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The Effects of Enforcement on Total Truck Operating Cost and Pavement Loading on Manitoba Highways

Paul Cordeiro E.I.T.

A thesis submitted to the Faculty of Graduate Studies in partial fulfillment
of the requirements for the degree of Master of Science

Department of Civil Engineering
University of Manitoba
August 1997

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**THE EFFECTS OF ENFORCEMENT ON TOTAL TRUCK OPERATING COST
AND PAVEMENT LOADING ON MANITOBA HIGHWAYS**

by

PAUL CORDEIRO, E.I.T.

A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba
in partial fulfillment of the requirements of the degree of

MASTER OF SCIENCE

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FACULTY OF GRADUATE STUDIES

MASTER'S THESIS/PRACTICUM FINAL REPORT

The undersigned certify that they have read the Master's Thesis/Practicum entitled:

THE EFFECTS OF ENFORCEMENT ON TOTAL TRUCK OPERATING COST AND
PAVEMENT LOADING ON MANITOBA HIGHWAYS

submitted by

PAUL CORDEIRO, E.I.T.

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

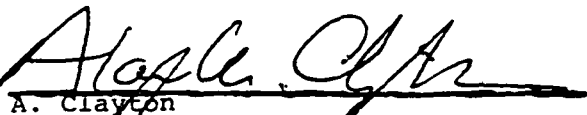
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Chapter 1
Introduction

This chapter states the purpose of the thesis, provides background information on vehicle weight regulation, lists the specific objectives of the thesis, outlines the organization of the thesis, and lists additional related research.

1.1 Purpose

This thesis is an empirical analysis of the effects of weight enforcement on: (1) the total operating costs of trucks on Manitoba highways; and (2) total pavement loading on Manitoba highways. These two factors are major components of the cost of highway transportation in the Province. Knowledge about these effects is important in the evaluation of enforcement and weight regulation policies and strategies.

1.2 Background

The weight operating characteristics of heavy vehicles is influenced by the regulations governing their size and weight, the characteristics of freight, the type and intensity of enforcement. Vehicle weight regulations are intended to balance the economic benefits of efficient freight transportation against the costs that large trucks can impose in the form of road wear, exposure to the risk of accidents, road geometry and bridge requirements, and the interaction with other traffic. Increases in truck weight limits are usually justified on the basis of economic efficiency. This thesis compares the benefits in allowing heavy vehicles to exceed these limits in terms of reduced total truck operating costs and the increase in total truck load factor which impacts pavement life.

The major factors needed for proper design, maintenance and management of the highway infrastructure are traffic volumes, classifications and weights which are used to obtain truck load factors. Technologies such as Weigh in Motion (WIM) and Automatic Vehicle Classification (AVC) have the potential to be used for the collection of this data and as an enforcement tool. A detailed analysis of these databases is needed to test the reliability of truck classifications from AVC and WIM sensors and the accuracy of dynamic weights of WIM sensors.

1.3 Objectives

The research objectives to accomplish the purpose of the thesis were:

(1) *To establish a method to determine and to estimate truck flows on the Provincial highway network in terms of volume and truck class.*

This was done through analysis of AVC and WIM sensors (Chapter 4) , and included related research by the author in “Truck Traffic in Manitoba Highways-1994” and “Traffic on Manitoba Highways-1994”. In the final analysis of this research, 1995 values of volumes and classifications were analyzed. The updated traffic reports for 1995 were based upon work done in part by the author in the previous versions. The 1995 truck flows were selected for use as they were the most recent (Chapter 5). Similarly, the 1995 AVC and WIM classification were selected for use as they were the most recent (Chapter 6,7). This allowed for the calculation of a detailed classification of the truck flow map for further use in the thesis.

(2) *To establish the truck operating weights on the Provincial highway network as a function of individual truck type and enforcement intensity.*

The thesis originally envisioned using dynamic weight data from WIM sensors for determining truck loads. Data from the years of 1990 to 1994 were analyzed (Chapter 4). Errors were observed in the cumulative distribution of weights from WIM sensors and as such it was decided to not use WIM as a basis for predicted vehicle weights. A static weight distribution model was identified and selected for use (Chapter 7). This static model relates enforcement intensity to GVW distributions for individual truck types based upon vehicle weight limits. This allowed for the calculation of average GVW's for individual truck types on each road class by violation rate.

(3) *To establish the operating costs of individual truck types as a function of enforcement intensity.*

The relationship between truck operating costs and enforcement intensity was determined by calculating modified traffic flows based upon constant payload movement within the province for all violation rates (Chapter 7). These modified traffic flows were multiplied by unit truck operating costs from Trimac (Chapter 3) to obtain truck operating costs for each truck type on each link. The total truck operating cost for existing traffic on Manitoba highways was determined assuming a violation rate of zero (Chapter 6).

(4) *To establish the truck load factor of individual truck types as a function of enforcement intensity.*

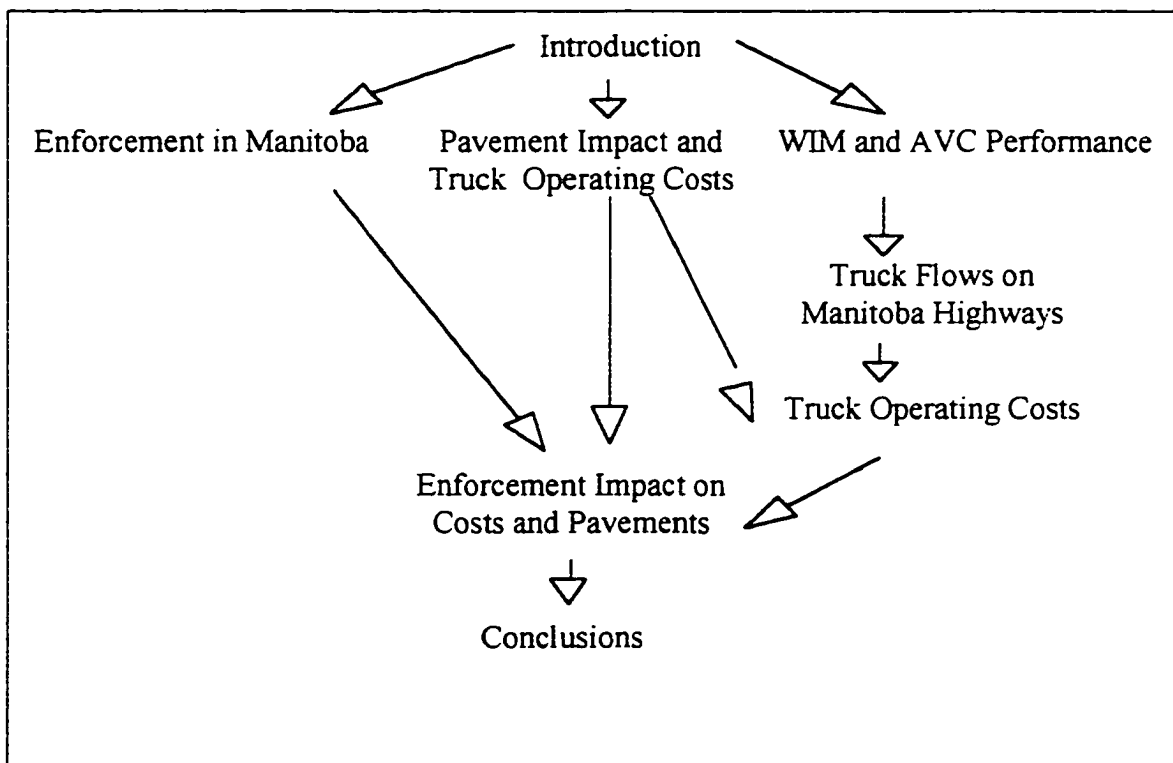
The relationship between truck load factor and enforcement intensity was determined by breaking down modified traffic flows (Chapter 7) into 13 specific truck types and using

the Fekpe GVW model, weights split factors, (Chapter 7) along with the AASHTO conversion factors (Chapter 7) to obtain average truck load factors for each individual truck type for each road class and violation rate.

(5) Having the truck flows, classifications, weight distributions, truck operating costs, and truck load factors all as a function of enforcement intensity, the total truck operating cost and total truck load factor was calculated for each road class and violation rate.

The relationship between each of the research areas is shown in Figure 1-1. The weight distributions are used to calculate both modified traffic flows and average truck load factors for a range of violation rates. The average truck load factors are used with the modified truck flows to obtain total truck load factor by vehicle type, road class and violation rate. The modified traffic flows are used along with unit costs values to obtain total truck operating costs on Manitoba highways by vehicle type and road class for a range of violation rates (Chapter 7). The conclusions are summarized in Chapter 8.

Figure 1-1 Flowchart of Research Areas



1.4 Additional Associated Research Conducted by the Author

The thesis included certain aspects of research done by the author which is included in other reports. These include the following:

A. Clayton, B. Lucas, M. Alam, and P. Cordeiro, (1992), *Design, Development, and Implementation of a Traffic Monitoring System for Manitoba Highways and Transportation*. University of Manitoba Transport Institute, April 1993.

Clayton, A., Cordeiro, P., Fekpe, E. (1994), *Advanced Systems for Permitting and Enforcement of Heavy Vehicle Operations on Manitoba Highways*, University of Manitoba, Department of Civil Engineering.

UMTIG- University of Manitoba Transport Information Group, (1994), *Truck Traffic on Manitoba Highways-1994*. University of Manitoba.

TIS- Traffic Information System, (1994), *Traffic on Manitoba Highways- 1994*, University of Manitoba.

Chapter 2
Role of Enforcement in
Heavy Vehicle Operations

This chapter summarizes past research on the enforcement of weight regulations in Manitoba and the importance of enforcement.

2.1 The Importance of Enforcement

There are several reasons for enforcing weight restrictions including increased safety benefits, reduced pavement and bridge damage, and creating a level playing field for all truck operators. Not enforcing regulations is akin to not having regulations at all.

2.1.1 Safety Benefits

The overloading of trucks beyond regulated limits can have several negative effects. Some of these are slower acceleration leading to increased passing times, overheating of brakes when decelerating, longer deceleration time, and longer stopping distance. These factors can lead to accidents.

The effects of overloading of trucks has been well documented. For example: Comptroller General, (1979) reports that when asked to identify safety hazards related to overweight trucks, officials from 28 states believed that “excessive weight increased stopping distance”. Transport Canada (1988) observes that “the California Highway patrol found the truck accident rates to be inversely proportional to the number of highway inspections.” (Reproduced from Clayton, 1991, Enforcement Levels Study).

2.1.2 Road and Bridge Damage

A major factors contributing to the deterioration of Manitoba highways and bridges is traffic. In particular, overloading of truck axles on roads can lead to a much higher number of ESAL's (Equivalent Standard Axle Loads). This is because ESAL's are typically calculated with a fourth power rule. Predicted ESAL's over the life span of a pavement are used to calculate the pavement construction requirements. Increasing truck loads can increase the actual ESAL load on a pavement thereby reducing it's predicted service life.

Overweight trucking can be a major factor in highway and bridge deterioration. For example: Walton and Yu, (1981) found that overweight trucking in Texas caused an additional pavement cost of \$9 million per year (in 1980 \$US). Comptroller General, (1979) found that overweight trucks are a major cause of highway deterioration. While eliminating excessively heavy trucks will not stop highway damage, it can reduce damage. The impact of overweight truck traffic on aging and deteriorating highways has major implications for future highway funding needs. Barros, (1984) reported that extrapolation of data to include undetected violations in New Jersey indicates that the total pavement damage attributable to all overweight trucks is considerable (estimated at \$19 million per year). TRB-NRC, (1990) concluded that the effect of eliminating illegally overweight axle loads (in the United States) would be to reduce pavement costs by \$160 million to \$670 million per year. OECD, (1979) stated that in many countries the increase in heavy traffic is a serious problem because of the resulting more rapid deterioration of existing highways and, in particular, of bridges. Overloads are, in particular, one of the most important reasons for bad and unsafe situations and bridge conditions. (Reproduced from Clayton, 1991, Enforcement Levels Study).

2.1.3 Maintaining Fair Competition

Trucking companies strive to operate at the highest possible limit which is legally permitted. This is because the additional operating cost of the extra load is outweighed by the benefit of decreasing the number of trips needed. If weight regulations were not enforced many trucking companies who operate legally would be at an unfair economic disadvantage.

The economic benefit to truckers who operate legally has also been determined in other jurisdictions. For example, TRB-NRC (1990) observed that increased enforcement would benefit truckers and shippers who operate within weight limits by eliminating the competitive advantage of those who operate illegally (Clayton, 1991).

2.2 Enforcement in Manitoba

Weight Regulations and Violations

In Manitoba, the following are the various elements of the weight limits that are regulated (Girling, 1988).

- tire load overweight
- single front steering axle overweight
- single non steering axle overweight
- tandem axle overweight
- tridem axle overweight
- maximum GVW for truck, truck and trailer, tractor semi-trailer, and combinations of tractor semi-trailers (trains)
- exceed bridge formula weight or weight reduction formula based on axle spacing and axle weights
- over the gross vehicle weight allowed on a posted bridge

A truck is considered to be illegally overweight if it exceeds any of these limits without a special permit or exemption.

A vehicle is considered to be in violation of weight regulations in Manitoba if a truck is illegally operating above imposed limits and the result is a successful charge. Trucks which are given a verbal warning are not counted as a violation. In addition written warnings are no longer given in Manitoba. The violation rate is defined as the number of trucks in-violation of weight regulations per 100 trucks weighed. (Fekpe, Clayton, Haas, 1995)

Reasons for Violations

There are three basic classes of violators as identified in IBI Group, (1983). These are:

- those who are ignorant of the law and unknowingly contravene it
- those who are aware of laws or regulations but who are unaware that their vehicle and load are contravening a specific regulation
- those who knowingly contravene the regulations

Some factors which contribute to the first two classes of violators identified in IBI Group, (1983) are:

- the complex wording of some of the regulations which make them difficult to interpret
- the variation of regulations from jurisdiction to jurisdiction
- the variation of regulations between seasons (spring weight restrictions and winter weight premiums)
- the variation of regulations on RTAC, primary, secondary and Winnipeg roads

A truck is said to be in noncompliance when it is operating above existing weight regulations without a permit or exemption. The level of noncompliance is the percentage of trucks in noncompliance for the entire truck fleet at a particular time. The level of compliance is the number of trucks operating within existing weight regulations for the entire truck fleet at a particular time (Clayton, 1991).

2.3 Types of Enforcement Practices

Determining the Level of Enforcement

The level of enforcement can be defined in five ways: (Clayton, 1991)

- resources employed (i.e. number of staff, stations, equipment, etc.)
- number of inspections performed
- convictions obtained (i.e. absolute, or % of movements checked, or % of all movements)

Measures of the effectiveness of enforcement are: (Clayton, 1991)

- perceived detection probability
- degree of compliance obtained

This thesis uses the number inspections performed as a measure of the intensity of enforcement.

Methods of Enforcement

Enforcement of vehicle weights on Manitoba Highways is the responsibility of the Transport Compliance Section of the Manitoba Department of Highways and

Transportation. This department operates 10 permanent inspections stations located throughout the Province at Emerson, West Hawk, Headingly, Rosser, Birds Hill, Log Cabin, Thompson, The Pas, Dauphin, and Pine Falls. These stations operate anywhere from 8 to 24 hours per day. The department also has patrol teams which use portable scales and office staff who perform trucks operator audits.

2.4 Patrol and Permanent Inspection Station Effectiveness

The effectiveness of Patrol Teams and Permanent Inspection stations in Manitoba in regulatating overweight regulations was examined in Cordeiro (1991). The number of inspections, violations, and violation rate was determined for both methods of enforcement. Table 2-1 compares the number of inspections, violations and violation rates over a four year period from 1988 to 1991. Data from all permanent weigh scale sites and patrol operations from 1988 to 1991 were obtained from the Manitoba Department of Highways Compliance Branch and are averaged on a yearly basis. The Violation Rate was determined as the number of violations expressed as a percentage of the total number of trucks inspected.

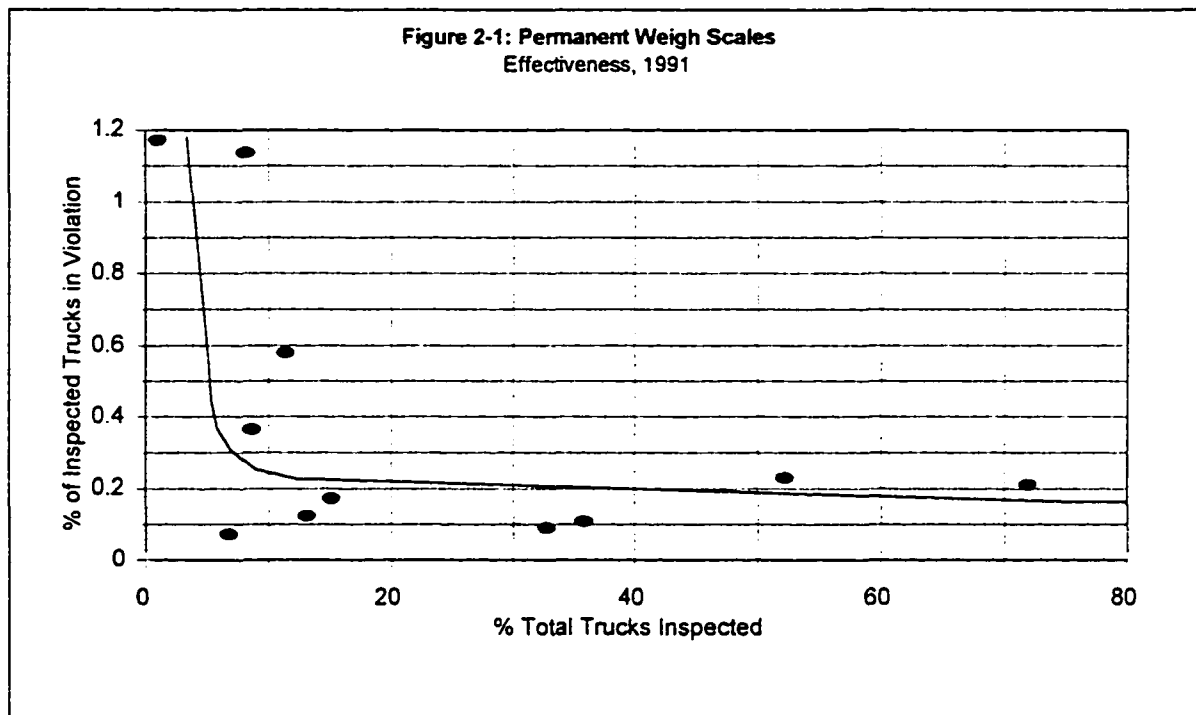
Table 2-1 Patrol Teams Versus Permanent Weigh Stations

Year	Scale			Patrol		
	# Inspections	# Violations	Violation Rate	# Inspections	# Violations	Violation Rate
1988	461831	679	0.15	12054	400	3.32
1989	373474	715	0.19	13059	273	2.09
1990	492512	721	0.15	22729	385	1.69
1991	501949	750	0.15	18344	228	1.24

The level of enforcement at a permanent weigh station can be determined by comparing the hours of operation for a scale versus the violation rate. The hours of operation where provided by the MDHT Compliance Branch. Table 2-2 shows the violation rates for individual scale sites for 1991. Figure 2-1 illustrates the relationship between the violation rate and percentage of the total truck traffic inspected (Cordeiro, 1991).

Table 2-2 Permanent Weigh Station Effectiveness, 1991

Location	# Trucks Inspected	# Total Trucks	Violations	% Inspected	% in Viol
Dauphin	27802	84937	25	32.7	0.1
Swan River	4096	392065	48	1.0	1.2
Thompson	120905	168136	255	71.9	0.2
The Pas	255577	713298	280	35.8	0.1
Emerson	29077	221220	36	13.1	0.1
Log Cabin	22245	328103	16	6.8	0.1
West Hawk	9848	64917	17	15.2	0.2
Pine Falls	4316	37887	25	11.4	0.6
Headingly	27294	52255	63	52.2	0.2
Rosser	2731	31481	10	8.7	0.4
Birds Hill	2022	24646	23	8.2	1.1



In Figure 2-1 there is an exponential relationship between the violation rate and the percentage of the truck traffic inspected at 10 scale sites operated at a variety of enforcement intensities. In this Figure, the violation rate decreases as the inspection rate increases. At high inspection rates, the curve becomes almost horizontal, approaching a

base level of violations. This indicates that regardless of the intensity of enforcement, there will always be some trucks in violation of weight regulations. This is due to operators who do not know what the regulations, do not know that their vehicle is in violation of a regulation, or who are willing to take a chance at avoiding detection. As the intensity of enforcement decreases, the number of trucks in violation rises steeply. At inspection rates of less than five percent, the violation rate does not rise above 1.2%. This may be due to the fact that many trucks have been inspected previously at scales in other jurisdictions with similar regulations. It also indicates that most trucking operators attempt to operate within the regulatory limits imposed.

2.5 Future Enforcement Options

In recent years there has been a development of advanced technologies commonly called Intelligent Transportation Systems (ITS) and more specifically those technologies related to Commercial Vehicle Operations (CVO). These include systems which can locate (AVL), identify (AVI), classify (AVC) and weigh trucks (WIM). These systems are a valuable tool for enforcement agencies and not a replacement for personnel.

There are several options for advanced technologies to be implemented as tools for enforcement agencies. Two such options are:

- WIM at current high truck volume inspection stations for pre-clearing of legally loaded trucks.
- the use a network of WIM and AVC sensors along with permanent inspections stations to be used in conjunction with patrol teams to maximize the coverage area for the enforcement agency.

This thesis examines the impacts of a network of WIM and AVC sensors used by patrol teams in conjunction with permanent weigh stations. Appendix E summarizes the impact of this network in terms of a coverage area.

2.6 Chapter References

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Chapter 3
The Economics of Heavy Vehicle Movements

This chapter examines the economics of truck movements on Manitoba Highways. It contains a short literature review on past studies, a summary of a City of Winnipeg pavement study, a Provincial Highway network pavement study, and the Trimac truck operating cost model which are used further on in the thesis.

3.1 Introduction

Since the introduction of the Highway Revenue Act of 1956 which imposed Federal taxes on gasoline and other motor fuels as well as excise taxes on new tires and new taxes on retreaded tires toward the establishment of a Highway Trust Fund dedicated solely for highway purposes it has been understood that there is a direct relationship between the cost of the highway infrastructure and the load effects of large trucks (Gray, 1992). The importance of trucking and the increased percentage of the freight movement is shown by the modal shift in freight movements to trucks in the United States (Garber, 1988). There has also been an increase in the total ton miles of freight moved. These factors along with the development of newer and much heavier trucks have dramatically increased the loading on pavements. The impact of these increased loads may effect the service life of pavements. Studies which examine the impact of truck loads on pavements are summarized in the thesis.

3.2 Literature Review

Overweight trucking can introduce costs to the infrastructure in bridge failure, pavement wear, and reduced safety on highways. The typical Manitoba pavement section is designed according to the AASHTO method. This method was based on a road test conducted in Ottawa, Illinois under the auspices of 49 states, the District of Columbia, Puerto Rico, the Bureau of Public Roads, and several industry groups (Garber, 1988).

Tests were conducted on short span bridges and test sections of flexible and rigid pavements. The test vehicles used were of ten different axle configurations and axle load combinations of single and tandem axle sets. The traffic was run for several thousand load repetitions and data was collected on the pavement condition with respect to the extent of cracking and the amount of patching required to keep the section in service

(Garber, 1988). Data was also collected on the extent of rutting. The results were analyzed and formed the basis for the AASHTO Design Method.

Most of today's pavements are still designed by using the AASHTO method despite new advances in vehicle suspensions, the widespread use of tridem axle groups, and new advances in materials of construction which may reduce the effects of axle loads on pavements. In recent years, several research studies have been done on the performance of pavements which question the validity of the design method. For example: (Reproduced from Alam, 1996)

- Small and Winston (1987) stated that the original analysis done for the AASHTO road test was in error resulting in design procedures that overestimate the life of rigid pavements for the specified ESAL's (Equivalent Standard Axle Loads).
- Little and Mckenzie (1989) concluded from their analysis of AASHTO data that the performance equations used overestimate the wear due to traffic for pavements thicker than 9.5 inches.
- The Ontario Pavement Analysis of Costs (OPAC) deterioration model for flexible pavements developed by Kher and Phang (1975) found that for pavements with less than 500,000 ESAL's/ Year deterioration was similar to that with zero loading concluding that low traffic pavements can be expected to deteriorate to their terminal condition independent of load.
- Hudson and Flanagan (1987) examined climate versus load effect on pavements at 14 locations in 5 states with different climates and found that traffic loads are a more significant cause of pavement distress than climate.

The pavement impacts of load related stresses has been examined in Manitoba in two recent studies. They are 'The Influence of Truck Traffic on Pavement Deterioration in the City of Winnipeg' by Mohammed Alam (1996) and 'Impact of Timber Haul Trucks on Pavement Infrastructure in the Repap and Pine Falls Networks' by INAG Engineering consultants Inc. (June, 1995).

3.3 City of Winnipeg Pavement Study

In 1996 a comprehensive examination of Winnipeg, Manitoba pavements was performed (Alam, 1996). The hypothesis was of the thesis was that the overall

deterioration of the truck route network in the City of Winnipeg increases with pavement age and traffic loads. The methodology used was to take the PCI (Pavement Condition Index) that the City of Winnipeg had collected from 1985 to 1994 and to group together sections with similar design specifications, construction and maintenance histories. Using the PAVER (City of Winnipeg Pavement Management System), PCI (Pavement Condition Index) values were obtained for these sections. Estimates of truck flows on the network and the resulting ESAL's over the time frame were calculated. The study then compared the pavement condition to the truck loading to quantify the deterioration.

One of the steps used to isolate these effects was to classify the road network into zones, branches, sections and sample units. PCI values are typically in sample units in a road section which are evaluated once every 2-4 years in a cycle. In order to isolate external factors such as maintenance a visual plot and statistical analysis of PCI values was undertaken. Climate was assumed to be uniform for all samples over the entire City of Winnipeg for the same time period.

The truck loading was obtained by first determining the truck flows on the truck route network. The truck route network was divided into three sections: full time, part time (operation in off peak hours) and roads where only trucks with six or less tires are allowed. Using truck flow and classification data from the City of Winnipeg, Province of Manitoba and selected Cordon Count Surveys, flows were harmonized into 4 truck classes for the entire network. These truck classes were LT (light trucks with 2 axles), HT (heavy trucks with 3 axles), singles (any truck-tractor single trailer-semitrailer combination) and doubles (any truck-tractor double trailer-semitrailer combination). Axle load data was then obtained for these truck classes from surveys done at several Manitoba Department of Highways Truck Inspection Stations. These traffic flows were then converted into ESAL's.

A model was then developed using a nonlinear regression analysis. The result is the development of performance curves of pavement over time. The model was then tested using 1995 and 1996 data.

The conclusion of the thesis was that the difference in pavement performance across the different load groups was found not to be significant. The hypothesis was rejected in favor of the conclusion that the City of Winnipeg's truck route pavement deterioration was influenced by pavement aging and not by truck loads for rigid pavements.

3.4 Timber Haul Pavement Study

In 1995 a comprehensive study was done on the effects of overweight trucking of timber haul trucks in the Pine Falls and Repap (The Pas) regions on the pavement infrastructure by INAG consultants. The objective was to determine the marginal impact of timber haul traffic on the structural adequacy of the road networks serving the two mills. Specifically it was to determine the pavement adequacy for the next 20 years (assuming no increase in traffic) and if not adequate to determine the strengthening and costs to make the roads adequate. The study required traffic data, geometric constraints, seasonal distributions of traffic, impact on other structures, and vehicle dynamics of different truck configurations.

The analysis used a theoretical finite element model (2 and 3 dimensional) to determine whether the pavement structure would be overstressed under heavy truck traffic of various axle groups and truck configurations. This was then projected to cumulative damage over 20 years.

The adequacy of the pavement was based upon three factors: the deflection criteria set up by the Manitoba Department of Highways and Transportation (MDHT) for different levels of traffic, strain criteria based on assumed fatigue relationships for the surface layer and subgrade, and the standard design procedure using MDHT design tables.

The conclusions of the study were:

- The traffic data showed there was significant overloading of trucks on the two networks. If the optimum truck configuration (7 axle B train) carried 20%

more load the cumulative ESAL's would not change significantly, thus the impact on the infrastructure would be insignificant.

- The overloaded truck traffic imposed by the wood haul traffic to the mill at The Pas and Pine Falls has no significant impact on the pavement infrastructure. The pavement will be able to carry the additional loads without fatigue damage to the surface layer or the subgrade over the analysis period of 20 years.
- The design procedure of MDHT tends to overestimate the structural requirement for the pavements in these two networks.

3.5 Truck Operating Costs-Trimac

Truck operating costs can vary significantly with vehicle configuration, commodity, distance, utilization, region, and right of way. The most comprehensive study which qualifies these costs is produced by Trimac Consulting Services for the Transportation Association of Canada titled 'Operating Costs of Trucks 1995' (Trimac, 1995). The analysis summarized for regions, 10 of the most common equipment configurations, and commodity types (dry freight and bulk), utilization (high, medium, low). The study then focuses on specific costs for each of the categories created. Data was obtained through surveys of industry, operators, unions and government agencies. The costs identified are (Trimac, 1995):

- driver costs (wages)
- fuel costs
- cleaning costs
- transport costs (this is a miscellaneous category which includes special equipment, hoses, tools, chains, tarps, heaters, etc.)
- tire costs
- repair costs
- depreciation costs
- capital costs
- license costs
- administration, interest, and insurance costs

3.6 Truck Operating Costs-Trimac-Manitoba Highways

The operating costs of trucks on Manitoba highways in a cents per kilometer basis is as follows (Trimac, 1995):

Table 3-1 Truck Operating Costs in Manitoba

Configuration Assuming 90% Operating Ratio	Utilization (km)	Costs (¢/km)
2 Axle Straight Truck(Drv)	80.000	222.4
	160.000	208.4
	240.000	203.7
2 Axle Straight Truck(Bulk)	80.000	141.1
	160.000	116.1
	240.000	107.8
5 Axle Semi (Van)	80.000	147.2
	160.000	124.6
	240.000	117
5 Axle Semi (Flat Deck)	80.000	149.3
	160.000	128.3
	240.000	121.3
5 Axle Semi (Liquid Tanker)	80.000	141.8
	160.000	114.8
	240.000	105.8
5 Axle Semi (Bulk Tanker)	80.000	147
	160.000	117.5
	240.000	107.7
6 Axle Semi (Van)	80.000	169.9
	160.000	144.7
	240.000	136.3
6 Axle Semi (Flat Deck)	80.000	166.6
	160.000	143.4
	240.000	135.6
8 Axle B Train (Van)	80.000	189.1
	160.000	158.5
	240.000	148.3
8 Axle B Train (Flat Deck)	80.000	192.9
	160.000	165.6
	240.000	156.5
8 Axle B Train (Liquid Tanker)	80.000	186.9
	160.000	145.1
	240.000	131.2
8 Axle B Train (Drv Tanker)	80.000	185.4
	160.000	144.5
	240.000	130.8

These values indicate that for any truck configuration, as the utilization rate increases (i.e. the kilometers of travel per year), the unit truck operating cost per kilometer of use decreases. In addition, smaller trucks such as the 2 axle straight trucks have higher unit costs than larger trucks such as the 5 axle tractor semi-trailer. This is due to the fact that smaller trucks operate primarily in urban areas while larger trucks generally operate in rural areas. This results in higher fuel consumption per unit of payload carried. The data from the Trimac report also indicates that the tractor single trailer combinations have higher unit costs than the tractor double trailer combinations. This is primarily due to the fact that single trailer trucks are primarily vans which are

often carrying less than truck load orders. Conversely, double trailer combinations are primarily tankers or flatbeds which have much smaller unloading times than vans. For the purposes of this thesis, truck operating cost is defined as the cost per kilometer of truck travel by truck type on Manitoba highways assuming the highest utilization rate given by TRIMAC.

3.7 Trucking Industry Incentive to Overweight Trucking

The rates which a trucking firm charges are based upon three criteria. The highest rates are those which the market will bear, the most common rates are costs plus a margin of profit, and the lowest rates are set at or below cost. For example, the rate for one trip would be the costs in cents per kilometer times the number of kilometers plus the profit. Generally, the rates follow the costs plus profit scenario. Rates are set at or below costs in order to attract new traffic or to avoid traveling empty on the back haul portion of a trip. A trucking firm will attempt to have its average rate, using all three schemes to follow the cost plus profit scenario. In a competitive environment, rates can be reduced by reducing costs or increasing the amount of freight carried per trip. Due to the competitive nature of the trucking industry, many trucks are already operating at the limits imposed by regulations in various jurisdictions. Therefore, carriers tend to operate at higher loads than the maximum allowable limits.

The following chapters examine the technologies available for enforcing or monitoring truck weights, the truck traffic on Manitoba Highways, the operating cost of trucks on the provincial highway network, and the impacts of truck loads on pavements.

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Chapter 4
WIM System Experience in Manitoba



This chapter examines Manitoba's experience with AVC and WIM technologies. It examines the Glenlea and Brokenhead WIM/AVC sites in terms of the drifting of WIM data over time and compares the WIM weights to static weights. These data are used later to classify the Manitoba truck flow data.

4.1 Systems Operating in Manitoba

AVC and WIM technologies were introduced to Manitoba in 1990/91 to collect vehicle classification data and axle weight data as part of the Strategic Highway Research Program (SHRP).

As of 1994, using Golden River M-600 processing units, piezo-electric AVC and WIM technology has been installed at five SHRP sites (Glenlea (PTH # 75); Brokenhead (PTH # 1, east of Winnipeg); Symington (PTH # 100, South Perimeter Highway); MacGregor (PTH #1, west of Winnipeg); Oak Lake (PTH #1, west of Winnipeg) and two C-SHRP sites (Roland and Nesbitt) in the province. AVC's have also been installed three non-SHRP sites - Paintlake, Oakville, and Russell.

As of 1994, the MDHT owns 17 M-600 processing units. One unit is required for each AVC and each WIM installation (thus, two units are required where both AVC and WIM exist). MDHT has purchased 7 M-660 processing units to replace the 600s at the SHRP and C-SHRP sites. A single 660 unit can handle both the AVC and WIM operation. As of December, 1994, these 660s have not been installed. When so installed, the 600 units from the SHRP and C-SHRP sites will be re-deployed to other locations. Two new AVC sites planned are Langruth and Minkcreek (north on PTH 10). The processors are currently programmed to classify vehicles using the FHWA-13 classification scheme. However, they are capable of classifying up to 15 vehicle classes given modified programs (Ostroman, 1993).

The WIM and AVC equipment installed in Manitoba has encountered a series of problems originating from the software. Each new software version installation corrected several old problems but introduced new ones. Some problems were: classifying vehicles incorrectly, sensors turning off on their own, and difficulty with collecting and storing data surveys. (Ostroman 1993).

Table A-1 in Appendix A summarizes the operational experience of the equipment at each site since installation. As of July 27, 1994, only one WIM site (i.e., Brokenhead) was producing WIM data. The other sites have a variety of software problems. All the AVC's (except the one at Roland) were producing classification data.

4.2 Evaluation of the Glenlea Site

Ostroman's (1993) research included a study to determine the functional capability of the latest software version. The study considered the operation of the Glenlea site during the summer of 1991. In particular, the study was concerned with the reliability of axle load estimates obtained from the WIM sensors, and vehicle classification data from the AVC loops.

Ostroman (1993) observed that "(at the time of the test in summer 1991) the site appears to fulfill SHRP's location requirements for super-elevation, pavement surface stress, gradient and curvature. However, there is a slight rise in the traveling lane approximately 30 m south of the sensor array, which could affect the measurements taken by the sensors." (p. 80).

Prior to undertaking the study, a calibration of the Glenlea site was conducted. This is described in detail by Ostroman (1993). Upon deciding that the calibration was sufficient, two reliability tests were undertaken. The method used was to obtain classifications and static weights for trucks in the traffic stream (done at the Emerson scale) and compare them to classifications and weights obtained by WIM and AVC equipment for the same vehicles (measured at the Glenlea site, on the recently calibrated equipment). Various statistical analyses were then used to determine the reliability of the data.

Ostroman (1993) concluded:

- The analysis of WIM technology shows that WIM (at the Glenlea site) does not reliably reproduce static weights. That is, the average percentage of differences between the dynamic and static axle weights exceeded the differences tolerated by the proposed ASTM standard for WIM.
- The automatic vehicle classification (AVC) analysis shows that AVC equipment reliably classifies (i.e., 88% of the time) FHWA class 9 vehicles

(3-S2 trucks). However, the small sample sizes of the remaining truck classes produced inconclusive results regarding AVC's ability to classify trucks other than FHWA class 9.

