

**HURRICANE EVACUATION CLEARANCE TIME MEMORANDUM OF UNDERSTANDING**

**BY AND BETWEEN**

**THE FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY AND THE COUNTY OF MONROE, CITY OF KEY WEST, VILLAGE OF ISLAMORADA, CITY OF LAYTON, CITY OF KEY COLONY BEACH, CITY OF MARATHON AND FLORIDA DIVISION OF EMERGENCY MANAGEMENT**

This Memorandum of Understanding (MOU) is being entered into by and between the State of Florida's Department of Economic Opportunity (the "DEO") and Division of Emergency Management (the "Division") and Monroe County, the City of Key West, the Village of Islamorada, the City of Layton, the City of Key Colony Beach, the City of Marathon (the "Local Governments") for purposes of complying with Rules 28-18, 28-19, and 28-20, F.A.C., and to stipulate the data sources, input variables and assumptions, including regional considerations, to depict evacuation clearance times for the population of the Florida Keys Area of Critical State Concern and the City of Key West Area of Critical State Concern.

**WHEREAS**, the Local Governments of the Florida Keys are within an area that the Florida Legislature has designated two Areas of Critical State Concern (the Florida Keys ACSC and the City of Key West ACSC), pursuant to Section 380.05 and 380.0552, Florida Statutes, and Florida Administrative Code Rule 28-36, hereinafter referred to as the "Keys ACSCs"; and

**WHEREAS**, the Local Governments have adopted Comprehensive Plans and Land Development Regulations, which have been approved by the State, as required by law; and

**WHEREAS**, the State's Legislative Intent of designating the Local Governments as an Area of Critical State Concern includes:

(a) Establish a land use management system that protects the natural environment of the Florida Keys;

(b) Establish a land use management system that conserves and promotes the community character of the Florida Keys;

(c) Establish a land use management system that promotes orderly and balanced growth in accordance with the capacity of available and planned public facilities and services;

(d) Provide affordable housing in close proximity to places of employment in the Florida Keys;

(e) Establish a land use management system that promotes and supports a diverse and sound economic base;

(f) Protect the constitutional rights of property owners to own, use, and dispose of their real property;

(g) Promote coordination and efficiency among governmental agencies that have permitting jurisdiction over land use activities in the Florida Keys;

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(h) Promote an appropriate land acquisition and protection strategy for environmentally sensitive lands within the Florida Keys;

(i) Protect and improve the nearshore water quality of the Florida Keys through the construction and operation of wastewater management facilities that meet the requirements of ss. 381.0065(4)(l) and 403.086(10), as applicable; and

(j) Ensure that the population of the Florida Keys can be safely evacuated (Section 380.0552 (2) Florida Statutes); and

**WHEREAS**, the Florida Keys remain one of the most vulnerable areas in the United States to hurricanes; and

**WHEREAS**, the Florida Legislature has mandated that the Local Governments include within the goals, objectives, and policies of their respective Comprehensive Plans, measures to protect public safety and welfare in the event of a hurricane by maintaining a evacuation clearance time for permanent residents of no more than 24 hours (Section 380.0552(9)(a)2. Florida Statutes, Rule 28-18.400(5)(a)10., F.A.C., and Rule 28-19.310(5)(a)5., F.A.C., and Rule 28-20.140(5)(a)14., and

**WHEREAS**, Florida Administrative Code Rule 28-36.003(2)(a)7 requires that the City of Key West prepare and adopt an evacuation plan which is consistent with the regional and County plans; and

**WHEREAS**, the Florida Legislature further mandated that the hurricane evacuation clearance time for the Florida Keys ACSC shall be determined by a state-approved hurricane evacuation study, conducted in accordance with a professionally accepted methodology; and

**WHEREAS**, the Administration Commission has directed that, after the clearance time has been derived from the hurricane evacuation study and the remaining allocation for the Keys ACSCs has been determined, DEO must recommend appropriate revisions to the Administration Commission regarding the allocation rates and the distribution of the annual building permit allocation system for Monroe County, Key West, Islamorada, Marathon, Layton and Key Colony Beach, or identify alternate evacuation strategies that support the 24 hour evacuation clearance time. If necessary, the Administration Commission has directed DEO to work with each local government to amend the comprehensive plans to reflect the revised allocation rates and distributions or propose rule making to the Administration Commission; and

