Hours	5:50	5:50	6:10

As discussed in Section 7, there is prolonged congestion within the EPZ which causes the ETE to extend beyond the mobilization time. The bottlenecks within the EPZ dictate the ETE since they meter the flow of traffic out of the area being evacuated. The change in trip generation rates has little effect on the ETE because of the congestion within the EPZ.

A second sensitivity study was conducted to determine the effect 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.

The case considered was Scenario 1, Region 3; a summer, midweek (workday), midday (morning also), and good weather evacuation for the entire EPZ with the percent of shadow evacuation ranging from 15% to 60%. Table I-2 presents the evacuation time estimates for each of these cases.

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

Shadow Data			Evacuation Region		
Percent Shadow Evacuation	**Number of Evacuating Shadow Residents**	**Number of Evacuating Shadow Resident Vehicles***	**2-Mile Region (R01)**	**5-Mile Region (R02)**	**Entire EPZ (R03)**
15%	9,412	4,928	5:50	5:50	6:10
30% (Base)	18,827	9,857	5:50	5:50	6:10
60%	37,654	19,714	5:50	5:50	6:40

* Telephone Survey data suggested average of 2.8 people/household with 1.46 evacuating vehicle/household, i.e. 1.91 people/evacuating household. Refer to Appendix F for details.

The ETE for the 2-Mile and 5-Mile regions remain unchanged as the percentage of people who decide to relocate from areas within the Shadow Region changes, showing the insensitivity of the ETE to shadow evacuation for those regions. The shadow area extends from 10 to 15 miles from CCNPP, thus it is reasonable that the 2-Mile and 5-Mile regions are not impacted.

The ETE for the entire EPZ, however, increases as the percentage of people who decide to relocate from the Shadow Region increases from 30% to 60%. The additional shadow vehicles between 10 and 15 miles from CCNPP interact with those vehicles evacuating from within the EPZ and further intensify congestion at existing bottlenecks and create additional bottlenecks, thereby increasing the ETE.

There are a total of 60,188 people (31,512 vehicles) within the Shadow Region.

A third sensitivity study related to the evacuation of Zone 3 is considered. Zone 3 in Calvert County has the highest population among all zones within the EPZ. It has a resident population of 21,079 (11,001 vehicles) which is 38.2% of the population of the entire EPZ.

The existing emergency plans for CCNPP suggest that those people in Zone 3 should evacuate southbound along Maryland Route 2/4. Analysis using PC-DYNEV of this routing pattern indicated prolonged congestion on Route 2/4 southbound, while there was far less congestion northbound. A sensitivity study was performed to analyze the impact of re-routing some of the evacuees from Zone 3 northbound on Route 2/4. Table I-3 clearly indicates that the ETE is significantly reduced by allowing Zone 3 evacuees to travel northbound on Route 2/4.

The ETE presented in Chapter 7 and Appendix J assume the routing of some residents within Zone 3 in the northbound direction along Route 2/4 towards CCNPP. Although vehicles are moved closer to the plant, the significant reduction in ETE minimizes the overall risk of exposure within the EPZ.

The case considered was Scenario 1, Region 3; a summer, midweek (work day), midday (morning also), good weather evacuation. As Table I-3 indicates, the ETE is significantly reduced for all regions when balancing the routing of Zone 3 vehicles northbound and southbound on Route 2/4.

Table I-3. Evacuation Time Estimates for Modified Routing for Zone 3

Trip Generation Period	Evacuation Region		
	2-Mile Region (R01)	5-Mile Region (R02)	Entire EPZ (R03)
Zone 3 allowed to use State Route 2/4 in both directions (Base)	5:50	5:50	6:10
Zone 3 allowed to use State Route 2/4 only in Southbound direction	7:50	10:10	10:50

A fourth sensitivity study was conducted to determine the effects of the percentage of EPZ residents and shadow residents attending the air show at the Patuxent Naval Airbase. Currently the base case considers that 75% of the attendees are residents within the EPZ. This study considers a change from 75% to 50%. This implies a higher number of transient vehicles (people from outside the EPZ) attending the event and results in increased vehicle demand. Table I-4 presents the evacuation time estimates for each of these cases.

Table I-4. Evacuation Time Estimates for Percentage of Shadow and Resident Population Attendance at the Air Show at the Naval Air Base

	Evacuating Vehicles Not Attending Air Show		Evacuation Region		
Percentage of EPZ Residents Attending Event	**Number of EPZ Resident vehicles**	**Number of Shadow Resident Vehicles**	**2-Mile Region (R01)**	**5-Mile Region (R02)**	**Entire EPZ (R03)**
75% (Base)	7,248	2,574	3:50	4:20	13:00
50%	14,443	4,934	5:50	8:00	13:40

The additional evacuating population at the Air Show increases all ETE. The traffic evacuating southbound on Route 2/4 from Zone 3 interacts with the traffic evacuating from the base northbound on MD 235, causing the increase in ETE. It is interesting to note that the ETE for Zone 1 is also affected. This is attributed to the fact those vehicles evacuating northbound on Route 2/4 from Zone 3 are further delayed by the increased congestion.

This sensitivity study indicates that as the percentage of attendees who live outside the EPZ who come to the show increases, the higher impact it has on the ETE.

A final sensitivity study using the Thomas Johnson Bridge as "contra-flow" was considered. We assume the following for this contra- flow scenario:

- Midweek (weekday), midday (day), and good weather evacuation
- An advisory to evacuate is issued to Zones 1, 2, and 3.

Contra-flow implies that Thomas Johnson Bridge only allows traffic southbound, thereby doubling the capacity. Additionally, it is assumed that at the intersection of MD 2/4 and MD 235, all traffic coming off the bridge is directed northbound on MD 235 and northbound traffic on MD 235 is directed onto MD 2/4 in the southbound direction. This ensures that traffic from this intersection does not back up onto the bridge.

This "contra-flow" scenario is only considered for conditions where Zone 3 is evacuated and Zone 6 and 7 are not evacuated. Table I-5 presents the ETE results for a Summer and a Winter Scenario.

Table I-5. Evacuation Time Estimates for Contra-Flow Scenario for Region 6 (Zones 1, 2 and 3)

Season	Contra Flow	Region 6 (Zones 1, 2, 3, and 8) ETE
Summer	No	5:50
Summer	Yes	5:50
Winter	No	6:00
Winter	Yes	6:00

The results of this sensitivity study indicate that the additional capacity at the bridge is not utilized since the intersection of MD 2/4 and Rousby Hall Road (MD 760 – one of the major evacuation routes for Zone 3), is metering the flow out of the zone and onto the Bridge.

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 14 Regions and all 12 Scenarios (Tables J-1A through J-1D).

Plots of Evacuating Vehicles vs. Elapsed Time leaving the 2-mile and 5-mile circular areas around CCNPP and the entire EPZ for Region R03, for all 12 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 14 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
        - 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
  - New Plant Construction
  - Air Show at Naval Air Base

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) provides guidance as an upper bound on ETE.
- 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) provides guidance as an upper bound on ETE.
- 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 Calvert Cliffs Nuclear Power Plant. The applicable distances and their associated candidate Regions are given below:
     - 2 Miles (Region R01)
     - 5 Miles (Regions R02, R04 and R05)
     - to EPZ Boundary (Regions R03 and R06 through R14)
   - 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 the CCNPP. 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 *towards* 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 parameters as: *Season*: summer; *Day of Week*: weekend; *Time of Day*: evening (non-work hours); and *Weather*: Rain. Entering Table J-1C, it is seen that there is no match for these descriptors. However, based on the discussions above (Section J-1, item 1), Scenario 4 would provides guidance as an upper bound on ETE.

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 R06 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 R09. This data cell is in column (4) and in the row for Region R06; it contains the ETE value of **5:20**.

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

Season		Summer		Summer		Summer	Winter		Winter		Winter	Summer	Summer	Season
Day of Week		Midweek		Weekend		All	Midweek		Weekend		All	Midweek	Weekend	Day of Week
Scenario:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Scenario
Time of Day		Midday		Midday		Evening	Midday		Midday		Evening	Midday	Midday	Time of Day
Zone	Region Wind Direction Towards	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather	New Plant Construction	Air Show at Base	Region Wind Direction Towards
Entire 2-Mile Region, 5-Mile Region, and EPZ														
1	R01 2-mile ring	1:30	1:35	1:20	1:25	1:15	1:30	1:35	1:15	1:25	1:15	1:50	0:60	R01 2-mile ring
1,2,3	R02 5-mile ring	2:25	2:35	2:20	2:35	2:15	2:25	2:35	2:15	2:30	2:10	2:45	1:05	R02 5-mile ring
1,2,3,4,5,6,7,8	R03 Entire EPZ	2:15	2:35	2:15	2:25	2:05	2:15	2:35	2:05	2:25	2:05	2:35	4:50	R03 Entire EPZ
2-Mile Ring and Downwind to 5 Miles														
1	N, NNE, NE, ENE, E	Refer Region 1												N, NNE, NE, ENE, E
1,3	R04 ESE, SE, SSE, S	2:10	2:25	2:05	2:20	2:00	2:10	2:25	2:05	2:15	2:00	2:35	1:10	R04 ESE, SE, SSE, S
1,2,3	SSW, SW, WSW	Refer Region 2												SSW, SW, WSW
1,2	R05 W, WNW, NW, NNW	1:45	1:60	1:40	1:50	1:35	1:45	1:60	1:40	1:50	1:35	2:10	0:60	R05 W, WNW, NW, NNW
5-Mile Ring and Downwind to EPZ Boundary														
1,2,3	NNE	Refer Region 2												NNE
1,2,3,8	R06 NE, ENE, E, ESE, SE	2:25	2:35	2:20	2:30	2:10	2:25	2:35	2:15	2:30	2:10	2:45	1:05	R06 NE, ENE, E, ESE, SE
1,2,3,7	R07 SSE, S	2:15	2:30	2:10	2:25	2:05	2:15	2:30	2:10	2:20	2:05	2:35	5:10	R07 SSE, S
1,2,3,6,7	R08 SSW, SW	2:15	2:35	2:15	2:25	2:05	2:15	2:35	2:10	2:25	2:05	2:35	5:05	R08 SSW, SW
1,2,3,4,6,7	R09 WSW	2:20	2:35	2:15	2:25	2:05	2:20	2:35	2:10	2:25	2:05	2:35	4:50	R09 WSW
1,2,3,4,6	R10 W	2:15	2:30	2:10	2:25	2:05	2:20	2:30	2:05	2:20	2:05	2:30	4:25	R10 W
1,2,3,4,5,6	R11 WNW	2:15	2:30	2:10	2:25	2:05	2:15	2:30	2:10	2:25	2:05	2:30	4:20	R11 WNW
1,2,3,4,5	R12 NW, NNW	2:25	2:35	2:20	2:35	2:15	2:25	2:40	2:15	2:30	2:10	2:45	1:10	R12 NW, NNW
1,2,3,5	R13 N	2:25	2:35	2:20	2:35	2:15	2:25	2:35	2:15	2:30	2:10	2:40	1:15	R13 N
1,8	R14	1:30	1:35	1:20	1:25	1:15	1:30	1:35	1:20	1:25	1:15	1:50	0:60	R14