From the enforcement perspective, however, Ostroman's data suggests that WIM measurements - even at WIM sites of some suspect, such as Glenlea - may be of some value. For example (depending on the calibration factor used), the following observations can be made based on Ostroman's data (as shown in Figures 5-1 to 5-8, p 96-99 in Ostroman, 1993), assuming relatively recent calibration of a WIM device:

- In only rare instances would a 3-S2 measured with a WIM GVW of < 25,000 kg be > 39,500 kg in STATIC GVW.
- In only rare instances would a tandem axle measured with a WIM weight of < 10,000 kg be > 17,000 kg in STATIC weight.
- In only rare instances would a front steering axle measured with a WIM weight of < 3,000 kg be > 5,500 kg in STATIC weight.

With refinement, these results offer opportunities for utilizing WIM weights in enforcement. Dynamic weights could be used as a screening tool for empty or lightly loaded trucks. It is also possible that higher accuracy could be attained by controlling vehicle speed. This type of knowledge would permit identifying those vehicles which clearly need not be stopped for static weighing.

4.3 Evaluation of the Brokenhead Site

The Brokenhead WIM scale is located on the westbound driving lane of the Trans Canada Highway approximately 80 km west of West Hawk Weigh Station at the Ontario border. (Cordeiro, 1994) The site was developed at the beginning of the SHRP program in 1991. This scale is capable of providing both truck classification data and truck axle weights. Classifiers are present in both lanes. Piezo-electric WIM sensors are present in the outside lane only.

Due to equipment malfunctions, the site was not operational on a consistent basis prior to June 1992. Since that time, it has worked on a regular basis with some gaps due to equipment failure.

The Brokenhead WIM records the following data:

- a vehicle identifying number
- date, hour, minute, second, hundredths of a second, when vehicle passed
- number of axles
- inter-axle spacing
- FHWA truck class (13 classes) (derived)
- individual axle weights
- GVW (derived)
- speed (derived)

The data is stored in a compressed data format. Table A-2 of Appendix A shows how the data is recorded and the meaning of the various codes as of 1994.

4.3.1 Calibration

As part of the SHRP program, MDHT has agreed to keep the WIM scales operating on a consistent basis. In order to ensure the reliability of the dynamic truck weights being recorded, it has been recommended (both by Golden River and SHRP) that the WIM scales be calibrated every 6-12 months.

As of 1994 the calibration procedure involves operating a 2-axle truck (of known static axle weights and spreads) over the scale at a relatively constant speed for several passes until at least 10 consistent runs have been obtained. For each of these passes, 8 calibration numbers (one for each sensor) are produced using the calibration computer program provided by the Golden River Corporation.

The first and fifth number for all passes are added and averaged to produce the first of the four final calibration factors. The second and sixth, third and seventh, fourth and eighth are similarly treated to produce the final three calibration factors. These factors are then inputted into the WIM device and the truck then does several verification passes. If the data produced by the WIM scale matches the known static weights and axle spreads, then the scale is considered calibrated. If the weights do not match, then further runs are to be conducted.

The scale at Brokenhead was calibrated in June, 1992 and again in May, 1994. The bulk of the data examined in the following sections was produced during this two year period.

4.3.2 Classification

Figure 4-1 compares the truck classification data provided by Brokenhead AVC's for the two week period immediately following the calibration of the WIM sensor in May of 1994 to a manual truck classification survey conducted at the West Hawk weigh station in 1992. The two data sets are not directly comparable. Nevertheless, it does appear that the WIM classifier is providing a similar mix to that observed in the manual survey.

4.3.3 WIM Weight Measurements

As one part of assessing the performance of the WIM device at Brokenhead, WIM weights for a one year period beginning in June, 1992 were examined in detail. Data was available for the months of September, October and December in 1992, and from January to August of 1993. As of 1994, the analysis has focused on the 3-S2's (FHWA Truck Class 9 vehicle), the 3-S3 (FHWA Truck Class 10), and the Super B-Train (FHWA Truck Class 13). All of the data used is summarized in Appendix B.

3-S2's

For 3-S2's, the WIM sensor provides an axle weight for each of the 5 axles. For the purpose of comparison to static axle group weights, the first axle was considered to be the steering axle, the second and third were added together to be the tandem drive axle, and the fourth and five were similarly added to be the tandem trailer axle. For each month of the analysis period, the 3-S2's were analyzed in terms of steering axle, drive tandem axle, trailer tandem axle, and GVW.

3-S3's

For 3-S3's, the WIM sensor provides an axle weight for each of the 6 axles. For the purpose of comparison to static axle group weights, the first axle was considered to be the steering axle, the second and third were added together to be the tandem drive axle, and the fourth, fifth and sixth were similarly added to be the tridem trailer axle. For each month of the analysis period, the 3-S3's were analyzed in terms of steering axle, drive tandem axle, trailer tandem axle, and GVW.

Super B-Trains

For Super B-Trains, the WIM sensor provides an axle weight for each of the 8 axles. For the purpose of comparison to static axle group weights, the first axle was considered to be the steering axle, the second and third were added together to be the tandem drive axle, and the fourth, fifth and sixth were similarly added to be the first trailer tridem axle, the seventh and eighth were added together to represent the second trailer tandem axle. For each month of the analysis period, the 3-S3's were analyzed in terms of steering axle, drive tandem axle, trailer tandem axle, and GVW.

GVW ANALYSIS

3-S2's

WIM GVW's for all laden 3-S2's (i.e., all 3-S2's whose GVW was greater than 14500 kg or defined as loaded) observed crossing the Brokenhead scale between September 1992 and August 1993 were analyzed. The observed weights were allocated into 500 kg groups over the GVW range from 14500 to 65000 kg - for each month. In addition, WIM observations of 3-S2's during the two week period following the most recent calibration (May 1994) were also analyzed. Further, selected observations of 3-S2 static weights passing the West Hawk Lake permanent weigh station in 1993 and 1994 are examined for comparison purposes.

Figure 4-2 illustrates the cumulative frequency distributions of these WIM GVW measurements for each month through the analysis period. An equivalent frequency distribution curve for the post calibration period, and a frequency distribution curve of selected static weight observations of 3-S2's passing through West Hawk, are shown in the Figure. The following observations can be made:

- Over the period September 1992 to August 1993, the cumulative distribution curve moves steadily to the right. In September 1992, approximately 10% of the observed WIM GVW's of 3-S2's at Brokenhead were greater than 39,500 kg. By the summer of 1993 (i.e., May to August), the scale measured approximately 40% of the 3-S2's with GVW's greater than 39,500 kg. Two explanations can be offered: (i.) the trucks are getting heavier with time; (ii) the WIM sensors are drifting with time, in effect increasingly overweighing

trucks. This first explanation appears unreasonable in that the vast majority of these trucks would have only a short time earlier passed through the West Hawk scale, complying with the 39,500 kg weight limit for 3-S2's. Thus, the second explanation seems most reasonable.

- The shapes of the static and dynamic cumulative GVW distribution curves for 3-S2's are different.

3-S3's

Similarly to 3-S2's, WIM GVW's for all laden 3-S3's (i.e., all 3-S3's whose GVW was greater than 15000 kg or defined as loaded) observed crossing the Brokenhead scale between September 1992 and August 1993 were analyzed. The observed weights were analyzed in a manner similar to 3-S2's.

Figure 4-3 illustrates the cumulative frequency distributions of these WIM GVW measurements for each month through the analysis period. An equivalent frequency distribution curve for the post calibration period, and a frequency distribution curve of selected static weight observations of 3-S3's passing through West Hawk, are shown. The following observations can be made:

- Similar to 3-S2's, over the period September 1992 to August 1993, the cumulative distribution curve moves steadily to the right. In October 1992, approximately 35% of the observed WIM GVW's of 3-S3's at Brokenhead were greater than 46500 kg. By the summer of 1993 (i.e., May to August), the scale measured approximately 70% of the 3-S3's with GVW's greater than 46500 kg. Similar to 3-S2's, two explanations can be offered: (i.) the trucks are getting heavier with time; (ii) the WIM sensors are drifting with time, in effect increasingly overweighing trucks. This first explanation appears unreasonable in that the vast majority of these trucks would have only a short time earlier passed through the West Hawk scale, complying with the 46500 kg weight limit for 3-S3's. Thus, the second explanation seems most reasonable.
- The post calibration curve of May 1994 indicates that less than 5% of the 3-S3's were overweight on GVW.
- The shapes of the static and dynamic cumulative GVW distribution curves for 3-S3's are different.

AXLE GROUP WEIGHTS

3-S2's

Figures 4-4, 4-5, and 4-6 illustrate the cumulative frequency distribution for steering, drive tandem and trailer tandem axles respectively for the analysis period, the post calibration period, and the static weights. The following observations can be made:

- For all axle groups, the general "drift" evident in the GVW curves can be seen (i.e., the curves are shifting to the right with time). For example, in September 1992, 10% of the WIM weights of the front steering axle were greater than 5,500 kg. By August 1993, some 70% of these axles showed a WIM weight greater than 5,500 kg. Similarly, for the tandem axles, 10% indicated a WIM weight greater than 17,000 kg in September 1992; by the summer of 1993, nearly 40% of tandems had a WIM weight greater than 17,000 kg.
- While the above drifting is evident for all axle groups, it does not occur in the very consistent manner seen in the GVW distributions.(i.e. the amount drift between consecutive months is not consistent). There is some type of additive effect - where greater variance is seen in the smaller weight ranges associated with the individual axles themselves. This may be due to a seasonal temperature effect which changes the material properties of the WIM strip sensor.
- As is the case for GVW, the axle weight post calibration curves of May 1994 indicate that effectively, very few are over the allowed static limits of 5,500 kg and 17,000 kg on steering and tandem axles respectively.

3-S3's

Figures 4-7, 4-8, and 4-9 illustrate the cumulative frequency distribution for steering, drive tandem and trailer tridem axles respectively for the analysis period, the post calibration period, and the static weights. The following observations can be made:

- For all axle groups, the general "drift" evident in the GVW curves can be seen as was the case for 3-S2's. (i.e., the curves are shifting to the right with time). Thus, for example, in October 1992, 37% of the WIM weights of the front steering axle were greater than 5,500 kg. By August 1993, some 85% of these axles showed a WIM weight greater than 5,500 kg. Similarly, for the tridem axles, 30% indicated a WIM weight greater than 24,000 kg in October 1992; by the summer of 1993, nearly 50% of tridems had a WIM weight greater than 24,000 kg.

- As was the case for 3-S2's, the above drifting is evident for all axle groups, it does not occur in the very consistent manner seen in the GVW distributions. There is some type of additive effect - where greater variance is seen in the smaller weight ranges associated with the individual axles themselves. As with 3-S2's, there appears to be a seasonal affect on the performance of the WIM strip sensor.
- As is the case for GVW, the axle weight post calibration curves of May 1994 indicate that effectively very few are over the allowed static limits of 5,500 kg, 17,000 kg and 24000 kg on steering, tandem and tridem axles respectively.

4.3.4 Static To WIM Weight Comparison

The second part of the Brokenhead WIM scale performance analysis compared the static weights of various trucks to the dynamic weights for that same truck produced by the WIM sensor. In June 1994, after the most recent calibration of the Brokenhead scale in May of 1994, static and dynamic weights were collected for 200 trucks over a one week period. Of these 200 trucks, 93 were 3-S2's, 25 were 3-S3's, and 17 were Super B Trains - and it is these observations which are presented here. The remaining 65 trucks were of other configurations such as 7 and 8 axle A-Trains, and 7 axle B Trains. The data sets were too small to be examined and are not included in the analysis.

3-S2's

Figures 4-10, 4-11, 4-12, and 4-13 show the comparisons of the WIM to static weights for these 94 3-S2's - for steering axles, drive tandem axles (sum of axles 2 and 3 on WIM), semi-trailer tandem axles (sum of axles 4 and 5 on WIM), and GVW (sum of all axles on WIM) respectively. The following observations can be made:

- There is no apparent correlation between the WIM weight of a front steering axle and its static weight. From an enforcement standpoint, however, this is of little practical concern because in only rare instances is the static weight of a front steering axle on a 3-S2 greater than 5,500 kg.
- A drive tandem axle measured with a WIM weight of less than 12,000 kg is rarely greater than 17,000 kg in static weight.

- The data indicates a strong correlation between static and dynamic weights on trailer tandem axles in 3-S2s. A trailer tandem axle measured with a WIM weight of less than 14,000 kg is rarely greater than 17,000 kg in static weight.
- A 3-S2 measured with a WIM GVW of less than 30,000 is rarely greater than 39,500 kg in static weight.

3-S3's

Figures 4-14, 4-15, 4-16, and 4-17 show the comparisons of the WIM to static weights for these 25 vehicles - for steering axles, drive tandem axles (sum of axles 2 and 3 on WIM), semi-trailer tridem axles (sum of axles 4, 5 and 6 on WIM), and GVW (sum of all axles on WIM) respectively. The following observations can be made:

- For steering and drive tandem axles, patterns similar to those of 3-S2's occur. i.e. there is no apparent correlation between the WIM weight of a front steering axle and its static weight.
- As with 3-S2's, a drive tandem axle measured with a WIM weight of less than 12,000 kg is rarely greater than 17,000 kg in static weight.
- A trailer tridem axle with a WIM weight of less than 15000 kg is rarely greater than 24000 kg in static weight.
- The data indicates a strong correlation between static and dynamic weights on trailer tandem axles in 3-S2's. Due to the limited number of data sets available, the statistical reliability of these observations is in question.
- The data indicates that there is a significant drifting between changes of season. (i.e. summer to winter, winter to summer). This is due to the fact that the WIM sensor is made of a high density rubber which is sensitive to temperature variations. The effects of the impact of a tire on the sensor is sensitive to the time of year the scale was calibrated.

Figure 4-1: Brokenhead WIM Vs. Static Survey Classification

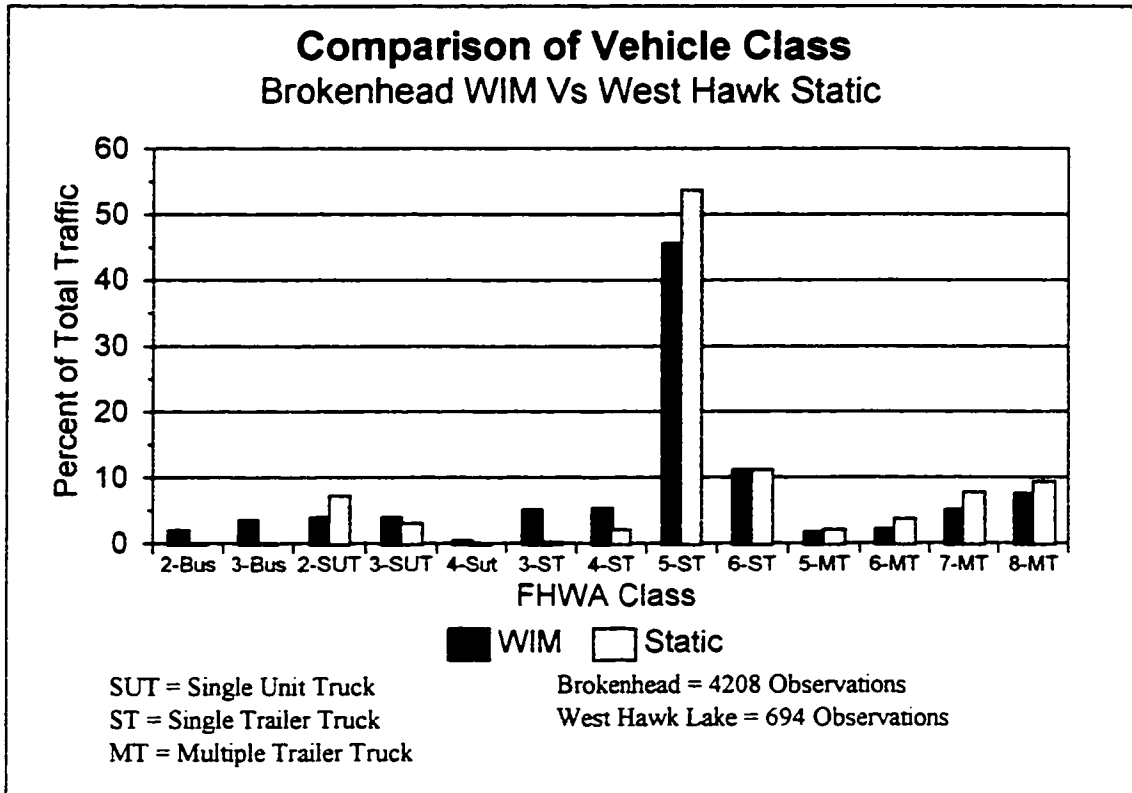


Figure 4-1: WIM Classification Data obtained from MDHT in the period following the most recent calibration of the Brokenhead Scale (May 94): Static Data from manual surveys done at the West Hawk Lake Weigh Station in 1992.

Figures 4-2 to 4-9:

- *Truck Weights in Winnipeg, 1991', by Clayton & Fekpe,
- *92 Static from manual West Hawk Lake Surveys by U of M in 1992
- *94 Static from manual West Hawk Lake Surveys by U of M in 1993
- *Calibration from 2 week period following may 1994 Brokenhead Scale Calibration
- *All other months from WIM data provided by MDHT

Figures 4-10 to 4-17

- *From June 1994 Static Survey at West Hawk Lake and corresponding WIM Survey at Brokenhead