**WHEREAS**, the Division of Emergency Management has prepared an evacuation study, titled "Statewide Regional Evacuation Studies Program," dated November 2010, which was prepared and funded by the state Legislature and the Federal Emergency Management Agency (FEMA); and

**WHEREAS**, DEO has determined that the Florida Division of Emergency Management's Transportation Interface for Modeling Evacuations (TIME) Model is the model acceptable to DEO to accurately depict evacuation clearance times for the population of the Keys ACSCs; and

**WHEREAS**, the Administration Commission has directed DEO to, by July 1, 2012, apply the derived clearance time to assess and determine the remaining allocations for the Florida Keys ACSC or identify alternative evacuation strategies that support the 24 hour evacuation clearance time; and

**WHEREAS**, the Administration Commission has directed DEO, the Division of Emergency Management, Monroe County, the Village of Islamorada, and the Cities of Marathon, Layton, Key Colony Beach, and Key West to enter into this MOU stipulating to the input variables and assumptions, including regional considerations, for utilizing the Florida Keys Hurricane Evacuation Model or other models acceptable to DEO in order to accurately depict evacuation clearance times for the population of the Florida Keys ACSC; and

**WHEREAS**, the Parties have reviewed studies and data related to the occupancy, participation, human behavior, response curves, capacity of the evacuation route and number of automobiles that will likely be evacuated, and have determined that the following input variables and assumptions best represent the most likely scenario for evacuating residents and non-residents from the Florida Keys for a Category 3-5 hurricane event.

**NOW THEREFORE**, the Parties wish to set forth the following understandings:

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**PART ONE: INPUT VARIABLES AND ASSUMPTIONS**

The Human Behavioral Studies, the 2010 Census Surveys, as supplemented by the American communities Surveys, Smith Travel Services and data from the "Statewide Regional Evacuation Study Program are the best available and most relevant data and analysis. The following input variables and assumptions provide the basis, when used in the TIME model, to accurately depict evacuation clearance times for the population of the Florida Keys, and will be used to determine the remaining development allocations:

- A. **Commencement and Completion of Evacuation:** For the purposes of hurricane evacuation clearance time modeling purposes, clearance time shall begin when the Monroe County Emergency Management Coordinator issues the evacuation order for phase II of the evacuation for a hurricane that is classified as a Category 3, 4, or 5 wind event or Category C-E surge event and pursuant to Rules 28-18, 28-19 and 28-20, Florida Administrative Code, the termination point for evacuation from is U.S. Highway One and the Florida Turnpike in Homestead/Florida City.
- B. **Number of Dwelling Units: The number of units evaluated by the model include:**
  - 1. Transient units: 13,665 Tourist units with 9,540 occupied units and 4,125 vacant units . The data source for the number and type of units and vehicular use is the Statewide Regional Evacuation Studies Program and the Department of Business and Professional Regulation. The data source for occupancy of transient units is the Smith Travel Research Data for 2011.

2. 8134 manufactured and mobile home units with 4,576 occupied units and 3,558 vacant units. The data source for the number and type of units, the vehicular use and occupancy of the units is the 2010 Census Survey supplemented by the American Communities Survey 2006-2010
3. 44,630 Site-built units with 28,053 occupied units and 16,577 vacant units.

The data source for the number, type, occupancy, and vehicular use is the 2010 Census supplemented by the American Communities Survey 2006-2010 and the Statewide Regional Evacuation Studies Program

**C. Response Curve.** The assumed **Response Curve** for model runs is 12 hours for all unit types as utilized in the Statewide Regional Evacuation Studies Program.