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

Season		Summer		Summer		Summer	Winter		Winter		Winter	Summer	Summer	Season
Day of Week		Midweek		Weekend		All	Midweek		Weekend		All	Midweek	Weekend	Day of Week
Scenario:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Scenario
Time of Day		Midday		Midday		Evening	Midday		Midday		Evening	Midday	Midday	Time of Day
Zone	Region Wind Direction	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather	New Plant Construction	Air Show at Base	Region Wind Direction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
1	R01 2-mile ring	2:45	2:50	2:25	2:40	2:25	2:45	2:50	2:20	2:35	2:25	3:20	2:00	R01 2-mile ring
1,2,3	R02 5-mile ring	4:10	4:30	4:05	4:30	4:10	4:10	4:30	4:00	4:30	4:10	4:50	3:10	R02 5-mile ring
1,2,3,4,5,6,7,8	R03 Entire EPZ	4:20	4:45	4:20	4:45	4:00	4:20	4:45	4:10	4:35	4:00	5:00	11:20	R03 Entire EPZ
2-Mile Ring and Downwind to 5 Miles														
1	N, NNE, NE, ENE, E	Refer Region 1												N, NNE, NE, ENE, E
1,3	R04 ESE, SE, SSE, S	4:20	4:40	4:20	4:40	4:20	4:30	4:50	4:20	4:40	4:20	4:30	3:20	R04 ESE, SE, SSE, S
1,2,3	SSW, SW, WSW	Refer Region 2												SSW, SW, WSW
1,2	R05 W, WNW, NW, NNW	3:05	3:20	2:55	3:15	2:45	3:05	3:20	2:50	3:05	2:45	3:55	2:00	R05 W, WNW, NW, NNW
5-Mile Ring and Downwind to EPZ Boundary														
1,2,3	NNE	Refer Region 2												NNE
1,2,3,8	R06 NE, ENE, E, ESE, SE	4:05	4:30	4:05	4:30	4:00	4:10	4:30	4:00	4:30	4:10	4:50	3:10	R06 NE, ENE, E, ESE, SE
1,2,3,7	R07 SSE, S	4:15	4:40	4:15	4:40	4:00	4:15	4:40	4:10	4:30	4:00	4:50	11:20	R07 SSE, S
1,2,3,6,7	R08 SSW, SW	4:15	4:40	4:15	4:40	4:00	4:15	4:40	4:10	4:30	4:00	4:50	11:25	R08 SSW, SW
1,2,3,4,6,7	R09 WSW	4:20	4:45	4:20	4:45	4:05	4:20	4:45	4:15	4:35	4:05	4:55	11:20	R09 WSW
1,2,3,4,6	R10 W	4:20	4:45	4:20	4:45	4:20	4:20	4:50	4:20	4:40	4:20	4:55	11:10	R10 W
1,2,3,4,5,6	R11 WNW	4:20	4:45	4:20	4:45	4:15	4:20	4:45	4:20	4:40	4:15	5:00	11:10	R11 WNW
1,2,3,4,5	R12 NW, NNW	4:20	4:45	4:15	4:40	4:10	4:20	4:45	4:10	4:35	4:10	5:05	3:00	R12 NW, NNW
1,2,3,5	R13 N	4:15	4:40	4:10	4:40	4:10	4:20	4:40	4:10	4:35	4:10	4:55	3:10	R13 N
1,8	R14	2:45	2:50	2:25	2:40	2:25	2:45	2:50	2:20	2:35	2:25	3:25	2:00	R14

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

Season		Summer		Summer		Summer	Winter		Winter		Winter	Summer	Summer	Season
Day of Week		Midweek		Weekend		All	Midweek		Weekend		All	Midweek	Weekend	Day of Week
Scenario:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Scenario
Time of Day		Midday		Midday		Evening	Midday		Midday		Evening	Midday	Midday	Time of Day
Zone	Region Wind Direction Towards	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather	New Plant Construction	Air Show at Base	Region Wind Direction
Entire 2-Mile Region, 5-Mile Region, and EPZ														
1	R01 2-mile ring	3:00	3:10	2:40	2:50	2:40	3:00	3:10	2:40	2:50	2:40	3:50	2:10	R01 2-mile ring
1,2,3	R02 5-mile ring	4:50	5:20	4:50	5:20	4:50	5:00	5:30	4:50	5:20	4:50	5:10	3:40	R02 5-mile ring
1,2,3,4,5,6,7,8	R03 Entire EPZ	5:00	5:30	5:00	5:20	4:30	5:00	5:30	4:50	5:20	4:50	5:20	12:10	R03 Entire EPZ
2-Mile Ring and Downwind to 5 Miles														
1	N, NNE, NE, ENE, E	Refer Region 1												N, NNE, NE, ENE, E
1,3	R04 ESE, SE, SSE, S	4:50	5:20	4:50	5:20	4:50	5:00	5:30	4:50	5:20	4:50	5:10	3:50	R04 ESE, SE, SSE, S
1,2,3	SSW, SW, WSW	Refer Region 2												SSW, SW, WSW
1,2	R05 W, WNW, NW, NNW	3:20	3:35	3:05	3:25	3:00	3:20	3:30	3:00	3:20	3:00	4:05	2:10	R05 W, WNW, NW, NNW
5-Mile Ring and Downwind to EPZ Boundary														
1,2,3	NNE	Refer Region 2												NNE
1,2,3,8	R06 NE, ENE, E, ESE, SE	4:50	5:20	4:50	5:20	4:50	5:00	5:30	4:50	5:20	4:50	5:10	3:40	R06 NE, ENE, E, ESE, SE
1,2,3,7	R07 SSE, S	4:50	5:20	4:50	5:20	4:40	5:00	5:30	4:50	5:20	4:50	5:10	12:10	R07 SSE, S
1,2,3,6,7	R08 SSW, SW	4:50	5:20	4:50	5:20	4:40	5:00	5:30	4:50	5:20	4:50	5:10	12:10	R08 SSW, SW
1,2,3,4,6,7	R09 WSW	4:50	5:20	4:50	5:20	4:40	5:00	5:30	4:50	5:20	4:50	5:20	12:10	R09 WSW
1,2,3,4,6	R10 W	5:00	5:20	4:50	5:20	5:00	5:00	5:30	4:50	5:20	5:00	5:20	12:00	R10 W
1,2,3,4,5,6	R11 WNW	5:00	5:20	4:50	5:20	5:00	5:00	5:30	4:50	5:20	5:00	5:20	12:00	R11 WNW
1,2,3,4,5	R12 NW, NNW	4:50	5:20	4:50	5:20	4:40	5:00	5:30	4:50	5:20	4:50	5:20	3:40	R12 NW, NNW
1,2,3,5	R13 N	5:00	5:30	5:00	5:20	5:00	5:00	5:30	4:50	5:20	5:00	5:20	3:50	R13 N
1,8	R14	3:00	3:10	2:40	2:50	2:40	3:00	3:10	2:40	2:50	2:40	3:50	2:10	R14

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

Season		Summer		Summer		Summer	Winter		Winter		Winter	Summer	Summer	Season
Day of Week		Midweek		Weekend		All	Midweek		Weekend		All	Midweek	Weekend	Day of Week
Scenario:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Scenario
Time of Day		Midday		Midday		Evening	Midday		Midday		Evening	Midday	Midday	Time of Day
Zone	Region Wind Direction	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather	New Plant Construction	Air Show at Base	Region Wind Direction Towards
Entire 2-Mile Region, 5-Mile Region, and EPZ														
1	R01 2-mile ring	4:10	4:10	4:00	4:00	4:00	4:10	4:10	4:00	4:00	4:00	4:30	3:50	R01 2-mile ring
1,2,3	R02 5-mile ring	5:50	6:20	5:50	6:20	5:50	6:00	6:30	5:50	6:20	5:50	6:10	4:20	R02 5-mile ring
1,2,3,4,5,6,7,8	R03 Entire EPZ	6:10	6:40	6:10	6:40	6:00	6:10	6:50	6:00	6:30	6:00	6:30	13:00	R03 Entire EPZ
2-Mile Ring and Downwind to 5 Miles														
1	N, NNE, NE, ENE, E	Refer Region 1												N, NNE, NE, ENE, E
1,3	R04 ESE, SE, SSE, S	5:50	6:20	5:50	6:20	5:40	5:50	6:30	5:50	6:20	5:40	6:10	4:20	R04 ESE, SE, SSE, S
1,2,3	SSW, SW, WSW	Refer Region 2												SSW, SW, WSW
1,2	R05 W, WNW, NW, NNW	4:10	4:10	4:10	4:10	4:10	4:10	4:20	4:10	4:10	4:00	4:40	4:00	R05 W, WNW, NW, NNW
5-Mile Ring and Downwind to EPZ Boundary														
1,2,3	NNE	Refer Region 2												NNE
1,2,3,8	R06 NE, ENE, E, ESE, SE	5:50	6:20	5:50	6:20	5:50	6:00	6:30	5:50	6:20	5:50	6:10	4:20	R06 NE, ENE, E, ESE, SE
1,2,3,7	R07 SSE, S	6:00	6:30	6:00	6:30	5:50	6:00	6:40	6:00	6:30	5:50	6:20	13:00	R07 SSE, S
1,2,3,6,7	R08 SSW, SW	6:10	6:40	6:10	6:40	6:00	6:10	6:50	6:00	6:30	6:00	6:30	13:00	R08 SSW, SW
1,2,3,4,6,7	R09 WSW	6:10	6:40	6:10	6:40	6:00	6:10	6:50	6:00	6:30	6:00	6:30	13:00	R09 WSW
1,2,3,4,6	R10 W	6:00	6:40	6:00	6:30	6:00	6:10	6:40	6:00	6:30	6:00	6:20	12:50	R10 W
1,2,3,4,5,6	R11 WNW	6:00	6:40	6:00	6:30	6:00	6:10	6:40	6:00	6:30	6:00	6:20	12:50	R11 WNW
1,2,3,4,5	R12 NW, NNW	6:00	6:30	6:00	6:30	5:50	6:00	6:40	5:50	6:30	5:50	6:20	4:20	R12 NW, NNW
1,2,3,5	R13 N	6:00	6:30	5:50	6:20	5:50	6:00	6:40	5:50	6:20	5:50	6:20	4:30	R13 N
1,8	R14	4:10	4:10	4:00	4:00	4:00	4:10	4:10	4:00	4:00	4:00	4:30	4:00	R14

Table J-2. Description of Evacuation Regions									
Region	**Description**	**ZONE**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
R01	2-Mile Ring	X							
R02	5-Mile Ring	X	X	X					
R03	Full EPZ	X	X	X	X	X	X	X	X
Evacuate 2-Mile Ring and 5 Miles Downwind									
Region	**Wind Direction Towards:**	**ZONE**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	N, NNE, NE, ENE, E	**See Region 1**							
R04	ESE, SE, SSE, S	X		X					
	SSW, SW, WSW	**See Region 2**							
R05	W, WNW, NW, NNW	X	X						
Evacuate 5-Mile Ring and Downwind to EPZ Boundary									
Region	**Wind Direction Towards:**	**ZONE**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	NNE	**See Region 2**							
R06	NE, ENE, E, ESE, SE	X	X	X					X
R07	SSE, S	X	X	X				X	
R08	SSW, SW	X	X	X			X	X	
R09	WSW	X	X	X	X		X	X	
R10	W	X	X	X	X		X		
R11	WNW	X	X	X	X	X	X		
R12	NW, NNW	X	X	X	X	X			
R13	N	X	X	X		X			
R14	*	X							X

*This Region was added at Constellation Energy's request. It is an evacuation of the 2-Mile Ring and downwind (Towards Dorchester County) to the EPZ Boundary.

