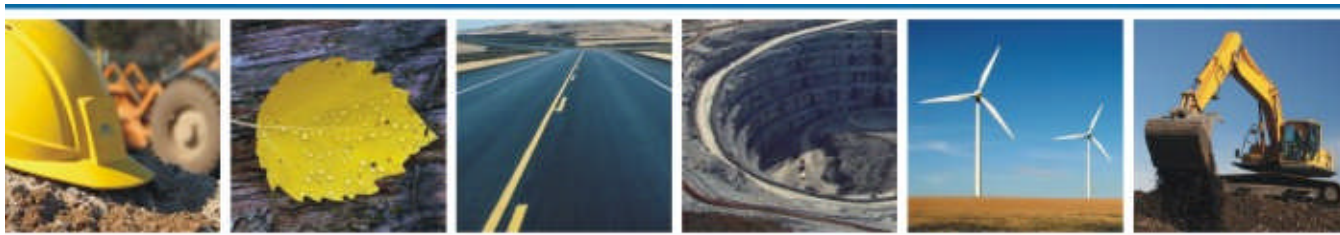


ALBERTA TRANSPORTATION
SOUTHERN REGION

HIGHWAY 22:06 TO HIGHWAY 22:12 CLIMBING AND PASSING LANE STUDY HIGHWAY 3 TO HIGHWAY 543 CON0010075



REPORT – EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Alberta Transportation (AT) has identified a need to review the existing passing opportunities along the Highway 22 corridor from Highway 3 to Highway 543. The study area encompasses Control Section 22:06 to Control Section 22:12 for a total length of approximately 118 km. It is possible that drivers become frustrated along the Highway 22 corridor as platoons form behind slower moving vehicles. Concerns with these platoons are related to drivers taking risks to pass on vertical grades or horizontal curves with inadequate passing sight distance. These concerns and feedback received regarding the lack of safety pullouts (to check braking and loads shifting) has led AT to develop a strategy to address issues along Highway 22.

Highway 22 is a major north-south transportation corridor in the southwest portion of the province. A large proportion of the traffic using this corridor includes recreational vehicles and truck traffic. Growth in traffic volumes is expected to continue in the near future as this corridor is an important link for local and interprovincial transportation of goods and people.

The focus of this study along Highway 22 is to reduce driver frustration, mitigate unsafe passing manoeuvres commonly caused by frustrated drivers, as well as address an overall improvement in safety to all members of the public. This will be achieved by improving current passing opportunities, addressing any deficiencies at existing passing/climbing lanes and reviewing the need for safety pullouts.

Strategic locations for climbing and passing lanes, and safety pullouts have been reviewed following the technical requirements and local knowledge obtained during the course of this study. Climbing lane analysis has followed the guidelines contained in Design Bulletin 66 “Climbing Lane Warrants for Two Lane Undivided and Four Lane Divided Highways – Revised” and passing lane analysis has followed the methodology contained in the Highway Geometric Design Guide (HG DG). The need for safety pullouts along the study corridor has considered safety, operational, adverse weather, industry, tourism and enforcement needs while applying the guidelines documented in the HG DG and other sources.

Throughout the process to develop recommended locations, input has been sought and applied from the members of the Technical Review Committee (TRC). Each of the recommended locations for climbing and passing lanes as well as safety pullouts have been discussed and subsequently revised considering the input provided. These locations have considered known constraints, constructability issues, local knowledge and technical warrants in an attempt to improve the safety and operation for vehicles within this study corridor.

From the analysis and discussion presented in this report, it is concluded that climbing lanes are warranted along the Highway 22 corridor at several locations. These climbing lanes are warranted following the guidelines documented in Design Bulletin 66 to address steep uphill grades, heavy vehicle speed performance, current and projected traffic volumes and reductions in the Level of Service. Subject to the availability of funding, climbing lanes in Control Section 06 and Control Section 08 should be given priority over those in Control Section 10.

It is also concluded that passing lanes are warranted along this corridor to address an improvement in the overall net passing opportunity in the northbound and southbound directions. The existing net passing opportunities range from 22% to 30% but are expected to drop as low as 14% to 18% by 2030. By

introducing climbing and passing lanes along the corridor, the net passing opportunity can be increased to 27% to 29% in 2030.

Following a review to determine the need for safety pullouts along Highway 22, it is concluded that pullouts are required to address many of the existing issues experienced along this highway. Strategic locations for safety pullouts have been selected that address safety, operational, adverse weather, industry, tourism and enforcement needs.