**D. Participation Rates.** The assumed **Participation Rates** are:

- |                                   |                            |
|-----------------------------------|----------------------------|
| 1. Tourist units:                 | 100%                       |
| 2. Manufactured and mobile homes: | 100%                       |
| 3. Site-built homes:              | 70% for Category 3 event   |
| 4. Site built homes               | 80% for a Category 4 event |
| 5. Site built homes               | 90% for a Category 5 event |

**E. Occupancy Rates**

1. For Mobile or manufactured home units

Sub-County Area	Average Occupancy Rate
Key West	80.4%
Lower Keys	68.0%
Middle Keys	52.2%
Upper Keys	42.0%

2. For Site-Built units:

Sub-County Area	Average Occupancy Rate
Key West	81.2%
Lower Keys	67.1%
Middle Keys	49.7%
Upper Keys	54.9%

3. For Hotel units:

<b>Months</b>	<b>Location</b>				
	<i>Key West</i>	<i>Monroe County w/o Key West</i>	<i>Key Largo</i>	<i>Marathon</i>	<i>Islamorada</i>
<i>June</i>	85.1%	71.7%	73.8%	74.8%	63.3%
<i>July</i>	90.5%	75.9%	77.8%	79.0%	67.5%
<i>August</i>	77.7%	61.3%	62.2%	64.8%	53.1%
<i>September</i>	63.2%	45.3%	47.9%	44.9%	40.3%
<i>October</i>	74.7%	52.8%	55.9%	52.9%	46.1%
<i>November</i>	85.2%	63.5%	67.3%	62.3%	58.5%
<b>Hurricane Season (Average)</b>	<b>79.4%</b>	<b>61.8%</b>	<b>64.2%</b>	<b>63.1%</b>	<b>54.8%</b>

F. **Vehicle Usage Rates**

1. For Mobile/manufactured home units:

Sub-County Area	Vehicle Usage Rates (percent of vehicles owned that will be evacuated)
Key West	90% (1.10 average)
Lower Keys	75% (1.55 average)
Middle Keys	80% (1.52 average)
Upper Keys	85% (1.56 average)

2. For Site-Built:

Sub-County Area	Vehicle Usage Rates (percent of vehicles owned that will be evacuated)
Key West	90% ( 1.21 )
Lower Keys	75% ( 1.43)
Middle Keys	80% (1.51)
Upper Keys	85% (1.49)

3. **Special Population:**

Florida Keys Community College:	100 vehicles
N.A.S. Key West	2,025

4. For Hotel Units                      **1.1 cars**

**G. Evacuation Stream.** The **evacuation stream** from Monroe County is the only assumed traffic demand considered.

The Roadway Capacity established by the Florida Department of Transportation is as follows:

Maximum Sustainable Traffic Flow Rates per Functional Evacuation Lane for Hurricane Evacuation Purposes US Highway 1 (Overseas Highway) and CR 905/Card Sound Road in the Florida Keys, Monroe County, Florida				
Area	Segment Milemarker			
	From	To		
Lower Keys	2.0	4.0	Key West to Stock Island	900
Lower Keys	4.0	9.0	Stock Island To Big Coppitt	900
Lower Keys	9.0	17.0	Big Coppitt to Sugar Loaf Key	1100
Lower Keys	17.0	22.0	Sugar Loaf to Cudjoe Key	1100
Lower Keys	22.0	24.0	Cudjoe Key to Summerland Key Cove Airport	1100
Lower Keys	24.0	25.0	Summerland Key Cove airport to Summerland Key	1100
Lower Keys	25.0	30.0	Summerland Key to Big Pine Key	1100
Lower Keys	30.0	34.0	Big Pine Key to West Summerland Key	1050
Lower Keys	34.0	35.2	West Summerland Key to Spanish Harbor Keys	1100
Lower Keys	35.2	36.5	Spanish Harbor Keys to Bahia Honda Bridge	1100
Lower Keys	36.5	37.5	Bahia Honda Bridge to Bahia Honda Key	1100
Lower Keys	37.5	47.0	Bahia Honda Key to Hog Key	1200
Lower Keys	47.0	48.0	Hog Key to Boot Key	1100
Middle Keys	48.0	50.2	Boot Key to Marathon	900
Middle Keys	50.2	58.0	Marathon to Marathon Shores	900
Middle Keys	50.8	54.0	Marathon Shores to Key Colony Beach	900
Middle Keys	54.0	54.5	Key Colony Beach to Deer Key	900
Middle Keys	54.5	58.0	Deer Key to Grassy Key	1100
Middle Keys	58.0	74.0	Grassy Key to Matecumbe Harbor	1100
Middle Keys	74.0	80.0	Matecumbee Harbor to Tea Table	1100
Upper Keys	80.0	83.5	Tea Table to Islamorada	1100
Upper Keys	83.5	85.6	Islamorada to Windley Key	1100
Upper Keys	85.6	90.0	Windley Key to Plantation Key	1100
Upper Keys	90.0	100.0	Tavernier Key to Newport Key	900
Upper Keys	100.0	105.0	Newport Key to Sexton cove	900
Upper Keys	105.0	106.3	Sexton Cove to Rattlesnake Key	900

