

Rick Scott
GOVERNOR



Hurting F. Deutsch
EXECUTIVE DIRECTOR

FLORIDA DEPARTMENT of
ECONOMIC OPPORTUNITY

July 30, 2012

The Honorable Craig Cates
Mayor, City of Key West
3126 Flagler Avenue
Key West FL 33040

Dear Mayor Cates:

Please find enclosed the proposed Memorandum of Understanding (MOU) and report from the Hurricane Evacuation Clearance Time Work Group. As you may recall, the Governor and Cabinet, sitting as the Administration Commission, has adopted Work Program Tasks that require the Department of Economic Opportunity (DEO) to enter into a Memorandum of Understanding (MOU) with Monroe County, City of Marathon, Islamorada, Village of Islands, City of Key West, City of Key Colony Beach, City of Layton and the Florida Division of Emergency Management regarding hurricane evacuation (Rule excerpt enclosed). To complete the Work Program Tasks, a Hurricane Evacuation Clearance Time Work Group (participant list enclosed) was appointed. Four workshops were conducted to consider the Statewide Regional Evacuation Study Program and hurricane model inputs, Census data, behavioral studies, hurricane forecasting, military evacuation procedures, traffic flow rates, private property rights, vacant platted lots, the draft MOU, and other related research.

The enclosed MOU identifies the input variables and assumptions as well as the model to be used to depict hurricane evacuation clearance times for the population of the Florida Keys. Evacuations will be based on the phased evacuation procedure currently in the Florida Keys local governments' adopted Comprehensive Plans. After the MOU is executed, DEO will be required to provide a report to the Administration Commission on the number of allocations that can be distributed to the local governments in the Keys. Based on the completion of more than 100 hurricane evacuation scenarios using the input variables and assumptions in the MOU, DEO has determined that a minimum of 3,540 additional allocations could be distributed in July 2013 among the Florida Keys' jurisdictions and maintain the evacuation clearance time of 24 hours. The applicable rules require an agreement on the inputs and assumptions and the parties are not authorized to set the allocation and distribution which is determined through an Administration Commission Rule or a comprehensive plan amendment. Therefore the allocation is not included in the MOU. A selection of evacuation scenarios has been attached for your review. All scenarios conducted may be viewed at the Department's web site (www.floridajobs.org).

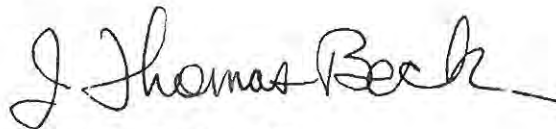
Florida Department of Economic Opportunity The Caldwell Building 107 E. Madison Street Tallahassee, FL 32399-4120
866.FLA.2345 850.245.7105 850.921.3223 Fax www.FloridaJobs.org www.twitter.com/FLDEO www.facebook.com/FLDEO

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The Department has mailed the MOU to all local governments in the Florida Keys, posted the draft MOU on the DEO website, and published a notice in the Florida Administrative Weekly that the Department is accepting comments from the public on the draft MOU. The Department requests that you schedule a public hearing in August to consider and execute the MOU. Please forward the signed MOU with any recommendations to the Department of Economic Opportunity, Division of Community Development, no later than September 30, 2012, to be included in the annual report to the Governor and Cabinet.

If you need additional information or wish to have a DEO staff person participate in your public hearing, please telephone Rebecca Jetton at (850) 717-8494. Thank you for your cooperation in this matter.

Sincerely,

A handwritten signature in black ink that reads "J. Thomas Beck". The signature is fluid and cursive, with a horizontal line extending from the end of the name.

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

JTB/rj

2012 Hurricane Evacuation Work Group Report

The Working Group made the following recommendations regarding the hurricane modeling assumptions and variables of the MOU:

1. **Tourist Units:** There are 13,665 tourist units with 11,287 units occupied (during July) with 100 percent participation for a Category 5 hurricane event. July is the highest month of hotel occupancy. The average car usage is 1.1 cars per unit.
2. **Mobile Home Units:** There are 8,134 mobile home units with 4,576 occupied units with 100 percent participation for a Category 5 hurricane event.
3. **Site-Built Units:** There are 43,718 site-built units with 27,320 occupied, with 90 percent participation for a Category 5 hurricane event.
4. **Response Curve:** 12 hours.
5. **Vehicle Usage by type of Unit:** The number of vehicles owned was taken from 2006-2010 American Communities Survey data
6. **The percent of vehicles** owned that will be evacuated is based upon the 2010 Statewide Monroe County Planning Assumptions, Volume 1-11, Appendix IIIC.
7. **Vehicle Usage by the Special Population:** 2,338 vehicles will be evacuated during Phase 1 by the Naval Air Station-Key West (electronic message to DEO from NAS Key West on July 7, 2012). The number of vehicles from the Florida Keys Community College is based upon the assumption that each of the 100 dorm beds will contribute one evacuating vehicle per bed.
8. **Evacuation Stream.** The evacuating traffic from Monroe County is the only traffic demand modeled (Section 163.3178(9), F.S.)
9. **The Roadway Capacity,** dated June 18, 2010, established by the Florida Department of Transportation.

Monroe County made the following recommendations regarding future allocations and mitigation options:

1. Local governments could consider Statutory, Rule and Comprehensive Plan revisions to amend the clearance time thresholds to reflect any improvements in forecasting.
2. Local governments could consider changing the rates and/or distribution of allocations to allow additional time to address vacant parcels as well as redistribute the potential, new vehicles participating in future evacuation events (reduce evacuating traffic).
3. Local governments could consider road improvements to address roadway capacity. It was noted that these projects are long term, costly, controversial and may conflict with community character.
4. Local governments should consider adopting policies to create and allow alternative uses of vacant properties, particularly along US1. Local governments can consider re-designating parcels to provide alternatives to residential development.

5. Local governments should adopt new funding mechanisms for land acquisition and management to accelerate the extinguishment of development rights and reduce evacuating traffic.
6. Local governments should adopt new incentives to facilitate development that donates land in order to extinguish development rights and reduce evacuating traffic.
7. Local governments should consider adopting policies to allow the transfer of development rights across jurisdictional boundary lines to redistribute existing density and reduce exposure to property rights takings cases.
8. Local governments could consider the construction of shelters outside of coastal high hazard areas in Monroe County funded by impact fees to improve public safety and reduce the number of evacuating vehicles. Note, this concept is not supported by the Florida Division of Emergency Management and only 3% of the population uses shelters.
9. Local governments could consider petitioning the federal government to designate all eligible vacant lots within the Keys as Coastal Barrier Resource Units (CBRS) to limit the developable areas that can receive federal funds or subsidies, such as flood insurance.

The Work Group made the following recommendations regarding future allocations:

The Work Group recommended scenario M5, from the scenarios presented on June 8, 2012, which includes the continuation of full allocations for each local government, with a provision that the City of Key West would transfer annually (by July 15th), any remaining allocations for the year to the other local governments. The unused allocations would be distributed to the other local governments based upon the local governments' ratio of vacant platted land. The vacant land analysis is the comparison of each local government's vacant land percentage to the whole of all the vacant lands in the Florida Keys.

The following table illustrates how the redistribution of the surplus allocations would be made based on the vacant land analysis. Key Colony Beach and Layton have less than 1 percent of the vacant land and would receive fractional allocations. Fractional units (to two decimal places) can be accumulated. However, only whole allocations can be awarded for the purposes of permit issuance.

Vacant Land Analysis Table	Vacant Parcels	% of Total Vacant Parcels	% of Surplus Key West Allocations
Islamorada	1,109	9.86%	5.03
Key Colony Beach	92	0.82%	0.42
Layton	13	0.12%	0.06
Marathon	1,281	11.38%	5.81
Unincorporated Monroe County	8758	77.83%	39.69
Total	11,253	100.00%	51.00

Concerns expressed by the Majority of the Work Group

1. **Timing of mobile home evacuation:** There is little information available regarding the precise time when a mobile home occupant will evacuate. Some members believe that mobile home occupants will not evacuate during Phase 1 and should be modeled as Phase 2. No evidence exists to indicate that mobile home occupants do or do not leave during Phase 1 of the phased evacuation.

Note: DEO recommended that educational workshops be conducted with the mobile home parks to provide education and to improve evacuation support services for individuals with pets and those lacking transportation to facilitate evacuation from mobile homes that are vulnerable to flooding, high winds and do not meet the current wind load standards under the Florida Building Code. The County Emergency Operations Director orders residents in vulnerable dwelling units to evacuate prior to the mandatory order for site built units.

2. **Human Behavioral Surveys** conducted by Dr. Baker for the DEM Statewide Regional Hurricane Evacuation Study indicates that 88 percent of mobile home occupants would evacuate for a Category 5 evacuation. The surveys included 400 telephone surveys conducted in Monroe County with 44 responses from mobile home occupants. These numbers were aggregated with Miami-Dade and Broward mobile home surveys for a total of 1600 surveys. While statistically sound, the small response from mobile home occupants in the Florida Keys was a concern to the Work Group since the adopted comprehensive plan policies and the Hurricane Evacuation model assume that the mobile home occupants evacuate on Phase 1 of the evacuation. Monroe County recommended that additional surveys of mobile home occupants be conducted.

Note: Several evacuation scenarios include 15% or 1,248 mobile home units modeled as evacuating with the site built units during Phase 2 and produced a 24 hour evacuation clearance time.

3. **Mobile home occupancy rate:** Some members questioned the validity of the occupancy rates reported by the U.S. Census and American Community Survey which indicates that out of 8,134 mobile homes, there are only 4,576 occupied units.

Note: This is the most recent, best available and relevant data.

Public Comments and responses

- Some citizens took the position that because the phased evacuation covers 48 hours, there is a clearance time of 48 hours, not 24 hours.

Note: The early evacuation of tourists and mobile home occupants is mitigation to maintain the 24 hour evacuation clearance time. The policy has been adopted for more than five years and the hurricane evacuation modeling software was developed in response to the adopted policy. To modify the policy requires a comprehensive plan amendment for five of the six local governments. Key West adopted the phased

evacuation policy by City Resolution. The adopted policies must be consistent with each other since the evacuation of the Florida Keys involves all of the local governments.