Figure 4-2: Cumulative Frequency Distribution: 3-S2 GVW

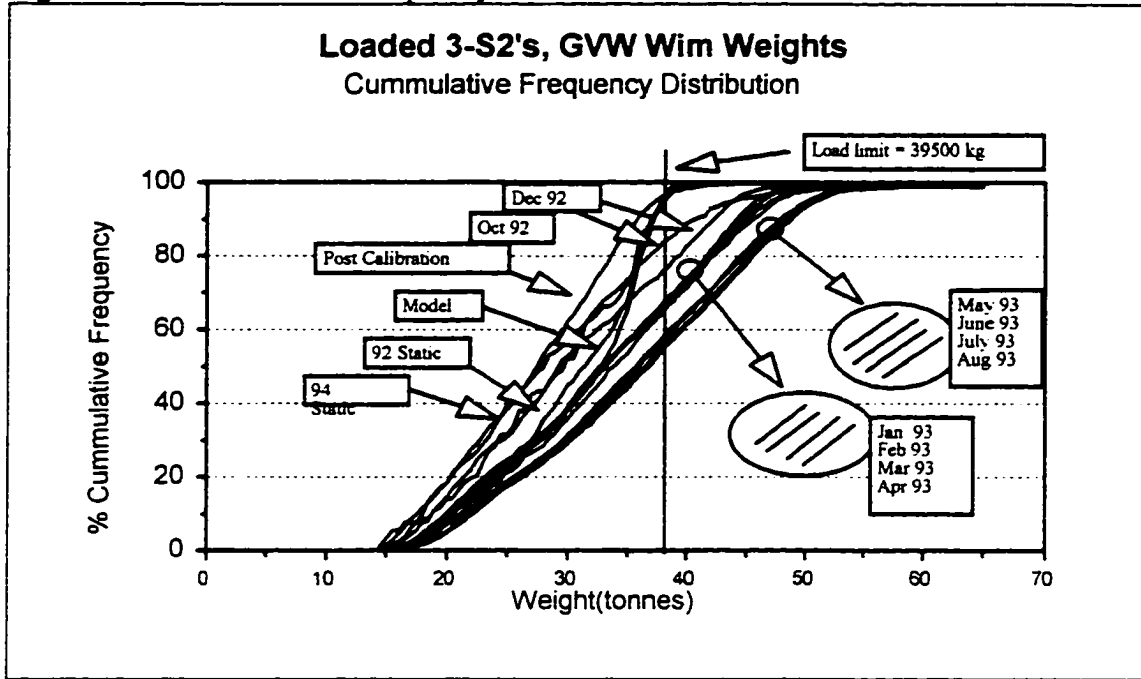


Figure 4-3: Cumulative Frequency Distribution: 3-S3 GVW

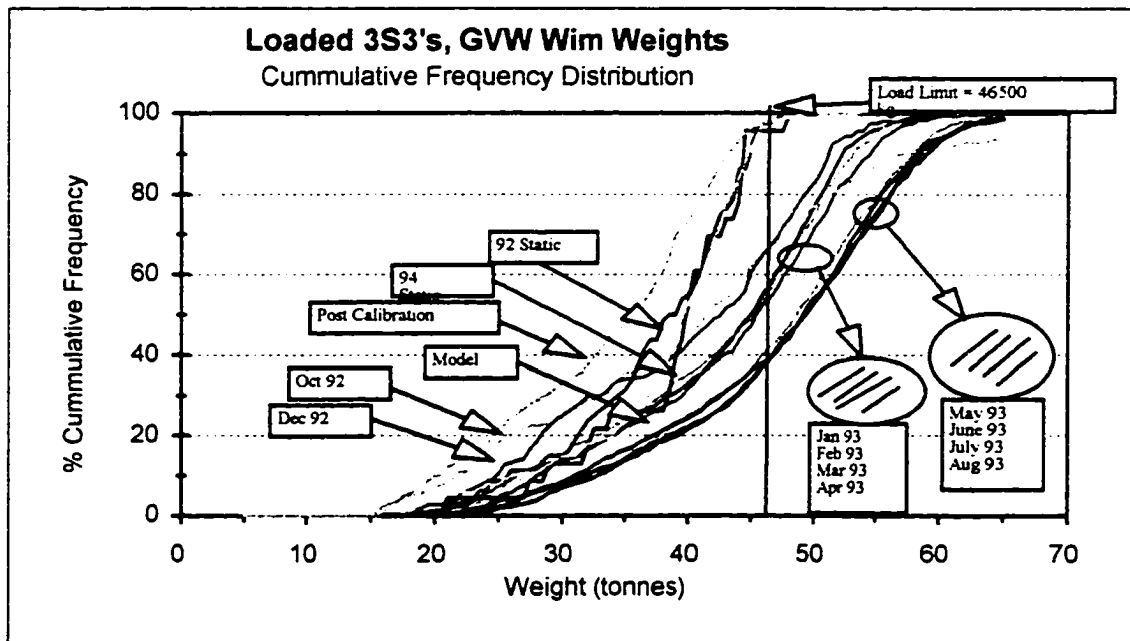


Figure 4-4: Cumulative Frequency Distribution: 3-S2 Steering Axle

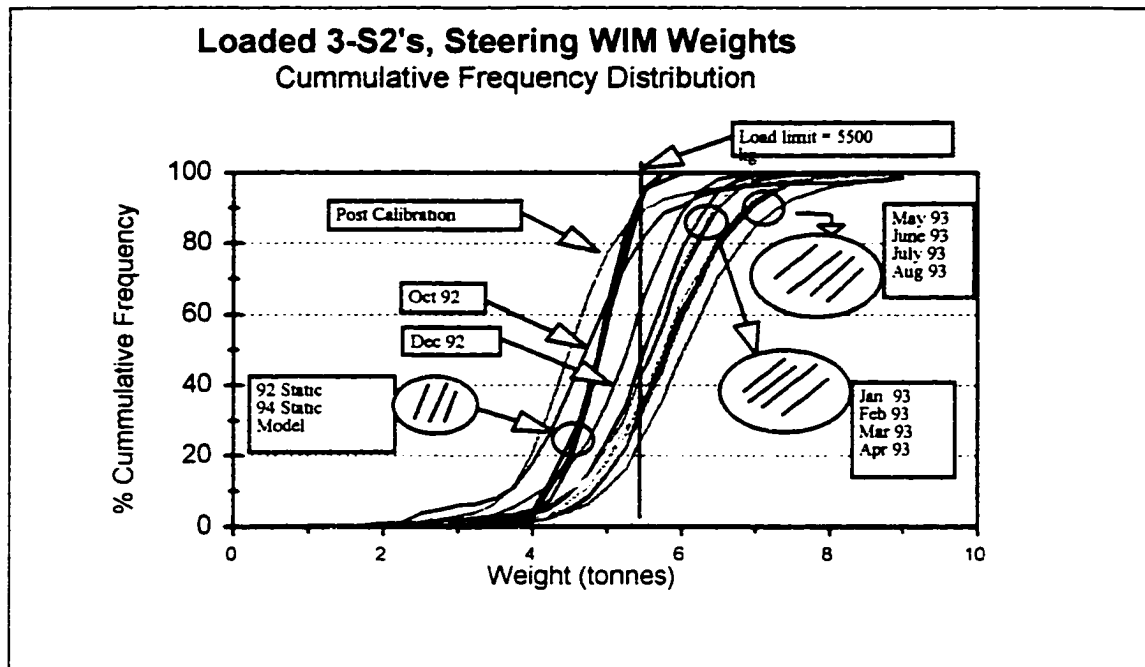


Figure 4-5: Cumulative Frequency Distribution: 3-S2 Drive Tandem Axle

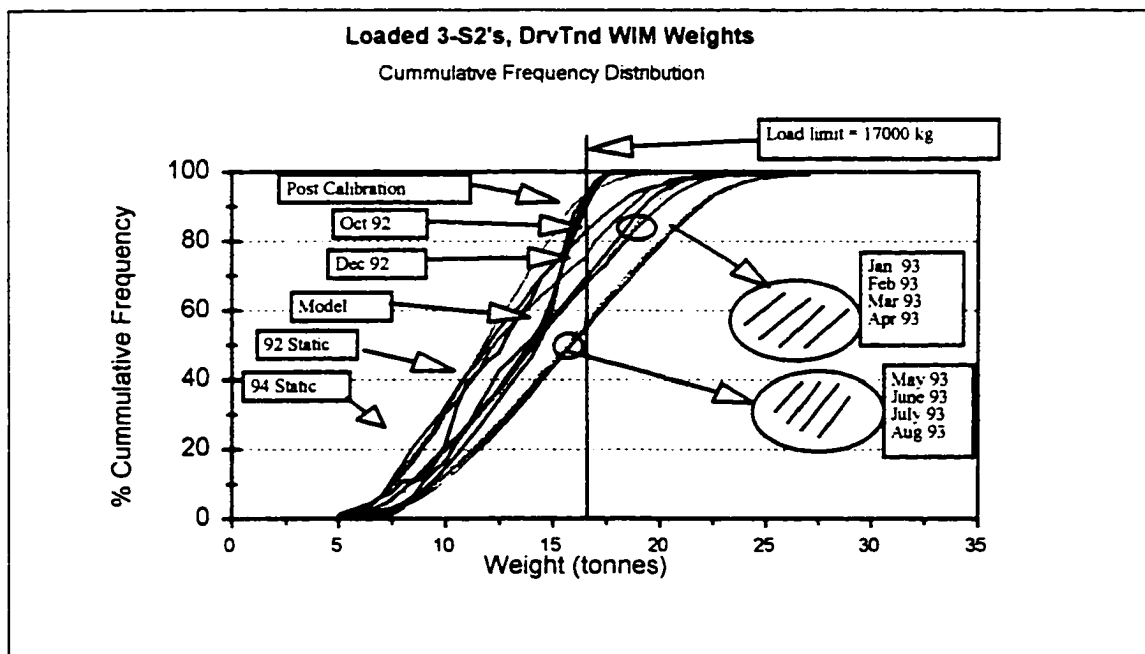


Figure 4-6: Cumulative Frequency Distribution: 3-S2 Trailer Tandem Axle

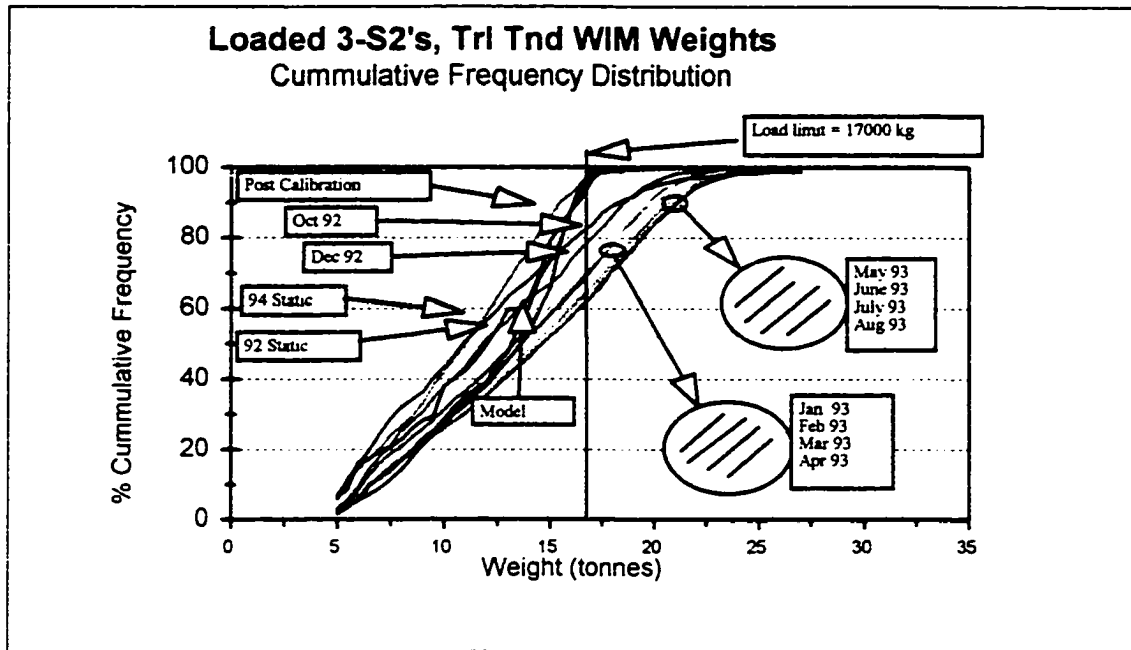


Figure 4-7: Cumulative Frequency Distribution: 3-S3 Steering Axle

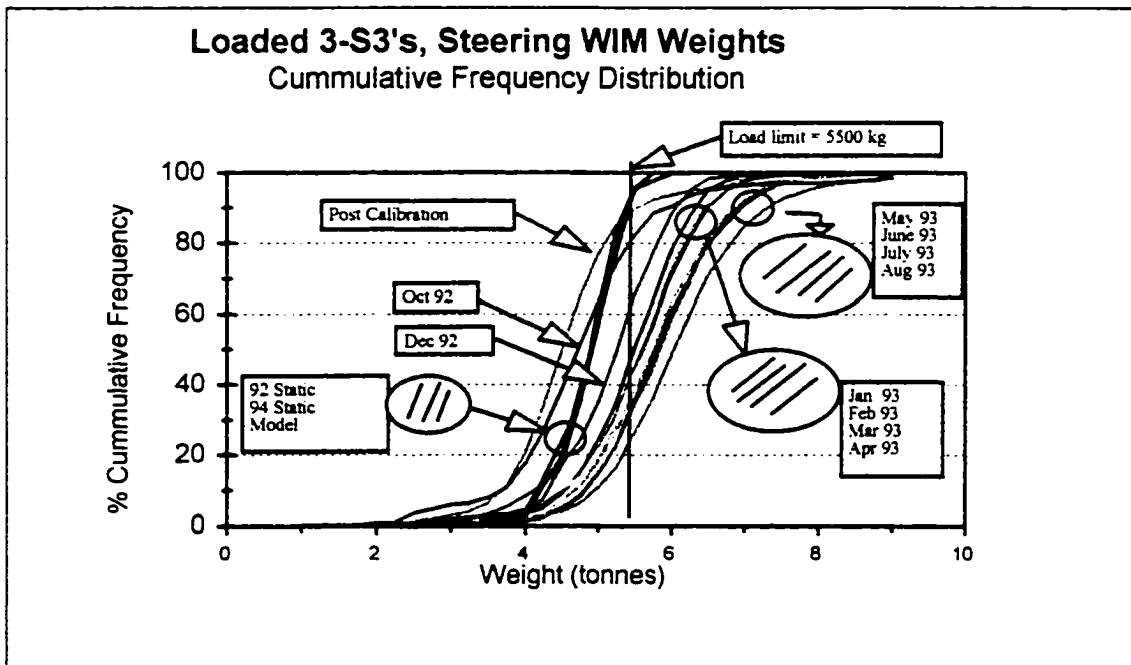


Figure 4-8: Cumulative Frequency Distribution: 3-S3 Drive Tandem Axle

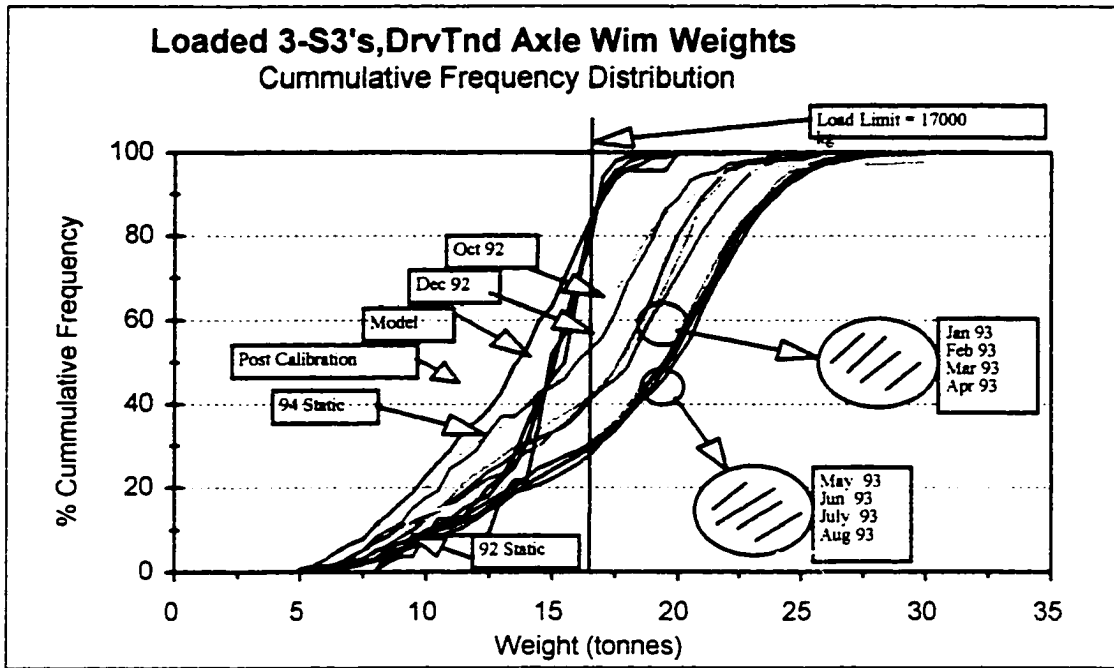


Figure 4-9: Cumulative Frequency Distribution: 3-S3 Trailer Tridem Axle

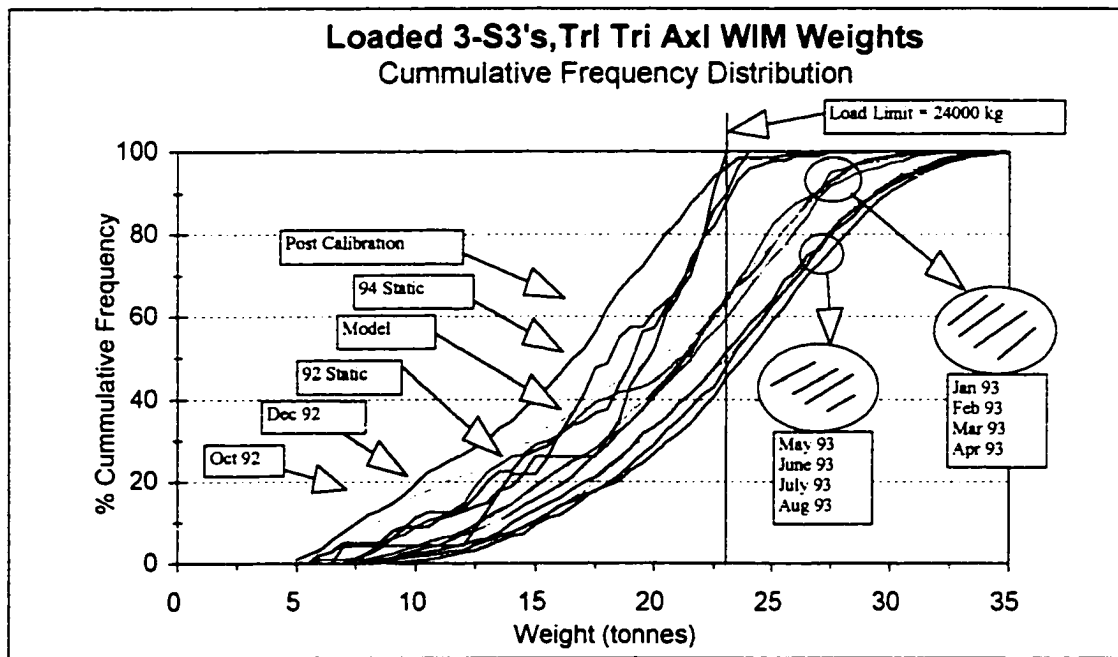


Figure 4-10: WIM vs Static Weight: 3-S2 Steering Axle

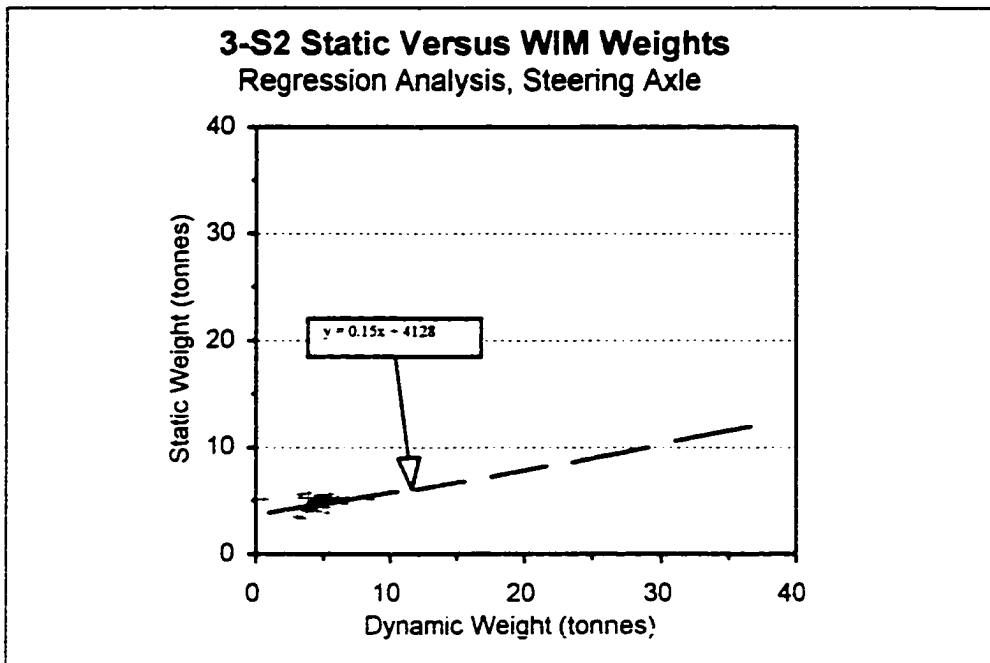


Figure 4-11: WIM vs Static Weight: 3-S2 Drive Tandem Axle

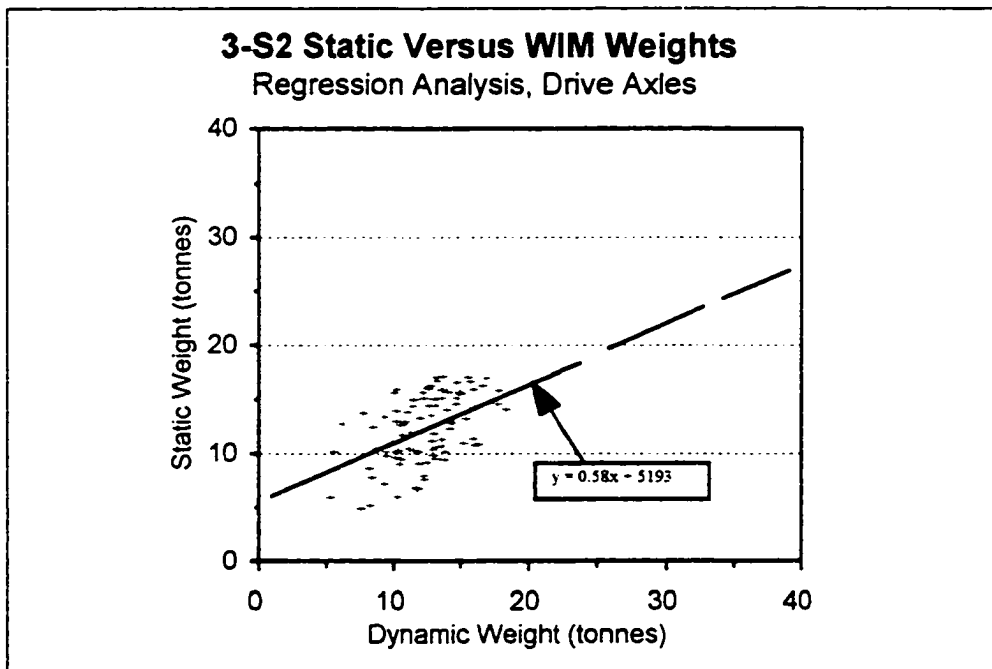


Figure 4-12: WIM vs Static Weight: 3-S2 Trailer Tandem Axle

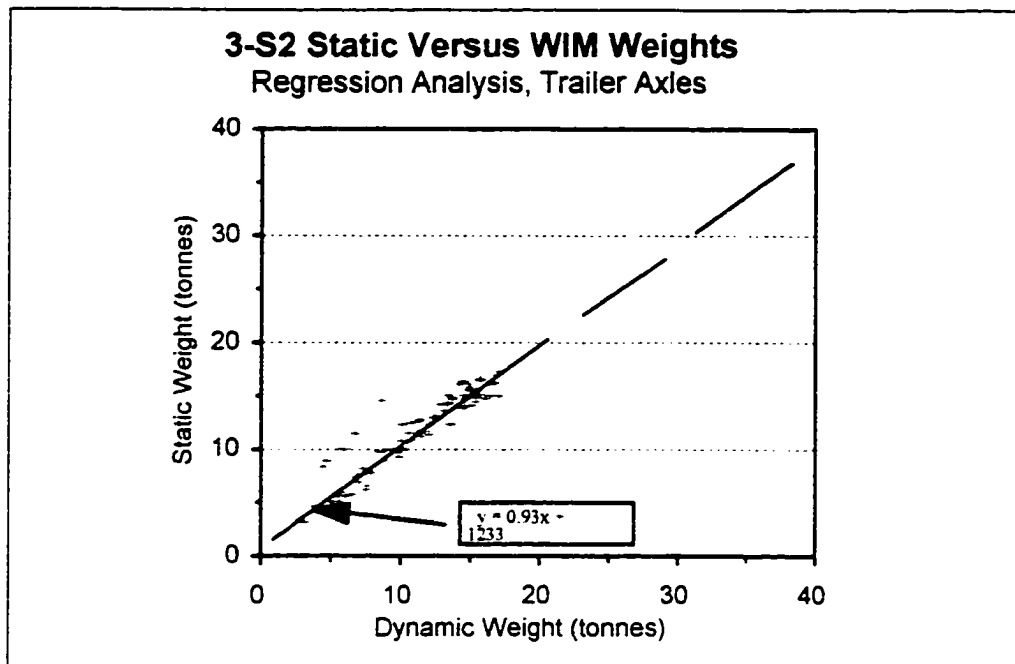


Figure 4-13: WIM vs Static Weight: 3-S2 GVW

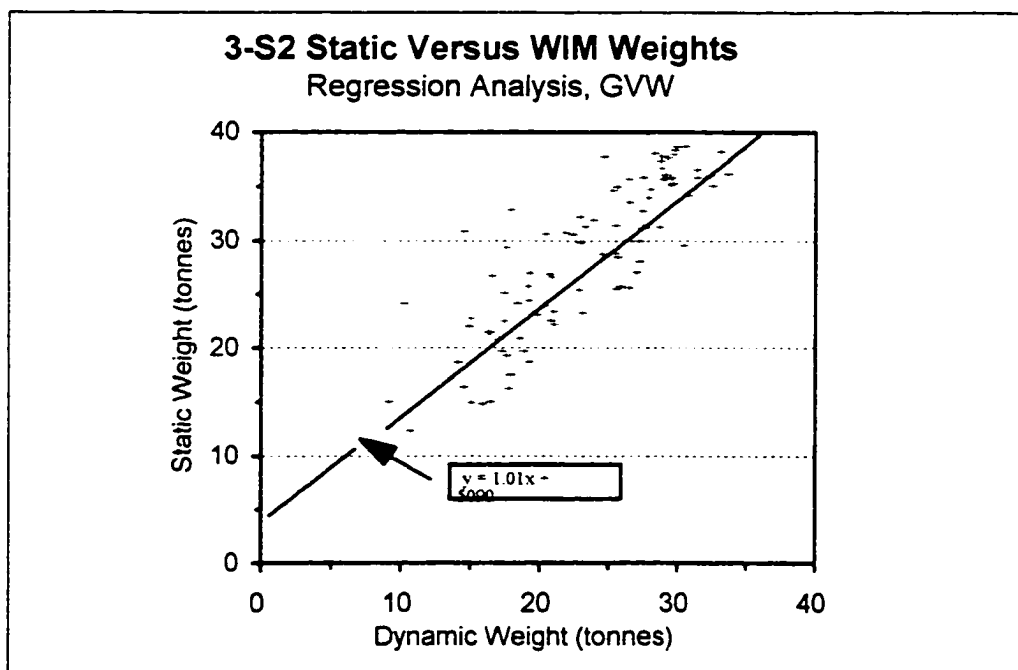


Figure 4-14: WIM vs Static Weight: 3-S3 Steering Axle

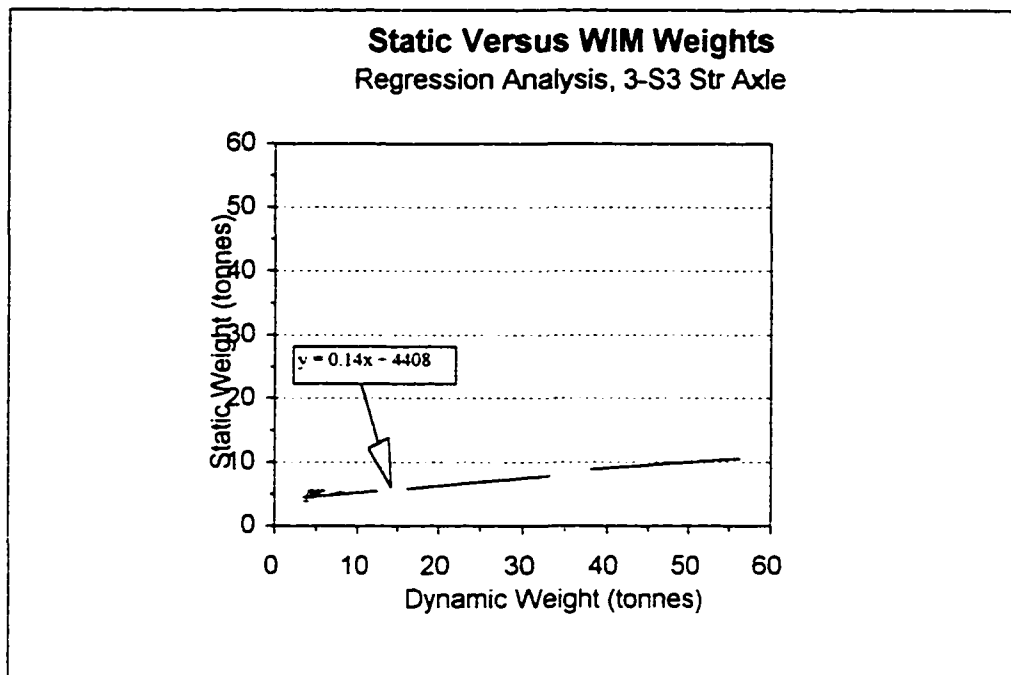


Figure 4-15: WIM vs Static Weight: 3-S3 Drive Tandem Axle

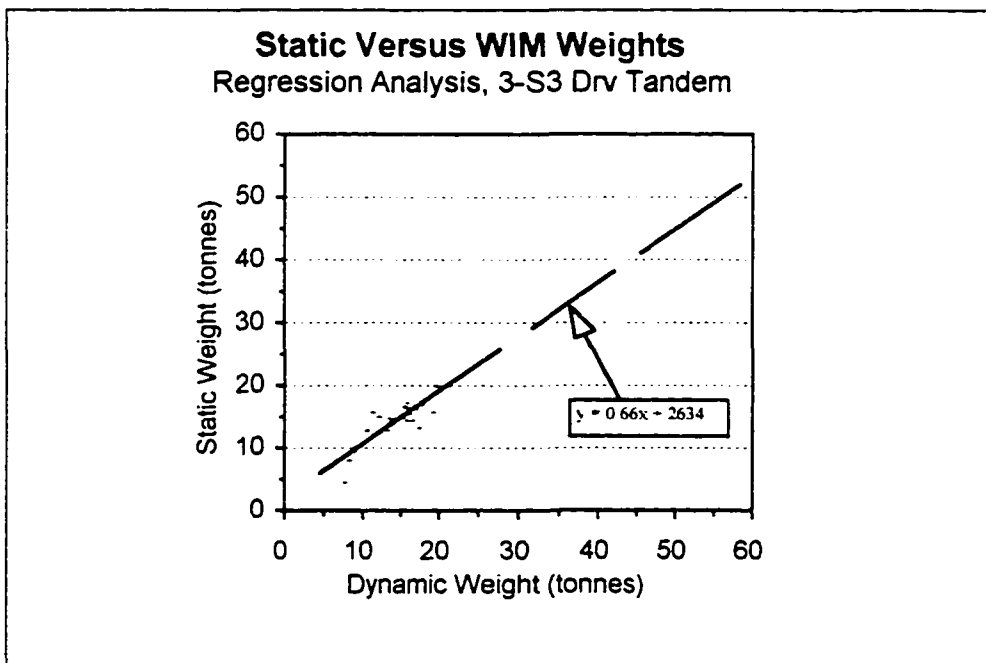


Figure 4-16: WIM vs Static Weight: 3-S3 Trailer Tridem Axle

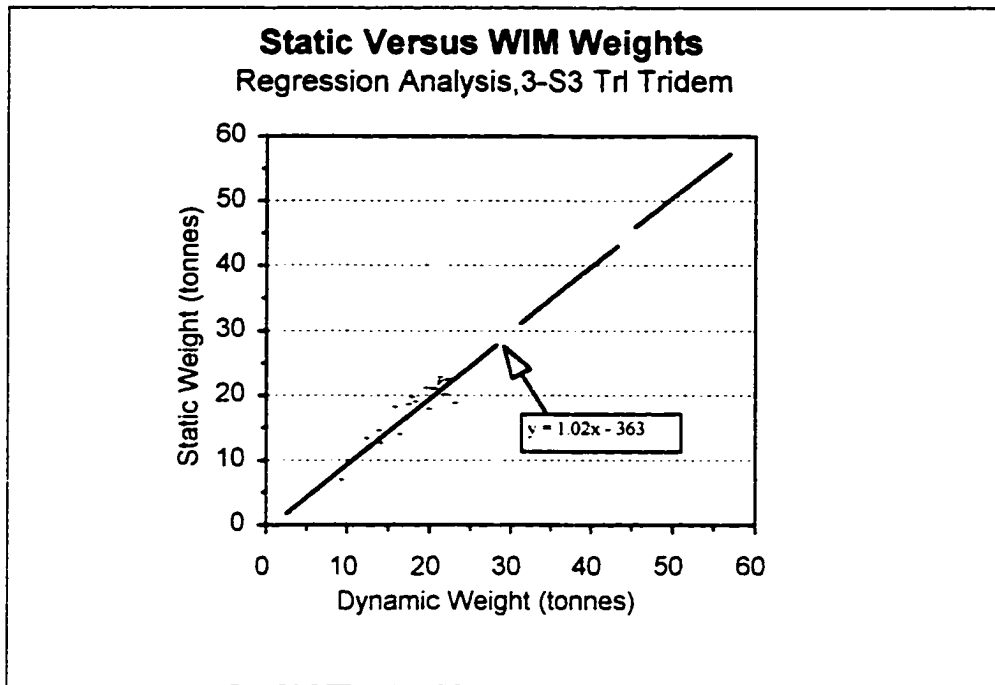
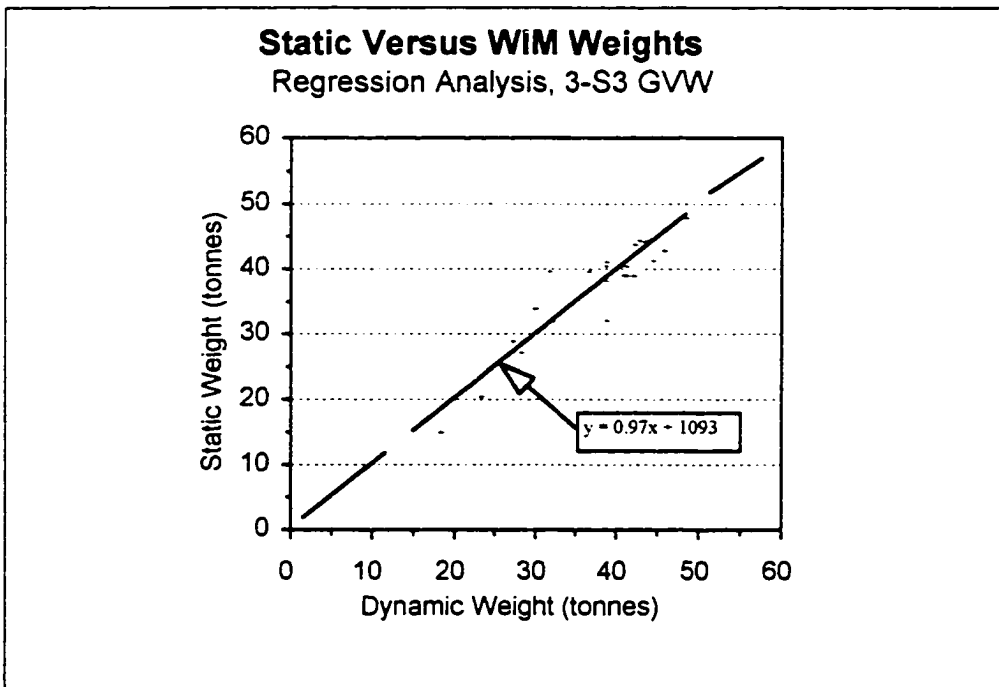


Figure 4-17: WIM vs Static Weight: 3-S3 GVW



4.4 Chapter References

1. Ostroman, Angela, E. (1993), A Reliable System for Monitoring Truck Movements and Characteristics in Manitoba, MSc. Thesis, University of Manitoba.
2. Clayton, A., Cordeiro, P., Fekpe, E. (1994), Advanced Systems for Permitting and Enforcement of Heavy Vehicle Operations on Manitoba Highways, University of Manitoba, Department of Civil Engineering.

Chapter 5
Classifications and Truck Flows
On Manitoba Highways

This chapter examines the results of WIM and AVC classifications on Manitoba sites from the years 1990 to 1991. It gives the location of the sites, the equipment installed, and summaries of the percentages of trucks in each class. These values are later used in conjunction with a Truck Flow Map developed by UMTIG in chapter 6 to obtain a classified truck flow map.

5.1 WIM Classifications

This chapter details truck traffic on Manitoba Highways in terms of truck classifications at thirteen locations in the Province. Figure 5.1 is a map detailing the location of these Automatic Vehicle Classification and/or Weigh in Motion Sites. Also included are twenty eight graphs detailing the vehicle and truck classification at these nine sites during the years of operation from 1990 to 1994.

Sources of Data

The truck flows were developed from three major data sources:

- ‘Traffic on Manitoba Highways 1994’ and ‘Traffic on Manitoba Highways 1995’ reports outlining AADT and Percent Trucks at various locations.
- Manitoba Highways GIS Database Developed by the University of Manitoba Transport Information Group.
- Truck classification data was obtained from the analysis of Automatic Vehicle Classifiers and Weigh in Motion Sensors available from thirteen locations in the Province.

Definitions

AADTT, Average Annual Daily Truck Traffic

The AADTT, or Average Annual Daily Truck Traffic, is the number of trucks passing a point on an average day of the year. This is a commonly used traffic statistic. The value shown here is the sum of two directions of travel. The AADTT in each direction is assumed to be half of the combined total.

AVC, Automatic Vehicle Classifiers

Automatic Vehicle Classifiers (AVC’s) are a set of loops and sensors which identify and classify every vehicle passing a point on the highway. All nine of the sites indicated have AVC data available.

WIM, Weigh in Motion

Weigh in Motion sensors (WIM's) are a set of sensors which identify, classify, and weigh every vehicle passing a point on the highway. Five of the sites indicated have WIM data available.

Total Truck Operating Cost

The total truck operating cost on Manitoba highways is defined as the number of kilometres of truck traffic multiplied by the cost per kilometre of travel by truck type.

Total Truck Load Factor

The total truck load factor is a summation of the truck load factors of each truck type. The truck load factor of each truck type is calculated by converting the actual axle loads of each truck type into a standard axle and summing them.

FHWA Scheme F, Federal Highway Association Scheme F

Many of the Manitoba WIM and AVC sites are part of the Canadian Strategic Highway Research Program (C-SHRP) or Long Term Pavement Performance Program (LTPP). All data obtained for these programs is collected and classified in terms of the US Federal Highway Association Class 13 Scheme F. The definitions of the different classes is as follows in Table 5-1 (UMTIG, 1996).

Table 5-1. FHWA Scheme F 13 Vehicle Classes


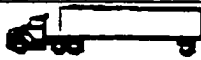










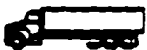
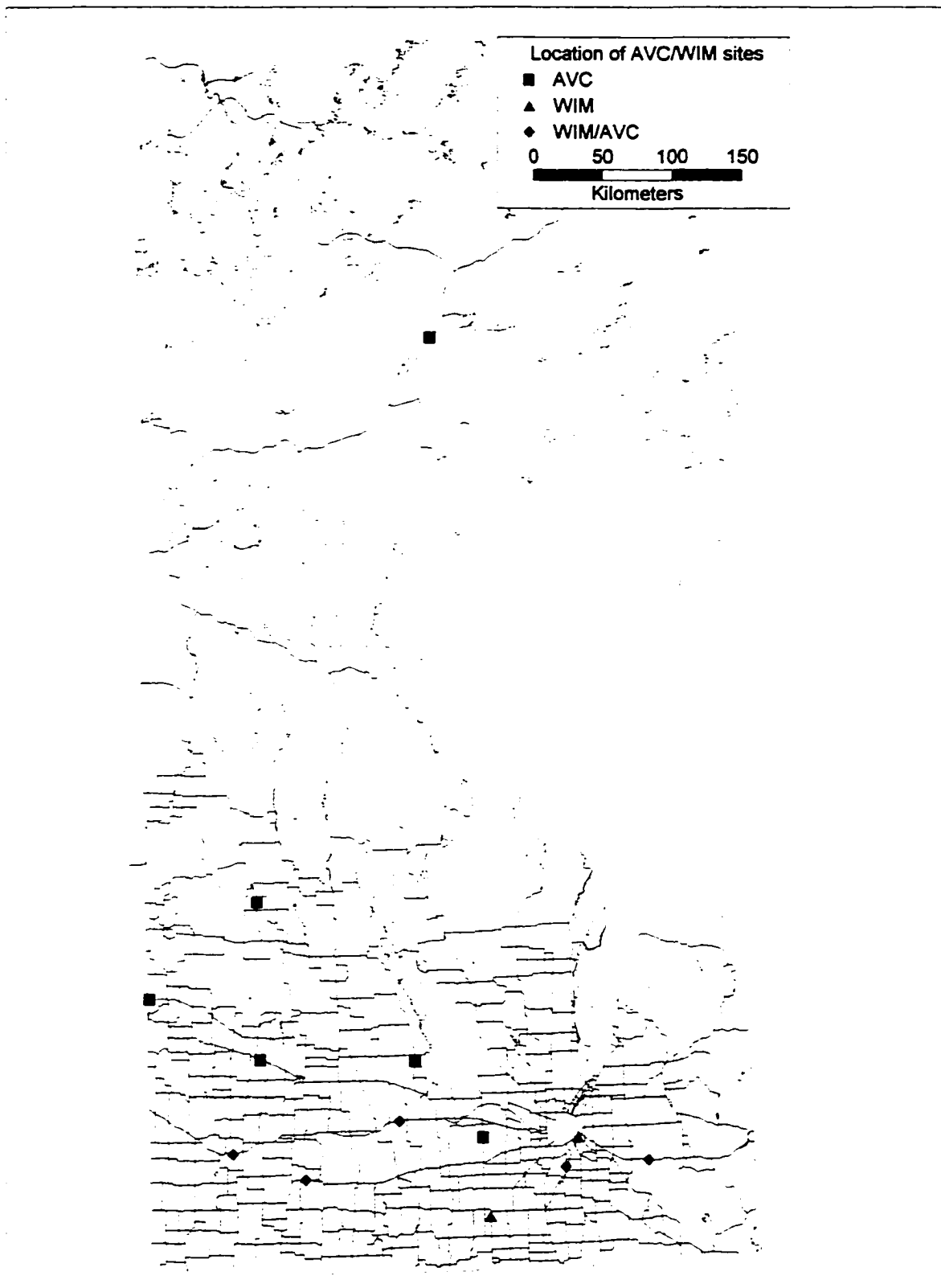
1) Motorcycle 	8) 4 or less axle, single trailer 
2) Passenger Cars 	9) 5 axle, single trailer 
3) Pickups 	10) 6 or more axle, single trailer 
4) Buses 	11) 5 or less axle multiple trailer 
5) 2 axle, 6 tire single unit 	12) 6 axle multiple trailer 
6) 3 axle, single unit 	13) 7 or more axle multiple trailer 
7) 4 or more axle, single unit 	

Figure 5.1 WIM and AVC sites in Manitoba as of January 1997



5.2 Truck Classifications

Point specific classifications based on AVC and WIM data are summarized for the following nine locations for the years of 1990 to 1994: Glenlea (63), Brokenhead (61), Nesbitt (66), MacGregor (65), Oak Lake (62), Oakville (81), Symington (64), Russell (80), and Paint Lake (82).

At each site, the AVC data was analyzed for all available years to provide two graphs. The first shows a yearly total vehicle classification based on the FHWA Class 13 Scheme F system included all vehicle classes. The second graph shows the Class 5 to 13 vehicles as a percentage of all trucks (after removing Class 1-4 vehicles).

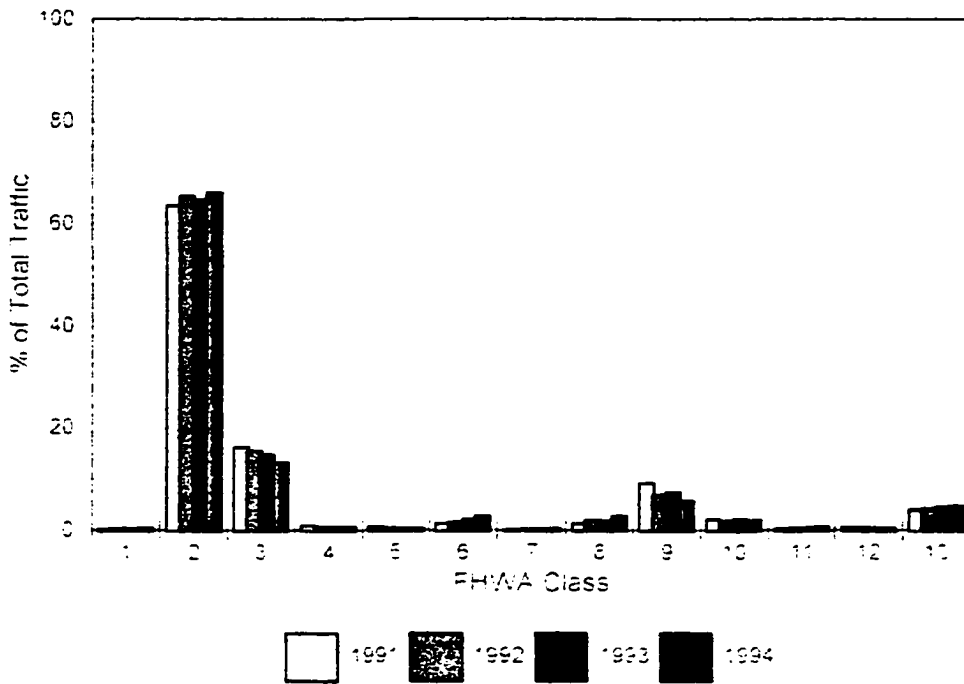
The five WIM sites where data was available (Glenlea, Brokenhead, Nesbitt, Symington and Oak Lake) were also analyzed and shown graphically in the same way. Appendix B summarizes the graphical data broken down by year, month, lane, and direction for each site. Lane 1 corresponds to the right lane and lane 2 corresponds to the left lane. Direction 1 is northbound, 3 is eastbound, 5 is southbound and 7 is westbound.

The following four graphs detail the analysis done for one of the stations. The Brokenhead station is located on Provincial highway 1 halfway between the City of Winnipeg and the Ontario Border. Classifications from the other WIM and AVC sites is shown in Appendix C.

The first two graphs summarize data from the AVC sensor. The first gives the percentage of vehicles in classes 1-13 over the lanes where the AVC is installed (i.e. all four lanes). This graph includes cars and trucks. In each of the vehicle classes, a trend in the percentage of vehicles of that type is exhibited (either consistently increasing or decreasing). The second graph removes class 1-4 vehicles from the data set and plots the percentage of each truck type out of the total number of trucks. The second two graphs are similar plots for the WIM sensor which is installed in the westbound driving lane. It appears that the AVC sensor is more consistent in classifying trucks and as such, where available it is used for classifications.

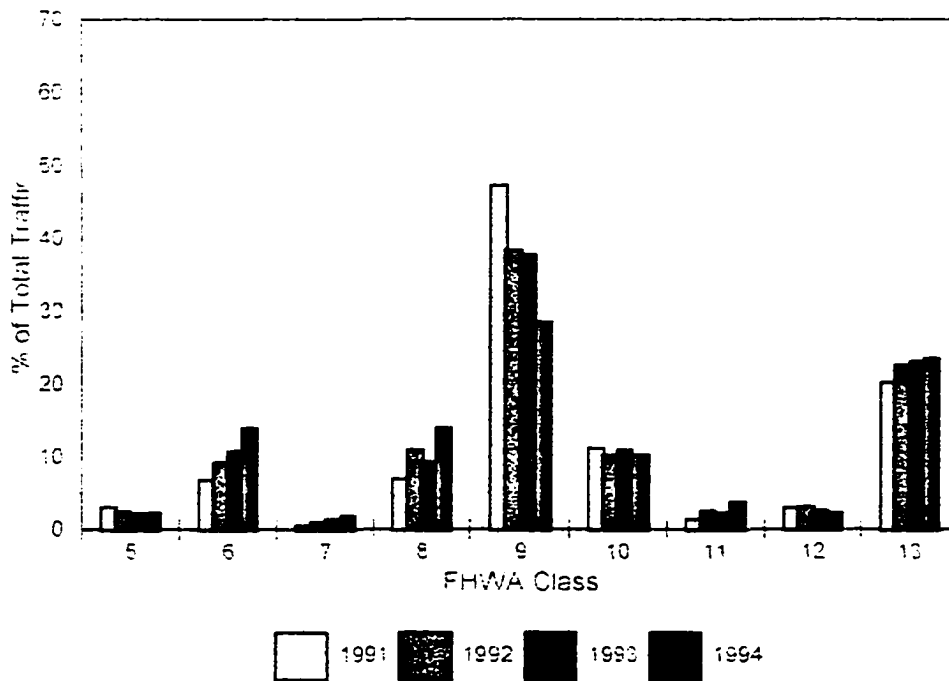
Station 61

Brokenhead AVC Vehicle Percentages
1991-1994



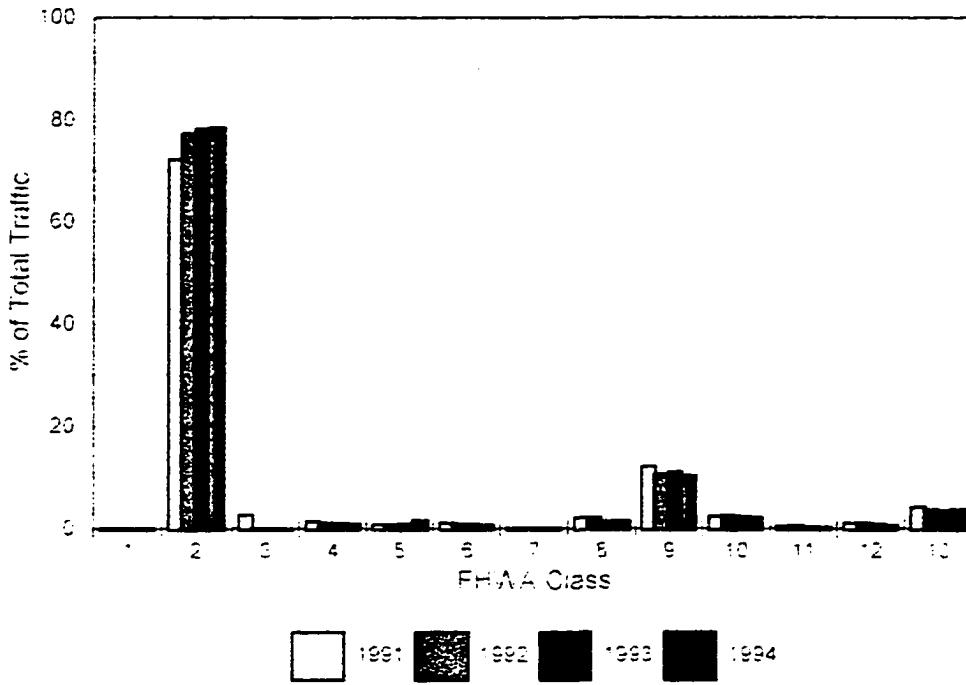
Station 61

Brokenhead AVC Truck Classification
1991-1994



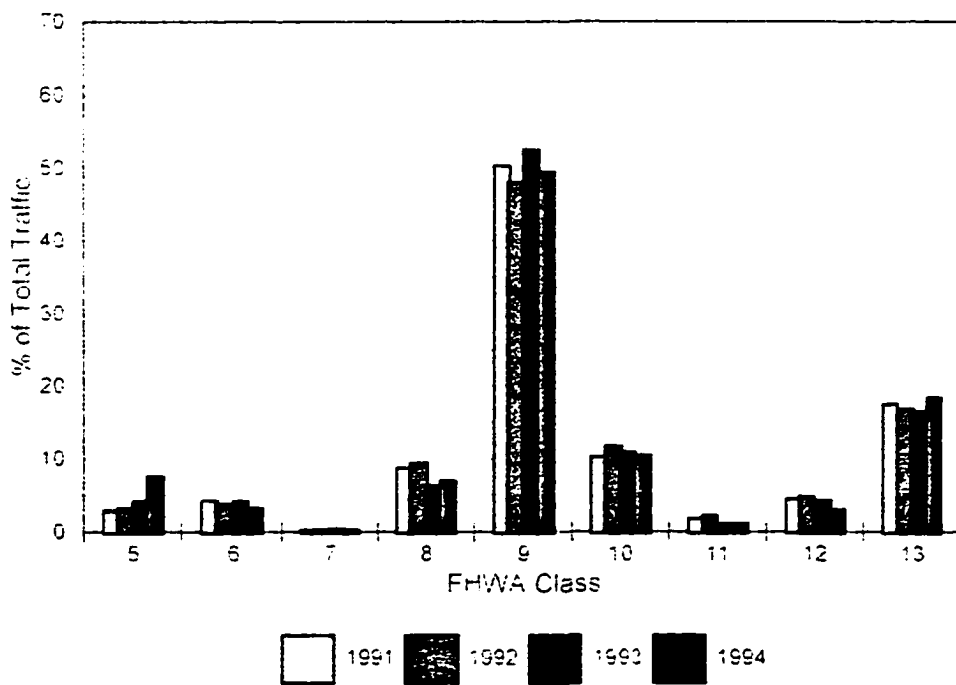
Station 61

Brokenhead WIM Vehicle Percentages
1991-1994



Station 61

Brokenhead WIM Truck Classification
1991-1994



5.2 1995 WIM and AVC Classifications

An update of the thirteen vehicle classifications was done by the University of Manitoba Transport Information Group for the year of 1995 and was presented in a report titled 'Truck Traffic on Manitoba Highways 1995'. Its findings are presented here. Table 5-2 gives the specific location and type of equipment in place.

