Alberta Transportation

Safety Rest Area
Implementation Framework

POLICY FRAMEWORK &
IMPLEMENTATION STRATEGY

FINAL
MARCH 31, 2004

2003 Premier's Award of Excellence

POMMEN Group
General Management Consultants

Alberta TRANSPORTATION

Report No. R: 863

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March 31, 2004

Alberta Transportation
2nd Floor, Twin Atria Building
Edmonton, AB

Attention: Jim Der, Director
Technical Standards Branch

Re: Safety Rest Area Implementation Framework and Strategy
Final Version

As a result of the suggestions provided by the Infrastructure Managers and further discussions with TRANS technical people, attached is the final version of the framework.

Where comments received from the TRANS Regions applied to the framework, such comments have been incorporated into this document. Additionally, some changes to the F2 Highway Design Guide have also been updated as a result of this framework.

We believe this document is now complete and ready for ATRANS signoff in preparation for issuance as a policy document.

We thank you and TRANS representatives for their participation in the preparation of this document.

Sincerely,

Dennis W. Pommen, CLGM, CHRP
President

ALBERTA TRANSPORTATION

SAFETY REST AREA
POLICY FRAMEWORK & IMPLEMENTATION STRATEGY

THE RECOMMENDATIONS CONTAINED WITHIN THIS REPORT WERE

PRESENTED TO

ALBERTA TRANSPORTATION DIVISIONAL EXECUTIVE COMMITTEE

ON

JANUARY 27TH, 2004.

THIS DOCUMENT IS COMPLETE AND HAS BEEN ACCEPTED

BY

ALBERTA TRANSPORTATION
WITH THE FOLLOWING PROVISIONS:

- Delete the high load/over dimensional staging areas.

Original signed by Allan Kwan

Allan Kwan
Executive Director
Technical Standards Branch

Date: M*arch 31, 2004* .

2003 Premier's Award of Excellence

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Policy Framework and Implementation Strategies

Table of Contents

Executive Summary

1 Executive Summary

Purpose of the Policy Framework and Implementation Strategy

This document:

1. *Consolidates and focuses the implementation of recommendations relating to 20 years of research and strategic planning regarding Safety Rest Areas.*
2. *Delegates the authority to TRANS Regions to implement prioritized short, medium, and long-term development and construction of Safety Rest Areas in each region of the province.*
3. *Provides construction priorities for Safety Rest Areas identified by previous studies.*
4. *Provides for needs assessment criteria and priority categories to address future requests for non-urban Safety Rest Areas.*
5. *Provides reference to the most current Safety Rest Area F-2 designs.*
6. *Provides reference to the most current location maps.*
7. *Provides the foundation for allocating resources and dedicated budgets to implement Safety Rest Area development in the TRANS Regions.*

Introduction

The purpose of the Safety Rest Area Implementation Framework is to provide a context and strategy for prioritizing and ranking of rural Safety Rest Areas along highways in Alberta. This Framework addresses a number of priority factors and acts as a guide to Alberta Transportation (TRANS).

Various stakeholders have identified the need for additional stopping opportunities along transportation corridors to ensure the safe, efficient, long-distance movement of goods and people. Furthermore, pending regulation changes that relate to driving times and the securing of loads also place higher demands on the need for Safety Rest Area availability.

Most of the reasons why Safety Rest Areas are required relate to driver safety and fatigue management; however, the resource industries require Safety Rest Areas for additional reasons. These include checking loads for the logging industry and providing layover or load inspections for heavy haul and wide loads.

Need identification is further supported by North American practices and studies that illustrate how Rest Areas improve highway safety.

This strategic planning document intends to provide the TRANS Regions with direction relative to the evaluation, selection, prioritization, and construction of specific rural Safety Rest Areas.

Policy and Implementation Framework

The Safety Rest Area Policy and Implementation Framework readies TRANS for the implementation of Safety Rest Area development for a period of years based on priority criteria. The responsibility to implement the Safety Rest Area Strategy is delegated to the TRANS Regions.

Specific responsibilities and outcomes include the following:

- Planning for and conducting individual site evaluations and advancing plans for Safety Rest Areas identified by priorities and strategies, in advance of construction
- Annually budgeting for the construction of sufficient Safety Rest Areas so that the "A" priorities are constructed and completed over a shorter period of time
- Designing and engineering Safety Rest Areas so that the design conforms to TRANS site development requirements and specifications
- Acquiring right-of-way and land in advance of facility construction
- Issuing tenders and contracts for an annual construction program
- Project managing construction contracts
- Maintaining and repairing facilities on an annual basis

These responsibilities will be encompassed by a five-step procedure:

1. Policy and Strategic Implementation
2. Site Evaluation Stage
3. Implementation Stage
4. Construction Stage
5. Monitoring and Maintenance Stage

In addition, the TRANS Regions will update Senior Management on the status of its three-year priority plan prior to the 31st of March each year. The plan will outline priority A, B and C Safety Rest Areas in a region, timelines and budgets for completion.

Implementation Strategies

The implementation strategies followed by the TRANS Regions will address:

- Sites and budgets in the three-year highway budget to provide for design and construction of Safety Rest Areas by priority locations and highways; or alternately, the plan to participate in dedicated funding approvals.
- Standard TRANS policy that future highway construction, overlays, rehabilitations and modifications provide for Safety Rest Area construction as part of design and construction contracts to lower costs whenever possible
- New installations to be completed before removals occur

- Removals required to improve safety and functionality in relation to new installations

The implementation strategy shall plan, coordinate, budget for, and complete the construction of Safety Rest Areas based on a three-point (A, B, C) priority scale as follows:

A - High Priority sites:	Construction should be planned, coordinated, and completed within a three-year window commencing in April 2005.
B - Medium Priority sites:	Construction should be planned, coordinated, and completed within three to six years from April 2005.
C - Low Priority sites:	Construction should be planned and coordinated for completion after A and B priority Safety Rest Areas are constructed.

Upon the completion of the Priority A sites, B sites will become As, Cs will become Bs and so on. Any future proposed rural sites ranked Priority A shall enter the three-year plan and take precedence over B and C sites, but not over A sites already identified in this report. *Urban areas do not qualify within the criteria of the program.*

Future Rural Safety Area Locations and Budget Estimates

Previously solicited stakeholder feedback, along with research indicates that approximately 38 Safety Rest Areas are required at strategic locations on existing and future divided highways, with an additional 50 Safety Rest Areas being required at strategic locations on two lane highways in the province.

Past and current studies include information on: a) the requirements for adequate Safety Rest Areas to meet the stated policy objectives, and b) the use of typical layouts/standards in the TRANS Highway Geometric Design Guide to meet various design criteria. Results of these studies and analyses have been summarized by region and priority in the following tables:

	Class of SRA						
	F.2.3.2				Total		***$(000)***
Regions	L(i)	L(ii)	F.2.1.2	F.2.1.1	New	Remove	***Estimate***
Totals for Peace Region	27	1	3	2	33	14	***13,519***
Totals for North Central Region	10	2	4	6	22	7	***13,587***
Totals for Central Region	10	0	3	4	17	8	***9,273***
Totals for Southern Region	0	0	11	5	16	10	***17,771***
Totals for Alberta	**47**	**3**	**21**	**17**	**88**	**39**	**$54,150**

The table above outlines the total number of Safety Rest Areas required in each region as well as required removals of existing Turnouts along with associated budget estimates.

For this level of review and for budget estimating purposes, an amount of $60 million should be considered.

SRA's by Region	*Priorities*						*SRA Total*	*$ (000) Estimate*
	A	$, 000	B	$, 000	C	$, 000		
Peace Region	24	10,085	2	490	7	1,715	33	12,290
North Central Region	6	3,405	13	8,456	3	491	220	12,352
Central Region	9	4,990	3	1,065	5	2,375	170	8,430
Southern Region	4	4,590	5	5,780	7	5,785	16	16,155
Sub-Totals	**43**	**$ 23,070**	**23**	**$ 15,791**	**22**	**$ 10,366**	**88**	**49,227**
Land Acquisition Allowance								4,923
Totals for Alberta								$ 54,150

Note: This table omits the 39 SRA removals in the total count, but does include them in the budget estimate.

Safety Rest Area Designs

The SRA classes referenced in the tables refer to standard designs from the 2003 update of the Highway Geometric Design Guide. For report purposes and estimating, seven reference designs are used:

- **F-2.1.1 Design:** Freeway/Expressway (F-2.1.1)
- **F-2.1.2 Design:** Expressway (Fig F-2.1.2)
- **F-2.2.1 Design:** Future Two Lane Highway on Same Side (Fig F-2.2.1)
- **F-2.2.2 Design:** Future Two Lane Highway on Opposite Side (Fig F-2.2.2)
- **F-2.3.1 Design:** Safety Rest Area for Two Lane Highway (Typical)
- **F-2.3.2 type L(i) Design:** For log haul routes with AADT < 3,000 (Fig F-2.3.2)
- **F-2.3.2 type L(ii) Design:** For log haul routes with AADT >3,000 (Fig F-2.3.2)

Policy and Strategy Summary

2 Policy and Strategy Summary

Purpose of the Policy Framework and Implementation Strategy

This document:

1. *Consolidates and focuses the implementation of recommendations relating to 20 years of research and strategic planning regarding Safety Rest Areas.*
2. *Delegates the authority to TRANS Regions to implement prioritized short, medium, and long-term development and construction of Safety Rest Areas in each region of the province.*
3. *Provides construction priorities for Safety Rest Areas identified by previous studies.*
4. *Provides for needs assessment criteria and priority categories to address future requests for non-urban Safety Rest Areas.*
5. *Provides reference to the most current Safety Rest Area F-2 design TRANS Highway Geometric Design Guide.*
6. *Provides reference to the most current location maps.*
7. *Provides the foundation for allocating resources and dedicated budgets to implement Safety Rest Area development in the TRANS Regions.*

The purpose of the Safety Rest Area Implementation Framework is to provide a context and strategy for prioritizing and ranking Safety Rest Areas[1] along highways in Alberta. This framework addresses a number of priority factors and lists to act as a guide to Alberta Transportation (TRANS).

This strategic planning document intends to provide direction relative to construction of specific Safety Rest Areas.

Need Identification

Various stakeholders have identified the need for additional stopping opportunities along transportation corridors to ensure the safe, efficient, long-distance movement of goods and people. Need identification is further supported by North American practices and studies that illustrate how Rest Areas improve highway safety.

A combination of key elements contribute to the need to add Safety Rest Areas to Alberta's highways:

[1] Referred to as "Roadside Turnouts" in previous documents. Will be referred to as "Safety Rest Areas" in the remainder of this document unless specifically referring to a previous study, guideline or reports. See *Definitions* section for more information.

• Driver fatigue management	• Driver operating hours
• Open Cargo Guide for load checks	• Equipment checks and maintenance
• Adverse weather conditions	• Equipment breakdowns
• Log haul safety checks	• Heavy truck haul checks, layovers
• Long haul trucking needs	• General travel needs
• Increased truck transportation	• Growth in economic development

Background

TRANS has researched and evaluated Safety Rest Areas in Alberta and throughout North America for many years.

In 1997, TRANS advanced developing strategies to address Safety Rest Area policy and development.

TRANS developed a program to partner with private service centres; pilot Partnership Rest Area (PRA) for 1999 on Yellowhead #16.

To date strategic location guideline reports have been completed on inter-provincial highways: North/South Trade Corridor, Yellowhead TransCanada #16, Highway #3, and TransCanada #1. These studies completed strategic site development on major transportation corridors.

Further strategic location guidelines have been developed to address the need for Safety Rest Areas on all two-lane highways in the province.

TRANS Technical Standards Branch developed typical design templates for Safety Rest Areas to accommodate phases of development for existing and future two and four lane highways.

TRANS construction priorities and budget allocations have determined the timing of construction of Safety Rest Areas. TRANS curtailed building Safety Rest Areas in the 1980s. Recently, four Safety Rest Areas have been built on the North/South Trade Corridor, one on Highway #1 (Saskatchewan border), and two on Highway #16 (east of Elk Island Park).

A site evaluation of 13 identified sites on two lane highways in the North Central region was completed by ARA Engineering in December 2002.

Guidelines

- Location convenience for the traveling public is a key consideration.
- Strategic locations are approximately 30-minute travel time spacing from urban centres (adjusted to accommodate resource transportation needs in given locations).
- Traffic mix, volumes, and locational factors determine locations.
- Locations are influenced in relationship to existing business or services, geographic and geotechnical features.
- Typical design templates have been prepared by the Technical Standards Branch and are to be utilized in developing individual sites.
- Individual sites/locations identified require "specific location evaluations" to assess impacts and minimize costs while providing safe/practical Safety Rest Area sites.
- A mechanism is provided to allow municipalities, industry and the public to identify and submit requests for the development of new Safety Rest Areas.

Observations

For several reasons, almost all stakeholders identified the need for Safety Rest Areas. Most relate to driver safety and fatigue management; however, the resource industries require Safety Rest Areas for additional reasons. These include checking loads for the logging industry and providing layover or load inspections.

Pending regulation changes that relate to driving times and the securing of loads also place higher demands on the need for Safety Rest Area availability.

The demand for Safety Rest Areas exceeds the current highway infrastructure and any existing future plans of TRANS.

Previously solicited stakeholder feedback along with research on Safety Rest Areas indicates that approximately 38 Safety Rest Areas are required at strategic locations on existing and future divided highways, with an additional 50 Safety Rest Areas required at strategic locations on two lane highways in the province.

Recommendations

Previous studies have identified a need for additional Safety Rest Area opportunities along Provincial highways to ensure the safe, efficient, long-distance movement of goods and people.

This report recommends adoption of the following**:**

1. Safety Rest Area Policy Framework

Policy Statement:

> "Alberta Transportation develops safe highway network design and operation with the inclusion of Safety Rest Areas within the highway network applied in accordance with North American transportation guidelines and criteria."

The Purpose of the Safety Rest Area Policy is to:

1. Ready TRANS for implementation of Safety Rest Area development for a period of years based on priority criteria.
2. Consolidate and focus on implementation of recommendations related to 20 years of research and strategic planning on Rest Areas, Roadside Turnouts, and Highway Services Rest Areas.
3. Advocate and rationalize the importance of safety and the public nature of resting opportunities.
4. Provide an Implementation Framework reflecting TRANS policy and **authorizes TRANS Regions** to implement prioritized short and long-term development plans for Safety Rest Area implementation.
5. Provide needs assessment and priority criteria in the application of the criteria to Safety Rest Areas identified by previous strategic studies and future requests for Rest Areas.
6. Provide the foundation for allocating resources and dedicated budgets to implement Safety Rest Area development throughout the highway network.
7. Advance an implementation strategy for Safety Rest Areas on Alberta Highways to meet the traveling public's needs.

The Scope of the Safety Rest Area Policy encompasses:

> All highways within the jurisdiction of TRANS for the purpose of planning, design, construction, and operation. This includes freeway/expressways, multi-lane and two lane highways.

Policy driven TRANS Region Responsibilities include:

> Implementing of the Safety Rest Area Strategy is delegated to TRANS regions. Specific responsibility and outcomes include the following:
>
> - Planning for and conducting site evaluations for Safety Rest Areas identified by priorities and strategies (past studies)
> - Annually budgeting for the construction of Safety Rest Areas and ancillary facilities so that they are constructed over a shorter period of time. Possibly securing a separate pool of funds allocated to complete the construction of the priority "A" sites within a 3-year time frame commencing in April 2005.

- Designing and engineering Safety Rest Areas, such that the design conforms to TRANS site development requirements and specifications
- Acquiring right-of-way and land in advance of facility construction
- Issuing tenders and contracts for an annual construction program
- Project managing construction contracts
- Maintaining and repairing facilities on an annual basis

2. Implementation Strategy

Phasing and implementation should address:

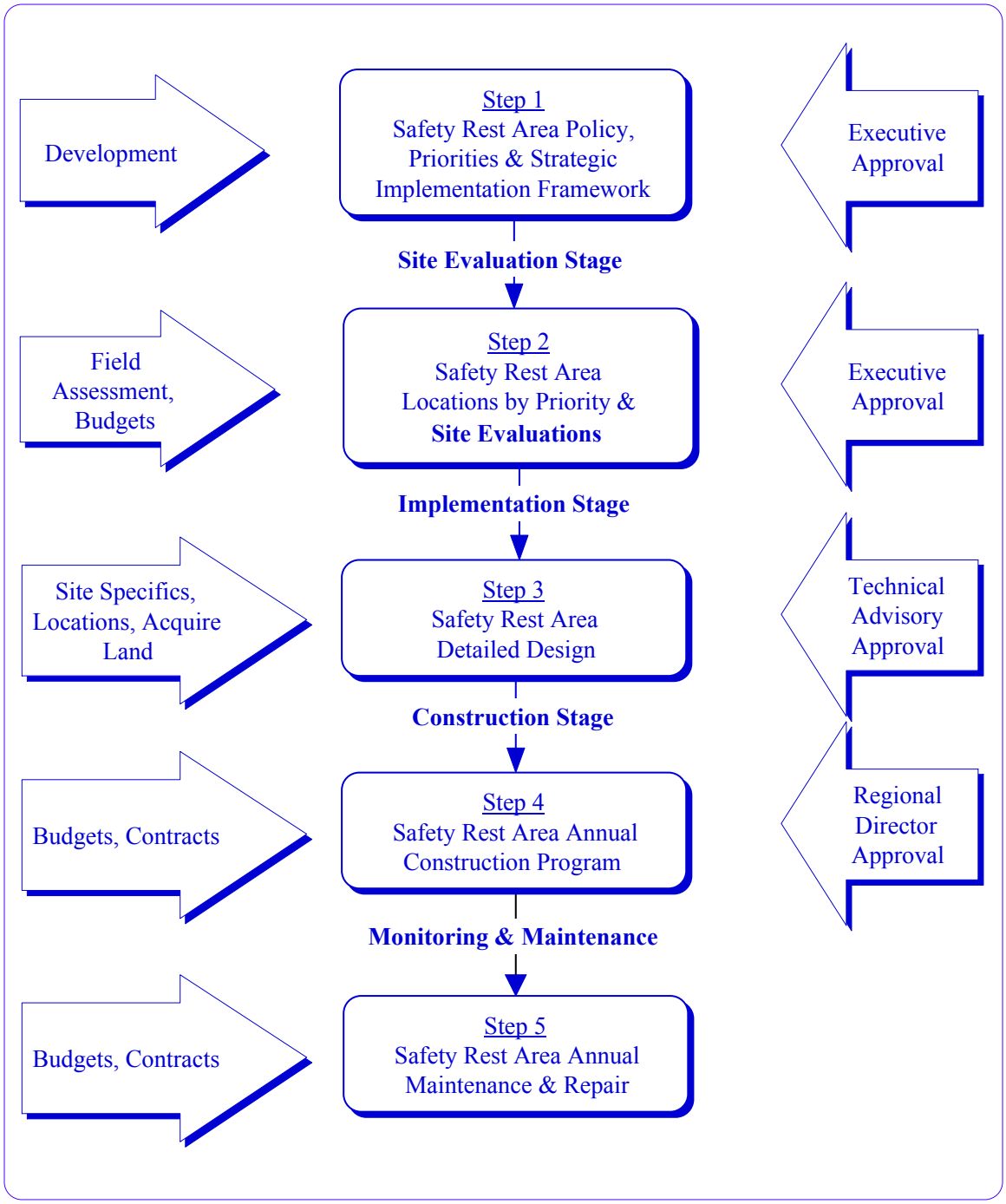
- TRANS Regions ***three-year highway budget*** and possibly a dedicated pool of funds to provide for design and construction of Safety Rest Areas and ancillary facilities by priority locations addressing "As", "Bs" and finally "Cs"
- Standard TRANS policy that future highway construction, overlays, rehabilitation and modifications provide for Safety Rest Area construction as part of design and construction contracts to lower costs whenever possible
- New installations to be completed before removals occur
- Removals are required to improve safety and functionality in relation to new installations
- Regions advance specific site evaluations and, eventually, detailed designs for specific sites/locations (determine exact locations and right-of-way needs)
- Advance acquisition of right-of-way land, if required.
- Construct Safety Rest Areas identified in the program when there is construction activity on a highway in a given region
- TRANS proceed to Construction Program by finalizing annual budgets, tendering
- Issuing contracts to construct Safety Rest Areas

Safety Rest Area Strategies address:

- The location and spacing of Safety Rest Areas based on functional factors and North American Standard Practices including: travel times, load check requirements, trucking industry regulations and guidelines, localized needs for poor weather conditions, and the incorporation of standard roadside functional design

- The influence on location of: traffic characteristics and log haul routes, proximity to urban and commercial services, proximity to other highways, and the geometric and geotechnical condition of proposed sites
- Design and location of appropriate and effective signage
- Marketing and education about road safety and the role of Safety Rest Areas

Procedures Flow Chart



Geometric Highway Design Guide Safety Rest Area Designs

The SRA classes referenced in the tables below refer to standard designs from the 2003 update of the Highway Geometric Design Guide. For report purposes and estimating, seven reference sizes are used:

- **F-2.1.1 Design:** Freeway/Expressway (Fig F-2.1.1)
- **F-2.1.2 Design:** Expressway (Fig F-2.1.2)
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- **F-2.3.2 type L(i) Design:** For log haul routes with AADT < 3,000 (Fig F-2.3.2)
- **F-2.3.2 type L(ii) Design:** For log haul routes with AADT > 3,000 (Fig F-2.3.2)

Future Safety Area Locations and Budget Estimates

The results of past/current studies and analysis into the requirements for adequate Safety Rest Areas to meet the stated policy objectives and the use of typical layouts/standards in the Highway geometric design guide (see Figures F-2.3.2, F-2.1.1, and F-2.1.2 *Appendices*) to meet the various design criteria are summarized in the following tables:

Regions	***Class of SRA***						***$(000) Estimate***
	F.2.3.2				Total		
	L(i)	L(ii)	F.2.1.2	F.2.1.1	New	Remove	
Totals for Peace Region	27	1	3	2	33	14	***13,519***
Totals for North Central Region	10	2	4	6	22	7	***13,587***
Totals for Central Region	10	0	3	4	17	8	***9,273***
Totals for Southern Region	0	0	11	5	16	10	***17,771***
Totals for Alberta	**47**	**3**	**21**	**17**	**88**	**39**	**$54,150**

For this level of review and for budget estimating purposes, an amount of $60 million should be considered.

SRA's by Region	Priorities A	$, 000	B	$, 000	C	$, 000	SRA Total	$ (000) Estimate
Peace Region	24	10,085	2	490	7	1,715	33	12,290
North Central Region	6	3,405	13	8,456	3	491	220	12,352
Central Region	9	4,990	3	1,065	5	2,375	170	8,430
Southern Region	4	4,590	5	5,780	7	5,785	16	16,155
Sub-Totals	**43**	**$ 23,070**	**23**	**$ 15,791**	**22**	**$ 10,366**	**88**	**49,227**
Land Acquisition Allowance								4,923
Totals for Alberta								$ 54,150

Regional Allocation of Costs by Priority

The following tables sorted by priority based upon resource activity and associated operational needs of industry correlated to overall traffic mix. Priorities are qualitative judgments based on review of needs in general and are as follows:

A - High: Construction should be planned, coordinated, and completed within a three-year window commencing in April 2005.

B - Medium: Construction should be planned, coordinated, and completed within three to six years of the April 2005 start date.

C - Low: Construction should be planned and coordinated for completion after A and B priority Safety Rest Areas are constructed.

Peace Region

SRA's by Priority	Class of SRA F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove	$(000) Estimate
Sub-totals for Priority "A" sites	18	1	3	2	14	10,085
Sub-totals for Priority "B" sites	2	0	0	0	0	490
Sub-totals for Priority "C" sites	7	0	0	0	0	1,715
Sub-Totals for Region	**27**	**1**	**3**	**2**	**14**	12,290
Land Acquisition Allowance				*10% of Sub-total*		1,229
Total for Peace Region						**$ 13,519**

North Central Region

SRA's by Priority	*Class of SRA*					*$ (000) Estimate*
	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove	
Sub-totals for Priority "A" sites	4	0	2	0	5	3,405
Sub-totals for Priority "B" sites	5	0	2	6	2	8,456
Sub-totals for Priority "C" sites	1	2	0	0	0	491
Sub-Totals for region	**10**	**2**	**4**	**6**	**7**	12,352
Land Acquisition Allowance				*10% of Sub-total*		1,235
Total for North Central Region						**$ 13,587**

Central Region

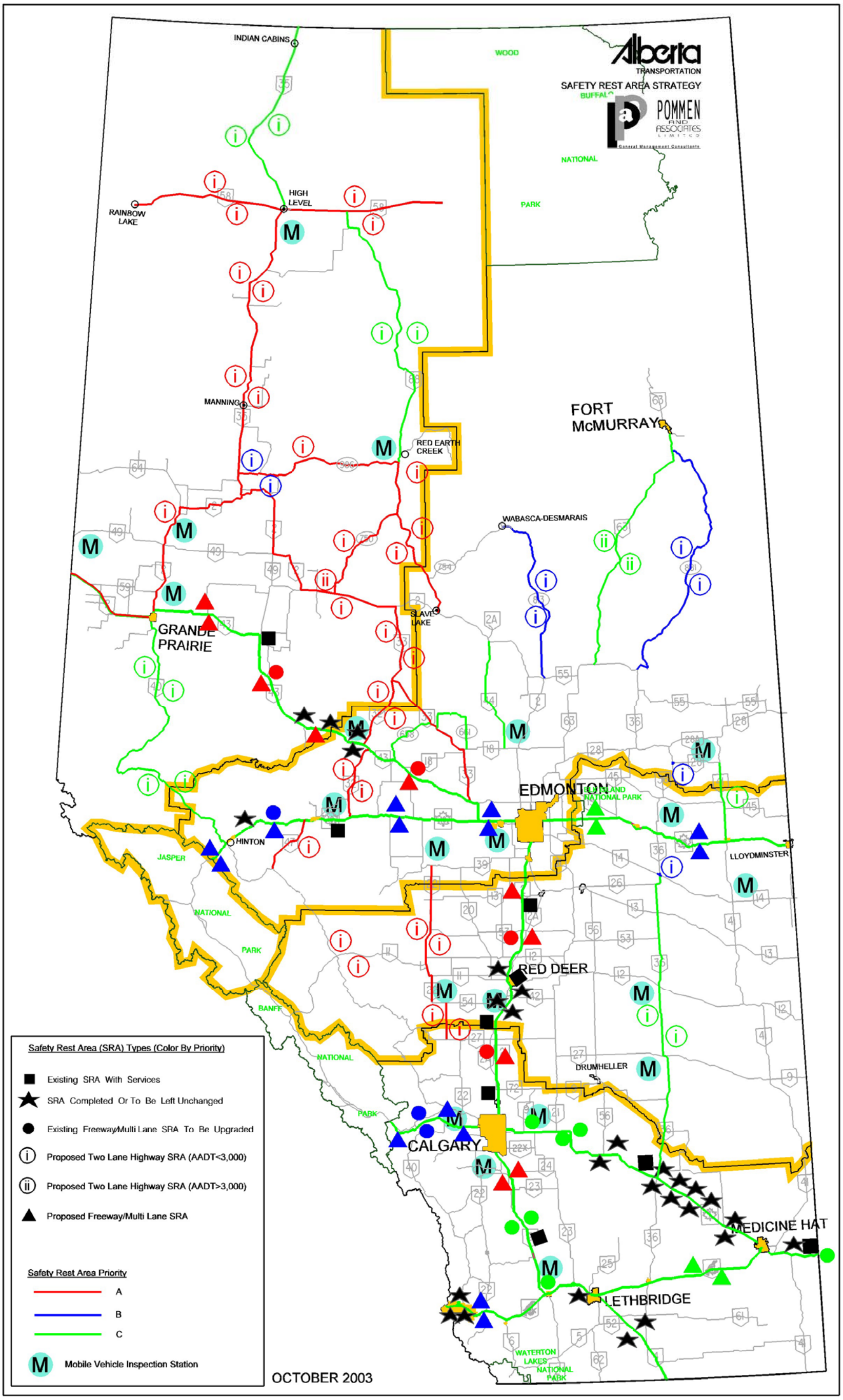
SRA's by Priority	*Class of SRA*					*$ (000) Estimate*
	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove	
Sub-totals for Priority "A" sites	6	0	3	0	6	$4,990
Sub-totals for Priority "B" sites	1	0	0	2	0	$1,065
Sub-totals for Priority "C" sites	3	0	0	2	2	$2,375
Sub-Totals for region	**10**	**0**	**3**	**4**	**8**	$8,430
Land Acquisition Allowance				*10% of Sub-total*		$843
Total for Central Region						**$ 9,273**

Southern Region

SRA's by Priority	*Class of SRA*					*$ (000) Estimate*
	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove	
Sub-totals for Priority "A" sites	0	0	4	0	1	$4,590
Sub-totals for Priority "B" sites	0	0	5	0	4	$5,780
Sub-totals for Priority "C" sites	0	0	2	5	5	$5,785
Sub-Totals for region	**0**	**0**	**11**	**5**	**10**	**$16,155**
Land Acquisition Allowance				*10% of Sub-total*		$1,616
Total for Southern Region						**$ 17,771**

Geographic Distribution:

The following map outlines the location by region of all the required Safety Rest Areas in the Province.



NOTE: An Inventory of All Existing Rest Areas Has Not Been Completed And Therefore Is Not Reflected On This Map.

Policy Framework

3 Policy Framework

3.1 *Definitions*

Alberta Transportation — the Province of Alberta department responsible for all aspects of transportation under provincial jurisdiction in Alberta, referred to as "TRANS" in this guideline.

Highway Service Rest Area (Private Sector) — in Alberta, means a privately owned and operated highway user facility that is equipped with primary and secondary facilities and services, provides public use facilities (washrooms, information, parking, picnic tables) without fees/charges, and has been designated through the Alberta Transportation Partnership Program.

Historical/Scenic/Pull-off — in Alberta, means parking areas adjacent to or slightly removed from the traveling lanes of a highway for the purpose of public viewing of historical and cultural information or sites, areas providing a special or scenic view of a geographical Alberta feature, or "You Are Here" site maps with some basic facilities.

Two Lane Highway Roadside Turnout (Now defined as a Safety Rest Area) — in Alberta, means visible parking in close proximity to the traveling lanes of a two lane highway. These accommodate drivers who wish to stop and rest or to attend to vehicles or loads in order to minimize the stopping of vehicles on highway shoulders. A typical design features a parking area parallel and adjacent to the highway along with deceleration and acceleration lanes. Major logging corridors include a large truck parking area. The facility provides only basic amenities such as litter containers and area lighting.

Provincial Rest Area — in Alberta, means a provincially owned facility located to permit traffic to exit the main highway traffic to reduce driver fatigue, attend to vehicle or load needs, and access services such as washrooms, travel information, etc.

Roadside Turnouts (Now defined as a Safety Rest Area) — in Alberta, means parking areas in close proximity to a highway for the purpose of accommodating drivers wishing to stop and rest or attend to vehicles or load needs in order to minimize the stopping on shoulders of highways. These are basic facilities, with parking, litter containers, and sometimes a telephone, which are meant to enhance safety.

Safety Rest Area — in the case of this document, the generic term "Safety Rest Area" means a location created or designated to permit a driver to exit the main highway traffic lanes for the purpose of stopping to reduce driver fatigue, attend to vehicle or load needs, etc. Safety Rest Areas are public facilities providing minimal services, toilets and parking only. This generic term now encompasses all locations that were previously referred to as "Two Lane Highway Roadside Turnout" and "Roadside Turnouts".

3.2 *Policy Statement*

Mission	"To provide a safe, efficient and sustainable highway network …"
Core Business	"Improve road, driver and vehicle safety … Improve the provincial highway infrastructure …"
Goals	"Improve Transportation Safety Improve Planning of the Provincial Highway Network Enhance Operation and Management of the Provincial Highway Network …"
Major Strategies	"Implement the *Traffic Safety Act* and its regulations, … addressing safety issues and … Evaluate the fatigue management pilot program … Lead the cross-ministry Capital Planning Initiative and support effective funding decisions with a long-term capital plan for both owned and supported infrastructure..."
Safety Rest Area Policy	"Alberta Transportation develops safe highway network design and operation with the inclusion of Safety Rest Areas within the highway network applied in accordance with North American transportation guidelines and criteria."

3.3 *Purpose*

The Purpose of the Safety Rest Area Policy and Implementation Framework is to:

- Ready TRANS for implementation of Safety Rest Area development for a period of years based on priority criteria. Previous studies provided for spacing and locations. This study advances policy and strategy framework to facilitate budget appropriations and construction activity
- Consolidate and focus on the implementation of recommendations related to 20 years of research and strategic planning regarding Rest Areas, Roadside Turnouts, and Highway Services Rest Areas
- Advocate and rationalize the importance of safety and the public nature of resting opportunities
- Provide an Implementation Framework reflecting TRANS policy and authorizes TRANS Regions to implement prioritized short and long-term development plans for Safety Rest Area implementation
- Provide priority criteria and the application of the criteria to Safety Rest Areas identified by previous strategies and future requests for Safety Rest Areas
- Provide the foundation for allocating resources and dedicated budgets to implement Rest Area development throughout the highway network
- Advance an implementation strategy for Safety Rest Areas on Alberta Highways to meet the traveling public's needs

3.4 *Scope*

The Safety Rest Area framework addresses all highways within the jurisdiction of Alberta Transportation for the purpose of planning, design, construction, and operation. This includes freeway/expressways, multi-lane and two lane highways.

