

# **MOBILE/MANUFACTURED HOME DAMAGE ASSESSMENT FROM A TORNADO THAT HIT NEAR OCALA**



**Bureau of Mobile Home and RV Construction  
Division of Motor Vehicles  
Department of Highway Safety and Motor Vehicles**

**April 11, 2005**

# **MOBILE/MANUFACTURED HOME DAMAGE ASSESSMENT FROM A TORNADO THAT HIT NEAR OCALA**

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## **NOTE: LIMITATIONS OF THE REPORT**

The purpose of this report is strictly for the use of the Florida Department of Highway Safety and Motor Vehicles to determine the effectiveness of current department administrative rules governing the installation of mobile/manufactured homes.

**All statistics reported here are from a sample of mobile home parks and areas visited. In addition, due to debris, entry into some areas was not possible to make more specific determinations. Consequently, the statistics reported here are estimates. There may be differences between what is reported here and determinations by local building departments, insurance companies or other government agencies**

When reporting the number of homes "destroyed or non-repairable" the totals represent homes with severe roof damage to the point of the roof being blown from the home, one or more exterior walls being separated from the home or water completely penetrating the unit.



**State of Florida**  
**DEPARTMENT OF**  
**HIGHWAY SAFETY AND MOTOR VEHICLES**  
**TALLAHASSEE, FLORIDA 32399-0500**

**FRED O. DICKINSON**  
Executive Director

**DATE:** April 11, 2005

**TO:** Phil Bergelt, Program Manager

**FROM:** Wayne Jordan, Community Assistance Consultant

**SUBJECT:** Manufactured Home study from Ocala Tornado, April 7, 2005

Thursday April 7, 2005, an F1 tornado created by a cold front meeting Florida's warm weather, skipped through Marion County damaging or destroying 165 homes. Local emergency workers reported no deaths, but several injuries. Some statistics were still being formulated by Emergency Services, but I found approximately 25 mobile homes heavily damaged or destroyed. The homes were located in one mobile home park on highway 27 just east of I-75 and one mobile home subdivision west of Ocala and I-75 near the airport.

The pre HUD homes did not fair well and several of these homes collapsed or were heavily damaged when carports or other attachments were blown away.

Homes built between June 1976 and July 1994 performed better, but again some were heavily damaged when carports or other attachments were blown away while others were blown off their foundation. One home, a 1978 single wide Homes of Merit, was relocated to new property and installed between 1996 and March of 1999. The installation standards at that time (6' spacings for frame ties, small stabilizer plates, etc.) was not enough to hold the home on its foundation and the home was pushed off its foundation and may be totaled the insurance company.

Next door, the daughter of the owners of the 1978 Homes of Merit had a newly installed 2005 Fleetwood doublewide. The Fleetwood took a hit from the F1 tornado (winds 73 to 112 mph), but stayed on its foundation. All tiedown products performed as Rule 15C-1 intended. Mechanical longitudinal and lateral stabilizing devices were found to be dug down into the ground and holding. The vertical straps at 5' 4" spacings were tightened and the stabilizer plates had stopped the anchors from slicing through the ground. As an added bonus, all the piers of the front of the home where the tornado hit had been toppled or rendered ineffective and the mechanical longitudinal devices were holding the front of the home erect.

We learn from each storm. The pre HUD homes with older installations (before 1996) do not perform well. Homes built between 1976 and June 1994 (old HUD standards) depending on their installation date perform better but may be blown off their foundations. Homes built after July 1994 perform the best under storm conditions.