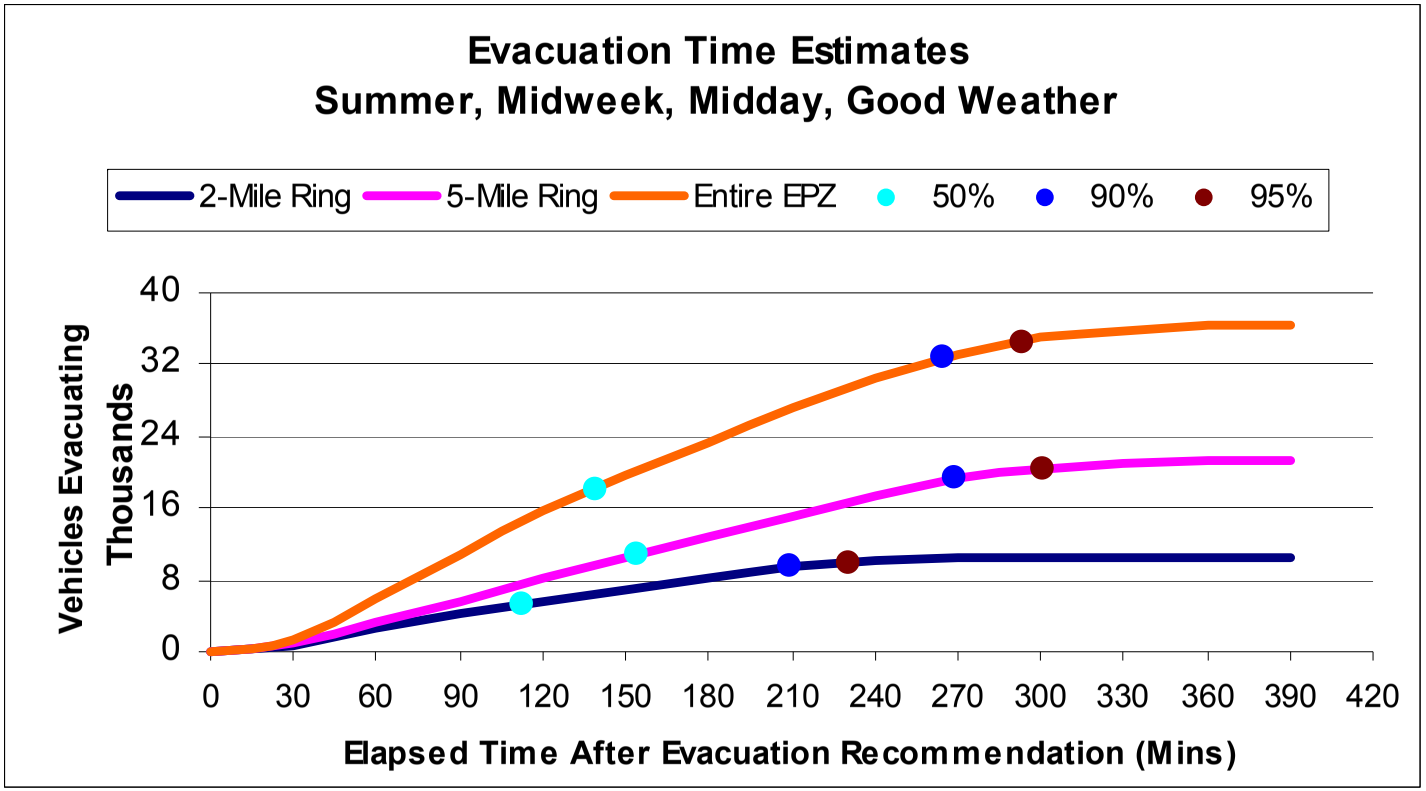

Figure J-1. Evacuation Time Estimates – Scenario 1 for Region R03 (Entire EPZ)

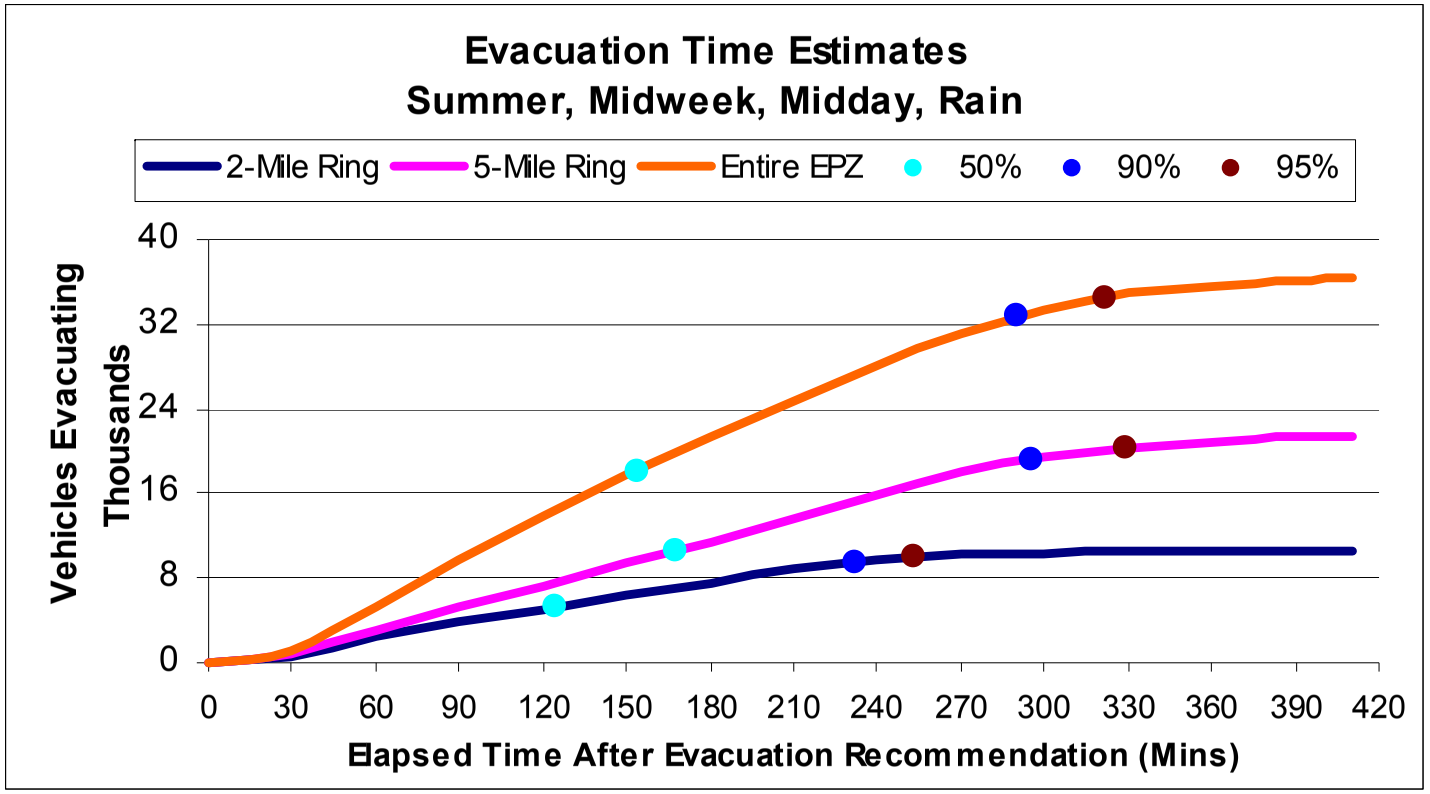

Figure J-2. Evacuation Time Estimates – Scenario 2 for Region R03 (Entire EPZ)

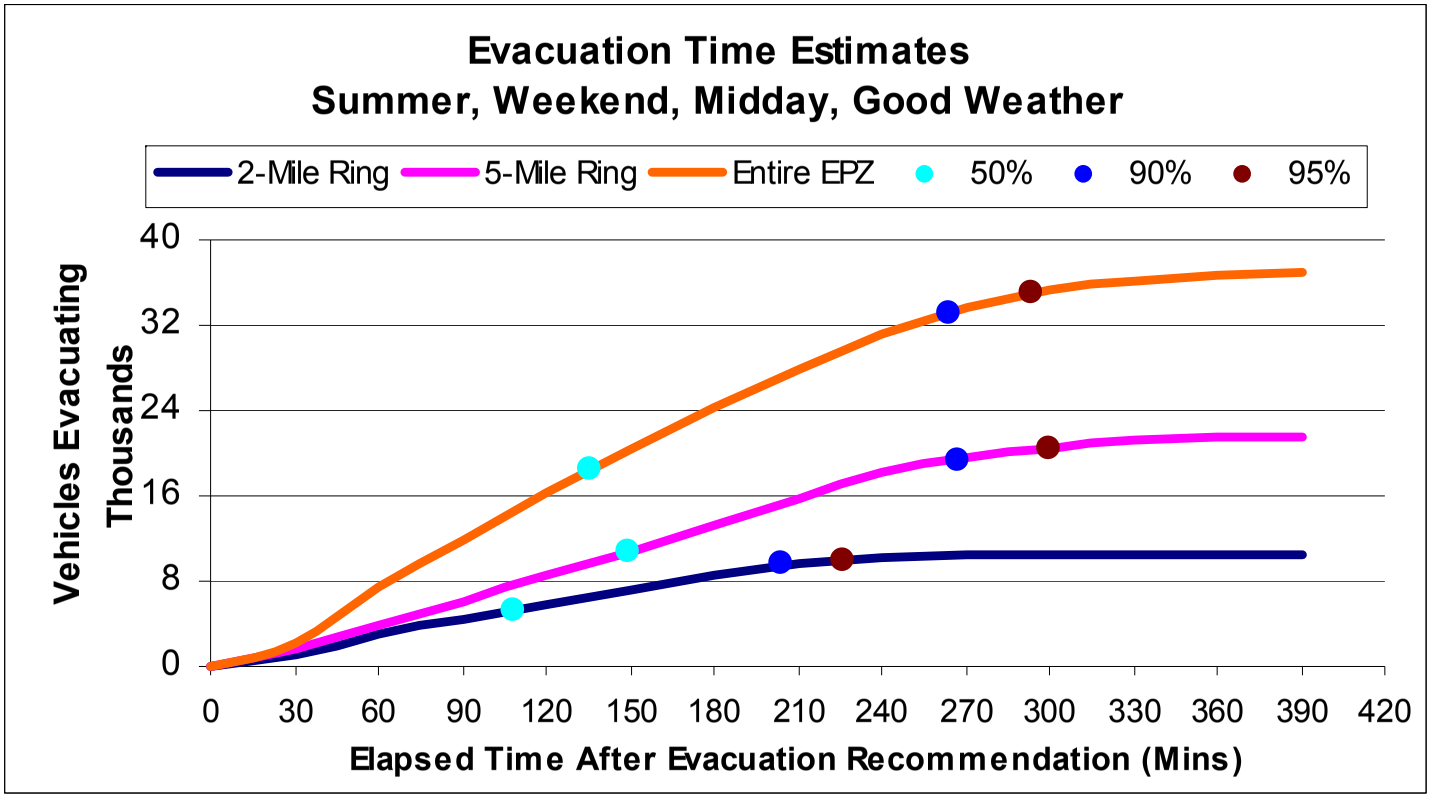

Figure J-3. Evacuation Time Estimates – Scenario 3 for Region R03 (Entire EPZ)

