Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

1000 NW 111th Avenue
Miami, Florida 33172-5800

STEPHANIE C. KOPELOUSOS
SECRETARY

October 28, 2010

Christine Hurley, AICP
Monroe County
Growth Management Division Director
2798 Overseas Highway, Suite 400
Marathon FL 33050

Dear Christine:

This is in response to your e-mail from October 27, 2010 regarding the Florida Keys Hurricane Evacuation Update. As requested in your e-mail, attached are the following items:

1. **Attachment 1** contains Technical Memoranda prepared by Dr. Brian Wolshon, PE, of Louisiana State University and Joaquin Vargas, PE, of Traf Tech Engineering, Inc., for the Florida Department of Transportation (FDOT) District Six entitled *The Florida Keys Site-Specific Capacity Study Technical Memorandum* (dated April 21, 2010) and the *Maximum Sustainable Evacuation Traffic Flow Rates for Hurricane Evacuation Analysis Purposes Technical Memorandum* (dated June 17, 2010).

2. **Attachment 2** contains a spreadsheet with the results of hourly traffic counts conducted from January 28-31, 2010 at three locations. These traffic counts were recorded for the Florida Keys Site-Specific Capacity Study dated April 21, 2010. As indicated in the attached count sheet, the maximum northbound hourly volume recorded on US-1/SR 5 near Mile Marker 106 (US 1/SR 5, just south of the 18-mile Stretch/CR 905 intersection) was 1,332 vehicles per hour (two lanes), or 666 vehicles per hour per lane. The subject count occurred on Sunday, January 31, 2010 between 2:00 PM and 3:00 PM.

3. Information related to signal operation during hurricane evacuation: Other professionals have previously suggested that all Monroe County traffic signals should operate in the "flashing" mode during hurricane evacuation conditions. This is not advisable at critical intersections located along US 1/SR 5 within the Florida Keys. As documented in the Florida Keys Site-Specific Capacity Study dated April 21, 2010, within the Key Largo area, it is preferred that the traffic signals located at Atlantic Boulevard and at Tarpon Basin Drive remain operational during hurricane evacuation conditions for the following reasons:

    - Nearly 20 percent of the evacuating vehicles will enter US 1/SR 5 from Key Largo. As such, drivers from this area will need adequate gaps to permit safe merging into the outbound US 1/SR 5 traffic stream
    - The US 1/SR 5 segment between Mile Markers 99.5 and 106.3 will carry the heaviest traffic volumes of the entire Florida Keys evacuation network

www.dot.state.fl.us

- By maintaining full operation of the traffic signals located near Mile Markers 100 and 101, gaps will be created along US 1/SR 5 which will benefit all evacuating vehicles entering the main highway from the numerous side streets. (Similar reasons apply at other locations throughout the Florida Keys).

To minimize the effects of the traffic signals on the evacuating traffic flow along Overseas Highway, the two simulated traffic signals were optimized so that most of the green time was allocated to US 1/SR 5. That is, the assumed signal operating plan permits one vehicle turning left from US 1/SR 5 and up to two vehicles entering Overseas Highway from the side street, per signal cycle. This is an assumption that significantly benefits the evacuating flow along the US 1/SR 5.

4. **Attachment 3** contains tables with recommended number of *Functional Evacuation Lanes* for the following scenarios:

   a. Completed projects from Table 18 of the 2001 Keys Evacuation Study (2001 Study)
   b. Projects under construction from Table 18 of the 2001 Study
   c. Projects funded in current work program from Table 18 of the 2001 Study

5. The table depicting FDOT Work Program Roadway Projects for the Florida Keys Evacuation Improvements as requested are hurricane related evacuation improvement only, as recommended in the 2001 Florida Keys Hurricane Evacuation Study.

If you have any questions please contact me at (305) 470-5200 or by e-mail at aileen.boucle@dot.state.fl.us.

Sincerely,

Aileen Boucle, AICP
District Planning and Environmental Administrator

CC: Rebecca Jetton, DCA
Barbara Culhane, FDOT
Reid Ewing, PhD
Ken Metcalf

Enclosures

Monroe County, Florida
Summary Table 1 (Permanent Roadway Improvements)
Late Response Curve
Hurricane Category 3-5