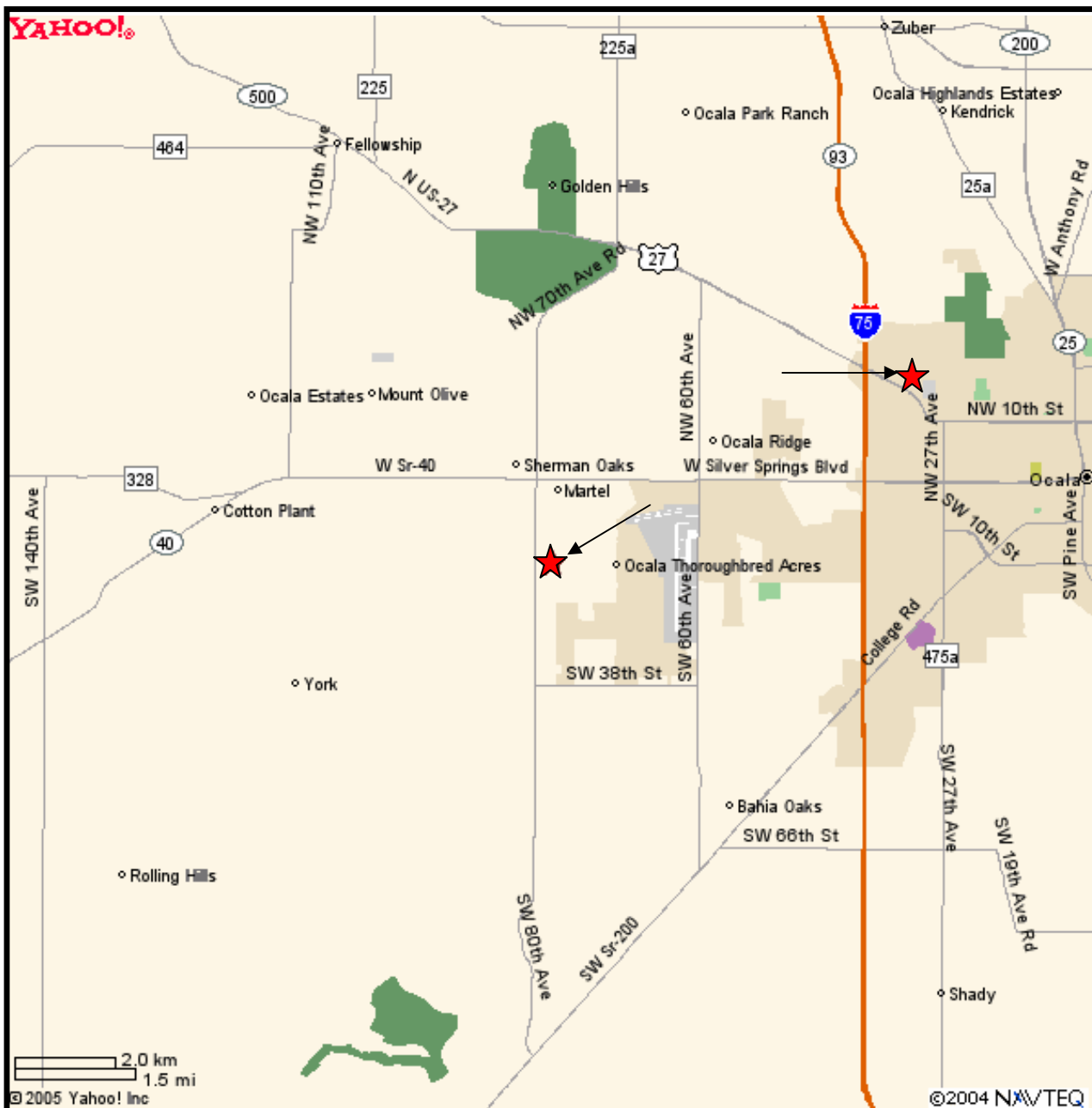
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Please note, the purpose of this report is strictly for the use of the Florida Department of Highway Safety and Motor Vehicles to determine the effectiveness of current department administrative rules governing the installation of mobile/manufactured homes.

All statistics reported here are from a sample of mobile homes damaged. In addition, entry into the mobile homes observed was not possible to make more specific determinations. Consequently, the statistics reported here are estimates. There may be differences between what is reported here and determinations by local building departments, insurance companies or other government agencies.

When reporting the number of homes "destroyed or non-repairable" the totals represent homes with severe roof damage to the point of the roof being blown from the home, one or more exterior walls being separated from the home, or water completely penetrating the unit.

**Location of Thoroughbred Acres Mobile Home Park on  
Southwest 80<sup>th</sup> Avenue and Golden Holiday Mobile Home Park  
just East of I-75 on Hwy 27.  
(See Arrows and Stars)**



**PHOTOS OF MOBILE/MANUFACTURED  
HOME DAMAGE FROM  
A TORNADO THAT HIT  
NEAR OCALA**

## **This home took a tremendous hit from what the National Weather Service is calling an F1 tornado.**

Thoroughbred Acres Mobile Home Community. This newly installed home will have to be reset, but only cosmetic damage to the exterior occurred as a result of the tornado.



