

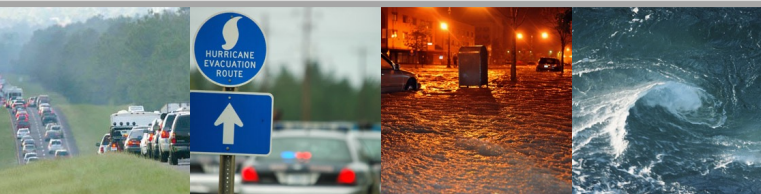


# Coastal Bend Hurricane Evacuation Study

## Study Update

**Plymouth Annex Building  
Sinton, Texas**

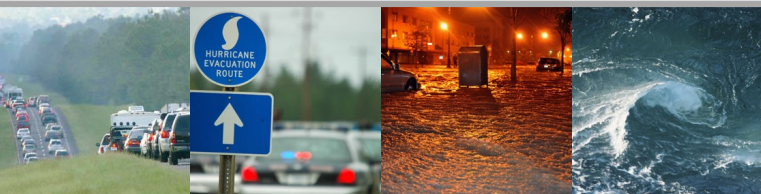
March 27, 2019





# Agenda

- |                                   |          |
|-----------------------------------|----------|
| ■ Introductions & Opening Remarks | 8:30 am  |
| ■ Behavioral Study Update         | 8:45 am  |
| ■ Vulnerability Analysis Process  | 9:15 am  |
| ■ BREAK                           | 9:45 am  |
| ■ Evacuation Zone Confirmation    | 10:00 am |
| ■ Evacuation Scenario Development | 10:15 am |
| ■ Wrap-up & Questions             | 11:45 am |

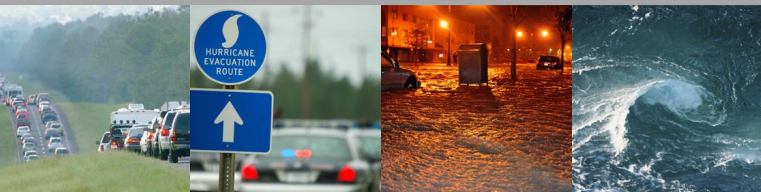




# Scenario Development

## Scenario Inputs

- Resident Behavior
  - Response Rate
  - Response Time
  - Destinations
- Seasonal Population
  - Response Rate
  - Response Time
- Roadway Operations
  - Evaculane
  - Contraflow
  - Incidents
  - Background Traffic
- “All Scenario” Inputs
  - Percent private vehicles
  - Percent using public transit

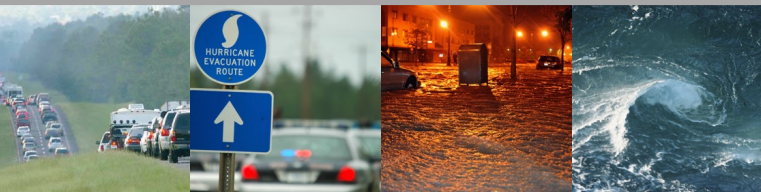




# Scenario Development

## Resident Behavior

- Storm impact and timing 'dials'
- Behavior study
- Rely on local knowledge/expertise
- Possible vs. Practical # of scenarios

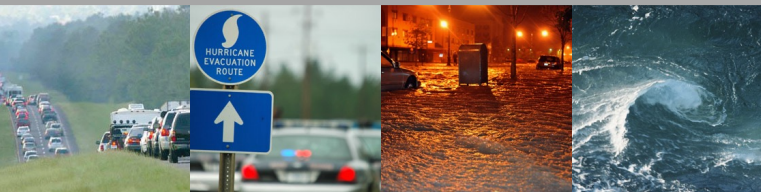




# Scenario Development

## Resident Behavior

- Response Rate
  - Percent of population leaving area by private vehicle
- Response time
  - Time lapse between evacuation call and last person entering roadway system







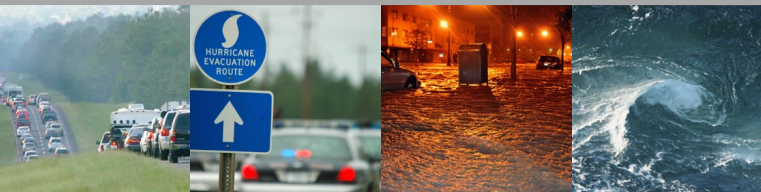
# Scenario Development

## Response Rate

(percent of population that leave area)

### ➤ Variations

- Storm Impact/Intensity
- Zone



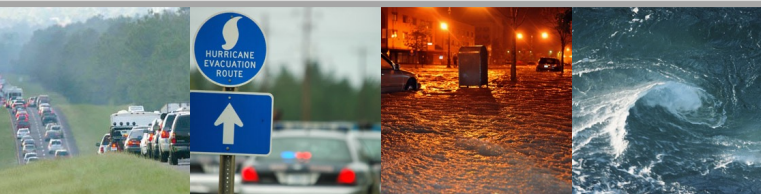


# Scenario Development

## Response Rate - Example

(percent of population that leave area)

IMPACT	EVACUATION ZONE			
	A	B	C	CBSA Not in Zone
High	100%	100%	100%	50%
Moderate	85%	80%	75%	40%
Low	65%	60%	50%	20%



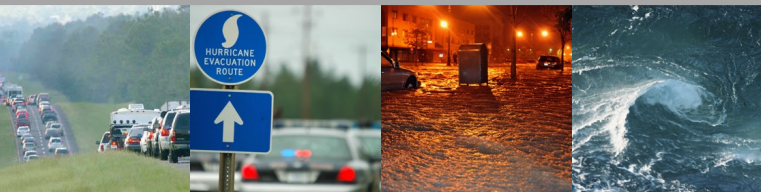


# Scenario Development

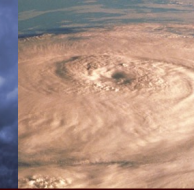
## Response Time - Examples

(last person enters roadway system in the evacuation area)