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Upper Keys	106.3	126.5	Rattlesanke Key to Card Sound Road	1200
Upper Keys	126.5	HEFT	CardSound Road to HEFT	900
Upper Keys	106.3	Int.CR905/ CR 905A	Lake Surprise to Crocodile Lake	1100
Upper Keys	Ocean Reef	Int.CR905/ CR 905A	Tanglefish Key to Crocodile Lake	1100
Upper Keys	Int.CR905/ CR 905A	US1	Crocodile Lake to South Miami Dade	1100

A Functional Evacuation lane has a pavement width of at least 10 feet The above flow rates are maximum values that are expected to be sustained for extended periods (more than 8 hours). During night conditions, these flow rates may be fewer than the ones shown above.

**H. EVACUATION PROCEDURES.** The assumed staged/phased evacuation procedure is:

1. Approximately 48 hours in advance of tropical storm winds, a mandatory evacuation of non-residents, visitors, recreational vehicles (RV's), travel trailers, live-aboards (transient and non-transient), and military personnel from the Keys shall be initiated. State parks and campgrounds should be closed at this time or sooner and entry into the Florida Keys by non-residents should be strictly limited.
2. Approximately 36 hours in advance of tropical storm winds, a mandatory evacuation of mobile home residents, special needs residents, and hospital and nursing home patients from the Keys shall be initiated.
3. Approximately 30 hours in advance of tropical storm winds, a mandatory phased evacuation of permanent residents by evacuation zone (described below) shall be initiated. Existing evacuation zones are as follows:
  - a) Zone 1 –Key West, Stock Island and Key Haven to Boca Chica Bridge (MM 1-6)
  - b) Zone 2 –Boca Chica Bridge to West end of 7-mile Bridge (MM 6-40)
  - c) Zone 3 –West end of 7-Mile Bridge to West end of Long Boat Key Bridge (MM 40-63)
  - d) Zone 4 –West end of Long Boat Key Bridge to CR 905 and CR 905A intersection (MM 63-106.5)
  - e) Zone 5 –905A to, and including Ocean Reef (MM 106.5–126.5)

The actual sequence of the evacuation by zones will vary depending on the individual storm.. The concepts embodied in this staged evacuation procedures should be embodied in the appropriate County operational Emergency Management Plans. The evacuation plan shall be monitored and updated on an annual basis to reflect increases, decreases and or shifts in population; particularly the resident and non-resident populations.