- Reduce units to the extent possible using vacant land analysis, until road improvements are made or develop additional means for evacuation.
- Petition for a toll on US1 and use funds for land acquisition to extinguish development rights.
- If future studies are proposed, the studies should first be submitted to Florida Division of Emergency Management for methodology approval.
- Tourist occupancy: Citizens recommended using the occupancy rate for the month of September and provided data showing that around 46% of hurricanes had occurred in September. The highest average hotel occupancy rate for the year occurs during July (Key West 90.5%, Lower Keys-75.9%, Marathon and Key Colony Beach 79%, Islamorada/Layton 67.5%, Key Largo 77.8%). The September average occupancy rate is lower than July's average occupancy rate. The citizens recommended using the Labor Day week-end occupancy rate which is 97% for Key West and 93% for the balance of the Keys for the Saturday during Labor Day weekend.

Note: DEO staff conducted a scenario using the highest occupied week end of the year which is Labor Day week end (97% and 93%) and the resulting evacuating time for Phase 1 was 17.5 hours.

- Some members expressed concern that mobile home occupants are permanent residents and should be counted evacuating with the Phase 2 site-built units.

Note: The adopted policies notify mobile home occupants to evacuate at 36 hours. The balance of the permanent residents live in permanent site built structures. Mobile homes are more vulnerable and mobile home occupants are asked to leave earlier as a safety precaution. Several evacuation scenarios include 15% or 1,248 mobile home units modeled as evacuating with the site built units during Phase 2 and produced a 24 hour evacuation clearance time.

- The currently adopted 48-hour phased evacuation policy is not reasonable due to the nature of hurricane storm events and tourists may not be able to evacuate before mobile and site-built units evacuate.

Note: The application of the worst case scenario would result in a building moratorium. Current hurricane forecasting and the media provide significant advance notice of approaching weather conditions.

- The Hurricane Evacuation Model accounts for 38% of the existing site built units because the Census data reports the balance of the site built units as vacant, therefore, providing evacuation clearance time results that are lower because of the applied occupancy and participation rates. The model should assume that some percentage of the vacant homes reported by the census and American Communities Surveys are being occupied by seasonal occupants.

Note: Insufficient data exists to provide an accounting for how many seasonal units may be rented without authorization or registration with the Department of Business and Professional Regulation and/or the local governments that issue vacation rental licenses.

Insufficient data exists to determine the number of units that may be occupied by a friend or relative, but have been classified as “vacant” in the hurricane evacuation model.

- Comments received from the public indicated there could be unlawful downstairs enclosures that are being reported by FEMA officials that may not have been counted by the US Census or included in the hurricane evacuation model’s evacuation stream.

Note: FEMA and the County are compiling the number. The County has implemented a program for home inspection when flood insurance policies must be renewed and when property sales occur and is taking enforcement action as needed.

- Comments received from the public recommended that the model use assumptions that account for a fast intensification of a hurricane where a phased evacuation is not possible and tourists and permanent residents evacuate simultaneously. Under this scenario, no additional new development could occur.

Note: With current technology, citizens are aware of potential storm threats several days in advance. Weather forecasting to predict where a hurricane will strike has improved and forecasters are able to predict as far out as 36 hours. The ability to project the precise intensity of the hurricane strike continues to be a challenge.

- Mr. James Franklin, with the National Hurricane Center, reported that the National Hurricane Center has improved in its ability to project where a hurricane will make landfall from 24 hours to 36 hours; however, rapid intensification of a hurricane system is still a major issue with forecasting. He indicated that the Weather Forecasting Services routinely misses intensity by 1 category and the hurricane track error increases by 45 miles/day. Track errors include: speed (timing) and location. He gave the following example: 48 hours in advance of storm (center of storm): Intensity is off by 15 knots and the track is off by 90 miles. 24 hours in advance of storm (center of storm): Intensity off by 11 knots and track is off by 51 miles.
- The occupancy rate for the existing site-built units could increase resulting in a longer evacuation time.

Note: Occupancy has declined over a 20 year period.

- Change rate and distribution of allocations based on vacant land analysis Keys wide.
- Decrease annual allocation rate to provide more time for acquisition of land and reduce evacuation stream
- Increase road capacity to facilitate evacuation.
- Re-designate vacant platted lots close to US1 for commercial/office uses to reduce residential evacuation.
- Revise evacuation clearance time in status and plans based on improved capacity.
- Consider referendum to create dependent taxing authority for land acquisition to reduce future evacuation stream.

Attachments

Excerpt of Rule 28-20.140, F.A.C.

11. By July 1, 2012, Monroe County shall enter into a memorandum of understanding with the Department of Community Affairs, Division of Emergency Management, Marathon, Islamorada, Key West, Key Colony Beach, and Layton after a notice and comment period of at least 30 days for interested parties. The memorandum of understanding shall stipulate, based on professionally acceptable data and analysis, the input variables and assumptions, including regional considerations, for utilizing the Florida Keys Hurricane Evacuation Model or other models acceptable to the Department to accurately depict evacuation clearance times for the population of the Florida Keys.
12. By July 1, 2012, the Florida Keys Hurricane Evacuation Model shall be run with the agreed upon variables from the memorandum of understanding to complete an analysis of maximum build-out capacity for the Florida Keys Area of Critical State Concern, consistent with the requirement to maintain a 24-hour evacuation clearance time and the Florida Keys Carrying Capacity Study constraints. This analysis shall be prepared in coordination with the Department of Community Affairs and each municipality in the Keys.
13. By July 1, 2012, the County and the Department of Community Affairs shall update the data for the Florida Keys Hurricane Evacuation Model as professionally acceptable sources of information are released (such as the Census, American Communities Survey, Bureau of Economic and Business Research, and other studies). The County shall also evaluate and address appropriate adjustments to the hurricane evacuation model within each Evaluation and Appraisal Report.
14. By July 1, 2012, the Department of Community Affairs shall apply the derived clearance time to assess and determine the remaining allocations for the Florida Keys Areas of Critical State Concern. The Department will recommend appropriate revisions to the Administration Commission regarding the allocation rates and distribution of allocations to Monroe County, Marathon, Islamorada, Key West, Layton and Key Colony Beach or identify alternative evacuation strategies that support the 24 hour evacuation clearance time. If necessary, the Department of Community Affairs shall work with each local government to amend the Comprehensive Plans to reflect revised allocation rates and distributions or propose rule making to the Administration Commission.
15. By July 1, 2013, if necessary, the Department of Community Affairs shall work with each local government to amend the Comprehensive Plan to reflect revised allocation rates and distribution or propose rule making to the Administration Commission.

Section 163.3178 (9), Florida Statutes

- i. A proposed comprehensive plan amendment shall be found in compliance with state coastal high-hazard provisions if:
 1. The adopted level of service for out-of-county hurricane evacuation is maintained for a Category 5 storm event as measured on the Saffir-Simpson scale; or
 2. A 12-hour evacuation time to shelter is maintained for a Category 5 storm event as measured on the Saffir-Simpson scale and shelter space reasonably expected to accommodate the residents of the development contemplated by a proposed comprehensive plan amendment is available; or
 3. Appropriate mitigation is provided that will satisfy subparagraph 1. or subparagraph 2. Appropriate mitigation shall include, without limitation, payment of money, contribution of land, and construction of hurricane shelters and transportation facilities. Required mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to development. A local government and a developer shall enter into a binding agreement to memorialize the mitigation plan.
- (b) For those local governments that have not established a level of service for out-of-county hurricane evacuation by July 1, 2008, by following the process in paragraph (a), the level of service shall be no greater than 16 hours for a Category 5 storm event as measured on the Saffir-Simpson scale.
- (c) This subsection shall become effective immediately and shall apply to all local governments. No later than July 1, 2008, local governments shall amend their future land use map and coastal management element to include the new definition of coastal high-hazard area and to depict the coastal high-hazard area on the future land use map.

Note: This statute provides the basis for utilizing the category 5 storm event. All local governments in the Florida Keys had already adopted a 24 hour evacuation time prior to the enactment of this legislation.

Hurricane Evacuation Procedure for all Florida Keys Local governments

*In the event of a **pending major hurricane (Category 3-5)** Monroe County shall implement the following staged/phased evacuation procedures to achieve and maintain an overall 24-hour hurricane evacuation clearance time for the resident population.*

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...

Work Group Participant List

- I. Hurricane Evacuation Clearance Time Work Group**
 - a. Commissioner Sylvia Murphy (Monroe County)
 - b. Mayor Pete Worthington (City of Marathon)
 - c. Mayor Ron Sutton (City of Key Colony Beach)
 - d. Councilman Don Achenberg (Islamorada, Village of Islands)
 - e. Councilman Clark Snow (City of Layton)
 - f. Commissioner Teri Johnston (City of Key West)
 - g. Rebecca Jetton (Department of Economic Opportunity)
 - h. David Halstead (Florida Division of Emergency Management)
- II. Special Interest Group Representatives**
 - a. William Knetge (NAS Key West)
 - b. Daniel Samess (Florida Keys Federation of Chambers of Commerce)
 - c. Sheldon Suga (Florida Restaurant and Lodging Association)
 - d. Jodi Weinhofer (Lodging Association of the Florida Keys and Key West)
 - e. John Hammerstrom (Environmental Group Representative)
 - f. Annalise Mannix (Citizen Advocacy)
- III. Technical Advisory Contributors**
 - a. Jeff Alexander (Northeast Florida Regional Planning Council)
 - b. Richard Ogburn (South Florida Regional Planning Council)
 - c. Irene Toner (Monroe County Emergency Management)
 - d. Lou Caputo (Monroe County Sheriff's Office)
 - e. John Rizzo and Andrew Devanas (alternate) (National Weather Service)
 - f. Aileen Boucle (Florida Department of Transportation)
 - g. Jeannine Kelsick (Areas of Critical State Concern Program)
 - h. Barbara Powell (Areas of Critical State Concern Program)
 - i. Christine Hurley (Monroe County)
 - j. Mayte Santamaria (Monroe County)
 - k. George Garrett (City of Marathon)
 - l. Don Craig (City of Key West)
 - m. Edward Koconis (Village of Islamorada)
 - n. Vickie Bollinger (City of Key Colony Beach)
 - o. Philip "Skip" Haring (City of Layton)
 - p. James Franklin (National Hurricane Center)
 - q. Bryan Davisson (Monroe County)
 - r. Bob Shillinger (Monroe County)
 - s. Richard Shine (Department of Economic Opportunity)
 - t. Andrew Sussman (Florida Division of Emergency Management)
 - u. Jim Callahan (Monroe County)
 - v. Gary Boswell (Monroe County)

