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Subject: evacuation work group comments

Date: Tue, May 22, 2012 3:52 am

Dear County Commissioners,

As a member of the hurricane evacuation work group, as a community group member, I would like to share my thoughts with you prior to your commission meeting later today. I apologize for the late submittal of this information, there are just so many great community meetings to attend all day. It may not be brief enough, but there was a lot of technical information discussed. It is always harder to write a short paper than a long one.

In general I believe that State staff created a good document that they could use to reasonably assure the legislature that we had an acceptable hurricane evacuation program. However, there were a few items that caused me concern. One was that the regional nature of the documents used when the Keys are not like the rest of the Florida region. My concerns were mostly in the area of vehicle flow rates, vehicle usage is behavioral studies. I did make additional comments though.

First, traffic flow rates that were selected were from studies of Hurricane Katrina's evacuation, and other evacuations further north in Florida and South Carolina. In the Keys, a modeling simulation was used to determine what the traffic flow might be during and prior to evacuations. The new verbiage is "practical maximum sustainable evacuation flow rates" which the DEO now say are 10 to 20% below prior maximum flow rate. A June 17, 2010 memo stated it was "suggested that these volumes could be used". First, I wondered who suggested since the other studies focused more on freeways and long distance four-lane divided highways. But it states that they were "similar enough to give a reasonable approximation of the conditions", citing two specific four-lane divided highways and two-lane highways.

The report indicates that the vehicles per hour cited for the 4-lane roads were approximately 1800 during the daytime and 400 at night. Yet in the Keys they suggested the vehicle flow rate should only be 900 to 1000 vehicles per hour during evacuation even though the evacuation traffic was sustained at 1200 to 1300 vehicles per hour in Key Largo during Hurricane Dennis and Hurricane Charley and Tropical Storm Fay. Clearly local past experience should outweigh estimations based on other cities

I noticed that between 10 PM and 3 AM there were approximately 550 vehicles is per hour traveling whereas on an average day there were more or less 200. This is indicative of people evacuating during the nighttime hours.

Many of the Keys models seem to show traffic pattern beginning 12 hours prior to visitor evacuation but many residents had been evacuating four days prior to that. I first I had issued a public service announcement and paid commercial for the City of KW on October 19, when City Hall closed, recommending people prepare their homes for a 6 foot storm surge and evacuation. I believe that many people to leave prior to evacuation order. My experience is that as soon as school lets out families or parts of them would evacuate immediately. I am concerned that the current study does not weigh that volume of people heavily enough.

The second new issue that I found very concerning was the "behavioral studies". The Baker Study was a questionnaire sent to trailer park managers, hcteliers, and RV park mangers with limited responses,

except for Key West hoteliers. The study found that "all but one park had very few if any transient units". The study indicated 90% of the transient visitors left by 24 hours, but only 87% of RV's will, however, trailer residents are much more likely to evacuate. I found this counter intuitive as the permanent residents in mobile homes seem to be some of the lowest paid among us and need to work until the last minute. According to a Pastor associate of mine, many show up at church during the evacuation.

The Statewide Regional Evacuation Readiness Program has a "Regional Behavior Analysis" component (page 11). It stated "people prefer not to evacuate at night but will do so if necessary" and "relatively few people leave prior to the issuance of evacuation notices by officials" but they will if asked to. The Baker study determined 23% of RV parks would already have departed before the evacuation order was called.

The DEO suggested that in the past, based on our evacuations, people in Monroe also preferred not to leave at night. However Emergency Management Director Irene Toner stated she only calls evacuations during the day to avoid people driving at night. So, I believe we may have a flawed conclusion. The Louisiana traffic study that indicated one quarter of the traffic flow (400VPH) would still drive at night, contradicted the less scientific "behavior analysis" The behavior analysis may be flawed because it assumes people don't drive at night because they prefer not to as opposed to the fact that evacuations in the Keys are only called during the day and mostly in the mornings, so people drive during the day. I fail to see a "behavior connection, I see a direction connection. A Keys person, I suspect, will be more likely to leave when they will not hit Miami Traffic.

