

Report	Report #	No Consultation with Strieter as to Proper Installation, Monitoring, Maintenance and Currently Successful Tests	Old Installation Method	Report Deemed Unacceptable Due To The Following Circumstances							Report Unavailable	Not Applicable	INVALID	INVALID - Duplication of Information
				Proof of Proper Installation Lacking	Proof of Proper Maintenance Lacking	Proof of Proper Monitoring Lacking	No Test Conducted, Only Referred to Other Studies	Sufficient Sample Size Questionable	Installation Information Declined	Additional Information Declined				
				INVALID - This test used the first model SWAREFLEX reflector. The design lent itself to theft and damage resulting in missing reflectors and therefore inadequate coverage existed.										
T. N. Woodward, and T. D. I. Beck. 1979. Regional deer-vehicle accident research. U. S. Department of Transportation Federal Highway Administration Report No. B4:C4 FHWA-RD-79-11. National Technical Information Service.	5											X		
	Not Applicable - SWAREFLEX was not introduced to the USA until 1978 and in use starting in 1981													
Williamson, L. 1980. Reflectors reduce deer-auto collisions. Outdoor News Bulletin 34:2.	6											X		
	Not Applicable - SWAREFLEX was not introduced to the USA until 1978 and in use starting in 1981													
Gilbert, J. R. 1982. Evaluation of deer mirrors for reducing deer-vehicle collisions. United States Federal Highway Administration report FHWA-RD-82-061.	7						X					X		
Refer to Appendix A	Not Applicable Evaluated polished metal deer mirrors with dimpled indentations - not SWAREFLEX. Refer to Appendix A.													

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Reed, D. F., T.D.I. Beck and T.N. Woodard. 1982. Methods of reducing deer-vehicle accidents: benefit-cost analysis. Wildlife Society Bulletin 10:349-354.	8										X				
Griffis, J. L.. 1984. Effects of Swareflex Wildlife Highway Warning Reflectors on Behavior and Mortality of White-Tailed Deer	9	X	X	X	X	X								X	
	INVALID - Subsequent correspondence indicated change in the area environment during the test disrupted the deer habitat rendering the study ineffective.														
Zacks, J. L. 1985. An investigation of Swareflex wildlife warning reflectors. Federal Highway Administration Report FHWA-MI-RD-85-04, Washington, D.C.	10	X												X	
Refer to Appendix B	INVALID -Test conducted on pen-raised deer born in captivity.														

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Zacks, J. L. 1986. Do white-tailed deer avoid red? An evaluation of the premise underlying the design of Swareflex wildlife reflectors. Transportation Research Record 1075: 35-43.	11													X	
Refer to Appendix C	INVALID														
Reeve, A. F.. 1989. Vehicle-related Mortality of Mule Deer in Nugget Canyon, Wyoming. Wyoming Cooperative Fishery and Wildlife Research Unit, Laramie, Wyoming	12	X	X	X	X	X				X					X
	INVALID - The Cody District informed Strieter in 2004 the Reflectors they installed within the Cody DOT region were indeed effective.														
Scholten, G., G. Loveland, and J. Spinazola. 1989. The Effectiveness of Swareflex Reflectors. Idaho Department of Fish and Game.	13	X	X	X	X	X								X	
Refer to Appendix D	INVALID														

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				INVALID - Alternate covering and uncovering method for a 3 - month period proved to be too costly for budget, test discontinued. Speculation on ineffectiveness based on other tests and assumptions.											
Oregon Highway Division and Dept. of Fish and Wildlife. 1991, Study of the Swareflex Wildlife Warning Highway Reflector System.	17	X	X	X	X	X		X					X		
				NOT APPLICABLE - .Was suggested that no less than 30 deer kills can be expected to demonstrate statistically and only 12 were reported during test. Test was discontinued.											
Waring, G. J., J. L. Griffs, and M. E. Vaughn. 1991. White-tailed deer roadside behavior, wildlife warning reflectors, and highway mortality. Applied Animal Behavioral Science 29: 2156-223.	18	X	X	X	X	X							X		X
				NOT APPLICABLE - Repeat of previous report by Griffis											