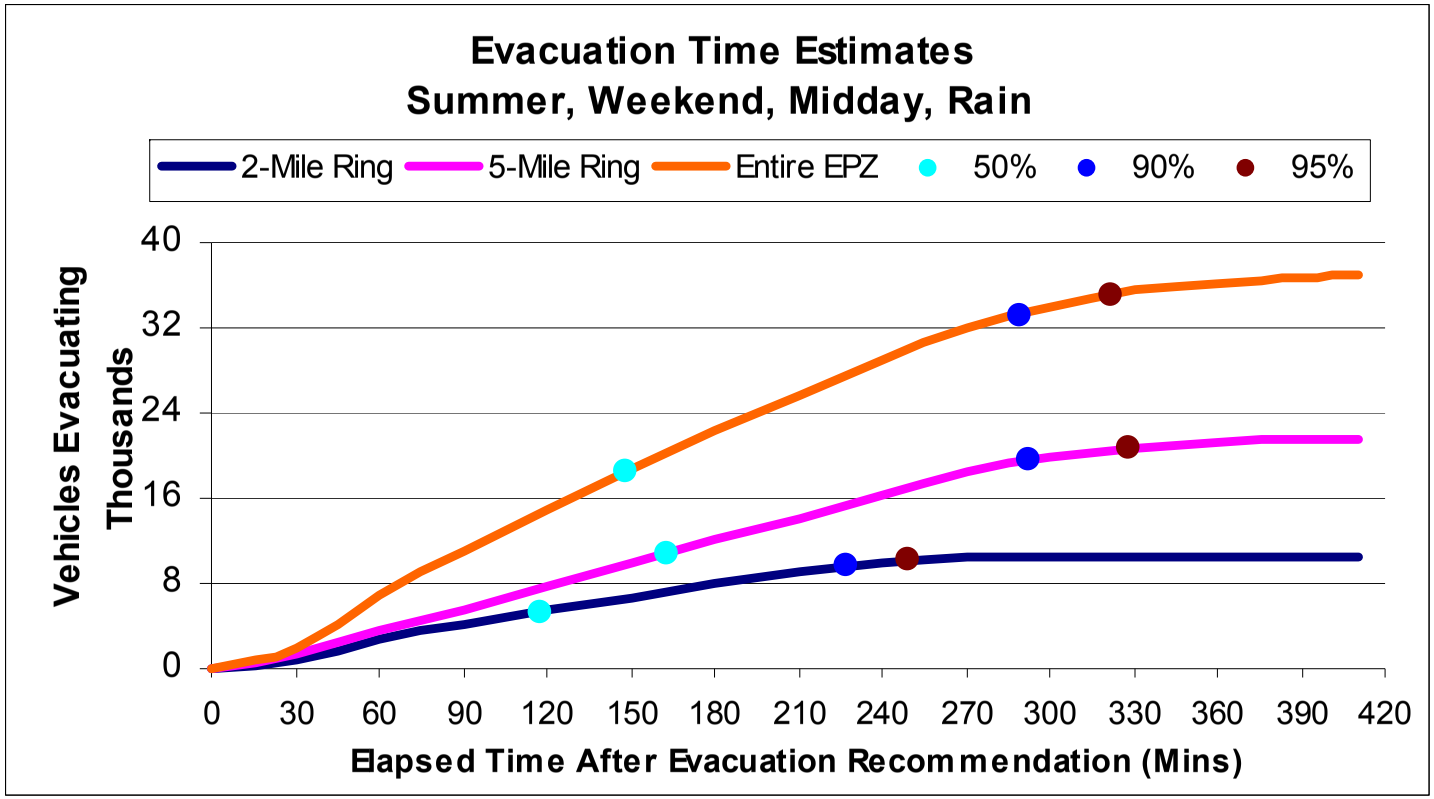

Figure J-4. Evacuation Time Estimates – Scenario 4 for Region R03 (Entire EPZ)

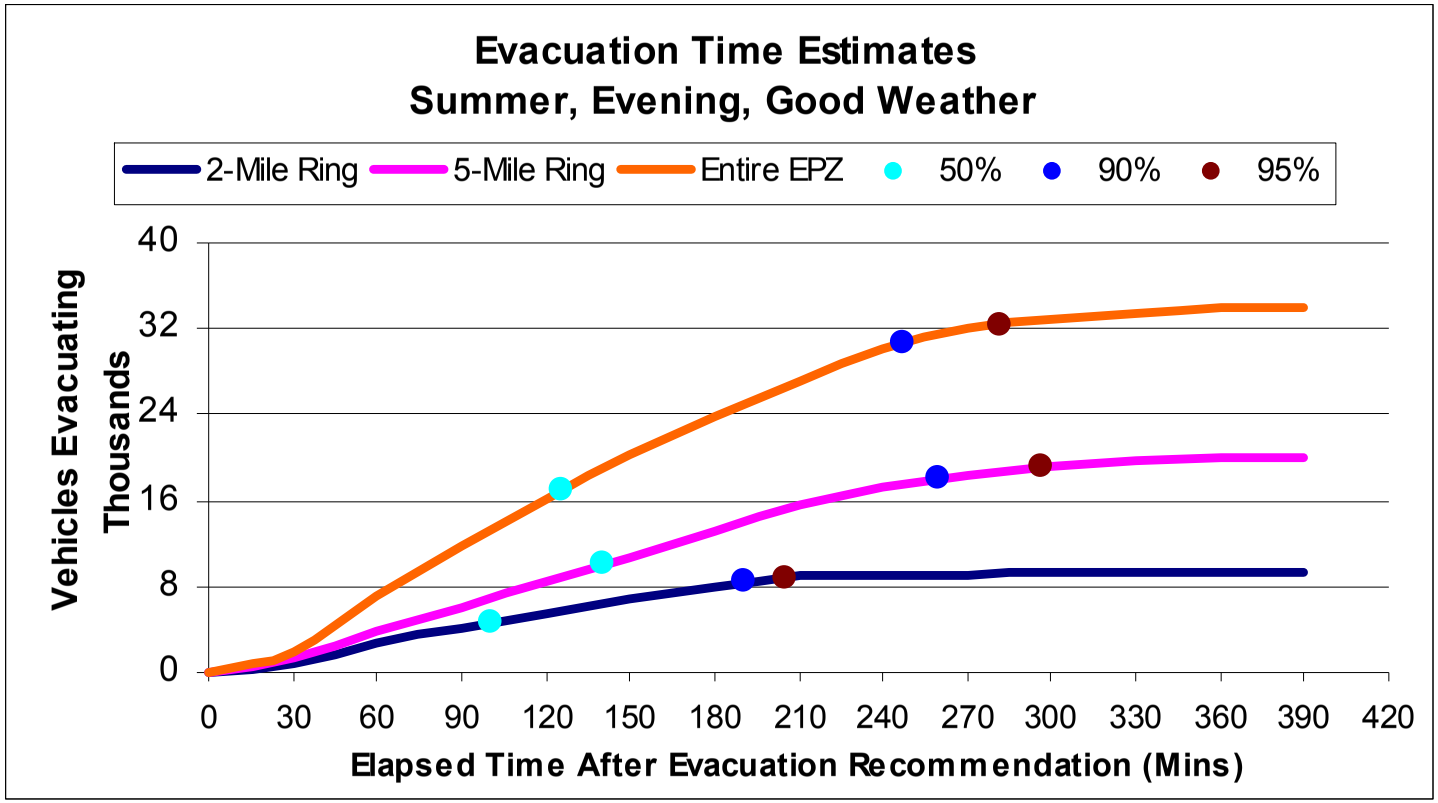

Figure J-5. Evacuation Time Estimates – Scenario 5 for Region R03 (Entire EPZ)

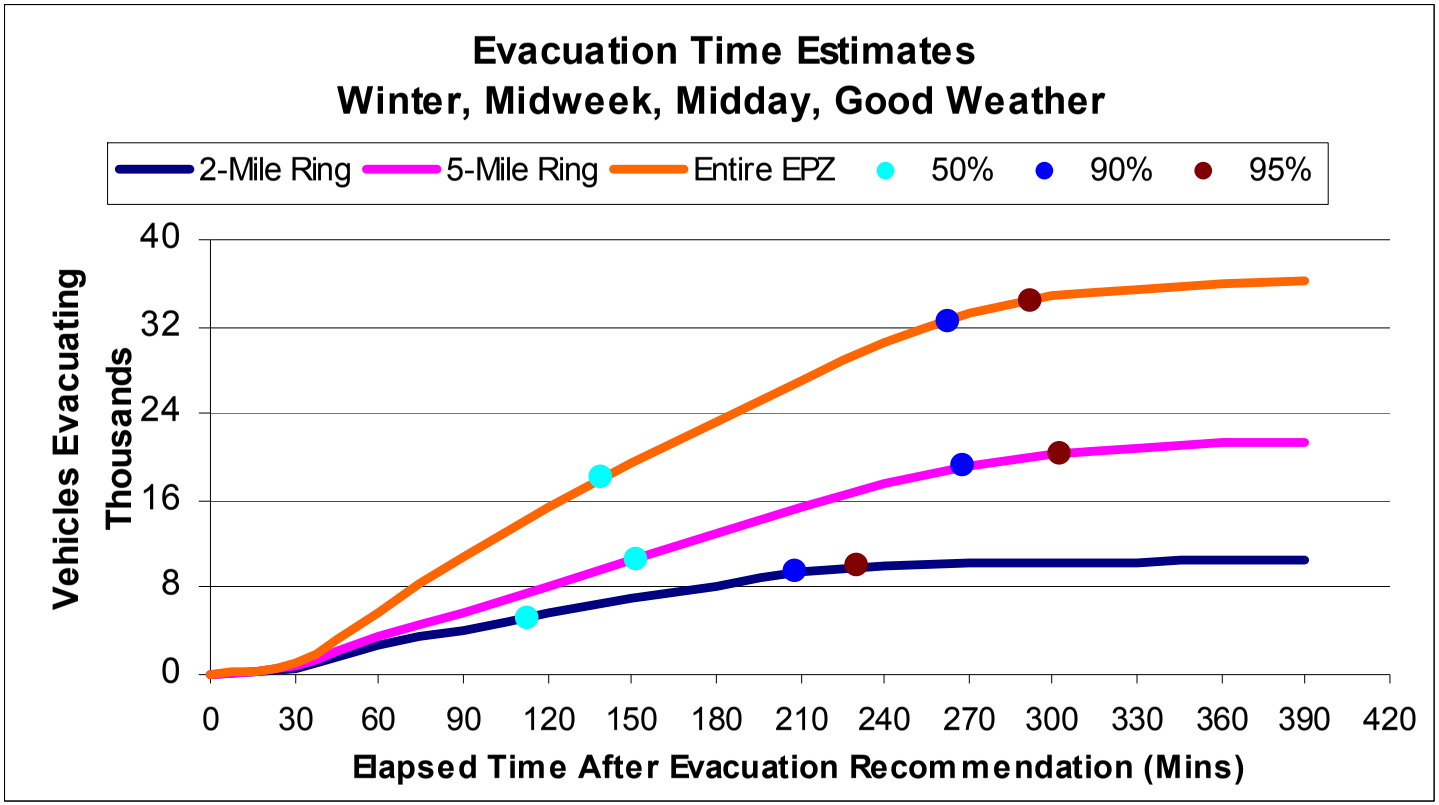

Figure J-6. Evacuation Time Estimates – Scenario 6 for Region R03 (Entire EPZ)

