



Loss Avoidance Study: Birmingham, AL Acquisitions

Study Area – Birmingham, AL

Hazard Type – Flood

Project Type – 735 Acquisitions on Village Creek

Total Project Cost – \$43.3 million
(735 projects; 2000 dollars)

Total Losses Avoided – \$63.7 million (2000 dollars)

Return on Investment (ROI) – 1.46

The primary properties with recurring damage were structures located in the 100-year floodplain. Numerous structures were also in the floodway, which generally has higher velocity flow rates that cause more damage to structures. Obstructions in the path of the water flow, such as under-sized culverts and bridges, added to the problem. Other factors contributing to regular flooding included debris build-up and erosion from roadbeds.

Loss Avoidance Methodology

This report documents the direct losses avoided resulting from the Village Creek Acquisition Projects. The losses avoided are a direct result of implementing the acquisition and relocation projects in the floodplain of Village Creek.

This study includes the total losses avoided due to repetitive flooding. The losses avoided are considered for two floods experienced in the FEMA Hazard Mitigation Program (HMGP) buyout area, and for six floods experienced in the USACE buyout area. This is calculated by comparing the total project cost to the damages that would have happened if the mitigation projects had not been completed.

Return on Investment

Table 1 below summarizes the losses that were avoided as a result of the property acquisitions. The ROI was calculated using detailed data that was collected from the City of Birmingham Village Creek Project Office and the local USACE office and were calculated using data from actual flooding events.

Pre- and Post-Mitigation Events

Numerous neighborhoods sit in the floodway and floodplain of the Village Creek. The Village Creek floodplain includes approximately 4,574 residential dwellings, 196 commercial/industrial structures, and 87 institutional structures (critical facilities). Historically, thousands of homes have been inundated by repetitive flooding. In the last 20 years alone, Village Creek has flooded these neighborhoods more than 20 times.

Often, flooding occurred several times in a given year. This damage history prompted the City of Birmingham and the U. S. Army Corps of Engineers (USACE) to seek congressional authorization and funding to accomplish both structural and non-structural solutions to resolve the repetitive flooding along Village Creek. Since the completion of the project by the USACE, FEMA has funded the acquisition of additional properties in the same area through its Hazard Mitigation Grant Program (HMGP).

Table 1. Summary of Losses Avoided

Funding Sources	Total Acquisition Cost	Total Losses Avoided	% of Losses Avoided to Acquisition Cost
USACE/City of Birmingham (1989–1994)	\$36,322,343	\$60,309,747 (six floods)	166%
FEMA/City of Birmingham (1998–2000)	\$7,070,426	\$3,399,893 (two floods)	48%
TOTAL (in 2000 dollars)	\$43,392,769	\$63,709,640	146%

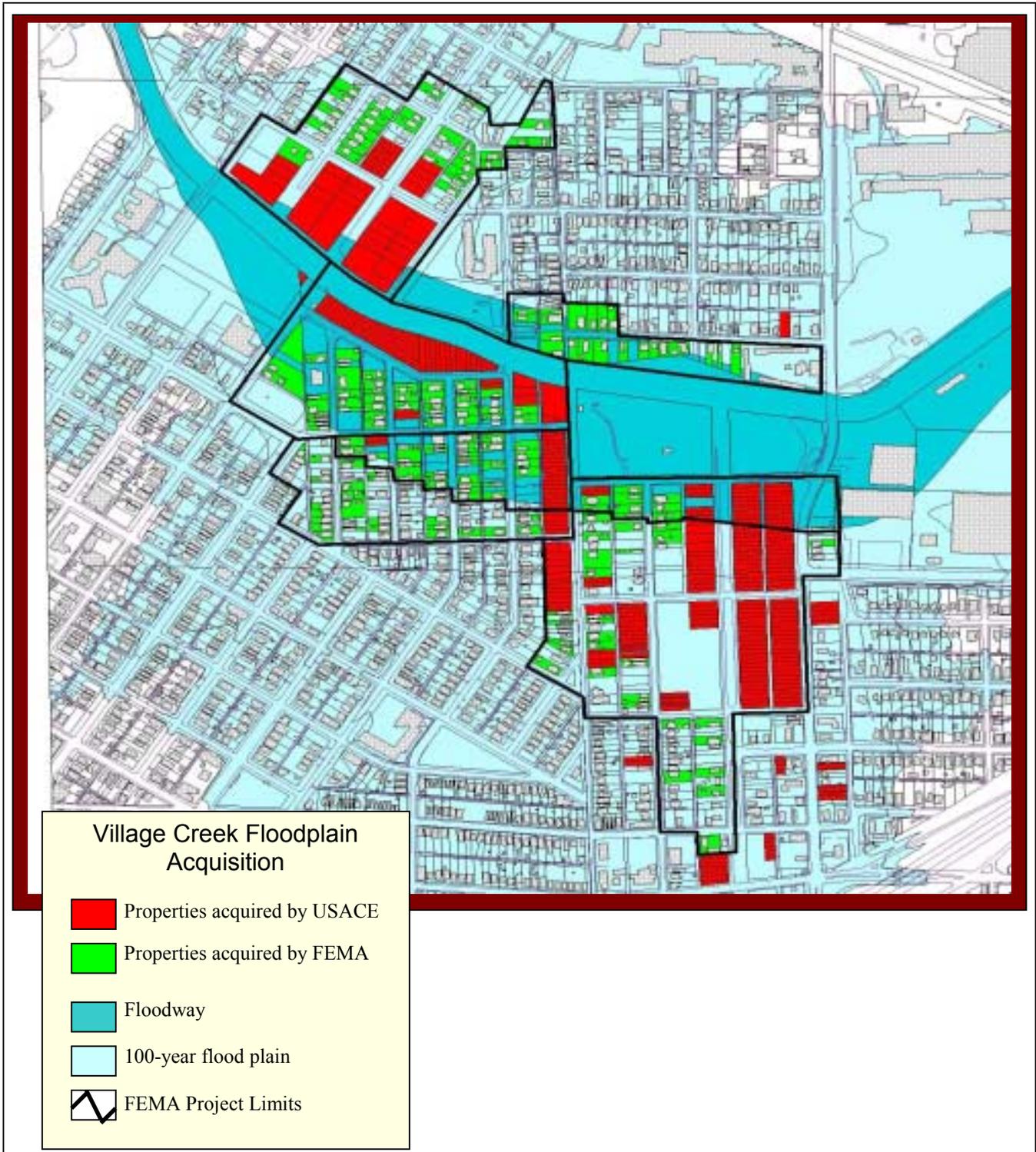


Figure 1. Partial scope of the village Creek Acquisition Project in Ensley community of Birmingham