



The role of magnetic agents in shaping post-disaster land use



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ABSTRACT

Three neighborhoods in Lexington, Kentucky, share a common flood history, including property acquisitions, as a means to mitigate against flooding; yet, the interactions of residents with the buyout landscapes vary significantly among the neighborhoods. Although the same institutions and structural controls implemented flood buyout programs in all three neighborhoods, semi-structured interviews illustrate that differing perspectives, personalities, and neighborhood politics shaped unique identities and land uses for the acquired properties in each neighborhood. Varying levels of resident engagement with the buyout landscape resulted in a range of attitudes towards hazard preparation, management, and mitigation, thus leaving some neighborhoods more resilient to future flooding than others. This study explores key residents, termed magnetic agents, who drove neighborhood civic action and land uses on the open space created through floodplain property acquisition. This research indicates magnetic agents can serve as important partners for local governments and non-governmental organizations (NGOs) in building community-based projects aimed at reducing vulnerability to flood events and instituting high utility land uses on floodplain buyout open space.

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1. Introduction

Community engagement is essential for effective disaster preparation and hazard mitigation. With community participation and support, preparedness and mitigation programs can successfully reduce vulnerability to hazards both prior to and following a disaster. The actions of individuals and governments during the recovery phase of a disaster impact how the community will recover and its vulnerability to future events (Geipel 1991; Haas et al., 1977; Hagelman et al., 2012; Pais and Elliott 2008). Therefore, disaster recovery offers an opportunity for governments to implement programs and policies that will increase resiliency (Berke et al., 1993; Zavar et al., 2012). The needs of residents are better represented in planning and mitigation efforts by incorporating a bottom-up approach to these programs. Previous research documents that incorporating projects into disaster preparedness and mitigation plans that reflect the interests and values of local residents reduces vulnerability to environmental and technological hazards (for example: Bajek et al., 2008; Burby 2003; Chen et al., 2006; Cutter 1996; Cutter et al., 2003; Godschalk et al., 1998; Godschalk et al., 2003; Kweit and Kweit 2004; Marfai et al., 2015; Patterson et al., 2010). This study explores how residents influence both formal and informal land uses within their neighborhoods and

identifies the potential to increase resiliency through sustainable land use practices at the neighborhood scale.

To understand the influence of residents on neighborhood land use, this paper focuses on three flood-prone neighborhoods in Lexington, Kentucky, as a case study, but the lessons here are transferable to other communities. The neighborhoods of Port Royal, WGPL,¹ and Cardinal Valley are all located within the Wolf Run Watershed and have experienced repeated flooding (Fig. 1). The Lexington-Fayette Urban County Government (LFUCG) initiated a buyout program with the assistance of federal funding through the Federal Emergency Management Agency (FEMA) in the late 1990s. Floodplain property acquisition prevents the development of high-risk floodplains and can contribute to resilient cities, defined as “a sustainable network of physical systems and human communities” (Godschalk 2003). LFUCG acquired a total of 38 properties dispersed among the three neighborhoods. Homeowners who elected to participate in the buyout program were compensated with the pre-flood value of their property through a cost-sharing approach between LFUCG and FEMA (Zavar, 2015). All of the structures on the buyout properties were demolished per FEMA guidelines following acquisition (FEMA, 1998). The acquired properties are now owned by LFUCG and designated as public open space in perpetuity.

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¹ The name WGPL is not an acronym but rather comes from the first letter of each street within the neighborhood.

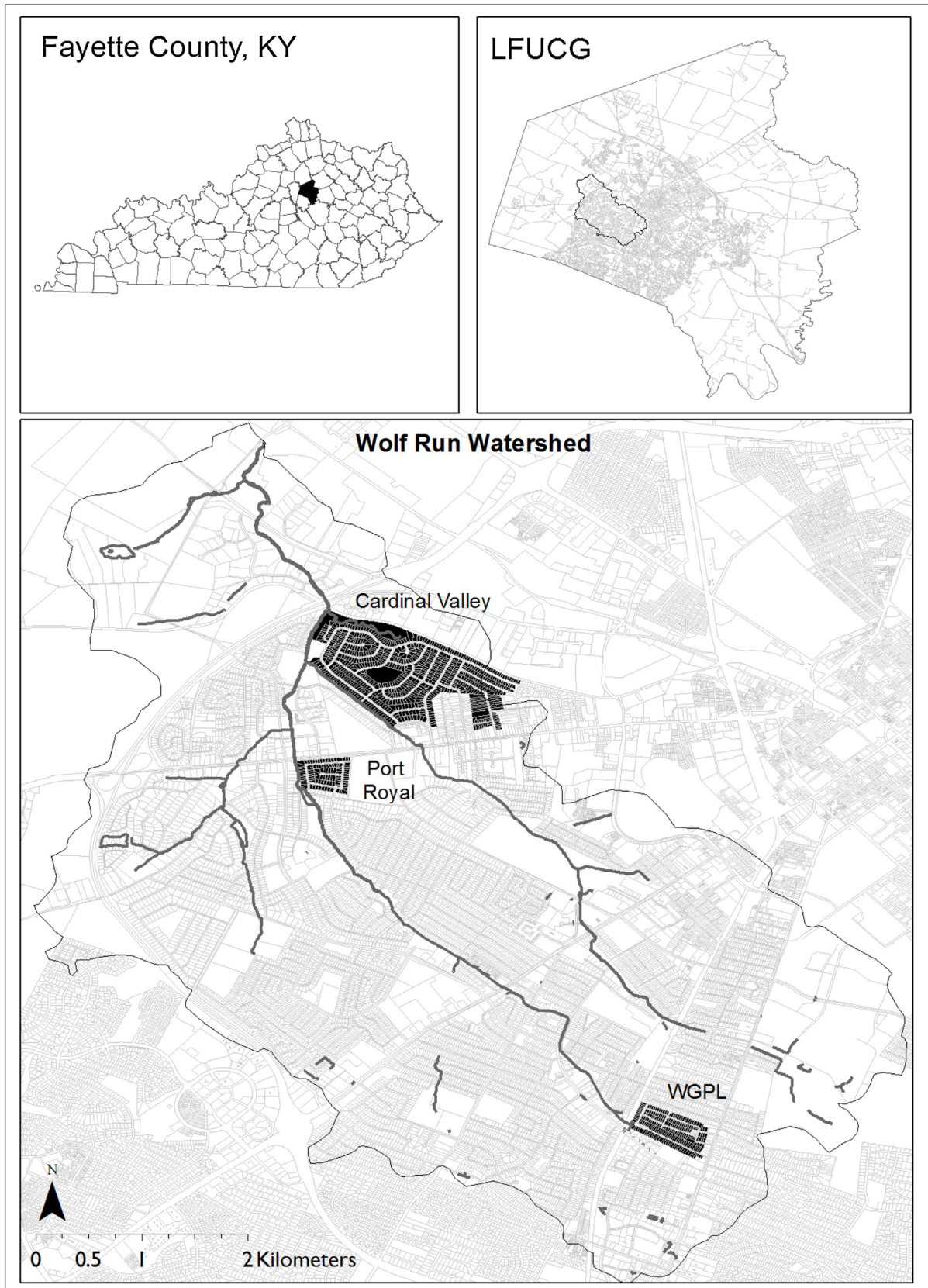


Fig. 1. Map of the three study neighborhoods within the Wolf Run Watershed in Lexington, Kentucky: Cardinal Valley, Port Royal, and WGPL. (Data Source: LFUCG GIS Department).

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