Table 5-2 AVC/WIM site locations

Site #	Name	Location	Equipment
35	Roland	Highway 428, South of PTH 23	WIM
42	Straithclair	Highway 16, 3.2 km E. of E. Jct. of PR 354	AVC
61	Brokenhead	Highway 1, near Brokenhead River	AVC/WIM
62	Oak Lake	Highway 1, East of Oak Lake	AVC/WIM
63	Glenlea	Highway 75, 5.1 km South of PR 210	AVC/WIM
64	Symington	Highway 100, West of Symington Road	WIM
65	MacGregor	Highway 1 West of MacGregor	AVC/WIM
66	Nesbitt	Highway 2, East of Nesbitt	AVC/WIM
80	Russell	Highway 16, 0.8 km E. of Sask. Border	AVC
81	Oakville	Highway 13, 3.2 km S. of Oakville	AVC
82	Paint Lake	Highway 6, 0.8 km S. of Paint Lake Access	AVC
83	Langruth	Highway 50, 1.3 km S of PR 265	AVC
84	Mink Creek	Highway 10, 3.8 km S. of S. Jct. of PTH 10A	AVC

In 1995 six sites reported AVC-only data, four sites reported AVC and WIM data, and the remaining three sites reported WIM-only data. This was the second year in which analysis of Manitoba WIM and AVC data was done in the form of an annual truck report. There have been modifications in the screening process of data to remove errors. Any data which did not comply with the following screening rules was discarded (UMTIG, 1995):

- overall length must be greater than zero
- wheel base must be greater than zero and less than overall length
- gross vehicle weight must be greater than zero
- at least one axle spacing must exist
- at least two axle weights must exist

Tables 5-2, 5-3, 5-4, 5-5 summarize UMTIG's analysis of AVC and WIM data for 1995 for class 5-13 vehicles. (Classes 1-4 are not heavy truck configurations and were not analyzed)

Table 5-3 1995 WIM data, Percentage of Vehicles in FHWA scheme F of Total Traffic

Stations	35	61	62	63	64	65	66
Observations	67,834	84,037	280,789	78,452	645,973	66,142	162,000
Vehicle Class							
1	0.3	0.0	0.2	0.0	1.3	0.3	0.3
2	63.8	58.2	45.5	37.5	51.0	63.8	63.8
3	25.2	18.3	15.8	16.1	15.9	25.2	25.2
4	0.9	1.0	1.9	1.6	7.4	0.9	0.9
5	1.0	1.2	1.7	1.8	2.6	1.0	1.0
6	1.9	0.5	1.4	3.1	3.6	1.9	1.9
7	0.2	0.1	0.1	0.1	0.5	0.2	0.2
8	1.2	2.0	2.3	1.6	3.3	1.2	1.2
9	2.4	11.3	18.2	27.3	6.7	2.4	2.4
10	0.8	3.2	5.4	2.4	2.7	0.8	0.8
11	0.2	0.3	0.5	0.4	0.7	0.2	0.2
12	0.1	0.7	1.1	0.4	0.3	0.1	0.1
13	2.0	3.2	5.8	7.6	4.0	2.0	2.0

Table 5-4 1995 WIM data, Percentage of Vehicles in FHWA scheme F Class 5-13

Stations	35	61	62	63	64	65	66
Observations	6,637	18,848	102,595	35,145	157,349	6,472	15,851
Vehicle Class							
5	9.9	5.2	4.7	4.1	10.5	9.9	9.9
6	19.1	2.4	3.7	6.9	15.0	19.1	19.1
7	2.5	0.5	0.4	0.2	2.1	2.5	2.5
8	12.0	8.8	6.2	3.7	13.5	12.0	12.0
9	24.7	50.3	49.9	60.9	27.5	24.7	24.7
10	7.9	14.2	14.8	5.3	11.1	7.9	7.9
11	1.9	1.4	1.5	0.9	2.9	1.9	1.9
12	1.0	3.1	2.9	1.0	1.1	1.0	1.0
13	20.8	14.2	15.9	17.0	16.3	20.8	20.8

Table 5-5 1995 AVC data, Percentage of Vehicles in FHWA scheme F Class 5-13

Station	43	61	62	63	65	80	81	82	83	84
Obs.	153290	452720	1361550	1217720	447560	298680	149170	48980	210880	370100
Class										
1	0.2	0.8	0.3	0.1	0.1	0.0	0.1	0.1	0.0	0.1
2	33.0	76.8	60.2	72.2	73.5	61.1	70.1	66.8	26.1	58.0
3	14.3	9.2	13.7	11.5	11.5	15.5	14.3	19.4	9.1	10.0
4	0.6	0.6	0.6	0.7	0.6	0.6	0.3	0.8	0.1	0.3
5	1.4	0.4	0.5	0.8	0.6	0.6	0.7	0.3	1.0	0.6
6	2.3	2.5	2.6	1.2	0.7	0.8	1.3	1.1	1.7	1.8
7	0.1	0.3	0.3	0.1	0.0	0.1	0.1	0.1	0.3	0.2
8	15.6	1.4	3.0	0.9	0.9	1.6	0.6	0.9	1.2	10.5
9	5.8	3.1	7.7	9.6	7.3	9.9	6.6	2.3	2.8	3.2
10	2.5	1.5	3.0	0.9	2.1	2.8	1.8	1.0	5.3	2.1
11	4.6	0.3	0.8	0.2	0.1	0.2	0.2	0.3	3.2	4.7
12	1.1	0.1	0.5	0.1	0.3	0.5	0.0	0.5	7.7	1.2
13	18.5	2.9	6.8	1.8	2.3	6.2	3.9	6.4	41.6	7.3

Table 5-6 1995 WIM data, Percentage of Vehicles in FHWA scheme F Class 5-13

Station	43	61	62	63	65	80	81	82	83	84
Obs.	79662	56557	341663	187602	64045	67899	22672	6336	136456	117107
Class										
5	2.8	3.3	1.9	4.9	4.0	2.8	4.5	2.5	1.6	2.0
6	4.4	20.0	10.3	7.5	5.1	3.6	8.2	8.5	2.6	5.7
7	0.2	2.7	1.0	0.4	0.2	0.4	0.6	0.8	0.5	0.7
8	30.0	11.1	11.9	5.5	6.2	6.9	3.7	7.1	1.8	33.1
9	11.2	24.5	30.6	62.5	50.7	43.7	43.7	17.7	4.4	10.1
10	4.8	11.7	12.0	5.5	14.8	12.4	11.8	8.0	8.1	6.6
11	8.9	2.6	3.0	1.2	0.9	0.9	1.4	2.3	4.9	14.8
12	2.1	1.0	2.1	1.0	2.0	2.2	0.2	3.8	11.8	3.9
13	35.5	23.0	27.1	11.5	16.1	27.2	25.8	49.3	64.3	23.0

5.3 Truck Flows

As of January 1997, Manitoba used 55 permanent traffic counters to monitor traffic on the highways in the province. WIM and AVC sites are part of this program. At these sites total traffic volumes and truck volumes are calculated directly. In addition to these counters, there are 1991 coverage count sites which are short term count sites. The coverage counts are done on a cycle once every 4 years for a period of 48 hrs. Most of the sites are equipped with pneumatic

tube counters with the increased use of induction loop counters which are capable of separating truck traffic. Using AADT traffic volumes at permanent counters, the coverage count values are expanded. Using these counts along with turning movement counts, historical data, and spot surveys, a percent trucks is established on each link in the highway network (TIS, 1995).

The average annual daily truck traffic (AADTT) is the AADT estimate for each link multiplied by the percent truck value established for each link. The methodology used to calculate AADTT for all links is as follows: (UMTIG, 1996)

For highway links for which a truck percent figure is established by the counting program or from WIM or AVC sites, this truck percent is multiplied by the AADT for the link to establish the AADTT (Method N). Truck flows on other links are estimated. In order of preference, the estimation procedures involves: transferring or averaging truck flow values from an adjacent link or links (Method S); transferring the percent truck value from an adjacent link (Method P); assigning a base Manitoba percent truck value of 7.5 percent (Method SP). Judgement is required in each method. The estimating method for each link is shown in the data base.

The following examples illustrates the essence of the procedure. (UMTIG, 1996)

Method N

This method is used on links where an AADT and truck percentage is calculated directly using either a permanent loop or pneumatic tube counter which differentiates between cars and trucks. It is also used for links which have permanent, WIM and AVC counters on them.. The method is also used where a truck percentage has determined using a manual survey such as a turning movement survey at an intersection. The application of the method is as follows:

Example:

The 1995 AADT on link X is 350. The percentage of trucks on the link is 10.

$AADTT = 350 \text{ times } 0.10 = 35 \text{ trucks/day.}$

Method S

This method is used on links which do not have a truck volume calculated directly but an adjacent link in the same direction of travel does. If there are no intersections between the two links, the truck volume in the known link is applied to the unknown links.

Examples:

Links A and B have no truck volumes assigned to them, but link X does. The volumes in Links A and B are found by transferring the volume in X.

$$\underline{\text{A= ? trucks/day} \quad \text{X= 150 trucks/day} \quad \text{B= ? trucks/day}}$$

Therefore Links A and B have a truck volume of 150 trucks/day

Links A and B have truck volumes assigned to them, but link X does not. The volume in Link X is found by adding the volumes in A and B and dividing by 2.

$$\underline{\text{A=350 trucks/day} \quad \text{X=? trucks/day} \quad \text{B=360 trucks/day}}$$

$$\text{X= (350+360)/2 trucks/day} \quad \text{X= 355 trucks/day}$$

Method P

This method is used on links which do not have a truck percentage calculated directly but an adjacent link in the same direction of travel does. If there are no intersections between the two links, the truck percentage in the known link is applied to the unknown links.

Example:

-Links A and B have no truck percentage assigned to them, but link X does. The percentages in Links A and B are found by transferring the percentages in X.

$$\underline{\text{A= ? \%} \quad \text{X= 11\%} \quad \text{B= ? \%}}$$

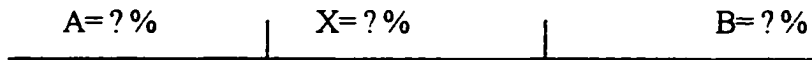
Therefore Links A and B have a truck percentage of 11% of total traffic volume

Method SP

This method is used where no other method is applicable.

Example:

- Links A, B and X have no truck percentage assigned to them. Therefore a base Manitoba percent truck value of 7.5 is assigned to each link.



Therefore Links A , B and X have a truck percentage of 7.5% of total traffic volume

The truck flow map for 1995 developed by UMTIG using the methodology described is used along with classifications obtained from WIM and AVC sensors to obtain a classified Manitoba truck flow map. The methodology used is described in the following chapter. Where possible the AVC classifications are used as opposed to the WIM classifications. The following chapters use a classified truck flow map to calculate truck operating costs and pavement damage.

5.4 Chapter References

1. UMTIG- University of Manitoba Transport Information Group, (1995), Truck Traffic on Manitoba Highways-1994. University of Manitoba.
2. UMTIG- University of Manitoba Transport Information Group, (1996), Truck Traffic on Manitoba Highways-1995. University of Manitoba.
3. TIS- Traffic Information System, (1996), Traffic on Manitoba Highways- 1995, University of Manitoba.

Chapter 6
Truck Operating Costs on Manitoba Highways

This chapter used the AVC and WIM classifications obtained from the previous chapters along with the 1995 truck flow map to obtain a classified truck flow map. It then uses these values along with unit truck operating cost to determine the total truck operating cost on Manitoba Highways.

6.1 Procedure

The procedure for determining the total cost of truck operations on Manitoba highways is as follows. The following sections perform each of the functions listed below.

- Harmonize AVC and WIM truck classification data
- Find the unit cost (cents per km) of operating each truck type (Trimac, 1995).
- Determine the classification of truck flows using point observations (AVC and WIM)
- Assign a point observation of truck classifications to each highway link.
- Determine the number of trucks in each class on every link per day
- Calculate the classified truck flows on all highway links per day (AADTT by truck type)
- Calculate the total truck cost for each truck type on the link per day. (Unit cost multiplied by the number of trucks)
- Calculate the total truck cost per link per day.
- Sum all link truck costs per day.
- Convert link cost per day to an annual total truck cost.

6.2 Harmonization of Truck Classifications

For the purposes of this study, the FHWA Class 13 scheme is reduced to 4 truck classes. These are the same truck classes which were used in a recent study for the City of Winnipeg Urban Goods Movement Study (UGM, 1995). They are:

- Light Single Unit Trucks (LT): any 2-axle single unit trucks with six or less tires. (FHWA Class 5)
- Heavy Single Unit Trucks(HT): any 3 or more axle single unit.(FHWA Class 6,7)
- Single: any truck-single trailer or tractor-single semitrailer combinations. (FHWA Class 8,9,10)
- Doubles: any truck-double trailer or tractor double trailer combinations. (FHWA Class 11,12,13)

6.3 Unit Cost By truck Type

The Trimac model gives unit costs for several truck types for different rates of utilization (km per year). For the purposes of this analysis, the highest utilization rate is assumed (i.e. 240,000 km of travel per year which may underestimate the actual cost). The truck types and their units costs for high utilization are shown in Table 6-1 (Trimac, 1995).

Table 6-1 Truck Operating Costs in Manitoba

Configuration	Utilization (km)	Costs (cents/km)
2 Axle Straight Truck(Dry)	240,000	203.7
2 Axle Straight Truck(Bulk)	240,000	107.8
5 Axle Semi (Van)	240,000	117
5 Axle Semi (Flat Deck)	240,000	121.3
5 Axle Semi (Liquid Tanker)	240,000	105.8
5 Axle Semi (Bulk Tanker)	240,000	107.7
6 Axle Semi (Van)	240,000	136.3
6 Axle Semi (Flat Deck)	240,000	135.6
8 Axle B Train (Van)	240,000	148.3
8 Axle B Train (Flat Deck)	240,000	156.5
8 Axle B Train (Liquid Tanker)	240,000	131.2
8 Axle B Train (Dry Tanker)	240,000	130.8

The unit costs of LT trucks is assumed to be an average of the 2 axle trucks. Singles costs are assumed to be an average of all 5 and 6 axle trucks. Doubles costs are assumed to be the average of B trains. HT costs are assumed to be the average of LT and Singles. These assumptions were made to reduce the number of variables in the analysis. Table 6-2 shows the units cost for each of the four classes used in the study.

Table 6-2 Truck Operating Costs in Manitoba, Summary

Class	Unit Cost (cents per km)
LT	155.75
HT	138.19
Singles	120.62
Doubles	141.70

6.4 Determining Classifications By Using Point Observations (AVC and WIM)

The FHWA class 13 distributions were determined for 13 AVC and WIM stations in chapter 5. For the purposes of calculating the total truck cost, these are harmonized into the four classes described in Section 6.2. In addition, where both a WIM and AVC are located at a site, only the AVC values were used (from the analysis of the data in chapters 4 and 5 it appears that the AVC data is more consistent and reliable). If no AVC data was available for a station, the WIM values were used. The results are as follows in Table 6-3.

Table 6-3 Class 4 Scheme Truck Percentage out of Total Number of Trucks

Vehicle Class	Station												
	35	43	61	62	63	64	65	66	80	81	82	83	84
LT	9.9	2.8	3.3	1.9	4.9	10.5	4.0	9.9	2.8	4.5	2.5	1.6	2.0
HT	21.6	4.6	22.7	11.3	7.9	17.0	5.3	21.7	4.0	8.8	9.3	3.1	6.4
Singles	44.6	46.1	47.4	54.5	73.6	52.1	71.7	44.6	63.0	59.3	32.8	14.3	49.8
Doubles	23.8	46.6	26.6	32.2	13.7	20.3	19.0	23.8	30.3	27.4	55.4	81.0	41.8

6.5 Assigning WIM and AVC Classifications To All Links

The methodology used in the 1996 edition Traffic on Manitoba Highways report (TIS, 1996) is take the coverage counts and assign a permanent traffic counter based upon the traffic pattern group of that station. The traffic pattern groups are Urban Commuter (UC), Trunk (T), Trunk Seasonal (TS), Rural Commuter (RC), Rural Commuter Seasonal (RCS) and Resort (R). The assignment of classifications for the AVC and WIM station to all links were done in a similar manner in this thesis.

On a link where the permanent station assigned to that link for the purposes of AADT expansion is a WIM or AVC site, the truck classifications for that site was assigned to that link. Where the link was assigned to a permanent counter which is not a WIM or AVC counter, the WIM or AVC station which was assigned to that traffic pattern group was assigned. If more than one AVC or WIM station is part of that traffic pattern group, an average of the classifications in all the counters in that group was used.

Traffic Pattern Group Stations

The stations were assigned to each of the traffic pattern groups are as follows:

- Urban Commuter (UC)- Station 64
- Trunk (T)- Station 43, 62, 63, 66, 80, 83, 84
- Trunk Seasonal (TS)- 61, 65
- Rural Commuter (RC)- 35
- Rural Commuter Seasonal (RCS)- none
- Resort (RES)- none

From this, the classification of station 64 is assigned to Urban Commuters, the average classification of stations 43, 62, 63, 66, 80, 83, 84 was assigned to Trunks, the average classification of stations 61 and 65 was assigned to Trunk Seasonal and the classification of station 35 was assigned to Rural Commuter. For Rural Commuter Seasonal and Resort an average of all the station classifications was assigned. Table 6-4 shows new classifications for these traffic pattern groups (TPG).

Table 6-4 Classifications of Traffic Pattern Groups

Class	TPG					
	UC	T	TS	RC	RCS	RES
LT	10.53	3.69	3.66	9.94	4.66	4.66
HT	17.03	8.42	13.99	21.65	11.06	11.06
Singles	52.11	49.43	59.54	44.63	50.30	50.30
Doubles	20.33	38.46	22.81	23.78	33.98	33.98

6.6 Trucks In Each Class By Link

Once the appropriate classification scheme was assigned to a link as outlined in section 6.5, the number of trucks in each class in each link was calculated by multiplying the percentage of trucks in that vehicle class for that classification scheme with the Average Annual Daily Truck Traffic (AADTT). The AADTT was calculated by UMTIG for the 'Truck Traffic in Manitoba Highways 1995' report but was not classified in any way. This chapter assigns the classification values for AVC, WIM, and TPG stations to links and calculates the classified truck flow values. Figures 6-1, 6-2, 6-3, 6-4 and 6-5 show traffic volumes for LT, HT, Singles, Doubles and total trucks respectively.

Figure 6-1 Average Annual Daily Truck Traffic 1995- Light Trucks (LT)

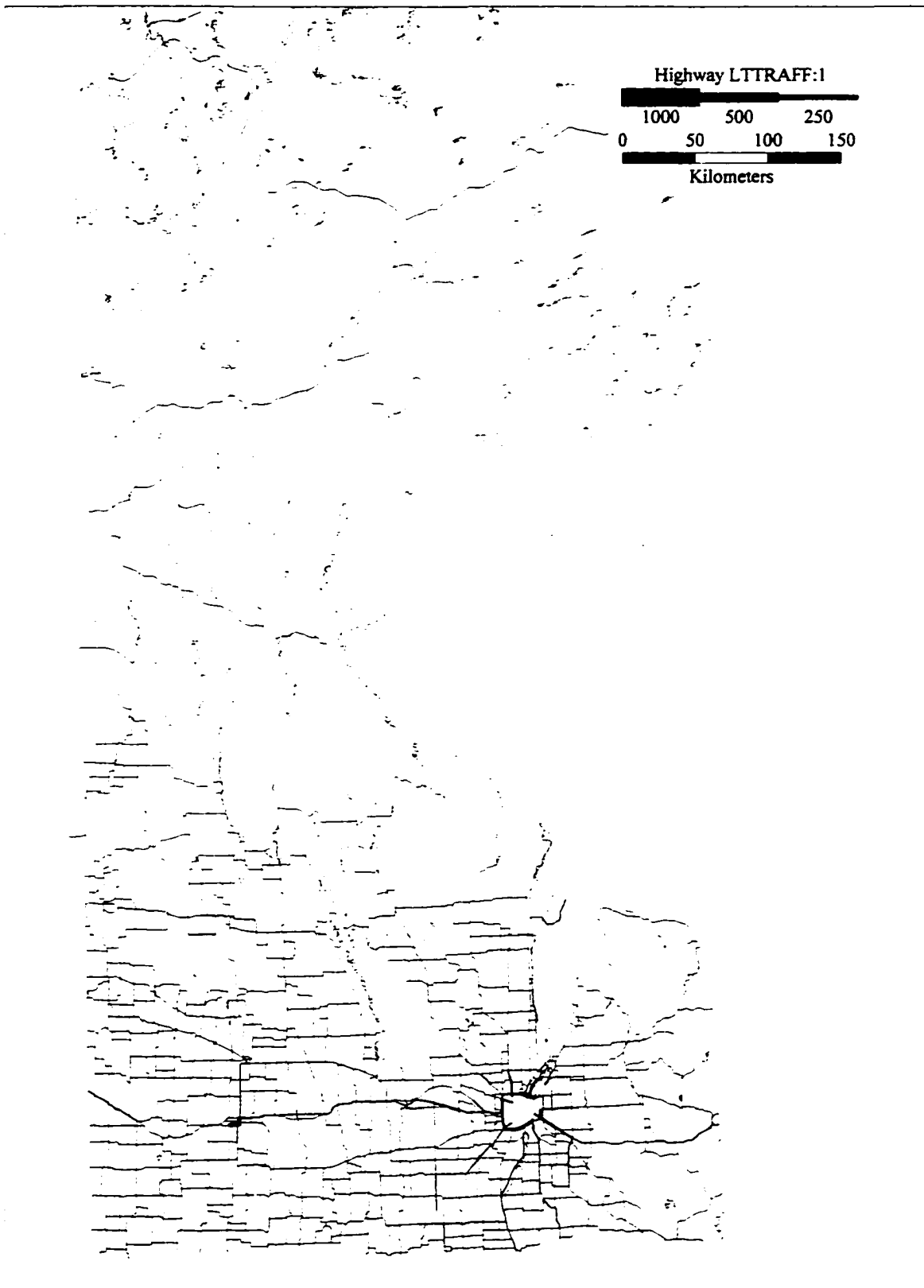


Figure 6-2 Average Annual Daily Truck Traffic 1995- Heavy Trucks (HT)

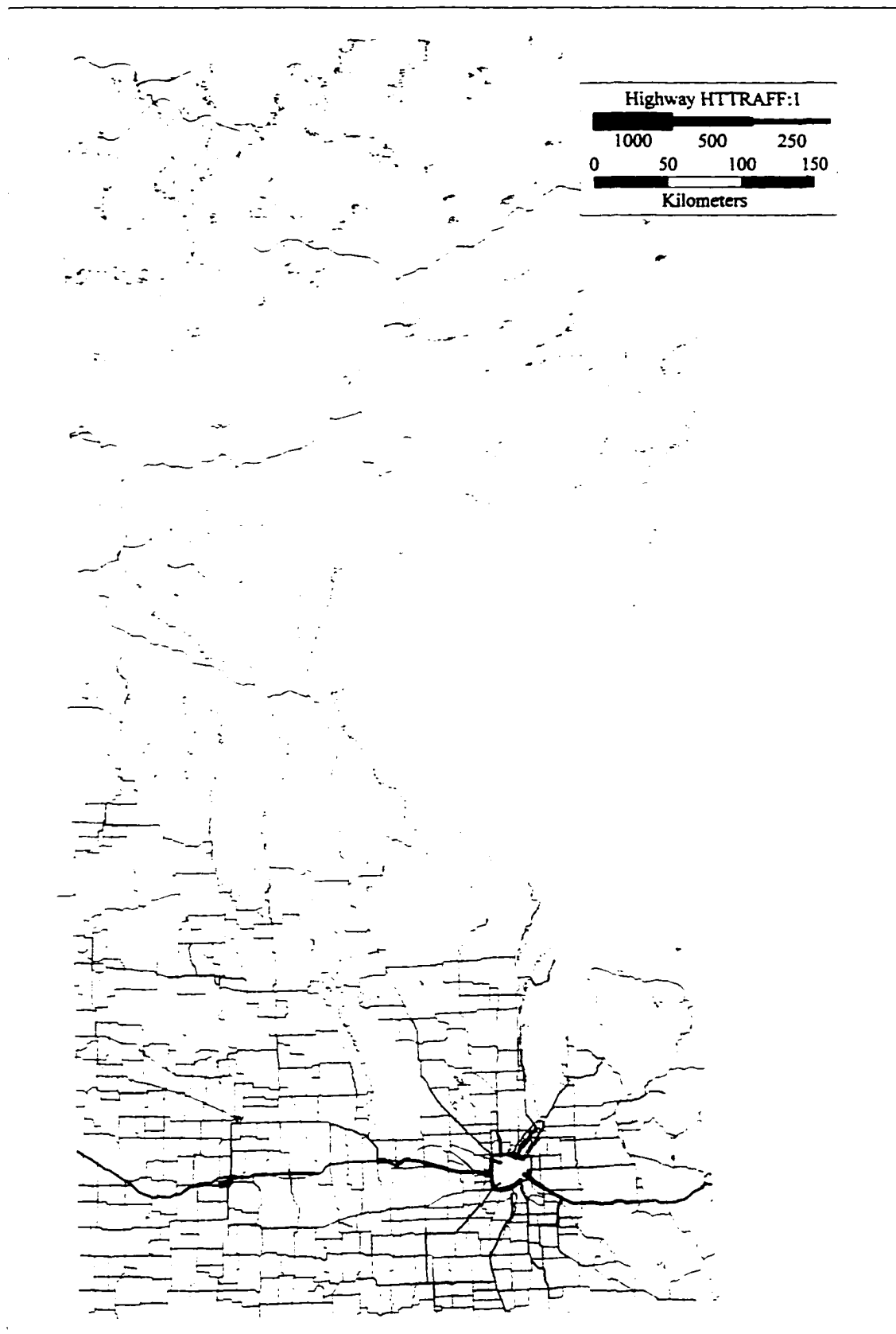


Figure 6-3 Average Annual Daily Truck Traffic 1995- Single Trailer Trucks



Figure 6-4 Average Annual Daily Truck Traffic 1995- Double Trailer Trucks

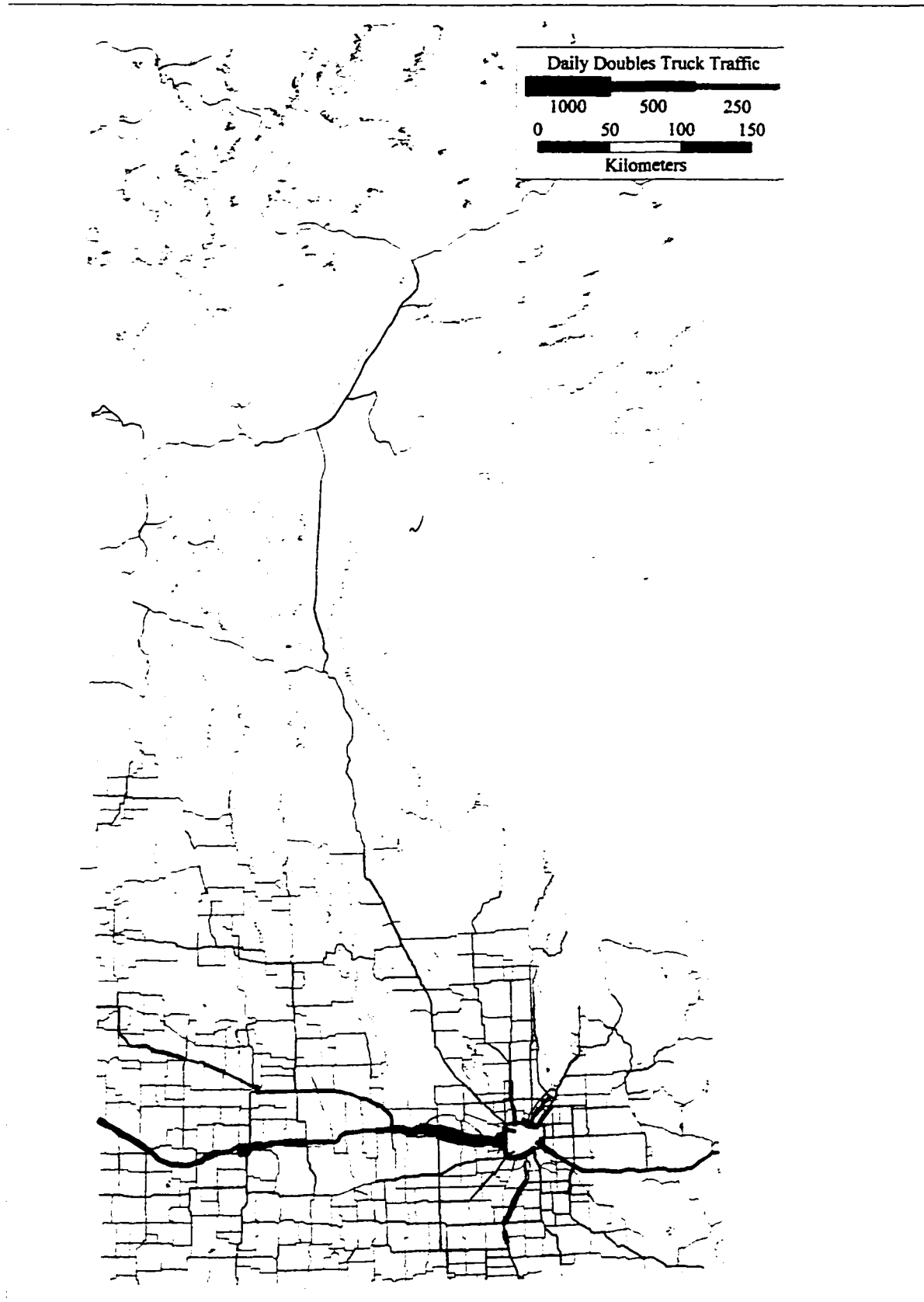
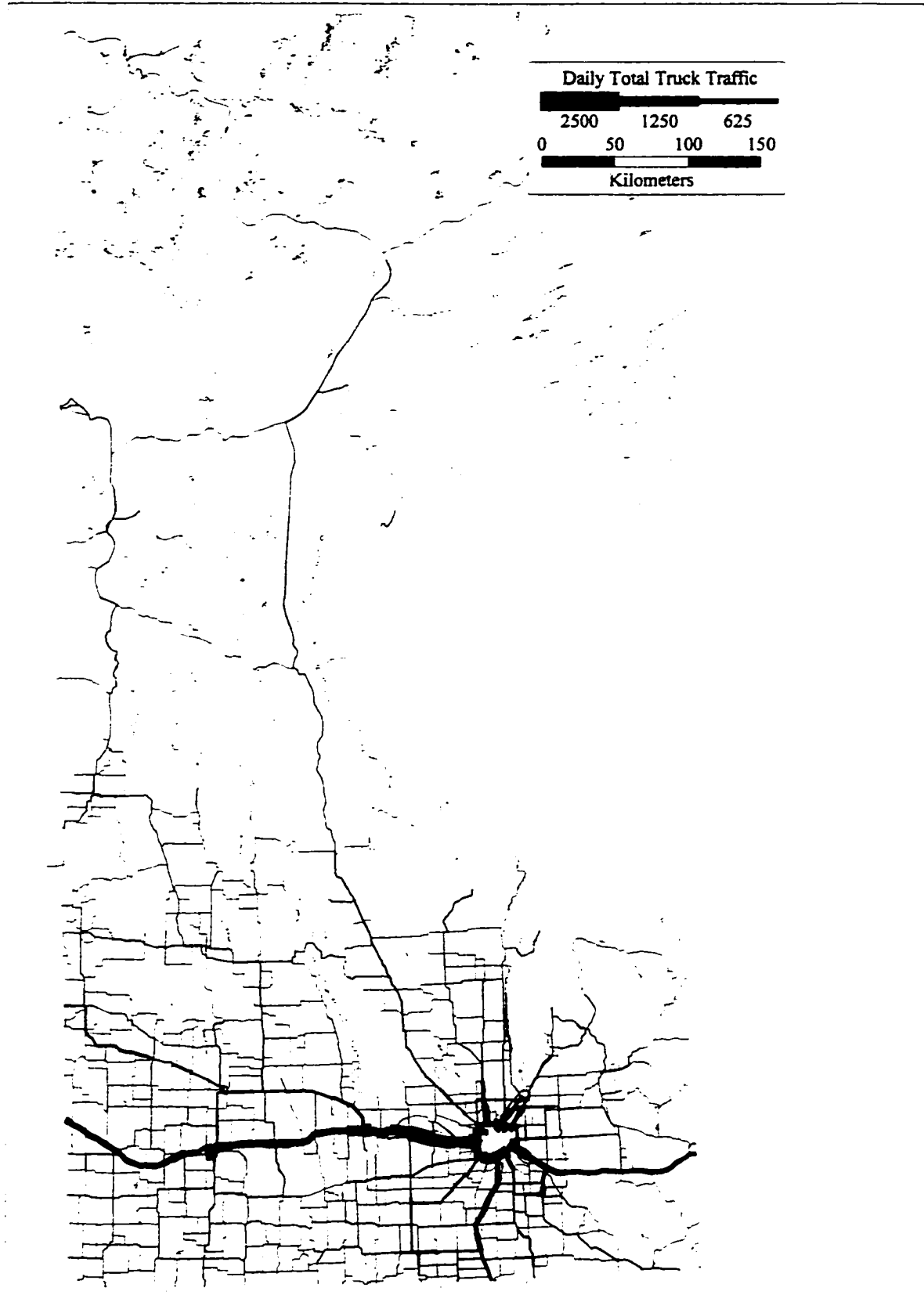


Figure 6-5 Average Annual Daily Truck Traffic 1995- Total Traffic



6.7 Annual Truck Cost

The truck traffic volumes calculated for each class and illustrated in the previous figures are used along with the Trimac unit operating costs to estimate an annual truck operating cost for Manitoba highways. The steps in calculating the average annual truck operating cost on Manitoba highways was as follows:

For each link calculate the daily truck operating costs by:

- multiply LT volume by LT unit operating cost and link length.
- multiply HT volume by HT unit operating cost and link length
- multiply Singles volume by Singles unit operating cost and link length
- multiply Doubles volume by Doubles unit operating cost and link length
- Sum the operating costs of the four truck classes on each link

The total daily truck operating cost for the entire network was estimated by adding all link costs together. The average daily cost of operating trucks on 16780 km of Manitoba highways is estimated as \$1,956,800.

The total annual cost of operating trucks on the entire Manitoba highway network was estimated by multiplying the total daily link cost by 365 days resulting in an estimated annual truck operating cost on Manitoba Highways of \$714,216,000.

It should be noted that the Trimac unit costs used assumed the highest utilization rate of 240,000 kilometers per year. This is not necessarily the case since many trucks will not operate that many kilometers. As such the annual truck operating cost is likely underestimated.

As a comparison, the City of Winnipeg Urban Goods Study done by the University of Manitoba in 1995 has 446.4 kilometers of road on its designated truck route network. Table 6-5 summarizes the truck kilometers of traffic, cost per day by truck class, cost per year by truck class, and the total cost per year for the Provincial highway network and the City of Winnipeg truck route network. The unit truck operating costs for both networks were the same.

Table 6-5 Truck Operating Costs on the Provincial and City Networks

km/day	Trk-km/day	Cost/day(\$)	Cost/year(\$)
City		446.4	
LT	226429.3	352663.68	128722243.74
HT	132457.8	183043.42	66810848.30
Singles	117160.5	141319.02	51581442.02
Doubles	9540.2	13518.53	4934265.00
Total	485587.9	690544.66	252048799.06
Hwy		16870.0	
LT	92258.0	143691.84	52447519.78
HT	204335.0	282370.54	103065245.82
Singles	757035.0	913135.62	333294500.21
Doubles	435823.0	617561.19	225409834.72
Total	1489451.0	1956759.18	714217100.52

As seen in Table 6-5, the City of Winnipeg has 485,588 truck kilometers of travel per day on its designated truck route system (446.4km) compared to the Provincial highway network (16870km) which has 1,489,451 truck kilometers of travel per year. Assuming the same unit costs for each truck type, this translates into a daily truck operating cost of \$690,544 for the City of Winnipeg compared to \$1,956,759 for the Provincial Highway network. The annual costs are \$252,048,799 for the City network and \$714,217,100 for the Provincial network.

The combined totals for the Province of Manitoba highway network and City of Winnipeg Truck Route network is summarized in Table 6-6. The total number of kilometers of road is 17316.4, the truck kilometers of traffic per day is estimated as 1,975,039, the daily truck operating cost is estimated as \$2,647,303, and the total truck operating cost per year is estimated as \$966,265,900.

Table 6-6 Total Truck Operating Cost in the Province of Manitoba

km/day	Trk-km/day	Cost/day(\$)	Cost/year(\$)
City		17316.4	
LT	318687.3	496355.51	181169763.52
HT	336792.8	465413.96	169876094.12
Singles	874195.5	1054454.64	384875942.22
Doubles	445363.3	631079.73	230344099.72
Total	1975038.9	2647303.83	966265899.57

The estimate of the truck kilometers of travel in the City of Winnipeg is based on an average weekday of traffic. As such the actual truck kilometers of traffic may be overestimated. Conversely, as in the case of the Provincial highway network, the unit truck operating costs used assumed the highest utilization rates which tend to underestimate the actual cost.

The following chapter uses the classified truck flows developed and incorporates the effect of enforcement to estimate the truck operating costs on Manitoba highways. The chapter also uses the truck flows to determine the effects of truck traffic on pavements and how it varies with a given enforcement intensity.

6.8 Chapter References

1. UMTIG- University of Manitoba Transport Information Group, (1995), Truck Traffic on Manitoba Highways-1994. University of Manitoba.
2. UMTIG- University of Manitoba Transport Information Group, (1996), Truck Traffic on Manitoba Highways-1995. University of Manitoba.
3. TIS- Traffic Information System, (1996), Traffic on Manitoba Highways- 1995, University of Manitoba.
4. Trimac Consulting Ltd., 1995, Truck Operating Costs in Canada, 1995.
5. "Profile of Urban Goods Movement in the City of Winnipeg, 1995", University of Manitoba Transport Information Group, July, 1996.