- Fast (5 hours)
- Medium (24 hours)
- Slow (2-day)







# Scenario Development

## Response Rate & Time

- Coupled to form ranges of demand

RESPONSE RATE (%)	RESPONSE TIME (hours)
100	48
90	36
80	24
70	18
60	12
50	6
40	0
30	
20	
10	
0	

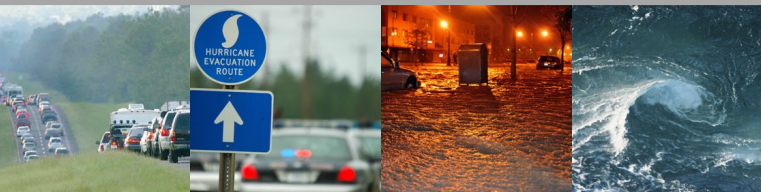




# Scenario Development

## Response Rate & Time - Examples

- Coupled to form ranges of demand
  - “Worst Case” – high rate and medium/quick time
  - “Normal” – moderate rate and medium/quick time
  - “Low” – low rate and slow/medium/quick time

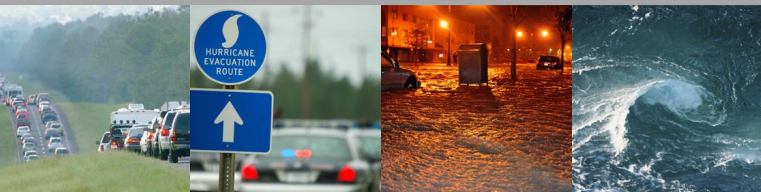




# Scenario Development

## Destinations

- Behavioral Survey
- Universal to all scenarios

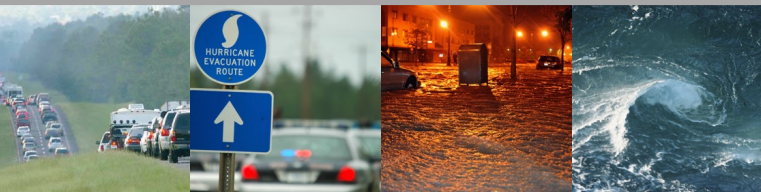




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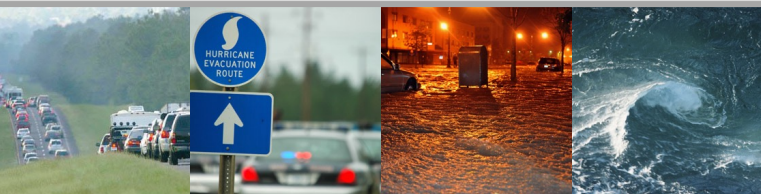




# Scenario Development

## Seasonal Population

- Response Rate Variation
  - Moderate
  - High
- Response Time
  - Fast



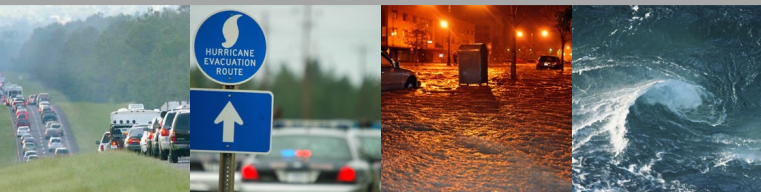




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# Scenario Definitions

## Roadway Operations

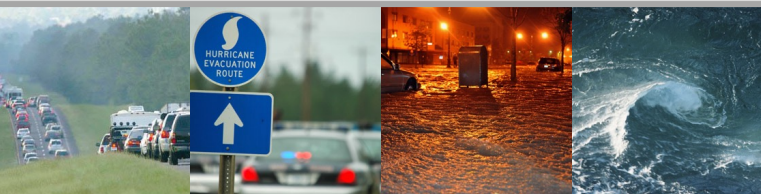
- Contraflow
- Evaculane
- Traffic incidents
- Background traffic

**Yes and No**

**Yes and No**

**Low & High**

**Low & High**

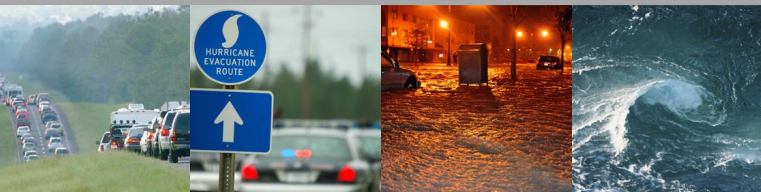


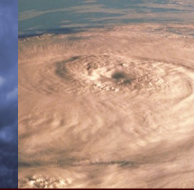


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# Scenario Definitions

## All Scenario Inputs

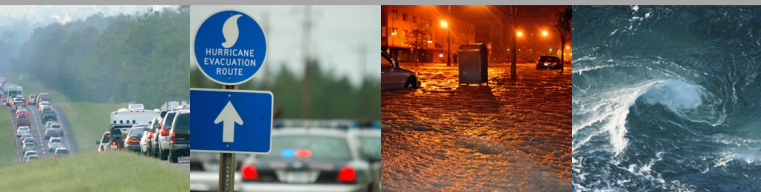
- |  |                  |
|--|------------------|
| • Average persons per vehicle          | Behavioral Study |
| • % of vehicles towing                 | Behavioral Study |
| • % pedestrians                        | 0%               |
| • Population not using private vehicle | 10%              |





# Scenario Definitions

**Let's make some decisions on scenarios**







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