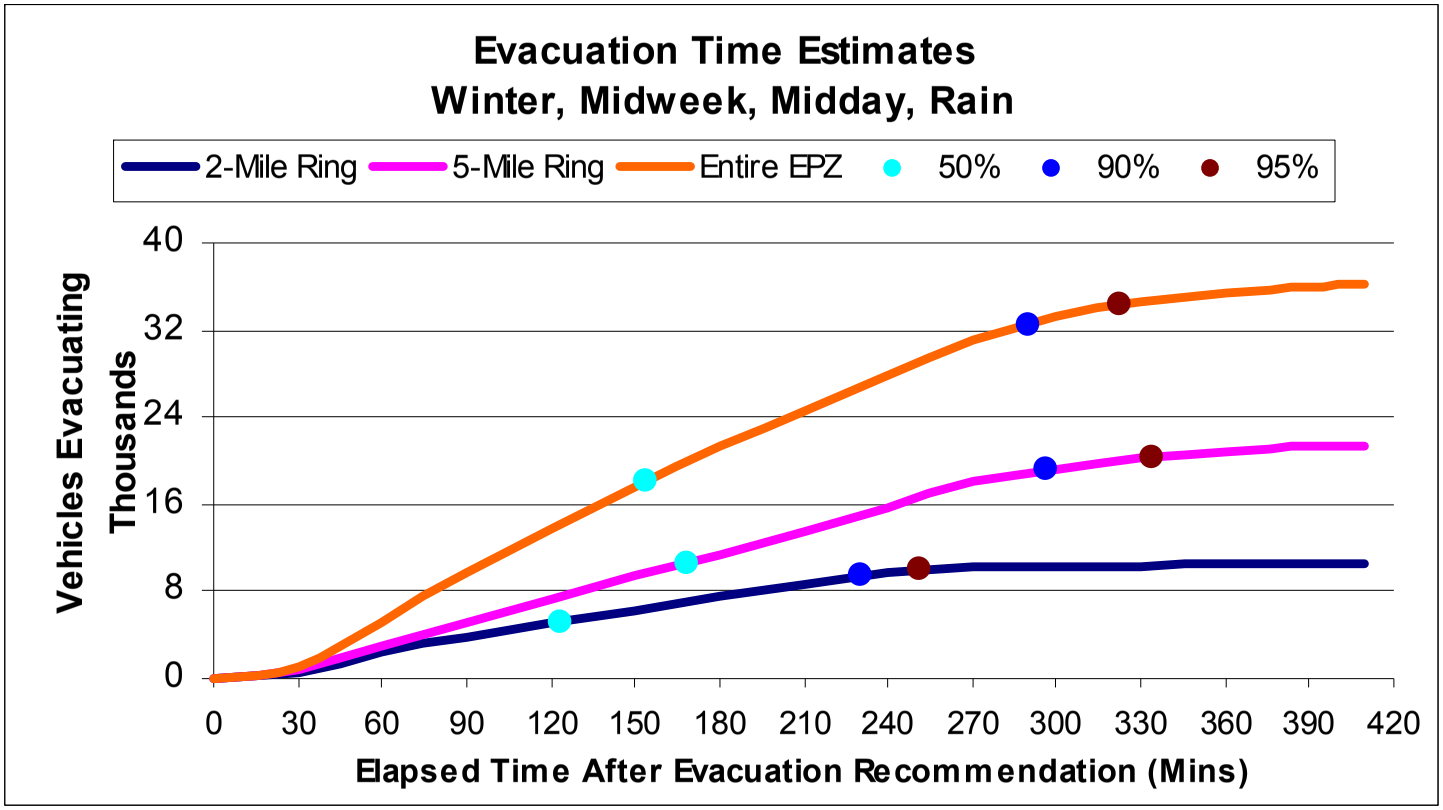

Figure J-7. Evacuation Time Estimates – Scenario 7 for Region R03 (Entire EPZ)

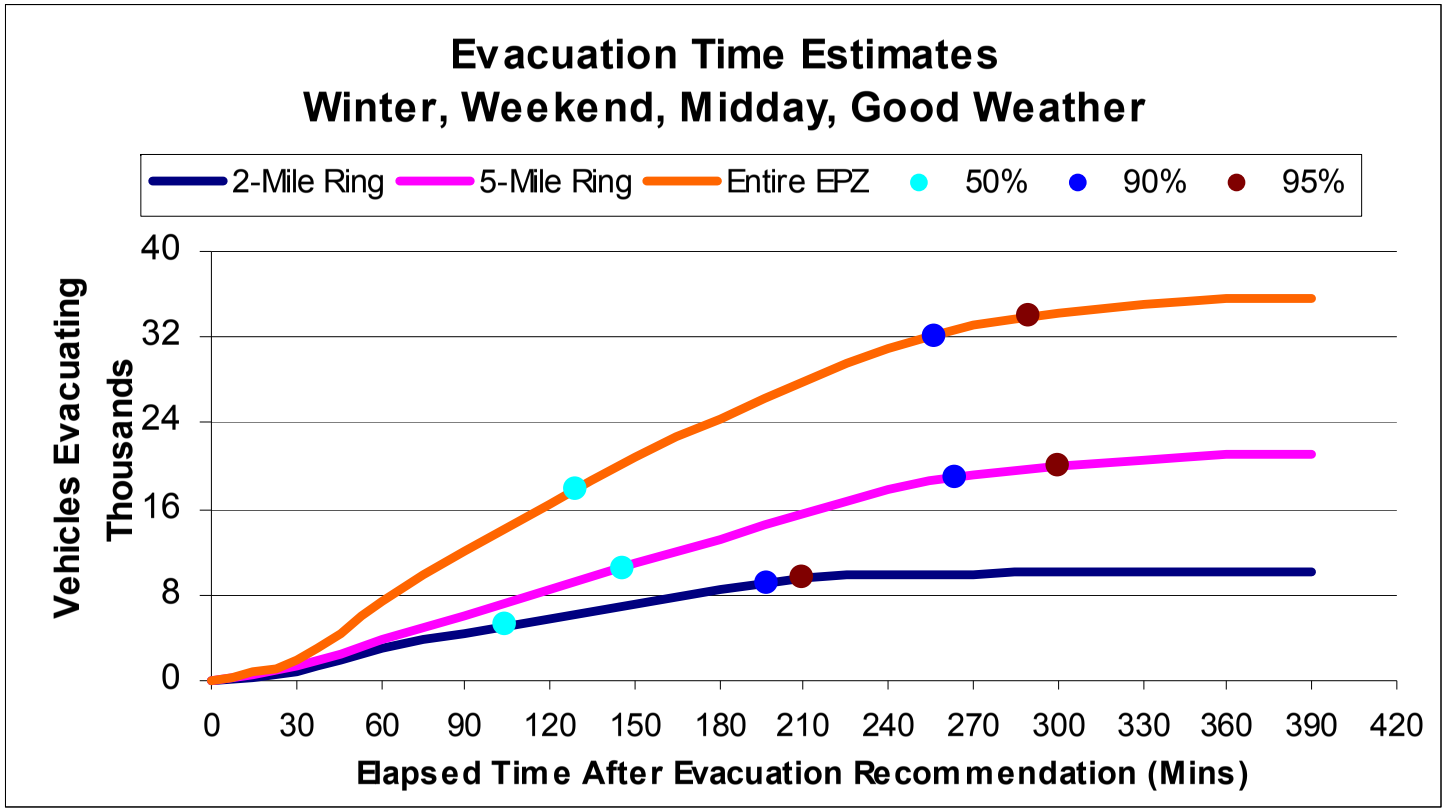

Figure J-8. Evacuation Time Estimates – Scenario 8 for Region R03 (Entire EPZ)

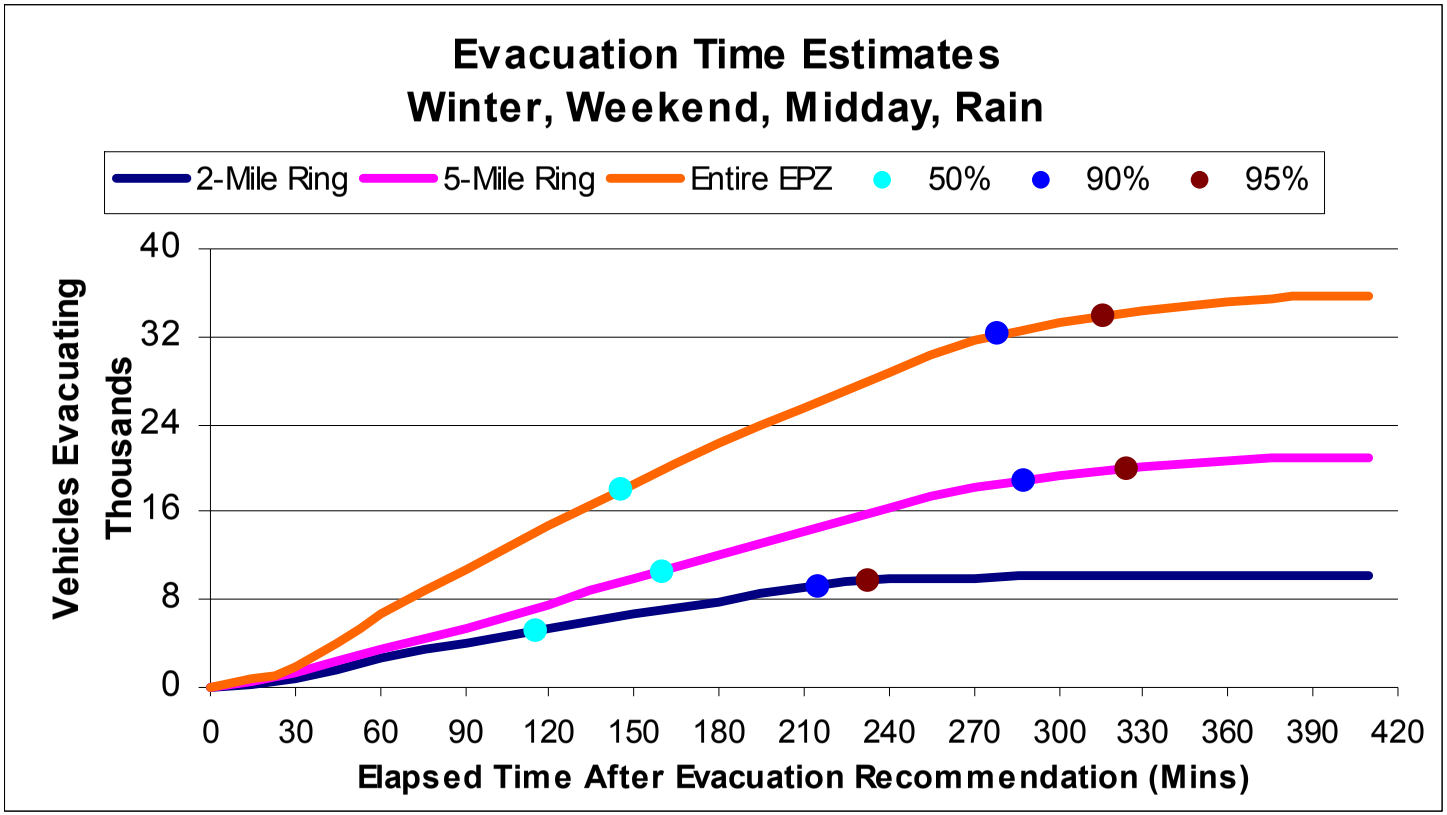

Figure J-9. Evacuation Time Estimates – Scenario 9 for Region R03 (Entire EPZ)

