2 Site Observations

2.1 Typical Pre-FIRM and Post-FIRM Construction

Typical pre-FIRM structures in the study area are one-story concrete block or wood-frame structures built on slab-on-grade foundations, one- to three-story concrete block structures, and one- to three-story wood-frame structures founded on timber piles. Many of these structures are behind concrete sheetpile seawalls. Many pre-FIRM structures were substantially damaged by the surge accompanying the storm event and were often destroyed because of foundation collapse, wave attack, or both.

Typical post-FIRM structures in the study area are one-, two-, and three-story wood-frame structures elevated on timber or concrete pile foundations. Some of these are new structures that either incorporate older, pre-FIRM structures or were built over them. Post-FIRM elevated structures sustained some wind and flood damage but, overall, performed much better than pre-FIRM structures that were at-grade or that were elevated but not to the BFE or CCCL requirements.

2.2 Observations of Wind Damage

Wind damage observed by the BPAT was generally confined to roofing shingles and tiles, exterior sheathing, unsecured air conditioning compressors, power poles and lines, and signs. However, the wind damage observed did not constitute a large portion of the total damage to structures.

2.3 Observations of Flood Damage

Flood damage was observed along the Gulf of Mexico shoreline at all sites visited by the BPAT (see Figures 2-1 and 2-2). Structures damaged by flood forces generally fell into the following categories:

- pre-FIRM structures founded on slabs or shallow footings and located in mapped V-Zones
- post-FIRM structures in mapped A-Zones, B-Zones, C-Zones, and X-Zones founded on slabs or shallow footings, but exposed to high-velocity flows, high-velocity wave action, flood-induced erosion, floodborne debris, or burial by overwash
- post-FIRM elevated structures not properly constructed or not elevated to or above the elevation reached by storm surge and wave effects
- pre- and post-FIRM structures dependent, in part or completely, on failed seawalls or bulkheads for protection and foundation support.

Figure 2-1 *Debris washed inland as a result of surge action from Hurricane Opal (note circled boats).*

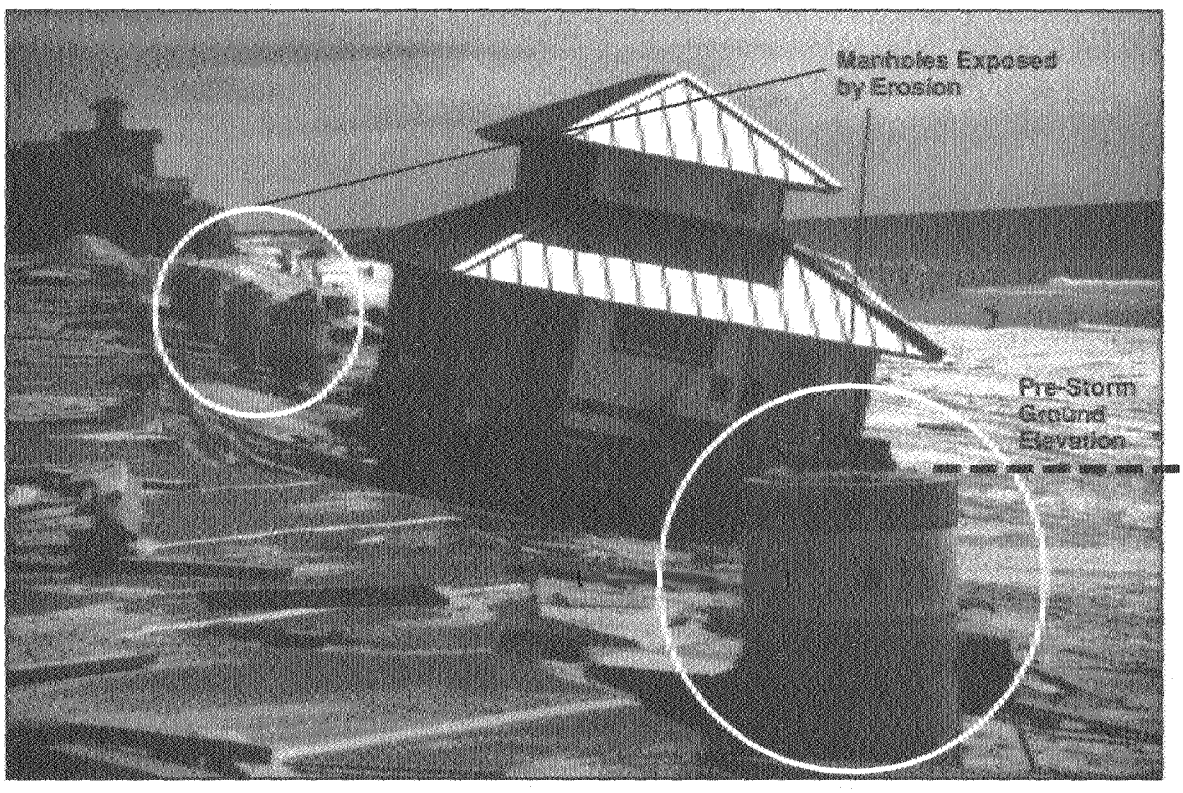

Figure 2-2 *Beach erosion caused major damage to structures, as well as roads and utilities.*