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Armstrong, J. J. An Evaluation of the Effectiveness of Swareflex Deer Reflectors. 1992. Ontario Ministry of Transportation. MAT-91-12.	19	X	X	X	X	X								X	
	INVALID - Conclusion is that the installation was ineffective in reducing the number of deer / vehicle accidents using the covered / uncovered method. A test site conducted by Ontario Provincial Police concluded STRIETER-LITE a "major success" (www.strieter-lite.com).														
Ford, S. G., and S. L. Villa. 1993. Reflector Use and the Effect They Have on the Number of Mule Deer Killed on California Highways. Report FHWA/CA/PD-94/01.	20	X			X	X								X	
	INVALID - By personal communication between Ford and Strieter, this was a self fulfilled prophecy by Ford. Report stated not effective for mule deer and highway crews objected to the required maintenance. Fact: British Columbia and Colorado mule deer reflector sites have proven effective.														
Reeve, A.F., and S. H. Anderson 1993. Ineffectiveness of Swareflex reflectors at reducing deer-vehicle collisions. Wildlife Society Bulletin 21:127-132.	21	X	X	X	X	X				X	X			X	
	NOT APPLICABLE - Repeat of previous report by Reeve														

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White Water Associates, Inc 1995. Investigating Methods to Reduce Deer-vehicle Accidents in Michigan. FHWA-MI-RD-96-02.	22						X								X
Refer to Appendix - F	NOT APPLICABLE														
Romin, L. A., and J. A. Bissonette. 1996. Deer-vehicle collisions: status of state monitoring activities and mitigation efforts. Wildlife Society Bulletin 24:276-283.	23						X						X		
NOT APPLICABLE - DUPLICATION OF INFORMATION FROM OTHER REPORTS AND PAPERS															
Danielson, B. J. and M. W. Hubbard. 1998. A literature Review for Assessing the Status of Current Methods of Reducing Deer-Vehicle Collisions.	24						X						X		
NOT APPLICABLE - DUPLICATION OF INFORMATION FROM OTHER REPORTS AND PAPERS															
Authors never visited or even contacted by phone the existing successful installation sites in Iowa City (2) since 1996 and in Alamakee County, Iowa (2) since 1987.															

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Refer to Appendix - H				INVALID											
Andrle, S. J., K. K. Knapp, T. McDonald, and D. E. Smith. <i>Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties</i> . Iowa Highway Research Board Project TR-441. Iowa State University, Center for Transportation Research and Education, Ames, IA, April 2001.	28										X				

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Beaupre', V. G. 2002. Pilot project to deter wildlife-vehicle collisions. Press release. Regina, Saskatchewan: Saskatchewan Department of Highways and Transportation. Available: http://www.gov.sk.ca/newsrel/releases/200s/05/09-326.html .	29										X			
Hedlund, J. H., Paul E. Curtis, G. Curtis, and A. F. Williams. 2003. Methods to Reduce Traffic Crashes Involving Deer: What Works and What Does Not. Insurance Institute for Highway Safety	30						X					X		
Refer to Appendix - I	INVALID and NOT APPLICABLE													

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DeerCrash. 2003. Countermeasures toolbox. Madison, WI: University of Wisconsin, Madison, Deer-Vehicle Crash Information Clearinghouse. Available: http://www.deercrash.com/toolbox/index.htm	31						X						X		
INVALID and NOT APPLICABLE - DUPLICATION OF INFORMATION FROM OTHER REPORTS AND PAPERS. Refer to Report # _____															
Cottrell, Jr., B. H. 2003. Technical Assistance Report Evaluation of Deer Warning Reflectors in Virginia. Virginia Transportation Research Council. VTRC 03-TAR6	32					X									
Refer to Appendix - J	Of 10 test sites, 2 were decidedly effective and 2 slightly effective.														

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APPENDIX															
Reference	Remarks														
Report 7 - A	<p>Not Applicable Evaluated polished metal deer mirrors with dimpled indentations - not SWAREFLEX. No tests were performed on SWAREFLEX. Merely commented on other tests on SWAREFLEX that were underway and concluded no statistically valid evidence that either the steel mirrors or the SWAREFLEX reduce DVCs. Mentioned the Woodard, et al., 1973 statistically valid test with a minimally sufficient sample size concluded SWAREFLEX was ineffective. Refer to Report #4 above as that test being INVALID.</p>														
Report 10 - B	<p>INVALID -Test conducted on pen-raised deer born in captivity. Three cycles of 15 - minute constant light source from stationary headlights used to activate reflectors. Watering device used to induce deer response. Moving light patterns were non-existent. Human present at 3 - five minute intervals during experiment. Six biologists submitted letters stating test ineffective (refer to Appendix). Subsequent to WSDOT 1984 Report stating their test proved 90% effective claimed Zacks submitted his reason for the success, was that motorists when entering the uncovered reflector sections would reduce their speed and increase their speed when entering the covered reflector sections. Such driver response is totally unlikely, given problems with getting motorists to reduce their speed when entering work zones and when approaching "Deer Crossing" signs.</p>														
Report 11 - C	<p>INVALID - Red color originally thought to be a deterrent by SWAREFLEX was later determined incorrect. Rather, it is thought the apparent moving unnatural light patterns existing along the road sides caused by the passing vehicle headlights striking the reflectors, deter deer and other wild animals from crossing.</p>														