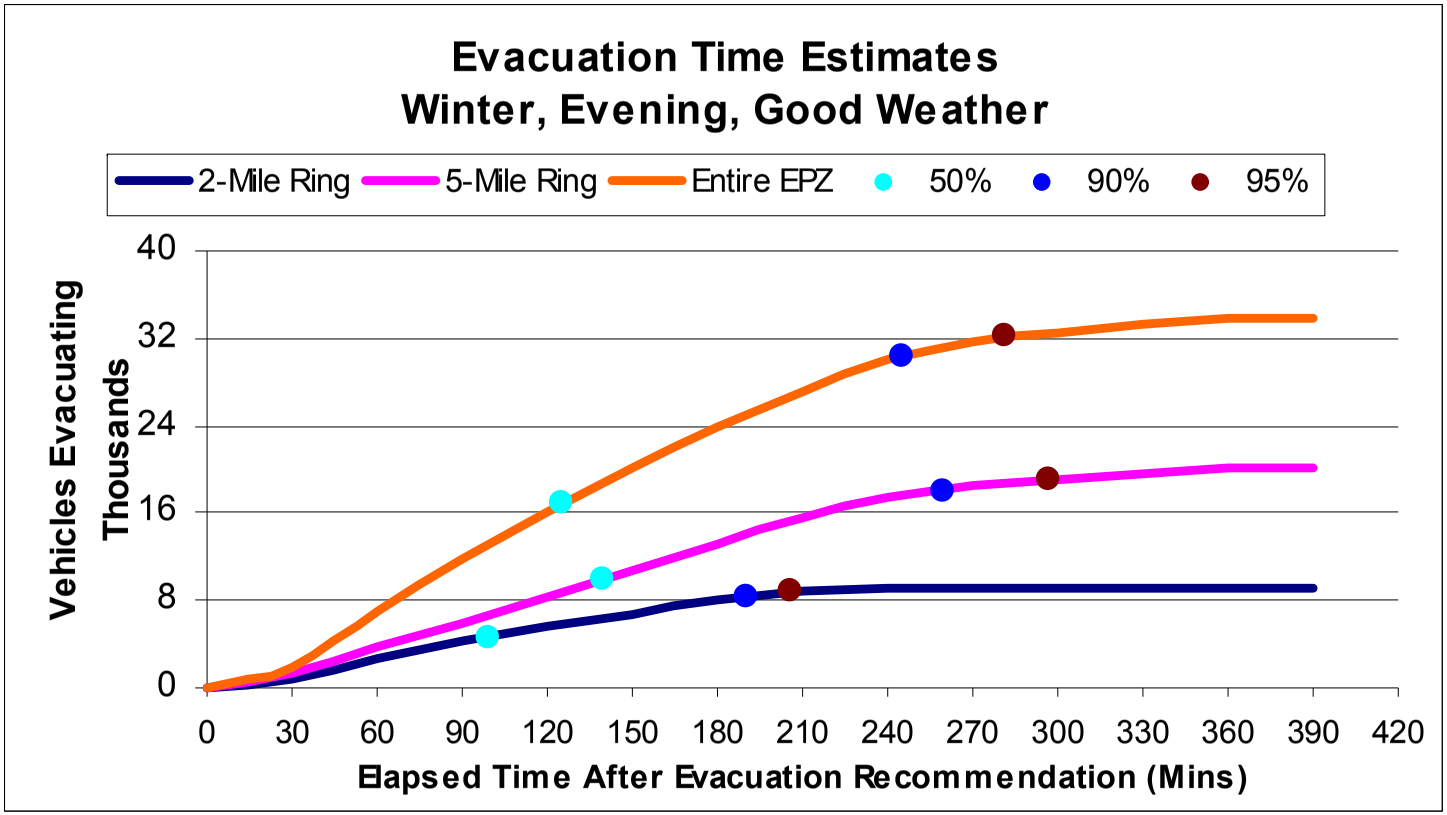

Figure J-10. Evacuation Time Estimates – Scenario 10 for Region R03 (Entire EPZ)

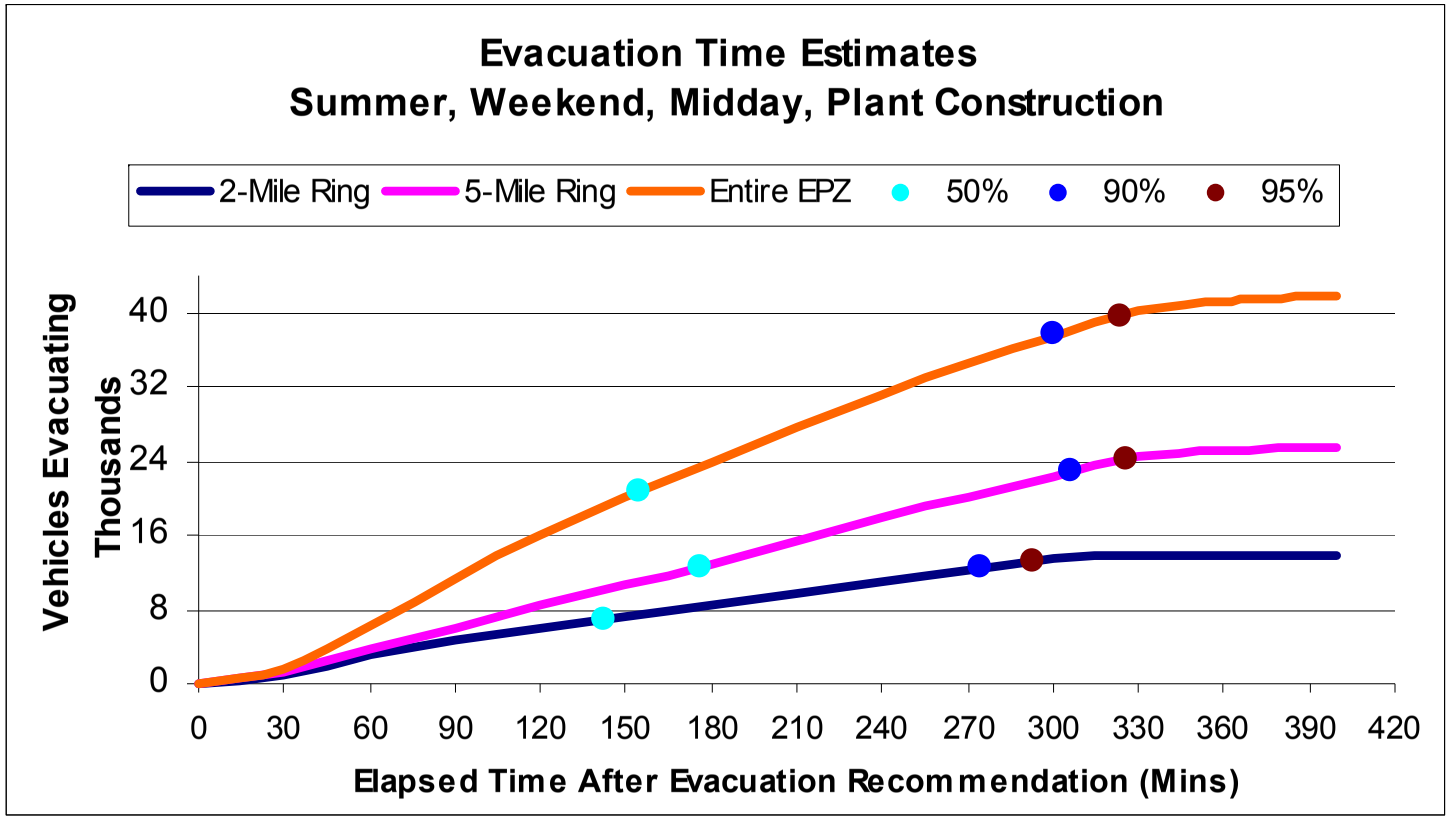

Figure J-11. Evacuation Time Estimates – Scenario 11 for Region R03 (Entire EPZ)

