3. Clearance Times (Southern Coastal Conglomerate)

Clearance time is one of two major considerations involved in issuing an evacuation order or advisory. The other time is the arrival of sustained tropical storm winds. Clearance times were calculated by storm scenario and by behavioral characteristic for each conglomerate. A discussion on the calculation of the estimated evacuation clearance times is found in the Basic Plan.

Clearance time is the time required to clear the roadway of all vehicles evacuating in response to a hurricane situation. Clearance time begins when the first evacuating vehicle enters the road network, and ends when the last evacuating vehicle reaches an assumed point of safety. The assumed point of safety for the Southern Conglomerate is the Allendale/Hampton County line. Clearance time includes the time required by evacuees to enter the road network (referred to as mobilization time) and the time spent by evacuees traveling along the road network due to traffic congestion (referred to as queuing delay time). Clearance time does not relate to the time anyone vehicle spends traveling on the road network, and does not include time needed for local officials to assemble and make a decision.

Clearance times generally fall below 24 hours for most of the scenarios. Due to the location of the controlling bottlenecks for clearance time calculations (US Highway 278 off Hilton Head), evacuation traffic does nothing to an adjacent conglomerates' clearance time situation. For the Southern Conglomerates, clearance times are largely a function of how well bottlenecks near the coast are processing evacuation traffic and whether inland traffic control points are manned.

For the Southern Conglomerate, individual household commute times were estimated from Beaufort to Aiken. The worst household commute times will be 2 to 6 hours in Category 1 hurricane when there is low-tourist occupancy. For a Category 1 hurricane with high-tourist occupancy, these times will be 8 to 11 hours for worst household commute times. Again, the shorter household commute times result from a longer loading of the highway network, whereas, the longest household commute times result from the rapid/quick loading of the road network. For a Category 3-5 scenario with high-tourist occupancy, worst household commute times could be as high as 11 to 14 hours. Even with the counter flow operation on US 278, households leaving during the middle of the evacuation could have a 7 to 10 hour commute.

Lane Reversal and Counter Flow Plans

If conditions require their implementation, South Carolina will employ one of more of the following lane reversal (four lanes outbound), or counter flow (three of four lanes outbound) plans in the Southern Conglomerate. Only one of these plans (US 278 counter flow) may provide a conglomerate-wide clearance time reduction. These plans are described in more detail in the attachments to this appendix.

1. Reversal plans: US 21 in the city of Beaufort from the US 21/SC 280 intersection to the US *21I US* 17 intersection in Gardens Comer; and US 278 off of Hilton Head from the Cross Island Expressway to the US 278/I-95 interchange.

2. Counter flow plans: US 21 in the city of Beaufort from the US 21/SC 280 intersection to the US *21IUS* 17 intersection in Gardens Comer; and US 278 off Hilton Head from Spanish Wells Road to the US 278/1-95 interchange.

Southern Conglomerate Clearance Times
(In Hours)

Category / Response Level	Normal Lane Use		US 278 Reversal	
	Tourists		Tourists	
	Low	High	Low	High
Category 1				
Rapid	12.00	17.50	8.25	11.50
Medium	12.50	18.50	8.75	12.50
Long	13.00	19.50	9.00	13.25
Category 2				
Rapid	16.50	22.50	11.00	15.25
Medium	17.00	23.50	12.00	16.25
Long	17.50	24.50	12.50	17.00
Category 3-5				
Rapid	20.00	25. 25	14.00	17.25
Medium	20.50	27.00	14.50	18.50
Long	21.00	27.25	15.00	19.00

From S.C. Hurricane Evacuation Restudy

Several hundred clearance time runs were done based on differing intensity of hurricanes, evacuation area assumptions, rapidity of evacuees' response, and differing tourist seasons. Controlling traffic bottleneck is the road segment US 278 from Burnt Church Road to Buckwalter Parkway**.** Times reflect 2007 estimated census figures and a 2007 localized traffic study for specific routes in Beaufort County. Clearance Times not displaced for US 21 reversal or US 21 counter flow; potential local savings only.

Southern Conglomerate Phasing

a) Category 1: Voluntary or mandatory evacuation recommendation will be based on the above table.

b) Category 2: Mandatory evacuation recommendation will be based on the above table. A voluntary evacuation may be recommended about 12-24 hours prior to a mandatory evacuation.

c) Category 3-5: Mandatory evacuation recommendation will be based on the above table. A voluntary evacuation will be recommended about 12-24 hours prior to a mandatory evacuation.

Southern Conglomerate US Highway 278 Counter Flow

a) Category 1: No counter flow is planned.

b) Category 2: During peak tourist season (Memorial Day through Labor Day), a counter flow of US Highway 278 may be recommended.

c) Category 3-5: A counter flow of US Highway 278 will be recommended.