Chapter 7
***Relationship Between Enforcement,
Truck Operating Costs
and Pavement Impacts***

This chapter is presented in two sections. The first section of the chapter examines the relationship between enforcement, weight distribution characteristics of trucks and the resulting pavement loads based on earlier work by Fekpe (1993). The second section applies these models to the truck traffic calculated in chapter 6. The enforcement effect of truck weights on operating costs and pavement damage is determined for Manitoba Highways.

7.1 Weight Predictive Models

This section summarizes pertinent aspects of Fekpe (1993). The factors which make truck operating weights of importance are:

- Government regulation of vehicle weights are implemented to balance the deterioration of the service life of pavements with trucking productivity and the resulting economic impact on society.
- Larger trucks are generally more cost effective than smaller ones.
- The reduction of service life of pavements is a function of load (tire, axle and GVW), traffic volumes and fleet mix, subgrade conditions, initial pavement design and construction, maintenance, pavement age, and environmental factors.

Due to the importance of truck weights and the lack of actual truck weight data, certain aspects of the Fekpe thesis (Fekpe, 1993) which are useful for the purposes of this research are:

- Determine the relationship between enforcement intensity and violation rate of truck size and weight regulations.
- Predict Gross Vehicle Weight distributions of the different truck types in the truck fleet as a function of the weight limit and the intensity of enforcement.
- Translate GVW distributions of a particular truck type into specific axle group loading.
- Assess pavement impact in terms of ESAL's resulting from the axle group loading of different truck configurations.

Enforcement Intensity Vs. Violation Rate

The objective of the enforcement of vehicle weights is use to protect the highway infrastructure from premature deterioration by keeping overweight trucks off the highway. The methods used by MDHT are inspections done primarily permanent inspection stations and portable weigh scales. At the present time, WIM is not used by MDHT for any enforcement purposes (either screening or monitoring), (Clayton, 1991).

An inspection is considered the weighing of one or more axle using a permanent or portable scale, a comparison of the bills of lading and axle loads, verification of any permits which may allow legal overweight trucking, and a check of the length, height or width of a truck. A truck is considered to be overweight when a tire, axle, axle group, GVW or combination are over the acceptable legal limits without a special permit to operate at that load. In Manitoba a violation is considered to be an overweight which results in a charge, written warning, verbal warning, or a successful prosecution. The violation rate (VR) is the number of trucks found in violation of regulations expressed as a percentage of the total number of trucks inspected. Compliance is defined as the percentage of all trucks of the total truck volume in compliance with the weight regulations (Fekpe, 1993).

The relationship was developed based on the theory that for the highest level of constraint (enforcement) there is a minimal amount of escape, or degree of freedom (violations) possible. Conversely, at minimal constraints, there is a maximum value of freedom possible. Weigh scale data supports this theory where at the highest level of enforcement there are still violations due to those truckers ignorant of the law, truckers who do not know there load is in violation, or those truckers who run the risk of detection and knowingly operate overweight. Conversely, at the lowest intensity of enforcement, the number of violations is limited by the physical capacity of the truck to take more load. The relationship between the two variables is described in the model as an exponential relationship (Fekpe, 1993).

The basic assumptions of Fekpe's model are: trucks have a finite load limit; there will be some overweight trucking no matter what the intensity of enforcement; the violation rate will decrease with an increasing intensity of enforcement.

The general form of Fekpe's model is:

$$f(z) = Ae^{-\beta z}$$

where,

$f(z)$ - violation rate (%)

z - inspection rate (% or veh/hr)

β - exponent (estimated at 0.10 for all inspection methods)

A - coefficient - method of enforcement and definition of in-violation

Fekpe calibrated with 1988-91 enforcement data and yielded the following results.

Table 7-1: Upper Bound Limit Model Coefficients for Manitoba

Method	Year data	A	β	r
Permanent Scales	1988-91	4.0	0.08	0.9667
Inspection Sites	1988-91	5.0	0.91	0.9720
Patrol Teams	1988-91	15.0	0.096	0.9334

r - coefficient of correlation

The possible uses of the model are:

- Resource allocation of limited enforcement resources.
- Estimation of violation rates for intensities of enforcement.
- Estimation of an intensity of enforcement to achieve an acceptable violation rate.
- Account for violation rates in pavement loading analysis for given levels of enforcement.

Enforcement Strategies

As of January, 1993, Manitoba currently has six major operating strategies of enforcement. They are:

- A: 24 hrs per day, 7 day per week, year round permanent weigh scales with no bypass routes.
- B: 24 hrs per day, 7 day per week, year round permanent weigh scales with bypass routes.
- C: 16 hrs per day, Monday to Friday, year round permanent weigh scales with 24 hr operations.

- D: seasonal permanent weigh stations operated during Spring Weigh Restrictions or to monitor a particular product haul.
- E: Random operation of permanent weigh stations.
- F: Patrol Teams

Prediction of Gross Vehicle Weight Distributions

This section presents the model for the 5 axle tractor semitrailer (3-S2) as it is representative of the 'all commodity' GVW distribution family and the 8 axle B Train as it is representative of the 'weight out' family. The model of the two reference trucks (assuming only loaded trucks) were found to be (Fekpe, Clayton, Haas, 1995):

All Commodity Family: 3-S2

$$P(x) = [1 / (100 + f(z))] [(23 - 1.43x + 0.022x^2) \quad \text{for } x > 35$$

Weight Out Family: 8 axle B train

$$P(x) = [1 / (100 + f(z))] (0.25x - 7.0) \quad \text{for } 30 < x \leq 80$$

$$P(x) = [1 / (100 + f(z))] (1573 - 0.356x + 0.239x^2) \quad \text{for } x > 80$$

where

x is the operating GVW as a % of the GVW limit (35 % is the assumed tare weight)

P(x) is the proportion of trucks operating at GVW less than or equal to x.

f(z) is the violation rate

The reason there are two equations is that some truck types will not take advantage of increasing in weight limits (such as 3S2's) as much as other truck types (such as the super B train). The model incorporates this phenomenon. In addition the model was developed based upon actual observation of trucks at varying violation rates within the Provinces of Manitoba and Saskatchewan.

The GVW's of the reference trucks can be translated into those of other trucks within the group using substitution ratios which are the effective GVW limit of the target truck divided by the effective GVW limit of the reference truck.

The axle loads found in the previous section can be converted into Truck Load Factors using the AASTO conversion factors for single, tandem and tridem axle groups. They are as follows:

$$\begin{aligned} \text{TLF}_{\text{single}} &= (W1/8200)^{3.8} && \text{where } W1 \text{ is the mean axle weight of a single axle} \\ \text{TLF}_{\text{tandem}} &= (W2/14500)^{3.8} && \text{where } W1 \text{ is the mean axle weight of a tandem axle} \\ \text{TLF}_{\text{tridem}} &= (W3/19100)^{3.8} && \text{where } W1 \text{ is the mean axle weight of a tandem axle} \end{aligned}$$

7.2 Effects of Enforcement Intensity of Manitoba Pavements

This section uses the four class Manitoba truck flows calculated in Chapter 5 as well as the GVW predictive model's discussed earlier to predict the economic cost and pavement impact of a range of violation rates. For the calculation of costs, the truck flows are limited to 4 vehicle classes. For the calculation of pavement impact in terms of ESAL's, the truck flows are broken down into 13 vehicle classes. The analysis assumes that the tonne-km of payload for any enforcement intensity (i.e. violation rate) will remain constant.

7.2.1 Procedure

The basic procedure for the research in applying the models to Manitoba highways is as follows:

- Determine a detailed total, empty and loaded daily truck classification for existing traffic.
- Using GVW distribution models (Fekpe, 1993) for 'all commodity' and 'weight out' trucks to find GVW distributions for all vehicle types for a range of violation rates and road classes for loaded traffic.
- Calculate the trucking activity (tonne-km)
- For a range of violation rates for every road link using the average payloads for each truck type for each road class and average tare weights.
- Finding the ratio of tonne-km for a range of violation rates to the base case violation rate of 0% for each truck class and road class.
- Calculate the total, loaded and empty traffic for each road link for a range of violation rates using the payload ratios as reduction factors.
- Use weight split factors to break down the GVW distributions calculated previously into axle weights, calculate the truck load factor for each truck type for each road class and violation rate, and calculate the average truck load factor for new traffic on each highway link.
- Calculate the cost per link for each violation rate from the new total truck flows for each link.

- Calculate the truck load factor-km (TLF-km) for each link for the range of violation rates.
- Summarize the costs and TLF-km for a range of violation rates and determine the relationships between the three factors.

7.2.2 Detailed Truck Classification for Existing Traffic

The truck flows for the total existing traffic was calculated in chapter five for four truck classes. In this section, data from five WIM sites along with manual truck surveys done in 1992 are used to break down these four classes into 13 truck types.

The first step was to break down the four classes using the number of axles in each vehicle type. Weigh in motion data from the Symington, OakLake, Nesbitt, Glenlea, and Brokenhead sites from the years of 1990 to 1994 was used. The following assumptions were made:

- the LT class was assumed to be equal to the number of vehicles in FHWA class scheme F class 5 which is defined as a two axle single unit truck.
- the HT class was assumed to be comprised of FHWA scheme F class 6 and seven which are three or more axle single unit trucks.
- the Singles class was assumed to be comprised of FHWA scheme F class 8, 9 and 10 which are truck single trailer and tractor single semitrailer combinations.
- the Doubles class was assumed to be comprised of FHWA scheme F class 11, 12, and 13 which are truck double trailer and tractor double semitrailer combinations.

The number of vehicles in FHWA class 5 to 13 observed at the Brokenhead, Oaklake, Nesbitt, Glenlea, and Symington WIM stations was calculated. This was then used to find the percentage of FHWA class 6 and 7 trucks in the LT class, the percentage of FHWA class 8, 9 and 10 truck in the Singles class, and the percentage of FHWA class 11, 12, and 13 trucks in the doubles class. In addition class 13 trucks were further broken down into 7 and 8 axle truck combinations. The results, summarized as follows in Table 7-2 were used to break down the 4 Class truck distributions into 10 truck classes.

Table 7-2: Percent of Vehicles in FHWA class in LT, HT, Singles and Doubles Class

4 Class System	FHWA Class	# Observations	%
LT	5	16137	100
HT	6	16757	95.34
	7	819	4.66
Singles	8	29534	17.75
	9	117806	70.78
	10	19090	11.47
Doubles	11	3359	6.95
	12	7038	14.56
	13-7 axles	13998	28.97
	13-8 axles	23931	49.52

The next step was to use static weigh scale surveys to determine the most common truck configurations in each of the ten truck classes. These surveys were conducted in June of 1992 at the MDHT permanent inspection stations at West Hawk Lake, Letellier, and Headingly and are summarized in Table 7-3.

Table 7-3 Static Weigh Scale Surveys

Type	West Hawk		Letellier		Headingly		Total	
	Loaded	Empty	Loaded	Empty	Loaded	Empty	Loaded	Empty
3-S2	327	76	235	101	553	66	1115	243
3-S3	82	1	3	3	102	16	187	20
2-S2	9	1	0	0	16	8	25	9
2-S1	1	0	0	1	0	1	1	2
2 axle	30	1	7	2	43	28	80	31
3 axle	20	0	6	13	46	9	72	22
2-2 A	4	0	0	0	3	1	7	1
2-3 A	1	0	0	0	0	0	1	0
3-2 A	2	0	0	0	2	0	4	0
3-S1-2 A	18	0	5	0	12	6	35	6
3-S2-2 A	12	0	0	0	0	5	12	5
3-S2-3 A	9	0	4	18	7	1	20	19
3-S2-3 C	2	0	0	0	0	0	2	0
3-S1-3 A	3	0	0	0	0	0	3	0
3-S1-2 C	2	0	0	0	5	0	7	0
3-S1-3 C	1	0	0	0	0	0	1	0
2-S1-2 C	1	0	1	0	1	2	3	2
3-S3-2 A	1	0	1	0	1	0	3	0
3-S3S2 B	54	3	0	10	73	9	127	22
3-S2S2 B	40	2	0	1	47	3	87	6
3-S2S1 B	1	0	0	0	2	1	3	1
3S-12	11	0	0	0	0	0	11	0
TOTAL	631	84	262	149	913	156	1806	389

The static survey was used to determine exactly what truck configurations were present in the 10 truck classes. For example, FHWA class 8 truck were comprised of 2-S2's, 2-S1's and 2-2A's. Table 7-4 summarizes the number of loaded and empty truck

configurations in each of the ten truck classes calculated previously. For each truck configuration, the percentage of empties of that configuration, the empty axle weights, and the percentage of that configuration in that truck class is calculated.

Table 7-4 Static Survey Truck Type Distribution, Tare Weights and Empty Percentages

Vehicle	Loaded	Empty	Total	%Class	% Mtry	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
2 ax str	80	31	111		27.93	2656	3433			
3 ax str	72	22	94		23.40	3984	5343			
4 ax sgl										
2-S2	25	9	34	75.56	26.47	2994	3908	3660		
2-S1	1	2	3	6.67	66.67	3155	5815	3980		
2-2 A	7	1	8	17.78	12.50	1280	3370	3040		
Total	33	12	45		26.67					
5 ax sgl										
3-S2	1115	243	1358	99.63	17.89	4523	5888	4323		
2-3 A	1	0	1	0.07	0.00					
3-2 A	4	0	4	0.29	0.00					
Total	1120	243	1363		17.83					
6 ax sgl										
3-S3	187	20	207		9.66	4607	6072	5248		
5 axl dbl										
2-S1-2 C	3	2	5		40.00	4680	4290	3460	4010	3780
6 axl dbl										
3-S1-2 A	35	6	41	78.85	14.63	4215	5923	4477	3122	2913
3-S1-2 C	7	0	7	13.46	0.00					
3-S2S1 B	3	1	4	7.69	25.00					
Total	45	7	52		13.46					
7 axl dbl										
3-S2-2 A	12	5	17	14.91	29.41	4480	5851	3716	2720	2758
3-S1-3 A	3	0	3	2.63	0.00					
3-S1-3 C	1	0	1	0.88	0.00					
3-S2S2 B	87	6	93	81.58	6.45	5422	5832	4837	1812	
Total	103	11	114		9.65					
8 axl dbl										
3-S2-3 A	20	19	39	20.21	48.72	4227	4355	3750	2531	3138
3-S2-3 C	2	0	2	1.04	0.00					
3-S3-2 A	3	0	3	1.55	0.00					
3-S3S2 B	127	22	149	77.20	14.77	4673	5807	5382	3646	

The next step was to eliminate truck configurations which comprise a very small percentage of each truck class. This reduced the total number of truck configurations to 13. Table 7-5 summarizes the percentages of these truck types out of the WIM classes and the corresponding empty percentages and tare weights.

Table 7.5 Summary of 13 Truck Types

Vehicle Type	Loaded	Empty	Total	% Split	% Empty	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
2 ax str	80	31	111	100.00	27.93	2656	3433			
3 ax str	72	22	94	100.00	23.40	3984	5343			
4 ax str				100.00						
2-S2	25	9	34	80.95	26.47	2994	3908	3660		
2-2A	7	1	8	19.05	12.50	1280	3370	3040		
3-S2	1115	243	1358	100.00	17.89	4523	5888	4323		
3-S3	187	20	207	100.00	9.66	4607	6072	5248		
2-S1-2 C	3	2	5	100.00	40.00	4680	4290	3460	4010	3780
3-S1-2A/C	35	6	41	100.00	13.46	4215	5923	4477	3122	2913
3-S2-2 A	12	5	17	15.45	29.41	4480	5851	3716	2720	2758
3-S2S2 B	87	6	93	84.55	6.45	5422	5832	4837	1812	
3-S2-3 A	20	19	39	20.74	48.72	4227	4355	3750	2531	3138
3-S3-S2 B	127	22	149	79.26	14.77	4673	5807	5382	3646	

The final step in determining a detailed daily truck flow on every highway link for existing traffic was to multiply the number of vehicles in the original four truck type vehicle classification scheme by the percentages of specific truck types in Table 7-5. The new truck classification was then multiplied by the percentage of empties in table 7-5 for each truck type for every link resulting in a detailed empty truck flow for existing traffic. The detailed loaded traffic per day on each link was calculated as the difference between the total traffic and empty traffic.

7.2.3 GVW Distributions

The next step in the analysis was to determine the GVW distribution for loaded trucks for each truck type and road class for a range of violation rates. There are thirteen truck types and three road classes resulting in thirty nine GVW distributions for each violation rate. Violation rates of zero to twenty percent in five percent increments were selected for analysis resulting in a total of 195 GVW distributions.

The GVW distributions were calculated using GVW distribution models (Fekpe, 1993). The 2, 3 and four axle straight as well as the 2-S2, 2-2A, 3-S2, 3-S3, 2-S1-2A, 3S1-2A, and 3-S2-2A were assumed to have an all commodity GVW distribution. The 3-S2S2, 3-S2-3A and 3-S3S2 were assumed to have a weight out GVW distribution.

The GVW distributions vary by the road type (RTAC, A, and B highways) in Manitoba. Generally RTAC roads allow the highest weight limits and Class B roads the lowest with Class A Roads somewhere in between. The GVW limits for each road class were obtained from the Manitoba Weight Policy Manual published by the Compliance Branch of the MDHT. Table 7-6 summarizes these limits as well as the axle/axle group limits for each road class.

Table 7-6 GVW and Axle/Axle Group Limits By Road Class (kgs)

Truck	Road	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5	GVW
2 axle straight truck	RTAC	7300	9100				16400
	A	7300	9100				16400
	B	7300	8200				15500
3 axle straight truck	RTAC	7300	17000				24300
	A	7300	16000				23300
	B	7300	14500				21800
4 axle straight truck	RTAC	7300	21000				28300
	A	7300	21000				28300
	B	7300	20000				27300
2S2	RTAC	7300	9100	17000			33400
	A	7300	9100	16000			32400
	B	7300	8200	14500			30000
2-2A	RTAC	7300	9100	9100	9100		33400
	A	7300	9100	9100	9100		32400
	B	7300	8200	8200	8200		30000
3-S2	RTAC	5500	17000	17000			39500
	A	5500	16000	16000			37500
	B	5500	14500	14500			34500
3-S3	RTAC	5500	17000	24000			46500
	A	5500	16000	23000			44500
	B	5500	14500	20000			40000
2-S1-2A	RTAC	5500	9100	9100	9100	9100	39700
	A	5500	9100	9100	9100	9100	39700
	B	5500	8200	8200	8200	8200	37900
3S1-2A	RTAC	5500	17000	9100	9100	9100	47600
	A	5500	16000	9100	9100	9100	46600
	B	5500	14500	8200	8200	8200	44200
3-S2-2A	RTAC	5500	17000	17000	9100	9100	55500
	A	5500	16000	16000	9100	9100	53500
	B	5500	14500	14500	8200	8200	47630
3-S2S2	RTAC	5500	17000	17000	17000		56500
	A	5500	16000	16000	16000		53500
	B	5500	14500	14500	14500		47630
3-S2-3A	RTAC	5500	17000	17000	9100	17000	55500
	A	5500	16000	16000	9100	16000	53500
	B	5500	14500	14500	8200	14500	47630
3-S3S2	RTAC	5500	17000	23000	17000		62500
	A	5500	16000	23000	16000		56500
	B	5500	14500	20000	14500		47630

Example Application of GVW model:

The first step in calculating the GVW distributions for loaded trucks was to pick a range of values for the percentage of GVW (x) for a violation rate of zero. The range was 35-100% for all commodity truck and 30-100% for weight out trucks.

An example of a table created for each truck is shown below. The first column contained the percentage of GVW in one percent increments. The second column was the GVW for that percentage calculated from the first column divided by 100 multiplied by the GVW limit for that road class and truck type. The third column was an average of the GVW for that percentage and the GVW for the previous percentage (to find a midpoint value).

The fourth column is a cumulative probability for the GVW percentage calculated using the formula's above developed by Edward Fekpe. The fifth column is the probability of that GVW occurring calculated from a difference between the previous cumulative probabilities. The sum of the probabilities is then calculated to obtain a modification ratio as part of an iterative process to calculate a new probability. The new probability values are in the sixth column. The last column is the probability multiplied by the GVW midpoint. The summation of this column results in the average GVW for the truck type, road class and violation rate specified.

An example of a GVW distribution calculation Table is shown below for a 3-S2 on an RTAC road and a violation rate of 5%.

RTAC x (% of GVW)	3-S2 GVW kgs	VR=5% GVW av kgs	Cumm Pr	Prob	Corrected Prob	GVW* Prob
35	13825		-0.0001			
36	14220	14022.5	0.0014	0.0015	0.0015	21.0832
37	14615	14417.5	0.0034	0.0020	0.0019	27.7316
.
99	39105	38907.5	0.9578	0.0284	0.0280	1087.8390
100	39500	39302.5	0.9867	0.0288	0.0284	1115.3877
101	39895	39697.5	1.0159	0.0293	0.0288	1143.2681
				1.0160	1.0000	30833.1294

In this case, the value of x ranges from 35 to 101 to account for some truck being over the GVW limit since the violation rate is 5%. The range for higher violation rates extends to as much as 106%. It is based upon the value where the cumulative probability first goes over the value of 1.

The GVW in this case is the GVW percentage (x) divided by 100, and multiplied by the GVW limit which is 39500. For example, for x= 37, the GVW is $37/100 \times 39500 = 14615$. The GVW average is the midpoint of the GVW for x on that row minus the GVW for the previous x. For example, for x= 36 the GVW average is $(14220 + 14615) / 2 = 14417.5$

The cumulative probability is then calculated. For example, for x= 37 and a violation rate of 5% it is equal to $[1 / (100 + 5)](22.6 - 1.43(37) + 0.0224(37)^2) = 0.0034$. The probability for any x is the cumulative probability for that x minus the previous. For the case of x= 37 it is $0.0034 - 0.0014 = 0.0020$. These probabilities are then summed (ex. 1.0160) to obtain a correction factor which is divided into each probability to obtain a new probability. For example, for x=37, the probability of 0.0020 is divided by 1.1060 to obtain a corrected value of 0.0019. These corrected probabilities are then summed to obtain a value of one as a check.

The final step in the process is to multiply the corrected probability by the average GVW in that range. For example, for x=37 it is $0.0019 \times 14417.5 = 27.7316$. The sum of all these values is the average GVW for that truck type and violation rate and road class, in this case 30833 kgs. Table 7.7 summarizes the average GVW's for loaded trucks obtained in the analysis for violation rates of 0, 5, 10, 15 and 20 percent on RTAC, Class A, and Class B roads.

Table 7-7 Average Loaded Truck GVW by Road Class, Truck Type and Violation Rate

VR (%)	2 Axle Straight	3 Axle Straight	4 Axle Straight	2-S2	2-2A	3-S2	3-S3	2S1-2A3	S1-2A	3-S2-2A	3-S2S2	3-S2-3A	3-S3S2
VR=0													
RTAC	12692	18807	21902	25849	25849	30570	35988	30725	36839	42953	49763	49763	55047
A	12692	18033	21902	25075	25075	29022	34440	30725	36065	41405	47121	47121	49763
B	11996	16872	21128	23218	23218	26701	30957	29332	34208	36862	41951	41951	41951
VR=5													
RTAC	12802	18968	22091	26072	26072	30833	36297	30989	37156	43322	50299	50299	55641
A	12802	18188	22091	25291	25291	29272	34736	30989	36375	41761	47629	47629	50299
B	12099	17017	21310	23418	23418	26930	31223	29584	34502	37179	42403	42403	42403
VR=10													
RTAC	13020	19292	22467	26516	26516	31359	36916	31518	37789	44061	50821	50821	56218
A	13020	18498	22467	25722	25722	29771	35328	31518	36996	42473	48122	48122	50821
B	12305	17307	21673	23817	23817	27389	31756	30089	35090	37813	42842	42842	42842
VR=15													
RTAC	13129	19453	22656	26738	26738	31622	37226	31782	38106	44431	51329	51329	56779
A	13129	18653	22656	25938	25938	30021	35625	31782	37306	42830	48603	48603	51329
B	12409	17452	21855	24017	24017	27619	32022	30341	35384	38130	43270	43270	43270
VR=20													
RTAC	13347	19777	23032	27183	27183	32148	37845	32310	38740	45169	51825	51825	57328
A	13347	18963	23032	26369	26369	30520	36217	32310	37926	43542	49073	49073	51825
B	12615	17742	22218	24416	24416	28078	32555	30845	35973	38764	43689	43689	43689

7.2.4 Payload Capacity

The payload capacity was calculated for a range of violation rates to obtain truck traffic modification ratios. This was based on the assumption that the tonne-km of traffic would remain a constant for all enforcement intensities. The original loaded truck traffic for a zero violation rate was used to calculate the payload in terms of tonne-km that existing traffic could carry for violation rates of zero, five, ten, fifteen and twenty percent. The procedure used was:

- for a violation rate of zero, the loaded traffic for each truck type was multiplied by the average GVW for a loaded truck which was calculated using the GVW distribution model (Fekpe, 1993). This was done on all road sections using the GVW distributions which corresponded to RTAC, Class A and Class B highways.
- multiply the empty traffic for each truck configuration by the tare weight for that truck type and the link length.
- subtract the empty tonne-km of truck traffic from the loaded tonne-km for each truck configuration on all links to obtain the tonne km of payload moved for a zero violation rate on that link for that truck type. This step was repeated for all truck types on that link.
- The tonne-km of payload for each truck configuration on each link was summed to calculate a total tonne-km of payload moved on each link.

- Repeat the previous steps for violation rates of 5, 10, 15 and 20 percent.

The analysis of the effects of enforcement on truck operating cost and TLF assumes a constant tonne-km payload. The result is a reduction in the truck traffic for violation rates other than zero. The total, loaded and empty traffic were assumed to be reduced by the same ratios. The traffic modification ratios were the tonne-km of payload moved for complete compliance with the original truck traffic divided by the tonne-km of payload moved for increasing violation rates. These values were calculated for each of the 13 truck types, on each of the three road classes, for violation rates of 5, 10, 15, and 20 percent. The modification ratios for the total traffic by truck type and road class was also calculated. Table 7-8 summarizes the traffic modification ratios.

Table 7-8 Traffic Modification Ratios

	2 axle	3 axle	4 axle	2-S2	2-2A	3-S2	3-S3	2-S1-2A/C	3-S1-2A/C	3-S2-2A	3-S2S2	3-S2-3A	3-S3S2B	Total
VR=5														
RTAC	0.9837	0.9832	0.9835	0.9857	0.9879	0.9837	0.9848	0.9755	0.9808	0.9845	0.9834	0.9834	0.9836	0.9837
A	0.9837	0.9825	0.9835	0.9854	0.9878	0.9828	0.9843	0.9755	0.9803	0.9840	0.9829	0.9829	0.9826	0.9830
B	0.9828	0.9811	0.9829	0.9845	0.9873	0.9812	0.9826	0.9731	0.9788	0.9820	0.9815	0.9815	0.9802	0.9813
TOTAL	0.9834	0.9823	0.9832	0.9852	0.9877	0.9826	0.9840	0.9746	0.9799	0.9835	0.9826	0.9826	0.9822	0.9827
VR=10														
RTAC	0.9528	0.9513	0.9520	0.9582	0.9646	0.9526	0.9558	0.9298	0.9446	0.9548	0.9679	0.9678	0.9681	0.9587
A	0.9528	0.9493	0.9520	0.9573	0.9641	0.9502	0.9542	0.9298	0.9431	0.9535	0.9669	0.9667	0.9662	0.9569
B	0.9502	0.9455	0.9503	0.9548	0.9629	0.9456	0.9495	0.9233	0.9389	0.9480	0.9642	0.9641	0.9618	0.9530
TOTAL	0.9518	0.9487	0.9514	0.9568	0.9639	0.9497	0.9534	0.9275	0.9421	0.9521	0.9663	0.9662	0.9656	0.9563
VR=15														
RTAC	0.9380	0.9361	0.9370	0.9450	0.9533	0.9377	0.9419	0.9086	0.9274	0.9407	0.9532	0.9530	0.9535	0.9440
A	0.9380	0.9335	0.9370	0.9439	0.9527	0.9347	0.9399	0.9086	0.9255	0.9389	0.9517	0.9516	0.9508	0.9417
B	0.9347	0.9286	0.9349	0.9406	0.9511	0.9287	0.9338	0.9003	0.9201	0.9319	0.9480	0.9478	0.9445	0.9364
TOTAL	0.9368	0.9327	0.9362	0.9433	0.9524	0.9340	0.9388	0.9056	0.9242	0.9372	0.9509	0.9508	0.9499	0.9408
VR=20														
RTAC	0.9098	0.9071	0.9084	0.9198	0.9316	0.9094	0.9153	0.8689	0.8949	0.9136	0.9392	0.9390	0.9397	0.9213
A	0.9098	0.9034	0.9084	0.9181	0.9307	0.9051	0.9124	0.8689	0.8923	0.9110	0.9374	0.9372	0.9362	0.9180
B	0.9052	0.8966	0.9054	0.9135	0.9284	0.8968	0.9039	0.8576	0.8848	0.9011	0.9326	0.9323	0.9281	0.9108
TOTAL	0.9081	0.9023	0.9072	0.9172	0.9303	0.9041	0.9109	0.8648	0.8905	0.9086	0.9364	0.9362	0.9350	0.9169

These traffic modification ratios were used to reduce the loaded and empty truck traffic on all links. The tonne-km of payload for all links of the same road class by truck type was summed with the results summarized in Table 7-9. This table shows how much payload is being carried by each truck type on the different road classes as well as the total tonne-km of payload being moved by each truck type for each enforcement intensity.

Table 7-9 Tonne km of Payload By Truck Type and Road Class

	2 axle	3 axle	4 axle	2-S2	2-2A	3-S2	3-S3	2-S1-2A/C	3S1-2A/C	3-S2-2A	3-S2S2	3-S2-3A	3-S3S2B	Total
VR=0														
RTAC	134037	435390	25425	383176	127467	2183522	493136	55912	259877	94482	931833	213604	1517224	6855082
A	131582	395032	25119	391292	131264	2119112	489506	61167	270710	96533	934870	214238	1413009	6673433
B	155192	436963	29845	353797	121564	1840224	412071	64047	287415	92337	928854	212702	1265279	6200290
TOTAL	420811	1267384	80389	1128265	380296	6142857	1394713	181125	818001	283351	2795556	640544	4195512	19728805
VR=5														
RTAC	136252	442817	25852	388747	129027	2219764	500743	57318	264962	95971	947525	217212	1542562	6968752
A	133757	402067	25541	397105	132892	2156122	497336	62705	276156	98103	951125	217976	1438068	6788953
B	157902	445365	30365	359378	123127	1875529	419369	65819	293650	94025	946324	216719	1290780	6318353
TOTAL	427910	1290250	81758	1145230	385046	6251415	1417449	185842	834767	288099	2844973	651908	4271410	20076058
VR=10														
RTAC	140682	457673	26707	399890	132147	2292255	515959	60130	275132	98950	962772	220718	1567182	7150199
A	138106	416140	26386	408732	136148	2230147	512998	65782	287048	101245	966920	221609	1462417	6973677
B	163321	462171	31405	370541	126253	1946145	433967	69365	306122	97401	963298	220623	1315559	6506170
TOTAL	442110	1335984	84498	1179163	394549	6468547	1462923	195277	868302	297595	2892990	662950	4345158	20630046
VR=15														
RTAC	142898	465102	27135	405462	133708	2328505	523567	61537	280218	100440	977626	224134	1591167	7261497
A	140281	423178	26808	414546	137777	2267165	520830	67320	292495	102816	982307	225147	1486137	7086805
B	166031	470574	31925	376123	127816	1981457	441266	71138	312358	99089	979835	224425	1339697	6621737
TOTAL	449210	1358854	85868	1196131	399301	6577127	1485663	199995	885071	302344	2939767	673706	4417000	20970038
VR=20														
RTAC	147329	479959	27990	416607	136829	2401005	538784	64350	290389	103419	992135	227470	1614596	7440862
A	144631	437252	27653	426174	141033	2341200	536494	70397	303389	105958	997337	228603	1509307	7269428
B	171452	487382	32965	387287	130943	2052081	455866	74684	324832	102466	995988	228140	1363276	6807362
TOTAL	463411	1404594	88608	1230069	408805	6794286	1531144	209431	918609	311842	2985460	684213	4487179	21517652

7.2.5 Truck Load Factor

In a previous section, the truck traffic flows were calculated for total, loaded and empty flows for 13 truck types by road class for a complete compliance condition. The traffic flows for increased violation rates are calculated by multiplying the existing loaded, empty, and loaded traffic for each truck type and road class by the appropriate modification ratio in Table 7.8 for the violation rate being calculated.

The modified traffic flows were used in calculating the truck load factor associated with each truck type by distributing the GVW's calculated among the individual axles or axle groups by using weight split factors. In calculating the Weight Split Factor (WSF) the axle/ axle group weight limit for the truck type under consideration is divided by the sum of all the axle/axle group limits for the specific road class being considered. These axle and axle group limits are found in Table 7-6. The WSF's are summarized in Tables 7.10a, 7-10b and 7-10c.

Table 7-10a Weight Split Factors For RTAC Roads

RTAC Truck	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
2 axle	0.445	0.555			
3 axle	0.300	0.700			
4 axle	0.258	0.742			
2-S2	0.219	0.272	0.509		
2-2A	0.211	0.263	0.263	0.263	
3-S2	0.139	0.430	0.430		
3-S3	0.118	0.366	0.516		
2-S1-2A/C	0.131	0.217	0.217	0.217	0.217
3-S1-2A/C	0.110	0.341	0.183	0.183	0.183
3-S2-2A	0.095	0.295	0.295	0.158	0.158
3-S2S2	0.097	0.301	0.301	0.301	
3-S2-3A	0.084	0.259	0.259	0.139	0.259
3-S3S2B	0.088	0.272	0.368	0.272	

Table 7-10b Weight Split Factors For Class A Roads

A Truck	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
2 axle	0.445	0.555			
3 axle	0.313	0.687			
4 axle	0.258	0.742			
2S2	0.225	0.281	0.494		
2-2A	0.211	0.263	0.263	0.263	
3-S2	0.147	0.427	0.427		
3-S3	0.124	0.360	0.517		
2S1-2A/C	0.131	0.217	0.217	0.217	0.217
3S1-2A/C	0.113	0.328	0.186	0.186	0.186
3-S2-2A	0.099	0.287	0.287	0.163	0.163
3-S2S2	0.103	0.299	0.299	0.299	
3-S2-3A	0.088	0.256	0.256	0.145	0.256
3-S3S2B	0.091	0.264	0.380	0.264	

Table 7-10c Weight Split Factors For Class B Roads

B Truck	Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
2 axle	0.471	0.529			
3 axle	0.335	0.665			
4 axle	0.267	0.733			
2S2	0.243	0.273	0.483		
2-2A	0.229	0.257	0.257	0.257	
3-S2	0.159	0.420	0.420		
3-S3	0.138	0.363	0.500		
2S1-2A/C	0.144	0.214	0.214	0.214	0.214
3S1-2A/C	0.123	0.325	0.184	0.184	0.184
3-S2-2A	0.108	0.285	0.285	0.161	0.161
3-S2S2	0.112	0.296	0.296	0.296	
3-S2-3A	0.096	0.253	0.253	0.143	0.253
3-S3-S2B	0.101	0.266	0.367	0.266	

The average Truck Load Factor (TLF) for empty and loaded traffic is calculated by finding the average TLF for loaded and empty traffic for each link for each enforcement intensity. The steps used are:

- multiply the GVW distribution of each truck by the appropriate weight split factors of that road class to obtain the axle and axle group weights distributions.
- the axle loads (expressed as a percent of the GVW limit) are multiplied by the probability of that load occurring.
- axle loads are converted into a TLF using the AASHTO equations.
- axle loads over the entire range of the GVW distribution are added to get an average truck load factor for each truck type
- the previous steps are repeated for all road classes and enforcement intensities

An example of these calculations for 3-S2's on an RTAC road with a violation rate of 10% is given. The TLF equations used for single, tandem and tridem axle configurations are as follows (Alam, 1996)

$$TLF_{single} = (W1/8200)^{3.8} \quad \text{where } W1 \text{ is the mean axle weight of a single axle}$$

$$TLF_{tandem} = (W2/14500)^{3.8} \quad \text{where } W1 \text{ is the mean axle weight of a tandem axle}$$

$$TLF_{tridem} = (W3/19100)^{3.8} \quad \text{where } W1 \text{ is the mean axle weight of a tandem axle}$$

Ex. Average TLF for 3-S2 on an RTAC road with a violation rate of 10%

RTAC 3-S2 VR=10%		WSF1 0.139241	WSF2 0.430380	WSF3 0.430380	
x	GVW	Prob	TLF Axle1	TLF Axle1	TLF Axle1
35					
36	14022.5	0.001420	0.000005	0.000051	0.000051
37	14417.5	0.001817	0.000007	0.000072	0.000072
.
101	39697.5	0.027199	0.005096	0.050733	0.050733
102	40092.5	0.027595	0.005369	0.053446	0.053446
103	40487.5	0.027992	0.005653	0.056272	0.056272
		1.000000			1.952221

In this example, for x (percent of GVW limit) = 36, the TLF or axle 1 is:

TLF Axle 1 =

$$[(WSF1*GVW*prob)/8200]^{3.8} = [(1.39241*14022.5*0.01420)/8200]^{3.8} = 0.000005$$

TLF Axle 2 =

$$[(WSF2*GVW*prob)/14500]^{3.8} = [(0.430380*14022.5*0.01420)/14500]^{3.8} = 0.000051$$

TLF Axle 3 =

$$[(WSF3*GVW*prob)/14500]^3.8 = [(0.430380*14022.5*0.01420)/14500]^3.8 = 0.000051$$

The average TLF a loaded 3-S2 on an RTAC road with a violation rate of 10% truck is then summation of all TLF1, TLF2 and TLF3 values yielding a total of 1.952221. The same procedure is carried out for all truck types for each road class and 5 different violation rates. The results are summarized in Table 7-11. Also summarized are the average empty TLF for each type of truck.