Exhibit 1 Table of Traffic Evacuation Zone (TEZ) Occupancy Data: Hotel, Motel and Other Vacation Rental (Tourist) Units												
TEZ	Monroe County Tourist Development Council Districts	Total	Occupancy Rate for July	Occupied Total for July	Occupancy Rate for September	Occupied Total for September	Occupancy Rate for October	Occupied Total for October	Occupancy Rate for November	Occupied Total for November	Occupancy Rate for Hurricane Season	Occupied Total for Hurricane Season
1208	Key West	1,993	90.50%	1,804	63.20%	1,260	74.70%	1,489	85.20%	1,698	79.40%	1,582
1209	Key West	1,696	90.50%	1,535	63.20%	1,072	74.70%	1,267	85.20%	1,445	79.40%	1,347
1210	Key West	162	90.50%	147	63.20%	102	74.70%	121	85.20%	138	79.40%	129
1211	Key West	1,144	90.50%	1,035	63.20%	723	74.70%	855	85.20%	975	79.40%	908
1212	Key West	210	90.50%	190	63.20%	133	74.70%	157	85.20%	179	79.40%	167
1213	Key West	0	90.50%	0	63.20%	0	74.70%	0	85.20%	0	79.40%	0
1214	Key West	31	90.50%	28	63.20%	20	74.70%	23	85.20%	26	79.40%	25
1215	Key West	230	90.50%	208	63.20%	145	74.70%	172	85.20%	196	79.40%	183
1216	Key West	992	90.50%	898	63.20%	627	74.70%	741	85.20%	845	79.40%	788
1217	Monroe w/o Key West*	1	75.90%	1	45.30%	0	52.80%	1	63.50%	1	61.80%	1
1218	Monroe w/o Key West*	25	75.90%	19	45.30%	11	52.80%	13	63.50%	16	61.80%	15
1219	Monroe w/o Key West*	1	75.90%	1	45.30%	0	52.80%	1	63.50%	1	61.80%	1
1220	Monroe w/o Key West*	1	75.90%	1	45.30%	0	52.80%	1	63.50%	1	61.80%	1
1221	Monroe w/o Key West*	136	75.90%	103	45.30%	62	52.80%	72	63.50%	86	61.80%	84
1222	Monroe w/o Key West*	105	75.90%	80	45.30%	48	52.80%	55	63.50%	67	61.80%	65
1223	Monroe w/o Key West*	82	75.90%	62	45.30%	37	52.80%	43	63.50%	52	61.80%	51
1224	Monroe w/o Key West*	217	75.90%	165	45.30%	98	52.80%	115	63.50%	138	61.80%	134
1225	Monroe w/o Key West*	6	75.90%	5	45.30%	3	52.80%	3	63.50%	4	61.80%	4
1226	Marathon	496	79.00%	392	44.90%	223	52.90%	262	62.30%	309	63.10%	313
1227	Marathon	191	79.00%	151	44.90%	86	52.90%	101	62.30%	119	63.10%	121
1228	Marathon	1,461	79.00%	1,154	44.90%	656	52.90%	773	62.30%	910	63.10%	922
1229	Marathon	576	79.00%	455	44.90%	259	52.90%	305	62.30%	359	63.10%	363
1230	Islamorada	87	67.50%	59	40.30%	35	46.10%	40	58.50%	51	54.80%	48
1231	Islamorada	173	67.50%	117	40.30%	70	46.10%	80	58.50%	101	54.80%	95
1232	Islamorada	202	67.50%	136	40.30%	81	46.10%	93	58.50%	118	54.80%	111
1233	Islamorada	1,156	67.50%	780	40.30%	466	46.10%	533	58.50%	676	54.80%	633
1234	Islamorada	106	67.50%	72	40.30%	43	46.10%	49	58.50%	62	54.80%	58
1235	Islamorada	103	67.50%	70	40.30%	42	46.10%	47	58.50%	60	54.80%	56
1236	Key Largo	21	77.80%	16	47.90%	10	55.90%	12	67.30%	14	64.20%	13
1237	Key Largo	169	77.80%	131	47.90%	81	55.90%	94	67.30%	114	64.20%	108
1238	Key Largo	52	77.80%	40	47.90%	25	55.90%	29	67.30%	35	64.20%	33
1239	Key Largo	212	77.80%	165	47.90%	102	55.90%	119	67.30%	143	64.20%	136
1240	Key Largo	840	77.80%	654	47.90%	402	55.90%	470	67.30%	565	64.20%	539
1241	Key Largo	232	77.80%	180	47.90%	111	55.90%	130	67.30%	156	64.20%	149
1242	Key Largo	1	77.80%	1	47.90%	0	55.90%	1	67.30%	1	64.20%	1
1243	Key Largo	186	77.80%	145	47.90%	89	55.90%	104	67.30%	125	64.20%	119
1244	Key Largo	284	77.80%	221	47.90%	136	55.90%	159	67.30%	191	64.20%	182
1245	Key Largo	85	77.80%	66	47.90%	41	55.90%	48	67.30%	57	64.20%	55
1246	Key Largo	0	77.80%	0	47.90%	0	55.90%	0	67.30%	0	64.20%	0
1247	Key Largo	0	77.80%	0	47.90%	0	55.90%	0	67.30%	0	64.20%	0
Total of Units		13,665		11,287		7,299		8,578		10,034		9,540

*The "Big Pine Key and Lower Keys" District did not participate in the current Smith Travel Research survey.

For the purposes of the TIME Model, the Lower Keys will be using "Monroe County w/o Key West" as default occupancy.

Source data: Monroe County Tourist Development Council; Smith Travel Research 2012: Historic Trend Report; Department of Business and Professional Regulation: Division of Hotels and Restaurants; 2010 Statewide Regional Evacuation Study: South Florida Region

Exhibit 2

Table of Traffic Evacuation Zone (TEZ) Occupancy Data: Site-Built and Mobile Home Units

TEZ	Sub-County Location	Site-Built			Mobile Home		
		Total	Occupancy Rate	Occupied Total	Total	Occupancy Rate	Occupied Total
1208	Key West	2,196	67.85%	1,490	1	100.00%	1
1209	Key West	2,252	65.32%	1,471	69	100.00%	69
1210	Key West	1,387	87.89%	1,219	8	100.00%	8
1211	Key West	2,779	77.69%	2,159	42	100.00%	42
1212	Key West	514	92.61%	476	0	0.00%	0
1213	Key West	1,069	87.65%	937	365	96.44%	352
1214	Key West	289	85.35%	247	10	100.00%	10
1215	Key West	1,586	77.96%	1,236	15	100.00%	15
1216	Key West	699	78.40%	548	10	100.00%	10
1217	Key West	610	81.97%	500	576	89.06%	513
1218	Key West	106	84.91%	90	304	79.28%	241
1219	Key West	448	86.61%	388	0	0.00%	0
1220	Lower Keys	1,041	86.36%	899	517	56.87%	294
1221	Lower Keys	1,112	71.22%	792	50	100.00%	50
1222	Lower Keys	1,521	55.03%	837	472	40.25%	190
1223	Lower Keys	2,477	66.98%	1,659	376	48.14%	181
1224	Lower Keys	1,174	59.20%	695	343	62.97%	216
1225	Lower Keys	464	63.79%	296	20	100.00%	20
1226	Middle Keys	747	56.09%	419	458	77.95%	357
1227	Middle Keys	1,613	58.15%	938	204	69.12%	141
1228	Middle Keys	3,854	49.35%	1,902	298	45.64%	136
1229	Middle Keys	1,093	37.60%	411	192	44.79%	86
1230	Middle Keys	258	62.79%	162	422	9.01%	38
1231	Middle Keys	1,155	34.37%	397	9	66.67%	6
1232	Upper Keys	525	57.52%	302	123	33.33%	41
1233	Upper Keys	273	57.88%	158	64	34.38%	22
1234	Upper Keys	885	49.83%	441	122	53.28%	65
1235	Upper Keys	2,299	57.16%	1,314	79	37.98%	30
1236	Upper Keys	619	53.96%	334	162	54.94%	89
1237	Upper Keys	933	52.52%	490	366	45.63%	167
1238	Upper Keys	377	75.86%	286	177	20.90%	37
1239	Upper Keys	1,509	55.53%	838	105	2.86%	3
1240	Upper Keys	1,547	46.15%	714	371	46.90%	174
1241	Upper Keys	1,009	79.58%	803	293	49.15%	144
1242	Upper Keys	487	63.24%	308	809	48.21%	390
1243	Upper Keys	1,114	52.96%	590	649	63.64%	413
1244	Upper Keys	605	32.23%	195	10	50.00%	5
1245	Upper Keys	1,071	34.08%	365	32	46.88%	15
1246	Mainland Monroe	4	50.00%	2	11	45.46%	5
1247	Mainland Monroe	17	70.59%	12	0	0.00%	0
Totals		43,718		27,320	8,134		4,576

Source data: 2010 US Census and 2006-2010 American Community Survey for Monroe County

Exhibit 3

Table of Traffic Evacuation Zone (TEZ) Vehicle Per Unit Data: Site-Built, Mobile Home and Tourist Units