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Report 13 - D	<p>INVALID - By reason of the circumstances noted above. Actual experience as reported by Bill Davidson, Regional Wildlife Manager, Region 5, Idaho Dept. of F&G that the 1984 SWAREFLEX installation was indeed effective on I -15 near Malad, ID prior to this test..</p>													
Report 14 - E	<p>INVALID - Due to near desert conditions causing sparseness of vegetation along the roadsides, mule deer grazed mainly along the narrow grassy shoulders supported from road water runoff. Heavy and fast moving ore/coal carrying semis made sport of hitting deer that ventured close or on the highway. Report states reflectors not effective with mule deer. Previous sites in Price, UT proved effective by Dalton as interviewed on Salt Lake City TV. Also, British Columbia and Colorado mule deer reflector sites have proven effective. Additionally, concerned motorists reported to Strieter, the roadkills were drastically reduced in the various reflector installations outside and within the Price area.</p>													
Report 22 - F	<p>NOT APPLICABLE - No tests on STRIETER-LITE. Generalized Swareflex with other reflectors that were not effective. No specific critical sources listed, thus preventing credibility. Based on their referrals of reports on reflectors from 1983 to 1987, and no scientifically rigorous studies had been done since 1987, recommended that further research (regarding reflectors) in Michigan is not warranted at the time of this report. Only referred to other authors who stated SWAREFLEX and STRIETER-LITE ineffective.</p>													
Report 25 - G	<p>NOT APPLICABLE - Experimented with the WEGU (German) reflector which is similar to but not to be compared with SWAREFLEX and STRIETER-LITE. Passed judgement on SWAREFLEX based on their experience with WEGU that effectiveness probably decreases with time because the process of habituations is only delayed, not nonexistent. We reject this on grounds that our reflector installations have been effective since 1987 in Iowa and 1978 in Austria.</p>													

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Report 27 - H	<p>NOT Also attempted to state STRIETER-LITE reflected light level is lower than SWAREFLEX. In our opinion it is not the intensity of reflected light that is effective, but that S-L provides unnatural moving light patterns along the roadsides which deter the deer from crossing. Since all deer and wildlife have acute night vision - light intensity is inconsequential.</p>													
Report 30 - I	<p>INVALID and NOT APPLICABLE -- Falsely stated Swareflex red reflectors form a visual barrier that humans cannot detect, so as not to distract drivers. In actuality, they simply reflect the light across the road and not back to the driver. All of the studies listed as not effective were flawed as noted in columns 2 - 5. For example, referred to the MN DOT report by Frank Pafko as not effective in MN urban areas. In actuality, Pafko listed 5 explanations for not working. One was poor maintenance. We have proof that the maintenance was neglected. Sand and salt resulting from vehicular traffic coated reflectors rendering them ineffective. Besides this, many reflectors on posts were either missing or bent or missaligned. There was a dispute between the road maintenance crews and road supervisors as to whether such maintenance was in the crew's job descriptions. With such resulting gaps in coverage, no wonder the effectiveness was less than expected. Abundant proof of long-term effectiveness exists. NOT APPLICABLE - DUPLICATION OF INFORMATION FROM OTHER REPORTS AND PAPERS, inadequate coverage and investigation of tests and reports are evident.</p>													
Report 32 - J	<p>Of 10 test sites, 2 were decidedly effective and 2 slightly effective. Of the remaining 6, objections to reflectors were cited by maintenance staff, some Board of Supervisors and adjacent property owners indicate success doubtful. Third party monitoring was suggested for greater accuracy, but budget restraints prevented it. Strieter's experience indicates unsatisfactory results usually occur where support is lacking by the maintenance staff. Proper installation on all 10 sites was certified by Strieter.</p>													