Table 7-11 Average TLF for Loaded and Empty Trucks

Loaded	2 Axle	3 Axle	4 Axle	2S2	2-2A	3-S2	3-S3	2S1-2A	3S1-2A	3-S2-2A	3-S2S2B	3-S2-3A	3-S3-S2B
VR=0%													
RTAC	0.975	1.133	0.951	1.813	2.043	1.761	2.030	2.299	2.510	2.707	3.922	2.802	4.056
A	0.975	1.009	0.951	1.641	1.820	1.432	1.694	2.299	2.356	2.396	3.146	2.294	2.829
B	0.753	0.753	0.840	1.211	1.321	1.017	1.104	1.857	1.868	1.502	1.985	1.445	1.404
VR=5%													
RTAC	1.009	1.173	0.985	1.877	2.115	1.823	2.101	2.380	2.599	2.803	4.067	2.906	4.206
A	1.009	1.045	0.985	1.699	1.884	1.483	1.754	2.380	2.439	2.481	3.262	2.378	2.933
B	0.779	0.779	0.870	1.253	1.368	1.052	1.143	1.923	1.934	1.555	2.059	1.499	1.456
VR=10%													
RTAC	1.081	1.256	1.055	2.010	2.264	1.952	2.250	2.549	2.783	3.001	4.213	3.010	4.358
A	1.081	1.119	1.055	1.819	2.017	1.588	1.878	2.549	2.612	2.657	3.379	2.464	3.039
B	0.834	0.834	0.931	1.342	1.465	1.127	1.224	2.059	2.070	1.665	2.133	1.553	1.508
VR=15%													
RTAC	1.118	1.299	1.091	2.079	2.342	2.019	2.327	2.636	2.878	3.104	4.361	3.115	4.510
A	1.118	1.157	1.091	1.881	2.087	1.642	1.943	2.636	2.702	2.748	3.498	2.550	3.145
B	0.863	0.863	0.963	1.388	1.515	1.166	1.266	2.130	2.142	1.722	2.207	1.607	1.561
VR=20%													
RTAC	1.195	1.389	1.166	2.223	2.504	2.159	2.488	2.818	3.077	3.318	4.509	3.222	4.664
A	1.195	1.237	1.166	2.011	2.231	1.755	2.077	2.818	2.888	2.937	3.617	2.637	3.253
B	0.922	0.922	1.030	1.484	1.620	1.246	1.353	2.276	2.289	1.841	2.283	1.662	1.614
Empty	2 Axle	3 Axle	4 Axle	2S2	2-2A	3-S2	3-S3	2S1-2A	3S1-2A	3-S2-2A	3-S2S2B	3-S2-3A	3-S3-S2B
	0.050	0.087	0.089	0.087	0.080	0.147	0.156	0.360	0.258	0.169	0.255	0.134	0.162

7.2.6 Total Truck Load Factor per Link

The truck load factor per link is calculated as the sum of the TLF for an average empty truck multiplied by the number of empty trucks of that type and the average TLF for a loaded truck multiplied by the number of loaded trucks of that type. For example, on an RTAC road link the TLF for a 3-S2 would be the appropriate average loaded TLF

in Table 7-11 multiplied by the number of loaded 3-S2's on that link for the existing violation rate added to the average TLF of an empty 3-S2 multiplied by the number of empty 3-S2's on that link for that violation rate.

The total TLF was calculated for every truck type, for each road link and for a range of violation rates. The TLF contribution from each truck type was then added to get a total TLF for the link. To simplify comparisons, the thirteen truck configurations were regrouped into the original four classes (LT, HT, Single, and Doubles) and a Total TLF calculated per link.

7.3 Comparison of Findings

Table 7-11 compares the average Truck Load Factor for loaded and empty truck for each violation rate and road class. For each truck type, the average TLF increases as the weight limits on the road increase (i.e. Class B to Class A to RTAC). For any truck type, the average TLF also increases with the violation rate.

To compare the performance of TLF with violation rate between links of different lengths, the TLF per day was multiplied by the link length (for each of the 4 truck classes). In order to compare between road types the TLF-km for each violation rate was summed for each road class.

Similarly, to compare the cost of truck movements, the costs for each violation rate and truck type (4 class) was calculated on a link basis. The total link cost for each class of road and violation rate were also summed for comparison purposes. Similar calculation were made for truck traffic volume and truck kilometers of travel. Table 7-12a, 7-12b, 7-12c, 7-12d, 7-12e, 7-12f summarize the traffic, truck kilometers, cost, TLF per day, TLF-km per day, and tonne-km for each road type and violation rate. Appendix D summarizes these value on a link basis.

7-12a Truck Traffic by Road Class and Violation Rate

VR=0	LT	HT	Singles	Doubles	Total
RTAC	5278	10693	39486	20496	75953
A	6039	12482	48541	25115	92177
B	6997	13932	43757	24098	88785
Total	18314	37107	131784	69709	256915
VR=5	LT	HT	Singles	Doubles	Total
RTAC	5193	10514	38863	20140	74709
A	5941	12264	47742	24661	90607
B	6877	13671	42970	23617	87135
Total	18010	36448	129575	68418	252451
VR=10	LT	HT	Singles	Doubles	Total
RTAC	5029	10173	37675	19704	72581
A	5753	11850	46219	24109	87932
B	6649	13176	41479	23038	84341
Total	17432	35199	125373	66851	244854
VR=15	LT	HT	Singles	Doubles	Total
RTAC	4951	10010	37108	19387	71457
A	5664	11654	45494	23707	86519
B	6541	12941	40772	22616	82869
Total	17156	34605	123374	65710	240845
VR=20	LT	HT	Singles	Doubles	Total
RTAC	4802	9701	36024	18998	69525
A	5494	11280	44110	23216	84099
B	6334	12497	39427	22103	80362
Total	16630	33477	119561	64317	233985

7-12b Truck Kilometers by Road Class and Violation Rate

VR=0	LT	HT	Singles	Doubles	Total
RTAC	28162	62893	237245	127635	455934
A	27646	62136	255189	139631	484601
B	36451	79307	264601	168557	548916
Total	92258	204335	757035	435823	1489451
VR=5	LT	HT	Singles	Doubles	Total
RTAC	27704	61838	233504	125414	448460
A	27196	61051	250985	137106	476339
B	35825	77817	259843	165195	538681
Total	90725	200707	744333	427715	1463480
VR=10	LT	HT	Singles	Doubles	Total
RTAC	26831	59832	226367	122700	435731
A	26340	58992	242982	134040	462353
B	34636	75000	250826	161140	521602
Total	87808	193824	720174	417880	1419686
VR=15	LT	HT	Singles	Doubles	Total
RTAC	26415	58877	222959	120728	428980
A	25932	58013	239169	131804	454918
B	34071	73666	246549	158188	512474
Total	86418	190556	708677	410720	1396371
VR=20	LT	HT	Singles	Doubles	Total
RTAC	25621	57056	216445	118305	417426
A	25152	56150	231892	129073	442267
B	32994	71135	238421	154606	497156
Total	83767	184341	686758	401983	1356849

7-12c Truck Cost by Road Class and Violation Rate

VR=0	LT	HT	Singles	Doubles	Total
RTAC	43862	86911	286165	180859	597796
A	43058	85865	307809	197857	634589
B	56772	109594	319161	238845	724373
Total	143692	282371	913135	617561	1956759
VR=5	LT	HT	Singles	Doubles	Total
RTAC	43149	85454	281653	177711	587967
A	42358	84367	302738	194279	623743
B	55798	107536	313423	234081	710837
Total	141305	277357	897814	606072	1922547
VR=10	LT	HT	Singles	Doubles	Total
RTAC	41790	82682	273044	173866	571382
A	41025	81521	293084	189934	605564
B	53946	103642	302546	228336	688471
Total	136761	267845	868674	592136	1865416
VR=15	LT	HT	Singles	Doubles	Total
RTAC	41142	81363	268934	171072	562510
A	40388	80168	288485	186767	595809
B	53066	101799	297388	224152	676404
Total	134596	263329	854807	581990	1834722
VR=20	LT	HT	Singles	Doubles	Total
RTAC	39905	78846	261075	167638	547464
A	39174	77594	279709	182896	579372
B	51388	98302	287584	219076	656350
Total	130466	254741	828368	569610	1783186

7-12d TLF/day by Road Class and Violation Rate

VR=0	LT	HT	Singles	Doubles	Total
RTAC	3783	9431	59614	60213	133041
A	4328	9881	61117	57597	132923
B	3894	8363	39214	33688	85158
Total	12005	27675	159945	151497	351122
VR=5	LT	HT	Singles	Doubles	Total
RTAC	3850	9593	60712	61331	135486
A	4405	10042	62195	58604	135247
B	3958	8485	39835	34191	86470
Total	12213	28120	162742	154126	357202
VR=10	LT	HT	Singles	Doubles	Total
RTAC	3988	9924	62964	62609	139485
A	4563	10374	64407	59791	139134
B	4091	8739	41113	34808	88751
Total	12642	29036	168484	157208	367370
VR=15	LT	HT	Singles	Doubles	Total
RTAC	4059	10094	64118	63749	142020
A	4643	10544	65541	60824	141552
B	4160	8869	41770	35331	90130
Total	12862	29507	171429	159904	373701
VR=20	LT	HT	Singles	Doubles	Total
RTAC	4203	10443	66480	65063	146188
A	4809	10893	67865	62049	145616
B	4300	9138	43120	35978	92536
Total	13312	30473	177465	163090	384339

7-12e TLF-km/day by Road Class and Violation Rate

VR=0	LT	HT	Singles	Doubles	Total
RTAC	20183	55471	358180	374959	808794
A	19814	49188	321303	320222	710527
B	20282	47604	237131	235632	540648
Total	60280	152263	916614	930813	2059969
VR=5	LT	HT	Singles	Doubles	Total
RTAC	20542	56421	364781	381917	823661
A	20166	49991	326969	325825	722950
B	20620	48302	240884	239153	548959
Total	61327	154713	932635	946894	2095570
VR=10	LT	HT	Singles	Doubles	Total
RTAC	21277	58370	378312	389878	847838
A	20888	51640	338597	332422	743547
B	21313	49742	248613	243467	563135
Total	63478	159753	965522	965767	2154520
VR=15	LT	HT	Singles	Doubles	Total
RTAC	21654	59370	385242	396977	863244
A	21258	52487	344558	338164	756468
B	21669	50485	252586	247129	571869
Total	64580	162343	982387	982271	2191580
VR=20	LT	HT	Singles	Doubles	Total
RTAC	22426	61420	399434	405156	888437
A	22016	54226	356775	344976	777993
B	22398	52013	260751	251653	586816
Total	66840	167660	1016960	1001786	2253246

7-12f Tonne kilometers of Payload by Road Class

	LT	HT	Singles	Doubles	Total
RTAC	134037	460815	3187301	3072930	6855082
A	131582	420150	3131173	2990527	6673433
B	155192	466808	2727657	2850633	6200290
Total	420811	1347773	9046131	8914089	19728805

For every truck type and Road Class, there appears to be a trend in the cost and TLF-km per day as the violation rate increases. Figure 7-1 illustrates this trend.

Figure 7-1: Costs per day of Each Truck Type By Road Class

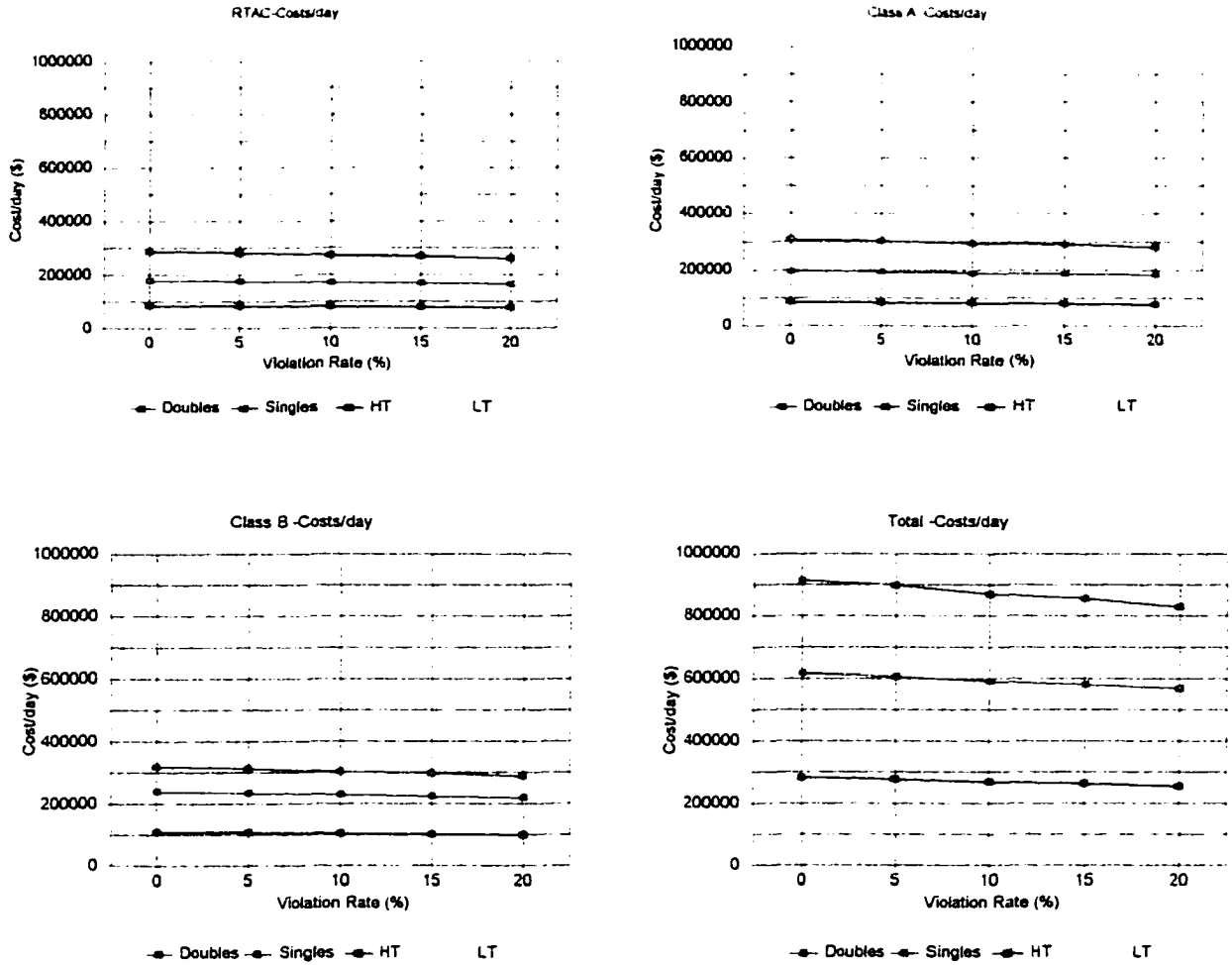


Figure 7-2: TLF-km per day of Each Truck Type By Road Class

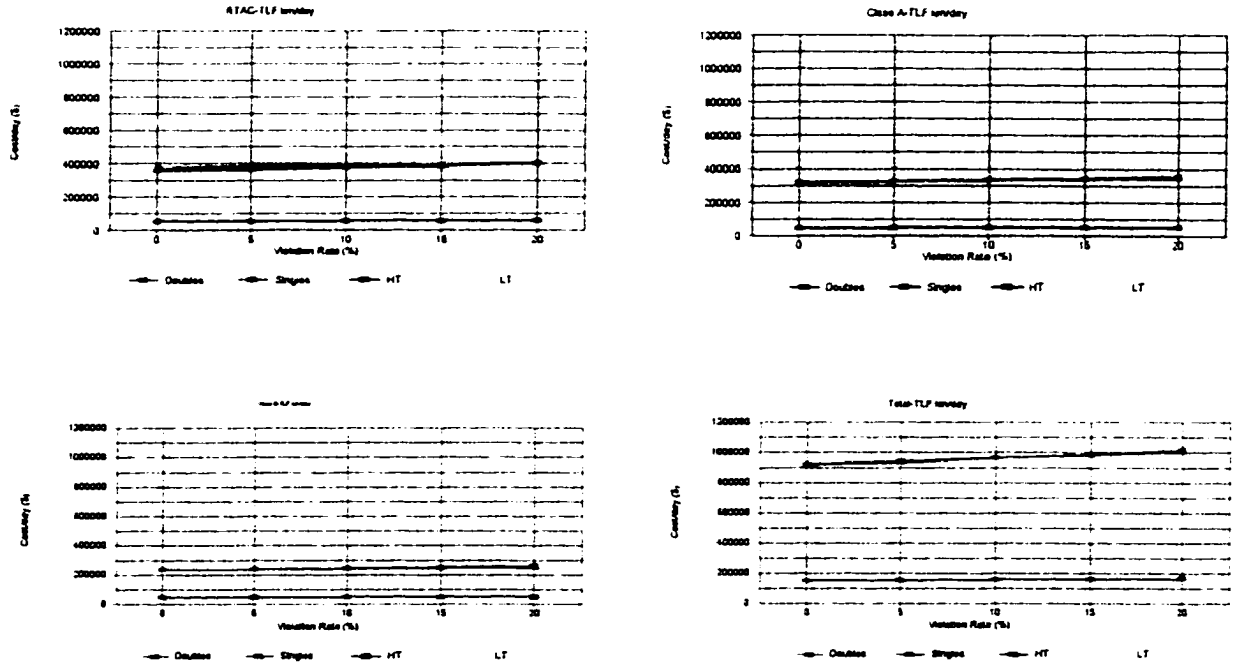


Figure 7-3: RTAC Routes-Cost and TLF-km per day vs Violation Rate

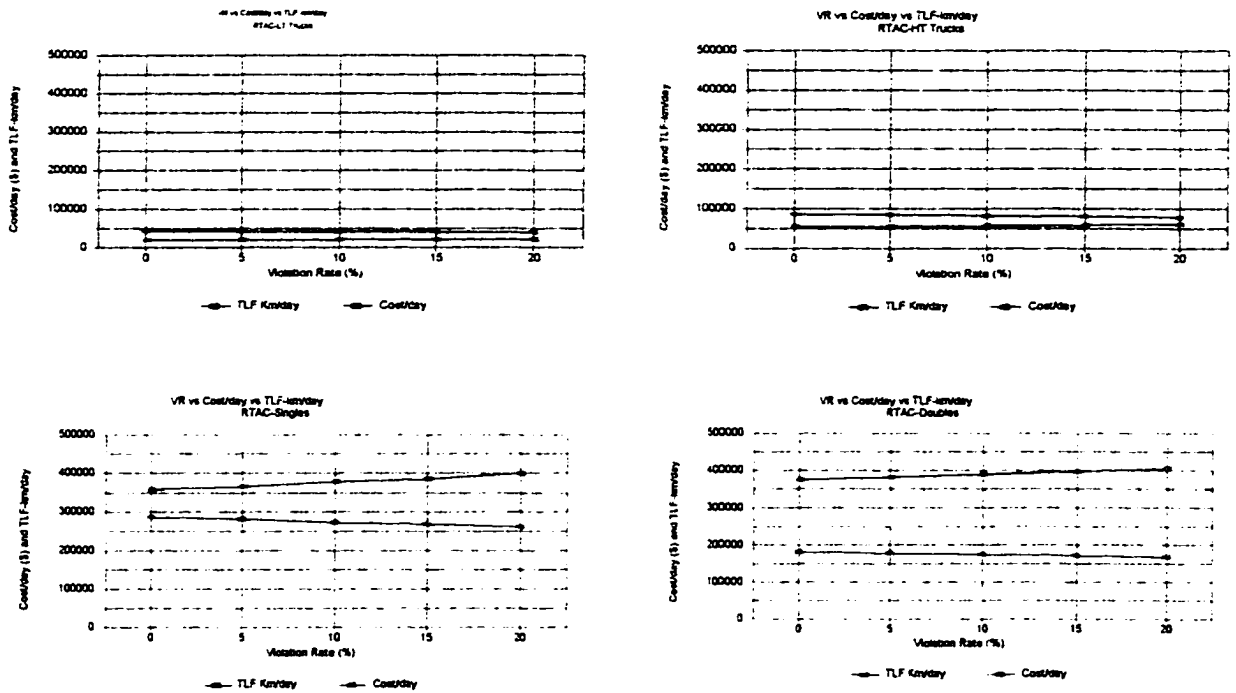


Figure 7-4: Class A Routes-Cost and TLF-km per day vs Violation Rate

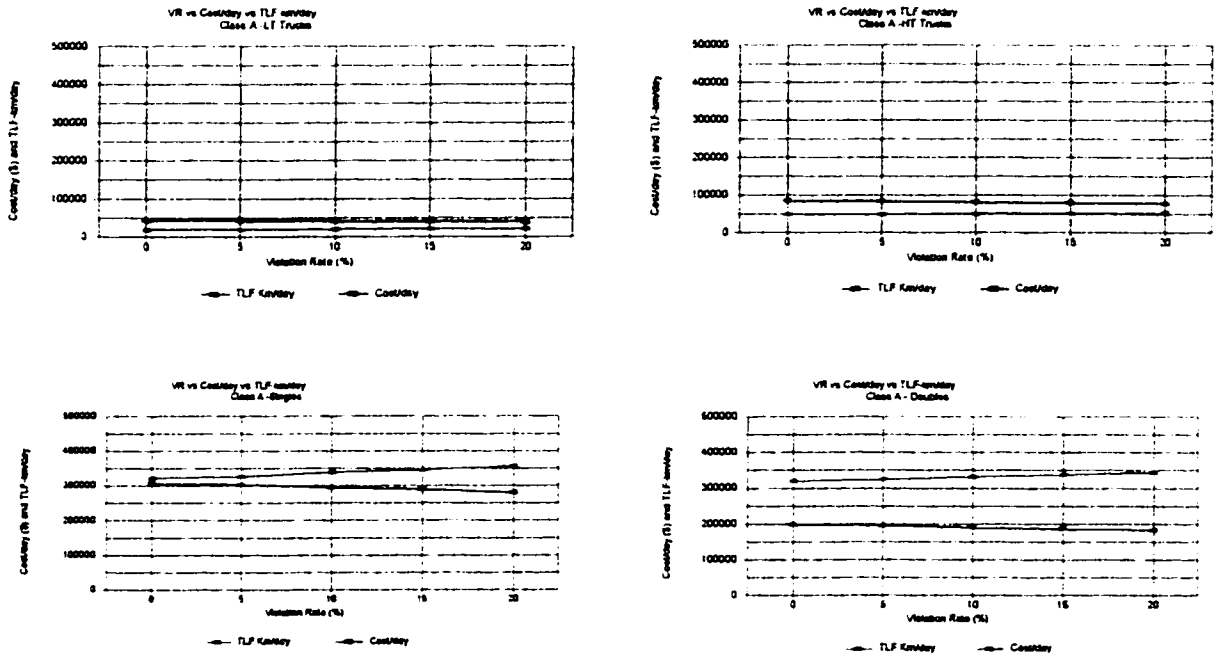


Figure 7-5: Class B Routes-Cost and TLF-km per day vs Violation Rate

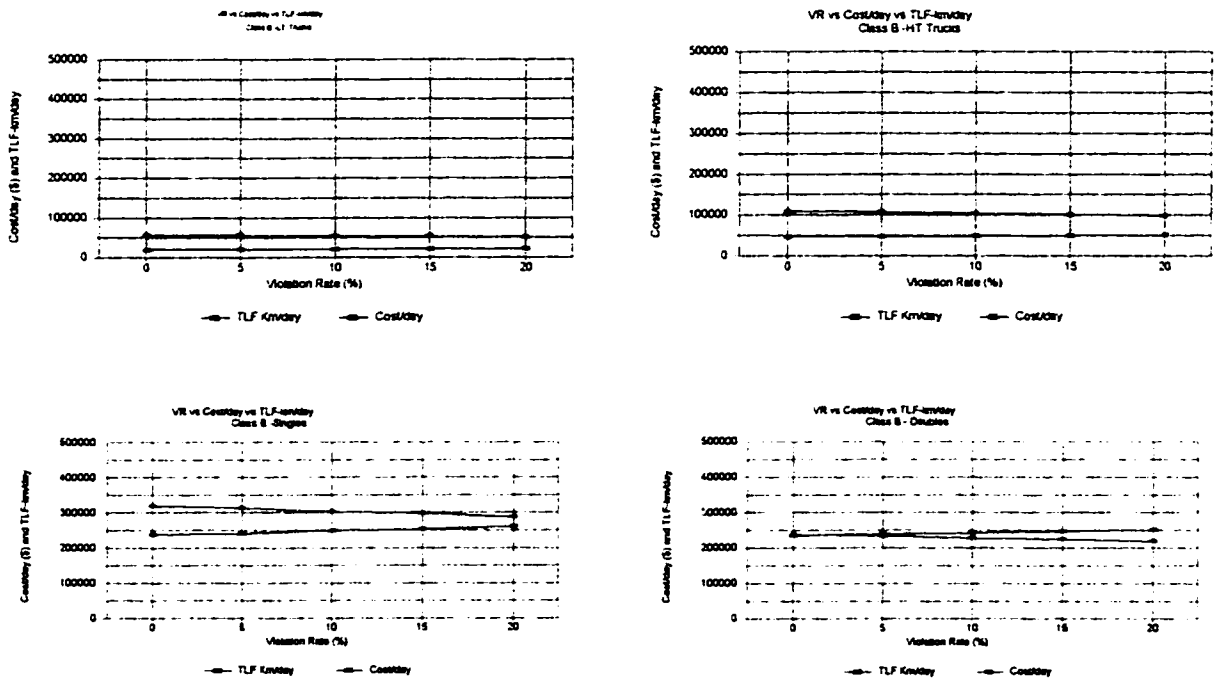


Figure 7-6: Total -Cost and TLF-km per day vs Violation Rate

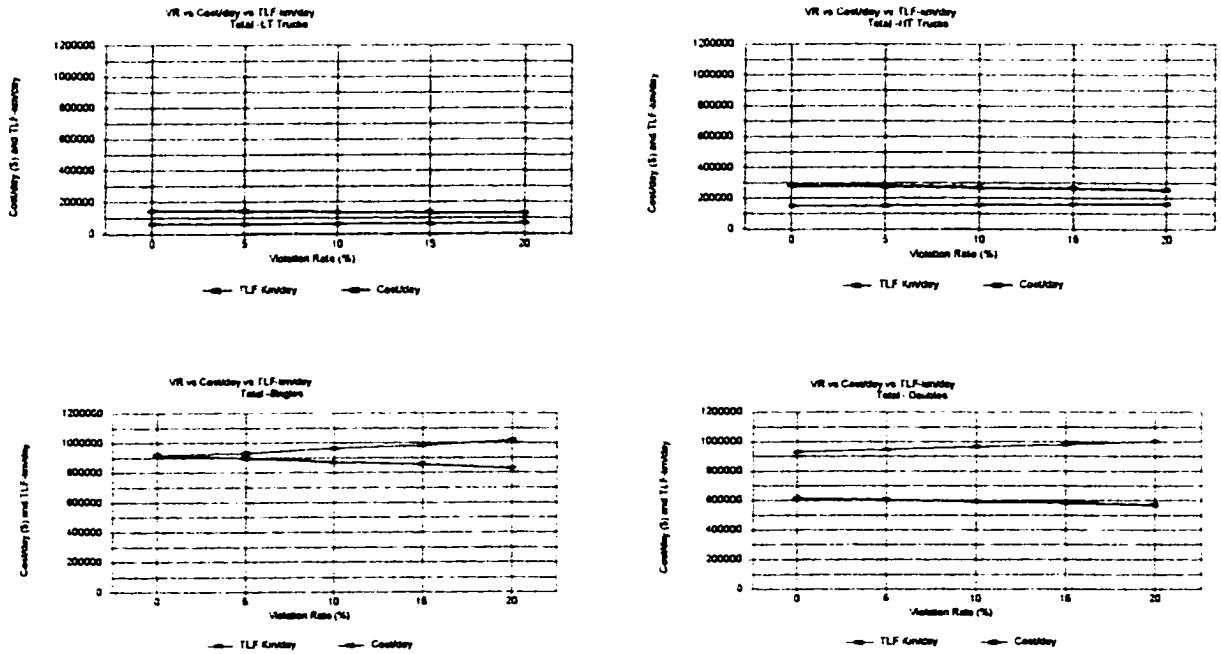


Figure 7-1 illustrates the relative costs of truck movements for each of the four truck classes on each of the road types as the intensity of enforcement changes. There is a trend in a decrease of operating costs for each truck class for all road types.

Similarly Figure 7-2 illustrates the relative change in TLF-km per day of truck movements for each of the four truck classes on each of the road types as the intensity of enforcement changes. There is a trend in a increase in TLF-km per day for each truck class for all road types.

Figure 7-3, 7-4, 7-5, and 7-6 compares the TLF-km per on RTAC routes and operating costs for a range of violation rates for each truck class on RTAC, Class A, Class B and all roads respectively. For all truck types and road classes there is a trend on an increase in TLF-km per day and decrease in cost per day with an increase in violation rate.

7.3.1 Relationship Between Violation Rate and Cost

For each of the road types (RTAC, Class A, Class B, Total Summary) the variation between violation rate and cost per day by truck type was plotted. A curve fit was done for each truck type on each road class for each violation rate. The general form of the relationship is as follows:

$$\text{Cost (Road Type, Truck Type)} = m * \text{VR} + b$$

where, VR is the violation rate in %, m and b are coefficients found in Tables 7-13a and 7-13b.

Table 7-13a Cost Coefficient b for each Truck Type and Road Class

	LT	HT	Singles	Double	Total
RTAC	43953.5	87095.8	286753.5	180845.3	598648.1
A	43148.6	86051.2	308455.9	197833.5	635489.1
B	56894.0	109839.0	319858.5	238791.4	725383.0
Total	143996.1	282986.0	915068.0	617470.2	1959520.2

Table 7-13b Cost Coefficient m for each Truck Type and Road Class

	LT	HT	Singles	Double	Total
RTAC	-198.4	-404.5	-1258.0	-661.6	-2522.4
A	-194.8	-414.8	-1409.1	-748.7	-2767.4
B	-270.0	-566.4	-1583.8	-989.3	-3409.6
Total	-663.2	-1385.7	-4250.8	-2399.6	-8699.4

7.3.2 Relationship Between Violation Rate and TLF-km per day

For each of the road types (RTAC, Class A, Class B, Total Summary) the variation between violation rate and TLF km per day by truck type was plotted. A curve fit was done for each truck type on each road class for each violation rate. The general form of the relationship is as follows:

$$\text{TLF- km/day (Road Class, Truck Type)} = x + y * \text{VR} + z * \text{VR} * \text{VR}$$

where, VR is the violation rate in %, x, y and z are coefficients found in Tables 7-14a, 7-14b, and 7-14c.

Table 7-14a TLF-km/day Coefficient x for each Truck Type and Road Class

	LT	HT	Singles	Doubles	Total
RTAC	20183.5	55470.9	358180.3	374959.3	808794.0
A	19813.8	49188.5	321302.5	320222.2	710527.1
B	20282.3	47603.5	237130.7	235631.7	540648.3
Total	60279.6	152262.9	916613.5	930813.3	2059969.4

Table 7-14b TLF-km/day Coefficient y for each Truck Type and Road Class

	LT	HT	Singles	Doubles	Total
RTAC	63.5	167.1	1173.8	1826.5	3231.0
A	62.3	139.8	1000.6	1444.9	2647.6
B	59.0	118.2	647.2	872.3	1696.7
Total	184.9	425.2	2821.6	4143.6	7575.5

Table 7-14c TLF-km/day Coefficient z for each Truck Type and Road Class

	LT	HT	Singles	Doubles	Total
RTAC	78.2	207.8	1438.0	876.8	2600.8
A	76.8	176.2	1238.1	728.3	2219.5
B	74.0	155.1	827.9	483.0	1539.9
Total	229.0	539.1	3504.0	2088.1	6360.1

The previous equations can be used to find the effects of changing the violation rate for each truck type for all roads in a specific class. To find the impact on cost or TLF on a specific link due to a change in violation rate a ratio can be used. Table D in appendix D lists the traffic per day, truck km per day, cost per day, TLF per day, TLF-km per day by four truck classes (LT, HT, Singles, Doubles) for all road links for a violation rate of zero.

To find effect of changing the violation rate on cost for a specific link for each truck type, the cost for each truck type in Table D for that link can be multiplied by the total cost for that truck type and road class using the equations developed previously. This can then be divided by the total cost for that truck type and road class for a zero violation rate. Similarly, the effects of violation rate on TLF-km can be found on a specific link by a ration using the values in Table D and the previously developed equation for TLF-km per day.

7.4 Major Findings

As seen in Table 7-12a, which compares the truck traffic by road class and violation rate, each road class appears to carry approximately one third of the total traffic. In reality, RTAC routes have the highest traffic volumes but have much fewer kilometers of highway. Class B routes have the lowest truck traffic volumes but have the most kilometers of highway. Class A highways fall between RTAC routes and Class B highways. In addition, for each truck class, as the violation rate increases the truck traffic decreases. This is due to the fact that the load is spread out among fewer heavier trucks.

As seen in Table 7-12b, which compares the truck kilometers of traffic by road class and violation rate, each road class appears have one third of the total truck kilometers of traffic. Similarly to Table 7-12a, RTAC routes have the highest truck kilometers of truck traffic with Class B routes having the lowest truck traffic volumes and Class A highways falling between RTAC routes and Class B highways. As with Figure 7-12a, as the violation rate increases the truck kilometers of traffic decreases. The total truck kilometers of traffic ranges from a high of 1,489,451 per day for a zero violation rate to a low of 1,356,849 per day for a violation rate of 20%. Allowing trucks to operate overweight could result in a reduction in the total truck kilometers of traffic per day of 8.9%.

Table 7-12c compares the truck cost by road class and violation rate for each truck class. The total truck cost per day ranges from a high of \$1,956,759 for a zero violation rate to a low of \$1,783,186 for a violation rate of 20%. This represents a reduction of 8.87%.

Tables 7-12d and 7-12e represents the TLF/day and the TLF-km/day due to truck traffic sorted by truck and road class. In this case, the TLF/day and TLF-km/day increase as the violation rate increases. Although the actual number of truck kilometers is

decreasing, each truck is marginally heavier and the additional load impacts the pavement to the fourth power. As such the increase is exponential. The values for TLF-km per day range from a low of 2,059,969 for a zero violation rate to a high of 2,253,246 for a violation rate of 20% resulting in a increase of 9.38%.

Figures 7-1 and 7-2 show the trends in cost per day by truck type and road class, TLF-km/day by truck type and road class respectively. In these figures it is seen that there is an decreasing linear relationship between cost per day and violation rate for every truck type on every road class. It can also be seen that there is an exponentially increasing relationship between TLF-km per day and violation rate for each truck class on every road class.

Figures 7-3, 7-4, 7-5, and 7-6 show the relationship between cost per day, TLF-km per day and violation rate for RTAC, Class A, Class B and all roads respectively. These figures were then used to develop mathematical expressions to fit the curves. The relationship between violation rate and cost per day was found to be decreasingly linear with the coefficients found in Table's 7-13a and 7-13b. The relationship between TLF-km per day and violation rate was found to be increasingly curvilinear with the coefficients found in Tables 7-14a, 7-14b, and 7-14c.

The number of kilometers of highways which had a TLF of less than values of 200,000 and 500,000 per year was calculated for each relationship. The total number of kilometers of highway (RTAC, Class A, and Class B) is 16869.5. Table 7-15 lists the results.