TEZ	Sub-County Location	Site-Built			Mobile Home			Tourist (based on July Occupancy)		
		Occupied Units	Vehicle per Unit	Total Vehicles	Occupied Units	Vehicle per Unit	Total Vehicles	Occupied Units	Vehicle per Unit	Total Vehicles
1208	Key West	1,490	1.08859	1,622	1	1.00000	1	1,804	1.1	1,984
1209	Key West	1,471	0.99544	1,464	69	0.85507	59	1,535	1.1	1,689
1210	Key West	1,219	1.36423	1,663	8	1.37500	11	147	1.1	162
1211	Key West	2,159	1.41147	3,048	42	1.45238	61	1,035	1.1	1,139
1212	Key West	476	1.22899	585	0	0.00000	0	190	1.1	209
1213	Key West	937	1.31910	1,236	352	1.36080	479	0	1.1	0
1214	Key West	247	1.45398	359	10	1.50000	15	28	1.1	31
1215	Key West	1,236	1.29993	1,607	15	1.26667	19	208	1.1	229
1216	Key West	548	1.31934	723	10	1.30000	13	898	1.1	988
1217	Key West	500	1.40800	704	513	1.40156	719	1	1.1	1
1218	Key West	90	1.64444	148	241	1.63900	395	19	1.1	21
1219	Key West	388	0.00000	0	0	0.00000	0	1	1.1	1
1220	Lower Keys	899	1.22914	1,105	294	0.62925	185	1	1.1	1
1221	Lower Keys	792	1.92045	1,521	50	1.92000	96	103	1.1	113
1222	Lower Keys	837	1.24134	1,039	190	1.60000	304	80	1.1	88
1223	Lower Keys	1,659	1.41772	2,352	181	1.70166	308	62	1.1	68
1224	Lower Keys	695	1.01727	707	216	1.71759	371	165	1.1	182
1225	Lower Keys	296	1.75000	518	20	1.70000	34	5	1.1	6
1226	Middle Keys	419	0.94033	394	357	1.03081	368	392	1.1	431
1227	Middle Keys	938	1.51386	1,420	141	1.39716	197	151	1.1	166
1228	Middle Keys	1,902	1.71451	3,261	136	1.75735	239	1,154	1.1	1,269
1229	Middle Keys	411	1.52555	627	86	1.58140	136	455	1.1	501
1230	Middle Keys	162	1.71605	278	38	1.71053	65	59	1.1	65
1231	Middle Keys	397	1.62972	647	6	1.66667	10	117	1.1	129
1232	Upper Keys	302	1.89073	571	41	1.90244	78	136	1.1	150
1233	Upper Keys	158	1.88608	298	22	1.86364	41	780	1.1	858
1234	Upper Keys	441	0.00000	0	65	0.00000	0	72	1.1	79
1235	Upper Keys	1,314	1.86758	2,454	30	1.76667	53	70	1.1	77
1236	Upper Keys	334	1.79042	598	89	1.78652	159	16	1.1	18
1237	Upper Keys	490	1.32245	648	167	0.93413	156	131	1.1	144
1238	Upper Keys	286	1.60140	458	37	1.56757	58	40	1.1	44
1239	Upper Keys	838	1.95346	1,637	3	2.00000	6	165	1.1	182
1240	Upper Keys	714	1.88936	1,349	174	1.40230	244	654	1.1	719
1241	Upper Keys	803	1.81071	1,454	144	1.83333	264	180	1.1	198
1242	Upper Keys	308	1.42532	439	390	1.40513	548	1	1.1	1
1243	Upper Keys	590	2.12881	1,256	413	1.93220	798	145	1.1	160
1244	Upper Keys	195	0.46154	90	5	1.60000	8	221	1.1	243
1245	Upper Keys	365	0.81096	296	15	1.86667	28	66	1.1	73
1246	Mainland Monroe	2	1.50000	3	5	1.40000	7	0	1.1	0
1247	Mainland Monroe	12	0.00000	0	0	0.00000	0	0	1.1	0
Totals		27,320		38,579	4,576		6,533	11,287		12,416

Source data: 2010 US Census and 2006-2010 American Community Survey for Monroe County; Smith Travel Research 2012: Historic Trend Report; 2010 Statewide Regional Evacuation Study: South Florida Region

Exhibit 4

Table of Traffic Evacuation Zone (TEZ) Vehicle Use Rate Data: Site-Built, Mobile Home and Tourist Units

TEZ	Sub-County Location	Site-Built			Mobile Home			Tourist (based on July Occupancy)		
		Total Vehicles	Vehicle Use Rate	Available Vehicles	Total Vehicles	Vehicle Use Rate	Available Vehicles	Total Vehicles	Vehicle Use Rate	Available Vehicles
1208	Key West	1,622	90%	1,460	1	90%	1	1,984	100%	1984
1209	Key West	1,464	90%	1,318	59	90%	53	1,689	100%	1,689
1210	Key West	1,663	90%	1,497	11	90%	10	162	100%	162
1211	Key West	3,048	90%	2,743	61	90%	55	1,139	100%	1,139
1212	Key West	585	90%	526	0	90%	0	209	100%	209
1213	Key West	1,236	90%	1,112	479	90%	431	0	100%	0
1214	Key West	359	90%	323	15	90%	14	31	100%	31
1215	Key West	1,607	90%	1,447	19	90%	17	229	100%	229
1216	Key West	723	90%	651	13	90%	12	988	100%	988
1217	Key West	704	90%	634	719	90%	647	1	100%	1
1218	Key West	148	90%	133	395	90%	356	21	100%	21
1219	Key West	0	90%	0	0	90%	0	1	100%	1
1220	Lower Keys	1,105	75%	829	185	75%	139	1	100%	1
1221	Lower Keys	1,521	75%	1,141	96	75%	72	113	100%	113
1222	Lower Keys	1,039	75%	779	304	75%	228	88	100%	88
1223	Lower Keys	2,352	75%	1,764	308	75%	231	68	100%	68
1224	Lower Keys	707	75%	530	371	75%	278	182	100%	182
1225	Lower Keys	518	75%	388	34	75%	26	6	100%	6
1226	Middle Keys	394	80%	315	368	80%	294	431	100%	431
1227	Middle Keys	1,420	80%	1,136	197	80%	158	166	100%	166
1228	Middle Keys	3,261	80%	2,609	239	80%	191	1,269	100%	1,269
1229	Middle Keys	627	80%	502	136	80%	109	501	100%	501
1230	Middle Keys	278	80%	222	65	80%	52	65	100%	65
1231	Middle Keys	647	80%	518	10	80%	8	129	100%	129
1232	Upper Keys	571	85%	485	78	85%	66	150	100%	150
1233	Upper Keys	298	85%	253	41	85%	35	858	100%	858
1234	Upper Keys	0	85%	0	0	85%	0	79	100%	79
1235	Upper Keys	2,454	85%	2,086	53	85%	45	77	100%	77
1236	Upper Keys	598	85%	508	159	85%	135	18	100%	18
1237	Upper Keys	648	85%	551	156	85%	133	144	100%	144
1238	Upper Keys	458	85%	389	58	85%	49	44	100%	44
1239	Upper Keys	1,637	85%	1,391	6	85%	5	182	100%	182
1240	Upper Keys	1,349	85%	1,147	244	85%	207	719	100%	719
1241	Upper Keys	1,454	85%	1,236	264	85%	224	198	100%	198
1242	Upper Keys	439	85%	373	548	85%	466	1	100%	1
1243	Upper Keys	1,256	85%	1,068	798	85%	678	160	100%	160
1244	Upper Keys	90	85%	76	8	85%	7	243	100%	243
1245	Upper Keys	296	85%	252	28	85%	24	73	100%	73
1246	Mainland Monroe	3	75%	2	7	80%	6	0	100%	0
1247	Mainland Monroe	0	75%	0	0	80%	0	0	100%	0
Totals		38,579		32,394	6,533		5,461	12,416		12,416

Source data: 2010 US Census and 2006-2010 American Community Survey for Monroe County; Smith Travel Research 2012: Historic Trend Report; 2010 Statewide Regional Evacuation Study: South Florida Region

Exhibit 5				
Table of Traffic Evacuation Zone (TEZ) Data: Special Population				
TEZ	Sub-County Location	Special Population Type	Originating Location	Number of Beds/Vehicles Used
1216	Key West	University Population	Florida Keys Community College - Blue Lagoon Residence Hall	100 vehicles
1220	Lower Keys	NAS Key West Personnel	NAS Key West - Boca Chica	2,338 vehicles

Source data: Naval Air Station (NAS) Key West; Florida Keys Community College

Exhibit 6 Maximum Sustainable Traffic Flow Rates per Functional Evacuation Lane: US Highway 1 (Overseas Highway) and CR 905/Card Sound Road in the Florida Keys, Monroe County, Florida					
Area	Milemarkers		Location/Description	Functional Evacuation Lane	Maximum Sustainable Flow Rate per Functional Lane
	From	To			
Lower Keys	2	4	Key West to Stock Island	2	900
Lower Keys	4	9	Stock Island To Big Coppitt Key	2	900
Lower Keys	9	17	Big Coppitt to Sugarloaf Key	1	1,100
Lower Keys	17	22	Sugarloaf to Cudjoe Key	1	1,100
Lower Keys	22	24	Cudjoe Key to Summerland Key Cove Airport	1	1,100
Lower Keys	24	25	Summerland Key Cove Airport to Summerland Key	1	1,100
Lower Keys	25	30	Summerland Key to Big Pine Key	1	1,100
Lower Keys	30	34	Big Pine Key to West Summerland Keys	1	1,050
Lower Keys	34	35.2	West Summerland Keys to Spanish Harbor Keys	1	1,100
Lower Keys	35.2	36.5	Spanish Harbor Keys to Bahia Honda Bridge	2	1,100
Lower Keys	36.5	37.5	Bahia Honda Bridge to Bahia Honda Key	1	1,100
Middle Keys	37.5	47	Bahia Honda Key to Hog Key	1	1,100
Middle Keys	47	48	Hog Key to Boot Key	1	1,100
Middle Keys	48	50.2	Boot Key to Marathon	2	900
Middle Keys	50.2	58	Marathon to Marathon Shores	2	900
Middle Keys	50.8	54	Marathon Shores to Key Colony Beach	2	900
Middle Keys	54	54.5	Key Colony Beach to Deer Key	2	900
Middle Keys	54.5	58	Deer Key to Grassy Key	1	1,100
Upper Keys	58	74	Grassy Key to Matecumbe Harbor	1	1,100
Upper Keys	74	80	Matecumbe Harbor to Teatable Key	1	1,100
Upper Keys	80	83.5	Teatable Key to Islamorada	1	1,100
Upper Keys	83.5	85.6	Islamorada to Windley Key	1	1,100
Upper Keys	85.6	90	Windley Key to Plantation Key	1	1,100
Upper Keys	90	100	Tavernier Key to Newport Key	2	900
Upper Keys	100	105	Newport Key to Sexton Cove	2	900
Upper Keys	105	106.3	Sexton Cove to Rattlesnake Key	2	900
Upper Keys	106.3	126.5	Rattlesnake Key to Card Sound Road	1	1,200
Upper Keys	126.5	HEFT	Card Sound Road to HEFT	1	900