3.4.1 Standards and Guidelines

The following TRANS standards and guidelines are part of all work and documentation, however the list is not inclusive of all TRANS standards:

- Engineering Consultants Guidelines for Highway and Bridge Projects (August, 2002)
- Highway Geometric Design Guidelines 1995 (1999 Update)
- Drafting Guidelines – CB4 (July 1995)
- Access Management Guidelines for Rural Roads in Alberta (now incorporated as a section in the Highway Geometric Design Guidelines)
- Traffic Accommodation in Work Zones (May 2001)
- TAC Geometric Standards Manual (1999)

3.4.2 Identified Need

Various stakeholders have identified the need for additional stopping opportunities along Alberta Highways. These include the Alberta Motor Transport Association, Alberta Motor Association, the heavy haul trucking industry, the oil drilling industry and the logging trucking industry.

The present number of Safety Rest Areas in Alberta does not meet the needs of the trucking industry. Current transport operating guidelines suggest that drivers take a 10-minute break every four hours or a 30-minute break every six hours. Hours of service guidelines stipulate a maximum of 15 hours on service and a maximum 13-hour drive at one time. These guidelines are currently proposed for reductions in hours of service. Most existing Safety Rest Areas are grade-widened designs that provide little or no acceleration/deceleration and insufficient parking areas.

Alberta's current economic growth is very much driven by activity in the major resource sectors. Over the next ten years, billions of dollars are expected to be invested in industrial development projects throughout the province. This will also result in growth of companies that provide supplies and services to industrial projects. The inevitable increased traffic volume of both commercial and passenger vehicles will have implications for the provincial highway system.

3.4.3 Safety and Driver Fatigue

The Safety Branch and Inspection Branch of TRANS are also in support of Safety Rest Area opportunities, which supports TRANS' goal of "ensuring that the safe, efficient, long-distance movement of goods and people is accommodated on Alberta's Provincial Highways."

Reducing driver fatigue and providing opportunities for the trucking industry to stop and inspect loads and equipment reduces travel and transportation risks. This observation is confirmed by North American studies (some by ASHTO) that demonstrate the need for fatigue management and the physical and human cost avoidance possible by reducing collisions.

3.4.4 Commercial Vehicle Requirements

Requirements for commercial vehicles to stop for rests and equipment inspections result in compromised stopping solutions when other options are unavailable. Three categories of trucks that need to stop regularly along Alberta highways include:

a) Logging Trucks

These vehicles must travel on designated routes and cannot pull off at unapproved locations, including Towns. Drivers are required to regularly check loads, vehicle condition and to conform to length-of-trip regulations. Logging trucks cannot use MIS areas due to access limitations. Presently, many drivers will make unofficial stops to complete wrapper checks at the side of the road or at intersections. New guidelines proposed in 2002 require open cargo load checks before starting a trip, within the first 80 kilometres of starting, and then every three hours or 250 kilometres thereafter.

b) Other Commercial and Long Haul Trucks

These vehicles require stopping areas for equipment inspection and fatigue management. Drivers presently utilize MIS areas, Towns, road shoulders, intersections, and grade-widened sites. For larger commercial vehicles, the grade-widened sites do not offer adequate access/egress and MIS and VIS areas do not encourage overnight stops.

c) Wide Load Trucks

Wide Load Truck staging areas ***are not part*** of the Safety Rest Areas program. However, industry has identified a need for staging areas because of specific permit restrictions such as "daylight travel only" and "no Sunday travel." Wide load units must be out of large urban areas before daylight, but cannot travel on highways until daylight; these units requested stopping areas on high load corridors outside of Calgary, Red Deer, Edmonton and Slave Lake direction. Wide load drivers check loads every four hours.

Given the current limited inventory of Safety Rest Areas, the anticipated increase in province-wide commercial vehicle traffic, and new transport guidelines, it is prudent to plan for constructing additional Safety Rest Areas.

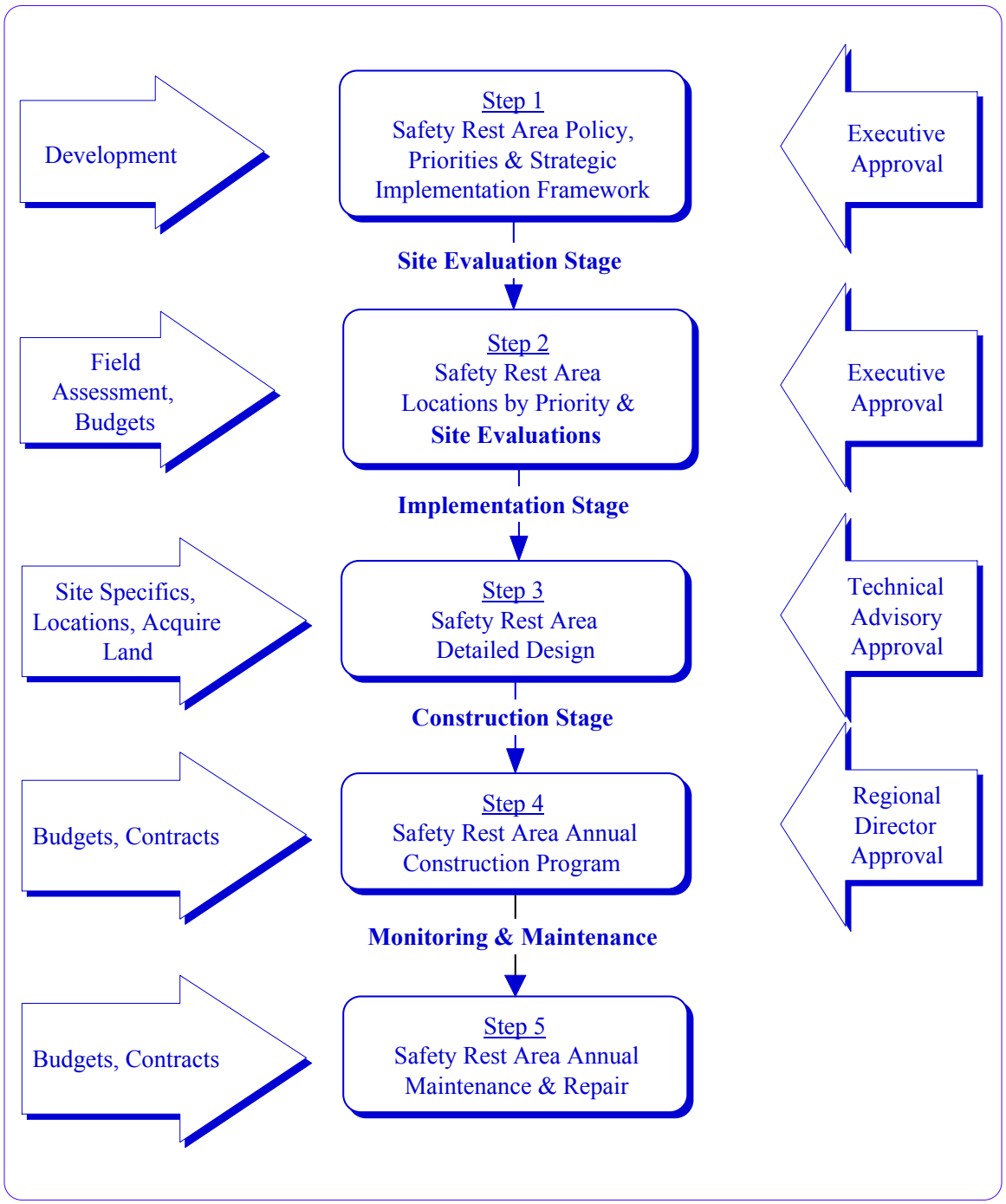
3.5 *TRANS Region Responsibilities*

Implementing the Safety Rest Area Strategy is delegated to TRANS regions. Specific responsibility and outcomes include the following:

- Planning for and conducting individual site evaluations in 2004 and advancing plans for Safety Rest Areas identified by priorities and strategies (well in advance of construction).
- Annually budgeting for the construction of sufficient Safety Rest Areas so that the current requirements are constructed and completed over a shorter period of time. Possibly a secure, separate pool of funding could be allocated to the Regions to complete the construction of the priority "A" sites within a 3-year time frame commencing in April 2005.
- Advancing design and engineering of Safety Rest Areas in 2004/05 so that the design conforms to TRANS site development requirements and specifications.
- Acquiring right-of-way and land in advance of facility construction.
- Issuing tenders and contracts for an annual construction program.
- Project managing construction contracts.
- Budgeting for and carrying out maintenance and repair of facilities on an annual basis.

3.6 *Construction Procedures*

The following provides an overview of the procedures TRANS regions follow to complete construction of Safety Rest Areas and maintain the facilities on an annual basis:



3.6.1 Step 1 - Policy and Strategic Implementation

This policy and strategy forms the basis for implementing Safety Rest Areas according to the priorities identified in this strategy. TRANS Regions are delegated the authority and responsibility to plan, budget, design, construct, and maintain Safety Rest Areas pursuant to the implementation schedule. This policy serves as the TRANS Regions' rationale and justification for including projects in three-year forecasts and annual budgets.

The TRANS Regions will update Senior Management on the status of its three-year rolling plan prior to the 31st of March of each year. The plan will outline priority A, B and C Safety Rest Areas in the region, and timelines and budgets for completion.

Upon the completion of the Priority A sites, B sites will become As, Cs will become Bs and so on. Any future proposed sites ranked Priority A shall enter the three-year plan and take precedence over B and C sites, but not over A sites already identified in this report.

3.6.2 Step 2 - Site Evaluation Stage

TRANS Regions are responsible for the specific site and field assessments to determine the best specific topographical location along Alberta highways identified by the priority listing. Site evaluation determines the best location as it relates to placement, soil conditions, local access conditions, access/egress, etc. A site evaluation chart is provided in *Section 3.5*. The TRANS Regions shall undertake to budget for and complete all Safety Rest Areas with a Priority A ranking within a three-year period commencing in April 2005.

3.6.3 Step 3 - Implementation Stage

Step 2 determines the specific Safety Rest Area location. Step 3 requires private land to be purchased or crown land designated and approved and a consultant engaged to design and engineer the facility utilizing TRANS typical or standard design templates for guidance and to prepare tender documents. All components shall be included in the design and tender: site preparation, base work, gravel, paving, refuse receptacles, lighting, telephone, toilets, traffic markings, signage, guard rails, posts, landscaping, etc.

3.6.4 Step 4 - Construction Stage

Construction of Safety Rest Areas is predicated upon annual budget approvals to meet TRANS Region priorities. Budget allocations can be achieved in three ways:

1. TRANS Region specify and target annual project budget amounts to meet the priority list progressing by completing priorities "A", then "B" and finally "C".
2. Incorporate Safety Rest Areas as a continuum of TRANS Region planned highway construction and rehabilitation projects.
3. External partnerships with TRANS that meet the priorities with external funding supplementing TRANS Region annual budget.

Construction means the tender call, tender evaluation, tender award, project management and contractor supervision, inspection, and acceptance of facility completion. After completion, advise Senior Management on status changes, and completions by the 31st of March of each year.

3.6.5 Step 5 - Monitoring and Maintenance Stage

TRANS Regions are responsible for monitoring requirements for upgrading and the daily and annual operation of the Safety Rest Areas. This includes the regular maintenance and cleaning of travel lanes and parking areas, drainage, repair of facility fixtures, cleanliness of toilets, repair patching, and paving. Regional annual budget requests should be adequate to ensure facilities are maintained to prevent deterioration of the facility or inconvenience to the traveling public.

3.7 *Policy Framework Q & A*

3.7.1 Why do we need to build and maintain SRAs?

There are several reasons:

1. Reduce driver fatigue and drowsiness to prevent collisions
2. Travelling public expects opportunities to interrupt destination travel with periodic rest stops to satisfy a number of needs: rest, personal needs, vehicle and equipment checks, make phone calls, etc.
3. Commercial carrier regulations require periodic stops to check vehicles, equipment, and loads
4. Commercial driver regulations require periodic stops and resting times to reduce driver fatigue and increase alertness

3.7.2 What is the current standard of SRA spacing?

The current standards of SRA spacing are:

- Approximately 30-minute travel time spacing from urban centres or previous stopping locations with variances in relationship to traffic volume and mix
- Overall 60-minute travel time spacing between SRAs depending on the variances in traffic volume and mix
- Locations are chosen based on their relation to existing business or services
- Current transport operating guidelines prescribe distance and time factors that become part of the Rest Area calculation spacing:
  - Pending open cargo guidelines:
    - Check load before starting trip
    - Check load within first 80 kilometres of starting; then every three hours or 250 kilometres
    - Check periodically when change in status of driving, resting, or off-duty
  - Current hours of service:
    c) 10-minute break every four hours, or
    d) 30-minute break every six hours
    e) Maximum 13 hours of driving at one time
    f) Maximum 15 hours on service

3.7.3 What is the selection criteria used to pick specific SRA locations?

The nine selection criteria are as follows:

1. Location – assesses whether the proposed location is within 30 minutes of an urban area, adjacent to a residence, or adjacent to a highway service establishment catering to the public. Urban locations or requests ***do not apply*** to this program.
2. Spacing – looks at the existence of urban or other service interventions. Urban locations ***do not apply*** to this program.
3. Traffic Mix – determines the location based on the types of vehicles that flow through the area
4. Traffic Volume – considers traffic volumes since higher volumes of traffic increase risk and driver needs
5. Current TRANS Design Standard – assesses an existing SRA to determine if it is below standard in design and functionality
6. Collision Avoidance – Safety – recognizes that an SRA should be located where it will help to prevent traffic collisions
7. Industrial Need – considers specific industry needs for meeting carrier open load requirements such as logging equipment and load checks, etc.
8. Poor Weather or Local Conditions – analyzes the need based on the frequency and severity of storms, icy grades, etc.
9. Tourism Benefit – assesses whether the SRA will benefit tourists

3.7.4 Who decides on the priority by which the SRA is built?

The methodology to determine the sequencing and order of Safety Rest Area construction is based upon priorities established through previous TRANS studies and priority criteria element ratings provided in this strategy.

3.7.5 What is the significance of the priorities assigned to the SRAs?

The “A”, “B”, “C” priorities in the framework were assigned based on a combination of safety matters, the condition of existing roadside turnouts, particular requirements by the trucking industry, and input from the Regions and other stakeholders.

The priorities translate to the following:

A - High: Construction should be planned, coordinated, and completed within a three-year window commencing in April 2005.

B - Medium: Construction should be planned, coordinated, and completed within three to six years of the April 2005 start date.

C - Low: Construction should be planned and coordinated for completion after A and B priority Safety Rest Areas are constructed.

Implementation Strategies

4 Implementation Strategies

4.1 *Implementation Strategy Statement*

Phasing and implementation should address:

1. a) TRANS Regions three-year budget to provide for design and construction of Safety Rest Areas by priority locations and highways; or

   b) Apply to Capital Planning Initiative funding over a five years at $12 million per year; or

   c) Apply to Capital Planning Imitative funding over 10 years at $8 million per year for the first five years and $4 million per year for the next five years.

2. Standard TRANS policy that future highway construction, overlays, and modifications provide for Safety Rest Area construction as part of design and construction contracts to lower costs whenever possible.

3. New installations to be completed before removals occur.

4. Removals required to improve safety and functionality in relation to new installations.

4.2 *Safety Rest Area Strategies*

As a result of current and previous research into Rest Areas and Roadside Turnout development and operation, following are the recommended strategies for application by TRANS regions:

4.2.1 Signs

- Create appropriate Safety Rest Area sign with notification of the next available Rest Area. Designs are to conform to TAC standards.
- Include "tag" signs below (toilet, litter receptacles, telephone, etc)
- Design the signs and add to TRANS signage manual
- Install signs two kilometres in advance of and at the entrance to facilities

4.2.2 Spacing

The overall strategies and functional factors determine the locations and spacing of Safety Rest Areas. The primary factors are:

- Approximately 30-minute travel time spacing from urban centres or previous stopping locations with variances in relationship to volume and mix of traffic, e.g., in log haul areas, a stop is required within 80 kilometres of accessing a highway; therefore, the travel time could be extended beyond 30 minutes to meet the criteria.
- North American Rest Areas are planned at approximately 60-minute spacing. Where Rest Areas do not exist, a combination of urban stops, rural commercial areas, TRANS MIS/VIS sites, and existing sites become part of the calculation of a 60-minute travel time for stopping.
- Overall 60-minute travel time spacing between Safety Rest Areas, depending on the variances in volume and mix of traffic.
- Locations in relation to existing business or services.
- Incorporating appropriate Safety Rest Areas functional design as outlined in the Highway Geometric Design Guide. Rest Area location, access and functional design should consider the traffic composition, truck types, AADT/ASDT, and seasonal volumes of traffic on the adjacent highway.
- Current and pending transport operating guidelines prescribe distance and time factors that become part of the Safety Rest Area calculation spacing:
    - Pending open cargo guidelines:
        - Check load before starting trip
        - Check load within first 80 kilometres of starting; then every three hours or 250 kilometres
        - Check periodically when change in status of driving, resting, or off-duty

- Current hours of service:
  - 10-minute break every four hours, or
  - 30-minute break every six hours
  - Maximum 13 hours of driving at one time
  - Maximum 15 hours on service

4.2.3 Locations

Location and spacing considerations to address:

- Traffic characteristics, volumes, and types
- Logging routes for special transport needs
- Proximity to urban and commercial services, and to adjacent facilities
- Proximity to other highways
- Geometric and geotechnical conditions of highways

4.2.4 Facilities and Services

Previous research and stakeholder feedback from industry and the general public indicates that the design of all Safety Rest Areas (SRA) in the province should include the following facilities and services at a minimum:

- Basic toilets
- Security lighting
- Garbage receptacles
- Picnic tables
- Telephone service

The policy framework will therefore establish the requirement of these facilities and services at all existing and proposed Safety Rest Areas, unless justification can be supported to omit them. Specific requirements for each category are as follows.

Basic Toilets

Based on the analysis outlined in sections 4.8.2.5 and 4.8.3 of the Appendices, a minimum of one toilet stall shall be provided at each proposed or upgraded Safety Rest Area. The actual number of toilet stalls required for a specific site shall be determined on the basis of traffic flow with the formulas outlined in section 4.8.2.4.

A minimum of one toilet stall shall be installed at existing Safety Rest Area locations where a request has been made or a need identified. The actual number of stalls

required at a specific existing location shall again be determined on the basis of traffic flow with the formulas from section 4.8.2.4.

The standard type of toilet to be installed throughout the province shall consist of a permanent pre-cast concrete or wooden structure over a concrete floor and holding tank. Provisions shall be made for adequate venting and pump-out connections. (See figures in appendix).

At Safety Rest Area locations with low traffic volumes (AADT < 3,000), the Regions may consider portable toilets and evaluate their suitability in terms of durability, resistance to damage and demand for maintenance.

Required Toilets at Safety Rest Areas

Toilet requirements	Traffic volume (AADT < 3,000)	Traffic volume (AADT > 3,000)
Proposed or Upgraded Safety Rest Areas:	Portable or permanent construction. Minimum of 1 stall.	Permanent construction, minimum of 1 stall, actual number based on AADT.
Existing Safety Rest Areas (Where toilets requested or deemed needed)	Portable or permanent construction. Minimum of 1 stall.	Permanent construction, minimum of 1 stall, actual number based on AADT.

Security Lighting

Industry and public stakeholders have identified the need for security lighting at all Safety Rest Areas where electrical power is available. Consideration should be given to providing solar powered lighting in locations without available electrical power or demonstrating a more economical power solution.

A design standard based on one 13 m steel pole per 50 m of site length should provide adequate light for security.

Garbage Receptacles

The provision of garbage receptacles in numbers sufficient to satisfy the flow of traffic at all Safety Rest Areas is included in this policy framework.

Picnic Tables

Safety Rest Areas located on highways where AADT > 3,000 shall be equipped with a minimum of one (1) picnic table. Additional tables shall be provided where required to meet higher volumes of traffic flow.

The installation of picnic tables at Safety Rest Areas with AADT < 3,000 can be omitted at the discretion of the Regions, based on the evaluation of the needs at each site.

Telephones

Previous participants in the public and industry stakeholder input process identified access to telephone service as important. Telephones installed at Safety Rest Area sites can be commercial pay phones, solar powered emergency phones or call boxes in areas where commercial service is unavailable. Consideration may be given to eliminating telephones from Safety Rest Areas located in proximity to urban or rural centres and where good cellular/wireless coverage is available.

Maintenance

The TRANS Regions may consider individually or collectively, the use of separate maintenance contractors for the toilets and other service amenities located at the Safety Rest Areas if the scope of the work is not relevant or appropriate for current CMA contractors.

4.2.5 Marketing and Education

Various marketing, education, and communication approaches to be advanced to increase the use of Safety Rest Areas:

- Make use of TRANS' existing "Think and Drive" program or future programs
- Create the Safety Rest Area highway "identity" or "branding"
- Improve advance highway signage
- Encourage industry associations to promote the use of Safety Rest Areas and reduce the incidence of large trucks parking on highway shoulders and intersections
- Promote along with the TRANS Partnership Rest Area program

4.3 *Functional Factors*

4.3.1 General Summary

Various factors influence the layout, design, and location of Safety Rest Area:

- Environmental impacts
- Adjacent highway services and proximity to neighbours
- Spacing and relative traffic composition and volume
- Geometric design requirements

4.3.2 Classes of Safety Rest Areas

- Safety Rest Area is a generic categorization of a site or facility that encourages motorists to take a break from driving and/or check their vehicles or loads, etc.
- Safety Rest Areas are usually basic stopping areas with minimal services such as parking, litter containers, lighting and possibly a telephone.
- Rest Area is a generic categorization of off-highway areas and facilities that provide services. Major (full service) Rest Areas are facilities providing public services such as parking, litter containers, telephone and washroom buildings.

4.3.3 Safety Rest Area Design Principles

As a result of current and previous research into Rest Area and Roadside Turnout development and operation, the following principles have been adapted for highway Safety Rest Area design and location:

- Should maintain or improve traffic safety
- Should address safe access/egress to a highway, i.e., proper deceleration/acceleration and parking requirements
- Must be conveniently located and highly visible to encourage high usage
- Should provide the opportunity to reduce and minimize driver fatigue, while minimizing interruptions to safe traffic flow
- Should address log haul, heavy haul, and long haul trucking industry needs, combined with regular traffic stream
- Should provide a basic level of service including toilets, while being an integral part of overall Safety Rest Area spacing
- Should take into account future highway upgrading plans

- Should be located in relation to existing, future, and various alternative highway service locations accessible to motorists
- Should generally adhere to TRANS typical design layouts

4.3.4 Specific Functional Factors

Only ***basic*** travel activities such as safety, checking loads and equipment, nighttime layovers, checking information, use of a toilet, making phone calls, and litter disposal are planned to be accommodated at Safety Rest Areas. Higher levels of services and needs are met by private/public Highway Service Rest Areas, urban centres, commercial, and private facilities. The majority of existing Safety Rest Area facilities include only litter disposal containers, some lighting, possibly pay telephones and a minimum of toilet facilities.

Throughout the current highway system, most Rest Areas are Roadside Turnouts with "grade-widened" type designs with short or no deceleration/acceleration lanes. Many do not adequately accommodate large and/or logging trucks. Some exceptions exist as TRANS recently built new Safety Rest Areas on the North/South Trade Corridor (north of Whitecourt, west of Milk River and west of Lethbridge). Industry feedback indicates satisfaction with the installations on Highway #63 to Fort McMurray.

Safety Rest Areas are intended to provide drivers with the opportunity to increase safety in highway travel and to address general travel needs. This Strategic Implementation Guideline document is intended to augment a "planned and functional approach" to addressing travel safety.

Several functional factors have been identified under the following three categories for consideration as Safety Rest Area criteria:

- Location
- Traffic characteristics
- Facilities and/or services

4.3.5 Location

4.3.5.1 Environmental Impact of Land Use

Safety Rest Areas have typically functioned separately from other highway facilities. However, it is possible to maximize site uses by considering other amenities such as scenic views, points-of-interest, or historic sites. Various location factors need to be considered, such as natural or developed watercourses, wildlife corridors, climate conditions, etc.

4.3.5.2 Impact on Adjacent Highway Services

Safety Rest Areas are to be located at approximately 60-minute travel time intervals or about 30 minutes from major full service facilities (i.e., urban commercial, public facilities, private/public Highway Service Rest Areas). Locations ***are not*** intended to compete with highway services.

Actual locations require evaluation in a transportation continuum context, taking into consideration geography, climate conditions, urban centre spacing, log haul load check requirements, highway service facilities, etc.

4.3.5.3 Proximity to Neighbouring Development

Proximity of Safety Rest Areas to existing development within the immediate vicinity is a critical locational element. Since the type of use includes diesel trucks operating 24 hours per day, noise and traffic activity are a concern to neighbours. Ideally Safety Rest Areas should be located a minimum of one kilometre or more from residences to provide maximum buffering. Local municipal land use bylaws should be reviewed with local authorities to ensure development conflicts are minimized.

4.3.5.4 Location to Highway

Safety Rest Areas should be highly visible to drivers to encourage use; therefore, they are adjacent to and easily accessible from a highway.

4.3.6 Traffic Characteristics

4.3.6.1 Composition of the Traffic Stream

The average stop time for a truck is longer than the average stop time for a car. The largest number of truck stops occurs in daylight hours, but the duration of the truck stop is longer at night. Safety Rest Areas on major divided and two lane highways need to accommodate large trucks up to 40 metres in length and have sufficient staging room for multiple unit parking. Where logging trucks use the facility, the load swing factor must be considered in the design. Safety Rest Areas must also consider recreational vehicles, bus parking and pedestrian movements.

4.3.6.2 Trip Purpose and Trip Length

Commuter travel (typically under two hours in travel time) is not subject to stopping to the extent that vacation and/or pleasure trips of longer length and duration are. Trip length is more relevant than trip purpose. Each major highway serves a number of uses ranging from overloads, long haul, recreational vehicle, and logging operations. Each highway needs to be evaluated to match the Safety Rest Area's requirements to the traffic stream mix.

4.3.6.3 Total Traffic Volume

In 2002, traffic volumes for four lane highways show that Alberta's average annual daily traffic (AADT) volume ranges from over 50,000 vehicles to 2,100 vehicles and that the major two lane highways' AADT volume may be over 9,600 vehicles. Seasonal variances with recreation, logging, and heavy haul may increase the intensity of highway use; therefore, an assessment of individual highway volume in relation to abnormal average traffic volume is required.

The logging industry places a higher demand on resource trucking needs. About 65% is winter payload and 35% summer payload.[2] The average log haul is 174 kilometres and the average woodchip haul is 160 kilometres. The haul route distribution is as follows:

Logging Industry Haul Route Distribution[1]	
Road Classification	Haul Distance (km)
Divided primary highway	4
Paved primary highway	54
Paved secondary highway	22
Gravel secondary highway	9
Paved municipal district road	6
Gravel municipal district road	6
Forestry class road	73

[2] Foothills Model Forest Transportation Study; KPMG November 10, 1999.

4.3.7 Facilities and Services

4.3.7.1 Accessibility and Convenience

Accessibility refers to physical design considerations including deceleration/ acceleration provisions, road grades, highway geometrics, sight lines, and the number and size of parking stalls. Parking areas must be designed to accommodate large truck (40 m length) configurations and projected parking requirements for the next 20 years, with the ability to expand parking if required.

Some locations will attract a greater number of large trucks or logging trucks than other areas; therefore, each location needs to be evaluated for current and future requirements.

Convenience refers to the functional planning of facilities including ease of access, advance notification signs, spacing, and 24-hour/365-days-per-year accessibility.

4.3.7.2 Appeal of Services, Facilities, and Site

While these factors address subjective or personal standards, there is a necessity for aesthetically pleasing sites. Functional layouts, cleanliness, maintenance, snow removal and ice control, and general overall appearance affect the utilization of Safety Rest Areas locations.

4.3.7.3 Winter Maintenance

The level of on-site maintenance, particularly during the winter, is a very important factor. Safety Rest Areas become safe havens during inclement weather. Safety Rest Areas must be maintained in such a manner that highway users can easily exit from the highway to these safe areas.

The physical location of these facilities should include the operating experience TRANS has relative to the "trouble spots" that contract maintenance partners and regional staff may identify. Examples include winter highway closure due to winter storms, icy grades, and brake checks. Some locations become staging areas during poor weather conditions.

4.4 *Design Criteria*

Design and facility considerations to address:

- Access/egress with regard for logging truck sweep dimensions and wide load configurations.
- Stagger and separate Safety Rest Areas on opposite sides of a highway.
- One direction of travel only, with only right hand turning maneuvers.
- Parking for 40-metre long trucks and separate parking areas for private vehicles where high logging truck use exists.
- Consider incorporating points of interest at existing locations where such joint use does not create conflict in vehicle mix or create safety issues.
- TRANS MIS locations can be designed to accommodate all types of truck use. Joint use with passenger vehicles should be further evaluated in relation to changes in utilization concepts in North America (AASHTO, August 2001).
- Consider expansion if additional parking is required in the future.
- Consider redevelopment of existing roadside pullouts to new standards if locations are acceptable.
- 24-hour access.
- Fixtures including litter containers and low intensity area lighting where appropriate and power is readily available.

4.4.1 Safety Rest Areas Design Templates

Section F.2 of the Highway Geometric Design Guide provides several design configurations for Safety Rest Areas. TRANS has created these designs to reflect the strategies of these guidelines. These designs address:

- Divided highways
- Two lane highways
- Two lane highways with future twinning taken into account
- Phases to accommodate existing need and future expansion parking

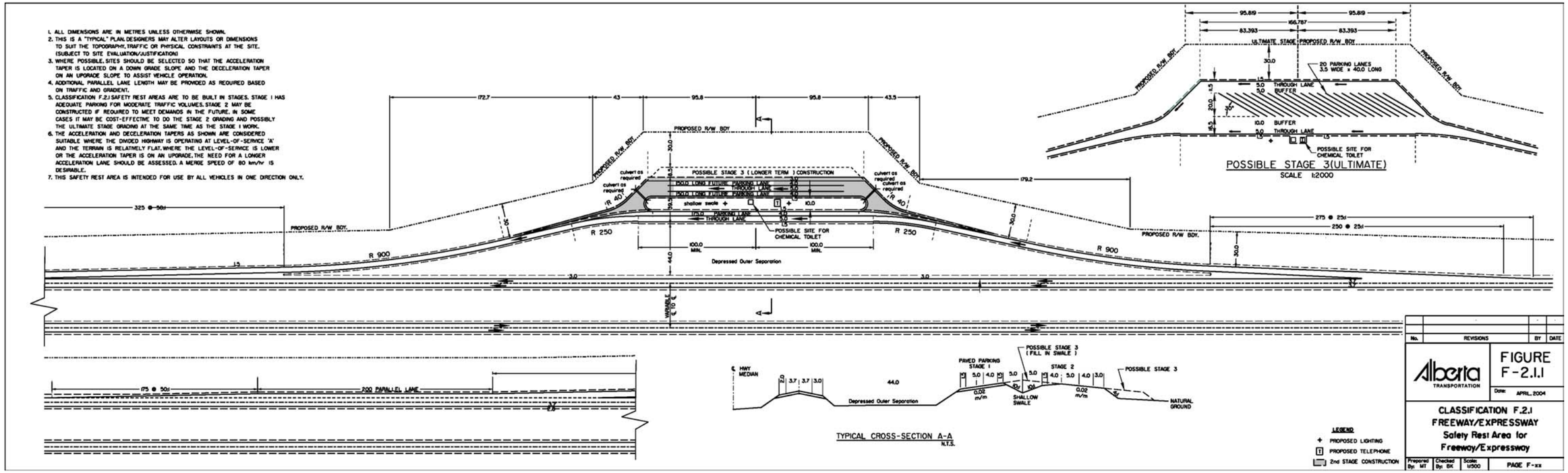
Consult the *Highway Geometric Design Guide* for the appropriate application (updated in appendix).

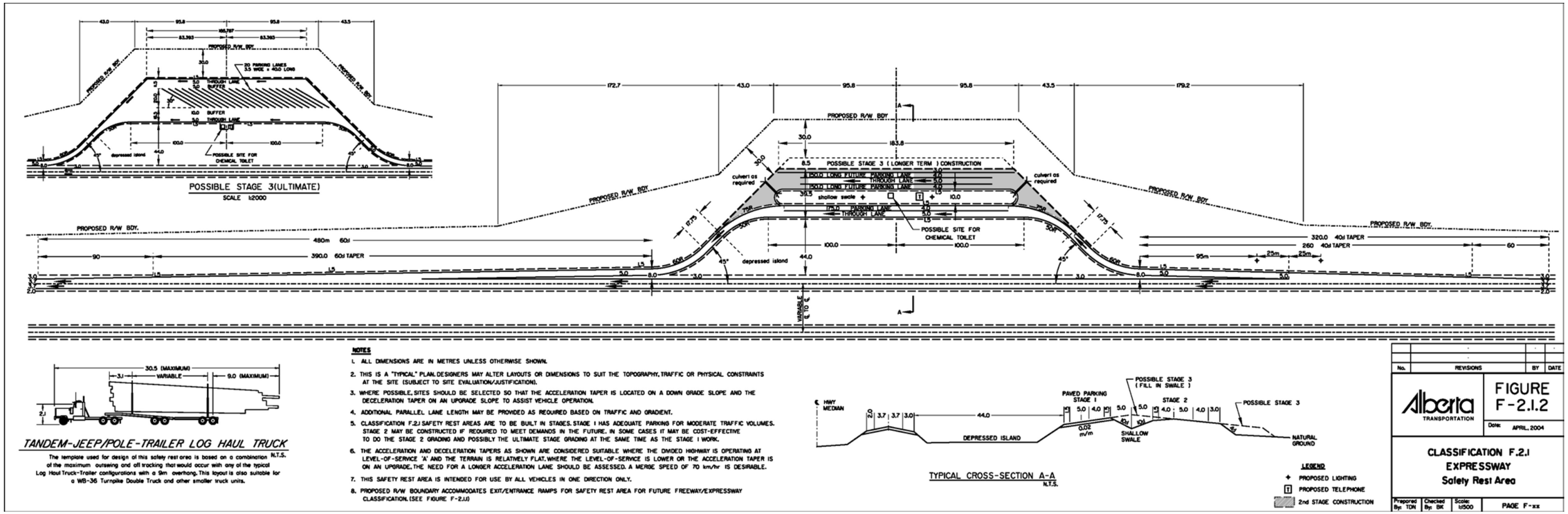
- Incorporating Safety Rest Areas functional designs F-2.1.1, F-2.1.2 for freeways and expressways throughout the Province.
- Incorporating Safety Rest Areas functional designs F-2.2.1 and F-2.2.2 for a future two lane highway on same and opposite sides.