Link	Area	Milemarkers From	Milemarkers To	Location/Description	Year 2,000 Configuration	Evacuation Outbound Lanes	Evacuation Time	Bottleneck Delay	Hours with Backup
A1	Lower Keys	2.0	4.0	Key West to Stock Island	4L	2	18:00:00	-	0.00
A2	Lower Keys	4.0	9.0	Stock Island to Big Coppitt Key	4LD	2	18:10:00	0:00:00	0.00
B	Lower Keys	9.0	17.0	Big Coppitt Key to Sugarloaf Key	2L	1	18:26:00	0:00:00	6.53
C	Lower Keys	17.0	22.0	Sugarloaf Key to Cudjoe Key	2L	1	18:36:00	0:00:00	7.17
D1	Lower Keys	22.0	24.0	Cudjoe Key to Summerland Key Cove Airport	2L	1	18:40:00	0:00:00	9.57
D2	Lower Keys	24.0	25.0	Summerland Key Cove Airport to Summerland Key	3L	1	18:50:00	0:08:00	10.20
D3	Lower Keys	25.0	30.0	Summerland Key to Big Pine Key	2L	1	19:36:00	0:36:00	10.33
E	Lower Keys	30.0	34.0	Big Pine Key to West Summerland Keys	2L	2	19:44:00	0:00:00	0.00
F1	Lower Keys	34.0	35.2	West Summerland Keys to Spanish Harbor Keys	2L	1	21:26:00	1:40:00	14.43
F2	Lower Keys	35.2	36.5	Spanish Harbor Keys to Bahia Honda Bridge	4LD	2	21:28:00	0:00:00	0.00
F3	Lower Keys	36.5	37.5	Bahia Honda Bridge to Bahia Honda Key	2L	1	21:30:00	0:00:00	11.43
G	Middle Keys	37.5	47.0	Bahia Honda Key to Hog Key	2L	1	21:50:00	0:00:00	0.00
H1	Middle Keys	47.0	48.0	Hog Key to Boot Key	2L	2	21:52:00	0:00:00	0.00
H2	Middle Keys	48.0	50.2	Boot Key to Marathon	4L	2	21:56:00	0:00:00	0.00
I1	Middle Keys	50.2	50.8	Marathon to Marathon Shores	5L	2	21:58:00	0:00:00	0.00
I2	Middle Keys	50.8	54.0	Marathon Shores to Key Colonial Beach	4LD	2	22:04:00	0:00:00	0.00
J1	Middle Keys	54.0	54.5	Key Colonial Beach to Deer Key	4LD	2	22:06:00	0:00:00	0.00
J2	Middle Keys	54.5	58.0	Deer Key to Grassy Key	2L	2	22:12:00	0:00:00	0.00
K	Upper Keys	58.0	74.0	Grassy Key to Matecumbe Harbor	2L	2	22:44:00	0:00:00	0.00
L	Upper Keys	74.0	80.0	Matecumbe Harbor to Teatable Key	2L	2	22:56:00	0:00:00	0.00
M1	Upper Keys	80.0	83.5	Teatable Key to Islamorada	3L	2	23:02:00	0:00:00	0.00
M2	Upper Keys	83.5	85.6	Islamorada to Windley Key	2L	2	23:08:00	0:00:00	0.00
N	Upper Keys	85.6	90.0	Windley Key to Plantation Key	2L	2	23:18:00	0:00:00	0.00
O	Upper Keys	90.0	100.0	Tavernier Key to Newport Key	4LD	3	23:38:00	0:00:00	0.00
P	Upper Keys	100.0	105.0	Newport Key to Sexton Cove	4LD	3	23:48:00	0:00:00	0.00
Q	Upper Keys	105.0	106.3	Sexton Cove to Rattlesnake Key	4LD	3	23:50:00	0:00:00	5.13
R1	Upper Keys	106.3	126.5	Rattlesnake Key to Card Sound Rd	2L/4L	2	24:30:00	0:00:00	0.00
R2	South Dade	126.5	HEFT	Card Sound Rd to HEFT	4LD	3	24:40:00	0:08:00	5.77
S	Upper Keys	106.3	Int CR 905 / CR 905 A	Lake Surprise to Crocodile Lake	2L	1	24:06:00	-	0.00
T	Upper Keys	Ocean Reef	Int CR 905 / CR 905 A	Tanglefish Key to Crocodile Lake	2L	1	17:58:00	-	0.00
U	Upper Keys	Int CR 905 / CR 905 A	US 1	Crocodile Lake to South Miami-Dade	2L	1	24:38:00	0:00:00	

LEGEND:

2L = Two-lane facility
2L/4L = Two lanes with short four-lane sections for passing purposes
3L = Three-lane facility (center lane is a two-way left-turn lane)
4L = Four-lane undivided facility
4LD = Four-lane divided facility
5L = Five-lane facility (center lane is a two-way left-turn lane)

Clearance Time:	24:40:00