Exhibit 6 Maximum Sustainable Traffic Flow Rates per Functional Evacuation Lane: US Highway 1 (Overseas Highway) and CR 905/Card Sound Road in the Florida Keys, Monroe County, Florida					
Area	Milemarkers		Location/Description	Functional Evacuation Lane	Maximum Sustainable Flow Rate per Functional Lane
	From	To			
Upper Keys	106.3	Int CR 905/CR 905A	Lake Surprise to Crocodile Lake	1	1,100
Upper Keys	Ocean Reef	Int CR 905/CR 905A	Tanglefish Key to Crocodile Lake	1	1,100
Upper Keys	Int CR 905/CR 905A	US1	Crocodile Lake to South Miami Dade	1	1,100

Source data: Florida Department of Transportation: Letter to Department of Community Affairs on June 18, 2010 - Tables 2A and 2B; Statewide Regional Evacuation Study for the South Florida Region

Scenario Summary

Phase 2 Scenarios		Category 5/ Level E
Participation		90%
S1	2010 Census site-built units. 44,630 - Evacuating Units 25,247	23 hours
S2	2010 Census site-built units with full allocation for 10 years. (44,630 + 3,540) - Evacuating Units 27,256	24 hours
M5 ¹	2010 Census site-built units with the military adjustment according to information submitted by Naval Air Station Key West and a full allocation for 10 years with a 10-year conversion of mobile homes to site-built and coning for MM 108-126. (43,760 + 3,540 + 1,248) - Evacuating Units 27,297	24 hours
KW3 ²	2010 Census site-built units with the military adjustment and a full allocation for 10 years, 10-year mobile home conversion to site-built and coning for MM 108-126. Equivalency Rate applied to Key West's entire allocation amount ($910 / .78 = 1,166$). (43,900 + 3,806 + 1,248) - Evacuating Units 27,762	24 hours
KW4 ²	2010 Census site-built units with the military adjustment and a full allocation for 10 years, 10-year mobile home conversion to site-built and coning for MM 108-126. Equivalency Rate applied to Key West's 30% of its allocation amount ($(910 * .30) / .78 = 350 + 637 = 987$). (43,900 + 3,627 + 1,248) - Evacuating Units 27,645	24 hours
BA-3	2010 Census site-built units with the revised military adjustment and a full allocation for 10 years, 10-year mobile home conversion to site-built and coning for MM 108-126. Additional units are included to simulate the past 3 ROGO years of full allocation since the 2010 US Census. This contains a potential allocation of 91 units for Key West in the event the Comprehensive Plan and allocation are amended and approved by the Department and the Administration Commission. (43,718 + 3,550 + 1,248 + 883) - Evacuating Units 27,960	24 hours
BA-3a	2010 Census site-built units with the revised military adjustment and a full allocation for 10 years, 10-year mobile home conversion to site-built and coning for MM 108-126. Additional units are included to simulate the past 3 ROGO years of full allocation since the 2010 US Census. This contains a potential allocation of 45 units for Key West in the event the Comprehensive Plan and allocation are amended and approved by the Department and the Administration Commission. (43,718 + 3,550 + 1,248 + 837) - Evacuating Units 27,930	24 hours

¹As discussed during the April 30, 2012 Work Group meeting, NAS Key West evacuating vehicles were modeled in Phase I of the evacuation but 870 housing units sited on the NAS Key West were not deducted from the Phase II evacuation. Scenarios M4, M5, M7, M9, and M10 account for this oversight. Subsequent updates have been received from NAS Key West with the final revisions submitted to the Department on July 13, 2012.

²These scenarios analyze the potential impacts from the use of the affordable housing equivalency rate as described in Sections 108-994 and 122-1470 of the City of Key West's Land Development Regulations. Based on the 2010 US Census and 2006-2010 American Community Survey, the equivalency rate would be updated to 0.78. Additionally, new development in Key West is required to allocate 30% of its units to affordable housing which has also been incorporated in the analyses.

Scenario Summary

Phase 2 Scenarios		Category 5/ Level E
Participation		90%
M1	2010 Census site-built units and mobile homes (44,630 + 8,134) - Evacuating Units 29,928	25 hours & 30 minutes
1	All Units – Simultaneous Evacuation 2010 Census site-built units, tourist units, mobile homes, and military (44,630 + 13,665 units + 8,134 units + 2,025 vehicles) - Evacuating Units 41,294	35 hours & 30 minutes
S3	2010 Census site-built units with 50% decrease in current allocation for 10 years (44,630 + 1,780) - Evacuating Units 26,256	23 hours & 30 minutes
S4	2010 Census site-built units with 25% decrease in current allocation for 10 years (44,630 + 2,660) - Evacuating Units 26,758	23 hours & 30 minutes
M2	2010 Census site-built units with full allocation for 10 years and mobile homes (44,630 + 3,540 + 8,134) - Evacuating Units 31,939	27 hours
M4 ¹	2010 Census site-built units with the military adjustment according to information submitted by Naval Air Station Key West and a full allocation for 10 years with a 10-year conversion of mobile homes to site-built (43,760 + 3,540 + 1,248) - Evacuating Units 27,297	24 hours
M7 ¹	2010 Census site-built units with the military adjustment according to information submitted by Naval Air Station Key West and a 50% decrease in current allocation for 10-year conversion of mobile homes to site-built (43,760 + 1,780 + 1,248) - Evacuating Units 26,299	23 hours & 30 minutes
M9 ¹	2010 Census site-built units with the military adjustment according to information submitted by Naval Air Station Key West and a 25% decrease in current allocation for 10-year conversion of mobile homes to site-built (43,760 + 2,660 + 1,248) - Evacuating Units 26,800	23 hours & 30 minutes
M10 ¹	2010 Census site-built units with the military adjustment according to information submitted by Naval Air Station Key West and a 15% decrease in current allocation for 10-year conversion of mobile homes to site-built (43,760 + 3,009 + 1,248) Evacuating Units 26,998	24 hours
M11	2010 Census site-built units with the military adjustment and a revised full allocation for 10 years, giving Key West 30 allocations and 10-year conversion of mobile homes to site-built (43,760 + 3,190 + 1,248) – Evacuating Units 26,327	23 hours

Scenario Summary

Phase 1 Scenarios		
Participation		100%
T1	Existing tourist units, additional 100 tourist units in Marathon, mobile homes, and military; tourist units modeled using tourist occupancy rates for July (13,665 + 100 + 8,134) - Evacuating Units 16,021 + 2,025 vehicles	16 hours & 30 minutes
T2	Existing tourist units, additional 100 tourist units in Marathon, mobile homes, and military; tourist units modeled using tourist occupancy rates for October (13,665 + 100 + 8,134) - Evacuating Units 13,259 + 2,025 vehicles	15 hours & 30 minutes
T3	Existing tourist units, additional 100 tourist units in Marathon, mobile homes, and military; tourist units modeled using tourist occupancy rates for November (13,665 + 100 + 8,134) - Evacuating Units 14,734 + 2,025 vehicles	16 hours
T4	Existing tourist units, additional 100 tourist units in Marathon, mobile homes, and military; tourist units modeled using tourist occupancy rates for the hurricane season average (June through November) (13,665 + 100 + 8,134) - Evacuating Units 14,241 + 2,025 vehicles	15 hours & 30 minutes
T5	Existing tourist units, additional 100 tourist units in Marathon, an additional 215 units in Key West, mobile homes, and military; tourist units modeled using tourist occupancy rates for July (13,665 + 100 + 215 + 8,134) - Evacuating Units 16,215 + 2,025 vehicles	16 hours & 30 minutes
T6 ³	Existing tourist units, additional 100 tourist units in Marathon, mobile homes, military modeled using hotel occupancy rates for Saturday, September 3, 2011 - Labor Day Weekend (13,665 + 100 + 8,134) - Evacuating Units 17,767 + 2,338 vehicles	17 hours & 30 minutes

³On July 13, 2012, Naval Air Station Key West confirmed information submitted on June 7, 2012 to the Department of Economic Opportunity regarding updated number of units and vehicles which would participate in Phase I of a hurricane evacuation scenario. The vehicle number was revised from 2,025 to 2,338.

Notice sent to FAW for publication on August 10, 2012

DEPARTMENT OF ECONOMIC OPPORTUNITY

Division of Community Development

The **Department of Economic Opportunity** is accepting comments regarding a memorandum of understanding developed with Monroe County, and the cities of Marathon, Islamorada, Key West, Key Colony Beach, and Layton, and the Florida Division of Emergency Management regarding the hurricane evacuation computer modeling variables and assumptions. The draft memorandum of understanding is available at: <http://www.floridajobs.org/community-planning-and-development/programs/areas-of-critical-state-concern/florida-keys-hurricane-evacuation> A copy of the memorandum of understanding may also be obtained by contacting: Barbara Powell, by phone: (850)717-8504, by email: barbara.powell@deo.myflorida.com, or by regular or express mail at the Department of Economic Opportunity, Division of Community Planning and Development, 107 E. Madison Street Caldwell Bldg., MSC 160 Tallahassee, FL 32399. Comments should be submitted to the address above and must be received no later than September 9, 2012

Summary of Agendas for 2012 Hurricane Evacuation Clearance Time Work Group Meetings

January 30, 2012

Marathon Fire Station, City of Marathon

Finalized Agenda – Meeting 1

10:00 – 10:15 AM	Welcome & Opening Remarks	Pete Worthington
10:15 – 10:45 AM	Administration Commission Directive and Process	Christine Hurley
10:45 – 11:15 AM	Statewide Regional Evacuation Study Program Model	Jeff Alexander
11:15 – 12:00 PM	Myths and Facts	Rebecca Jetton
12:00 – 1:00 PM	Lunch (collect \$ & order sandwiches)	
1:00 – 1:30 PM	National Hurricane Forecasting	James Franklin
1:30 – 2:00 PM	Behavioral Studies	Barbara Powell
2:00 – 2:30 PM	Census Data	Richard Ogburn
2:30 – 2:45pm	Break	
2:45 – 3:15 PM	History of Modeling in Keys and Parameters Utilized	Mayté Santamaria
3:15 – 3:45 PM	Public Comments & Questions	
3:45 – 4:00 PM	Local Government & Special Interest Group Input	
	Hand out blank, draft MOU for next meeting	