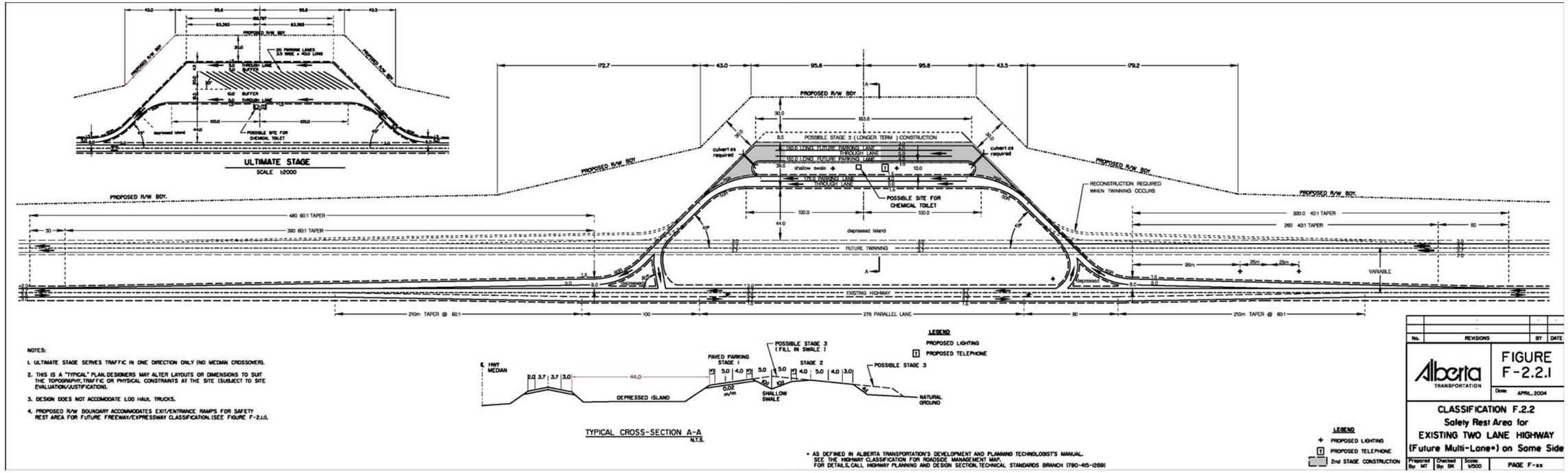
- Incorporating Safety Rest Areas functional designs F-2.3.1 and F-2.3.2 types L (i) and L (ii) for two lane highways (typical and log haul routes) throughout the Province.
- Safety Rest Areas location access and functional design should consider the traffic composition, truck types, AADT/ASDT, and seasonal volumes of traffic on the adjacent highway.

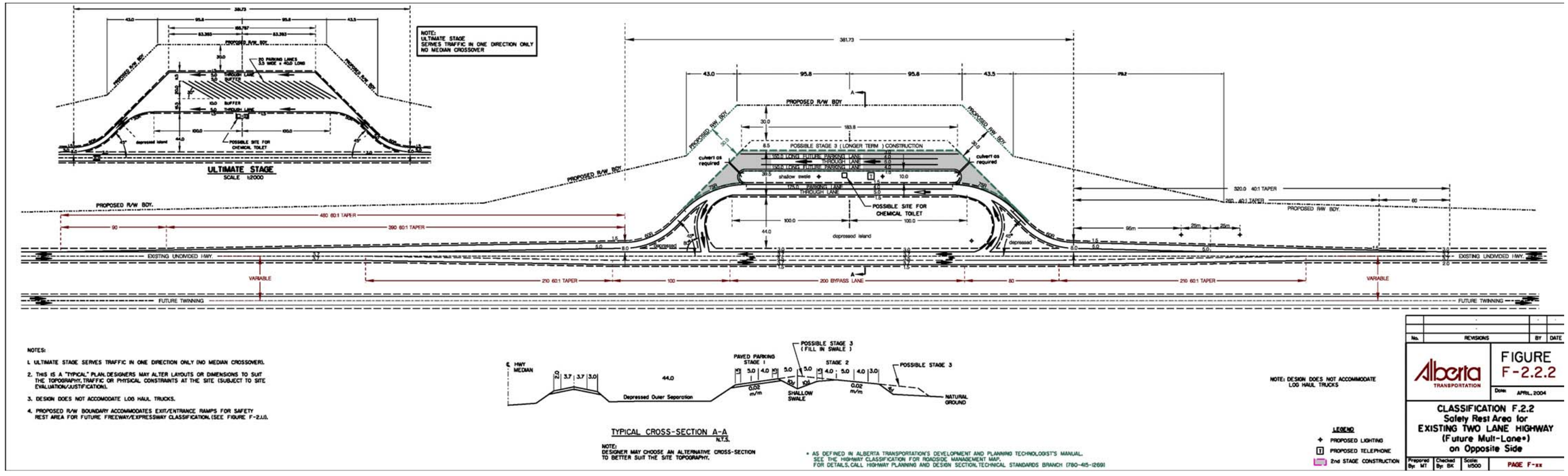
See seven templates following.

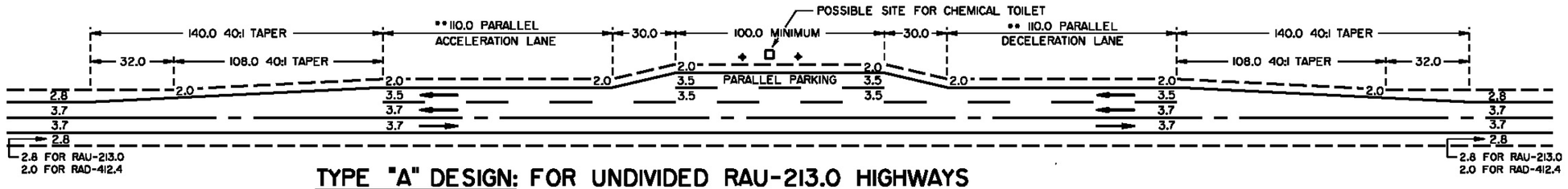
Typical Safety Rest Area Design Templates From Technical Standards Branch:



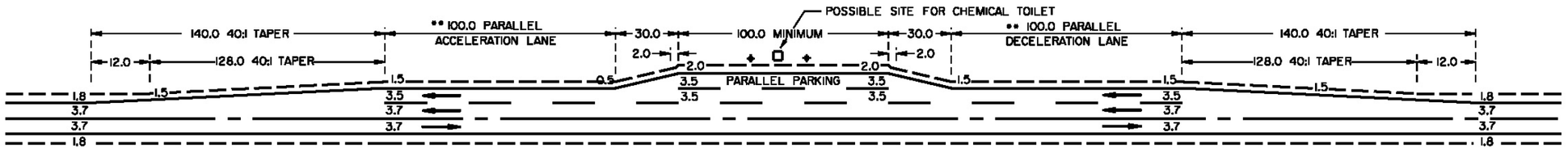

POSSIBLE STAGE 3(ULTIMATE)
SCALE 1:2000
PROPOSED R/W BDY.
20 PARKING LANES 3.5 WIDE x 45.0 LONG
THROUGH LANE
BUFFER
depressed island
POSSIBLE SITE FOR CHEMICAL TOILET
480m 60:1
390.0 60:1 TAPER
320.0 40:1 TAPER
260 40:1 TAPER
POSSIBLE STAGE 3 (LONGER TERM) CONSTRUCTION
1500 LONG FUTURE PARKING LANE
culvert as required
shallow swale
PAVED PARKING STAGE 1
STAGE 2
POSSIBLE STAGE 3
(FILL IN SWALE)
NATURAL GROUND
SHALLOW SWALE
0.02 m/m
TANDEM-JEEP/POLE-TRAILER LOG HAUL TRUCK
The template used for design of this safety rest area is based on a combination of the maximum outswing and off tracking that would occur with any of the typical Log Haul Truck-Trailer configurations with a 6m overhang. This layout is also suitable for a WB-36 Turnpike Double Truck and other smaller truck units.
N.T.S.
TYPICAL CROSS-SECTION A-A
N.T.S.
LEGEND
PROPOSED LIGHTING
PROPOSED TELEPHONE
2nd STAGE CONSTRUCTION
NOTES
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
2. THIS IS A "TYPICAL" PLAN. DESIGNERS MAY ALTER LAYOUTS OR DIMENSIONS TO SUIT THE TOPOGRAPHY, TRAFFIC OR PHYSICAL CONSTRAINTS AT THE SITE (SUBJECT TO SITE EVALUATION/JUSTIFICATION).
3. WHERE POSSIBLE, SITES SHOULD BE SELECTED SO THAT THE ACCELERATION TAPER IS LOCATED ON A DOWN GRADE SLOPE AND THE DECELERATION TAPER ON AN UPGRADE SLOPE TO ASSIST VEHICLE OPERATION.
4. ADDITIONAL PARALLEL LANE LENGTH MAY BE PROVIDED AS REQUIRED BASED ON TRAFFIC AND GRADIENT.
5. CLASSIFICATION F.2.I SAFETY REST AREAS ARE TO BE BUILT IN STAGES. STAGE 1 HAS ADEQUATE PARKING FOR MODERATE TRAFFIC VOLUMES. STAGE 2 MAY BE CONSTRUCTED IF REQUIRED TO MEET DEMANDS IN THE FUTURE. IN SOME CASES IT MAY BE COST-EFFECTIVE TO DO THE STAGE 2 GRADING AND POSSIBLY THE ULTIMATE STAGE GRADING AT THE SAME TIME AS THE STAGE 1 WORK.
6. THE ACCELERATION AND DECELERATION TAPERS AS SHOWN ARE CONSIDERED SUITABLE WHERE THE DIVIDED HIGHWAY IS OPERATING AT LEVEL-OF-SERVICE 'A' AND THE TERRAIN IS RELATIVELY FLAT. WHERE THE LEVEL-OF-SERVICE IS LOWER OR THE ACCELERATION TAPER IS ON AN UPGRADE, THE NEED FOR A LONGER ACCELERATION LANE SHOULD BE ASSESSED. A MERGE SPEED OF 70 km/hr IS DESIRABLE.
7. THIS SAFETY REST AREA IS INTENDED FOR USE BY ALL VEHICLES IN ONE DIRECTION ONLY.
8. PROPOSED R/W BOUNDARY ACCOMMODATES EXIT/ENTRANCE RAMPS FOR SAFETY REST AREA FOR FUTURE FREEWAY/EXPRESSWAY CLASSIFICATION. (SEE FIGURE F-2.I.I)
No. REVISIONS BY DATE
Alberta TRANSPORTATION
FIGURE F-2.1.2
Date: APRIL, 2004
CLASSIFICATION F.2.I
EXPRESSWAY
Safety Rest Area
Prepared By: TDN
Checked By: BK
Scale: 1:500
PAGE F-xx


ULTIMATE STAGE
SCALE 1:2000
PROPOSED R/W BDY.
480 60:1 TAPER
390 60:1 TAPER
320.0 40:1 TAPER
260 40:1 TAPER
FUTURE TWINNING
EXISTING HIGHWAY
POSSIBLE STAGE 3 (LONGER TERM) CONSTRUCTION
POSSIBLE SITE FOR CHEMICAL TOILET
RECONSTRUCTION REQUIRED WHEN TWINNING OCCURS
depressed island
VARIABLE
210m TAPER @ 60:1
100
276 PARALLEL LANE
80
210m TAPER @ 60:1
NOTES:
1. ULTIMATE STAGE SERVES TRAFFIC IN ONE DIRECTION ONLY (NO MEDIAN CROSSOVER).
2. THIS IS A "TYPICAL" PLAN. DESIGNERS MAY ALTER LAYOUTS OR DIMENSIONS TO SUIT THE TOPOGRAPHY, TRAFFIC OR PHYSICAL CONSTRAINTS AT THE SITE (SUBJECT TO SITE EVALUATION/JUSTIFICATION).
3. DESIGN DOES NOT ACCOMODATE LOG HAUL TRUCKS.
4. PROPOSED R/W BOUNDARY ACCOMMODATES EXIT/ENTRANCE RAMPS FOR SAFETY REST AREA FOR FUTURE FREEWAY/EXPRESSWAY CLASSIFICATION. (SEE FIGURE F-2.1.1).
TYPICAL CROSS-SECTION A-A
N.T.S.
LEGEND
PROPOSED LIGHTING
PROPOSED TELEPHONE
2nd STAGE CONSTRUCTION
* AS DEFINED IN ALBERTA TRANSPORTATION'S DEVELOPMENT AND PLANNING TECHNOLOGIST'S MANUAL. SEE THE HIGHWAY CLASSIFICATION FOR ROADSIDE MANAGEMENT MAP. FOR DETAILS, CALL HIGHWAY PLANNING AND DESIGN SECTION, TECHNICAL STANDARDS BRANCH (780-415-1269)
Alberta TRANSPORTATION
FIGURE F-2.2.1
Date: APRIL, 2004
CLASSIFICATION F.2.2
Safety Rest Area for
EXISTING TWO LANE HIGHWAY
(Future Multi-Lane*) on Same Side
Prepared By: MT
Checked By: BK
Scale: 1:500
PAGE F-xx

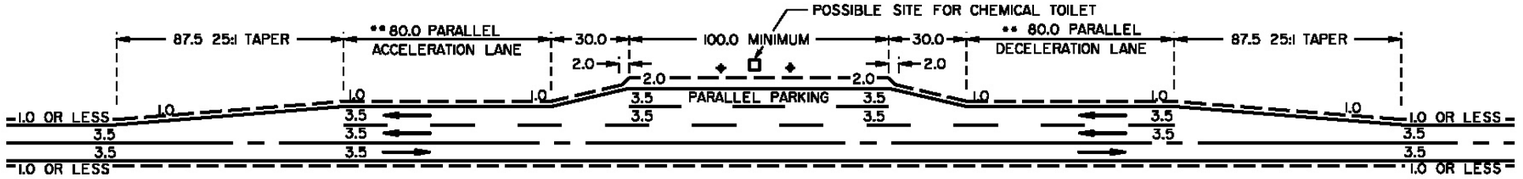

NOTE:
ULTIMATE STAGE
SERVES TRAFFIC IN ONE DIRECTION ONLY
NO MEDIAN CROSSOVER
ULTIMATE STAGE
SCALE 1:2000
381.73
43.0
95.8
95.8
43.5
PROPOSED R/W BDY.
POSSIBLE STAGE 3 (LONGER TERM) CONSTRUCTION
THROUGH LANE
THROUGH LANE BUFFER
PASSING LANE
THROUGH LANE
shallow swale
POSSIBLE SITE FOR CHEMICAL TOILET
depressed island
culvert as required
480 60:1 TAPER
390 60:1 TAPER
320.0 40:1 TAPER
260 40:1 TAPER
EXISTING UNDIVIDED HWY.
FUTURE TWINNING
VARIABLE
210 60:1 TAPER
100
200 BYPASS LANE
80
95m
25m
NOTES:
1. ULTIMATE STAGE SERVES TRAFFIC IN ONE DIRECTION ONLY (NO MEDIAN CROSSOVER).
2. THIS IS A "TYPICAL" PLAN. DESIGNERS MAY ALTER LAYOUTS OR DIMENSIONS TO SUIT THE TOPOGRAPHY, TRAFFIC OR PHYSICAL CONSTRAINTS AT THE SITE (SUBJECT TO SITE EVALUATION/JUSTIFICATION).
3. DESIGN DOES NOT ACCOMODATE LOG HAUL TRUCKS.
4. PROPOSED R/W BOUNDARY ACCOMMODATES EXIT/ENTRANCE RAMPS FOR SAFETY REST AREA FOR FUTURE FREEWAY/EXPRESSWAY CLASSIFICATION. (SEE FIGURE F-2.1.1).
℄ HWY MEDIAN
44.0
Depressed Outer Separation
PAVED PARKING STAGE 1
STAGE 2
POSSIBLE STAGE 3
(FILL IN SWALE)
SHALLOW SWALE
NATURAL GROUND
0.02 m/m
TYPICAL CROSS-SECTION A-A
N.T.S.
NOTE:
DESIGNER MAY CHOOSE AN ALTERNATIVE CROSS-SECTION TO BETTER SUIT THE SITE TOPOGRAPHY.
NOTE: DESIGN DOES NOT ACCOMMODATE LOG HAUL TRUCKS
LEGEND
PROPOSED LIGHTING
PROPOSED TELEPHONE
2nd STAGE CONSTRUCTION
* AS DEFINED IN ALBERTA TRANSPORTATION'S DEVELOPMENT AND PLANNING TECHNOLOGIST'S MANUAL. SEE THE HIGHWAY CLASSIFICATION FOR ROADSIDE MANAGEMENT MAP. FOR DETAILS, CALL HIGHWAY PLANNING AND DESIGN SECTION, TECHNICAL STANDARDS BRANCH (780-415-1269)
No. REVISIONS BY DATE
Alberta TRANSPORTATION
FIGURE F-2.2.2
Date: APRIL, 2004
CLASSIFICATION F.2.2
Safety Rest Area for
EXISTING TWO LANE HIGHWAY
(Future Mult-Lane*)
on Opposite Side
Prepared By: MT
Checked By: BK
Scale: N.T.S.
PAGE F-xx



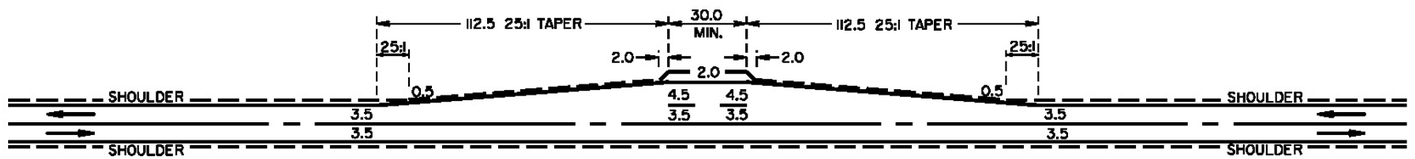
TYPE "A" DESIGN: FOR UNDIVIDED RAU-213.0 HIGHWAYS



TYPE "B" DESIGN: FOR UNDIVIDED RAU-211.0 HIGHWAYS



TYPE "C" DESIGN: FOR UNDIVIDED RAU-209 OR LOWER STANDARD HIGHWAYS WITH SHOULDER WIDTHS ONE METRE OR LESS



TYPE "D" DESIGN: MINIMUM TREATMENT FOR SAFETY REST AREAS ON LOW VOLUME ROADS.

Notes:

1. Dimensions shown are finished surface pavement widths. Additional subgrade widths to be provided to allow for depth of base course and pavement.
2. All dimensions are expressed in metres unless otherwise noted.
3. This safety rest area is intended for use by all vehicles in one direction only.
4. Chemical toilet should be provided where AADT>3000. Chemical toilet should be located beyond clear zone. Refer to Table C5.2a.

**** Notes regarding acceleration/deceleration lanes:**

1. Where the AADT <1000, the parallel lane sections for acceleration and deceleration are not required.
2. Where 1000<AADT<3000 standard acceleration lanes as shown on type "A" or "B" should be used.
3. Where AADT >3000, designer should consider acceleration characteristics of the design truck (as shown on Figure F-1.2) and gradient and provide a suitable merge speed. Desirable minimum merge speed is 80km/h is adequate. Length of parallel lane should not exceed 600m.

No.	REVISIONS	BY	DATE

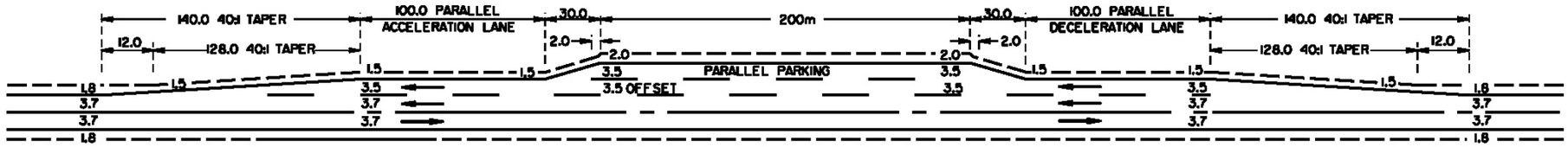
Alberta TRANSPORTATION

FIGURE F-2.3.1

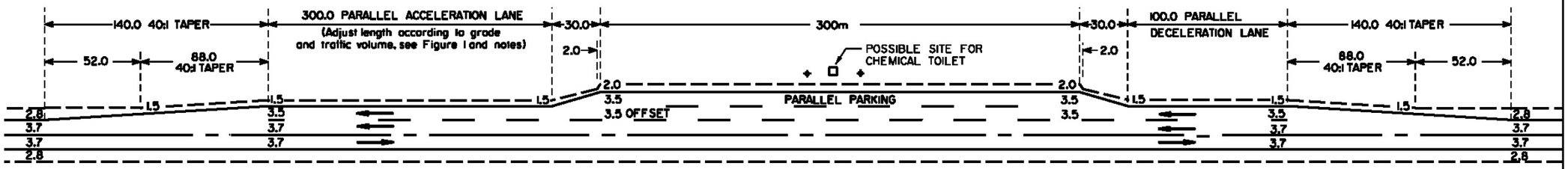
Date: APRIL, 2004

CLASSIFICATION F.2.3
TWO LANE HIGHWAY
Safety Rest Area for Two Lane Highway (Typical)

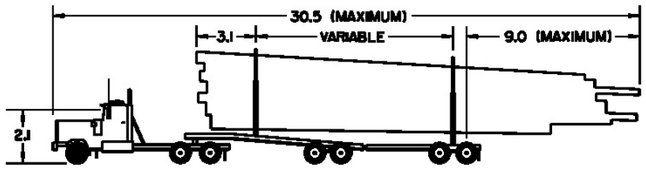
Prepared By: LT	Checked By: BK	Scale: 1:2000	PAGE F-xx



TYPE "L(i)" DESIGN: FOR LOG HAUL ROUTES WITH AADT ≤3000



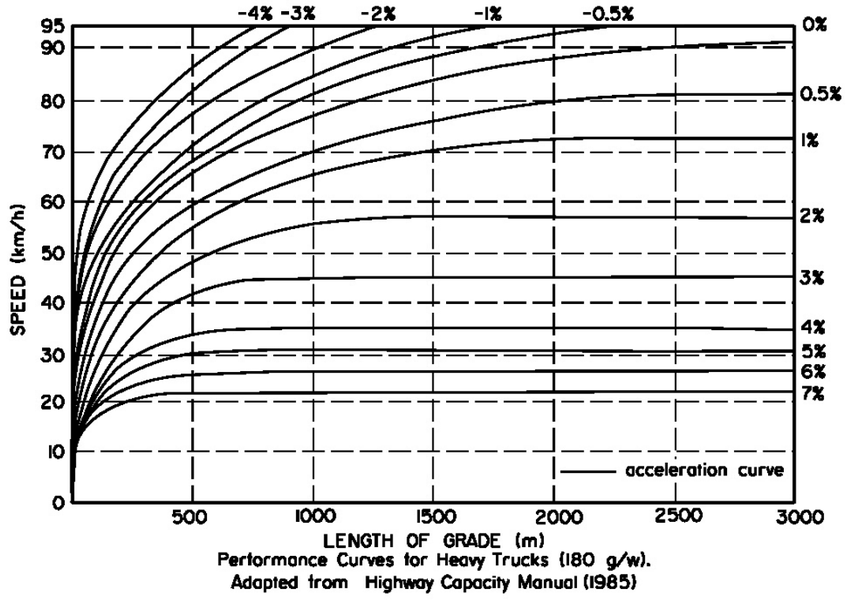
TYPE "L(ii)" DESIGN: FOR LOG HAUL ROUTES AADT >3000



TANDEM-JEEP/POLE-TRAILER LOG HAUL TRUCK

NOTES:

1. This safety rest area is intended for use by log haul trucks and other vehicles travelling in one direction only. The design vehicle is represented by the Alberta Log Haul Truck as described in Section D.5 of this Guide. The maximum allowable width (from bunk to bunk) is 3.2 m.
2. In cases where type L(ii) design is used, the length of the acceleration lane may be adjusted according to the grade.
3. The acceleration characteristics of the typical log haul truck can be estimated from Figure 1.
4. The desirable minimum merge speed at the end of the acceleration lane is 80 km/h. However, merge speed of 60 km/h is considered adequate for this type of safety rest area.
5. The length of the parallel acceleration lane should not exceed 600 m for practical reasons.
6. Ideally, truck safety rest areas should be located near the top of smooth crest curves provided that sight distance restrictions do not exist. This will aid the deceleration and acceleration of trucks using the facility and may allow the designer to reduce the length of the parallel lane. The ideal location of a truck safety rest area would provide decision sight distance at the beginning of taper and not be in close proximity to a horizontal curve.
7. Chemical toilet should be provided where AADT>3000. Chemical toilet should be located beyond clear zone. Refer to Table C5.2a.



Performance Curves for Heavy Trucks (180 g/w).
Adapted from Highway Capacity Manual (1985)

FIGURE 1

No.	REVISIONS	BY	DATE

Alberta TRANSPORTATION

FIGURE F-2.3.2

Date: APRIL 2004

CLASSIFICATION F.2.3
TWO LANE HIGHWAY
Safety Rest Area for Log Haul Routes

Prepared By: LT	Checked By: BK	Scale: N.T.S.	PAGE F-xx

4.4.2 Geometric Considerations

The references made within this section refer to TRANS *Highway Geometric Design Guide*, April 1995 (updated 1999), revised in 2003. The purpose is to identify the key elements of a "typical" Safety Rest Area design and to cross-reference to the manual rather than insert all of the exhibits into this document. To determine an acceptable design, each site must be thoroughly evaluated to ensure it meets acceptable criteria/standards.

4.4.2.1 Deceleration/Acceleration Requirements

Section D.6, D.7 and F identify the requirements.

4.4.2.2 Highway Grade

Section B.4, Vertical Alignment - identifies the requirements.

Section F.2, Typical Access Guidelines - provides the internal design of the Safety Rest Area.

Acceleration/deceleration lanes, tapers, and turning lanes will have an impact on the level of service on the adjacent highway. Safety Rest Areas should be designed based on standard highway geometric design considerations (functional classification, design speed, gradient, divided/undivided, traffic volume, etc.). Where the need exists, designs are to be modified to accommodate logging truck movements or other specialty needs.

Internal Road Grade from Safety Rest Area to Highway

Section B.4, Vertical Alignment - identifies the requirements.

At-Grade Intersection Geometrics

Sections D.5, D.6 and F.2 - identify the requirements.

Vertical Sight Distances

Sections B.4 and D.4 - identify the requirements.

Horizontal Sight Distances

Sections B.3 and D.3 - identify the requirements.

Proximity to Other Intersections

The physical proximity to at-grade intersections and to existing and future interchanges and intersections needs to be evaluated on a site-specific basis according to locational factors and TRANS Access Management Guidelines.

A thorough engineering review is to be carried out when Safety Rest Areas are being considered in the vicinity of an intersection, interchange, or other facility to ensure that a safe, desirable, and compatible design is achieved.

Future Safety Rest Area Locations

5 Future Safety Rest Area Locations

5.1 *Summary Map and Tables*

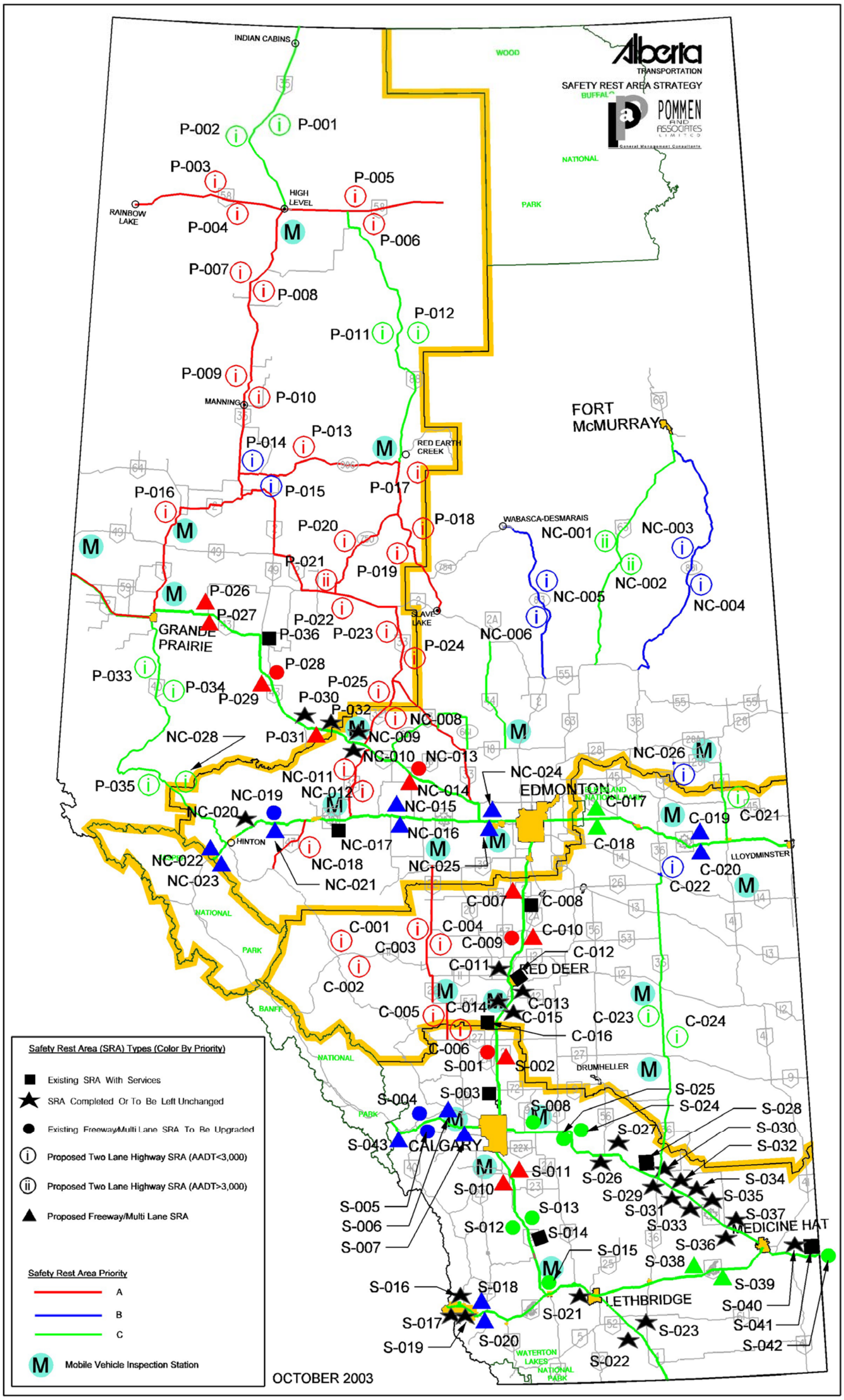
Location estimates are based on stakeholder feedback and areas in the province where major resource activities are occurring. These are not intended to be precise, but to demonstrate an order of magnitude in relation to the overall guideline needs. Control Sections are approximate only. ***Each highway will require a specific assessment to verify site locations, design selections, layouts and costs correlated back to this SRA Framework.***

5.1.1 Geographical Positioning of Future Safety Rest Areas

The overall strategies and functional factors determine the locations and spacing of Safety Rest Areas. Four primary factors are:

1. Approximately 30-minute travel time spacing from urban centres or previous stopping locations with variances in relation to volume and mix of traffic, e.g., in log haul areas a stop is required within 80 kilometres of accessing a highway; therefore, the travel time could be extended beyond 30 minutes to meet the criteria.
2. Overall 60-minute travel time spacing between Safety Rest Areas depending on the variances in volume and mix of traffic.
3. Locations in relation to existing business or services.
4. Incorporating the appropriate current Roadside Turnout functional designs. For report purposes and estimating, seven reference sizes are used:
   - **F-2.1.1 Design:** Freeway/Expressway (Fig F-2.1.1)
   - **F-2.1.2 Design:** Expressway (Fig F-2.1.2)
   - **F-2.2.1 Design:** Future Two Lane Highway on Same Side (Fig F-2.2.1)
   - **F-2.2.2 Design:** Future Two Lane Highway on Opposite Side (Fig F-2.2.2)
   - **F-2.3.1 Design:** Safety Rest Area for Two Lane Highway (Typical)
   - **F-2.3.2 type L (i) Design:** For log haul routes with AADT ≤ 3,000 (Fig F-2.3.2)
   - **F-2.3.2 type L(ii) Design:** For log haul routes with AADT > 3,000 (Fig F-2.3.2)

5.2 *Map*



NOTE: An Inventory of All Existing Rest Areas Has Not Been Completed And Therefore Is Not Reflected On This Map.

5.3 *Summary of Future Safety Rest Area Locations*

The following sub-sections outline existing and proposed Safety Rest Areas for each transportation region in the province of Alberta. The lists for each region are organized by priority (A-high, B-medium, C-lower) and identify the corresponding highway, approximate CS location, travel direction (northbound, southbound, eastbound, or westbound), and 2002 WAADT for each Safety Rest Area in the region.