Table 7-15 kilometers of Highway with <200,000 and 500,000 ESAL's/Yr by VR

Violation Rate	0	5	10	15	20
<200,000 Esals/Yr	16145.26 95.7%	16145.26 95.7%	16145.26 95.7%	16139.04 95.66%	16104.29 95.46%
<500,000 Esals/Yr	16608.39 98.5%	16605.44 98.4%	16592.68 98.4%	16581.04 98.29%	16545.77 98.08%

As seen in Table 7-15, the vast majority of highways have less than 200,000 or even 500,000 ESAL's per year of truck traffic. As the violation rate increases, some highways increase to above 200,000 or 500,000 ESAL's per year but even at the highest violation rate considered, well over 95% of the kilometers of highways in Manitoba have less than 200,000 ESAL's of traffic on them.

7.5 Chapter References

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2. Fekpe, E.S.K., Clayton A.M., Haas R.C.G, 1995: Evaluating Pavement Impacts of Truck Weight Limits and Enforcement Levels, Transportation Research Board, Washington D.C.
3. Alam M.M., 1996: The Influence of Truck Traffic on Pavement Deterioration in the City of Winnipeg, MSc. Thesis, University of Manitoba.
4. UMTIG, 1995: University of Manitoba Transport Information Group, Truck Traffic on Manitoba Highways-1994, University of Manitoba.
5. UMTIG, 1996: University of Manitoba Transport Information Group, Truck Traffic on Manitoba Highways-1995, University of Manitoba.
6. Clayton, 1991: "Enforcement Levels Study:", Clayton Sparks and Associates, June 1991. Prepared for Transport Compliance Branch, Saskatchewan Department of Highways, 1991.

Chapter 8
Conclusions

This chapter summarizes conclusions and observations relating to the effects of enforcement on truck operating costs and truck load factor. It also presents recommendations and future areas of research.

8.1 Conclusions and Observations

The purpose of the thesis was to examine the effects of weight enforcement on: (1) the total operating cost of trucks on Manitoba highways; and (2) total pavement loading on Manitoba highways. The conclusions summarize observations relating to the research objectives outlined in Chapter 1.

Observations

(1) Analysis of the Brokenhead WIM site found that: (a) the calibration technique used by MDHT did not conform to ASTM standards. (b) the WIM and AVC sensors classified the truck stream similarly to a manual survey. (c) for the vehicle types analyzed (3S2, 3S3, and 8 axle B train) there was a shift in the calibration curve with time. The WIM consistently overweighed trucks to a greater degree the longer the site had not been calibrated. This shift was more pronounced during seasonal changes. It was found that: (a) there was no correlation between the steering axle weights of WIM and static measurements. (b) for tandem drive axles, a WIM weight of less than 12,000 kgs would not result in a static weight of more than 17,000 kgs. (c) for tandem trailer axles, a WIM weight of less than 14,000 kgs would not result in a static weight of more than 17,000 kgs. (d) for WIM GVW's of less than 30,000 kgs the static would not be greater than 39,500 kgs for a 3S2. The study also found that there was a linear relationship between WIM and static weights when the period shortly after calibration was analyzed.

(2) The thesis related enforcement with truck operating costs and pavement impact by calculating for a range of violation rates, the changes in total daily truck operating costs and the changes in total TLF-km per day. It was assumed that as the violation rate increases, the intensity of enforcement decreases.

(3) The thesis assumed that as the violation rate increased, the payload per truck would increase (estimated by GVW distribution models).

(4) The relationship between violation rate, truck operating costs per day and truck load factor-kilometers per day was analyzed for RTAC, Class A, and Class B roads for LT, HT, Singles and Doubles truck classes. For all road classes as the violation rate increased the truck operating costs per day decreased and the TLF-km per day increased. For all truck types, as the violation rate increased, the truck operating costs per day decreased and the TLF-km per day increased.

(5) A statistical relationship between the truck operating cost per day and the violation rate was found to be linear. (i.e. as violation rate increases, the truck operating costs decrease).

(6) A statistical relationship between the truck load factor-kilometers per day and violation rate was found to be exponential. (i.e. as the violation rate increased the truck load factor-kilometers per day increased).

Conclusions

(1) The AVC sensors were found to be relatively reliable for the classification of truck flows and were used in the analysis. Analysis of dynamic weights from WIM sensors found that they have had problems such as incorrectly classifying trucks, sensor malfunctions, and difficulty in data storage and collection. As such they were not used for the prediction of truck weights.

(2) The total daily cost of operating trucks on 16870 km of the Provincial highway network was estimated as \$1.96 million assuming a complete weight compliance scenario. The total annual cost was estimated to be \$714 million.

(3) It was estimated that the total tonne km of payload moved per day would range from 19.73 million kg-km for a violation rate of zero to 21.52 million kg-km for a violation rate of 20%. It was assumed that the total tonne-km of payload moved per day would be held constant resulting in traffic reduction ratios for violation rate greater than zero. These ranged from 0.98 for a violation rate of 5% to 0.91 for a violation rate of 20%.

(4) The total truck traffic (truck kilometers of travel per day) estimate ranged from 1.49 million truck-kilometers per day for a violation rate of zero to a reduced travel of 1.36 million truck kilometers per day for a reduction of 8.9%.

(5) The total truck operating cost per day was estimated to range from \$1.96 million for a zero violation rate to \$1.78 million for a 20% violation rate condition for a daily savings of 8.87%

(6) The truck load factor-kilometers per day for a zero violation rate was estimated to range from 2.06 million for a zero violation rate to 2.19 million for a violation rate of 20% resulting in an increase of 6.01%.

(7) For two values of ESAL's per year, the kilometer's of highway with ESAL's greater than those selected was calculated. These were then compared as the violation rate increased. There were 16104.29 kilometers of highway with less than 200,000 ESAL's per year for a violation rate of zero increasing to 16145.29 kilometers for a violation rate of 20% for an increase of 0.25% of the network. Similarly, there were 16545.77 kilometers of highway with less than 500,000 ESAL's per year for a violation rate of zero increasing to 16608.39 for a violation rate of 20% for an increase of 0.38% of the network. For the worst case scenario, over 95% of the highway network has less than 200,000 ESAL's per year.

8.2 Recommendations

(1) The methods used by MDHT for calibration should be done by ASTM standards and more frequently.

(2) The data from WIM and AVC sites should be used to produce an enforcement report for use by compliance officials.

(3) Enforcement officers should be able to access WIM and AVC sites to determine trends in truck traffic or to determine the approximate static weight of trucks.

8.3 Future Research Needs

- (1) The WIM and AVC database should be augmented by incorporating new sites as they are installed.
- (2) A methodology to improve the WIM to static weight relationship or to post correct the data should be implemented to allow for the use of these weights for other highways departments.
- (3) Data should be collected from permanent truck stations to improve the quality of the database.
- (4) The truck flow map and classifications should be upgraded and improved with the implementation of any new data sources.

Appendix A
Brokenhead Operations



Table A-1: Operational Experience of the Brokenhead WIM

Dates in which the Scale was functioning:
November 1991 to August 1993

Start Date			End Date		
Month	Day	Year	Month	Day	Year
11	8	91	11	13	91
11	15	91	11	16	91
11	21	91	11	23	91
11	29	91	12	6	91
12	12	91	12	14	91
9	10	92	9	13	92
10	7	92	10	11	92
10	14	92	10	16	92
10	19	92	10	21	92
12	9	92	12	15	92
12	17	92	12	31	92
1	1	93	1	17	93
1	17	93	1	29	93
2	1	93	2	14	93
2	15	93	3	1	93
3	2	93	3	11	93
3	15	93	3	17	93
3	22	93	3	30	93
4	2	93	4	4	93
4	5	93	4	10	93
4	30	93	5	11	93
5	11	93	5	20	93
5	25	93	6	6	93
6	6	93	6	19	93
6	19	93	7	1	93
7	1	93	7	13	93
7	13	93	7	19	93
7	19	93	7	24	93
7	27	93	8	10	93
8	10	93	8	23	93

Table A-2: Codes Used in WIM Data

Detailed Field Description	Length	Start Column
L - Lane	1	2
LD- Lane Direction	2	4
MO - Month	2	10
DD - Day	2	13
YY - Year	2	16
HH - Hour	2	19
MN - Minute	2	22
SS - Second	2	25
HS - Hundredths of Seconds	2	28
VEHNUM - Vehicle Number	6	35
NA - Number of Axles	2	38
CI - Class	2	41
GROS - Gross Wt *10	4	46
LENG - Overall Length *10	4	51
SPED - Speed /10	4	56
SP1 - Axle Spacing 1-2 * 10	3	60
SP2 - Axle Spacing 2-3 * 10	3	64
SP3 - Axle Spacing 3-4 * 10	3	68
SP4 - Axle Spacing 4-5 * 10	3	72
SP5 - Axle Spacing 5-6 * 10	3	76
SP6 - Axle Spacing 6-7 * 10	3	80
SP7 - Axle Spacing 7-8 * 10	3	84
SP8 - Axle Spacing 8-9 * 10	3	88
WT1 - Weight of Axle 1 *10	3	92
WT2 - Weight of Axle 2 *10	3	96
WT3 - Weight of Axle 3 *10	3	100
WT4 - Weight of Axle 4 *10	3	104
WT5 - Weight of Axle 5 *10	3	108
WT6 - Weight of Axle 6 *10	3	112
WT7 - Weight of Axle 7 *10	3	116
WT8 - Weight of Axle 8 *10	3	120

NB: Until Recently, all units were imperial

Example Code:

1,01,12,13,93,22,36,51,35,122156,08,13,5010,230,950,030,015,075,015,015,125,015,000,550,880,880,700,700,700,800,800,000

This Vehicle passed on the right lane of the westbound direction on December 12, 1993 at 10:36:51:55 p.m. and was the 122156 vehicle. It was a 8 axle class 13 vehicle with a GVW of 50100, length of 23 metres, speed of 95 kph, axle spacings of 3, 1.5, 7.5, 1.5, 1.5, 12.5, 1.5 (all in metres) with the axle weights of 5500, 8800, 8800, 7000, 7000, 8000, 8000, 000

Appendix B
Data Summary



Appendix B: Data Summary

Table B-1: Static and WIM Weights Collected for 3S2's at Brokenhead (June, 1994)

(NB: All Weights are in Kilograms)

Number	Static				WIM			
	Steer	Drive	Trailer	GWV	Steer	Drive	Trailer	GWV
10864	4450	7950	10900	23300	4090	12310	10790	23100
11061	5260	16300	16130	37690	4470	12800	16450	29250
11077	4950	10180	8010	23140	4660	11950	7900	19850
11176	4200	14420	11240	29860	4280	11440	11490	22930
11232	4160	6860	4080	15100	3790	11760	4720	16480
11954	5000	14500	16300	35800	4380	12650	16780	29430
11962	4600	10400	5940	20940	4120	12920	5640	18560
11986	5000	14260	14950	34210	4380	16030	14760	30790
12008	5240	15180	14740	35160	5240	14810	14600	29410
12015	5000	13350	14440	32790	5100	11990	15390	27380
13741	4890	11170	13900	29960	4380	12890	14250	27140
15471	4800	15680	14190	34670	6390	10080	15170	25250
15433	4230	4920	3210	12360	3740	7620	3080	10700
15441	5110	10580	9720	25410	8650	13170	9740	22910
15532	5150	17110	16110	38370	5940	15580	14170	29750
15689	5380	13960	12900	32240	4830	10250	12680	22930
15715	4500	5950	4610	15060	4080	5260	3850	9110
15735	5100	10170	8900	24170	520	5540	4660	10200
15765	4880	13440	14570	32890	5080	9340	8580	17920
19563	4680	10880	10070	25630	4810	16330	10090	26420
15795	5740	17020	13880	36640	3900	16820	14550	31370
15829	4300	13040	14070	31410	3930	10900	14600	25500
15865	4700	9640	8200	22540	4490	10190	7260	17450
16219	4430	9200	9800	23430	4380	12560	8420	20980
17175	5240	14080	14700	34020	5330	14000	13720	27720
17186	4950	14500	12500	31950	6400	13160	10750	23910
17189	4710	10800	10000	25510	6690	16120	9450	25570
17220	5200	15700	15000	35900	6070	14930	16450	31380
17207	5620	13780	11500	30900	3360	7740	6710	14450
17210	5290	12700	12800	30790	3270	10490	11390	21880
17305	5000	15600	14200	34800	5200	15010	12910	27920
17652	5000	13300	13000	31300	6050	15390	12360	27750
17896	5000	16000	14900	35900	4180	13680	15480	29160
17663	4070	10170	6570	20810	4280	9520	7550	17070
17740	4240	7210	4960	16410	4210	9330	5170	14500
17744	4750	11000	10000	25750	4610	9900	9270	19170
17811	4630	6020	4330	14980	5600	10300	4760	15060
18070	5000	12000	9900	26900	4840	11310	9410	20720
18101	5300	13000	12360	30660	3860	10250	10150	20400
19278	4370	10200	7650	22220	4000	13830	7260	21090
19360	5040	17170	15630	37840	4720	13700	15060	28760
19386	5150	10300	9000	24450	5130	10430	8810	19240
19507	5000	10760	12330	28090	4460	13630	13550	27180
19455	5640	16590	16500	38730	5570	14690	15760	30450
19482	4290	13000	11540	28830	4020	14260	11160	25420
17727	4900	15700	14400	35000	5440	12180	13430	25610
12061	4000	13880	12660	30540	4560	11100	11310	22410
12137	4800	15180	6970	26950	4850	12300	7020	19320
12166	4920	9860	7800	22580	4840	12990	7870	20860

Appendix B: Data Summary

Table B-1: Static and WIM Weights Collected for 3S2's at Brokenhead (June, 1994)

(NB: All Weights are in Kilograms)

Number	Static			GVW	WIM			GVW
	Steer	Drive	Trailer		Steer	Drive	Trailer	
12244	5340	14620	15840	35800	5090	14660	14960	29620
12324	5090	15740	15070	35900	4930	14060	13400	27460
12470	5120	9460	5130	19710	4650	13850	5020	18870
12497	5170	15200	15350	35720	5470	13580	15310	28890
13598	5180	12830	10790	28800	5060	14430	10080	24510
13599	5400	17090	16200	38690	5430	13110	16730	29840
15550	4890	10210	11550	26650	4460	10320	10600	20920
15545	4800	10500	9800	25100	4140	8750	8720	17470
15609	4630	9040	8330	22000	3860	10470	4410	14880
15622	5140	13550	14860	33550	4960	12770	13700	26470
15617	4970	11760	10020	26750	4310	10680	5880	16560
15705	4280	9770	7420	21470	3710	9510	6790	16300
15868	5530	8650	10000	24180	4710	8240	10140	18380
15903	3400	5230	6230	14860	3400	8330	7550	15880
16003	4250	9090	6000	19340	3920	11910	5700	17610
16075	4610	15000	16150	35760	4260	11520	14860	26380
16156	4250	10300	5160	19710	3920	11580	5670	17250
16201	5100	11400	9300	25800	5250	15920	9920	25840
17289	4060	14110	11400	29570	3690	18350	12060	30410
17292	4940	14600	15600	35140	4940	17740	14760	32500
17441	4900	16300	15000	36200	4190	16600	17050	33650
17461	4900	16000	17310	38210	4740	15970	17110	33080
17466	4690	15890	14750	35330	4070	13580	16070	29650
17599	4390	11000	11700	27090	5220	15240	11770	27010
17597	5020	16790	15600	37410	4840	13300	15440	28740
17832	4910	7630	5000	17540	4770	12300	5620	17920
17836	4970	16070	16960	38000	4540	12660	16960	29620
17960	4650	9510	9780	23940	4140	10600	9770	20370
18042	5490	12830	13000	31320	5060	10810	12480	23290
18002	4470	12500	5800	22770	4980	8530	6490	15020
18048	5200	7810	5670	18680	5110	8450	5640	14090
18045	5470	10500	5530	21500	4680	11200	5250	16450
19565	5260	12320	13620	31200	6790	14220	13190	27410
19597	5300	16200	16590	38090	4990	12570	15640	28210
19610	3870	6770	5670	16310	5310	11870	5940	17810
19667	4320	11860	15120	31300	4210	12980	15670	28650
19700	4810	11330	12360	28500	4330	13560	12070	25630
19701	5070	15100	16570	36740	4870	13020	15780	28800
19699	5390	15990	16380	37760	4710	10250	14430	24680
19735	3520	9580	5630	18730	3030	13140	6130	19270
19446	5150	15870	15070	36090	6130	17790	14550	32340
19528	5120	16720	14260	36100	4990	15710	13370	29080
19452	5070	12750	11540	29360	5170	6240	11350	17590

Appendix B: Data Summary
 Table B-2 Regression Output For Brokenhead 3S2's

Steering	
Regression Output:	
Constant	4127.5
Std Err of Y Est	435.9
R Squared	0.102
No. of Observations	92
Degrees of Freedom	90
X Coefficient(s)	0.153
Std Err of Coef.	0.047

Drives	
Regression Output:	
Constant	5192.9
Std Err of Y Est	2737.2
R Squared	0.250
No. of Observations	92
Degrees of Freedom	90
X Coefficient(s)	0.583
Std Err of Coef.	0.106

Trailer	
Regression Output:	
Constant	1233.4
Std Err of Y Est	1272.9
R Squared	0.894
No. of Observations	92
Degrees of Freedom	90
X Coefficient(s)	0.928
Std Err of Coef.	0.033

GWV	
Regression Output:	
Constant	5090.4
Std Err of Y Est	3822.6
R Squared	0.710
No. of Observations	92
Degrees of Freedom	90
X Coefficient(s)	1.010
Std Err of Coef.	0.068

Appendix B: Data Summary

Table B-3: Static and WIM Weights Collected for 3S3's at Brokenhead (June, 1994)

(NB: All Weights are in Kilograms)

Number	Static				WIM			
	Steer	Drive	Tridem	GVW	Steer	Drive	Tridem	GVW
10947	5620	19910	22260	47790	5860	19700	22900	48460
12298	5440	16490	21740	43670	5330	15780	21100	42210
12490	5360	15750	20140	41250	4530	19320	20600	44450
13593	4630	15300	21150	41080	4030	15140	19610	38780
13627	5270	16620	22510	44400	4590	15630	22550	42770
13740	4950	13125	14000	32075	4840	17470	16490	38800
13900	4570	12820	14600	31990	4980	13310	13900	32190
17277	5340	15600	18000	38940	4720	16440	19890	41050
17462	5390	16500	22500	44390	5250	16770	22060	44080
17930	5100	4460	5340	14900	4460	7770	6110	18340
17465	5000	14400	21000	40400	4910	15870	20480	41260
18071	3920	12740	12200	28860	3890	10620	12680	27190
19318	5200	14060	21190	40450	4660	13720	20430	38810
15679	5270	14750	18900	38920	5320	13590	23130	42040
15888	5020	9410	12740	27170	4980	9170	14170	28320
15889	5360	15000	13500	33860	5310	12170	12430	29910
15983	5470	8040	7000	20510	5690	8330	9310	23330
15998	5000	16300	22830	44130	5030	17160	21310	43500
16109	5350	16880	22230	44460	5180	17970	21220	44370
16217	5120	14400	18690	38210	4650	16740	17460	38850
19387	5070	14710	19810	39590	4500	14220	17890	35610
19529	5250	17320	20210	42780	7960	15970	21920	45850
19561	5140	14800	19150	39090	7310	15350	18390	41050
19674	5610	15720	18270	39600	4500	11330	15830	31660

Appendix B: Data Summary
 Table B-4 Regression Output For Brokenhead 3S3's

Steering	
Regression Output:	
Constant	4408.0
Std Err of Y Est	351.3
R Squared	0.102
No. of Observations	24
Degrees of Freedom	22
X Coefficient(s)	0.144
Std Err of Coef.	0.080

Drives	
Regression Output:	
Constant	2633.5
Std Err of Y Est	1912.3
R Squared	0.665
No. of Observations	24
Degrees of Freedom	22
X Coefficient(s)	0.806
Std Err of Coef.	0.122

Trailer	
Regression Output:	
Constant	-363.4
Std Err of Y Est	1646.8
R Squared	0.891
No. of Observations	24
Degrees of Freedom	22
X Coefficient(s)	1.016
Std Err of Coef.	0.076

GWW	
Regression Output:	
Constant	1092.9
Std Err of Y Est	3062.9
R Squared	0.860
No. of Observations	24
Degrees of Freedom	22
X Coefficient(s)	0.965
Std Err of Coef.	0.083

Appendix B: Data Summary

Table B-5 Summary of Brokenhead 3S2 Data

NB: All Weights are in Kilograms

Month of Data		Steer	Drive	Trailer	GWV	
Jan 93	Avg	5441.4	13953.5	13442.3	32837.4	
Summary	Max	8346.2	30436.6	26853.1	64048.3	
Loaded Vehicles	3627	Std	769.0	4075.3	4888.3	8788.3
Feb 93	Avg	5565.8	14168.6	13182.8	32917.4	
Summary	Max	9389.5	27805.7	27578.9	56291.8	
Loaded Vehicles	3941	Std	741.4	4153.9	4988.9	8993.8
March 93	Avg	5548.3	14179.6	13215.8	32943.5	
Summary	Max	11566.8	27034.6	28576.8	59467.0	
Loaded Vehicles	2932	Std	913.0	4361.9	5093.2	9297.9
April 93	Avg	5604.8	14619.6	13401.7	33625.9	
Summary	Max	11657.5	34246.8	26172.7	63277.2	
Loaded Vehicles	1154	Std	1084.4	4391.9	4980.6	9134.6
May 93	Avg	5757.6	15615.1	13966.2	35338.9	
Summary	Max	16284.2	36741.6	41277.6	62687.5	
Loaded Vehicles	4136	Std	951.7	4597.4	5224.7	9636.8
June 93	Avg	5845.4	15858.4	14294.5	35998.9	
Summary	Max	11022.5	29302.6	33521.0	67178.2	
Loaded Vehicles	4553	Std	867.5	4573.9	5325.9	9738.8
July 93	Avg	5847.2	15682.2	14068.9	35597.6	
Summary	Max	11340.0	28123.2	28259.3	59058.7	
Loaded Vehicles	4123	Std	880.4	4497.1	5249.8	9571.4
August 93	Avg	6107.0	15757.5	14268.3	36132.8	
Summary	Max	31752.0	29257.2	33793.2	67223.5	
Loaded Vehicles	3394	Std	1223.1	4627.6	5317.0	9836.1
Calibration	Avg	4605.7	11817.9	10786.6	27210.2	
Summary	Max	11490.0	22620.0	24130.0	51460.0	
Loaded Vehicles	1937	Std	966.2	3208.2	3748.0	6760.3
October 92	Avg	4880.4	12514.4	11793.9	29188.7	
Summary	Max	41549.8	78518.2	74526.5	144653.0	
Loaded Vehicles	707	Std	2131.3	4989.6	6460.8	10710.3
December 92	Avg	5170.5	12853.5	21208.7	30220.7	
Summary	Max	11340.0	27851.0	27125.3	55974.2	
Loaded Vehicles	804	Std	852.9	4172.6	4743.3	8715.6

Appendix B: Data Summary
 Table B-6 Summary of Brokenhead 3S3 Data
 NB: All Weights are in Kilograms

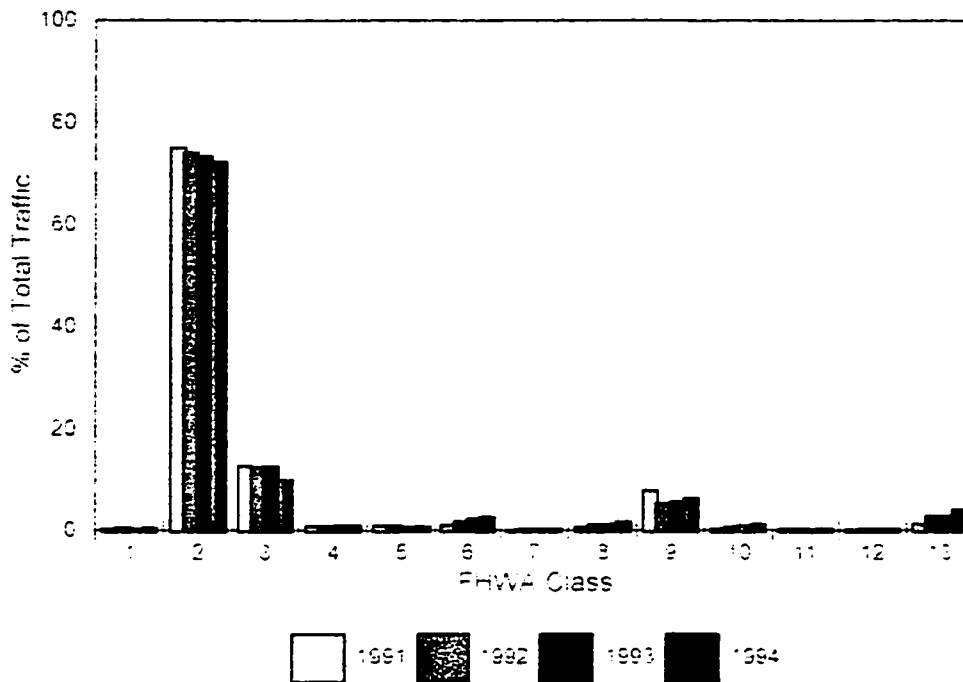
Month of Data		Steer	Drive	Trailer	GVW	
Jan 93	Avg	5602.4	16334.8	20649.1	42586.3	
Summary	Max	7348.3	30255.1	32749.9	64910.2	
Loaded Vehicles	823	Std	862.7	4506.1	5145.9	9262.8
Feb 93	Avg	5719.2	16314.2	20461.0	42494.4	
Summary	Max	11430.7	29347.9	34382.9	64139.0	
Loaded Vehicles	880	Std	904.1	4718.8	5413.7	9767.8
Mar 93	Avg	5714.0	16712.1	20729.2	43155.3	
Summary	Max	11884.3	34428.2	35290.1	68357.5	
Loaded Vehicles	599	Std	1084.8	4925.6	5650.1	10091.7
April 93	Avg	5838.8	17207.5	21670.9	44717.2	
Summary	Max	12519.4	30164.4	35834.4	69627.6	
Loaded Vehicles	251	Std	1274.3	5015.3	5593.2	10120.7
May 93	Avg	5969.1	18250.4	22509.0	46728.5	
Summary	Max	20457.4	38510.6	34201.4	65772.0	
Loaded Vehicles	855	Std	1162.4	4781.9	5394.0	9592.2
June 93	Avg	6011.7	18403.0	23209.0	47623.7	
Summary	Max	11793.6	30436.6	39100.3	68992.6	
Loaded Vehicles	939	Std	981.1	4793.4	5476.4	9885.8
July 93	Avg	6084.5	18530.9	22713.3	47328.7	
Summary	Max	49215.6	41912.6	36106.6	94983.8	
Loaded Vehicles	858	Std	1693.9	4981.5	5496.3	10083.4
Aug 93	Avg	6292.1	18437.4	22302.5	47032.0	
Summary	Max	21500.6	30073.7	36560.2	67631.8	
Loaded Vehicles	670	Std	1224.4	5130.5	5792.8	10485.8
Oct 92	Avg	5513.5	15420.7	20237.1	41171.3	
Summary	Max	16238.9	57153.6	68130.7	97387.9	
Loaded Vehicles	209	Std	1919.7	7004.1	10090.1	15403.2
Dec 92	Avg	5386.0	15008.8	19371.5	39766.3	
Summary	Max	7892.6	24403.7	32024.2	59467.0	
Loaded Vehicles	211	Std	787.0	4454.3	6151.3	10310.3
92 Static	Avg	5069.1	14531.4	17587.8	37188.3	
Summary	Max	6020.0	19730.0	23920.0	47150.0	
Loaded Vehicles	80	Std	305.4	2498.7	4650.6	6835.3
Post Calibration	Avg	4746.2	13055.9	15629.1	33431.3	
Summary	Max	8580.0	22410.0	29470.0	53440.0	
Loaded Vehicles	475	Std	888.0	3518.2	5216.2	8557.1
94 Static	Avg	5145.7	14810.7	18461.7	38418.0	
Summary	Max	5620.0	19910.0	22830.0	47790.0	
Loaded Vehicles	25	Std	367.8	2443.9	4084.3	6402.7

