MEMORANDUM

STATE OF ALASKA

Department of Transportation and Public Facilities
Central Region-Division of Design and Engineering Services
Traffic, Safety, & Utilities Section

To: **Distribution** **Date:** April 14, 2014

Thru: **Ken Morton, P.E.**
Regional Preconstruction Engineer

From: **Scott E. Thomas, P.E.**
Central Region Traffic Engineer

Subject: Moose-Vehicle Collisions
Priority List 2006 - 2010

Attached is an HSIP program analysis of the most current:

1) statewide annual moose-vehicle collision totals, and
2) statewide ranking of top moose-vehicle collision segments.

Ranking is based upon reported crash density per mile. Crash rates per million vehicle miles of travel were unable to be processed at this time[1]. Overall, crashes are increasing with increasing traffic. Some segments no longer rank as high as they did in the past two decades due to increased clearing, lighting, and fencing, as well as local changes off the highway.

Use this list to guide areas of concern for 3R or 4R projects, maintenance of existing clearing and signs, and coordination with other agencies and the public. Reevaluate crash densities and crash rates on a design project basis as newer data becomes available. Moose-vehicle collisions are only one component to be addressed in a design. Balance their consideration with all other factors contributing to the budget and scope of a project.

Quantify, compare, and select cost-effective mitigation for 3R, 4R and other major funding projects on segments on the 95 percentile list. For other projects examine signing and clearing for areas of concern on either list.

- Clearing and removing or stunting browse is desirable at least 50 feet off the roadway.
- Warning signing spaced approximately every 2 miles is desirable in affected segments.

Also available upon request is a *.kmz layer showing these locations in Google Earth.

Contact me at 269-0633 or scott.thomas@alaska.gov with questions.

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[1] Method A = crash rates per mile over five years per the original 1995 Alaska's Moose-Vehicle Accidents on Rural Roads. Method B = crash rates per MVMT (million vehicle miles travelled).
This is consistent with methods in the 1995 study FHWA-RD-94-156 Investigation of Crashes with Animals summarized in the HSIS (Hwy Safety Information System). The study used more than 5 years of data with more than 150,000 animal-vehicle crashes in Illinois, Maine, Minnesota, Utah, and Michigan.

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95%ile
Table 1 3/25/14

STATEWIDE DOT & PF
MOOSE-VEHICLE COLLISION RANKINGS 2006-2010
Highest Crash Segments for Mitigation using 95%ile Thresholds
(Consider benefit/cost of mitigation possibilities: vegetation mgmt, off-site habitat/corridors, lighting, fencing, at-grade warning, and grade separation...)

Rank	CDS Route #	Road Name	From CDS Mipt	Description	To CDS Mipt	Description	Length	Total Recorded Collisions	Average Collisions Per Year	Average Collisions Per Mi, Yr	Method A >=15/mile	Method B Rate/MVMT
1	117600	Kenai Spur Highway	3.989	600' S of Silver Salmon Drive	8	500' S of Swires Road	4.011	77	15.4	3.8	4.011	
2	170044	Knik-Goose Bay Road	7.301	50' S of Sunset Avenue	10.484	1,600' S of Knik Knack Mud Shack Road	3.183	42	8.4	2.6	2.953	
3	170073	Big Lake Road	0.998	500' N of Wasey Way	2.964	800' S of S Shotgun Drive	1.966	29	5.8	3.0	1.966	Not Computed
4	117600	Kenai Spur Highway	12.95	1,300' S of Milepost 13	14.859	500' S of Sunset Boulevard	1.909	29	5.8	3.0	1.909	
5	170000	Parks Highway	11.81	@ Museum Drive	13.56	@ Sylvan & Pittman Roads	1.75	26	5.2	3.0	1.75	
6	134300	Minnesota Drive	3.17	700' S of Strawberry Road SB Off-Ramp	4.74	@ Int'l WB to Minnesota SB Loop Ramp	1.57	24	4.8	3.1	1.57	
7	135000	Glenn Highway	22.841	@ Mirror Lake SB Off-Ramp	24.399	500' S of Eklutna NB Off-Ramp	1.558	20	4.0	2.6	1.558	
8	135000	Glenn Highway	5.527	2,800' S of Fort Rich NB Off-Ramp	6.616	300' N of Fort Rich NB On-Ramp	1.089	18	3.6	3.3	1.089	
9	170044	Knik-Goose Bay Road	1.582	500' S of Milepost 1	2.582	@ Edlund Road	1	15	3.0	3.0	1	
10	133500	O'Malley Road	0.247	@ Seward Hwy NB Overpass	1.247	50' E of Hane Street	1	15	3.0	3.0	1	
		None in Northern Region										
		None in Southeast Region										
											18.806 miles	