Furthermore, the tables identify an existing or proposed class and construction budget estimate for each proposed, modified, or new Safety Rest Area construction project. Where required, existing Safety Rest Areas need to be removed as a result of new construction or modifications have been identified and this cost needs to be accounted for in the overall regional budget.

Detailed descriptions of the rationale for each new, modified, or removed Safety Rest Area recommendation are included in the *Appendices* section of the report.

Finally, detailed information on the assumptions and methodologies used to develop the Safety Rest Area cost estimates are included for reference in the *Appendices* section. Supporting material with the design requirements and details for each Safety Rest Area type is included in the *Appendices* section as well.

5.3.1 Alberta Overall

Based on the regional data, the overall recommendations for the province result in the following tables. For this level of review and for budget estimating purposes, an amount of $60 million should be considered.

	Class of SRA						
	F.2.3.2				Total		***$(000)***
Regions	L(i)	L(ii)	F.2.1.2	F.2.1.1	New	Remove	***Estimate***
Totals for Peace Region	27	1	3	2	33	14	***13,519***
Totals for North Central Region	10	2	4	6	22	7	***13,587***
Totals for Central Region	10	0	3	4	17	8	***9,273***
Totals for Southern Region	0	0	11	5	16	10	***17,771***
Totals for Alberta	**47**	**3**	**21**	**17**	**88**	**39**	**$54,150**

	Priorities						***SRA***	***$ (000)***
SRA's by Region	A	$, 000	B	$, 000	C	$, 000	***Total***	***Estimate***
Peace Region	24	10,085	2	490	7	1,715	33	12,290
North Central Region	6	3,405	13	8,456	3	491	220	12,352
Central Region	9	4,990	3	1,065	5	2,375	170	8,430
Southern Region	4	4,590	5	5,780	7	5,785	16	16,155
Sub-Totals	**43**	**$ 23,070**	**23**	**$ 15,791**	**22**	**$ 10,366**	**88**	**49,227**
Land Acquisition Allowance								4,923
Totals for Alberta								$ 54,150

5.3.2 Peace Region

The following table summarizes the required number of new or modified Safety Rest Areas of each type, the proposed number of removals of existing locations, and the estimated budget for the Peace Region broken down by the three priority levels.

	Class of SRA					
	F.2.3.2					***$(000)***
SRA's by Priority	L(i)	L(ii)	F.2.1.2	F.2.1.1	Remove	***Estimate***
Sub-totals for Priority "A" sites	18	1	3	2	14	10,085
Sub-totals for Priority "B" sites	2	0	0	0	0	490
Sub-totals for Priority "C" sites	7	0	0	0	0	1,715
Sub-Totals for Region	**27**	**1**	**3**	**2**	**14**	12,290
Land Acquisition Allowance					*10% of Sub-total*	1,229
Total for Peace Region						**$ 13,519**

Table 3.1 Safety Rest Area Summary for the Peace Region

Table 3.2 on the following page is a detailed layout of the data and budget estimates for each Safety Rest Area in the region organized by priority.

Peace Region					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355	0	0	20	Total	Priority
P-030	43	43:12	WB	4,355	Leave as is					0	-	-	-	-	-	-	-
P-032	43	43:12	WB	4,355	Completed					0	-	-	-	-	-	-	-
P-036	43	43:06	NB	4,170	Existing Rest Area					0	-	-	-	-	-	-	-
2-2.1	43	43:06	WB	N/A	Replaced by P-026/027				1	1					20	20	A
2-3.2	43	43:06	EB	N/A	Replaced by P-026/027				1	1					20	20	A
3-1.1	43	43:08	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-1.2	43	43:08	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-2.1	43	43:08	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-2.2	43	43:08	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-4.1	43	43:10	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-4.2	43	43:10	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-5.1	43	43:10	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-5.2	43	43:10	SB	N/A	Replaced by P-028/029				1	1					20	20	A
4-1.2	43	43:12	EB	N/A	Replaced by P-031/032				1	1					20	20	A
4-2.1	43	43:12	WB	N/A	Replaced by P-031/032				1	1					20	20	A
P-003	58	58:04	WB	690	1					1	245	-	-	-	-	245	A
P-004	58	58:06	EB	760	1					1	245	-	-	-	-	245	A
P-005	58	58:10	WB	230	1					1	245	-	-	-	-	245	A
P-006	58	58:10	EB	230	1					1	245	-	-	-	-	245	A
P-007	35	35:10	SB	1,130	1					1	245	-	-	-	-	245	A
P-008	35	35:10	NB	1,130	1					1	245	-	-	-	-	245	A
P-009	35	35:08	SB	1,250	1					1	245	-	-	-	-	245	A
P-010	35	35:08	NB	1,250	1					1	245	-	-	-	-	245	A
P-013	986	986:02	WB	570	1					1	245	-	-	-	-	245	A
P-016	2	2:68	SB	2,440	1					1	245	-	-	-	-	245	A
P-017	88	88:08	NB	560	1					1	245	-	-	-	-	245	A
P-018	88	88:04	NB	590	1					1	245	-	-	-	-	245	**A**
P-019	88	88:04	SB	590	1					1	245	-	-	-	-	245	A
P-020	750	750:02/04	SB	1,260	1					1	245	-	-	-	-	245	**A**
P-021	2	2:52	WB	3,690		1				1	-	355	-	-	-	355	A
P-022	2	2:50	EB	2,120	1					1	245	-	-	-	-	245	A
P-023	33	33:14	SB	620	1					1	245	-	-	-	-	245	A
P-024	33	33:12	NB	760	1					1	245	-	-	-	-	245	A
P-025	32	32:12	SB	760	1					1	245	-	-	-	-	245	A
P-026	43	43:04	WB	4,648				1		1	-	-	-	800	-	800	A
P-027	43	43:06	EB	4,170				1		1	-	-	-	800	-	800	A
P-028	43	43:10	NB	3,718			1			1	-	-	1,060		-	1,060	A
P-029	43	43:10	SB	3,718			1		1	2	-	-	1,190	-	20	1,210	A
P-031	43	43:12	EB	4,355			1		1	2	-	-	1,190	-	20	1,210	A
Sub-totals for Priority "A" sites					*18*	*1*	*3*	*2*	*14*	*38*	*4,410*	*355*	*3,440*	*1,600*	*280*	***10,085***	
P-014	986	986:01	WB	770	1						245	-	-	-	-	245	B
P-015	986	986:01	EB	770	1						245	-	-	-	-	245	B
Sub-totals for Priority "B" sites					*2*	*0*	*0*	*0*	*0*	*0*	*490*	*0*	*0*	*0*	*0*	*490*	
P-001	35	35:18	NB	450	1						245	0	-	-	-	245	C
P-002	35	35:16	SB	1,200	1						245	-	-	-	-	245	C
P-011	88	88:14	SB	170	1						245	-	-	-	-	245	C
P-012	88	88:14	NB	170	1						245	-	-	-	-	245	C
P-033	40	40:40	SB	1,064	1						245	-	-	-	-	245	C
P-034	40	40:38	NB	990	1						245	-	-	-	-	245	C
P-035	40	40:32	SB	760	1						245	-	-	-	-	245	C
Sub-totals for Priority "C" sites					*7*	*0*	*0*	*0*	*0*	*0*	*1,715*	*0*	*0*	*0*	*0*	*1,715*	
Totals					**27**	**1**	**3**	**2**	**14**	**38**	**$6,615**	**$355**	**$3,440**	**$1,600**	**$280**	**$12,290**	

Table 3.2 Detailed listing of Safety Rest Areas in the Peace Region

5.3.3 North Central Region

The following table summarizes the required number of new or modified Safety Rest Areas of each type, the proposed number of removals of existing locations, and the estimated budget for the North Central Region broken down by the three priority levels.

	Class of SRA					
	F.2.3.2					***$ (000)***
SRA's by Priority	L(i)	L(ii)	F.2.1.2	F.2.1.1	Remove	***Estimate***
Sub-totals for Priority "A" sites	4	0	2	0	5	3,405
Sub-totals for Priority "B" sites	5	0	2	6	2	8,456
Sub-totals for Priority "C" sites	1	2	0	0	0	491
Sub-Totals for region	**10**	**2**	**4**	**6**	**7**	12,352
Land Acquisition Allowance				*10% of Sub-total*		1,235
Total for North Central Region						**$ 13,587**

Table 3.3 Safety Rest Area Summary for the North Central Region

Table 3.4 is a detailed layout of the data and budget estimates for each Safety Rest Area in the region organized by priority.

North Central					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
NC-009	43	43:14	WB	4,804	Completed					0						-	-
NC-010	43	43:14	EB	4,804	Completed					0						-	-
NC-017	16	16:06	EB	7,190	Existing Rest Area					0						-	-
NC-020	16	16:02	WB	4,990	Leave as is					0						-	-
4-4.1	43	43:14	WB	N/A	Replaced with P-031/32				1	1					20	20	A
4-4.2	43	43:14	EB	N/A	Replaced with P-031/32				1	1					20	20	A
5-1.1	43	43:16	EB	N/A	Remove with '98 twinning				1	1					20	20	A
5-2.2	43	43:16	EB	N/A	Replaced with NC-013/014				1	1					20	20	A
NC-008	32	32:12	NB	760	1					1	231					231	A
NC-011	32	32:10	SB	1,410	1					1	267					267	A
NC-012	32	32:08	NB	1,057	1					1	230					230	A
NC-013	43	43:18	WB	4,824			1			1			1,060			1,060	A
NC-014	43	43:18	EB	4,824			1		1	2			1,190			1,190	A
NC-018	47	47:06	NB	730	1					1	347					347	A
Sub-totals for Priority "A" sites					*4*	*0*	*2*	*0*	*5*	*11*	*1,075*	*0*	*2,250*	*0*	*80*	*3,405*	
1.-3.3	16	16:04	EB	N/A	Replaced with NC-021				1	1					20	20	B
1-1.3	16	16:00	EB	N/A	Replaced with NC-023				1	1							B
NC-003	881	881:22	SB	380	1					1	209					209	B
NC-004	881	881:21	NB	220	1					1	209					209	B
NC-005	813	813:08	NB	240	1					1	294					294	B
NC-006	813	813:04	SB	550	1					1	484					484	B
NC-015	16	16:10	WB	6,169				1		1				800		800	B
NC-016	16	16:10	EB	6,169				1		1				800		800	B
NC-019	16	16:04	WB	5,120				1		1				655		655	B
NC-021	16	16:04	EB	5,120				1		1				800		800	B
NC-022	16	16:00	WB	3,580				1		1				800		800	B
NC-023	16	16:00	EB	3,580				1		1				800		800	B
NC-024	16	16:14	WB	13,100			1			1			1,170			1,170	B
NC-025	16	16:14	EB	13,100			1			1			1,170			1,170	B
NC-026	36	36:22	NB	1,050	1					1	245					245	B
NC-027	14	14:06	EB	4,950						0						-	C
Sub-totals for Priority "B" sites					*5*	*0*	*2*	*6*	*2*	*15*	*1,441*	*0*	*2,340*	*4,655*	*20*	*8,456*	
NC-001	63	63:06	SB	2,340		1				1		134				134	C
NC-002	63	63:06	NB	2,340		1				1		121				121	C
NC-007	44	44:04	SB	1,820						0						-	C
NC-028	40	40:32	NB	760	1					1	236					236	C
Sub-totals for Priority "C" sites					*1*	*2*	*0*	*0*	*0*	*3*	*236*	*255*	*0*	*0*	*0*	*491*	
Totals					**10**	**2**	**4**	**6**	**7**	**29**	**$2,752**	**$255**	**$4,590**	**$4,655**	**$100**	**$12,352**	

Table 3.4 Detailed listing of SRAs in the North Central Region

5.3.4 Central Region

The following table summarizes the required number of new or modified Safety Rest Areas of each type, the proposed number of removals of existing locations, and the estimated budget for the North Central Region broken down by the three priority levels.

	Class of SRA					
	F.2.3.2					***$ (000)***
SRA's by Priority	L(i)	L(ii)	F.2.1.2	F.2.1.1	Remove	***Estimate***
Sub-totals for Priority "A" sites	6	0	3	0	6	$4,990
Sub-totals for Priority "B" sites	1	0	0	2	0	$1,065
Sub-totals for Priority "C" sites	3	0	0	2	2	$2,375
Sub-Totals for region	**10**	**0**	**3**	**4**	**8**	$8,430
Land Acquisition Allowance				*10% of Sub-total*		$843
Total for Central Region						**$ 9,273**

Table 3.5 Safety Rest Area Summary for the Central Region

Table 3.6 is a detailed layout of the data and budget estimates for each Safety Rest Area in the region organized by priority.

Central					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
C-008	2	2:28	NB	18,540	Existing Rest Area					0	-					-	-
C-011	2	2:24	SB	26,632	Leave as is					0	-					-	-
C-012	2	2:24	NB	26,632	Existing Rest Area					0	-					-	-
C-013	2	2:24	NB	26,632	Leave as is					0	-					-	-
C-014	2	2:24	SB	26,632	Leave as is					0	-					-	-
C-015	2	2:24	NB	26,632	Leave as is					0	-					-	-
C-016	2	2:22	SB	25,064	Existing Rest Area					0	-					-	-
7-1.1	2	2:30	NB	N/A	Replaced by C-007				1	1					20	20	A
7-2.2	2	2:30	SB	N/A	Replaced by C-007				1	1					20	20	A
7-4.2	2	2:30	SB	N/A	Replaced by C-007				1	1					20	20	A
8-1.1	2	2:28	NB	N/A	Replaced by C-010				1	1					20	20	A
8-5.2	2	2:24	SB	N/A	Remove				1	1					20	20	A
C-001	11	11:06	WB	990	1					1	245					245	A
C-002	11	11:06	EB	990	1					1	245					245	A
C-003	22	22:26	SB	1,730	1					1	245					245	A
C-004	22	22:24	NB	2,089	1					1	245					245	A
C-005	22	22:20	SB	1,948	1					1	245					245	A
C-006	22	22:20	NB	1,948	1					1	245					245	A
C-007	2	2:30	SB	20,240			1			1	-		1,170			1,170	A
C-009	2	2:26	SB	17,580			1			1	-		1,060			1,060	A
C-010	2	2:26	NB	17,580			1		1	2	-		1,190			1,190	A
C-025	*2*	*2:24*	*NB*	*26,632*						0						-	A
Sub-totals for Priority "A" sites					*6*	*0*	*3*	*0*	*6*	*15*	*1,470*	*0*	*3,420*	*0*	*100*	*4,990*	
C-019	16	16:28	WB	5,089				1		1	-			410		410	B
C-020	16	16:28	EB	5,089				1		1	-			410		410	B
C-022	36	36:18	NB	965	1					1	245					245	B
Sub-totals for Priority "B" sites					*1*	*0*	*0*	*2*	*0*	*3*	*245*	*0*	*0*	*820*	*0*	*1,065*	
5-2.1	16	16:22	WB	N/A	Remove, not required				1	1					20	20	C
6-1.2	16	16:26	EB	N/A	Remove, not required				1	1					20	20	C
C-017	16	16:22	WB	7,482				1		1	-			800		800	C
C-018	16	16:22	EB	7,482				1		1	-			800		800	C
C-021	41	41:20/41:22	NB	1,863	1					1	245					245	C
C-023	36	36:12	SB	1,000	1					1	245					245	C
C-024	36	36:12	NB	1,000	1					1	245					245	C
Sub-totals for Priority "C" sites					*3*	*0*	*0*	*2*	*2*	*7*	*735*	*0*	*0*	*1,600*	*40*	*2,375*	
Totals					**10**	**0**	**3**	**4**	**8**	**25**	**$2,450**	**$0**	**$3,420**	**$2,420**	**$140**	**$8,430**	

Table 3.6 Detailed listing of Safety Rest Areas in the Central Region

5.3.5 Southern Region

The following table summarizes the required number of new or modified Safety Rest Areas of each type, the proposed number of removals of existing locations, and the estimated budget for the North Central Region broken down by the three priority levels.

	Class of SRA					
	F.2.3.2					***$ (000)***
SRA's by Priority	L(i)	L(ii)	F.2.1.2	F.2.1.1	Remove	***Estimate***
Sub-totals for Priority "A" sites	0	0	4	0	1	$4,590
Sub-totals for Priority "B" sites	0	0	5	0	4	$5,780
Sub-totals for Priority "C" sites	0	0	2	5	5	$5,785
Sub-Totals for region	**0**	**0**	**11**	**5**	**10**	**$16,155**
Land Acquisition Allowance					*10% of Sub-total*	$1,616
Total for Southern Region						**$ 17,771**

Table 3.7 Safety Rest Area Summary for the Southern Region

Table 3.8 on the next page is a detailed layout of the data and budget estimates for each Safety Rest Area in the region organized by priority.

Southern					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
S-003	2	2:18	SB	25,690	Existing Rest Area					-						-	-
S-014	2	2:08	NB	5,649	Existing Rest Area					-						-	-
S-016	3	3:02	WB	5,636	Leave as is					-						-	-
S-017	3	3:02	EB	5,636	Leave as is					-						-	-
S-019	3	3:02	EB	5,636	Leave as is					-						-	-
S-021	3	3:08	EB	14,110	Leave as is					-						-	-
S-022	4	4:04	SB	2,129	Completed					-						-	-
S-023	4	4:04	NB	2,129	Completed					-						-	-
S-026	1	1:16	EB	6,348	Leave as is - reeval with S-025					-						-	-
S-027	1	1:16	WB	6,348	Leave as is - reeval with S-024					-						-	-
S-028	1	1:16	WB	6,348	Existing Rest Area					-						-	-
S-029	1	1:16	EB	6,348	Leave as is -reevaluate					-						-	-
S-030	1	1:16	WB	6,348	Leave as is -reevaluate					-						-	-
S-031	1	1:18	EB	6,000	Leave as is -reevaluate					-						-	-
S-032	1	1:18	WB	6,000	Leave as is -reevaluate					-						-	-
S-033	1	1:18	EB	5,490	Leave as is					-						-	-
S-034	1	1:18	WB	5,490	Leave as is-reevaluate					-						-	-
S-035	1	1:18	WB	5,490	Leave as is-future upgrade					-						-	-
S-036	1	1:20	EB	7,510	Leave as is -reevaluate					-						-	-
S-037	1	1:20	WB	7,510	Leave as is -reevaluate					-						-	-
S-040	1	1:22	WB	4,690	Completed					-						-	-
S-041	1	1:22	WB	4,690	Existing Rest Area					-						-	-
S-042	1	1:22	EB	4,690	Sask Responsibility					-						-	-
9-1.1	2	2:22	NB	N/A	Replaced by S-002				1	1					20	20	A
S-001	2	2:20	SB	19,550			1			1			1,060			1,060	A
S-002	2	2:20	NB	20,660			1			1			1,170			1,170	A
S-009	1	1:10	EB	13,675						0						-	A
S-010	2	2:12	SB	10,330			1			1			1,170			1,170	A
S-011	2	2:12	NB	10,330			1			1			1,170			1,170	A
Sub-totals for Priority "A" sites					*0*	*0*	*4*	*0*	*1*	*5*	*0*	*0*	*4,570*	*0*	*20*	*4,590*	
1-1.1	1	1:02	WB	N/A	Substandard - Remove				1	1					20	20	B
2-1.1	3	3:06	WB	N/A	Remove, not required				1	1					20	20	B
S-004	1	1:04	WB	16,342	Leave as is-reevaluate					-						-	B
S-005	1	1:04	EB	16,342	Leave as is-reevaluate					-						-	B
S-006	1	1:06	WB	16,529			1			1			1,060			1,060	B
S-007	1	1:08	EB	18,620			1			1			1,170			1,170	B
S-018	3	3:04	WB	3,615			1			1			1,170			1,170	B
S-020	3	3:04	EB	3,615			1			1			1,170			1,170	B
S-043	1	1:02	WB	16,580			1		2	3			1,170			1,170	B
Sub-totals for Priority "B" sites					*0*	*0*	*5*	*0*	*4*	*9*	*0*	*0*	*5,740*	*0*	*40*	*5,780*	
11-1.2	2	2:10	SB	N/A	Replaced by S-012				1	1					20	20	C
12-3.2	4	4:06	SB	N/A	Remove with S-022				1	1					20	20	C
12-4.1	4	4:06	NB	N/A	Remove with S-023				1	1					20	20	C
12-4.2	4	4:06	SB	N/A	Remove with S-022				1	1					20	20	C
13-1.1	4	4:02	NB	N/A	Remove with S-023				1	1					20	20	C
S-008	1	1:12	WB	11,770	Leave as is-reevaluate					-						-	C
S-012	2	2:10	SB	6,969				1		1				655		655	C
S-013	2	2:10	NB	6,969				1		1				655		655	C
S-015	2	2:08	NB	5,649				1		1				655		655	C
S-024	1	1:14	WB	6,262			1			1			1,060			1,060	C
S-025	1	1:14	EB	6,262			1			1			1,060			1,060	C
S-038	3	3:14	WB	2,784				1		1				800		800	C
S-039	3	3:14	EB	2,784				1		1				800		800	C
Sub-totals for Priority "C" sites					*0*	*0*	*2*	*5*	*5*	*12*	*0*	*0*	*2,120*	*3,565*	*100*	*5,785*	
Totals					**0**	**0**	**11**	**5**	**10**	**26**	**$0**	**$0**	**$12,430**	**$3,565**	**$160**	**$16,155**	

Table 3.8 Detailed listing of Safety Rest Areas in the Southern Region

5.4 *Requests for Future Non-Urban Safety Rest Areas*

Alberta Transportation receives numerous requests for adding Safety Rest Areas to the highway system. However, all requests do not necessarily meet the ***strategic criteria*** of this policy nor is there sufficient funding to construct new Safety Rest Areas over those currently on the priority list. Therefore, a three-step process has been developed to assist regions address current and future requests for Safety Rest Areas.

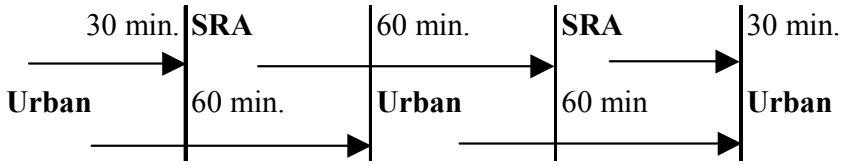
Step 1 is to determine if a Safety Rest Area qualifies and meets the basic strategy criteria.

Step 2 is to determine need based on eight elements that influence Safety Rest Area construction.

Step 3 is to determine the priority of a qualifying Safety Rest Area and construction sequencing.

5.4.1 Step 1 – Does the Safety Rest Area Qualify?

Before a request for an Safety Rest Area is processed through scoring, priority and site evaluation, the proposed location of the Safety Rest Area needs to be screened to the basic principles of the strategy: distance and location.



Urban/Commercial Location - If a requested Safety Rest Area is proposed either within an urban community, within 20 minutes of an urban community or a non-urban Commercial Service Centre (e.g. a truck stop), the requested Safety Rest Area does not meet the strategic criteria and the request would be denied. ***There is no need to proceed to Step 2.*** The proponent would be advised that the Safety Rest Area does not meet the basic strategic spacing distance away from the urban/commercial area as follows:

"Alberta Transportation has reviewed your request for installation of an Safety Rest Area located at (describe the location). Pursuant to Alberta Transportation's policy for the location of Safety Rest Areas, your requested site does not meet the spacing distance for Safety Rest Area *installations. Therefore, your request will not be considered further. Thank you for bringing your request forward for review."*

5.4.2 Step 2 – Need Point Scoring

Only if the proposed location of a Safety Rest Area passes Step 1 criteria, then the proposed Safety Rest Area would be evaluated further by Step 2 criteria. The methodology to determine the need of a Safety Rest Area is based on ***eight elements*** of a model. The model attempts to balance of obvious and requested need of key

elements related to safety and local condition criteria. ***Note: application of this model only applies to non-urban Safety Rest Areas*** *since Urban areas do not qualify for Safety Rest Areas in that Safety Rest Areas are strategically placed outside of urban areas and according to the spacing criteria.*

Criteria	Possible Points	Assigned Points	E.g. A
Spacing (1 per +/- 60 minutes)	0 or 3 to 5	Within 60 minutes = 0; otherwise 3 to 5	3
Traffic Mix (>15% class variance RV,TT,CU)	0 or 3 to 5	Under 20% variance = 0; otherwise 3 to 5	5
Traffic Volume (>5,000 AADT)	0 or 3 to 5	Under 5, 000 AADT = 0; otherwise 3 to 5	0
None or Below Current SRA Design Standard	0 or 5	Current Standard = 0; None or Bulb/parallel lane type = 5	5
Collision Avoidance - Safety	0 or 5	Minimal improvement = 0; other wise 5	5
Industrial Need	0 to 5	0 to 5	5
Poor Weather or Local Conditions	0 to 5	0 to 5	1
Tourism Benefit	0 to 5	0 to 5	1
Total Points	40	Maximum Priority Points = 40	25
% of Total Points determines Need			63%

Table 3.9 Sample Need Point evaluation for a proposed Safety Rest Area requested location.

Total Points – The eight elements generated an assigned total possible Need Point value of 40. Completing a sample needs assessment, this chart, as an example indicates that this proposed Safety Rest Area would generate a total score of 25 or 65% of Total Need Points. ***Any value below 50% would not be considered for construction. Review Step 3 for construction prioritization.***

5.4.2.1 Spacing

- Determined by existing Safety Rest Area locations and/or other opportunities to stop, such as urban areas or rural service areas. Where no urban or other service interventions exist, then 60-minute travel time intervals apply.
- If urban or other service opportunities exist, then a 30-minute travel time between intervals applies. *Safety Rest Areas are rural in nature and a proposal for an urban Safety Rest Area does not qualify for the program and would not be evaluated as part of this model.*
- If a proposed location is within 60 minutes of another facility, then the score is 0. Otherwise, the score is based on the perspective of approximate site spacing ranging from 3 to 5 points.

5.4.2.2 Traffic Mix

- Where major differences in types of vehicles exist as part of the traffic flow such as a high concentration in the percentage of the number of trucks or recreational

vehicles using a highway, such mix receives higher points to reflect trucking rest factors.

- If a highway for a proposed location has a traffic mix of less than 15% variation, then the score is 0. Otherwise, the score is based on higher percentage of mix over 15% variations ranging in score from 3 to 5 points.

5.4.2.3 Traffic Volume

- Recognizes that the higher amounts of traffic increases risk and driver needs. Such levels are based on TRANS annual traffic counts for Alberta highways.
- Traffic volumes of below 5,000 AADT is scored at 0. Otherwise, the score is based on higher volumes over 5,000 AADT ranging in score from 3 to 5 points.

5.4.2.4 Below Current TRANS Design Standard

- Assesses an existing Safety Rest Area constructed configuration. This creates a higher weighting for highways that may have a Safety Rest Area that is substandard in design and functionality - typically the roadside "grade-widened" site.
- Newly constructed (e.g. North/South Trade Corridor) or existing Safety Rest Areas that provide a higher level of service are scored at 0. Otherwise, the score is 5 points to demonstrate the value of meeting current day design standards.

5.4.2.5 Collision Avoidance - Safety

- Recognizes that a highway's collision occurrences or prevention of occurrences addresses a higher order of safety. Evaluation can be verified by collision statistics, near misses or hazardous road and travel conditions. Safety issues warrant maximum points for a given proposal meeting criteria.
- Where minimum improvement of highway safety conditions will result, the score is 0. Otherwise, the score is 5 points to recognize improvement to safety conditions.

5.4.2.6 Industrial Need

- Refers to specific industry needs to meet carrier load requirements such as logging or open load parking needs. The degree of ranking is contingent upon the significance of the need. As an example, the log haul industry must meet certain load checking and safety requirements.
- Scoring of this element is weighted to the stakeholder and safety needs; therefore a score ranging from 1 to 5 may be assigned.

5.4.2.7 Poor Weather or Local Conditions

- Refers to areas of a local nature that require specific attention. The frequency for major storms requiring "safe havens", severe icing, steep hills, etc. is factors to consider in rating these conditions. Local users and contract maintenance operators should be consulted to verify local conditions.
- Scoring of this element is weighted to the local needs and conditions; therefore a score ranging from 1 to 5 may be assigned.

5.4.2.8 Tourism Benefit

- Refers to areas of more tourist traffic that could benefit from scenic areas or travel rest opportunities. Such benefit may include tourism surveys or tourism feedback as to the need of Rest Areas in certain highway locations.
- Scoring of this element is weighted to the tourism perceived needs and conditions; therefore a score ranging from 1 to 5 may be assigned.

5.4.3 Step 3 – Prioritization for Construction

Construction or Safety Rest Areas is based upon priorities established through previous studies and this 2003/04 Framework for Implementation Strategy. Theoretically, only the A and B priorities identified in this strategy should be constructed before new requests are considered. However, highway-operating conditions may require revisiting the A and B priorities in light of a need that had not been contemplated by this strategy. Thus priority criteria can determine an additional A or B priority based on need.

In evaluating *future non-urban Safety Rest Area proposals*, the eight elements Needs Model outlined above, may determine the relative need of placing a Safety Rest Area among the list of Safety Rest Areas required throughout Alberta Highways.

The prioritization of the need is then placed in the chart below with A, B, and C priorities being assigned. Using the example from above, the score of 63% would place the proposed Safety Rest Area in a Priority B status and could be added to the list of existing priority Bs.

Safety Rest Area Prioritization	
Points Assigned to Site	**Priority Assigned to Site**
More than 30 points (+76%)	A
20 to 30 points (50-75%)	B
19 points or less (<50%)	C (Do not Consider)

Future proposed sites that fall within the Priority A category might be added to the TRANS Region list for completion within the next three years, *but following the completion of the existing A-ranked sites identified in this strategy.*

In determining overall provincial priorities, the actual points or the percentage can be used to rank the priority in which Safety Rest Areas would be constructed by the province as a whole and by TRANS region. In other words, an "A" priority site with 36 points (90%) would be scheduled ahead of an "A" priority site with 32 points (80%).

Advisory Response to the Proponent:

After Step 3 is completed, the Safety Rest Area proponent would be advised of the evaluation outcome as follows, **if the ranking were an "A" or "B":**

"Alberta Transportation has reviewed your request for installation of an Safety Rest Area located at (describe the location). Pursuant to Alberta Transportation's policy for the location of Safety Rest Areas and the need point criteria, your requested site meets Safety Rest Area spacing and need criteria.

Timing for the installation falls within an (specify an "A" or "B") ranking and will only be considered for construction after the current list of "A" and "B" priorities are completed or the proponent is prepared to pay the cost of the installation. Currently, there are many Safety Rest Areas on the A and B list for construction; therefore we cannot predict the timing of construction of the requested Safety Rest Area.

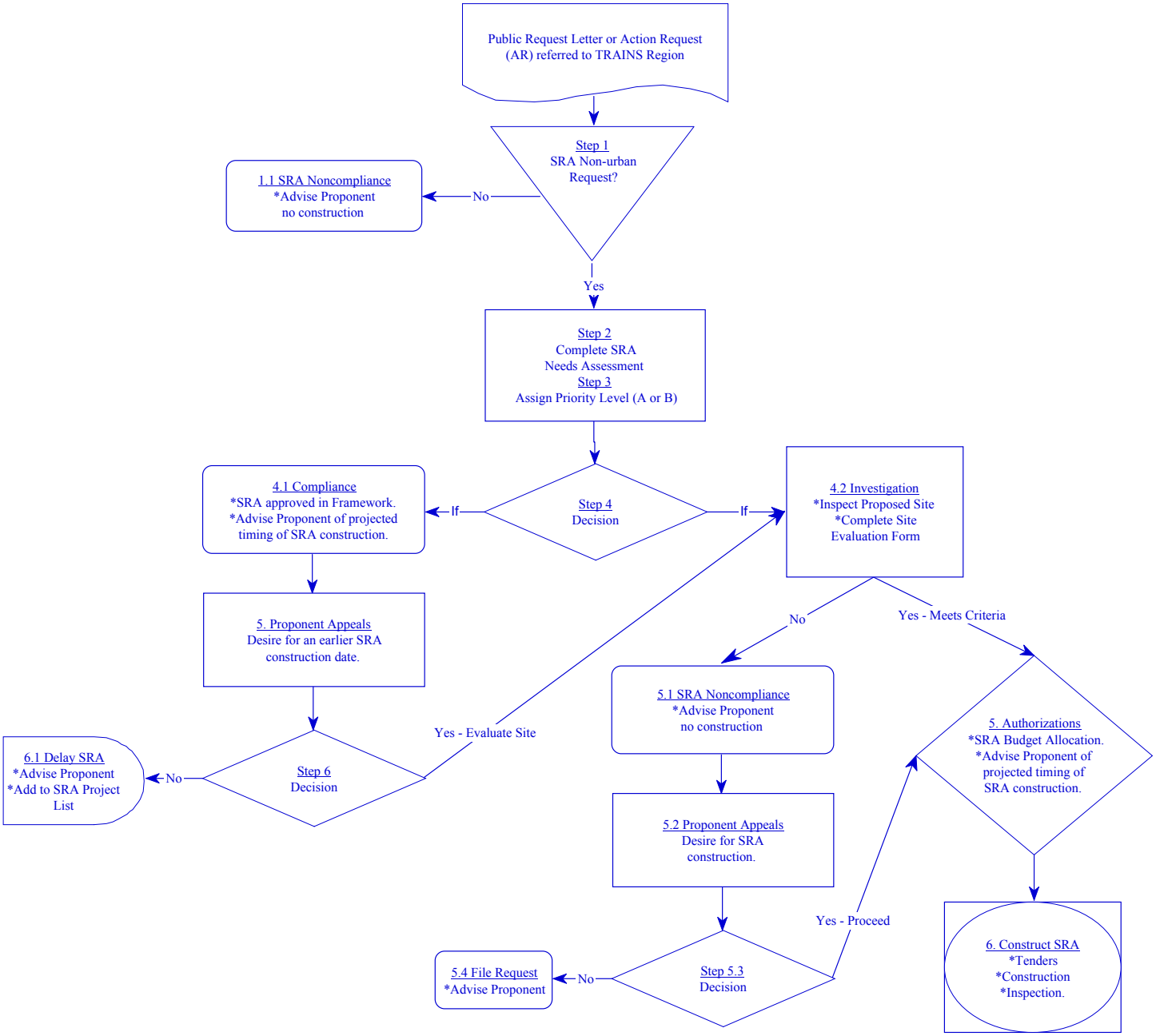
Thank you for bringing your request forward for review."