February 27, 2012

Harvey Government Center, City of Key West

Tentative Agenda – Meeting 2

10:00 – 10:15 AM	Welcome & Opening Remarks	Teri Johnston
10:15 – 10:45 AM	DRAFT MOU Overview	
10:45 – 11:15 AM	Participation Rate Variable	
11:15 – 11:45 AM	Road Capacity and Shoulder Enhancements	
11:45 – 12:45 PM	Lunch (collect \$ & order sandwiches)	
12:45 – 1:15 PM	Occupancy Rate Variable	
1:15 – 1:45 PM	Vacant Land Analysis	
1:45 – 2:15 PM	Break	
2:15 – 3:15 PM	Scenario Run Results	
3:15 – 3:45 PM	Public Input	
3:45 – 4:00 PM	Local Government & Special Interest Group Input	
	Public Comments & Questions	

March 30, 2012

Murray E. Nelson Government Center, Key Largo

Tentative Agenda – Meeting 3

10:00 – 10:15 AM	Welcome & Opening Remarks	Sylvia Murphy
10:15 – 10:30 AM	Scenario Run Results	
10:30 – 11:00 AM	New Scenario Requests	
11:00 – 12:00 PM	Revisions to Current Policies	
12:00 – 1:00 PM	Lunch (collect \$ & order sandwiches)	
1:00 – 1:30 PM	Tourist Evacuation and Scenarios	
1:30 – 2:00 PM	Private Property Rights	Richard Shine
2:00 – 2:30 PM	DRAFT MOU Overview	
2:30-2:45 PM	Break	
2:45 – 3:15 PM	Allocation and Distribution of ROGO	
3:15 – 3:35 PM	Public Comment	
3:35 – 4:00 PM	Local Government & Special Interest Group Input	
	Public Comments & Questions	

Hurricane Evacuation Clearance Workshop

June 8, 2012 Minutes

Welcome and Opening Remarks

Barbara Powell from the Department of Economic Opportunity brought the meeting to order and introduced Mayor Peter Worthington of the City of Marathon to welcome the group.

Mrs. Powell proposed changes to the Agenda to allow Work Group member Annalise Mannix to speak since she was unable to stay the duration of the meeting. Other announcements included the intent to post an email on the Department of Economic Opportunity's Florida Keys Hurricane Evacuation website to cure a potential Sunshine Law violation that occurred when Ms. Mannix sent an email to the Monroe County Board of County Commissioners and copied Work Group member Commissioner Sylvia Murphy. The email from Ms. Mannix expressed her concerns regarding: 1) traffic flow rates, 2) vehicle usage rates and 3) behavioral studies.

Mrs. Powell noted that Bob Shillinger, Assistant County Attorney for Monroe County, had previously requested, via email, changes to the April 30th minutes regarding his presentation on a Sunshine violation. Mrs. Powell asked if there were any other corrections to the April 30th meeting minutes before approval. Mr. Hammerstrom requested that the minutes reflect the economic impact of hurricane evacuation (\$3 Million impact during a week day and \$8 Million on a weekend).

Annalise Mannix Presentation

Ms. Mannix stated that the traffic flow rates utilized in the hurricane evacuation model for the Florida Keys were too low. Ms. Mannix indicated that the population may start evacuating days in advance of a hurricane storm event. Regarding the behavioral studies, Ms. Mannix had issue with how residents in Mobile Homes and Recreational Vehicles were surveyed. She also stated that assuming people won't drive at night was incorrect.

Ms. Mannix indicated that further research should be done to make sure double-counting does not occur. Ms. Mannix was not convinced that new construction equates to new permanent residents since more homes are being used as second homes and vacation rentals. She also felt that the 10 ft. shoulders should be counted in the model as a functional evacuation lane and recommended a contra-flow plan on the 18-mile stretch.

John Hammerstrom Presentation

John Hammerstrom's slide presentation provided an overview of the assumptions that are part of the Memorandum of Understanding (MOU), reinforced that the task of the Work Group was to choose reasonable input parameters and to compare the resulting clearance time to the statutory limit of 24 hours, and he expressed his apprehension that the group would instead "...start with a clearance time of 24 hours or less and then define the inputs and assumptions to achieve that time."

Mr. Hammerstrom quoted Jonathan Rizzo, Warning Coordination Meteorologist at the National Weather Service, Key West, "The science of weather forecasting, including track, intensification, wind field and storm surge does not support the assumption that Monroe County will always have 48 hours in which to carry out a phased evacuation," James Franklin, Branch Chief of the National Hurricane Center, Hurricane Specialist Unit, "While Average Track Errors for Atlantic hurricanes have been cut in half over the past 15 years, there has been virtually no change in average intensity forecast errors over that period. Rapid intensification is particularly difficult to forecast. Accurate forecasts of storm surge 48 hours in advance are complicated by a lack of ability to forecast changes in storm structure and size, where almost no forecast skill exists. The structure or distribution of a storm's wind field is one of several critical factors in determining the amount of surge that a particular location will experience," and Andrew Devanas, Science and Operations Officer of the National Weather Service, Key West, "Hurricanes Wilma, Rita, Ivan and Dennis all intensified from tropical storm to evacuation-inducing Category 3+ strength in less than 24 hours - and none of those intensifications were forecast."

It was Mr. Hammerstrom's opinion that mobile home residents and tourists should be modeled as evacuating with the site-built units because "...forecasting tools are inadequate to reliably evacuate tourists 48 hours ahead. History tells us that sometimes 24 hours is insufficient." Mr. Hammerstrom discussed the 20,135 dwelling units the US Census considered vacant and the fact that none are included in the MOU clearance time calculation. He referred to the census statement that 75% of the vacant units are occupied "seasonally, recreationally or occasionally" and it was his opinion that "...many 'vacant' dwelling units will generate evacuation traffic because they are second homes in need of hurricane preparation by mainland owners, or simply because they are occupied as 'seasonal, recreational or occasional' units."

Mr. Hammerstrom stated that the proposed MOU accounts for only 38% of the County's total dwelling units since the Work Group's proposed input parameters excludes all 20,135 dwelling units considered "vacant" and all tourist units and mobile homes based on the presumption that there will be 48 hours in which to execute a two-phased evacuation.

Mr. Hammerstrom suggested that the draft MOU should include Tourist and Mobile Home residents in the clearance time calculation and should include 25% of those units considered vacant by the US Census. Since it was required by Florida Administrative Code to include "regional considerations", he asserted that the clearance time for Monroe County should therefore include the influences of neighboring counties. Mr. Hammerstrom presented his recommendations for a revised MOU that he had drafted. The members of the Work Group did not make a motion to accept his recommendations.

Mayte Santamaria Presentation

Mayte Santamaria, Assistant Planning Director for Monroe County, gave a presentation based on alternative strategies to mitigate for hurricane evacuation impacts in the Florida Keys. Some of the potential strategies are as follows:

- Revision to the rate and distribution of building allocations
 - Distribution based on vacant land analysis within jurisdictions
 - Decrease annual allocation rate to allow for the ability to buy more land and allow for long term land acquisition

- Roadway Improvements
 - Acknowledge these type of projects are costly and controversial
 - Additional lanes may conflict with community character and are prohibited by Monroe County Comprehensive Plan policies in areas with 4 lane highways in the Upper Keys
- Adopt comprehensive plan policies which would allow for the transfer of building allocations across Monroe County sub-areas and across other local governments' jurisdictional lines
 - Would help with limited allocations
 - May negatively impact affordable housing deficit in the Florida Keys
- Re-designate vacant platted lots near US 1 as strictly non-residential land uses (such as commercial/office, etc.)
- Request federal government designate all eligible vacant lots within the Keys as Coastal Barrier Resource Units (CBRS)
 - Provide limitations on obtaining federal funds or subsidies for future development

Ms. Santamaria stated that there could be an evaluation to the current 24-hour clearance time to see whether it is still appropriate for the Florida Keys since forecasting ability has improved since it was adopted into the Florida Statutes and local law. She also recommended the reconsideration of the current phased policy adopted by the local governments to see if the policy is still relevant for the Keys and whether revision is necessary.

Monroe County has 8,758 privately-owned, vacant lots and the local governments should consider mechanisms to accelerate and fund land acquisition while balancing the private property rights and fairness for future development. Ms. Santamaria indicated there may be long-term maintenance issues. A solution would include locating additional funding sources for the County's Land Authority.

Other mitigation strategies included research and construction of hurricane shelters within Monroe County located outside the Coastal High Hazard Area (CHHA). Funding for shelter development could come from fees from future development in the Keys. Ms. Santamaria presented maps of potential locations outside of Tier I and the CHHA.

Scenario Discussion - Barbara Powell and Jeannine Kelsick

Scenarios M3, M4, M5 and M11

Scenario M3: This scenario assumes 44,630 existing site-built units, projected allocation of 3,540 and 1,248 mobiles homes to convert to site-built units over the 10-year period. The scenario provided an evacuation clearance time of 24 hours and 30 minutes.

Scenario M4: This scenario assumes 43,760 existing site-built units, projected allocation of 3,540 and 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario differs from Scenario M3 by removing 870 units which were double counted (military housing). Mrs. Powell indicated that the scenario shows the location bias of units located within the Key West region and how the location of 870 units at the beginning of the evacuation stream

affects clearance time by 30 minutes. This scenario provided an evacuation clearance time of 24 hours.

Scenario M5: This scenario assumes 43,760 existing site-built units, projected allocation of 3,540 units and 1,248 mobiles homes to convert to site-built units over the 10-year period, and coning north of Jewfish Creek Bridge. This scenario provided an evacuation clearance time of 24 hours.

Scenario M11: This scenario assumes 43,760 existing site-built units, projected allocation of 3,190 with only 30 new units located at Key West and 1,248 mobiles homes to allocation over the next 10 years. This scenario produced an evacuation time of 23 hours.

Scenarios M6-M13

Scenario M6: This scenario assumes 44,630 existing site-built units, projected allocation of 1,770 units (a 50% decrease in the current allocation), and an estimate of 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario provided an evacuation clearance time of 24 hours.

Scenario M7:

This scenario assumes 43,760 existing site-built units, a projection of 1,770 units (a 50% decrease in allocation) 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario differs from Scenario M6 by removing the double count of military housing units associated with Naval Air Station Key West. This scenario provided an evacuation clearance time of 23 hours and 30 minutes.