Rating methods, thresholds from 1995 Moose-Vehicle Collisions on Alaska's Rural Roadways (1988-2002), DOT/PF
Segments are ranked using collision frequency.
CDS Milepoints are DOT/PF linear references. Mileposts are historical markers and not the same. See Descriptions for location.
When information is available, cost-effectiveness of mitigation strategies should be measured before implementation
This table overlaps with the data meeting the 75%ile threshold
Segment lengths, locations fluctuate over time due to changes in winters, habitat, development, population dynamics...etc.

75%ile
Table 2

3/25/14

STATEWIDE DOT & PF

MOOSE-VEHICLE COLLISION RANKINGS 2006-2010

Segments of Concern using 75%ile Thresholds

(Consider benefit/cost of mitigation possibilities: improved brushing, vegetation mgmt, signing, winter trails...)

Rank	CDS Route #	Road Name	From CDS Mipt	Description	To CDS Mipt	Description	Length	Total Recorded Collisions	Average Collisions Per Year	Average Collisions Per Mi, Yr	Method A >=8/mile	Method B Rate/MVMT
1	170000	Parks Highway	8.83	@ Deskas Road	17.7	@ Larae Road	8.87	82	16.4	1.8	8.055	
2	117600	Kenai Spur Highway	2.819	500' S of Mooring Drive	9.064	300' S of Dolly Varden Street	6.245	100	20.0	3.2	6.245	
3	110000	Sterling Highway	50.202	300' N of Milepost 87	56.202	500' N of Heath Place	6	50	10.0	1.7	5.693	
4	170044	Knik-Goose Bay Road	5.055	@ Donavan Street	10.96	@ Royal Lane	5.905	61	12.2	2.1	5.674	
5	117600	Kenai Spur Highway	12.502	50' N of Haller Street	16.787	50' S of Williams Road	4.285	52	10.4	2.4	4.285	
6	135000	Glenn Highway	2.74	100' N of Turpin NB On-Ramp	6.918	400' N of Fort Rich NB On-Ramp	4.178	42	8.4	2.0	4.178	
7	134300	Minnesota Drive	1.29	1,000' S of 100th SB On-Ramp	5.33	100' S of Tudor Road	4.04	39	7.8	1.9	4.04	
8	135000	Glenn Highway	8.463	2 mi N of Fort Rich NB On-Ramp	12.24	Artillery SB Off-Ramp	3.777	29	5.8	1.5	3.777	
9	170073	Big Lake Road	0.5	200' N of Padre Pio Road	3.739	500' S of Roxas Road	3.239	36	7.2	2.2	3.239	
10	170044	Knik-Goose Bay Road	0.8	500' S of Riley Avenue	4	100' N of Milepost 4	3.2	33	6.6	2.1	3.2	
11	130000	Seward Highway	121.608	1,500' N of Diamond Bridge	124.421	500' S of Old Seward SB Off-Ramp	2.813	26	5.2	1.8	2.813	
12	110000	Sterling Highway	61.5	2,000' N of Echo Lake Drive	64.17	400' S of Charland Drive	2.67	23	4.6	1.7	2.67	
13	133899	Tudor Road	2.199	100' W of Shelikof Street	4.763	200' E of MLK Jr. Drive	2.564	21	4.2	1.6	2.564	
14	110000	Sterling Highway	120.293	2,000' N of Norman Lowell Road	122.71	100' S of Milepost 163	2.417	16	3.2	1.3	2.417	
15	135000	Glenn Highway	48.549	@ Milepost 56	50.658	500' N of Milepost 58	2.109	20	4.0	1.9	2.109	
16	135000	Glenn Highway	27.627	Old Glenn SB On-Ramp	29.691	100' N of Knik River NB On-Ramp	2.064	18	3.6	1.7	2.064	Not Computed
17	133500	O'Malley Road	0	@ Old Seward Highway	2.035	500' E of Elmore Road	2.035	23	4.6	2.3	2.035	
18	117600	Kenai Spur Highway	19.2	300' S of Miller Loop Road	21.142	@ Milepost 21	1.942	13	2.6	1.3	1.942	
19	133724	Abbott Road	1.392	400' W of Sahalee Drive	3.23	100' W of Vanguard Street	1.838	15	3.0	1.6	1.838	