After Step 3 is completed, the *Safety Rest Area* proponent would be advised of the evaluation outcome as follows, **if the ranking were a "C" category**:

"Alberta Transportation has reviewed your request for installation of an Safety Rest Area located at (describe the location). Pursuant to Alberta Transportation's policy for the location and need rating of Safety Rest Areas, your requested site does not meet the minimum need point requirement for Safety Rest Area installations. Therefore, your request will not be considered further. Thank you for bringing your request forward for review."

5.5 *SRA Non-urban Application Flow Chart*

The flow chart depicts a general flow of a request or application from the public/municipality or from a TRANS region staff for a non-urban Safety Rest Area. It provides the steps to process a new request or a request to change the priority of a planned Safety Rest Area already on the priority list. It also provides for a review if a Safety Rest Area is turned down or not changed in priority. ***Note: urban areas do not qualify for Safety Rest Area program as described in this section).***



5.6 *Safety Rest Area Site Evaluation Chart*

The Safety Rest Area Site Evaluation Chart is intended to provide a field reference guide to assess a specific location for a Safety Rest Area proposed location evaluated to the Safety Rest Area strategies and technical design location requirements. The evaluation must be done on site because the most of the strategic locations where selected by a time and distance calculation and not confirmed by field observation.

The Evaluation Chart is a guideline and checklist to remind the site evaluator of the key location and site design elements that need to be considered in the application of the Safety Rest Area framework. The site evaluator should review and comprehend the intent of how to locate Safety Rest Areas within the strategies identified before undertaking the site evaluation work. Locating Safety Rest Areas requires some judgment assessments to ensure the best fit is achieved in relationship to the use of the highway and neighbouring communities.

The site evaluation can be viewed as a hierarchical assessment of key elements to determine final design parameters. The Evaluation Chart prompts the site evaluator to consider the following hierarchy of decisions:

Level 1 – Strategic Location
• Determine spacing within the 60/30 minute travel times • 30 min. separation to urban centres • 30 min. spacing to private traveler services
Level II – Site Utilization
• Top of hill advantage • Historic or scenic view advantages • Location to intersections or interchanges • Minimize adjacent neighbour conflicts • Minimize geotechnical & environmental issues (soil conditions) • Etc.
Level III – Site Details
• Applicable F.2 Design applied to site characteristics • Minimum one km stagger between Safety Rest Areas on opposite sides of the highway, with the right hand site located in advance of the left hand site to minimize left hand turn access and prevent pedestrian highway crossings • Size of site correlated to traffic characteristics i.e. parking requirements • Unique site construction challenges • Site servicing issues • Municipal land development issues • Etc.

The following form is a checklist of specific elements to be addressed on a specific site evaluation, correlated to the design elements of this Safety Rest Area Framework:

Hwy #				Control Section #		Km #	Site #
Region:				Direction of Travel:			
Pre-Design Evaluation							
Functional Factors				Yes	No	Comments/Variances (See Reverse)	
1	Spacing						
1	1	60 min. SRA					
1	2	30 min. SRA					
2	Traffic Characteristics						
2	1	Traffic Composition					
2	2	Trip Purpose/Length					
2	3	Traffic Volume					
2	4	Design Type					
3	Location						
3	1	Environmental					
3	1	1	Natural conditions				
3	1	2	Water courses				
3	1	3	Scenic views				
3	1	4	Points of interest				
3	1	5	Winter storms				
3	2	Adjacent Services					
3	2	1	30 min. separation				
3	3	Urban Centres/Borders					
3	3	1	30 min. separation				
3	4	Neighbouring Develop.					
3	4	1	Land Use Bylaw				
3	4	2	Residences				
3	4	3	>1 km separation				
3	4	4	Utilities, Irrigation				
3	5	Right-of-way					
3	5	1	F.2. Highway Design Guide				
3	5	2	Grades, Visibility				
3	5	3	Land ownership				
3	5	4	Interchanges (P & E)				
3	5	5	Intersections (P & E)				
4	Facilities						
4	1	Litter Containers					
4	2	Phone					
4	3	Dry Toilet					
4	4	Regular Maintenance					
4	5	Winter Maintenance					
4	6	Visibility					
4	7	24 hour access					
4	8	No. of Parking Stalls (P & E)					
SRA — Safety Rest Area; P & E — Planned and Existing							

Inspected by _____ Reviewed by _____

Date _____ Date _____

Function #	Observation and Site Comments

Appendices

6 Appendices

6.1 *Project Credits*

TRANS Technical Review

Southern Region, Lethbridge Office – John Lowe, Infrastructure Manager
Central Region, Red Deer Office – Brian Reid, Infrastructure Manager; Mike Damberger
North Central Region, Barrhead Office – Ian Baird, Acting Infrastructure Manager; Michal Pylko
Peace Region, Peace River Office – Helen Tetteh-Wayoe, Infrastructure Manager; Dany Jung; Jenny Burgess
Edmonton Office - Jim Der, P.Eng., Director Highways & Roadside Planning
Richard Chow, P.Eng., Traffic Operations Specialist
Bill Kenney, P.Eng. Highway Engineering Section
Peter Mah, P.Eng. Geometric Design Standards Engineer
Emil Nelson, Senior Project Planning Coordinator
Glen Tjostheim, Roadside Planning Specialist

TRANS Circulation

Southern Region, Lethbridge Office – Darrell Camplin, Director
Central Region, Red Deer Office – Stu Becker, Director
North Central Region, Barrhead Office – Bruno Zutautas, Director
Peace Region, Peace River Office – John Engleder, Director

Consultant Team

Pommen, Dennis W.; CLGM, CHRP; Project Manager
Cullen, Jeffrey D.; MBA, P.Eng, PMP; Project Consultant
Laura Filewych, BA; Editing Associate
Schimanke, Ralph; Estimating/Mapping Design Consultant
Shearer, Brian; P. Eng.; Project Consultant

6.2 *Research Material*

6.2.1 Background

Review of technical literature, reports by highway agencies and previous interviews with stakeholders identified 13 functions that could occur at Safety Rest Areas. This list of 13 functions ranges from:

- Personal comfort — exercise, refreshments and restroom breaks
- Safety — changing drivers, checking loads, repairing minor mechanical troubles, rest and/or sleep and emergency stops
- Information — review of travel information and maps, telephone calls, and checking on road and weather conditions
- Convenience — litter disposal and refueling of vehicles

6.2.1.1 Spacing

Various research has been conducted about spacing of Rest Areas. The generic term "Rest Area" tends to relate to facilities with multiple services positioned to respond to the traveling public's needs. The "median" spacing in the United States is about 70 kilometres[3] and the recommended spacing is about 60 minutes or 80 kilometres. Washington State is considering converting to time traveled of 50 to 60 minutes, rather than using distance measurement.

The following provides a summary of some of the guidelines applied to Rest Area spacing:

American Association of State Highway and Transportation Officials (AASHTO):

- 60-minute driving time
- Map stop immediately before urban centre

Ontario Ministry of Transportation

- 80 km intervals on controlled access roads

British Columbia Trucking Association

- 150 km intervals on all highways
- Within 30-minute driving time before urban centre

British Columbia Department of Highways

- 80 km intervals or 60-minute driving time on four-lane routes
- 60 km intervals or 60-minute driving time on two-lane routes

Alberta Transportation and Utilities

- 90 km intervals or 60-minute driving time
- Class III Safety Rest Areas every 30 to 40 km.

[2] Evaluation of Safety Roadside Rest Areas, 1989, Transportation Research Board, Washington, D.C.

Washington State Department of Transportation

- 100 km or 60-minute intervals with restroom equipped facilities

6.2.2 Functional Factors

Location

Proximity to Urban Centres and/or Borders

Highway users have stated that Rest Area sites within 60-minute driving time intervals or in the immediate proximity of either urban centres or provincial borders are ideal locations for stopping. The typical functions occurring at these locations include checking travel information and maps, changing drivers, checking loads, placing telephone calls related to trip destination activities, and checking road and weather conditions before continuing the journey.

Location to Highway Right-of-Way

Published experience on highways throughout the United States has shown that Rest Areas must be highly visible in order to be well utilized. Typically, the utilization of a designated Rest Area increases with its proximity to the traveled portion of the right-of-way. Should a Rest Area not be visible from the highway right-of-way, the utilization decreases. There has not been mathematical modeling that could relate the proximity of the highway right-of-way to the utilization of the service Rest Areas; however, diverting travel off the main route directly impacts site use.

Traffic Characteristics

Composition of the Traffic Stream[4]

The composition of traffic stream is a significant factor in Rest Areas. This study identified that the average stop length for a truck is longer than the average stop length for a car. While the largest numbers of truck stops occur in the daylight hours, the duration of the truck stop is longer at night.

Trip Purpose and Trip Length

Commuter travel, typically under two hours of travel time, is not subject to stopping to the extent that vacation and/or pleasure trips of longer length and duration experience. Trip length is more relevant than trip purpose. The published literature on this subject does not identify a mathematical formula between trip purpose and trip length; however, stakeholder comments confirm the relationship between vacation and/or pleasures trips and stop frequency.

[4] Evaluation of Safety Roadside Rest Areas, 1989, Transportation Research Board, Washington, D.C.

Percentage of Stops per Vehicle Type[5]

Alberta Transportation's study indicated that 14% of trucks and 17% of recreation vehicles passing a Rest Area were likely to stop. The percentage of passing cars stopping at a Rest Area was not stated in absolute terms; however, the report stated that the rate of stopping for automobiles was lower than for trucks and recreation vehicles. The average stop duration for all vehicles was 11 minutes based upon a noon hour study of use in the Rest Area.

Total Traffic Volume[6]

Traffic volumes show that Alberta's Average Annual Daily Traffic volume ranges from over 42,800 vehicles on one segment of primary highway to less than 70 vehicles on another segment within the Primary Highway network. This wide range of traffic volume requires different classes of Safety Rest Areas and the need to consider volumes relative to spacing and sizing of Safety Rest Areas.

Facilities and Services

Safe, Accessible and Convenient

While this factor appears to be self-evident, there are a number of elements that are relevant. The context of *"safe"* includes open and well-lit areas as well as areas that are frequented by highway users including law enforcement agencies. *Accessibility* refers to physical design considerations including deceleration/acceleration provisions, road grades, geometric and sight lines, number and size of stalls. Directional separation on high-speed multilane highways is a design factor. The parking area design must accommodate large truck configurations and have an adequate number of stalls. To determine the number of stalls, a combination of traffic volume and mix needs to be evaluated over a 20-year horizon. Some locations attract more large trucks than others do. *Convenience* refers to the functional planning of facilities, including ease of access, advance notification signs and spacing.

Appeal of Services, Facilities and Site

While these factors address subjective or personal standards, there is a significant emphasis in published studies that addresses the necessity for aesthetically pleasing sites, functional layouts, levels of cleanliness and general overall appearance that affect the utilization of Rest Areas. From the comments received from stakeholders, the subjective elements of function and cleanliness have a greater impact on use of Rest Areas over the number and nature of the individual facility components.

[5] Safety Rest Area Program Report, Roadway Planning Branch, AT&U (Revised June 1989).
[6] Alberta Primary Highway Traffic History Report 1987-1996, AT&U.

Time

24-Hour Accessibility

This factor has not been specifically addressed in any of the published technical studies relating to Rest Areas. Review of the published reports and response from stakeholders indicate that the greatest need for Rest Areas is during that period of time when the use of the highway is at its lowest volume. It is further implied that the need for a safe haven increases with the remoteness of the Rest Area from the nearest urban centre.

Estimated Length of Stay[7]

Alberta Transportation's Rest Areas research indicated that the average stop duration was 11 minutes during a study done over the noon hour. This report indicated that, on average, 5% to 10% of the total traffic volume stops at Alberta's Rest Areas.

The Washington study indicates the length of stay to be 9 to 14 minutes with cars being 11, trucks 12 and recreational vehicles 19 minutes, respectively.

The British Columbia Safety Rest Area Program Master Development Plan (December 1994) does not include duration of stop information, but indicates that the percentage of mainline traffic likely to stop at Safety Rest Areas relates to the category of road and its setting. This study indicates that on two-lane highways in rural areas, 9% of the traffic will stop. On two-lane highways in a recreational setting, 12% of the traffic will stop. With four lane divided highways in a rural setting, 15% to 17% of the traffic will stop. On four lane divided highways near urban centres, 6% to 9% of the traffic will stop. A combination of traffic volumes, the percentage of main line traffic stopping and the estimated duration of stay determine the activity at Rest Areas.

Seasonal Use[8]

In British Columbia, the peak factor which reflects the ratio between the summer average daily traffic and the average annual daily traffic, identifies that:

[7] Safety Rest Area Program Report, Roadway Planning Branch, AT&U (Revised June 1989) Evaluation of Safety Roadside Rest Areas 1989, Transportation Research Board, Washington, D.C.

[8] British Columbia Safety Rest Area Program Master Development Plan, December 1994.

Peak Factor	Traffic Mix
Less than 1.3	Commuters
1.3 to 1.6	Mix: commuter, recreational, commercial
1.6 to 1.75	Rural
Greater than 1.75	Summer recreational

This British Columbia study indicated that the lower the peaking factor, the lower the requirement for Rest Areas. There was no direct correlation established. An empirical rating, applied to peak factors, was utilized in establishing a priority rate for Rest Areas.

6.3 *Safety Statistics*

6.3.1 AASHTO Rest Area August 2001 Summary

Background

- The late 50's early 60's Rest Area guidelines emerged in the United States primarily addressing passenger vehicle traffic.
- By the 1970's, traffic, traffic mix and truck volumes increased substantially rendering previous planning and designs obsolete.
- The 1981 Minnesota DOT guidelines became the standard for Rest Area development.
- By 1994, AASHTO realized the need to upgrade the guidelines because of the following factors:
    - Increased commercial vehicles and larger trucks placing greater demands on and for Rest Areas
    - RV travel increased placing additional demands on size of facilities and amenities; e.g. washrooms, dumping stations
    - Security and safety issues; e.g. public safety
    - American Disabilities Act addressed seniors and special needs
    - Rehabilitation of 30-year-old facilities
    - 2001 AASHTO Guidelines issued, coordinated by New York State identifies the following different approaches to addressing Rest Area development:
    - Planning and Program Development.
    - Needs Assessment for each highway corridor
    - Emphasis on providing integrated traveler services (commercial, tourism, community)
    - Emphasis on large truck parking and integrated services
    - Spacing changed 30 minute to 60 minutes spacing (NB: this is Alberta TRANS guidelines now with Safety Rest Areas)
    - Emphasis on security
    - Maintenance and Operations Manual
    - Emphasis on landscape architecture – aesthetic value

Observations

- Most states have a Rest Area program which is coordinated and integrated with multiple services – commercial, tourism, economic development, architectural, maintenance, etc. (e.g. Ohio 126 RA's).

- Some states have a designated Rest Area Coordinator position to administer and develop Rest Areas.
- Funding to establish Rest Areas is an issue in some states although California will be spending under $500 million over the next 10 years. New York State is spending $100 million.
- Most Rest Area developments are on the interstate highways. Other low volume highways Rest Area development varies by state policy. Focus of more coordination and integration of all types of highway services and facilities.
- Safety and multiple travelers needs are placing higher demands for Rest Area development.
- Off-interstate private truck service facilities continue to expand.
- Tourism partnerships are becoming more focused too.

Conclusions Related to Alberta

- As Alberta highway traffic volumes increase, North American experience indicates Alberta Safety Rest Area requirements and usage will increase.
- Travelers and commercial drivers on overtime will request higher levels of services at Rest Areas, e.g., washrooms with flush toilets, commercial services.
- Alberta TRANS Safety Rest Areas Guidelines appear to be appropriate and on target regarding spacing and sizes. However North American trends indicate that washrooms will be requested and future amenities. Also, more facilities and services could be integrated (tourism, highway patrol, inspections, weigh stations, etc.).

Alberta TRANS should have a funded development and operating program to bring Safety Rest Areas up to minimum acceptable standards.

AASHTO Rest Area Planning and Design							
State	# RA's	# Reno./ New	$ Range	Combined Law Enf./ Inspect/ RA	Combined/ Tourism/ Law Enf./Insp. RA	Spacing	Amenities
Arizona		Yes				60 min.	
California	88		500 mil		Yes	60 min.	All
Florida	120	14	180 mil.	Yes			
Iowa			(2.3 mil)		Yes		
Minnesota	258				Yes	50 min.	All
Montana		3	(1.8 mil.)				
New York		39	100 mil. (4.5 mil)		Yes	60 min.	All
Ohio			(5-800 K Conv)				
Ontario	24	50-70				50 min.	
Pennsylvania	45	1	(5 mil.)		Yes		
Texas		Yes	52 mil.			<100 min.	All
Wisconsin	45			Yes			
100,000 crashes or 15% fatigue related; 4.5% fatigue factor (755 fatalities) (California). 33% increase in truck shipments in the next 10 years in California. 3.7% reduction in accidents in California, saving of $148 million to society. 95% of all drivers use Rest Areas in Pennsylvania.							
Information Summarized from August 2001 Conference, San Diego, California							

6.3.2 Fatigue and Driving

Edmonton Journal, September 2001

6 EDMONTON JOURNAL RV SHOWCASE WEDNESDAY, SEPTEMBER 5, 2001

Does fatigue have an impact on driving?

Pushing on with your trip when you are too tired is never a good idea. Pull over and take a rest, or change drivers before you continue.

Rest: Your life depends on it

Incidents like the nuclear meltdown at Chernobyl, the Exxon Valdez oil spill and the explosion of the Challenger space shuttle were all directly linked to fatigue. This frightening fact raises an equally frightening question: If the people involved in large, important projects like space missions can't stay awake, how can we expect to keep ourselves awake on long, boring stretches of flat highways?

Whether you're operating a nuclear reactor or driving a car, falling asleep at the switch' can result in disaster. Studies in several countries have shown that insufficient sleep is a major contributor to lost productivity, worker injuries and road casualties.

Poor sleep habits affect millions of North Americans. The result of insufficient sleep is called sleep debt. Sleep is an appetite, just like hunger and thirst. Your body craves sleep; if you don't give in to the craving at safe times, your body can choose to fall asleep at the wrong times — such as when you are driving. There is nothing you can do to fight it, contrary to the popular idea that it is possible to stay alert no matter how tired you are.

Continued on 7

Continued from 6

Here are some statistics that could keep you awake nights:

· falling asleep is regarded as being second only to alcohol as a cause of collisions;

· as many as 4 out of 10 commercial vehicle collision reports state that driver fatigue was a major contributing factor to the crash;

· 15 per cent of drivers have reported actually falling asleep while driving.

What happens when we don't sleep?

Your body operates on a built-in timer, or biological clock, that controls body temperature, alertness, and energy. Your internal timer operates on a daily cycle of approximately 24 hours. During the cycle there are times that you feel especially alert and energetic, and there are other times you feel groggy, tired and cold.

There are two times during the internal cycle when most people feel sleepy. One is the 'afternoon lull,' from 2 to 5 p.m., the other is the early morning, from 2 to 6 a.m. Sometimes drivers, especially professionals, cannot avoid driving during their internal 'slow-down' times. This makes driver fatigue an important factor to consider. If you must drive during your body's naturally slow times, make sure you're prepared to stay alert:

· keep your vehicle well ventilated;

· avoid caffeine or other drugs to keep you awake; when they wear off, you will feel very tired;

· listen to the radio (especially talk radio);

· avoid large meals and heavy, fatty foods;

· stop frequently (at least every two hours) and take a walk;

· change drivers often if you are driving with others.

When you go without sleep for extended periods, your mind and body begin to shut down, affecting your mental and physical alertness. When your mental and visual ability begin to deteriorate, the effects on your driving are obvious: You become a danger to yourself and others.

Any of the following signs should be your cue to start looking for a safe place to pull off the road and either have a nap or turn in for the night:

· frequent yawning,

· loss of concentration and wandering thoughts,

· missing turns or drifting out of your lane,

· cars seem to appear out of nowhere,

· you can't remember anything about the last few kilometres you drove,

· you are driving too fast or too slow, or your speed is unsteady,

· general sluggishness.

If you experience any of these indicators of fatigue, it's time to be very honest with yourself. Pushing on with your trip when you are too tired is never a good idea; no matter how important your trip is, it's better to arrive late than to never arrive at all.

Falling asleep at the wheel is likely the direct cause of many 'unexplained' collisions such as single-vehicle rollovers and driving off the road. Unfortunately, nobody can say for sure because there are seldom survivors to such crashes.

Drivers are responsible not only to themselves, but to every other road user. The risk you take on the road can be minimized by planning the times and duration of your trips, the amount of sleep you get, and by being honest about how tired you feel when driving. Recognizing fatigue as a serious impairment is an important step to making yourself a safer, more alert driver.

For those traveling with RVs, it's particularly easy to pull over for a rest. Remember, your life could depend on it.

— Story supplied by AMA Mission Possible

6.3.3 Increased Truck Traffic

Edmonton Journal, May 2001

16 The Edmonton Journal, Friday, May 21, 1999

U.S., Canadian factories cranking out trucks

Move to just-in-time delivery creates need to have more big trucks on North American roads

You grip the steering wheel tightly
s you bump over one pothole after
nother, your vision blocked by the
uge truck in front, your avenue of
scape cut off by trucks on either side.
nd you wonder: Is there no end to the
tream of trucks on the highways?

Nope.

In fact, you can expect even more.
ast month, Navistar International
Corp. sharply increased its projection
f truck demand in 1999. The Chicago-
ased manufacturer of trucks, buses
nd engines said it expects U.S. and
anadian factories to crank out 415,000
f these vehicles this year, not the
80,000 it predicted only last December.

That projection may be unwelcome
ews to the folks who share the roads
vith the huge rigs, or the taxpayers
who pick up the tab for resulting pot-
oles. It also raises safety concerns,
ecause more trucks mean more inex-
erienced drivers.

But the numbers amount to a
onanza for employees and sharehold-
rs of Navistar and other truck manu-
acturers. And they reflect the growing
trength of the broader economy.

"If the economy tends to grow at a
.5 to three per cent rate, the popula-
ion of trucks would have to grow at
he same rate," said James L. Hebe,
hief executive officer of Freightliner
Corp. in Portland, Ore. "It's almost a
ne-for-one growth rate.... Anything
bove zero economic growth means
nore trucks."

In the U.S., sales of heavy trucks —
he big tractor-trailer rigs officially
abeled Class 8 or higher — rose by an
mazing 33.2 per cent in the 12 months
hrough March, according to the Bank
f Tokyo-Mitsubishi.

"When we did planning for this fis-
al year, we expected sales to tail off in
he second half," Navistar Chief Exec-
tive John R. Horne said recently. "But
he order book does not support that."

Besides the continued strength of
he overall economy, two other

File photo

Trucks increasingly crowd the nation's highways as sales of the vehicles keep

"Inventories create costs. Everybody's objective is to utilize the inventory, turn it and pay for it. That's what trucks do; they allow for rapid deployment of assets."

— James L. Hebe, chief executive officer of Freightliner Corp.

overnight, versus two to three weeks by a supposedly improved rail system, Defosset said.

When the risk of inventory not being delivered on time is factored in, "we could move freight by truck faster and at equal to or very close to rail freight costs," Freightliner's Hebe said.

Not everyone is convinced. As railroads continue to regain efficiencies, they could grab business back, some say.

Rising diesel prices, for instance, stand to make trucking costs even more expensive.

commuter train collided with a truck in Portage, Ind. In another high-profile accident, the inaugural trip of an Orlando-to-Tampa train ended with a crash into a truck, killing one person.

While none of those crashes has been linked to inexperienced or untrained drivers, the public — and politicians — are latching onto the issue.

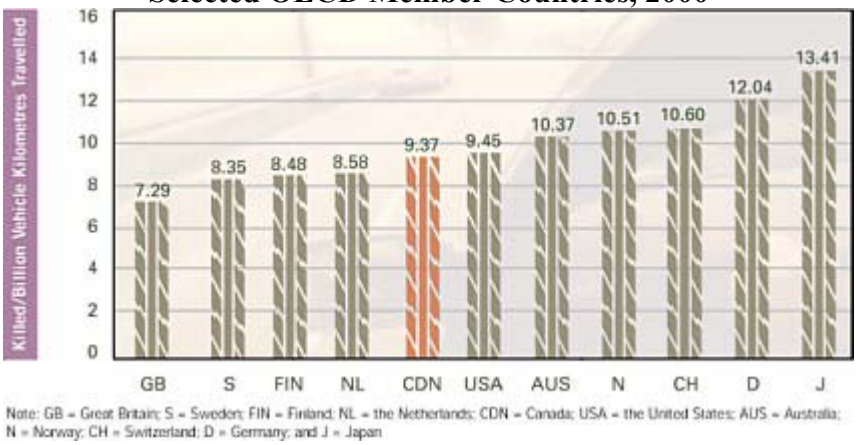
Though turnover is inevitable in a job defined by repeated cross-country trips, fleet owners say they are emphasizing comfort in an effort to retain skilled drivers.

Increasingly, couples are taking to

6.3.4 Canada Road Safety

Canada's placing internationally with selected countries: moved from 7th to 5th place; however, still some 20% higher than the UK.

Road Users Killed Per Billion Vehicle Kilometres Traveled - Selected OECD Member Countries, 2000



Note: GB = Great Britain; S = Sweden; FIN = Finland; NL = the Netherlands; CDN = Canada; USA = the United States; AUS = Australia; N = Norway; CH = Switzerland; D = Germany; and J = Japan

In Canada, motor vehicles are a pervasive fact of life. With 900,000 kilometres of roadways, almost 18 million registered vehicles and more than 20 million licensed drivers, Canadians are among the most mobile people in the world. Motor vehicles enable Canadians to overcome the fundamental challenges of the country: vast geography and a harsh climate. However, this mobility does not come without consequences. More than 2,900 road users were killed and another 227,000 were injured in traffic collisions during 2000.

For individuals and society alike, the toll is immense. Collectively, the social cost to Canadians is at least $10 billion per year (about 1% of GDP).

6.3.5 Canadians' Views on Trucking Safety on Canada's Highways

CRASH, Ipsos-Reid - April 25, 2002

OTTAWA, April 25 /CNW/ - Canadians for Responsible and Safe Highways (CRASH) today released the results of a new Ipsos-Reid national poll on how Canadians view trucking safety issues. The survey was conducted between April 2 to 7, 2002 among a representative sample of 1,000 adult Canadians. The Canada-wide sample of 1,000 yields, with 95 percent certainty, yields results that are accurate within +/- 3.1 percentage points.

Principal findings of this new poll include the following:

- Four in five Canadians (83%) say that the growing number of tractor-trailers has made travel on our highways and roads more dangerous.
- Canadians strongly oppose any attempt to allow extra-long multi trailer trucks on our roads. Nine in ten (87%) oppose the use of trucks with two 53-foot trailers. And, Canadians are almost unanimous (95%) in their opposition to triple-trailer trucks.
- Canadians are again nearly unanimous (91%) in their belief that the long hours that truck drivers can be required to work place too much stress on humans.
- There is strong support for restricting truck driver hours on Canada's roads. Eight in ten (82%) favour reducing the 13-hour driving shift allowed in Canada to the American limit of 10 hours. A strong majority (85%) favour restricting the number of hours a trucker can work per week to the proposed American limit of 60 hours rather than the 84 hours per week planned here.
- Eight in ten Canadians (78%) favour a rule requiring that all big trucks be equipped with electronic devices to counter the cheating on hours worked.

The release of these polling results occurs at a time when the House of Commons Standing Committee on Transport and Government Operations is holding hearings on the proposed new regulations for truck driver workload. CRASH believes the Committee should pay attention to the related public views and concerns reported by this survey.

For further information: contact: Bob Evans, Executive Director, CRASH, (613) 860-0529; John Wright, Public Affairs, Ipsos-Reid, (416) 324-2900; For full tabular results, visit; www.ipsos-reid.com

6.3.6 CAA Ontario – Five Part Plan for Staying Alert on the Highway

Sleeping and Driving Don't Mix
CAA Ontario

NEWS RELEASE
Orillia, June 25, 2002

CAA Ontario has approached the Ontario government with a five-part plan to make our 400-series highways more conducive to staying alert:

1. *More frequent rest stops*. By the time we realize we are drowsy, we have usually been driving impaired by fatigue for a while. At that point a sign that reads "Next Rest Stop 65 kilometres" is of no comfort.
2. More restful rest stops. Yes, we need food and fuel, but we also need rest. People generally do not stretch at a donut shop or walk about a parking lot with constant traffic. They certainly do not let their kids burn off energy there. The additional rest stops I mentioned a moment ago needn't have a service station attached, although I think a washroom might be helpful.
3. Better signage of and access to restful rest stops. Believe it or not, we have picnic grounds attached to most of the service station rest stops now. Many people don't know about the picnic grounds, and I can tell you that they are massively underused, even during the few months when they are open to the public.
4. A public education campaign to drive traffic to the new restful rest stops. I don't mean just some commercial at movie theatres telling moviegoers not to drowse and drive. I mean signs that communicate to drivers when and where they get drowsy: Something like: "Have you taken a break in the past two hours? Rest stop ahead."
5. More parking spaces for trucks. If you've ever driver along the 401 at night, you would discover the real reason for on ramps and off ramps – to park your rig when the official parking spots are full. We believe that truck drivers more than anybody need to be well rested, so let's give them the proper infrastructure to get the rest they need.

We at CAA Ontario are very excited that the OPP are tackling the issue of driving while fatigued. We congratulate them on this program and wish them success.

6.3.7 Sleepy Drivers

Every year, falling asleep while driving is responsible for at least 100,000 automobile crashes, 40,000 injuries, and 1,550 fatalities. These crashes happen between the hours of midnight and 6am, involve a single vehicle and a sober driver traveling alone, with the car leaving the roadway without any attempt to avoid the crash. These figures underestimate the true level of involvement of drowsiness because they do not include crashes involving daytime hours, multiple vehicles, alcohol, passengers, or evasive manoeuvres (www.nhtsa.org).

According to National Sleep Foundation's 2002 Sleep in America survey, about one-half of America's adult drivers - 51 percent or approximately 100 million people - are on the roads feeling sleepy while they are driving. Nearly two in 10 drivers - 17 percent or approximately 14 million people - say they have actually fallen asleep at the wheel in the past year. Diminished productivity and property damage add to the costs of drowsy driving, which are estimated to be $12.5 billion USD annually.

6.4 *Changing Carrier and Driver Standards Impact Rest Needs*

6.4.1 Pending Harmonization and Potential Regulatory Changes

Alberta is a key transportation player undergoing several proposed legislative changes to harmonize transportation legislation with other provinces, federal and international conditions. These proposed changes have direct bearing on consideration of priorities and numbers of Safety Rest Areas needed in the province.

Briefly, proposed legislation and regulation changes and amendments respond to Federal and Provincial cooperation under a MOU signed in 2002. The MOU formally recognized that effective harmonized motor carrier rules that are practical and enforceable would provide safety and economic benefit to Canada. The MOU has created a process that formally engages the Council of Deputies and Ministers in approving new or revised standards. International discussions are ongoing through the North American Free Trade Agreement Land Transportation Subcommittee to harmonize certain basic elements of the safety rating system. (E.g. proposed North American Cargo Securement Standard).

The MOU identified four areas for priority action:

1. Driver Hours of Service

2. Commercial vehicle safety ratings

3. Commercial vehicle load securement

4. NSC weight threshold

Concerns for each of these priority areas under the MOU hold relevance to the proposed frequency and distance between Rest Area opportunities.

6.4.2 Driver Hours of Service

More vehicles and drivers will fall under proposed new regulations. These changes reflect in less time per day allowable for driving, hence a greater need for Rest Areas and those that can accommodate more vehicles. The following chart compares the changing standards:

Current Canadian Rules	Proposed Canadian Rules	Current Alberta Rules
1. Applies to motor carriers engaged in the operation of an extra provincial bus undertaking or an extra provincial truck undertaking (truck >4,500 kg and bus >11 passengers including the driver).	Unchanged	Applies to carriers engaged in the operation of an intra provincial bus undertaking or an intra provincial truck undertaking (truck >18,000 kg and bus >11 passengers including the driver).
2. Oil well service vehicles can apply for permit of exemption to cumulative rules.	Oil well service vehicles can apply for a permit to reduce supplementary time off requirements	Permits are not required for Alberta as there are no cumulative rules.
3. Driver may not drive after accumulating 15 hours on-duty in a work shift, which actually allows for 16 hours on-duty time in a day	Not specifically provided for, however driver must take 10 hours off-duty in a day (some indication that this limits driver to 14 hours on-duty in a day).	Driver may not drive after accumulating 15 or more consecutive hours on-duty, which actually allows for 16-hour on-duty in a day.
4. Driver may not drive after accumulating 60 hours in seven consecutive days, 70 hours in eight consecutive days, or 120 hours in 14 consecutive days.	Driver may not drive after accumulating 70 hours on duty in any period of seven days (cycle 1) or 20 hours in any period of 14 days (cycle 2). Driver may restart or switch cycles by taking 36 (cycle 1) or 72 (cycle 2) hour off-duty.	There are no cumulative cycle caps in Alberta.
5. To start work, shift driver must take eight consecutive hours off-duty.	To start day, driver must take eight consecutive hours off-duty; then must take two hours off-duty during the day.	A driver must be off-duty for at least eight hours immediately prior to commencing a work shift.
6. Driver may reduce off-duty time from eight hours to four hours once in a seven-day period.	The option to reduce the off-duty time from eight hours to four hours is eliminated. Driver may average time off over 48 hour period by deferring two-hour supplementary time to second day.	A driver may reduce the off-duty time from eight hours to four hours once in a seven-day period.
7. None	Driver must take 24 hours off-duty in maximum of 14-day period.	None.
8. Any driver may use sleeper berth to split eight hours off-duty into two periods, minimum two hours long.	Only team drivers may use sleeper berth. May split eight consecutive hour period into two periods minimum four hours long.	Any driver may use sleeper berths to split eight hours off-duty into two periods minimum two hours long.