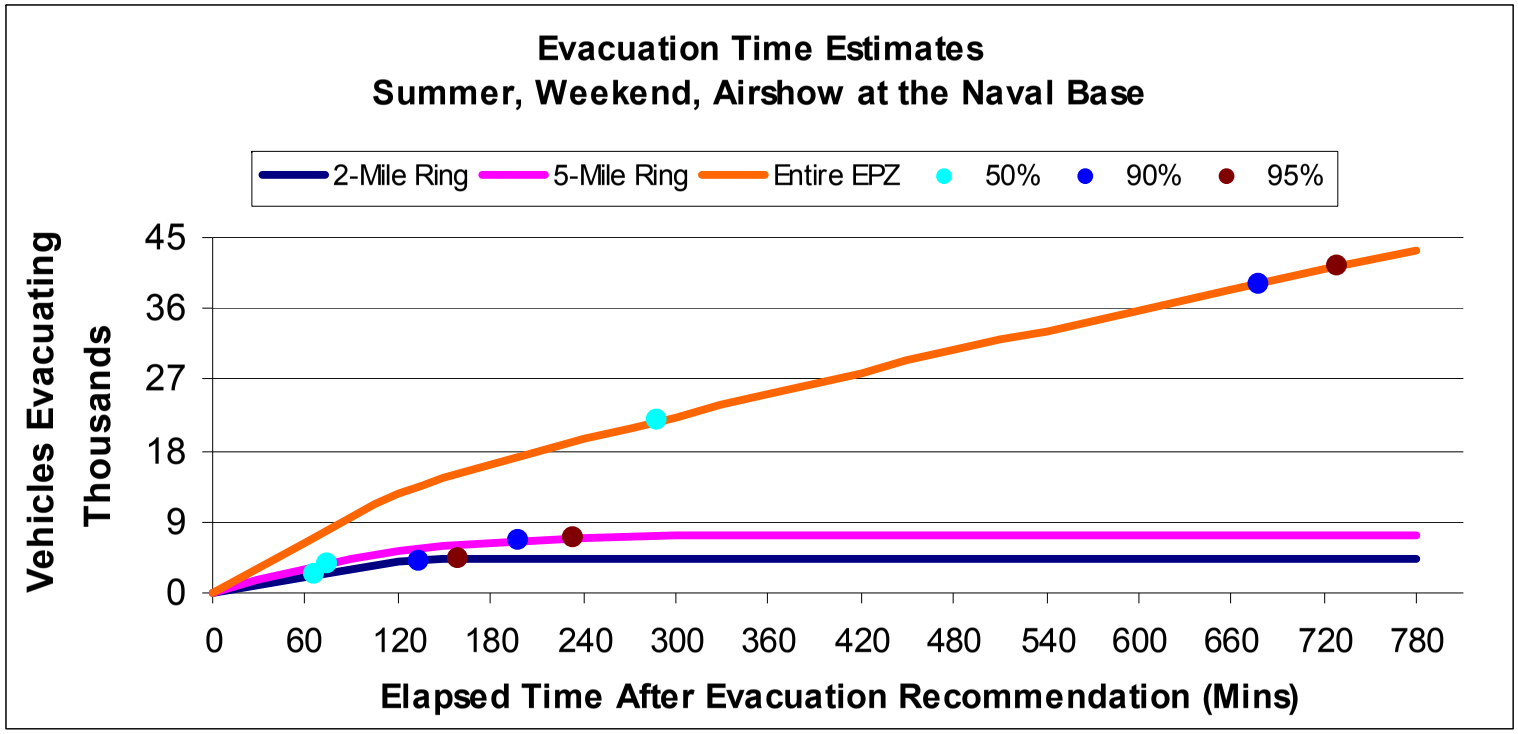

Figure J-12. Evacuation Time Estimates – Scenario 12 for Region R03 (Entire EPZ)

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	102	16	2	1900	55
1	103	31	1	1900	55
1	34	213	2	1900	55
2	56	15	3	1900	50
2	57	16	2	1800	40
3	336	12	3	1900	55
3	337	20	3	1900	55
4	3	58	2	1900	55
4	165	52	2	1900	55
5	167	57	2	1900	55
5	6	124	2	1900	55
6	5	124	2	1900	55
6	7	46	2	1900	55
7	6	46	2	1900	55
7	8	108	2	1900	55
8	7	108	2	1900	55
8	9	50	2	1900	55
9	8	50	2	1900	55
9	10	132	2	1900	55
10	9	132	2	1900	55
10	196	14	2	1900	50
11	12	28	1	1900	40
11	203	29	1	1900	50
12	11	28	1	1900	40
12	13	90	1	1900	40
13	224	55	1	1900	40
13	12	90	1	1900	40
14	15	90	1	1900	40
14	224	63	1	1900	40
15	14	90	1	1900	40
15	16	58	1	1900	40
16	67	28	2	1900	30
16	45	35	3	1900	50
16	15	58	2	1900	40
16	68	29	3	1900	55
17	158	55	2	1900	55
17	159	37	2	1900	55
18	158	41	2	1900	55
18	384	86	2	1900	55
19	338	73	2	1900	55
19	384	74	2	1900	55
20	338	81	2	1900	55
20	335	61	2	1900	30
21	22	46	2	1900	55

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
21	335	45	2	1900	30
22	21	46	2	1900	55
22	339	18	4	1900	55
23	22	151	2	1900	55
23	25	73	2	1900	55
24	340	32	2	1900	55
24	26	49	2	1900	55
24	92	50	1	1900	50
24	148	31	1	1900	30
25	149	128	1	1900	30
25	340	121	2	1900	55
25	23	73	2	1900	55
26	24	49	2	1900	55
26	342	21	2	1900	55
27	441	33	2	1900	55
27	28	41	2	1900	30
28	38	36	2	1900	55
28	27	41	2	1900	55
29	441	107	2	1900	55
29	115	40	2	1900	55
30	31	94	1	1900	30
31	32	172	1	1700	30
31	117	16	1	1900	30
32	118	60	1	1700	30
33	34	97	2	1900	55
33	118	20	2	1900	55
34	1	213	2	1900	55
34	33	97	2	1900	55
35	29	19	2	1800	40
36	28	28	1	1700	30
37	28	79	1	1700	30
38	39	28	2	1900	55
38	28	36	2	1900	30
39	38	28	2	1900	55
39	342	30	2	1900	55
43	342	65	1	1800	45
45	16	35	3	1900	50
45	46	42	3	1900	50
46	45	42	3	1900	50
46	47	31	3	1900	50
47	46	31	3	1900	50
47	48	18	3	1900	50
48	47	18	3	1900	50
48	231	11	3	1900	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
49	50	53	3	1900	50
49	233	19	2	1900	30
49	231	30	3	1900	50
50	49	53	3	1900	50
50	242	40	3	1900	50
51	53	15	3	1900	50
51	248	22	3	1900	50
52	53	13	3	1900	50
52	244	70	3	1900	50
53	52	13	3	1900	50
53	51	15	3	1900	50
54	55	18	3	1900	50
54	248	11	3	1900	50
55	54	18	3	1900	50
55	56	28	3	1900	50
56	2	15	2	1900	50
56	55	28	3	1900	50
56	57	14	2	1700	30
57	58	22	2	1800	40
58	59	16	2	1800	40
59	60	20	2	1800	40
60	276	44	2	1800	40
61	62	40	2	1800	40
62	63	16	2	1800	40
63	282	22	2	1800	40
64	65	29	1	1800	30
65	288	118	1	1800	40
66	297	186	1	1900	40
67	293	44	1	1900	30
68	16	29	3	1900	50
68	69	36	2	1900	50
69	70	36	2	1900	50
69	68	36	2	1900	55
70	431	80	2	1900	50
70	69	36	2	1900	50
71	301	123	1	1800	40
71	309	9	2	1900	55
71	316	62	2	1900	50
72	315	115	1	1800	40
73	74	75	2	1900	50
73	325	79	2	1900	50
74	330	42	2	1900	50
74	73	75	2	1900	50
74	328	203	1	1800	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
75	76	138	2	1900	50
75	330	217	2	1900	50
76	333	196	2	1900	50
76	75	138	2	1900	50
77	78	106	1	1900	50
78	367	64	1	1800	50
80	329	161	1	1800	50
80	292	111	1	1700	30
81	80	32	2	1800	50
82	81	44	2	1800	50
83	298	40	2	1700	40
83	82	137	2	1800	50
84	85	242	1	1800	40
85	86	148	2	1900	50
85	333	251	2	1900	50
85	334	84	1	1800	40
86	85	148	2	1900	50
86	87	39	2	1900	50
87	86	39	2	1900	50
87	88	48	2	1900	50
88	354	62	2	1900	50
88	87	48	2	1900	50
89	350	15	1	1900	50
89	349	11	1	1900	50
89	221	194	1	1900	55
90	391	105	1	1900	50
90	135	113	1	1900	55
91	389	49	1	1800	40
92	390	67	1	1900	50
92	24	50	1	1900	40
93	130	38	1	1900	50
93	94	63	1	1900	50
94	93	63	1	1900	50
95	102	109	2	1900	55
95	96	71	2	1900	55
96	95	71	2	1900	55
98	99	97	1	1700	30
99	100	109	1	1700	30
100	101	39	1	1700	30
101	102	49	1	1700	40
102	95	109	2	1900	55
102	1	16	3	1900	55
103	102	29	1	1900	40
103	130	31	1	1900	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
103	1	31	2	1900	50
105	106	90	1	1700	30
106	99	68	1	1900	30
107	108	125	1	1700	30
107	32	78	1	1700	30
108	109	89	1	1700	30
109	100	40	1	1700	30
110	107	112	1	1700	30
111	107	97	1	1700	30
115	29	40	2	1900	55
115	119	71	2	1900	55
116	117	105	1	1900	30
117	119	102	1	1900	30
118	33	20	2	1900	55
118	346	64	2	1900	55
119	115	71	2	1900	55
119	346	47	2	1900	55
120	346	48	1	1700	30
121	347	107	1	1700	30
121	35	169	1	1800	40
122	121	121	1	1800	40
123	125	63	1	1700	30
123	122	81	1	1800	40
124	123	155	1	1800	40
125	128	107	1	1700	30
125	132	215	1	1800	40
126	34	57	1	1700	30
128	126	179	1	1700	30
128	129	209	1	1700	30
129	130	135	1	1800	40
130	93	38	1	1900	50
130	103	31	2	1900	55
131	93	57	1	1900	50
132	133	160	1	1800	40
134	37	131	1	1700	30
135	90	113	1	1900	50
135	420	83	1	1900	55
136	43	128	1	1800	45
137	438	98	1	1800	40
138	23	162	1	1800	50
139	150	35	1	1700	30
140	139	93	1	1700	30
141	139	80	1	1700	30
142	22	127	1	1800	40

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
143	379	263	1	1800	40
143	18	134	1	1700	30
144	380	108	1	1800	40
146	143	285	1	1800	40
147	19	88	1	1700	30
148	26	28	1	1900	30
148	24	31	1	1900	40
149	340	28	1	1900	30
149	148	41	1	1900	30
150	22	53	1	1900	40
150	21	10	1	1900	40
151	150	46	1	1900	40
151	335	11	1	1900	30
152	151	62	1	1900	40
152	20	12	1	1900	40
153	152	135	1	1900	40
153	19	39	1	1900	30
154	151	72	1	1700	30
155	152	52	1	1800	40
156	153	43	1	1700	30
157	153	106	1	1900	30
158	157	97	1	1900	40
158	17	55	2	1900	55
158	18	41	2	1900	55
159	17	37	2	1900	55
159	3	71	2	1900	55
161	3	76	1	1700	30
162	163	33	1	1800	40
163	159	9	1	1900	40
164	159	59	1	1800	40
165	4	52	2	1900	55
165	167	19	2	1900	55
166	165	51	2	1700	30
167	5	57	2	1900	55
167	165	19	2	1900	55
169	4	46	2	1700	30
171	5	23	1	1700	30
173	171	99	1	1700	30
174	178	34	1	1700	30
174	175	155	1	1700	30
174	7	30	1	1700	30
175	5	43	1	1700	30
176	8	23	1	1800	40
177	187	10	1	1700	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
178	177	54	1	1700	30
179	174	113	1	1700	30
180	188	10	1	1700	30
182	183	95	1	1800	40
183	193	37	1	1900	50
184	176	121	1	1800	40
185	184	99	1	1800	40
187	176	39	1	1700	30
188	187	13	1	1700	30
189	188	7	1	1700	30
190	180	17	1	1700	30
191	179	85	1	1700	30
192	179	112	1	1700	30
193	184	69	1	1800	40
194	193	37	1	1700	30
195	202	30	1	1800	40
196	10	14	2	1900	55
196	198	18	2	1900	50
197	198	23	2	1900	50
197	203	51	2	1900	50
198	196	18	2	1900	50
198	197	23	2	1900	50
199	200	69	1	1800	40
200	201	62	1	1800	40
201	202	21	1	1800	40
202	198	4	2	1800	40
203	11	29	1	1900	40
203	197	51	2	1900	50
204	195	23	1	1800	40
205	9	9	2	1700	30
206	214	183	1	1700	30
206	215	196	1	1700	30
207	206	196	1	1700	30
207	208	305	1	1700	30
208	209	361	1	1700	30
209	210	202	1	1700	30
210	450	163	1	1700	30
211	209	131	1	1700	30
212	207	160	1	1700	30
213	212	104	1	1700	30
216	212	217	1	1700	30
217	423	78	1	1900	55
217	220	105	1	1900	55
218	220	154	1	1900	55