**The steel longitudinal stabilizing devices with lateral arms performed as designed. The frame ties and stabilizers plates also took a lot of the wind forces.**



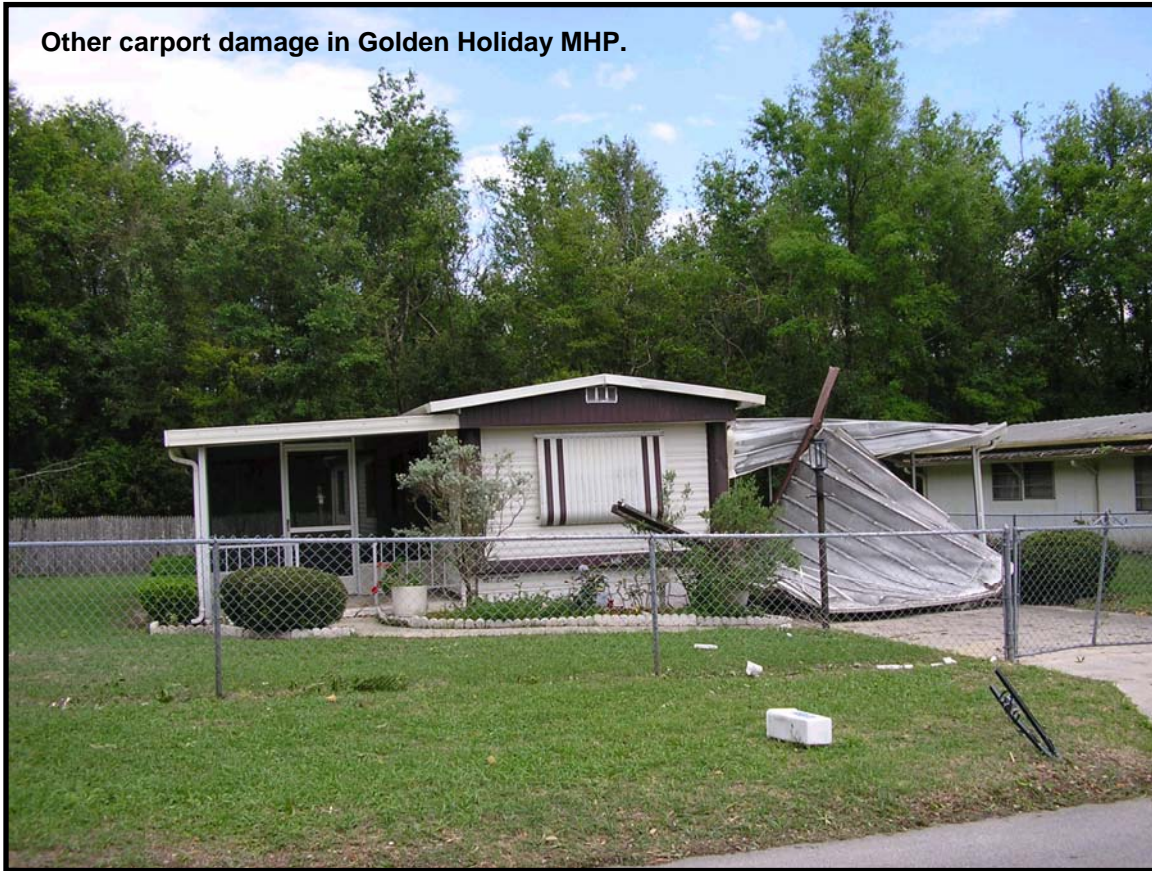


Several homes damaged in the Golden Holiday Mobile Home Park just off Hwy 27 near I-75. All damage was caused by carports or roof overs being blown off the homes and subsequently taking the home's roof also. No homes left their foundations.





**Other carport damage in Golden Holiday MHP.**



**This home could be totalled because the carport took the roof.**





The home was pushed hard but stayed on its foundation.





**Thoroughbred Acres mobile home community.  
This 1978 Homes of Merit home was next to the newly installed home and will probably be totaled by the insurance company. The damage mostly inside the home was caused by the home leaving its foundation.**



**The home was installed between 1996 and the changes to Rule 15C in 1999. The smaller stabilizer plates and anchors at 6 foot spacings was not enough to hold the home on its foundation.**





**Thoroughbred Acres. This home made the news and appears to have lost its roof due to a screened porch being blown away thatt was attached to the home.**









**Thoroughbred Acres. This pre HUD home was installed after the Rule changes of 1999. The home stayed on its foundation, but the structure collapsed in on itself.**



**We can date the home by checking things like the water heater compartment. HUD requires fire proofing the compartment – this home had none.**



**We can date the installation by galvanized anchors, large stabilizer plates and frame tie spacings of 5' 4".**





**Thoroughbred Acres. This old home had not been installed and still had the hitch, axles and wheels. It was not anchored, no piers installed, no plumbing, no electrical.**



**This was the area used by the news media.**