6.4.3 Proposed Motor Carrier Safety Fitness Certificate Regulation

Under the Motor Vehicles Transportation Act, elements affected are the numbers of vehicles to be certified, inspected and tracked. This proposes all vehicles in the >4500kg down from the original attempt at harmonizing to 11,794 kg weight threshold. Could have a minor possible effect on inspection sites (MIS/VIS) with greater volumes of vehicular traffic needing to be inspected, processed through inspection facilities and made available for roadside inspections safely. This is mainly due to the sheer number increase.

6.4.4 North American Cargo Securement Standard.

Since 1994 there has been active cooperation between Canada and the US in the pursuit of developing and implementing uniform regulatory requirements for the securement of cargo on highway transport vehicles. Latest Canada USA talks concluded in draft 5 model regulation (NACSS) in revised and updated form, for possible implementation of proposed legislation in January 2004.

Net effect again is huge, due to the number of vehicles to be included as the weight class falls into the >4,500kg weight threshold level. Other key elements include:

- Requirements to check load securement devices and loads at prescribed frequencies - prior to setting out, within the first 80 kilometres, and
- As any adjustments need be made and re-examined and adjusted when any of the following occurs:
    - Driver makes a change of his/her duty status, or
    - Commercial motor vehicle has been driven for three hours, or
    - Commercial motor vehicle has been driven for 240kms, which ever occurs first,
    - Some exceptions are allowed, however the combination of dropping coverage weight to 4,500 kg and up, and the frequency of load check stopping increments increases the need for Rest Areas.

6.5 *Stakeholder (Previous Input)*

6.5.1 Stakeholder List

Several participants have, over time, contributed to this project and helped a great deal in formulating various parts of this report. We recognize the Alberta Transportation representatives' special efforts to assist in the development of this work.

Commercial Transport District Advisory Committees

Alquire, Rick – Tolko
Berndt, Rob – Daishowa-Marubeni International Ltd.
Bruinsma, Lorena - Premay
Burnell, Alan – Burnell Contractors Ltd.
Campbell, Colin – Weyerhauser Canada
Cook, Duncan – Premay Equipment Ltd.
Delany, Patrick – Petroleum Association (PSAC)
Demaulder, Bob – Alberta Forest Products Association
Drolet, Kelly – Sunpine
Groat, Ken – Weldwood
Hartman, Lloyd – Alberta Forest Products Association
Howe, Mike – ALPAC
Larocque, Bert – Alberta Plywood Ltd.
Marchand, Dale - Premay
Mathews, Max – Miller Western – Whitecourt
McNeil, Scott – Footner Forest Products – High Level
Moore, Ardyth – Weyco
Rimmer, Len – Canfor
Smyth, Al – Alberta Motor Transport Association
Sunstrum, Murray – Oil Drilling Association (CAODC)
Wilson, Scott – Alberta Motor Association

Commercial Transport District Advisory Committees

Beaupre, Ghislain – Edson
Evasiuk, David – Whitecourt
Morrison, Peter – Highwood
Romanko, Rark – Stony Plain
Smith, Kevin – Bonnyville
Smud, Nick – Drayton Valley
Williscroft, Ron – High Prairie
Withers, Neil – Grande Prairie

Alberta Transportation

Atwell, Bruce
Bedingfield, Jim
Brown, Andy
Callahan, Steve
Clarke, Roger
Dunn, Geoff
Gish, Bill
Griffith, Allan
Hees, Rose
Kenny, Bill
LesStrange, Dave

6.5.2 Summary of Pre-2001 Stakeholder Feedback

The following provides a summary of some of the stakeholder comments received through the Safety Rest Area 1997[9] consultation process: North/South Trade Corridor, TransCanada Yellowhead Highway #16. Duplicate responses have been recorded only once. Some responses will appear to differ since various opinions exist as to what is appropriate relative to Safety Rest Area needs; e.g., no potable water and a minimum need of potable water. It is the intent of this summary to provide the range of views expressed, extrapolated and correlated to what might be applicable to Safety Rest Areas.

Minimum Amenities and Services

- Toilets (outside) and inside toilets.
- Picnic tables; no picnic tables.
- Bathroom, water, phones.
- Wilderness area Rest Areas should be maintained in case of emergency.
- Adequate amount of parking area.
- Adequate lanes for access, RV parking, truck parking.
- Safe access/egress off and onto the highway.
- Factors that determine different amenities are remoteness, such as trunk roads. Weather can have an impact. Travelers stranded by storms could require warmth (shelters with wood burners plus a supply of wood).
- Minimum: phone, washrooms, traveler information. Now a lack of highway info: how to get to locations, general information, campsites, services, distances, simple things. Where am I and where am I going?
- Any remote highway, #43 between Fox Creek and Whitecourt, shuts down; so not a lot of stops to get off the road in bad conditions.
- Static interpretation and information.
- Need security and lighting.
- Locational aspects/physical site characteristics, e.g., a scenic or attractive location may encourage travelers to stay longer at a site and thus prompt the development of commercial services or amenities.
- If highways were designed differently with more room, could have Rest Areas in the middle medians.

[9] Excerpts from Highway Service Rest Area Report, POMMEN AND ASSOCIATES LIMITED, October 1997.

Hours of Accessibility (24 hours a day?)

- Core hours for usage, 8 a.m. to 10 p.m. and midnight to 2 a.m. (Nojack)
- Core time period is at darkness as travelers begin to pull-off highway (Niton)
- Peak usage is 4 to 7 p.m., particularly by tourists (Highway #16 west of Edson)
- Between the hours of 2 a.m. to 6 p.m. is critical re: long hauls due to fatigue factor
- Prefer 24 hours a day, like Edmonton to Calgary highway; #16 west, lesser degree to the east because less volume to the east. #1 east and west. Lesser degree #2 to the US border
- Prefer 24 hours a day for emergency or safety situations

Seasonal Usage

- Usage increases in summer (June), begins to slow down in the fall. Minimal usage in winter (except for heavy truck traffic), which begins to increase in spring (Nojack).
- Busy year round (Niton).
- Could be closed in winter as peak usage is in summer months (Highway #16 west of Edson).
- Storms have an impact on travelers and Safety Rest Areas are required.
- In winter, people are going from point A to point B, so only basic heated facilities required (washroom, telephone, and information).

Distance or Travel Time between Rest Areas

- One hour (Nojack).
- Every 100 miles (Niton).
- Three hours apart (Highway #16 west of Edson).
- Two hundred miles, no more frequent, depending on the route.
- Between and 150 to 200 km. Based on driving experiences; e.g. Edmonton to Hinton to get gas; then Blue River for a rest.
- Between Edmonton and Calgary: Bear Hills, Red Deer, Crossfield is about the ideal spacing.
- Locate near urban municipalities for truck drivers to access services.
- Northern Alberta requires more and better-serviced Rest Areas.
- Every 30–45 minutes. Some travelers may pass two or three Rest Areas before deciding that they need to stop. Or some Rest Areas may be quite busy and the traveler will decide to stop at the next area.

Qualification of Existing Facilities

Some of the Yellowhead Highway Association observations:

- Elaborate rest stops are not required to promote safety; elaborate rest stops limits viability; should increase opportunities for stops.
- Use existing facilities and increase Safety Rest Areas. Improve some of them, including signage, deceleration and acceleration lanes.
- Weight scales could be integrated.
- Integrate existing municipal tourist facilities.

Location of Rest Areas

- Should be close to highway, as people have been robbed when parking off highways and vandalism can occur (Niton).
- Should be next to highway so that motorists can see it. People won't use it if they can't see it. Should be no further than 500 m.
- AMA advises that the further the Rest Area is off the main road, the less attractive it is. With the push for a north/south corridor to Mexico, Rest Areas will be important.
- Immediate access is critical to the trucking industry; however, greater separation from traveling lanes is necessary to accommodate proper sleeping areas.
- Could be located close to some towns or cities; e.g., those that have no existing parking areas for rigs or RVs.
- In remote areas, where sportsmen and travelers drive off the main highways.
- Most comments suggest locating close to the highway for optimal use. When people need to rest, they want to stop in a short period of time.
- Towns are enforcing parking restrictions making it difficult for truckers to park in urban areas.

Compatibility of Rest Areas with Various Users (truckers, travelers and tourists)

- Need to separate heavy trucks from the rest of motorists or users, due to space and noise.
- Require restrooms for truckers (they now relieve themselves on the ground).
- Truckers should be restricted from the smaller Rest Areas.
- Weigh scale usage at a Rest Area should be restricted to truckers only. Public use of weigh scales could become a nuisance by people leaving garbage, dumping ashtrays and starting fires.
- A multi-use Rest Area would require that parking areas be designated for the various users, in order to separate truckers from others.

- Highway #43 in Grande Prairie has experienced trucks crossing the median to get to a Rest Area. At night they leave headlights on causing confusion to oncoming traffic (AMA).
- There will be conflicts between different market groups and we strongly suggest caution be exercised in attempting to incorporate joint uses amongst the different groups.
- Appearance of weigh scale facilities may have to be changed re: market attractiveness for the general traveling public.
- Concern for tourism facility use and accommodating large trucks; not compatible for Grande Cache.

Infrastructure, Maintenance and Enforcement

- Telephone required.
- Security lighting is required.
- Facilities should be geared to long haulers. Certainly there is a need. Bear Hills is a good example of a well-serviced, accessible Rest Area site.
- Weigh scales: A personal comment that RCMP traffic units could be stationed in the weigh scales and staffing could provide policing, travel information, assistance, etc.

Alberta Economic Development

- The purpose of a Rest Area needs to be clearly defined. Highway travelers stop for different purposes and intents. The level of service and amenities that are provided will be strongly influenced by the type of market or user group. A Rest Area could be as simple as a pull-off or as elaborate as a full commercial area. The intent of the stop will clearly dictate the types of services that would be required by the traveler.
- Suggested categories of Rest Areas and 'pull-off/stopping areas' include:
- Rest areas established by the province, which may have a recreational component, associated with them (e.g., picnic areas). Examples include the Edson, Wetaskiwin and Dixon/Stephenson (near Airdrie-Crossfields) Rest Areas.
- Private sector/commercial areas, which act as stopping areas. Examples include 'gasoline alley' near Red Deer, 'Niton Junction' along Highway #16 and 'Deadman's Flats' near Canmore.
- Visitor information centres along the highway. Examples include locations at Milk River, Canmore, Crowsnest Pass and Lloydminster.
- Interpretive stops — these are areas along the highway where interpretive signing has been erected along with a pull-off area.

- Provincial/municipal recreation areas located along the highways — some of these were former Alberta Infrastructure campgrounds.
- Information pull-off areas that have been established over time on a random basis (e.g., information parking for recreational activities). An example of this includes an area east of Canmore.

Timing of Construction

- Stakeholder comments indicate more urgent need for early construction of Rest Areas.
- Some concern that Safety Rest Area construction will be low priority compared to the provincial and regional highway demands.

6.6 *Strategic Safety Rest Area Location Listing*

Location estimates are based on stakeholder feedback and areas in the province where major resource activities are occurring. These are not intended to be precise, but to demonstrate an order of magnitude in relationship to the overall guideline needs. Control Sections are approximate only. Each highway will require a specific assessment to verify site locations, layouts and costs.

6.6.1 Safety Rest Area Descriptions

6.6.1.1 Peace Region

Peace Region					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removeal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355	0	0	20	Total	Priority
P-001	35	35:18	NB	450	1					1	245	0	-	-	-	245	C
P-002	35	35:16	SB	1,200	1					1	245	-	-	-	-	245	C
P-003	58	58:04	WB	690	1					1	245	-	-	-	-	245	A
P-004	58	58:06	EB	760	1					1	245	-	-	-	-	245	A
P-005	58	58:10	WB	230	1					1	245	-	-	-	-	245	A
P-006	58	58:10	EB	230	1					1	245	-	-	-	-	245	A
P-007	35	35:10	SB	1,130	1					1	245	-	-	-	-	245	A
P-008	35	35:10	NB	1,130	1					1	245	-	-	-	-	245	A
P-009	35	35:08	SB	1,250	1					1	245	-	-	-	-	245	A
P-010	35	35:08	NB	1,250	1					1	245	-	-	-	-	245	A
P-011	88	88:14	SB	170	1					1	245	-	-	-	-	245	C
P-012	88	88:14	NB	170	1					1	245	-	-	-	-	245	C
P-013	986	986:02	WB	570	1					1	245	-	-	-	-	245	A
P-014	986	986:01	WB	770	1					1	245	-	-	-	-	245	B
P-015	986	986:01	EB	770	1					1	245	-	-	-	-	245	B
P-016	2	2:68	SB	2,440	1					1	245	-	-	-	-	245	A
P-017	88	88:08	NB	560	1					1	245	-	-	-	-	245	A
P-018	88	88:04	NB	590	1					1	245	-	-	-	-	245	**A**
P-019	88	88:04	SB	590	1					1	245	-	-	-	-	245	A
P-020	750	750:02/04	SB	1,260	1					1	245	-	-	-	-	245	**A**
P-021	2	2:52	WB	3,690		1				1	-	355	-	-	-	355	A
P-022	2	2:50	EB	2,120	1					1	245	-	-	-	-	245	A
P-023	33	33:14	SB	620	1					1	245	-	-	-	-	245	A
P-024	33	33:12	NB	760	1					1	245	-	-	-	-	245	A
P-025	32	32:12	SB	760	1					1	245	-	-	-	-	245	A
P-026	43	43:04	WB	4,648				1		1	-	-	-	735	-	735	A
P-027	43	43:06	EB	4,170				1		1	-	-	-	735	-	735	A
2-2.1	43	43:06	WB	N/A	Replaced by P-026/027				1	1					20	20	A
2-3.2	43	43:06	EB	N/A	Replaced by P-026/027				1	1					20	20	A
P-028	43	43:10	NB	3,718			1			1	-	-	1,045		-	1,045	A
P-029	43	43:10	SB	3,718			1		1	2	-	-	1,190	-	20	1,210	A
3-1.1	43	43:08	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-1.2	43	43:08	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-2.1	43	43:08	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-2.2	43	43:08	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-4.1	43	43:10	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-4.2	43	43:10	SB	N/A	Replaced by P-028/029				1	1					20	20	A
3-5.1	43	43:10	NB	N/A	Replaced by P-028/029				1	1					20	20	A
3-5.2	43	43:10	SB	N/A	Replaced by P-028/029				1	1					20	20	A
P-030	43	43:12	WB	4,355	Leave as is					-	-	-	-	-	-	-	-
P-031	43	43:12	EB	4,355			1			1	-	-	1,190	-	-	1,190	A
P-032	43	43:12	WB	4,355	Completed					-	-	-	-	-	-	-	-
4-1.2	43	43:12	EB	N/A	Replaced by P-031/032				1	1					20	20	A
4-2.1	43	43:12	WB	N/A	Replaced by P-031/032				1	1					20	20	A
P-033	40	40:40	SB	1,064	1					1	245	-	-	-	-	245	C
P-034	40	40:38	NB	990	1					1	245	-	-	-	-	245	C
P-035	40	40:32	SB	760	1					1	245	-	-	-	-	245	C
P-036	43	43:06	NB	4,170	Existing Rest Area					-	-	-	-	-	-	-	-

P-001 - Hwy#35, CS 35:18, Northbound [Traffic Volume 450 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-002 - Hwy#35, CS 35:18, Southbound [Traffic Volume 1,200 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-003 - Hwy#58, CS 55:04, Westbound [Traffic Volume 690 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-004 -Hwy#58, CS 58:06, Eastbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-005 - Hwy#58, CS 58:10, Westbound [Traffic Volume 230 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-006 - Hwy#58, CS 58:10, Eastbound [Traffic Volume 230 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-007-Hwy#35, CS 35:10, Southbound [Traffic Volume 1,130 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-008 - Hwy#35, CS 35:10, Northbound [Traffic Volume 1,130 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-009 - Hwy#35, CS 35:08, Southbound [Traffic Volume 1,250 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-010 - Hwy#35, CS 35:08, Northbound [Traffic Volume 1,250 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-011 - Hwy#88, CS 88:14, Southbound [Traffic Volume 170 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-012 - Hwy#88, CS 88:14, Northbound [Traffic Volume 170 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-013 - Hwy#986, CS 986:02, Westbound [Traffic Volume 570 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-014 -Hwy#986, CS 986:01, Westbound [Traffic Volume 770 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-015 - Hwy#986, CS 986:01, Eastbound [Traffic Volume 770 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-016 - Hwy#2, CS 2:68, Southbound [Traffic Volume 2,440 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-017 - Hwy#88, CS 88:08, Northbound [Traffic Volume 560 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-018 - Hwy#88, CS 88:04, Northbound [Traffic Volume 590 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-019 - Hwy#88, CS 88:04, Southbound [Traffic Volume 590 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-020 - Hwy#750, CS 750:02/04, Northbound [Traffic Volume 1,260 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-021 - Hwy#2, CS 2:52, Westbound [Traffic Volume 3,690 WAADT] F-2.3.2 Type L(ii)

No site data or observations available

P-022 - Hwy#2, CS 2:50, Eastbound [Traffic Volume 2,120 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-023 - Hwy#33, CS 33:14, Southbound [Traffic Volume 620 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-024 - Hwy#33, CS 33:12, Northbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-025 - Hwy#32, CS 32:12, Southbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-026 - Hwy#43, CS 43:04, Westbound [Traffic Volume 4,648 WAADT] F-2.1.1 Design

Originally referenced as RST 2-1.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Coordinate with Goodwin & Debolt access.

The existing RST tagged as 2-2.1 in the above mentioned report should be removed when P-026 is completed.

P-027 - Hwy#43, CS 43:06, Eastbound [Traffic Volume 4,170 WAADT] F-2.1.1 Design

Originally referenced as RST 2-1.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Coordinate with Goodwin & Debolt access.

The existing RST tagged as 2-3.2 in the above mentioned report should be removed when P-027 is completed.

P-028 - Hwy#43, CS 43:10, Northbound [Traffic Volume 3,718 WAADT] F-2.1.2 Design

Originally referenced as RST 3-3.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade and stage existing RST, address school bus issue.

The existing RSTs tagged as 3-1.1, 3-2.1, 3-4.1, and 3-5.1 in the above mentioned report should be removed when P-028 is completed.

P-029 - Hwy#43, CS 43:10, Southbound [Traffic Volume 3,718 WAADT] F-2.1.2 Design

Originally referenced as RST 3-3.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replace and stage existing RST.

The existing RSTs tagged as 3-1.2, 3-2.2, 3-4.2, and 3-5.2 in the above mentioned report should be removed when P-029 is completed.

P-030 - Hwy#43, CS 43:12, Westbound [Traffic Volume 4,355 WAADT]

Originally referenced as RST 4-1.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

P-031 - Hwy#43, CS 43:12, Eastbound [Traffic Volume 4,355 WAADT] F-2.1.2 Design

Originally referenced as RST 4-2.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replaces existing RST, locate at gravel pit?

The existing RSTs tagged as 4-1.2 and 4-4.2 in the above mentioned report should be removed when P-031 is completed.

P-032 - Hwy#43, CS 43:12, Westbound [Traffic Volume 4,355 WAADT] (Completed)

Originally referenced as RST 4-3.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Construction has been completed.

The existing RST tagged as 4-2.1 and 4-4.2 in the above mentioned report should have been removed when P-032 was completed, or should be removed if still existing.

P-033 - Hwy#40, CS 40:40, Southbound [Traffic Volume 1,064 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-034 - Hwy#40, CS 40:38, Northbound [Traffic Volume 990 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-035 - Hwy#40, CS 40:32, Southbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

No site data or observations available

P-036 - Hwy#43, CS 43:06, Northbound [Traffic Volume 4,170 WAADT]

Existing Rest Area

6.6.1.2 North Central Region

North Central					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
NC-001	63	63:06	SB	2,340		1				1		134				134	C
NC-002	63	63:06	NB	2,340		1				1		121				121	C
NC-003	881	881:22	SB	380	1					1	209					209	B
NC-004	881	881:21	NB	220	1					1	209					209	B
NC-005	813	813:08	NB	240	1					1	294					294	B
NC-006	813	813:04	SB	550	1					1	484					484	B
NC-007	44	44:04	SB	1,820						0						-	C
NC-008	32	32:12	NB	760	1					1	231					231	A
NC-009	43	43:14	WB	4,804	Completed					0						-	-
NC-010	43	43:14	EB	4,804	Completed					0						-	-
4-4.1	43	43:14	WB	N/A	Replaced with P-031/32				1	1					20	20	A
4-4.2	43	43:14	EB	N/A	Replaced with P-031/32				1	1					20	20	A
NC-011	32	32:10	SB	1,410	1					1	267					267	A
NC-012	32	32:08	NB	1,057	1					1	230					230	A
NC-013	43	43:18	WB	4,824			1			1			1,045			1,045	A
NC-014	43	43:18	EB	4,824			1		1	2			1,190			1,190	A
5-1.1	43	43:16	EB	N/A	Remove with '98 twinning				1	1					20	20	A
5-2.2	43	43:16	EB	N/A	Replaced with NC-013/014				1	1					20	20	A
NC-015	16	16:10	WB	6,169				1		1				410		410	B
NC-016	16	16:10	EB	6,169				1		1				410		410	B
NC-017	16	16:06	EB	7,190	Existing Rest Area					0						-	-
NC-018	47	47:06	NB	730	1					1	347					347	A
NC-019	16	16:04	WB	5,120				1		1				340		340	B
NC-020	16	16:02	WB	4,990	Leave as is					0						-	-
NC-021	16	16:04	EB	5,120				1		1				410		410	B
1.-3.3	16	16:04	EB	N/A	Replaced with NC-021				1	1					20	20	B
NC-022	16	16:00	WB	3,580				1		1				410		410	B
NC-023	16	16:00	EB	3,580				1		1				410		410	B
1-1.3	16	16:00	EB	N/A	Replaced with NC-023				1	1							B
NC-024	16	16:14	WB	13,100			1			1			1170			1,170	B
NC-025	16	16:14	EB	13,100			1			1			1,170			1,170	B
NC-026	36	36:22	NB	1,050	1					1	245					245	B
NC-027	14	14:06	EB	4,950						0						-	B
NC-028	40	40:32	NB	760	1					1	236					236	C

NC-001- Hwy#63, CS 63:06, Southbound [Traffic Volume 2,340 WAADT] (F-2.3.2 Type L(ii)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 63:03 is a logging route with 2001 traffic volumes of 3,657 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(ii). The estimated cost to construct the proposed RST is $134,000.00."

NC-002 - Hwy#63, CS 63:06, Northbound [Traffic Volume 2,340 WAADT] (F-2.3.2 Type L(ii)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 63:03 is a logging route with 2001 traffic volumes of 3,657 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(ii). The estimated cost to construct the proposed RST is $121,000.00."

NC-003 - Hwy#881, CS 881:22, Southbound [Traffic Volume 348 WAADT] (F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 881:22 is a logging route with 2001 traffic volumes of 542 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $209,000.00."

NC-004 - Hwy#881, CS 881:21, Northbound [Traffic Volume 220 WAADT] (F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 881:21 is a logging route with 2001 traffic volumes of 392 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $209,000.00."

NC-005 - Hwy#813, CS 813:08, Northbound [Traffic Volume 240 WAADT] (F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 813:08 is a logging route with 2001 traffic volumes of 317 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $294,000.00."

NC-006 - Hwy#813, CS 813:08, Southbound [Traffic Volume 240 WAADT] (F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 813:08 is a logging route with 2001 traffic volumes of 701 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $484,000.00."

NC-007 - Hwy#44, CS 44:04, Southbound [Traffic Volume 1,820 WAADT] (Type F-2.3.3 DESIGN)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 44:04 is a future high load corridor with 2001 traffic volumes of 2,927 AADT, the layout design configuration to be used [ ] is Type (F-2.3.3 DESIGN). The estimated cost to construct the proposed RST is $288,000.00."

NC-008 - Hwy#32, CS 32:12, Northbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 32:12 is a logging route with 2001 traffic volumes of 909 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $231,000.00."

NC-009 - Hwy#43, CS 43:14, Westbound [Traffic Volume 4,804 WAADT] (Completed)

Originally referenced as RST 4-5.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Construction has been completed.

NC-010 - Hwy#43, CS 43:14, Eastbound [Traffic Volume 4,804 WAADT] (Completed)

Originally referenced as RST 4-5.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Construction has been completed.

NC-011 - Hwy#32, CS 32:10, Southbound [Traffic Volume 1,410 WAADT] F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 32:10 is a logging route with 2001 traffic volumes of 2,404 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $267,000.00."

NC-012 - Hwy#32, CS 32:10, Northbound [Traffic Volume 1,057 WAADT] F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 32:10 is a logging route with 2001 traffic volumes of 1,626 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(ii). The estimated cost to construct the proposed RST is $230,000.00."

NC-013 - Hwy#43, CS 43:18, Westbound [Traffic Volume 4,828 WAADT] (F-2.1.2 Design)

Originally referenced as RST 5-3.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

NC-014 - Hwy#43, CS 43:18, Eastbound [Traffic Volume 4,828 WAADT] (F-2.1.2 Design)

Originally referenced as RST 5-3.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replaces existing RST.

The existing RSTs tagged as 5-1.1 and 5-2.2 in the above mentioned report should be removed when NC-014 is completed.

NC-015 & NC-016 - Hwy#16, CS 16:10, Westbound/Eastbound [Traffic Volume 6,169 WAADT] (2 @F.2.1.1)

Originally referenced as RST 3-1.1 and 3-1.2 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760).

New Installation: Meets 30-minute westerly and easterly travels time or midpoint between Niton Junction and Entwistle and also provides an additional rest stop from the exit from Edmonton or the Highway #43 location.

RST 3-1.1 and 3-1.2 eliminates the need for previously identified turnouts in the December 1997 Highway Report as follows:

- 16:08, km 12 unsuitable due to proximity to Niton Junction existing services and the existing provincial recreation area
- 16:08, km 2 location before SR 753 south form Cynthia and Lodgepole unsuitable due to low terrain
- 16:10, km 9 unsuitable due to proximity to Highway #22 and access concerns
- 16:12, km 42 west of Gainford unsuitable due to proximity to existing commercial highway services and topographic concerns

The December 1997 Highway #16 Report suggested turnouts on Highway #16 to resolve trucks parking on shoulders at intersections. However, the new spacing and functional design F-2.4d should better accommodate long-haul truck traffic. Local truck traffic accessing Highway #16 should be accommodated with secondary road parking turnouts in advance of Highway #16 access. Trucks are required to check loads before accessing the primary highway and may need parking turnouts to do so without compromising the safety of access to Highway #16.

NC-017 - Hwy#16, CS 16:06, Eastbound [Traffic Volume 7,190 WAADT]

Existing Rest Area

NC-018 - Hwy#47, CS 47:06, Northbound [Traffic Volume 730 WAADT] F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 47:06 is a logging route with 2001 traffic volumes of 3,657 AADT, the layout design configuration to be used [ ] is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $347,000.00."

NC-019 - Hwy#16, CS 16:04, Westbound [Traffic Volume 5,120 WAADT] (F.2.1.1)

Originally referenced as RST 1-3.1 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Some upgrading.

RST 1-3.1

Existing RST [16:04, km 31]: Meets 30-minute westerly travel time or midpoint between Edson and Hinton. Existing parking is acceptable, and decel/accel lanes are in place, although the whole facility may not fully meet F-2.4d design. Lighting and telephone is required and parking size and travel lanes may need modification. For budget purposes, the modified allowance of $265,000 has been identified; however, actual costs should be below this number.

This location eliminates the need for previously identified turnouts in the December 1997 Highway Report, at 16:02, km 40 and km 6.5, due to their proximity to Hinton and the 30-minute travel time spacing.

NC-020 - Hwy#16, CS 16:02, Westbound [Traffic Volume 4,990 WAADT]

Originally referenced as RST 1-2.1 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Leave as is.

RST 1-2.1

Existing RST [16:02, km 7]: Although this turnout does not meet the functional design F-2.4d, a larger paved parking area exists and is still serviceable. Rather than removing it at this time, the use can be reevaluated later on in its life cycle.

NC-021 - Hwy#16, CS 16:04, Eastbound [Traffic Volume 5,120 WAADT] (F.2.1.1)

Originally referenced as RST 1-3.2 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Opposite side to 1-3.1 (NC-019).

RST 1-3.2

New Installation: Meets 30-minute easterly travel time or midpoint between Hinton and Edson and compliments RST 1-3.1. The location's terrain is more suitable at the proposed location.

RST 1-3.2 replaces the existing substandard RST 1-3.3, which should be removed when NC-021 is completed

NC-022 - Hwy#16, CS 16:00, Westbound [Traffic Volume 3,580 WAADT] (F.2.1.1)

Originally referenced as RST 1-1.1 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Combine historic site.

RST 1-1.1

New Installation: meets 30-minute travel time from Hinton or Jasper. The location and facility incorporates the existing historical sites and eliminating the substandard RST 1-1.3 and Historic site pull-offs.

These installations eliminate the need for any further turnouts previously identified in the December 1997 Highway Report [km 40] by meeting the spacing factors, resolving unsuitable terrain conditions and locating in close proximity with an existing private campground [16.02, km 48].

NC-023 - Hwy#16, CS 16:00, Eastbound [Traffic Volume 3,580 WAADT] (F.2.1.1)

Originally referenced as RST 1-1.2 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Combine historic site.

RST 1-1.2

New Installation: meets 30-minute travel time from Hinton or Jasper. The location and facility incorporates the existing historical sites and eliminating the substandard RST 1-1.3 and Historic site pull-offs.

These installations eliminate the need for any further turnouts previously identified in the December 1997 Highway Report [km 40] by meeting the spacing factors, resolving unsuitable terrain conditions and locating in close proximity with an existing private campground [16.02, km 48].

NC-024 - Hwy#16, CS 16:14, Westbound [Traffic Volume 13,100 WAADT] (F-2.1.2 Design)

Originally referenced as RST 4-1.1 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760). Move N/S Corridor #6-1.1 to this site.

RST 4-1.1

New installation: Meets 30-minute travel time westerly from Edmonton and additionally provides a rest stop prior to accessing Highway #43. Therefore, an RST #6-1.1 identified in the North/South Trade Corridor Strategy could be moved to the Highway #16 location and satisfy a greater number of travelers. The size would be a "full build" concept.

NC-025 - Hwy#16, CS 16:14, Eastbound [Traffic Volume 13,100 WAADT] (F-2.1.2 Design)

Originally referenced as RST 6-2.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). New RST prior to City of Edmonton Hwy. #16.

RST 6-2.2

New installation: Meets 30-minute travel time easterly from Entwistle and provides a rest stop prior to accessing the City of Edmonton for travelers to orientate themselves for the balance of their trip. The size would be a "full build" concept and has been budgeted for in the North/South Trade Corridor plan.

RST 4-1.1 and 6-2.2 eliminates the need for previously identified turnouts in the December 1997 Highway Report as follows:

- 16:12, km 22 unsuitable due to proximity to existing commercial highway services, access and utility development
- 16:12, km 3 and 4 [Smithfield and Manly Corner] unsuitable due to proximity to existing commercial highway services, access, congestion and safety concerns and should be removed
- 16:12, km 3 [west of #43 and south side of #16], unsuitable due to access and safety concerns; currently used for itinerate parking and should be closed
- 16:14, km 17 [north of Stony Plain], unsuitable due to existing development, service roads and topographical constraint

NC-026 - Hwy#36, CS 36:22, Northbound [Traffic Volume 1,050 WAADT] F-2.3.2 Type L(i)

No site data or observations available

NC-027 - Hwy#14, CS 14:06, Eastbound [Traffic Volume 4,950 WAADT] (Type F-2.3.3 Design)

Staging area East of Edmonton. No site data or observations available

NC-028 - Hwy#40, CS 40:32, Northbound [Traffic Volume 760 WAADT] F-2.3.2 Type L(i)

Summarized from ARA Engineering report: "Based on design bulletin #5/2001 "Design of Roadside Turnouts on Log Haul Routes [ ] and the fact that Hwy 40:32 is a logging route with 2001 traffic volumes of 945 AADT, the layout design configuration to be used is F-2.3.2 Type L(i). The estimated cost to construct the proposed RST is $236,000.00."