Scenario M8: This scenario assumes 44,630 existing site-built units, a projection of 2,660 (a 25% decrease in allocation), and an estimate of 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario provided an evacuation clearance time of 24 hours.

Scenario M9: This scenario assumes 43,760 existing site-built, 2,660 projected units (a 25% decrease in the current allocation) and an estimate of 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario differs from Scenario M8 by removing the double count of military housing units associated with Naval Air Station Key West. This scenario provided an evacuation clearance time of 23 hours and 30 minutes.

Scenario M10: This scenario assumes 43,760 existing site-built, 3,009 projected units (15% decrease in the current allocation), 1,248 mobiles homes to convert to site-built units over the 10-year period. This scenario also assumes the removal of the military housing double count associated with Naval Air Station Key West. This scenario provided an evacuation clearance time of 24 hours.

Scenario M12: This scenario assumes 44,630 existing site-built units, a projected allocation of 3,540 and 1,248 mobiles homes to convert to site-built units over the 10-year period, and including one additional functional lane (i.e. 10-foot shoulder) from Key West to MM 106.3, the junction of Card Sound Road and US 1. There are portions of US 1 that already have 2 functional evacuation lanes. This scenario assumes the addition of a 10-foot shoulder to be used

as a functional evacuation lane in areas with only one functional evacuation lane, with coning on bridges. This scenario produced an evacuation time of 23 hours and 30 minutes.

Scenario M13: This scenario assumes 44,630 existing site-built units, a projected allocation of 3,540 and 1,248 mobile homes to convert to site-built units over the 10-year period, and the 10 foot shoulder enhancements planned in the Florida Department of Transportation Work Plan projected through 2016 with coning on bridges adjacent to shoulder improvements. This scenario produced an evacuation time of 23 hours and 30 minutes.

Scenarios 1, S1 through S4 and M1 through M2

Scenario 1: This scenario assumes a simultaneous evacuation of site-built units, mobile homes, tourist units, and military. This scenario provided an evacuation clearance time of 35 hours and 30 minutes.

Scenario S1: This scenario assumes 44,630 existing site-built units. This scenario provided an evacuation clearance time of 23 hours.

Scenario S2: This scenario assumes 44,630 existing site-built units and 3,540 projected units for 10 years. This scenario provided an evacuation clearance time of 24 hours.

Scenario S3: This scenario assumes 44,630 existing site-built units and 1,770 projected units (a 50% decrease in current allocations) for 10 years. This scenario provided an evacuation clearance time of 23 hours and 30 minutes.

Scenario S4: This scenario assumes 44,630 existing site-built units, a projected allocation of 2,660 units (a 25% decrease in current allocation) for 10 years. This scenario provided an evacuation clearance time of 23 hours and 30 minutes.

Scenario M1: This scenario assumes 44,630 existing site-built units and 8,134 mobile homes evacuate at the same time. This scenario provided an evacuation clearance time of 25 hours and 30 minutes.

Scenario M2: This scenario assumes 44,630 existing site-built units and 8,134 mobile homes evacuate at the same time with a projection of 3,540 units for 10 years. This scenario provided an evacuation clearance time of 27 hours. Mrs. Powell pointed out that if the local governments of the Florida Keys do not order mobile homes to evacuate early as a mitigation strategy that the Keys is over their statutorily defined 24-hour clearance time limit. From this point, Mrs. Powell started the discussion regarding mitigation strategies for the Florida Keys.

Mitigation Recommendations – Barbara Powell

Before discussion began, John Hammerstrom had a question regarding the coning of 2 functional lanes north of Jewfish Creek Bridge which was used in some of the hurricane scenario evacuation analyses. Mrs. Powell and Lou Caputo, Chief of the Law Enforcement Bureau for the Monroe County Sheriff's Department, explained the scenario represented a worse case-operational scenario.

Rebecca Jetton from the Department of Economic Opportunity encouraged the Work Group to focus on the hurricane evacuation scenarios that were presented and to start a dialog on which scenario the Work Group members would agree on for the purposes of the MOU. Barbara Powell explained that the vote would be taken from signatories of the MOU only, which consists of the representatives for the six (6) local governments within the Florida Keys, the Department of Economic Opportunity and the Florida Division of Emergency Management. Additionally, Mrs. Powell indicated that the members appointed to represent the cross sections of the

population would have a chance to speak in the afternoon before the final recommendations are agreed upon by the signatories.

Rebecca Jetton stated that the recommendations made by the Work Group are advisory to each local government and the elected officials will consider each issue when they conduct public hearings to execute the MOU. Ms. Jetton recommended that each representative indicate which hurricane evacuation scenarios the signatories would support. Daniel Samess, President of the Florida Keys Federation of Chambers of Commerce, suggested that discussion should focus on those scenarios which are 24 hours or below and allows for the greatest allocation feasible to sustain services and the economy as well as proper growth management.

Mayor Pete Worthington recommended including coning of Jewfish Creek Bridge and an additional functional lane on Card Sound Road. Chief Caputo indicated issues with Card Sound Road and Richard Ogburn, Director of Research at the South Florida Regional Planning Council, stated that the bottlenecks for evacuation are not north, but towards the Lower and Middle Keys such as at Snake Creek Bridge.

Mayor Worthington made a motion to discuss and vote on using the existing roadway network on Card Sound Road to make two northbound lanes during a hurricane evacuation scenario. Irene Toner, Emergency Management Director for Monroe County, and Chief Caputo indicated that Card Sound Road has been studied and that Card Sound Road is too narrow to add an additional functional lane for use in a hurricane evacuation scenario. There are public safety considerations due to accidents that have occurred during previous evacuations. Additionally, at Florida City, there are 3 lanes, not 4, exiting out of the Florida Keys which would make merging difficult if both Card Sound Road and US 1 had 2 functional lanes each. This would cause a significant bottleneck without getting a 4th lane in Florida City. The motion failed.

Commissioner Sylvia Murphy commented that the Work Group should consider decreasing allocations per year, not overall, by extending the planning horizon past 10 years.

Councilman Clark Snow, City of Layton, discussed Scenario M5. Mayor Pete Worthington mentions looking at Scenario M11 which is the full allocation but provides Key West with 30 allocations, not 90. Don Craig, Planning Director for the City of Key West, provided that the City has 84 vacant, buildable lots, but also has an affordable housing deficit. Mr. Craig pointed out that, with the mixed-use zoning in place, that Key West could issue 90 allocations per year and didn't believe that 30 annual allocations would be enough.

Commissioner Murphy and Commissioner Teri Johnston, City of Key West, recommended moving allocations across jurisdictions and sub-areas. Commissioner Murphy discussed Scenario M10, stating that the need for units is usually not where the allocations are located. Christine Hurley, Planning Director for Monroe County, indicated that the reluctance to support an allocation for 90 allocations in Key West may be based upon the fact that Key West hasn't had any allocations for the past 10 years. Ms. Hurley suggested that Key West provide the Work Group with their housing needs in order to revise the assumptions needed for hurricane evacuation modeling. Mr. Craig indicated that Key West needs 250 allocations for affordable housing as well as for their vacant lots. Mr. Craig indicated that Key West would need time to do a proper analysis for their housing need and cannot provide a number at the moment.

Mayor Ron Sutton, City of Key Colony Beach, motioned to end discussion and to call for a vote for Scenario M5. The motion failed.

Commissioner Murphy motioned for discussion and vote on Scenario M10, seconded by Councilman Snow. Councilman Don Achenberg, the Village of Islamorada, stated that the Village will not sign a MOU with a decrease in allocation for Islamorada. The motion failed.

Councilman Achenberg motioned to discuss and vote for Scenario M11, which is seconded by Mayor Worthington with an amendment to be accommodating to Key West's affordable housing issue. Commissioner Johnston stated that Key West would not support Scenario M11. The motion for Scenario M11 fails.

Commissioner Johnston suggested an amendment to Scenario M11 which would allow Key West staff the opportunity to identify the City's housing need and if Key West uses less than their projected need, that they will distribute their unused allocations to the rest of the jurisdictions by regulatory means. The presumed yearly need would be between 30-90 units. Ms. Jetton indicated a need for discussion regarding the equivalency rate that Key West has adopted which may nearly double the allocations for Key West. She stated that the equivalency rate is based on data from 1990 and likely cannot be supported by current demographic and hurricane data. Mr. Craig clarified that the location where the City needs affordable housing allocations does not qualify for the criteria set up for the .55 equivalency rate and Key West has used full allocations for affordable housing unit in some locations. (**Note:** Research indicates there are 7 zoning districts where equivalency ratios are allowed and 9 districts where the equivalency cannot be used).

Councilman Achenberg indicated agreement with Scenario M11 with the new amendment and motions to discuss and vote, but the new amendment fails. Ms. Jetton indicated a reluctance to support the Scenario vote because it did not identify an allocation for Key West. The City's location at the beginning of the evacuation stream and additional development at this location could have a positive or negative impact on evacuation clearance time. A re-vote is suggested for Scenario M5 to resolve this issue. Commissioners Johnston, Murphy, and Councilman Achenberg suggested that such a vote may not allow the transfer of unused units. Ms. Jetton explained the amendment to Scenario M11 is independent of the other scenarios, since allowing the transfer of units can only occur with amendment to the local governments' land development regulations. Mr. Craig indicated that Key West staff will create a building permit allocation system similar to the other local governments in the Florida Keys to ensure that all the allocations are not used up before the planning horizon ends. Mr. Craig also indicated that Key West will negotiate with the other local governments regarding the transfer of units. Mayor Sutton indicated a motion should be made to Scenario M5 with the amendment from Scenario M11.

Mayor Sutton made a motion to rescind the vote for Scenario M11 and the motion passed. After input from Ms. Santamaria and Edward Koconis regarding timing of annual unused allocations and vacant land analysis, Ms. Jetton then made a motion for an amendment that unused allocations from Key West, annually by July 15th, would be transferred to the other local

governments based on the vacant land analysis which is a comparison of each local governments' vacant land percentage to the whole of all the vacant lands in the Florida Keys.

George Garrett, Planning Director for the City of Marathon, indicated that the previous allocation building caps were set up disproportionately and the amendment being crafted for the vote is a potential way of solving the issue. Scenario M5 with the amendment passed.