**PART TWO: MISCELLANEOUS**

- A. **Liability.** Nothing in this MOU shall be construed to impose on the State of Florida, DEO, DEM, or the Local Governments any liability. Nothing in this MOU may be interpreted as a waiver of sovereign immunity for any Party. Any provision of this MOU that is inconsistent with the State's sovereign immunity statute shall be considered null and void.
- B. **Modification.** Modification to the Memorandum of Understanding shall be valid only when reduced to writing and duly signed by all parties.
- C. **Severability.** If any term or provision of this Memorandum of Understanding shall be invalid or unenforceable to any extent, the Parties agree to comply with remaining terms and provisions, unless compliance of the remaining terms and provisions would prevent the accomplishment of the original intent of the agreement between the Parties.
- D. **Termination.** Any Party may terminate this Memorandum of Understanding at any time, with or without cause. Termination shall take effect upon receipt of written notification by a Party to all other Parties.
- E. **Notification.** Notification by a Party to the DEO shall be directed to the Areas of Critical State Concern Administrator, Department of Economic Opportunity, 107 East Madison Street, Tallahassee, Florida 32399. Notification to the other parties to this Memorandum of Understanding shall be directed as follows:
1. Mayor, Monroe County, 2798 Overseas Hwy. Marathon, FL 33050 with a copy to the Growth Management Division Director, 2798 Overseas Hwy. Marathon, FL 33050,
  2. Mayor, City of Key West, 3126 Flagler Avenue Key West, Florida 33040, with a copy to the Planning Director, 3126 Flagler Avenue Key West, Florida 33040,
  3. Mayor, City of Marathon, 9805 Overseas Highway Marathon, Florida 33050, with a copy to the Planning Director, 9805 Overseas Highway Marathon, Florida 33050
  4. Mayor, City of Layton, 68260 Overseas Highway P.O. Box 778 Long Key, FL 33001
  5. Mayor, City of Key Colony Beach, P.O. Box 510141 - Key Colony Beach, Florida 33051-0141 with a copy to the City Clerk at P.O. Box 510141 - Key Colony Beach, Florida 33051-0141
  6. Mayor, Village of Islamorada, 86800 Overseas Highway Islamorada, FL 33036, with a copy to the Planning and Development Services Manager, 86800 Overseas Highway Islamorada, FL 33036
  7. Director, Florida Division of Emergency Management, 2555 Shumard Oaks Boulevard, Tallahassee, Florida 32399-2100, with a copy to the Hurricane Program Manager



- F. **Effective Date.** This Memorandum of Understanding is effective upon execution by all Parties, and approval by the Florida Administration Commission and ends upon the termination of the Florida Keys Area of Critical State Concern designation, unless terminated earlier according to Part III (D) above.

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**IN WITNESS WHEREOF**, the parties have executed this Memorandum of Understanding.

CITY OF KEY WEST, FLORIDA,

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Craig Cates, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

ATTEST:

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James Scholl, City Manager

Approved as to form and legality:

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Shawn Smith, City Attorney

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**BOARD OF COUNTY COMMISSIONERS  
OF MONROE COUNTY**

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David Rice, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

**ATTEST:**

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Roman Gastesi, County Administrator

Approved as to form and legality:

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Suzanne Hutton, County Attorney

CITY OF MARATHON, FLORIDA

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Peter Worthington, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

ATTEST:

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Roger Hernstadt, City Manager

Approved as to form and legality:

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John Herin, City Attorney

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CITY OF LAYTON, FLORIDA

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Norman S. Anderson, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

ATTEST:

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Philip Haring Administrative  
Assistant to the Mayor

Approved as to form and legality:

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City Attorney

**CITY OF KEY COLONY BEACH,  
FLORIDA**

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Ron Sutton, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

ATTEST:

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Vickie L. Bollinger, City Clerk

Approved as to form and legality:

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Thomas D. Wright, City Attorney

**VILLAGE OF ISLAMORADA, FLORIDA**

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Michael Reckwerdt, Mayor

This \_\_\_\_\_ day of \_\_\_\_\_, 2012.

ATTEST:

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Edward Koconis, Village Manager

Approved as to form and legality:

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Nina Boniske, Village Attorney

**STATE OF FLORIDA DIVISION OF EMERGENCY  
MANAGEMENT**

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Brian Koon  
Director, Florida Division of  
Emergency Management

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Date

Approved for Legal Sufficiency:

By:

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Date

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**APRIL 17, 2012 DEO**

STATE OF FLORIDA DEPARTMENT OF ECONOMIC  
OPPORTUNITY

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J. Thomas Beck, AICP  
Director, Division of Community  
Development

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Date

Approved for Legal Sufficiency:

By:

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Date