6.6.1.3 Central Region

Central					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
C-001	11	11:06	WB	990	1					1	245					245	A
C-002	11	11:06	EB	990	1					1	245					245	A
C-003	22	22:26	SB	1,730	1					1	245					245	A
C-004	22	22:24	NB	2,089	1					1	245					245	A
C-005	22	22:20	SB	1,948	1					1	245					245	A
C-006	22	22:20	NB	1,948	1					1	245					245	A
C-007	2	2:30	SB	20,240			1			1	-		1,170			1,170	A
7-1.1	2	2:30	NB	N/A	Replaced by C-007				1	1					20	20	A
7-2.2	2	2:30	SB	N/A	Replaced by C-007				1	1					20	20	A
7-4.2	2	2:30	SB	N/A	Replaced by C-007				1	1					20	20	A
C-008	2	2:28	NB	18,540	Existing Rest Area					0	-					-	-
C-009	2	2:26	SB	17,580			1			1	-		1,045			1,045	A
C-010	2	2:26	NB	17,580			1		1	2	-		1,190			1,190	A
8-1.1	2	2:28	NB	N/A	Replaced by C-010				1	1					20	20	A
C-011	2	2:24	SB	26,632	Leave as is					0	-					-	-
C-012	2	2:24	NB	26,632	Existing Rest Area					0	-					-	-
C-013	2	2:24	NB	26,632	Leave as is					0	-					-	-
C-014	2	2:24	SB	26,632	Leave as is					0	-					-	-
C-015	2	2:24	NB	26,632	Leave as is					0	-					-	-
8-5.2	2	2:24	SB	N/A	Remove				1	1					20	20	A
C-016	2	2:22	SB	25,064	Existing Rest Area					0	-					-	-
C-017	16	16:22	WB	7,482				1		1	-			735		735	C
C-018	16	16:22	EB	7,482				1		1	-			735		735	C
5-2.1	16	16:22	WB	N/A	Remove, not required				1	1					20	20	C
6-1.2	16	16:26	EB	N/A	Remove, not required				1	1					20	20	C
C-019	16	16:28	WB	5,089				1		1	-			735		735	B
C-020	16	16:28	EB	5,089				1		1	-			735		735	B
C-021	41	41:20/41:22	NB	1,863	1					1	245					245	C
C-022	36	36:18	NB	965	1					1	245					245	B
C-023	36	36:12	SB	1,000	1					1	245					245	C
C-024	36	36:12	NB	1,000	1					1	245					245	C
C-025	*2*	*2:24*	*NB*	*26,632*												-	A

C-001 - Hwy#11, CS 11:06, Westbound [Traffic Volume 990 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-002 - Hwy#11, CS 11:06, Eastbound [Traffic Volume 990 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-003 - Hwy#22, CS 22:26, Southbound [Traffic Volume 1,730 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-004 - Hwy#22, CS 22:24, Northbound [Traffic Volume 2,089 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-005 - Hwy#22, CS 22:20, Southbound [Traffic Volume 1,948 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-006 - Hwy#22, CS 22:20, Northbound [Traffic Volume 1,948 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-007 - Hwy#2, CS 2:30, Southbound [Traffic Volume 20,240 WAADT] (F-2.1.2 Design)

Originally referenced as RST 7-3.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replaces existing RST 7-2.2.

The existing RSTs tagged as 7-1.1, 7-2.2 and 7-4.2 in the above mentioned report should be removed when C-007 is completed.

C-008 - Hwy#2, CS 2:28, Northbound [Traffic Volume 18,540 WAADT]

Existing Rest Area

C-009 - Hwy#2, CS 2:26, Southbound [Traffic Volume 17,580 WAADT] (F-2.1.2 Design)

Originally referenced as RST 8-2.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

C-010 - Hwy#2, CS 2:26, Northbound [Traffic Volume 17,580 WAADT] (F-2.1.2 Design)

Originally referenced as RST 8-2.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replaces existing RST 8-1.1.

The existing RST tagged as 8-1.1in the above-mentioned report should be removed when C-010 is completed.

C-011 - Hwy#2, CS 2:24, Southbound [Traffic Volume 26,632 WAADT]

Originally referenced as RST 8-4.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

C-012 - Hwy#2, CS 2:24, Northbound [Traffic Volume 26,632 WAADT]

Existing Rest Area

C-013 - Hwy#2, CS 2:24, Northbound [Traffic Volume 26,632 WAADT]

Originally referenced as RST 8-5.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

C-014 - Hwy#2, CS 2:24, Southbound [Traffic Volume 26,632 WAADT]

Originally referenced as RST 8-6.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

The existing RST tagged as 8-5.2 in the report mentioned above should be removed.

C-015 - Hwy#2, CS 2:24, Northbound [Traffic Volume 26,632 WAADT]

Originally referenced as RST 8-6.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

C-016 - Hwy#2, CS 2:22, Southbound [Traffic Volume 25,064 WAADT]

Existing Rest Area

C-017 & C-018 - Hwy#16, CS 16:22, Westbound/Eastbound [Traffic Volume 7,482 WAADT] (2 @F-2.1.1 Design)

Originally referenced as RST 5-1.1 and 5-1.2 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760).

New Installations: Meets 30-minute travel time and midpoint westerly and easterly between Edmonton and Vegreville. Combine with the existing Historic Sites to create multi-purpose use. Geotechnical conditions will influence exact location and design factors.

RST 5-1.1 and 5-1.2 eliminates the need for RST 5-2.1 as a duplicate facility.

C-019 & C-020 - Hwy#16, CS 16:28, Westbound/Eastbound [Traffic Volume 5,089 WAADT] (2 @F-2.1.1 Design)

Originally referenced as RST 6-2.1 and 6-2.2 in the February 1999 "Yellowhead Highway #16 Roadside Turnouts" study (Report R-760).

New installations: Meets approximately the 30-minute travel time and midpoint westerly and easterly between Vegreville and Lloydminster. However, locating these RSTs considers a balance in relationship to commercial services available at Innisfree, Minburn, Mannville, and Vermilion.

The existing RST tagged as 6-1.2 in the report mentioned above should be removed. Not required due to existing commercial services at Innisfree and new installations near Mannville of RST 6-2.1 and 6-2.2 (C-019 and C-020).

C-021 - Hwy#41, CS 41:20/22, Northbound [Traffic Volume 1,863 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-022 - Hwy#36, CS 36:18, Northbound [Traffic Volume 965 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-023 - Hwy#36, CS 36:12, Southbound [Traffic Volume 1,000 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-024 - Hwy#36, CS 36:12, Northbound [Traffic Volume 1,000 WAADT] F-2.3.2 Type L(i)

No site data or observations available

C-025 - Hwy#2, CS 2:24, Northbound [Traffic Volume 26,632 WAADT] (F-2.3.3 Design)

Staging area East of Red Deer. No site data or observations available

6.6.1.4 Southern Region

Southern					Class of SRA						$ (000) Estimate						
		Location			F.2.3.2		F.2.1.2	F.2.1.1	Removal	Total	F.2.3.2 L(i)	F.2.3.2 L(ii)	F.2.1.2	F.2.1.1	Remove		
SRA #	Hwy #	Approximate CS	Direction	WAADT	L(i)	L(ii)					245	355			20	Total	Priority
S-001	2	2:20	SB	19,550			1			1			1,045			1,045	A
S-002	2	2:20	NB	20,660			1			1			1,170			1,170	A
9-1.1	2	2:22	NB	N/A	Replaced by S-002				1	1					20	20	A
S-003	2	2:18	SB	25,690	Existing Rest Area					-						-	-
1-1.1	1	1:02	WB	N/A	Substandard - Remove				1	1					20	20	B
S-004	1	1:04	WB	16,342	Leave as is-reevaluate					-						-	B
S-005	1	1:04	EB	16,342	Leave as is-reevaluate					-						-	B
S-006	1	1:06	WB	16,529			1			1			1,045			1,045	B
S-007	1	1:08	EB	18,620			1			1			1,170			1,170	B
S-008	1	1:12	WB	11,770	Leave as is-reevaluate					-						-	C
S-009	1	1:10	EB	13,675						0						-	A
S-010	2	2:12	SB	10,330			1			1			1,170			1,170	A
S-011	2	2:12	NB	10,330			1			1			1,170			1,170	A
S-012	2	2:10	SB	6,969				1		1				600		600	C
S-013	2	2:10	NB	6,969				1		1				600		600	C
11-1.2	2	2:10	SB	N/A	Replaced by S-012				1	1					20	20	C
S-014	2	2:08	NB	5,649	Existing Rest Area					-						-	-
S-015	2	2:08	NB	5,649				1		1				600		600	C
S-016	3	3:02	WB	5,636	Leave as is					-						-	-
S-017	3	3:02	EB	5,636	Leave as is					-						-	-
S-018	3	3:04	WB	3,615			1			1			1,170			1,170	B
S-019	3	3:02	EB	5,636	Leave as is					-						-	-
S-020	3	3:04	EB	3,615			1			1			1,170			1,170	B
2-1.1	3	3:06	WB	N/A	Remove, not required				1	1					20	20	B
S-021	3	3:08	EB	14,110	Leave as is					-						-	-
S-022	4	4:04	SB	2,129	Completed					-						-	-
S-023	4	4:04	NB	2,129	Completed					-						-	-
12-3.2	4	4:06	SB	N/A	Remove with S-022				1	1					20	20	C
12-4.1	4	4:06	NB	N/A	Remove with S-023				1	1					20	20	C
12-4.2	4	4:06	SB	N/A	Remove with S-022				1	1					20	20	C
13-1.1	4	4:02	NB	N/A	Remove with S-023				1	1					20	20	C
S-024	1	1:14	WB	6,262			1			1			1,045			1,045	C
S-025	1	1:14	EB	6,262			1			1			1,045			1,045	C
S-026	1	1:16	EB	6,348	Leave as is - reeval with S-025					-						-	-
S-027	1	1:16	WB	6,348	Leave as is - reeval with S-024					-						-	-
S-028	1	1:16	WB	6,348	Existing Rest Area					-						-	-
S-029	1	1:16	EB	6,348	Leave as is -reevaluate					-						-	-
S-030	1	1:16	WB	6,348	Leave as is -reevaluate					-						-	-
S-031	1	1:18	EB	6,000	Leave as is -reevaluate					-						-	-
S-032	1	1:18	WB	6,000	Leave as is -reevaluate					-						-	-
S-033	1	1:18	EB	5,490	Leave as is					-						-	-
S-034	1	1:18	WB	5,490	Leave as is -reevaluate					-						-	-
S-035	1	1:18	WB	5,490	Leave as is-future upgrade (B)					-						-	-
S-036	1	1:20	EB	7,510	Leave as is -reevaluate					-						-	-
S-037	1	1:20	WB	7,510	Leave as is -reevaluate					-						-	-
S-038	3	3:14	WB	2,784				1		1				735		735	C
S-039	3	3:14	EB	2,784				1		1				735		735	-
S-040	1	1:22	WB	4,690	Completed					-						-	-
S-041	1	1:22	WB	4,690	Existing Rest Area					-						-	-
S-042	1	1:22	EB	4,690	Substandard - Sask Responsibility					-						-	-
S-043	1	1:02	WB	16,580			1		2	3			1,170			1,170	B

S-001 - Hwy#2, CS 2:20, Southbound [Traffic Volume 19,550 WAADT] (F-2.1.2 Design)

Originally referenced as RST 9-2.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

S-002 - Hwy#2, CS 2:20, Northbound [Traffic Volume 20,660 WAADT] (F-2.1.2 Design)

Originally referenced as RST 9-2.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Replaces existing RST 9-1.1.

The existing RST tagged as 9-1.1in the report mentioned above should be removed when S-002 is completed.

S-003 - Hwy#2, CS 2:18, Southbound [Traffic Volume 25,690 WAADT]

Existing Rest Area

S-004 - Hwy#1, CS 1:04, Westbound [Traffic Volume 16,342 WAADT]

Originally referenced as RST 1-3.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is and re-evaluate.

RST 1-3.1
Subsection 1:04 (Video Count 1:05:16 to 1:05:59) at kilometre seven, four kilometres east of Jct. Hwy. #40. An existing Safety Rest Area, serving westbound traffic on the north side of Highway #1, under a 240 kV power line with a parallel lane, two separate parking lanes and a call box. Although substandard to new design configurations, this site is functional for the interim period before new Safety Rest Areas are created.

Recommend leaving as is until new Safety Rest Areas have been constructed. Reevaluate the need in relationship to the unique geographic area, winter storm refuge and tourist activities to determine whether the existing should be removed or redeveloped.

S-005 - Hwy#1, CS 1:04, Eastbound [Traffic Volume 16,342 WAADT]

Originally referenced as RST 1-3.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is and re-evaluate.

RST 1-3.2
Subsection 1:04 (Video Count 57:37 to 58:59) at kilometre seven, four kilometres east of Jct. Hwy. #40. An existing Safety Rest Area, on the south side of Highway #1 with parallel lane and two separate parking lanes. This is acting as a Rest Area for various eastbound users. Although substandard to new design configurations, this site is functional for the interim period before new Safety Rest Areas are created.

Recommend leaving as is until new Safety Rest Areas have been constructed. Reevaluate the need in relationship to the unique geographic area, winter storm refuge and tourist activities to determine whether the existing should be removed or redeveloped.

S-006 - Hwy#1, CS 1:06, Westbound [Traffic Volume 16,529 WAADT] (F-2.1.2 Design)

Originally referenced as RST 2-1.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Upgrade existing to new standards.

RST 2-1.1
Subsection 1:06 (Video Count 53:51 to 57:37) at kilometre five, at top of Scott Lake Hill. This is an existing median separated (rural ditch) litter turnout serving westbound traffic. It is located on top of a hill with telephone, including acceleration/deceleration geometry, long downgrade with truck climbing lane to the west.

The trucking industry as well as general public uses this location extensively. It meets the 30-minute travel time spacing from Calgary and supplements the commercial services at Highway #22. The MD of Bighorn reports that this site has been considered for future highway commercial services.

Recommend that a large F-2.1.2 Design Safety Rest Area be developed at this location. It is a former service station on the north side of Highway #1, which may require environmental analysis as part of redevelopment.

S-007 - Hwy#1, CS 1:08, Eastbound [Traffic Volume 18,620 WAADT] (F-2.1.2 Design)

Originally referenced as RST 2-1.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Upgrade existing to new standards.

RST 2-1.2
Subsection 1:06 (Video Count 47:41 to 53:50) at kilometre nineteen, one kilometre west of Jct. Hwy #22. This is an existing litter turnout, median separated with tapers at entrance and exit, serving eastbound traffic. It is located in close proximity to the Highway #22 interchange and could interfere with traffic weave close to the intersection.

The spacing criteria are somewhat farther than the 30-minute interval from Canmore; however, RST 1-3.2 and other private service areas provide a stopping opportunity before this location. This location provides the opportunity for traffic to stop before either entering Highway #22 or proceeding to Calgary. The area is open and lends itself to additional construction. Commercial service facilities on the north side of Highway #1 provide Rest Area opportunity for westbound traffic.

Recommend that a large F-2.1.2 Design Safety Rest Area upgrade the current facility for eastbound traffic, by moving it west of the current location to improve Highway #1 and #22 movements.

S-008 - Hwy#1, CS 1:12, Westbound [Traffic Volume 11,770 WAADT]

Originally referenced as RST 3-1.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is and re-evaluate with RST 3-2.1 (S-024).

RST 3-1.1

Subsection 1:12 at kilometre four, 3-4 kilometre's east of Strathmore VIS, westbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design. This existing location is well within the 30-minute travel time of Calgary and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for this location once RST 3-2.1(S-024) and 3-2.2 (S-025) are constructed.

S-009 - Hwy#1, CS 1:10, Eastbound [Traffic Volume 13,675 WAADT] (F-2.3.3 Design)

Staging area East of Calgary. No site data or observations available

S-010 - Hwy#2, CS 2:12, Southbound [Traffic Volume 10,330 WAADT] (F-2.1.2 Design)

Originally referenced as RST 10-1.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). New RST. Coordinate location with historic sites.

S-011 - Hwy#2, CS 2:12, Northbound [Traffic Volume 10,330 WAADT] (F-2.1.2 Design)

Originally referenced as RST 10-1.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). New RST. Coordinate location with historic sites.

S-012 - Hwy#2, CS 2:10, Southbound [Traffic Volume 6,969 WAADT] (F-2.1.1 Design)

Originally referenced as RST 11-2.2 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

The existing RST tagged as 11-1.2 in the above mentioned report should be removed when S-012 is completed.

S-013 - Hwy#2, CS 2:10, Northbound [Traffic Volume 6,969 WAADT] (F-2.1.1 Design)

Originally referenced as RST 11-2.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

S-014 - Hwy#2, CS 2:08, Northbound [Traffic Volume 5,649 WAADT]

Existing Rest Area

S-015 - Hwy#2, CS 2:08, Northbound [Traffic Volume 5,649 WAADT] (F-2.1.1 Design)

Originally referenced as RST 12-1.1 in the July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Upgrade existing RST.

S-016 - Hwy#3, CS 3:02, Westbound [Traffic Volume 5,636 WAADT]

Originally referenced as RST 1-1.1 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). Leave as is.

RST 1-1.1

Subsection 3:02 (Video Count 50:32 to 1:03:54) at kilometre 14. Existing roadside litter turnout on north side, opposite RST 1.1.2. Both sites do not meet Safety Rest Area site and adjacent residence location separation criteria. Located in bedrock-controlled topography and alignment.

Recommend both be left 'as is' for continued use as this rather unique portion of Highway #3 does not offer many opportunities for development of pull off sites for slower moving vehicles and RVs. Area is subject to many weather advisories and some highway closures common to roadways through mountain passes.

S-017 - Hwy#3, CS 3:02, Eastbound [Traffic Volume 5,636 WAADT]

Originally referenced as RST 1-1.2 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). Leave as is.

RST 1-1.2

Subsection 3:02 (Video Count 50:32 to 1:03:54) at kilometre 14. Existing roadside litter turnout on north side, opposite RST 1.1.2. Both sites do not meet Safety Rest Areas site and adjacent residence location separation criteria. Located in bedrock-controlled topography and alignment.

Recommend both be left 'as is' for continued use as this rather unique portion of Highway #3 does not offer many opportunities for development of pull off sites for slower moving vehicles and RVs. Area is subject to many weather advisories and some highway closures common to roadways through mountain passes.

S-018 - Hwy#3, CS 3:04, Westbound [Traffic Volume 3,615 WAADT] (F-2.1.2 Design)

Originally referenced as RST 1-2.1 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). New RST.

RST 1-2.1
Subsection 3:04 (Video Count 1:06 to 1:11) at kilometre 11 to 5. New installation proposed as a large size facility to accommodate traffic streams and staging area for winter highway closures in the Crowsnest Pass.

Meets 30-minute travel time from Fort MacLeod and the BC border. The location is situated outside the built up areas of the Crowsnest Pass to the west, and east of the existing VIS facility, located on the south side of Highway #3, one km east of Jct. SR 507. The Crown may control the land. A suitable site is also available on the north side of Highway #3, and can also be considered for westbound traffic today or with four-lane construction as another alternative. Locations separate from VIS facilities were chosen to address AI-TU Inspection Services concerns about mixing location uses, trucks avoiding VIS, and safe operating conditions.

Natural conditions are good, given local terrain, as the location is low and relatively flat, offering some wind / storm protection during local Highway closures. It also offers scenic views and is located away from local points of interest. From an access/egress standpoint, it is considered to be among the better of the few site locations available west of Cowley.

Two timing alternatives should be considered for this location:

1. One Facility
    - Develop RST 1-2.2 as a both directional access Safety Rest Area in an area between the junctions of SR507 and Highway #22 on Highway #3.
    - This should be constructed in a configuration so as to be used as an eastbound facility after four-lane construction is realized.
    - This option is recommended if four-lane highway construction occurs beyond a five-year time frame.
2. Two Facilities
    - Develop RST 1-2.2 as an eastbound only Safety Rest Area in an area between the junctions of SR507 and Highway #22 on Highway #3.
    - Develop RST 1-2.1 as a westbound only Safety Rest Area in an area between the junctions of Highway #22 and SR507 on Highway #3.
    - Both Safety Rest Areas should be constructed in a configuration so as to be used after four-lane construction is realized.

This configuration advances the capital investment before four-lane construction occurs.

S-019 - Hwy#3, CS 3:02, Eastbound [Traffic Volume 5,636 WAADT]

Originally referenced as RST 1-1.3 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). Leave as is.

RST 1-1.3

Subsection 3:02 (Video Count 50:32 to 1:03:54) at kilometre 16. Existing roadside litter barrel and unofficial scenic viewpoint turnout located on south side of Highway #3, on the western approach to Coleman. Site has substandard approaches and is contained inside a bedrock-controlled area located on the outside of a horizontal curve. It is not suitable for larger vehicle use.

Recommend it be left 'as is', since this rather unique portion of Highway #3 does not offer many opportunities for development of pull off sites for slower moving vehicles and RVs. Area is subject to many weather advisories and some highway closures common to roadways through mountain passes.

S-020 - Hwy#3, CS 3:04, Eastbound [Traffic Volume 3,615 WAADT] (F-2.1.2 Design)

Originally referenced as RST 1-2.2 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). New RST, vicinity of existing VIS.

RST 1-2.2

See text *1-2.1* under S-018 above.

RST 2-1.1

Subsection 3:06 (Video Count 44:01 to 44:44) at kilometre 40. Removal is recommended. Site is a substandard litter turnout located on the north side of the highway, 5 km west of Jct. Highway #2. Site does not meet Safety Rest Area site location separation criteria. Alternate facilities are (will be) available in the general area.

S-021 - Hwy#3, CS 3:08, Eastbound [Traffic Volume 14,110 WAADT]

Originally referenced as RST 12-2.2 in July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Leave as is.

S-022 - Hwy#4, CS 4:04, Eastbound [Traffic Volume 2,129 WAADT]

Originally referenced as RST 12-5.2 in July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Completed.

The existing RSTs tagged as 12-3.2 and 12.4.2 in the above mentioned report should have been removed when S-023 is completed, or should be removed now if still existing.

S-023 - Hwy#4, CS 4:04, Eastbound [Traffic Volume 2,129 WAADT]

Originally referenced as RST 12-5.1 in July 1998 "North/South Trade Corridor Roadside Turnouts" study (Report R-750). Completed.

The existing RSTs tagged as 13-1.1 and 12.4.1 in the above mentioned report should have been removed when S-023 is completed, or should be removed now if still existing.

S-024 - Hwy#1, CS 1:14, Westbound [Traffic Volume 6,262 WAADT] (F-2.1.2 Design)

Originally referenced as RST 3-2.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Upgrade existing to new standards.

RST 3-2.1

Subsection 1:14 (Video Count 35:18 to 35:55) at kilometre 17, four kilometres east of Jct. Hwy #561. Existing roadside litter turnout serving westbound traffic with a parallel lane with separate parking lane. This spacing meets the 30-minute travel time criterion before the City of Calgary.

Recommend an upgrading to F-2.1.2 Design Safety Rest Area to meet current design standards. RST 3-2.2 complements service for eastbound traffic.

S-025 - Hwy#1, CS 1:14, Eastbound [Traffic Volume 6,262 WAADT] (F-2.1.2 Design)

Originally referenced as RST 3-2.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Upgrade existing to new standards.

RST 3-2.2

Subsection 1:14 (Video Count 35:18 to 35:55) at kilometre 17, four kilometres east of Jct. Hwy #561. Existing roadside litter turnout serving eastbound traffic with a parallel lane and separate parking lane. Also has a County of Newell information map. This spacing meets the 30-minute travel time criterion after the City of Calgary.

Recommend an upgrading to F-2.1.2 Design Safety Rest Area to meet current design standards. RST 3-1.1 complements service for westbound traffic.

S-026 - Hwy#1, CS 1:16, Eastbound [Traffic Volume 6,348 WAADT]

Originally referenced as RST 4-1.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate with RST 3-2.2 (S-025).

RST 4-1.2

Subsection 1:14 at kilometre 59, 3-4 kilometres west of Junction #56, east bound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a

travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design. This existing design is within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for this location once RST 3-2.1 (S-024) and 3-2.2 (S-025) are constructed.

S-027 - Hwy#1, CS 1:16, Eastbound [Traffic Volume 6,348 WAADT]

Originally referenced as RST 4-2.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate with RST 3-2.1 (S-024).

RST 4-2.1

Subsection 1:16 (Video Count 34:36 to 35:17) at kilometre eight, west of railroad crossing and 10 kilometres east of Jct. Hwy #56. This serves westbound traffic with a parallel lane and separate parking lane. This location is prone to winter highway closures and the location acts as a safe haven.

This existing location is within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for this location once RST 3-2.1 (S-024) and 3-2.2 (S-025) are constructed.

S-028 - Hwy#1, CS 1:16, Westbound [Traffic Volume 6,348 WAADT]

Existing Rest Area

S-029 & S-030 - Hwy#1, CS 1:16, Eastbound/Westbound [Traffic Volume 6,348 WAADT]

Originally referenced as RST 4-3.1 and 4-3.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 4-3.1 & 4-3.2

Subsection 1:16 at kilometre 53, 12 kilometres west of Brooks, west and eastbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design.

These existing locations are within the 30-minute travel time between Safety Rest Areas and service centres. The Provincial Highway Rest Area immediately west of RST 4-3.1 also provides additional service for westbound traffic. The Town of Brooks provides additional service for eastbound traffic. The current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for these locations as traffic warrants and when construction occurs on the highway in the future.

S-031 & S-032 - Hwy#1, CS 1:18, Eastbound/Westbound [Traffic Volume 6,000 WAADT]

Originally referenced as RST 5-1.1 and 5-1.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 5-1.1 & 5-1.2

Subsection 1:18 at kilometre 23, 13 kilometres east of Brooks, west and eastbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design. These existing locations are within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for these locations as traffic warrants and when construction occurs on the highway in the future.

S-033 - Hwy#1, CS 1:18, Eastbound [Traffic Volume 5,490 WAADT]

Originally referenced as RST 5-2.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 5-2.2

Subsection 1:18 (Video Count 1.1 to 1.4) at kilometre 42, 32 kilometres east of Brooks, eastbound traffic. This is a large stage 3 type Safety Rest Area with large median separate parking areas for recreational vehicles and trucks, chemical toilets, picnic facilities, litter barrels. Design includes deceleration and acceleration lanes. This design is somewhat similar to AI-TU 1999 RST F-2.4d design. Spacing meets the 30-minute travel time criterion before Medicine Hat. The current design configuration is similar to the intent of AI-TU 1999 RST F-2.4d design.

Recommend leaving as is.

S-034 - Hwy#1, CS 1:18, Westbound [Traffic Volume 5,490 WAADT]

Originally referenced as RST 5-2.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 5-2.1

Subsection 1:18 at kilometre 33, 25 kilometres east of Brooks, westbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing

location design. This existing design is within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for these locations as traffic warrants and when construction occurs on the highway in the future.

S-035 - Hwy#1, CS 1:18, Westbound [Traffic Volume 5,490 WAADT]

Originally referenced as RST 5-3.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 5-3.1

Subsection 1:18 at kilometre 54, 44 kilometres east of Brooks, westbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design. This spacing meets the 30-minute travel time criterion after Medicine Hat.

Recommend leaving as is as long as the balance of Safety Rest Areas remained in place. If other Safety Rest Areas within the vicinity are removed, then RST 5-3.1 should be upgraded to a F-2.1.1 Design size of Safety Rest Area.

S-036 & S-037 - Hwy#1, CS 1:20, Eastbound/Westbound [Traffic Volume 7,510 WAADT]

Originally referenced as RST 5-4.1 and 5-4.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate in the future.

RST 5-4.1 & 5-4.2

Subsection 1:20 at kilometre 28, 25 kilometres west of Medicine Hat, west and eastbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design.

This existing location is within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for these locations as traffic warrants and when construction occurs on the highway in the future.

S-038 - Hwy#3, CS 3:14, Westbound [Traffic Volume 2,784 WAADT] (F-2.1.1 Design)

Originally referenced as RST 4-1.1 in the October 1999 "Highway #3 Safety Rest Areas" study (Report R-773). New RST.

RST 4-1.1

Subsection 3:14 (Video Count 31:08 to 34:05) at kilometre 3 to 7. New installation situated 5 km west of Burdett, on the north side of Highway #3, on unirrigated land created by increased offset between the highway and the CP Rail alignment. May be on crown land.

Although it is 40 km east of Taber, the site is considered to be the best local site meeting Safety Rest Areas site location and separation criteria given existing developments and irrigated land adjacent the highway alignment in the area between Bow Island and Burdett.

Two timing alternatives could be considered for this location:

1. One Facility
    - Develop RST 4-1.1 as a both directional access Safety Rest Area.
    - This should be constructed in a configuration so as to be used as a westbound facility after four-lane construction is realized.
    - This option is recommended if four-lane highway construction occurs beyond a five-year time frame.
2. Two Facilities
    - Develop RST 4-1.1 as a westbound only Safety Rest Area.
    - Develop RST 4-2.1 as an eastbound only Safety Rest Area.
    - Both Safety Rest Areas should be constructed in a configuration so as to be used after four-lane construction is realized.
    - This alternative minimizes the possible impact on commercial activity within the Town of Bow Island.
    - This configuration advances the capital investment before four-lane construction occurs.

S-039 - Hwy#3, CS 3:14, Eastbound [Traffic Volume 2,784 WAADT] (F-2.1.1 Design)

Originally referenced as RST 4-2.1 in the October 1999 "Highway #3 Roadside Turnouts" study (Report R-773). New RST.

RST 4-2.1

Subsection 3:14 (Video Count 12:36 to 29:48) at kilometre 28.5. New installation situated 8 km east of Bow Island, on the south side of Highway #3, on a height of unirrigated farmland. A telecommunications tower is sited on the north side of the highway and west of the proposed Safety Rest Area site. The site meets Safety Rest Area site location and separation criteria. It is considered to be the best site given existing developments and irrigated land adjacent the highway alignment in the area between Bow Island and Burdett.

Two timing alternatives could be considered for this location:

1. One Facility
    - Develop RST 4-2.1 as a both directional access Safety Rest Area.
    - This should be constructed in a configuration so as to be used as an eastbound facility after four-lane construction is realized.
    - This option is recommended if four-lane highway construction occurs beyond a five-year time frame.

2. Two Facilities
    - Develop RST 4-2.1 as an eastbound only facility Safety Rest Area.
    - Develop RST 4-1.1 as a westbound only facility Safety Rest Area.
    - Both Safety Rest Areas should be constructed in a configuration so as to be used after four-lane construction is realized.
    - This alternative minimizes the possible impact on commercial activity within the Town of Bow Island.
    - This configuration advances the capital investment before four-lane construction occurs.

One Facility vs. Two Facility Discussion

On two lane highways, "both directional design access" Safety Rest Areas are necessary to accommodate traffic from both directions of travel. This is a given unless other factors weigh more heavily in favour of creating two facilities that would separate the two directions of travel. These are:

- Date of expected construction of four lanes from two lanes
- Cost savings in relation to early investment of capital compared to expected date of four-lane construction and throwaway costs for one alternative over the other
- Safety considerations in relation to ASDT volumes and projected growth, traffic mix, geographic factors, accident history, weather conditions, etc.

Applying these factors to Highway #3, the following guidelines are provided:

- If four-lane construction is to occur within five years, then construction of the Safety Rest Area should be deferred to that time and save throwaway costs of interim lane construction.
- Throwaway costs are considered to be similar (about 15% of cost for new facilities) for either option, therefore either alternative does not provide a cost advantage. The major saving is deferring the expenditure for a second Safety Rest Area beyond the five-year period.

- A "both directional design access" can provide a relative safe traffic flow facility and provide for the abnormal winter weather conditions. Therefore, a both directional facility can meet the highway and traffic operational needs.

S-040 - Hwy#1, CS 1:22, Westbound [Traffic Volume 4,690 WAADT]

Originally referenced as RST 6-1.1 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Leave as is, reevaluate with RST 6-2.1.

RST 6-1.1

Subsection 1:22 at kilometre 25, about mid point between Medicine Hat and Saskatchewan border, westbound traffic. Built to Highway #1 standards, similar to most of the Safety Rest Areas east of Calgary to Medicine Hat. Design includes deceleration and acceleration lanes, a travel lane and parking lane. AI-TU 1999 RST F-2.4d design exceeds existing location design.

This existing location is within the 30-minute travel time and the current design configuration is acceptable.

Recommend leaving as is and reevaluate the need for this location after RST 6-2.1 Alberta Information Centre be upgraded.

S-041 - Hwy#1, CS 1:22, Westbound [Traffic Volume 4,690 WAADT]

Existing Rest Area

S-042 - Hwy#1, CS 1:22, Eastbound [Traffic Volume 4,690 WAADT]

Originally referenced as RST 6-2.1 and 6-2.2 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). The Alberta side is complete and the Saskatchewan side is outside of Alberta Transportation jurisdiction.

RST 6-2.1

Subsection 1:22 (Video Count 14:41 to 16:40) at Saskatchewan border.

This is a Welcome to Alberta sign turnout serving westbound traffic. It is substandard in design, no deceleration lane and a stop controlled access without acceleration lane. This location is also on the undivided portion of the highway. A good tourist information centre and private services are located in Walsh two kilometres west of this location.

Subsection 1:22 (Video Count 16:40 to 14:41) at Walsh.

This is an Alberta Tourist Information Centre with all services located adjacent to a service road on the north side of Highway #1 with general and recreational parking. Truck parking is located on the service road and some at the private service station. Both are not large enough to accommodate additional truck traffic. The Information Centre restricts truck parking.

This location meets the 30-minute travel time spacing between Medicine Hat and Saskatchewan border. It is also a strategic rest stop and service location demonstrated by past and present usage.

RST 6-2.2

A turnout type facility exists across the Saskatchewan border that provides service in both directions and falls within the 30-minute spacing from Medicine Hat. The facility does not accommodate large trucks, has 90-degree access, and is stop sign controlled with no deceleration or acceleration lanes.

Recommend that the following alternatives be considered:

Close and only feature the "Welcome to Alberta" sign at the border and construct large size design truck parking at the Walsh Tourist Information Centre, in conjunction with the private sector and Information Centre; or

Modify the "Welcome to Alberta" sign location to add "deceleration and acceleration" lanes with a modified parking area within the railway/highway width constraints; or

In conjunction with Saskatchewan's 2000 twinning, negotiate for an eastbound Safety Rest Area on the Alberta side of the border, and a westbound Safety Rest Area on the Saskatchewan side of the border.

