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CREATING AN URBAN DEER-VEHICLE ACCIDENT MANAGEMENT PLAN USING INFORMATION FROM A TOWN'S GIS PROJECT

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Abstract

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The Town of Amherst, New York is an urban/suburban community near Buffalo that has experienced considerable development in the past 10 years (1991-2000). In the same time period, the Town has experienced a noticeable increase in deer vehicle accidents. Given the Town's landscape, interactions of deer and people seem highly likely to continue. In addition to commercial uses and residential areas (both high and low density), the town includes substantial agricultural land protected by conservation easements that preserve green space and also perpetuate local agricultural use on selected acreage. This mixture of residential, commercial, green space, and agricultural lands results on ongoing conflicts between humans and deer. The most noticeable is that of increased deer vehicle accidents which, in the past 10 years, have ranged from a low of 298 to a high of 444 collisions per year. The Town is unusual in that, since 1991, planners have been assembling data on land use patterns, locations of deer vehicle collisions, and deer population estimates. These have been compiled into a GIS project that was used to guide the formulation of a deer-vehicle management plan and the State environmental review of that plan. To date, analysis of GIS data has demonstrated spatial and temporal patterns of deer accident "hot spots." It has also shed light on the likely proximate causes of those hot spots which include proximity to green space, speed and vehicle movement, and locations with new development. In addition, the State Department of Environmental Conservation has conducted regular aerial deer counts for several years. Analysis of these counts show the effects of the town's more concerted efforts at lethal control in 1994-1996 that is also reflected in shifts in deer vehicle accident "hot spots." A deer vehicle accident adaptive management plan is being formulated that takes a multifaceted approach to the reduction of deer vehicle accidents including modification of driver behavior, modification of deer behavior (particularly movement), and periodic deer population control. The GIS project also shows promise as a monitoring tool for continued implementation of this adaptive management plan.

Web Sites

www.white-water-associates.com ; www.amherst.ny.us/govt/planning