20	115400	Kalifornsky Beach Road	19.529	1,500' S of Merrywood Avenue	21.324	1,000' S of Sports Center Road	1.795	14	2.8	1.6	1.795	
21	133900	Muldoon Road	0.155	500' N of Tudor Road	1.937	200' N of E 16th Avenue	1.782	11	2.2	1.2	1.782	
22	135000	Glenn Highway	15.427	1,000' S of S Birchwood SB On-Ramp	17.122	1,700' N of S Birchwood NB On-Ramp	1.695	12	2.4	1.4	1.695	
23	135000	Glenn Highway	22.841	@ Mirror Lake SB Off-Ramp	24.524	500' N of Eklutna SB On-Ramp	1.683	20	4.0	2.4	1.683	
24	117790	Bridge Access Road	0.415	1,500' S of Tern Avenue	2.024	2,500' S of Boat Launch Road	1.609	12	2.4	1.5	1.609	
25	134140	Lake Otis Parkway	1.615	@ 40th Avenue	3.204	500' S of E 63rd Avenue	1.589	12	2.4	1.5	1.589	
26	133735	Elmore Road	0.766	500' S of 84th Avenue	2.267	500' N of 64th Avenue	1.501	14	2.8	1.9	1.501	
27	136000	Old Glenn Hwy @ Palmer	14.005	1000' S of Ye Old River Road	15.5	500' N of Vera Way	1.495	9	1.8	1.2	1.495	
28	135000	Glenn Highway	18.506	2,600' S of N Birchwood NB Off-Ramp	20	500' S of S Peters Creek SB On-Ramp	1.494	12	2.4	1.6	1.494	
29	115400	Kalifornsky Beach Road	17.326	500' S of Ciechanski Road	18.675	1,000' S of Bye Way	1.349	12	2.4	1.8	1.349	
30	170077	Hollywood Road	3.431	1,500' W of Andrea Drive	4.728	1,300' E of Pond Lilly Lane	1.297	9	1.8	1.4	1.297	
31	130000	Seward Highway	113.743	1,500' S of Milepost 115	114.953	1,000' S of Milepost 116	1.21	8	1.6	1.3	1.21	
32	110000	Sterling Highway	67.994	1,500' N of Milepost 106	69.194	2,500' S of McElroy Farm Avenue	1.2	11	2.2	1.8	1.2	
33	115400	Kalifornsky Beach Road	8.489	2,000' S of Collins Avenue	9.677	1,500 S of Milepost 10	1.188	9	1.8	1.5	1.188	
34	134750	Northern Lights Blvd	1.87	@ Wesleyan Drive	2.87	500' E of Arca Drive	1	9	1.8	1.8	1	
35	133710	Rabbit Creek Road	0	@ Old Seward Highway Spur	0.955	500' E of Bayview Drive	0.955	11	2.2	2.3	0.955	
1	151000	Chena Hot Springs Rd	4	@ Milepost 4	5.708	300' W of Amanita Road	1.708	15	3.0	1.8	1.708	
2	188800	Badger Road	6.16	200' S of Hartzog Loop	7.57	2,500' S of Bradway Road	1.41	8	1.6	1.1	1.41	
3	190000	Richardson Highway	361.498	500' N of Milepost 358	362.6	1,500' N of MP 359	1.102	8	1.6	1.5	1.102	
4	175400	Sheep Creek Road	1.795	500' S of Cinnabar Drive	2.795	500' N of Blacksheep Lane	1	8	1.6	1.6	1	
		None in Southeast Region										
											82.6 miles	

Rating methods, thresholds from 1995 Moose-Vehicle Collisions on Alaska's Rural Roadways (1988-2002), DOT/PF

Segments are ranked using collision frequency first, then by rate of collisions second.

CDS Milepoints are DOT/PF linear references. Mileposts are historical markers and not the same. See Descriptions for location.

When information is available, cost-effectiveness of mitigation strategies should be measured before implementation

Segments less than 1 mile apart are combined. This will create longer segments than what meets Rating Method A thresholds.

Segment lengths, locations fluctuate over time +/- several miles due to changes in winters, habitat, development, population dynamics...etc.