S-043 - Hwy#1, CS 1:02, Westbound [Traffic Volume 16,580 WAADT] (F-2.1.2 Design)

Originally referenced as RST 1-2.1 and 1-2.2 and 1-2.3 in the October 1999 "Highway #1 Roadside Turnout Locations" Study (Report R-777). Consolidate 3 Scenic, create one RST.

RST 1-2.1, 1-2.2 and 1-2.3

Subsection 1:02 (Video Count 1:01:37 to 1:03:53) at kilometre 21 to 23. Existing three large paved scenic roadside pull-offs serving westbound traffic on the north side of the highway, adjacent to Lac des Arcs, opposite Exshaw. The geography and narrow highway right-of-way is a constraining factor. The current pull-off configuration does not meet design standards, address roadside safety, parking allocation, mixture in traffic stream, etc.

These locations experience high use by tourists and general traveling public. It acts as a bird-watching station at certain times of the year. They supplement the 30-minute travel time between Calgary, Highway #22, and Banff Park gates.

Recommend the consolidation of the three scenic pull-offs and manipulation into one larger size Safety Rest Area, RST 1-2.3. The typical large size Safety Rest Area design may need to be modified to fit this scenic location due to geographical constraints. Commercial traffic may need to be limited to the larger Safety Rest Area with tourist traffic assigned to a narrow segment of the Safety Rest Area. Coordinate scenic signs with Alberta Community Development, Historic Site Branch.

RST 1-1.1

Subsection 1:02 (Video Count 58:59 to 59:20) at kilometre 15. Existing historical sign, one kilometre east of Dead Man's Flats. No facilities and substandard situation.

Recommend the sign be removed, area closed and sign relocated to RST 1-2.3. Coordinate relocation with Alberta Community Development, Historic Site Branch

6.7 *Cost Estimates*

6.7.1 Safety Rest Area Estimated Locations and Cost Estimates

The following table has been prepared based on a "table-top" exercise of reviewing four lane highways and two lane highways identified in relationship to major resource activity; that is, log haul and overload transport. The purpose of this table is to present an order of magnitude estimate of the number of Safety Rest Areas that are required. A further detailed assessment is required for each highway identified.

Cost estimates for the F-2.3.2 Types L(i) ,L(ii) and F-2.3.3 (OS) designs based on 2003 values calculated on F-2.4b and F-2.4b(i) Roadside Turnout designs, assuming a certain size and configuration for a given highway, with the exception of SRAs NC-001, 002, 003, 004, 005, 006, 007, 008, 011, 012, 018, 027, and 028 which are based on recommendations outlined in the December 2002 "Two Lane Highway Roadside Turnouts – Site Evaluation Report" prepared by ARA Engineering.

Cost Estimates for the New and Modified Type F-2.1.2 and F-2.1.1 designs were based on the superseded F-2.4d, 2.4e designs and updated to the cost estimates from the October 1999 "Highway #1 Roadside Turnout Locations" report prepared by the POMMEN Group Inc.

6.7.1.1 Cost Components

The cost for each design layout will vary from site to site according to specific locational criteria and geotechnical factors. However, the following provides a preliminary estimate of one Safety Rest Area constructed on one side of a highway.

Design of Safety Rest Areas is based on these strategic guidelines and accommodating logging trucks and large trucks up to 40 metres in length.

Trucks govern acceleration and deceleration characteristics at these turnouts, much the same as trucks govern MIS site turnout design.

Estimates: These designations are used to simplify order-of-magnitude estimates. ***Each location will require a specific estimate to address each location's unique circumstances.***

F-2.1.1 Design: Freeway/Expressway (Fig F-2.1.1)

F-2.1.2 Design: Expressway (Fig F-2.1.2)

F-2.2.1 Design: Future Multi-Lane Highway on Same Side (Fig F-2.2.1)

F-2.2.2 Design: Future Multi-Lane Highway on Opposite Side (Fig F-2.2.2)

F-2.3.1 Design: Safety Rest Area for Two Lane Highway (Typical)

F-2.3.2 type L(i) Design: For log haul routes with AADT ≤ 3,000 (Fig F-2.3.2)

F-2.3.2 type L(ii) Design: For log haul routes with AADT > 3,000 (Fig F-2.3.2)

6.7.1.2 Detailed Breakdown forF-2.3.2 type L(i) and L(ii) Designs

Detailed L (i): AADT< 3,000; L(ii): AADT > 3,000;
**Please see design template F2.3.2 in section 2.5.1 for further details.

Item	Unit Rate	Unit	L(i) Design		L(ii) Design	
			Quantity	Amount	Quantity	Amount
Right of Way	$ 6,000	hectare	1.6	$ 9,600	2.20	$ 13,200
Grading	25.75	sq.m.	3,000	77,250	4,400	113,300
Base	12.25	sq.m.	3,000	36,750	4,400	53,900
Paving	17.60	sq.m.	3,000	52,800	4,400	77,440
Miscellaneous (5%)	2.78	sq.m.	3,000	8,340	4,400	12,232
Sub-total	$ 58.38			184,740		270,072
Engineering	10%		$ 184,740	18,474	$ 270,072	27,007
Contingency	20%		$ 184,740	36,948	$ 270,072	54,014
Total				240,162		351,094
Use for Estimates				$ 245,000		$ 355,000

Calculations & Assumptions by TRANS:
1. 20 metre wide right-of-way
2. 2 metre thick layer of fill
3. Base thickness = 350mm, same as adjacent travel lane thickness
4. ACP thickness = 160mm
5. If available, power installed from contingency
6. Landscaping from contingency

Note: The estimates in the previous table were not applied to SRAs NC-001, 002, 003, 004, 005, 006, 007, 008, 011, 012, 018, 027, and 028 whose costs are based on recommendations outlined in the December 2002 "Two Lane Highway Roadside Turnouts – Site Evaluation Report" prepared by ARA Engineering.

RST Quantities Computation						
	L(i) AADT <3,000			L(ii) AADT >3,000		
Design Elements	Width	Length	Area	Width	Length	Area
Deceleration Taper	3.5	140	245.0	3.5	140.0	245.0
Parallel Deceleration Lane	3.5	100	350.0	3.5	100.0	350.0
Parking Lane (Upstream Taper)	3.5	30	52.5	3.5	30.0	52.5
Parallel Parking Lane	3.5	200	700.0	3.5	300.0	1,050.0
Offset Lane	3.5	260	910.0	3.5	360.0	1,260.0
Parking Lane (Downstream Taper	3.5	30	52.5	3.5	30.0	52.5
Parallel Acceleration Lane	3.5	100	350.0	3.5	300.0	1,050.0
Acceleration Taper	3.5	140	245.0	3.5	140.0	245.0
Total		740	2,905.0		1,040.0	4,305.0

6.7.1.3 Detailed Breakdowns for New/Modified Types F-2.1.2(A) & F-2.1.1(B)

*Please see design templates F-2.1.1 and F-2.1.2 in section 2.5.1 for further details.

6.7.2

	Design Alternative Preliminary Estimates ($,000)			
	A.		B.	
Cost Components	Large	Large Modified	Standard	Standard Modified
1. Construction	960	865	642	514
2. Lighting (variable)	35	35	35	35
3. Amenities, Landscape	21	21	21	21
4. Contingency (15%)	154	139	102	85
Sub-Total	*1,170*	*1,060*	*800*	*655*
5. Land right-of-way	?	?	?	?
Use for Estimates	1,170	1,060	800	655

Basis of Cost Estimates Design Assumptions for Parking Stalls

"A Large" Stage 3 Ultimate Design Size (F-2.1.1) and "B Standard" Stage 1 Design Size (F-2.1.1)

Small parking stalls (10 m) based on a 10-minute stop duration.

Truck stalls (40 m) involve longer stops.

(60 min./hr)/(10 min. duration) = 6 durations/stall/hr

For AADT < 5,000:

No. of stalls = AADT/2 x 10% x 0.15 peak flow factor ÷ 6 durations/stall

For AADT > 6,000 and < 25,000:

No. of stalls = AADT/2 x 9% x 0.14 ÷ 6

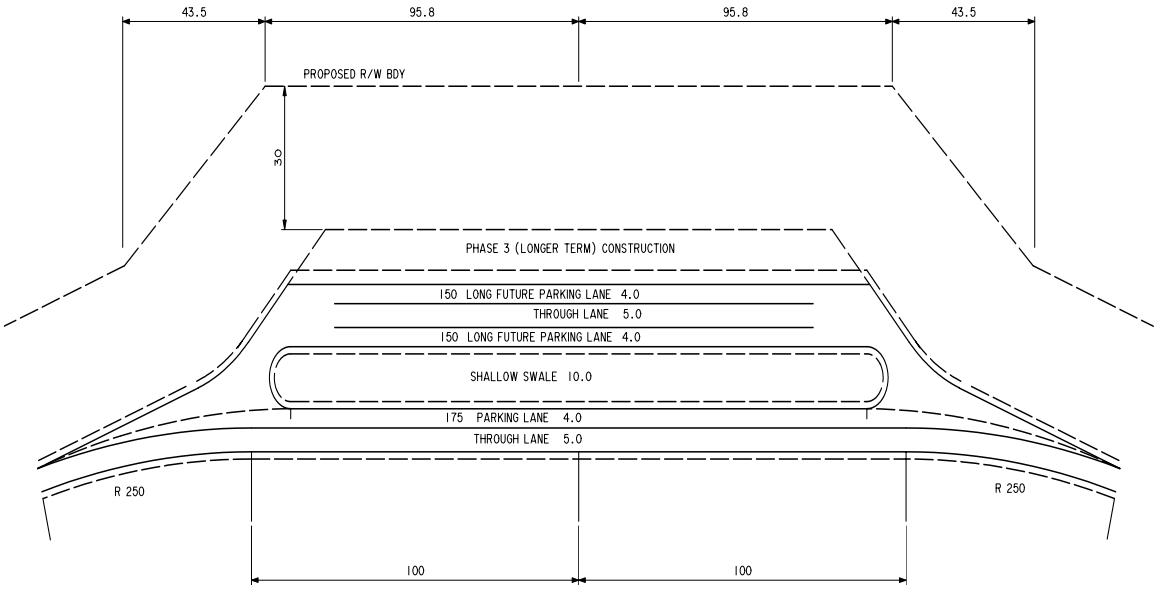
Assumption: 50% trucks in turnouts, therefore, assume 50% truck stalls (40 m), and 50% car stalls (10 m).

Larger AADT volume (> 25,000) requires separate site-specific analysis.

"A Large" Design Stage 3 Ultimate (based on 1999 Fig F-2.4e) current F-2.1.1

a)	Exit Terminal	
	Taper Area = 250 m x 10 m / 2	= 1,250m^2
b)	Entrance Terminal	
	Taper Area = 325 m x 6.5 m / 2	= 1,100 m^2
g)	Acceleration Lane = 200 m x 3.5 m = 700 m^2	= 2,050 m^2
	Lane Drop Taper = 125 x 3.5m / 2 = 250 m^2	
d)	Site Approaches	
	350 m (L) x 7.5 m (W) = 2,625 m^2 x 2	= 5,250 m^2
e)	Site (based on F-2.4d Stage 3)	
	200 m (L) x 48 m (W)	= 9,600 m^2

**Please see design template F-2.1.1 in section 2.5.1 for further details.



Total Area = a), b), c), d), and e) = (18,150 m²)

Given 18,150 m^2 @ \$53.00/m^2 = \$ 962,000; then \$ 960,000 per location

Stand Alone Construction without Contingencies:

1. Grading (+1 m fill)	\$ 16.00/m^2
2. Granular Base Course (350 mm)	12.00/m^2
3. Asphalt Base Course (80 mm)	12.00/m^2
4. ACP (90 mm)	13.00/m^2
Total	**\$ 53.00/m^2**

"B Standard" Design (based on Stage 1 of 1999 Fig

F-2.4e) Current F-2.1.1

a) Exit Terminal

Taper Area = 250 m x 10 m / 2 = 1,250m^2

b) Entrance Terminal

Taper Area = 325 m x 6.5 m / 2 = 1,100 m^2

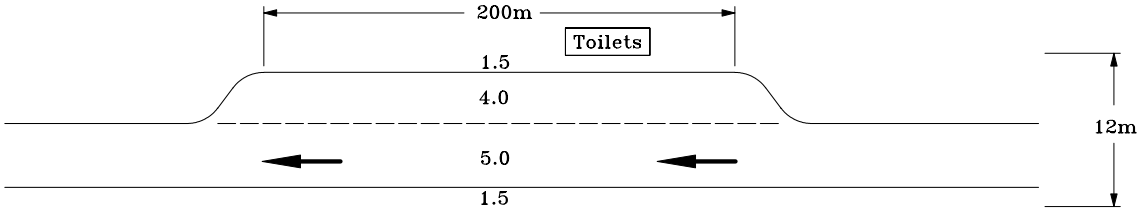
c) Acceleration Lane = 200 m x 3.5 m = 700 m^2 = 2,050 m^2

Lane Drop Taper = 125 x 3.5m / 2 = 250 m^2

d) Site Approaches

350 m (L) x 7.5 m (W) = 2,625 m^2 x 2 = 5,250 m^2

e) Site Stage 1 minimum



Total = 2,460 m^2

Total Area = a), b), c), d) and e) = (12,110 m^2)

Given 12,110 m^2 @ \$53.00/m^2 = \$ 641,830; then \$ 642,000 per location

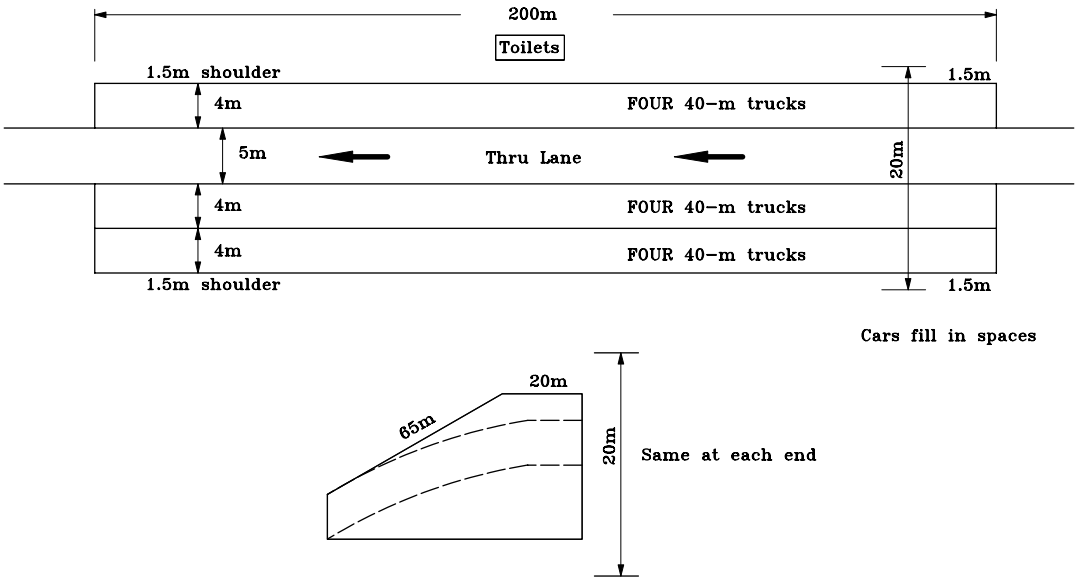
f) Logging Truck Provision

Where some locations may need to accommodate logging trucks, an addition of a parallel (longer) acceleration lane could be added with an incremental cost. For extra site size, consider using Stage 2 of the F-2.4d design.

Add:

Lane addition – (300 m + 10%) x 3.5 m x \$53/m^2 = \$ 62,000

"Resource" Alternate Design



Area = 200 m x 20 m + 2 x 65 x 20 – (2(45 x 15))/2
= 4000 m^2 + 2600 m^2 – 675 m^2 = 6,000 m^2

This alternate "Resource" design is slightly smaller and would reduce costs by about $100,000. However, the parking configuration is less efficient and passenger vehicles would be mixed with trucks. Therefore, projections have been based on design "A Large" for estimating purposes.

6.7.2.1 Modified Designs to Upgrade Existing Safety Rest Areas

"A Large" Design

Estimated new installation	=	$ 960,000
Assume 10% use of existing, ∴ 90%, then	Total	$ 865,000

"B Standard" Design

Estimated Minimum Design new installation	=	$ 642,000
Assume 20% use of existing, ∴ 80%, then		$ 514,000

6.7.2.2 *Removal Cost of Existing Turnout Locations*

Assume 100 m x 10 m parking area	= 1,000 m^2
Assume 200 m x 5 m entrance/exit	= 1,000 m^2
ACP and Base Course	= 2,000 m^2

Assume 5 days: hoe + two gravel trucks		
$1,000/day + $500/day x 2	= $ 2,000 day	
Foreman + truck	= 500 day	
	= 2,500 day	
	x 5 days =	$ 12,500
Saw cut asphalt		2,000
Landscaping		3,000
Overhead and contingency (±15%)		2,500
		$ 20,000

6.7.2.3 *Lighting Cost Estimate (where practical)*

Assumptions

Parking area security lighting only
Forty-foot steel poles, new versus used
One pole per 50 m site length, therefore two poles per 100 m long site
Power company brings power to transformer pole/metre only; balance of site work by local electrical contractor

Cost Estimate for Location Work

New metal poles — 2 x $1,000	= $ 2,000		
Precast in place concrete bases — 2 x $800	= 1,600		
Fixtures/Photocells — 2 x $300	= 600		
Trenching — 100 m @ $25/m		= 2,500	
Cable — 100 m @ $7/m	= 700		
Panel box/breakers	= 600		
Eng. and cont. @ 20%		= 2,000	
Total estimated location cost			=$ 10,000

Notes:

1. Reviewed with TransAlta and Magna 4 Engineering
2. Does not include power supply to site by TransAlta
3. Minimum cost for pole and transformer = $ 3,000
4. Supply of overhead power (wooden poles @ 100m spacing) = $10,000 per kilometre
5. Cost for pushing conduit under highway is $50/lin. m, and not included in above.

6.7.2.4 Portable Toilets (where practical)

General

No one company maintains sites across Alberta, so they subcontract locally for maintenance.
Suggest a wheelchair accessible unit at each site.
Should have adequate ventilation, solar light for night and a heater. Easier to clean and more comfortable in winter.
Normally, maintenance is weekly. However, high frequency use locations will require daily service.
Use brine in winter.
Renter is responsible for theft, vandalism, base construction, and weather damage.

Number of Toilets per Location

For AADT <5,000

$$\text{No. of toilets} = \frac{\text{AADT}}{2} \times \frac{\text{10\% vehicle stopping}}{100} \times \frac{\text{1.2 users per vehicle}}{\text{30 toilet users/hr}} \times \frac{0.15}{\text{peak hour factor}}$$

Factor

For AADT of 3,000 — 0.9 toilets/site; round off to 1/site

For AADT of 4,000 — 1.2 toilets/site; round off to 1/site

For AADT of 5,000 — 1.5 toilets/site; round off to 2/site

For AADT of 6,000 to 15,000 — use lower vehicle stopping at 9% and lower peak hour factor of 0.14. Decision to maintain portable toilets should be reviewed regularly. Above 15,000 AADT, portable facilities may not be appropriate due to number of units required and maintenance costs.

$$\text{No. of toilets} = \frac{\text{AADT}}{2} \times 9\% \times \frac{1.2}{30} \times 0.14$$

Example: For AADT of 10,000 — 2.5 toilets/site; round off to 3/site For AADT of 15,000 — 3.8 toilets/site; round off to 4/site

Rental and Cleaning Service (1999)

Wheelchair accessible units	$110 each/month/unit
Standard units	$90 each/month/unit
Solar lighting	$25 each/month/unit
Heaters	$15 each/month/unit

Rates quoted are based on supply of 30 units and include weekly service. Rate may vary depending on location and will vary depending on frequency of maintenance schedule. Delivery/set-up costs are also dependent on location as well as the type of base anchored to. Renter is responsible for any loss due to theft, weather or vandalism.

6.7.3 Toilet Design and Demand

6.7.3.1 Toilet Requests, Concerns, and Comparisons

Who is asking for public facilities?
The requests come from several sources. Through the consultation process commencing with the initial 1998 Highway Service Rest Area Study, through to the completion of the five Roadside Turnout reports for all Alberta inter-provincial highways, key stakeholders identified the need for restroom facilities along provincial highways.

The various groups include: Yellowhead Highway Association, Alberta Motor Transport Association, Alberta Motor Association, municipal and tourism groups and general feedback from general public through letters, letters to the editor, etc. Alberta data is not available reflecting the specific toilet demand that can be referred to in relationship to the total traffic stream. A 1989 Transportation Research Board study of US Rest Areas identified that 85% of the Rest Area usage was for Toilets; 50% for rest/stretch; 14% for water fountain.

More recently, organizations and TRANS are receiving complaints about travellers either stopping at the side of the road or at existing "grade-wideneds", since toilets are not available at existing "grade-wideneds".
One organization basically says: "let's get on with it."

What are other provinces/states doing?
Safety Rest Areas in Alberta are different than other jurisdictions. The US interstate program develops Rest Areas with permanent washroom facilities. British Columbia has a combination of "grade-widened" and Rest Areas, where the Rest Areas usually have permanent washrooms sometimes combined with Tourist Facilities or stand-

alone buildings (wooden structures). Saskatchewan tends to be "grade-widened" with waste receptacles.

The US system is highly organized and developed as either public facilities or combined with private commercial establishments. Most have large parking areas for all types of vehicles.

Implications of Toilet installations
TRANS Operations Managers have concerns for the increased maintenance and possible vandalism that may occur at the toilets. These are valid concerns that need to be balanced in relationship to the overall problem. Since rural private sector facilities are not keeping up with demand or meet the needs of the overall traffic stream, one solution is to install toilets at rural locations.

A pilot project west of Whitecourt on Highway #43 demonstrated that portable toilets couldn't keep up with usage and required maintenance; these have been replaced with a modular wooden structure. One portable toilet at Hwy #16 Junction #60 at a vehicle weight station and is proving to be acceptable.

The public may also complain about the cleanliness or standard of toilet facility installed. Frequent cleaning will be necessary by an assigned contract will be necessary. The volume of traffic and seasonal conditions will determine the frequency.

There is also an increased annual cost to TRANS budget. However, the regions may consider the use of separate maintenance contracts for the toilets and other service amenities at Safety Rest Areas.

6.7.3.2 Toilet Design

Type of Toilet

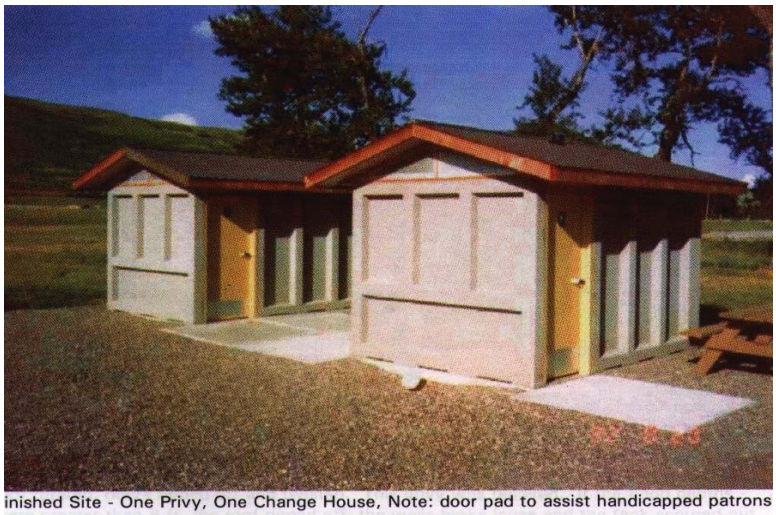
a.) Generally, highway Rest Area facilities in North America are constructed buildings with running water and flush toilets; e.g. Hwy. #43 Valleyview; Hwy. #2 Dickensview (Airdrie). Where traffic volumes generate large user demand, portable toilets are installed to supplement the fixed facility. This occurs at private operations as well. Although this type of facility provides an ultimate level of washroom service, these are costly to construct and have not been part of the Alberta Safety Rest Area strategy for the near or long-term future.

b.) The next class of toilet is a concrete or wooden structure, usually without running water. These are usually installed at scenic and parks areas. A concrete pre-cast structure is a low cost facility option and is a feasible option for existing and future Safety Rest Areas.

c.) A basic class of service is the portable toilet. Various outlets supply and service these. The units may have cold water in the units during the summer months. This is a low cost option and can be supplied immediately and answer ***low volume demands*** at many Safety Rest Area locations.

	Estimate ($)							
	I		II		III		IV	
Components	Capital	Annual	Capital	Annual	Capital	Annual	Capital	Annual
Full Service	140-180,000	27-50,000						
Mid-service			90-115,000	15-25,000				
Holding Tanks					70-90,000	10-20,000		
Portables							-	8-12,000

Example of Alberta Precast Privy



inished Site - One Privy, One Change House, Note: door pad to assist handicapped patrons

6.8 *Summary of 2001 Stakeholder Feedback on Roadside Turnouts*

A wide cross section of stakeholder groups were interviewed to identify issues and concerns relating to the issue of Safety Rest Areas on major two lane highways. A summary of the information obtained is presented below.

Regulations and Legislation

Cargo Securement Regulation

This will be a model or guide but not a law at this time stating that load securement must be checked:

- Before starting trip
- Within the first 80 kilometres of starting, then every 3 hours or 250 kilometres
- Periodically when change in status of driving, resting or off-duty

Comments from Heavy Haul Trucking Companies

- Haul oversize loads requiring special permits
- Most loads travel on the high load corridor
- Permits usually stipulate:
- Daylight travel only
- Maximum speed – 80 kilometres per hour
- Curfew 3:00 PM Friday
- No travel on Sunday
- Need a place to stop in the morning:
- Large loads often need to be out of the city before daylight
- Cannot travel on highways until daylight
- Need a place on the East side of Calgary, Red Deer and Edmonton for this purpose
- Need a place to stop at night:
- Cannot travel in darkness
- Need more places on high load corridor for this purpose
- Suggest Spedden, Holden, (#14) and additional on #36
- Like to check their loads every four hours at least

Current Hours of Service

- A 10 minute break after 4 hours of driving, or
- A 30-minute break after 6 hours of driving.
- A maximum of 13 hours driving time, or
- A maximum of 15 hours duty time.

Fatigue Management Program

A new Fatigue Management Program is being developed to manage driver fatigue effectively. This may change the approach to this problem and empower drivers to stop when necessary rather than when required by the Hours of Service Regulations.

Comments from Alberta Motor Transport Association

- AMTA strongly advocates the construction of Safety Rest Areas to address driver fatigue, equipment checks, etc.
- In order to meet the new Fatigue Management Program, more Safety Rest Areas are needed on most Alberta highways
- AMTA strongly recommends that TRANS gets on with building the facilities

Vehicle Condition Checks

The condition of the vehicle, including tires and wheel nuts, needs to be checked at regular intervals. It should be done at the start of and end of each shift, as well as any break in travel for whatever reason. Log haulers should be checking loads more frequently to inspect loads, to cut off broken logs, check equipment, clean lights and generally ensure safe operating conditions.

Enforcement

Enforcement has approximately 30 VIS (Vehicle Inspection Stations) and MIS (Mobile Inspection Stations) throughout the province.

- VIS sites have permanent facilities including a scale building on site.
- MIS sites may or may not have a self-weigh scale. Mobile Inspection Vehicles utilize these sites to inspect vehicles as required.
- Additional areas are required where trucks can be safely pulled off for inspection.

- Truckers use VIS and MIS sites for an area to rest and/or check loads now. This is acceptable to the department. Logging trucks may not be able to access these sites due to their long turning radius requirements. Logging trucks must follow fixed routes and are not permitted to deviate or stop at undesignated areas.
- The public should be discouraged from using VIS and MIS sites, as it is a potential safety problem.

Comments

- Feel very strongly that mobile inspection stations should not be used for Safety Rest Areas even if designs are changed to make them multi-purpose facilities.
- Passenger vehicles may park in truck locations resulting in trucks unable to access weigh scales.
- Some trucks carry hazardous goods. Potential safety hazard.
- Some trucks park overnight with their lights off. Vehicles could run into them.
- Tourists, children, and pets should not be around loaded trucks.
- Public use would increase demand for washroom facilities on site.

Tourism

Tourism has designated theme routes to encourage tourism. Some of these utilize two lane highways and secondary routes. Tourism routes include:

Canadian Badlands Trail
The Cowboy Trail
Grande Alberta Trail
Alberta North to Alaska Trail;
Oil Sands and Lakes Tour
Alberta Rocky Mountain Tour
Alberta's UNESCO Tour

- Safety Rest Areas, along with washrooms and picnic tables, would be highly desirable.
- Tourism has not had a lot of requests for more stopping places on highways; however, the need will grow as the tourism industry grows.

Industry Feedback

Oil Drilling Contractors

- Are required by permit to travel in a convoy
- Usually short runs (fatigue is not as big an issue)
- Need a place to pull off for mechanical problems, etc.

Petroleum Servicing Contractors

- Includes service rigs and equipment
- Usually short runs (fatigue not an issue)
- Not a major concern for this industry

Heavy Haul Industry

- Agree with the report.
- Layover sites proposed outside of three major cities are a high priority for them.
- Calgary is the most critical at this time.
- Layover sites at junction of Highway #14 and #36 and Highway #28 and #36 would be useful to them (2nd priority).
- There are no other high priority needs for layover sites for their industry at this time.

Logging Industry

- The industry incurs 500,000 trips per year in the province.
- Need to check load securement and condition of vehicle.
- Need to conform to hours of service regulations.
- Cannot pull off at unapproved locations due to permit requirement to not deviate from approved route.
- Majority of demand is seasonal.
- Cannot use MIS as stopping locations due to access limitations.
- Feel that basic Safety Rest Areas would meet the industry's needs.
- Gravel surface.
- Short deceleration and acceleration lanes.
- Truckers are required to carry out mandatory wrap checks if appropriate stopping areas are in place.
- General agreement with the report.
- Feel highway #58 East and West of High Level is a high priority.

- Some areas (highway #58 West) are critical and need a Safety Rest Area as soon as possible.
- Highway #11 to Rocky Mountain House is presently all right as it is.

Association Feedback

Alberta Motor Association

- Recent survey done by AMA indicates that public opinion is almost equally split on the issue as to whether there are an adequate number of rest stops on highways in Alberta.
- AMA advocates Rest Areas and advocates a maximum two-hour driving time for each segment of a trip.
- Agree with the recommendation of the report and support implementation as soon as possible.

Alberta Motor Transport Association

- Strongly in favour of construction of more Safety Rest Areas on two lane highways.

Observations

Based on a review of materials and discussions with stakeholders, a number of observations can be made.

- Safety Rest Areas provide a safe stopping place for a variety of purposes:
- Check loads and adjust if necessary
- Allow drivers to rest
- Check condition of vehicle
- Repair tires or mechanical problems
- Park out of service vehicles
- Leave trailer if road conditions poor
- Allow inspection of vehicle
- Park vehicle overnight
- Temporary pullout to allow traffic to pass
- Park vehicle while waiting for daylight
- The need for Safety Rest Areas is more critical in some areas of the province than in others.

The logging industry has a need for them in the western and northern portions of the province. Specifically on highways:

- #35 Grimshaw North to border.
- #58 East and West of High Level (temporary).
- #986 Grimshaw to Red Earth.
- #88 Slave Lake to North of Red Earth.
- # 32 and #33 Carrot Creek to Kinuso.
- #658 Blue Ridge to Ft. Assiniboine.
- #661 Ft. Assiniboine to Vega.
- #40 Grande Prairie to Grande Cache.
- #22 Sundre to Entwistle.
- #881 Anzac to Lac La Biche.
- #813 Wabasca to Athabasca.
- #750 Enilida to Junction Highway #88.
- Highway #63 has a number of Safety Rest Areas at present. A few more would help the logging industry.
- The current number of Safety Rest Areas is inadequate to meet the needs of the trucking industry. Often vehicles must stop on the shoulders or approaches to allow for checking wraps are mechanical problems.
- New government regulations and guidelines will increase the need for Safety Rest Areas to allow vehicles to stop and check load securement.
- Enforcement uses Safety Rest Areas as well as VIS and MIS to carry out job activities safely.
- All agencies interviewed, with the exception of one, felt that Safety Rest Areas could accommodate various types of commercial vehicles as well as the traveling public. Cooperation and care is required of all parties using Safety Rest Areas. Logging areas may require separation of uses depending on the volumes and seasonal nature of the business.
- Other Transportation agencies are now designing and constructing Rest Areas as integrated facilities. E.g. All types of parking, inspections, weigh scales, highway patrol, tourism, etc.
- There is a general agreement on the appropriate 30 – 60 min. spacing between Safety Rest Areas and other places to stop. Opinions varied from 30 minutes to two hours. A number of individuals indicated the spacing of rest stops on Highway # 63 to Fort McMurray was good. AASHTO Rest Area 2001 guidelines recommend 60-minute spacing.

- It was generally felt that the industry needs to be aware of the rules and regulations and to abide by them. Industry should identify any issues that prevent industry from conforming to the rules.
- Comments were made that government should provide the necessary infrastructure to ensure the safety of users of the highway system.
- Other:
- Long haul vehicles often park at ramps and other unsafe locations during the night to allow the driver to sleep.
- Ensure that previous Safety Rest Area Studies on four lane inter-provincial highways meet the new legislation requirements. Four-lane inter-provincial highway studies were based on 60-minute spacing, therefore accommodate new legislation requirements.

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