There are areas along this highway corridor where specific safety concerns have been observed. Through construction of climbing and passing lanes, and safety pullouts, the safety performance can be expected to improve. Specific concerns raised during this study are related to the area along Highway 22:06 between Cow Creek and Wildcat Creek which is susceptible to winter storms and high winds.

The following recommendations are made based on the analysis and discussion presented.

It is recommended that AT undertake the design and construction of new climbing and passing lanes, and safety pullouts as presented in this report. The recommended locations and estimated costs for climbing and passing lanes are shown in Table ES1. Recommended locations and estimated costs for safety pullouts are shown in Table ES2. These tables also show a relative ranking of these recommended locations to assist AT with prioritizing improvements required in the study area.

The climbing lanes in Control Section 06 and Control Section 08 are warranted within the first ten years of the analysis period. Climbing lanes in Control Section 10 are not expected to be met until 2030. Should climbing lane improvements along this corridor be programmed with funding allocated within the first 10 years (2010 to 2019), consideration should be given to construction of climbing lanes in Control Section 06 and Control Section 08 prior to those in Control Section 10. If funding is not available until after 2019, construction of any of these climbing lane locations could be considered. Due to the uncertainty of programming and funding these improvements, the relative ranking provided in each table does not give prioritization to climbing lanes based on the projected year of need but has been determined from feedback received and through discussion with members of the TRC.

Table ES1: Recommended Climbing and Passing Lane Locations

Hwy Control Section	Traffic Control Section	Direction	Facility	Start of Lane (km)	End of Lane (km)	Cost Estimate	Relative Ranking (by direction)
22:06	4	NB	CL	2.600	6.160	\$1,566,000	2
22:06	4	SB	PL*	7.200	9.500	\$1,229,000	5
22:06	4	NB	PL	16.675	18.275	\$815,000	7
22:06	4	SB	CL	20.600	23.336	\$1,758,000	2
22:08	4	NB	CL	3.480	5.750	\$2,021,000	3
22:08	4	SB	PL*	13.222	16.078	\$1,927,000	8
22:08	4/8	NB	CL	16.810	21.750	\$5,027,000	1
22:08	8	SB	CL	25.910	30.140	\$3,521,000	1
22:08	8	NB	PL	40.500	42.500	\$997,000	5
22:08	8	SB	PL	40.500	42.500	\$987,000	7
22:10	4	NB	PL	2.450	4.450	\$1,655,000	4
22:10	4	SB	PL	7.000	9.000	\$1,273,000	4

Table ES1: Recommended Climbing and Passing Lane Locations

Hwy Control Section	Traffic Control Section	Direction	Facility	Start of Lane (km)	End of Lane (km)	Cost Estimate	Relative Ranking (by direction)
22:10	8	NB	PL	13.000	15.000	\$1,257,000	8
22:10	8	SB	PL*	18.050	20.050	\$1,352,000	6
22:10	12	SB	CL	26.000	27.500	\$1,431,000	9
22:10	12	NB	CL	30.500	32.800	\$1,425,000	6
22:10	12	SB	CL	35.122	37.272	\$1,987,000	3

Note: PL = passing lane, CL = climbing lane
 *Bridge file located within limits

Table ES2: Recommended Safety Pullout Locations

Hwy Control Section	Traffic Control Section	Direction	Start of Lane (km)	End of Lane (km)	Cost Estimate	Relative Ranking
22:06	4	NB	1.400	2.040	\$339,000	6
22:06	4	SB	19.000	19.640	\$390,000	2
22:08	4	NB	8.000	8.640	\$197,000	1
22:08	4	SB	18.160	18.800	\$1,073,000	5
22:10	4	NB	8.060	8.700	\$264,000	4
22:10	4	SB	10.100	10.740	\$203,000	3

The total cost estimate to provide these improvements is \$32,694,000.

It is recommended that signing be placed along Highway 22 advising drivers of the distance to the next dedicated passing opportunity (climbing or passing lane). Similar signs could also be displayed advising drivers of the distance to safety pullouts. Consideration could be given to utilizing intelligent transportation systems including Variable Message Signs to provide advanced notification of adverse weather conditions along this corridor, particularly in the area approaching Cow Creek and Wildcat Creek which is susceptible to large snow drifts, high winds and white out conditions.

It is recommended that future work within this corridor include undertaking a pavement marking plan in accordance with current guidelines.