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
218	221	83	1	1900	55
220	218	154	1	1900	55
220	217	105	1	1900	55
221	348	139	1	1700	30
221	218	83	1	1900	55
221	89	194	1	1900	50
223	45	21	2	1700	30
224	13	55	1	1900	40
224	14	63	1	1900	40
225	224	23	1	1700	30
226	46	41	2	1700	30
227	46	29	2	1700	30
228	48	26	1	1700	30
229	228	55	1	1700	30
230	229	44	1	1700	30
231	48	11	3	1900	50
231	49	30	3	1900	50
232	231	16	1	1900	30
233	234	76	1	1900	30
234	237	108	1	1700	30
235	62	25	2	1700	30
236	235	33	1	1700	30
237	236	33	1	1700	30
238	49	23	2	1900	30
239	50	14	2	1700	30
240	50	43	2	1900	30
241	240	43	1	1900	30
242	50	40	3	1900	50
242	244	10	3	1900	50
243	242	41	1	1700	30
244	52	70	3	1900	50
244	242	10	3	1900	50
245	244	16	1	1700	30
246	51	33	2	1700	30
247	51	13	2	1700	30
248	51	22	3	1900	50
248	54	11	3	1900	50
249	248	17	1	1700	30
250	264	63	1	1900	30
250	265	68	2	1900	50
251	252	88	1	1900	50
252	257	66	1	1900	50
253	252	24	1	1700	30
254	255	85	1	1800	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
255	256	55	1	1800	30
256	258	136	1	1800	30
257	256	114	1	1800	30
257	261	122	1	1900	50
258	270	40	1	1800	30
259	260	64	1	1800	30
260	285	75	1	1800	30
261	250	100	2	1900	50
262	250	39	1	1700	30
263	258	78	1	1900	30
264	263	106	1	1900	30
265	2	135	2	1900	50
266	265	24	1	1700	30
267	2	11	2	1900	30
268	267	31	1	1700	30
269	267	17	2	1900	30
270	259	65	1	1800	30
271	270	59	1	1700	30
272	271	77	1	1700	30
273	57	35	1	1700	30
274	58	25	1	1700	30
275	60	10	1	1700	30
276	278	16	2	1800	40
277	276	18	2	1700	30
278	61	54	2	1800	40
279	61	37	2	1700	30
280	62	5	2	1700	30
281	63	7	2	1700	30
282	64	57	2	1800	40
283	282	14	1	1700	30
284	285	15	1	1700	30
285	64	24	1	1800	30
286	65	64	1	1900	30
287	65	75	1	1800	30
288	289	146	1	1800	40
288	366	157	1	1900	30
289	290	278	1	1800	45
290	291	251	1	1800	40
291	83	115	1	1800	30
291	298	95	1	1800	30
293	66	178	1	1900	40
294	293	48	1	1700	30
295	69	35	2	1700	30
295	294	42	1	1700	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
296	66	78	1	1900	40
297	291	155	1	1900	40
298	83	40	2	1700	40
299	83	174	1	1800	40
300	299	40	1	1800	40
301	300	179	1	1900	40
302	299	135	1	1700	30
303	300	48	1	1700	30
304	70	27	1	1900	30
305	307	55	1	1700	30
306	305	42	1	1700	30
307	310	80	1	1700	30
308	307	49	1	1700	30
309	71	9	2	1900	55
309	312	94	2	1900	50
310	475	80	1	1900	30
311	310	44	1	1700	30
312	309	94	2	1900	55
312	431	124	2	1900	50
313	312	32	1	1900	30
314	313	26	1	1700	30
315	480	79	1	1800	40
316	318	114	2	1900	50
316	71	62	2	1900	55
317	316	107	1	1700	30
318	316	114	2	1900	50
318	319	126	2	1900	50
319	318	126	2	1900	50
319	322	58	1	1700	30
319	325	128	2	1900	50
320	73	103	1	1800	40
321	319	58	1	1700	30
322	323	143	1	1900	30
323	302	117	1	1900	30
324	318	89	1	1700	30
325	73	79	2	1900	50
325	319	128	2	1900	50
325	327	169	1	1700	30
327	328	190	1	1700	30
328	77	68	1	1900	50
328	78	96	1	1700	30
329	77	202	1	1800	50
330	74	42	2	1900	50
330	75	217	2	1900	50

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
331	330	42	1	1700	30
332	84	146	1	1800	40
333	76	196	2	1900	50
333	85	251	2	1900	50
335	21	45	2	1900	55
335	20	61	2	1900	55
336	159	59	2	1900	55
337	4	38	2	1900	55
338	19	73	2	1900	55
338	20	81	2	1900	55
339	436	35	2	1900	55
340	24	32	2	1900	55
340	25	121	2	1900	55
341	91	116	1	1800	30
342	39	30	2	1900	55
342	26	21	2	1900	55
343	39	25	1	1900	30
344	38	16	1	1700	30
345	115	23	1	1700	30
346	119	47	2	1900	55
346	118	64	2	1900	30
347	118	103	1	1700	30
349	351	18	2	1900	50
349	352	14	2	1900	50
349	350	10	1	1900	50
350	89	15	1	1900	50
350	351	14	1	1900	50
350	353	11	1	1900	50
351	89	11	1	1900	50
351	354	114	2	1900	50
351	349	18	2	1900	50
352	349	14	2	1900	50
353	350	11	1	1900	50
354	351	114	2	1900	50
354	88	62	2	1900	50
355	88	25	1	1700	30
356	87	28	1	1700	30
357	87	27	1	1700	30
358	86	13	1	1900	30
359	86	22	1	1700	30
360	359	69	1	1700	30
361	360	139	1	1700	30
362	333	29	1	1900	30
363	76	87	1	1800	30

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
364	75	65	1	1800	30
365	331	77	1	1700	30
368	67	11	1	1700	30
369	47	4	2	1900	30
370	52	11	2	1700	30
371	53	6	2	1700	30
372	54	15	2	1700	30
373	55	4	2	1700	30
374	375	181	1	1700	30
376	156	42	1	1700	30
377	376	59	1	1700	30
378	156	89	1	1700	30
379	142	85	1	1800	40
380	379	140	1	1800	50
381	382	44	1	1800	40
382	144	141	1	1800	40
383	338	11	1	1900	30
384	18	86	2	1900	55
384	19	74	2	1900	55
385	384	17	1	1700	30
386	91	27	1	1800	30
387	91	25	1	1800	30
388	341	49	1	1800	30
389	90	63	1	1800	40
390	92	67	1	1900	50
390	391	63	1	1900	50
391	390	63	1	1900	50
391	90	105	1	1900	50
400	173	93	1	1700	30
401	205	79	1	1700	30
402	205	26	1	1700	30
405	198	11	1	1700	30
406	197	7	1	1700	30
407	182	46	1	1800	40
409	191	51	1	1700	30
410	320	61	1	1800	40
411	325	50	1	1700	30
415	72	101	1	1800	40
420	135	83	1	1900	55
420	423	132	1	1900	55
421	420	28	1	1700	30
422	135	30	1	1700	30
423	420	132	1	1900	55
423	217	78	1	1900	55

Upstream Node Number	Downstream Node Number	Length (miles * 100)	Full Lanes	Saturation Flow Rate (Veh/hr/ln)	Free Flow Speed (MPH)
424	423	36	1	1700	30
425	135	30	1	1700	30
426	217	34	1	1700	30
430	75	31	1	1700	30
431	312	124	2	1900	50
431	70	80	2	1900	50
432	431	37	1	1700	30
433	276	15	1	1700	30
434	278	20	1	1700	30
435	59	13	1	1700	30
436	23	98	2	1900	55
437	436	22	1	1700	30
438	136	90	1	1800	40
439	125	64	1	1700	30
440	27	26	1	1700	30
441	27	33	2	1900	55
441	29	107	2	1900	55
442	441	34	1	1700	30
443	92	26	1	1700	30
444	92	30	1	1700	30
445	390	40	1	1900	30
446	391	28	1	1700	30
447	391	28	1	1700	30
450	451	149	1	1700	30
475	480	42	1	1700	30
475	309	36	1	1900	30
480	71	12	1	1900	40

APPENDIX L

Zone Boundaries

APPENDIX L: ZONE BOUNDARIES

Zone 1:

Calvert County: Area bounded on the north by Calvert Beach Road, on the east by the Chesapeake Bay, on the south by Breeden Road, Sollers Wharf Road, Old Mill Road, Hellen Creek, St. Paul Branch, Route 492 and Calvert Cliffs State Park, and on the west by Route 2/4 and St. Leonard Creek.

Zone 2:

Calvert County: Area bounded on the north by Route 2/4 and Governor Run Road, on the east by the Chesapeake Bay, Route 2/4, and St. Leonard Creek, on the south by Calvert Beach Road and the Patuxent River and on the west by Broomes Island Road and Nan Cove.

Zone 3:

Calvert County: Area bounded on the north by Breeden Road, Sollers Wharf Road, Old Mill Road, Hellen Creek, St. Paul Branch, Route 497 and Calvert Cliffs State Park, on the east by the Chesapeake Bay, and on the south and west by the Patuxent River.

Zone 4:

Calvert County: Area bounded on the north by Route 2 & 4, on the east by Broomes Island Road and Nan Cove, on the south by the Patuxent River and on the west by Route 231, Adelina Road and Sheridan Road.

Zone 5:

Calvert County: Area bounded on the north by Dares Beach Road and Cassell Road, on the east by the Chesapeake Bay, on the south by Governor Run Road, and on the west by Tobacco Ridge Road (to Calvert County Property Gate), Main Street at Monitor Way (to Calvert Towne), and Route 2/4 (at Calvert Towne).

Zone 6:

St. Mary's County: Area bounded on the north by the Patuxent River, on the east by Hollywood Road and Sotterly Gate Road, on the south by Brooks Run, and on the west by Cat Creek Road, Sandgates Road, Route 235, Clover Hill Road, McIntosh Road, Riva Ridge Drive and McIntosh Run.

Zone 7:

St. Mary's County: Area bounded on the north by the Patuxent River, on the east by the Patuxent Naval Air Test Center, on the south by Brooks Run, Broad Run, Hayden Road, St. Mary's County Airport Drive, Cottonwood Parkway, Wildewood Parkway, Saint Andrews Church Road and Route 235, and on the west by Hollywood Road and Sotterly Gate Road.

Zone 8:

Dorchester County: Includes all of Taylor's Island, Smithville, and residents off Meekins Neck Road, Smithville Road (north of Beaver Dam Creek), and Route 16 (west of Parsons Creek).