

Minnesota's Experience with Deer Warning Systems

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The Minnesota Department of Transportation focus for the Deer Detection and Warning System project is reduction of the number of deer/vehicle crashes (DVC). It is estimated that there are over 35,000 DVC yearly in the state resulting in 3 to 11 deaths, over 400 personal injuries, and close to 4,000 reported property damages of one thousand dollars or more. Of course, a large percentage of DVC are not reported do to insurance deductibles.

Initial Project

A system was installed on Trunk Highway 23 near Camden State Park, about 12 miles south of Marshall, MN, to ascertain if the number of DVC can be reduced. This system consists of two different parts; first a method to detect deer, and secondly to activate a flashing beacon on a standard deer sign to warn motorists of the possible danger so that they can slow down and check the right of way.

This system was installed in April of 2007. Daily inspections were made by a Minnesota Department of Natural Resources Park Ranger of the project area to locate deer carcasses, as these are the best indication of DVCs. During the evaluation period from May through November of 2007, seven deer carcasses were observed in the project area, compared to 20 during the same period in 2006, a 65% reduction in DVCs.

The initial deployment of the system has provided a great deal of information that has been incorporated into a second deer warning system project.

Current Project

A second Deer Warning System Project is planned for 2011. This project consists of two major efforts:

1. Update the existing system near Marshall Minnesota; and
2. Select a new site and install a new system on this site.

Update Existing System

The existing system on Highway 23 will be evaluated to verify proper operation. Based on the condition of the existing system, a system upgrade work plan will be created to reflect the needed tasks for upgrades and any component replacements. This plan will then be implemented to ensure proper continued operation of this system.

New System

A second deployment site will be selected for the installation of a deer warning system. Site selection includes finding a site where a cross street or driveway will cause vehicles to cross into a detection zone allowing a demonstration of the system's ability to discriminate between large animals and vehicles. Furthermore, at least one section of the selected site will have an area suitable to test area-based wildlife detection technologies.

It is anticipated passive infrared (PIR) devices will be used as the area detectors. The different characteristics of PIR (area) detectors will require a different mechanical design from the beam-based wildlife detection used in previous system.

It is also anticipated that an inductive loop-based or non-intrusive method of vehicle detection that operates in tandem with the wildlife detectors to reduce false-positive activations will be developed. This system will mitigate the effect of vehicles that, due to road geometry, have to cross a detection zone.

Installation of this system is planned for the summer of 2011.

Presentation

The presentation will detail the system design and deployment, report on maintenance issues, and report results of DVC reduction.