Commissioner Murphy inquired if the hurricane evacuation modeling scenarios were done assuming bridges were locked down and stoplights are flashing (no set red lights). Jeff Alexander, Director of Emergency Preparedness for Northeast Florida Regional Council, indicated that Commissioner Murphy was technically correct since the TIME Model assumes that traffic uses maximum flow rates. Mr. Hammerstrom and Mr. Ogburn brought up that maximum flow rates were adjusted dependent on factors such as lights and intersections.

Discussion of MOU – Rebecca Jetton

Mrs. Powell reconvened the Work Group to start discussion on the MOU. Discussion for the MOU would be focused on those items that the Work Group was unable to reach consensus on during the April 30th meeting.

Ms. Jetton began with Part One, Section A of the MOU, which is the "Commencement and Completion of Evaluation" language. There were a number of recommendations to include definitions for the terms within the clause, so the glossary from the Statewide Regional Evacuation Study Program (SRESP) was included. Ms. Jetton recommended the following changes that are identified:

"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, as delegated by the Monroe County Board of County Commissioners, issues the evacuation order for site-built units permanent residents under Phase 2 for the evacuation for a ~~hurricane that is classified as a~~ Category 3, 4, or 5 hurricane wind event or Category C-E hurricane surge event and pursuant to Rules 28-18, 28-19 and 28-20, Florida Administrative Code, the termination point for evacuation is U.S. Highway One and the Florida Turnpike in Homestead/Florida City."

Discussion for this clause included whether there was a definition for permanent residents in the clause since this was an important issue from the last meeting as stated by Commissioner Murphy. Ms. Jetton indicated there was no such definition, but it can be included. An issue was raised that Monroe County may have already adopted a resolution to order both site-built units and mobile homes to evacuate together with an earlier notification period than that in the adopted policy.

Ms. Jetton stated that, previously, when the Monroe County Comprehensive Plan was found "not in compliance" in the 1990s, the Final Order instituted the 24 hour time frame for evacuation for the Florida Keys. At that time, it was thought that the evacuation clearance time was over 30

hours. In 1999, Miller Consulting, Inc. found that the evacuation clearance time was 25 hours and 52 minutes. Following that assessment, mitigation strategies such as the phased evacuation approach which included mobile homes leaving earlier than site-built units was adopted to balance development and public safety. All the local governments have adopted the phased evacuation approach. The phased evacuation does not imply that mobile home residents are not permanent residents, but that mobile homes are more vulnerable to potential wind damage. Mayor Worthington agreed. Jeff Alexander further indicated that the term “permanent residents”, for the purposes of the SRESP, was to identify those residents who reside in permanent residential structures, not mobile residential structures such as mobile homes and other related structures. This is important to take note in the Florida Keys, in which mobile home residents are more than likely to evacuate than those in permanent structures in Category 1 and 2 hurricane storm events and have to differentiate the different population types for phased evacuation. It did not have any bearing on defining a population. Ms. Jetton recommended changing “permanent residents” to “site-built units” in the commencement clause.

Ms. Jetton stated that if Monroe County would like to change the phasing time of site-built units and mobile homes, then that would require a comprehensive plan change and would affect the MOU and all the other local governments because hurricane evacuation ties all the communities together.

Ms. Jetton indicated that the clause being discussed could possibly be removed since it was placed into the MOU for clarity. The Work Group decided to remove the language and place it as an exhibit to the MOU.

Christine Hurley indicated that Monroe County has taken up this issue on the phased evacuation and requested that DEO staff conduct another scenario run to understand the results of ordering site-built units and mobile homes to leave at the 36 hour point. (**Note:** Research indicates that Scenario M1 includes an evacuation of mobile homes and site built units together with a clearance time of 25 hours and 30 minutes. Since the transient and military evacuation stream would have started at the 48 hour point (12 hours earlier) there would still be some evacuating traffic impacting mobile homes and site built units leaving at the 36 hour mark. The model is not structured to accommodate a scenario such as this because the model does not take into consideration the time of an evacuating order without further modification to the software to understand traffic volumes generated by the model. Such a modification has been requested by DEO for the model. Scenario 1 includes hotels, mobiles, and site built units and the clearance time is 35 hours and 30 minutes. The evacuation time for the mobiles and site built units leaving at the 36 hour interval would result in a clearance time between 25 hours and 30 minutes and 35 hours and 30 minutes, both exceed the 24 hour target.)

Ms. Jetton discussed Vehicle Usage assumptions in the MOU and added additional references including the community college contribution to the evacuation stream. Ms. Jetton indicated that the data in the MOU had been revised by attaching the specific data from each Traffic Evacuation Zone, including roadway capacities and number of lanes based upon data from the Florida Department of Transportation.

Mr. Hammerstrom pointed out that the glossary from the SRESP contains the definition for “Out-of-County” clearance time and that is different from what is being identified for the Florida Keys. Ms. Jetton pointed out that the definition from Section 163.3178(9), Florida Statutes, is the definition that should be used for the hurricane evacuation modeling.

Ms. Jetton discussed the traffic evacuation stream and if the model should utilize Monroe County traffic or a regional evacuation. Mayor Worthington, Councilman Snow and Commissioner Johnston agree that “Out-of-County” for Monroe County should only be used since the County cannot control development in other areas. Mr. Hammerstrom asked Jeff Alexander to explain the definition of clearance time.

Mr. Alexander described:

- Clearance time to Shelter: All in County trips have reached their destination within the County. This does not mean all traffic movement in the County has ended; rather it means that everyone going to a point of safety **AND** that point is in the County, has reached their shelter.
- In-County Clearance Time: All in County trips have reached their destination **AND** all out of county trips have left the Evacuation Zone; **AND** traffic originating from outside the County that pass through the Evacuation Zone has also cleared the Zone. This does not mean all traffic movement in the County has ended; rather it means that everyone going to a point of safety **AND** that point is in the County, has reached their shelter **AND** the Evacuation Zone is clear.
- Out-of-County Clearance Time: All in County trips have reached their destination **AND** all out of county trips have left the County; **AND** traffic originating from outside the County that passes through the County has also cleared the County. This does not mean all traffic movement in the County has ended; rather it means that everyone going to a point of safety has reached their shelter or left the County.
- Regional Clearance time is the highest time for an Out of County clearance time in the designated region. Monroe County is part of a region, so it would be the time it takes for the last car to leave the region which is when the last car leaves through Broward County.

Discussion continued on whether modeling efforts should include only Monroe County traffic or include traffic for the entire region. Discussion began with past hurricane storm events which included multiple counties conducting evacuations. Irene Toner provided an example of Hurricane Ike. Ms. Toner stated that Monroe, Miami-Dade and Broward were planning evacuations, so the choice was made to evacuate Monroe County earlier than the other two though the other counties ultimately decided not to evacuate because of changes in storm conditions. The signatories choose to keep modeling only for Monroe County traffic.

Ms. Jetton moved to the phased evacuation policy under Section H of which no changes were recommended. Edward Koconis discussed the participation rates (100%) used for mobile homes. Jeannine Kelsick explained that the model was modified to use site-built unit characteristics instead of mobile home characteristics. Richard Ogburn stated there isn't a significant difference

between the number of vehicles generated by site built or mobile homes. The difference comes with the occupancy rates. Mr. Koconis indicated the MOU should be revised to only list the participation rates being used for hurricane evacuation modeling purposes for the Keys and that those rates can be up for further study.

Returning to discussion regarding the adopted phased evacuation policy, Andrew Sussman from the Florida Division of Emergency Management suggested that the policy in the MOU be removed. He suggested adding a statement under Section H that references the evacuation procedures as adopted by the local governments' comprehensive plan so the MOU does not have to be revised when a local government revises their comprehensive plan.

Ashley Monnier from Naval Air Station Key West provided comments regarding the military's past procedures for evacuation. Ms. Monnier indicates that further coordination would be needed with the chain of command. Mr. Sussman stated that emergency operation procedures are separate from growth management policy decisions. Christine Hurley supported Mr. Sussman's recommendation on referencing an exhibit that would contain the phased evacuation procedure from the comprehensive plan policy. The signatories agreed on the revision.

Work Group Comment

Mrs. Powell requested comments from the Work Group members who are not signatories of the MOU. John Hammerstrom restated his assertion that modeling assumptions may not include enough dwelling units for evacuation purposes. None of the other members had comments.

Public Comment

Naja Girard from Last Stand commented that she cannot support the assumptions used for hurricane evacuation modeling. Ms. Girard is happy about discussions about mitigation strategies such as sheltering.

Ron Miller from Key Largo commented that allocations should be phased out for areas without takings liability and the allocations should be maintained at the same level for those areas with takings liability. Mr. Miller indicated that Monroe County has comprehensive plan language which prohibits the movement of allocations across sub-areas of the County to control potential bottlenecks that may occur during hurricane evacuation. Mr. Miller referenced a study for Monroe County to look at entitled Monroe County 2010-2030 Population Projections which was accepted by the Department of Community Affairs in 2011.

Final Recommendations for MOU

Mrs. Powell turned the conversation back to the signatories of the Work Group for final recommendations. After hearing additional comments from the public and other Work Group members, Mrs. Powell asked if the signatories had any other changes they would like to see reflected in the MOU. No changes were announced. The motion passed. Mrs. Powell indicated that this MOU is for the assumptions and inputs for hurricane evacuation modeling and that the attorneys from all the local governments, Department of Economic Opportunity and the Florida Division of Emergency Management will review the MOU. Christine Hurley indicated that the

MOU should include language to reflect the amendment to Scenario M5 decided this morning, of which the signatories of the MOU agree.

Ms. Jetton asked if there were any other recommendations from the Work Group for mitigation strategies. Mayor Pete Worthington stated that more information is needed regarding day and night evacuations, coning for Card Sound Road and Jewfish Creek Bridges and identifying bottlenecks and other roadway issues. Mayor Worthington recommended more emphasis on evacuating vulnerable populations in RVs, boats and mobile homes early enough. Ms. Jetton recommended additional discussion with DEM regarding preparedness education funding. Commissioner Johnston recommended use of public transportation to help with evacuations, especially for those worried about evacuating at night. Mr. Craig suggested that sheltering in-place should be looked at for the Florida Keys.

The Work Group members were thanked for their participation and the meeting was adjourned.