That makes me wonder, if we issued evacuation notices at say 5 am , or even 4 AM, would that not allow for a faster evacuation time? Those night owls and early risers can get on the road early.

The third issue is mobile homes being considered as site-built for evaluation during the second phase. E I do know that many trailers and many homes sit vacant all summer and fall. However, I also know that many trailers in Key West and Stock Island are used on a full-time basis by laborers who may be the least likely to leave early, possibly the least likely to focus on a hurricane because of many of the types of jobs they hold, and therefore a certain percentage of those trailers at least in Key West Stock Island should be considered permanent residences.

That brings up the issue of trailer conversions. At this point I must state that I am in the construction/engineering business, and do a fair amount of conversions. Trailer conversions will continue. But what I see are trailers for workers turning into some work force housing and some second homes.

As a building inspector in 1990 I recall saying Key West was built out; nothing could possibly be build anywhere else. Yet, to my dismay, thousands of more units were created. However, our population has decreased by thousands. Due to the extremely high cost of living in Key West, Marathon and the rest of the Keys, I suspect that our population will not increase greatly if at all in the future. We may be relegated to communities of wealthy people who visit periodically to their homes maintained by property managers because that is what much of our population is already. So, does it follow that more construction means more population? I suggest the answer is obviously a resounding no.

At the same time, I also believe that the number of permanent residence that is assumed within the city of Key West seems extraordinarily high, even for a day in high season, nonetheless in the summer

or fall.

I asked for clarification from the state and regarding double counting of people in hospitals and nursing homes and perhaps special needs and I expect that will be addressed shortly. If they are evacuated up front they need to be deducted from their homes. I also do believe the number of people that evacuate on airplanes or ferries should be considered.

The Chamber member proved the number of tourists is greatly reduced when people know a hurricane is approaching and so the room occupancy drops significantly and that should be taken into consideration.

As an engineer I believe the traffic control device (light) at Sugarloaf should be removed not only does it prohibit free traffic flow during evacuations, it seems to be a hazard to health and safety. I do not believe it was warranted (however, now that it seems to attract accidents the stats will suggest it is – that too is a circular argument).

The Baker study stated that the normal range for vehicle usage is 65% to 75%; The Miller model assumes 69 to 71%. Yet, the South Florida Regional Behavioral Study stated that the usage rate would be 91% in Key West. Many of the vehicles in KW are Conch Cruisers. The Usage rate is a bit confusing, if you have less vehicles it will go up. But still it does seem preposterous to me that that number is so high I may not be the norm but my sons bought old vehicles, one I will not allow to leave Key West and one can travel only to Sugarloaf. We would use 1 of 4 vehicles to evacuate I think that is 25%.

The concern that homeowners from South Florida will drive to the keys close up their homes in the keys thereby adding to the evacuation. A simple way to analyze these possibilities would be that the Property Appraiser run a report of all property owners living within six hours of the Keys which is probably the most one might travel during an evacuation order. I would recommend this analysis be performed.

As an emergency management professional and a public servant I always consider citizens safety as our number one mission. I believe the opportunity to evacuate should be available to everyone, although I do not believe everyone would take advantage of. I believe all of our local governments need to spend more effort in developing evacuation plans with the communities they serve, including the trailer parks and housing developments.

In summary, I think there needs to be more work to obtain better information, but I suspect it is too late for that. The best option may be to add 25% mobile homes to the site built, and move the vehicles per hour up to what we have experienced. Open up all paved shoulders and allow contra flow on the 18 mile stretch for a Cat 4 and 5. Ignore stock island traffic flows since that has a lot of commuter traffic back and forth during the events.

Thanks for allowing me to serve on your team!

Regards,

Annalise Mannix

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