Appendix C
AVC and WIM Classifications



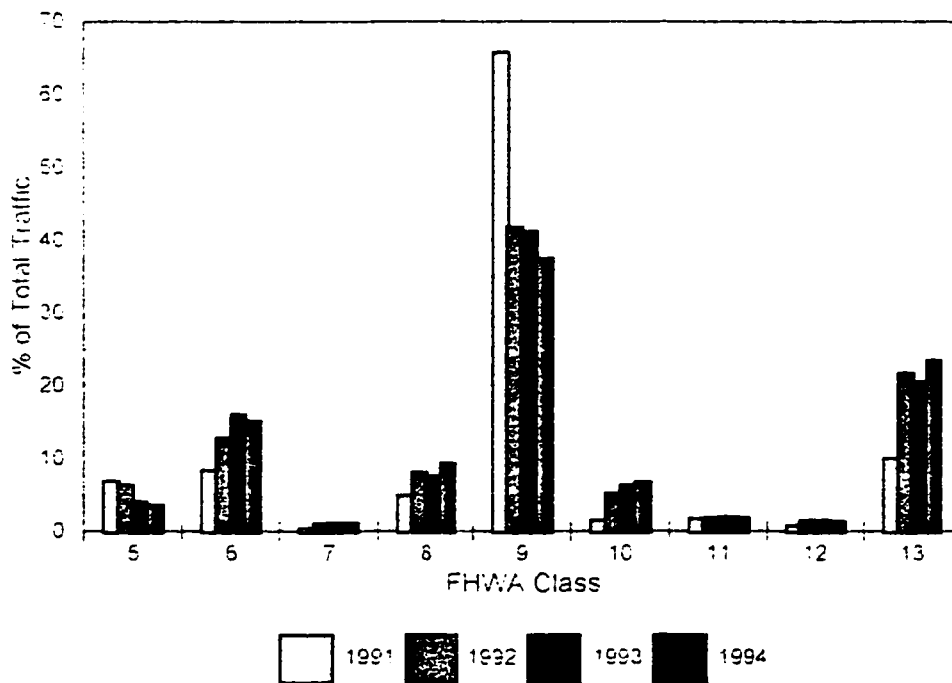
Station 63

Glenlea AVC Vehicle Percentages
1991-1994



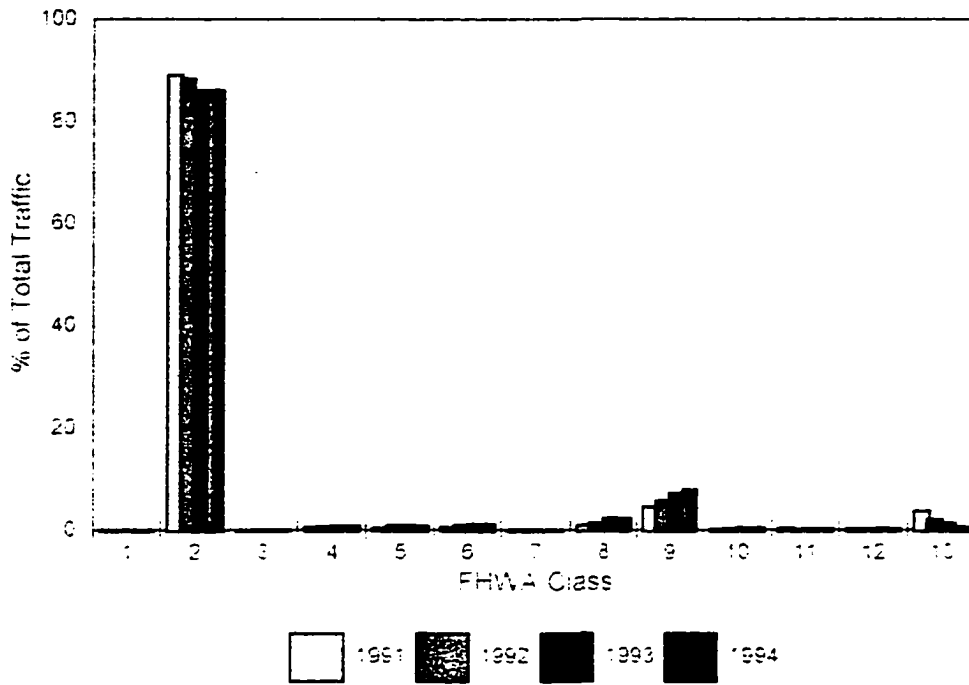
Station 63

Glenlea AVC Truck Classification
1991-1994



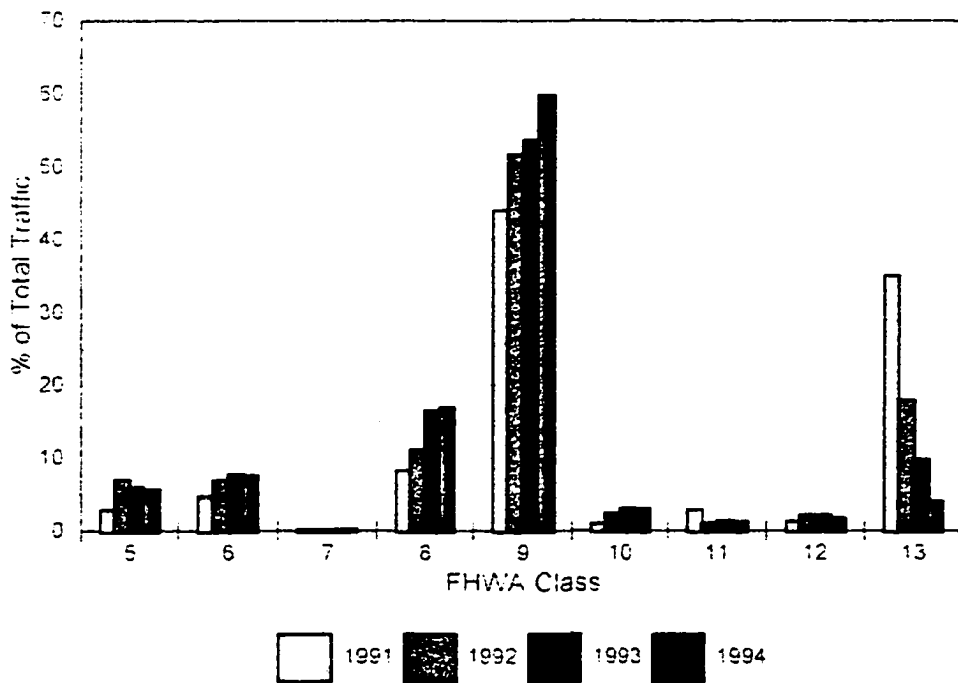
Station 63

Glenlea WIM Vehicle Percentages
1991-1994



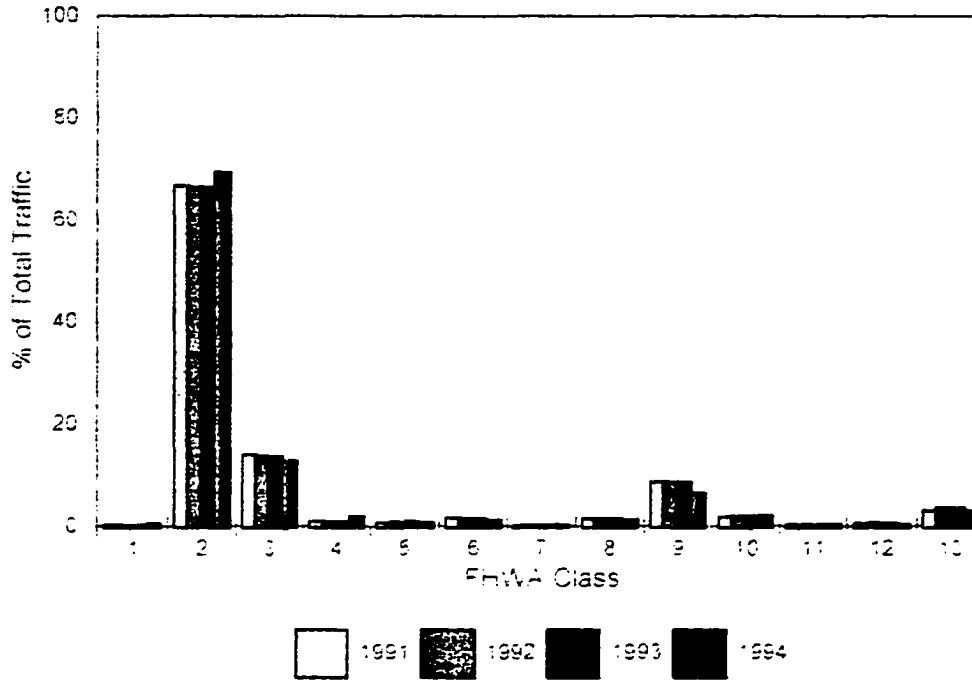
Station 63

Glenlea AIM Truck Classification
1991-1994



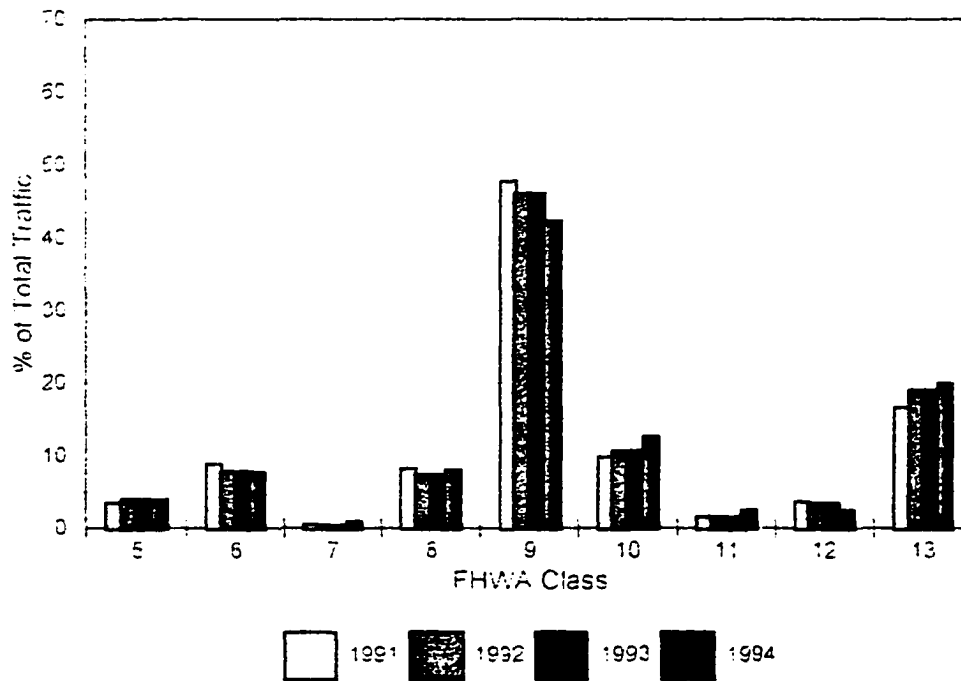
Station 65

MacGregor AVC Vehicle Percentages
1991-1994



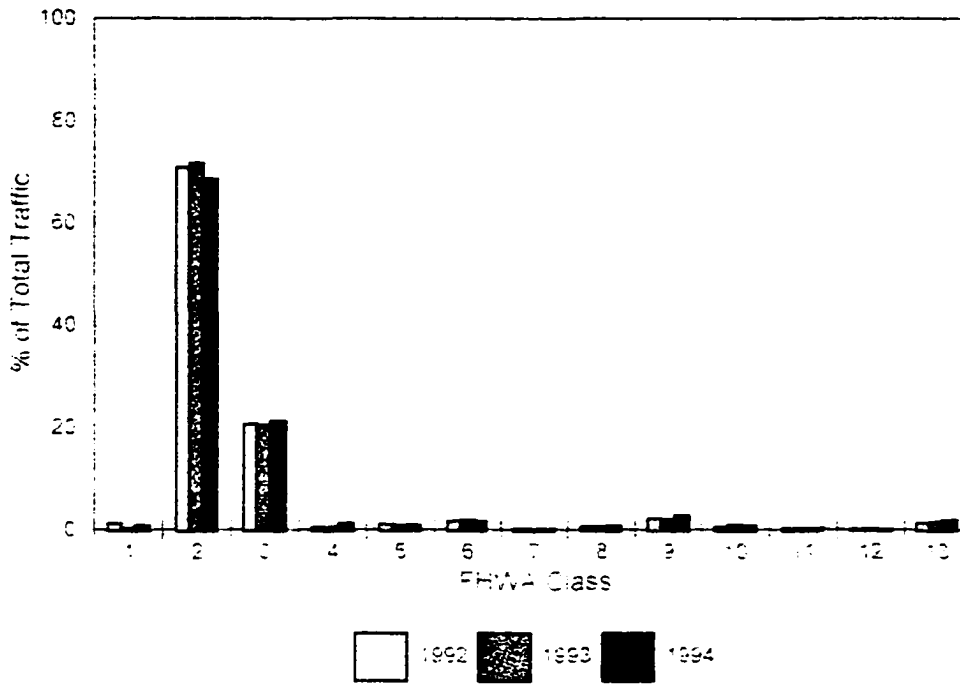
Station 65

MacGregor AVC Truck Classification
1991-1994



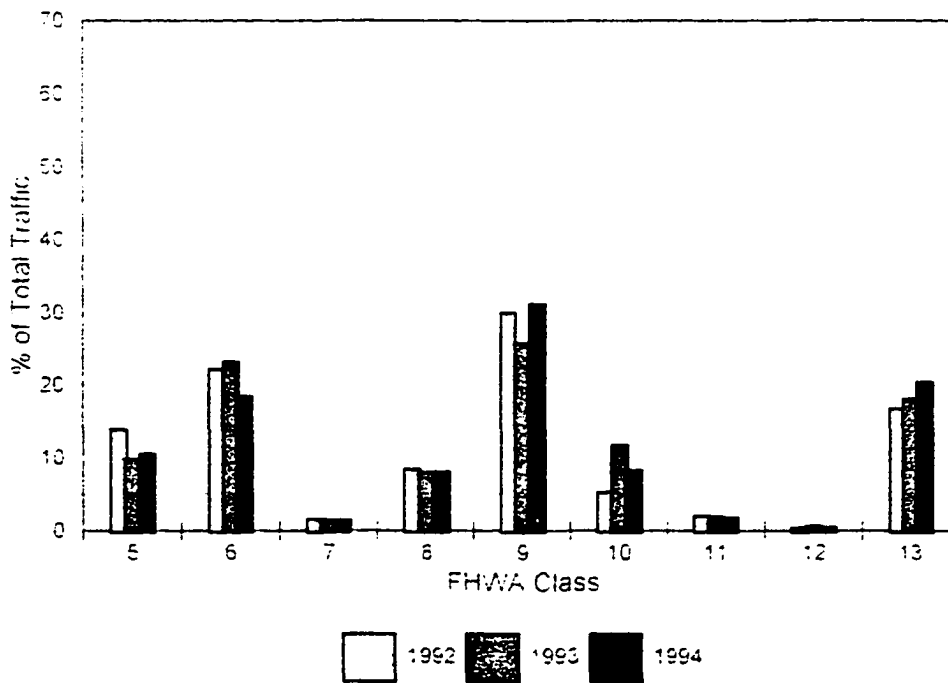
Station 66

Nesbitt AVC Vehicle Percentages
1991-1994



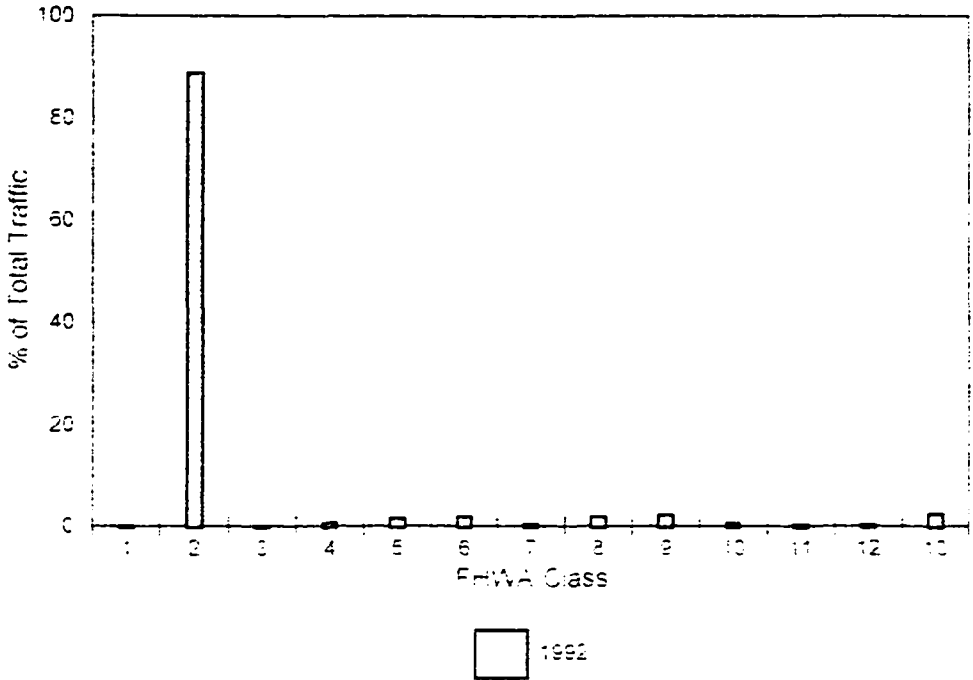
Station 66

Nesbitt AVC Truck Classification
1991-1994



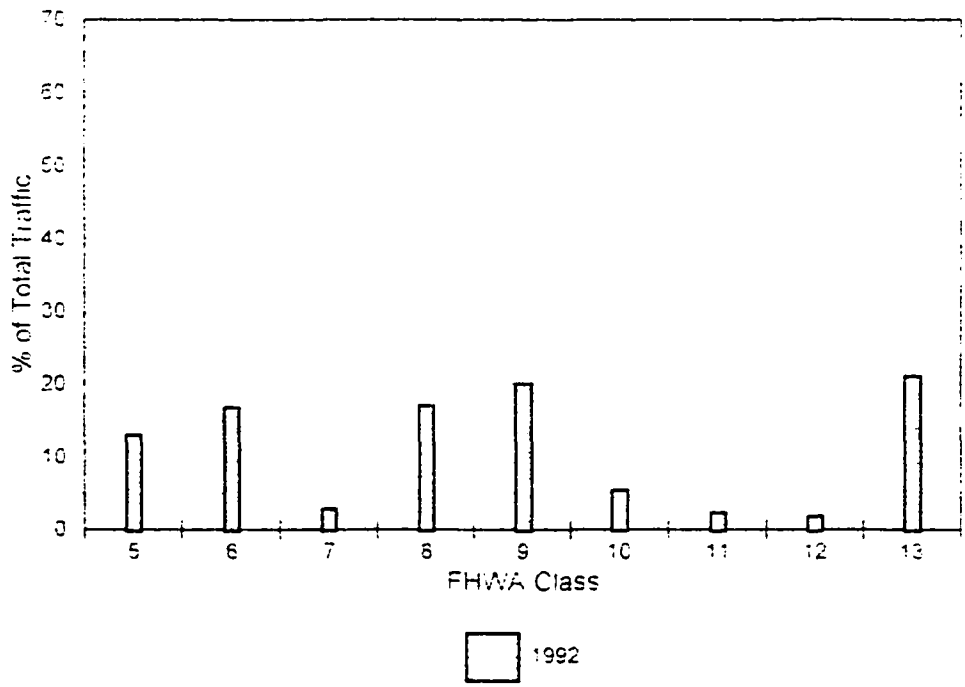
Station 66

Nesbitt WIM Vehicle Percentages
1991-1994



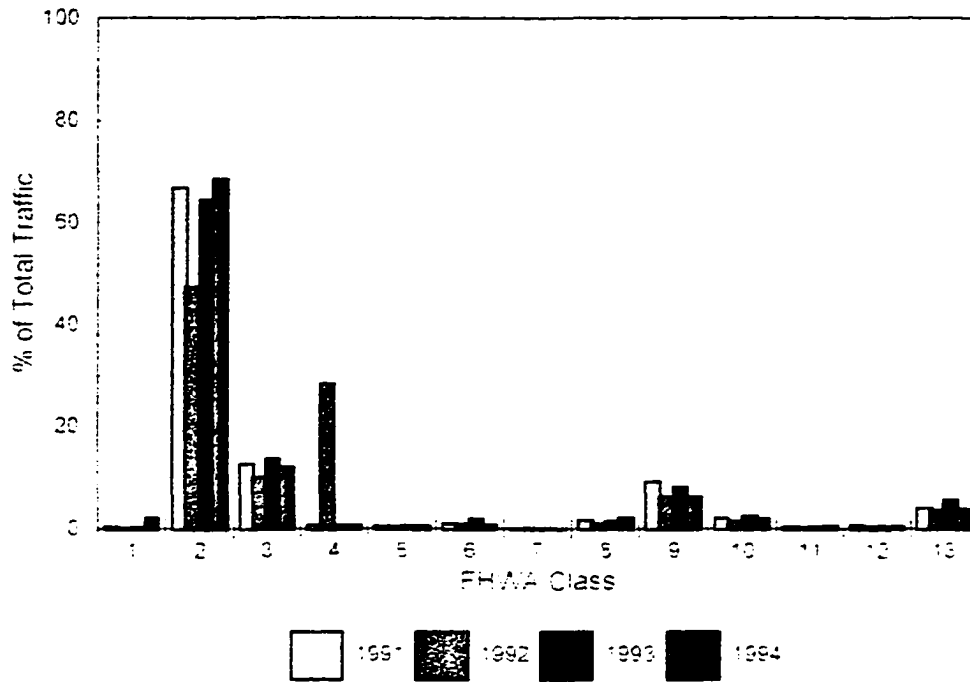
Station 66

Nesbitt WIM Truck Classification
1991-1994



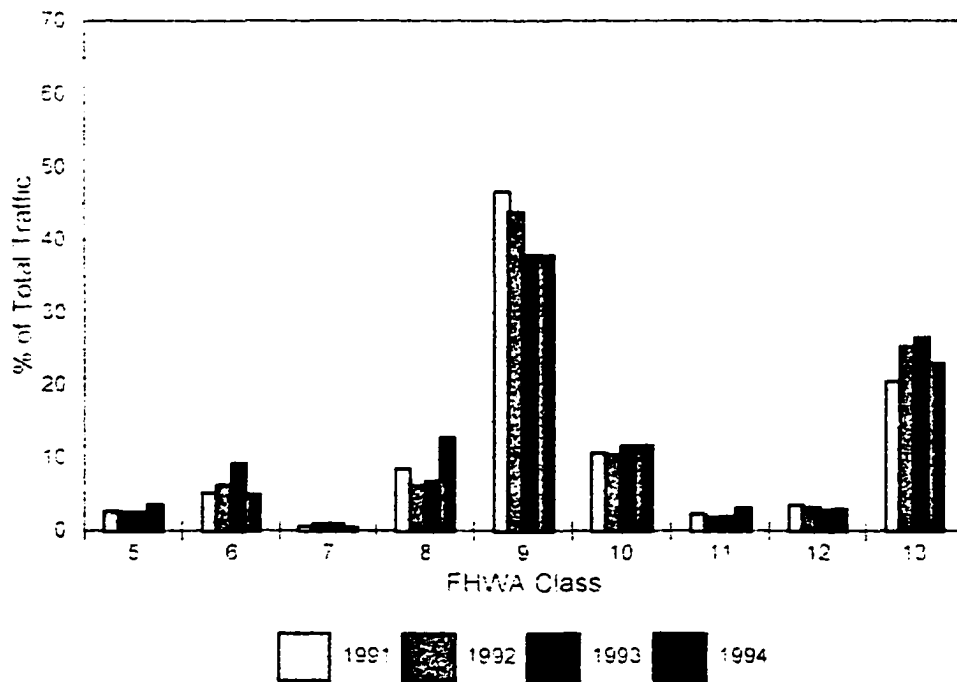
Station 62

Oak Lake AVC Vehicle Percentages
1991-1994



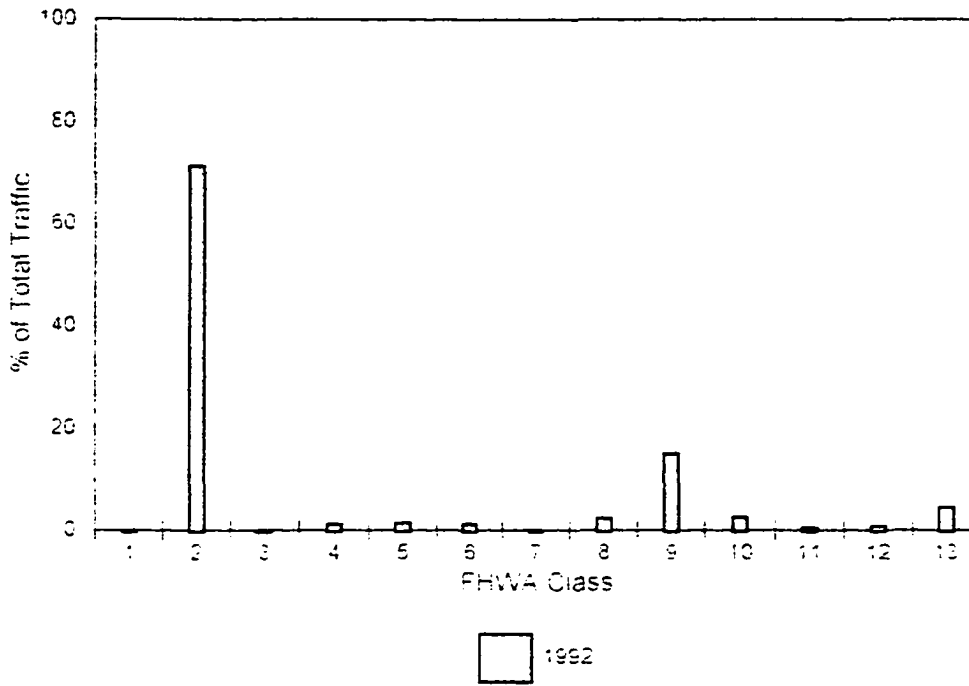
Station 62

Oak Lake AVC Truck Classification
1991-1994



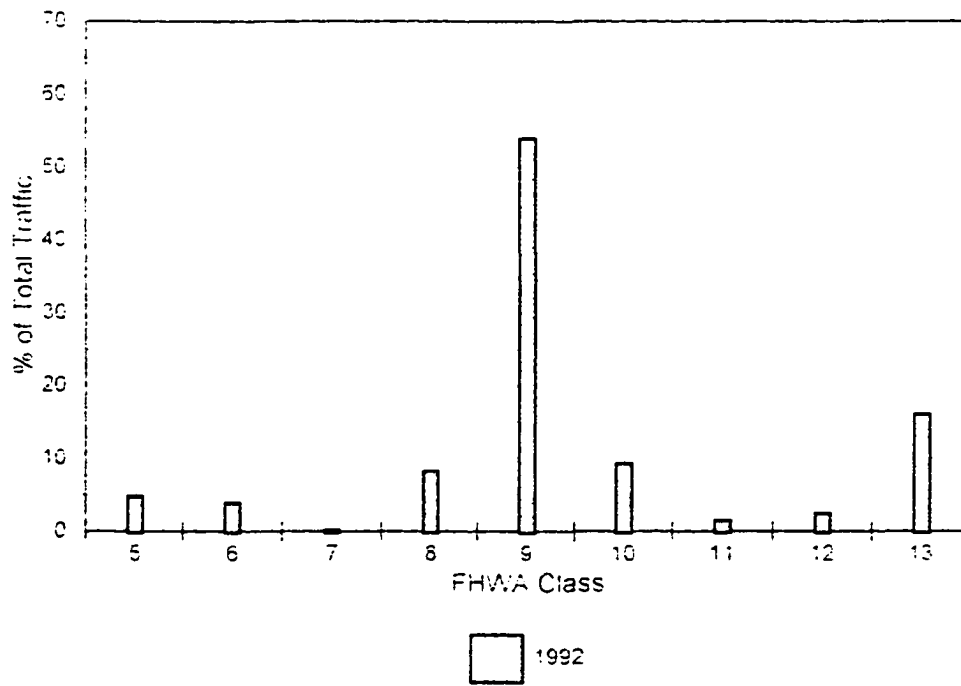
Station 62

Oak Lake WIM Vehicle Percentages
1991-1994



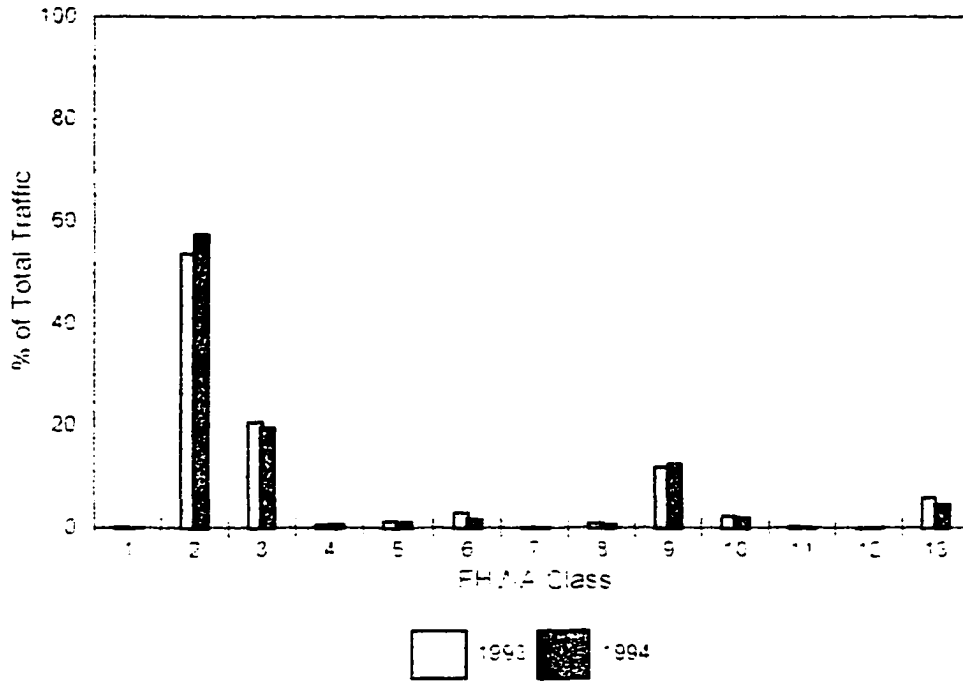
Station 62

Oak Lake A.M. Truck Classification
1991-1994



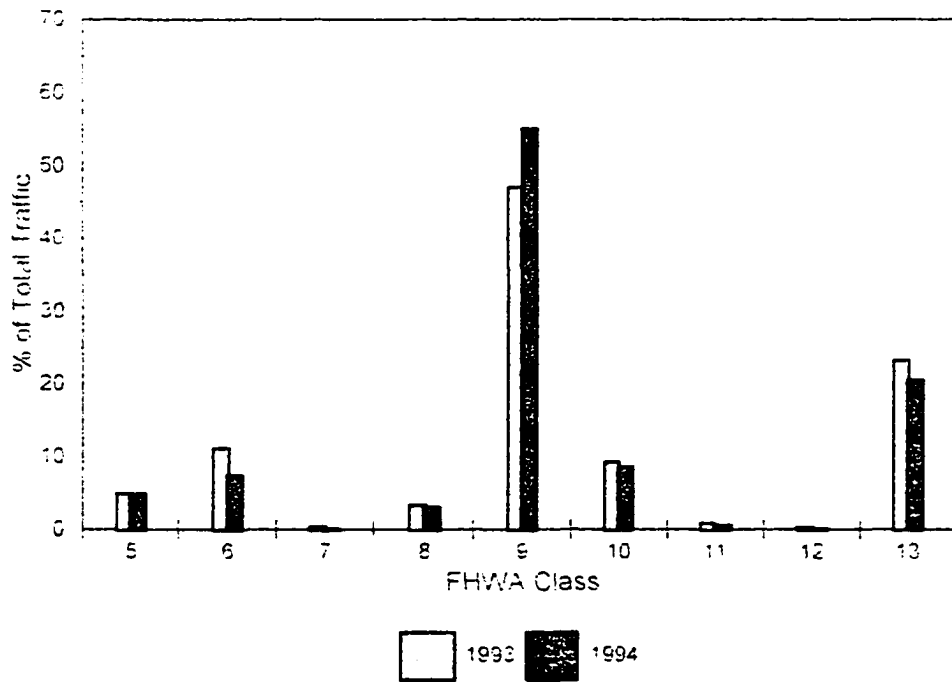
Station 81

Oakville AVC Vehicle Percentages
1991-1994



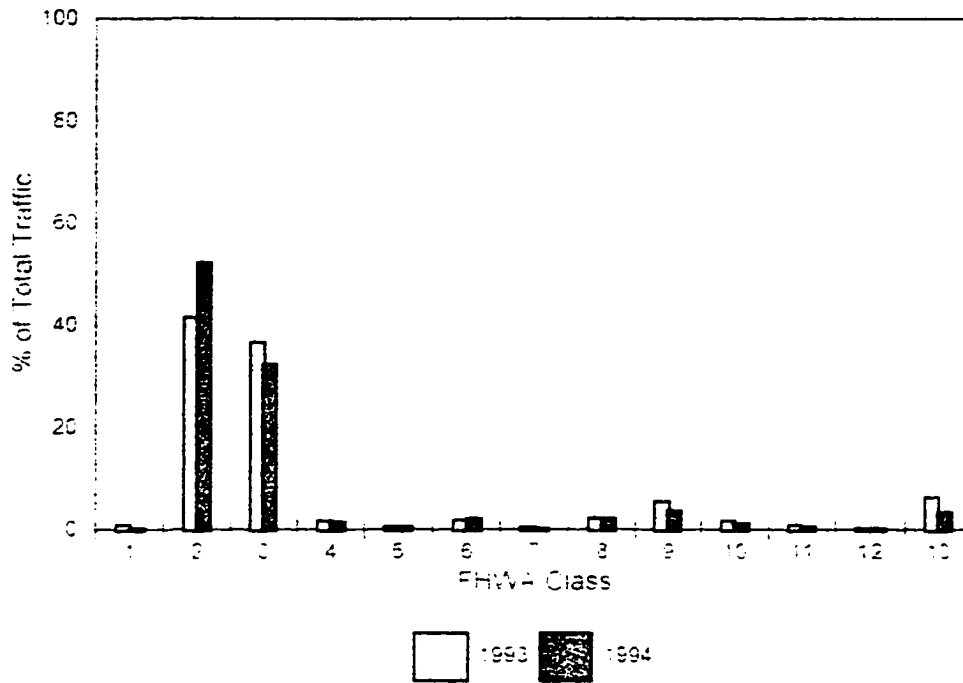
Station 81

Oakville AVC Truck Classification
1991-1994



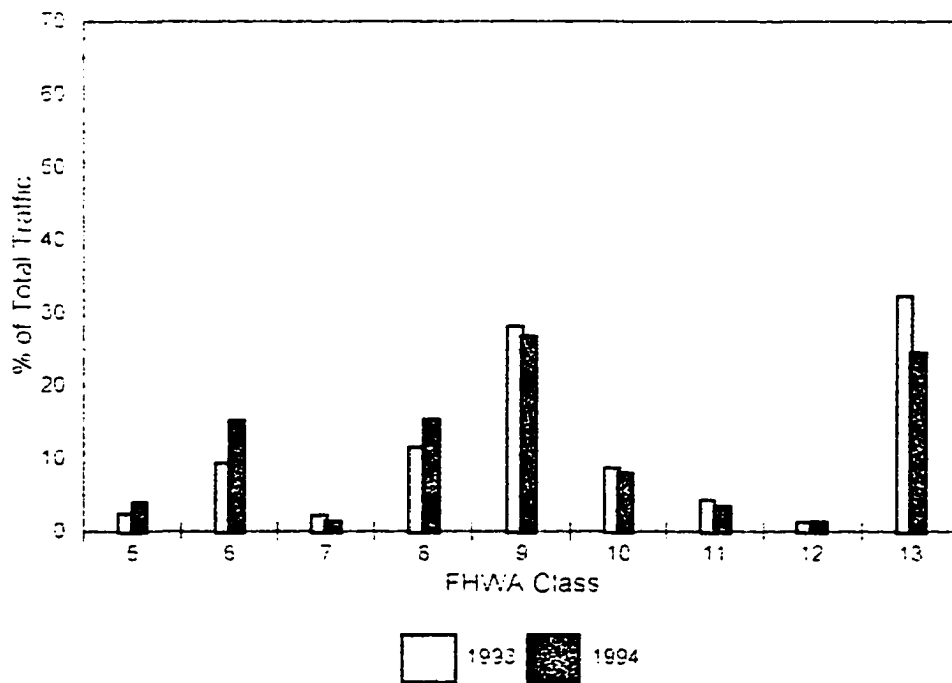
Station 82

Paint Lake AVO Vehicle Percentages
1991-1994



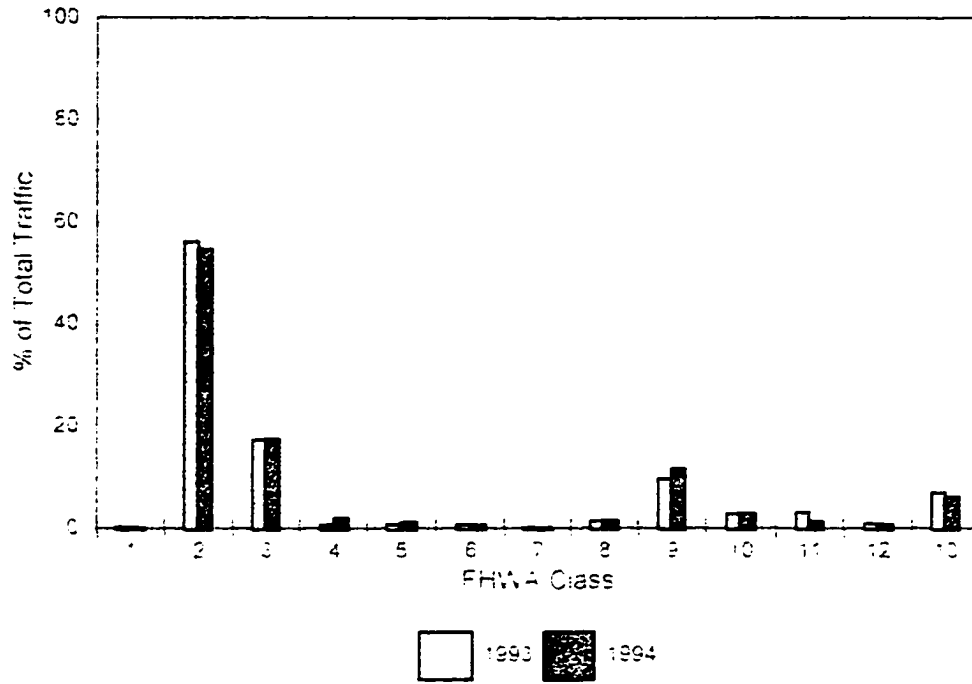
Station 82

Paint Lake AVO Truck Classification
1991-1994



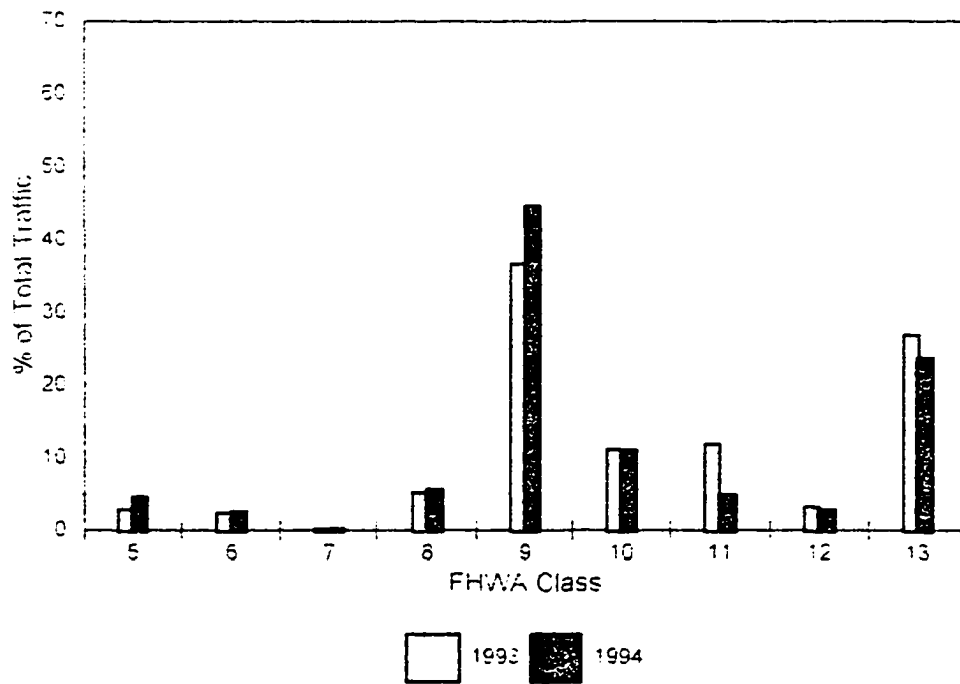
Station 80

Russell AVC Vehicle Percentages
1991-1994



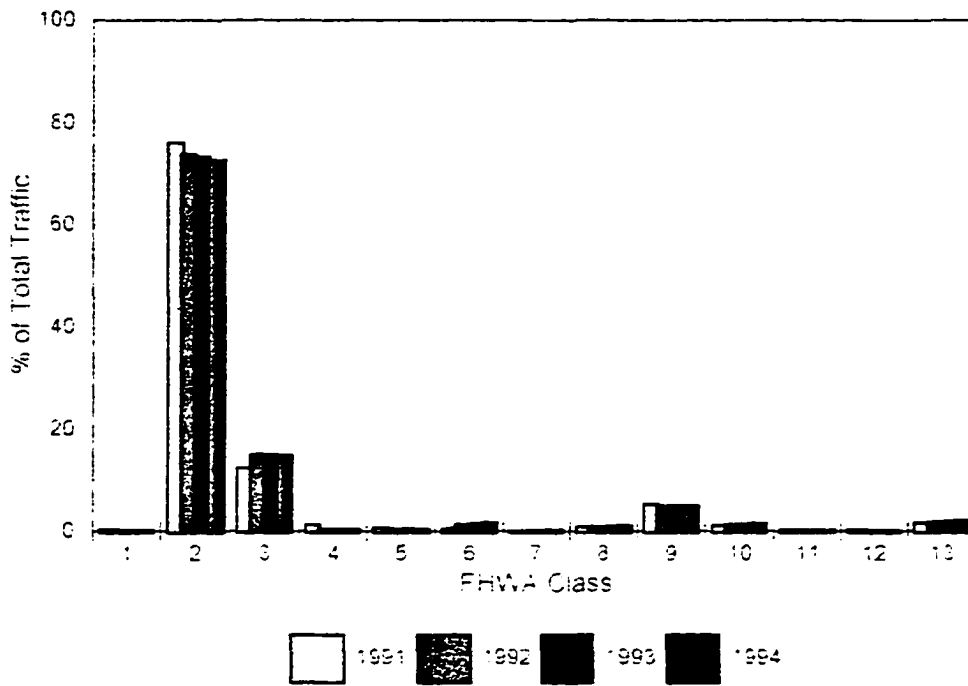
Station 80

Russell AVC Truck Classification
1991-1994



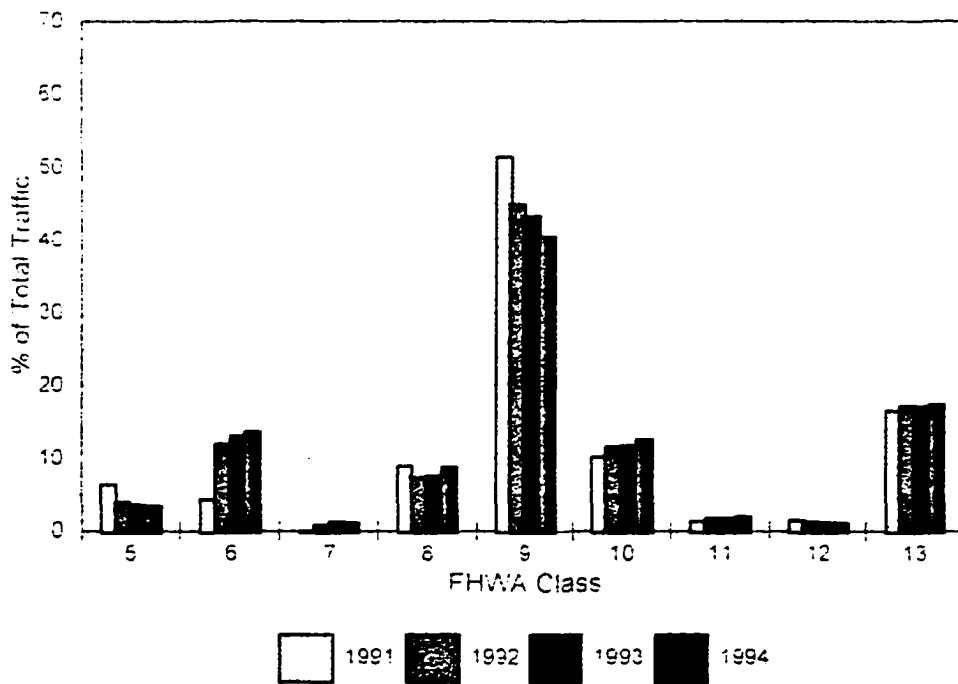
Station 64

Symington AVC Vehicle Percentages
1991-1994



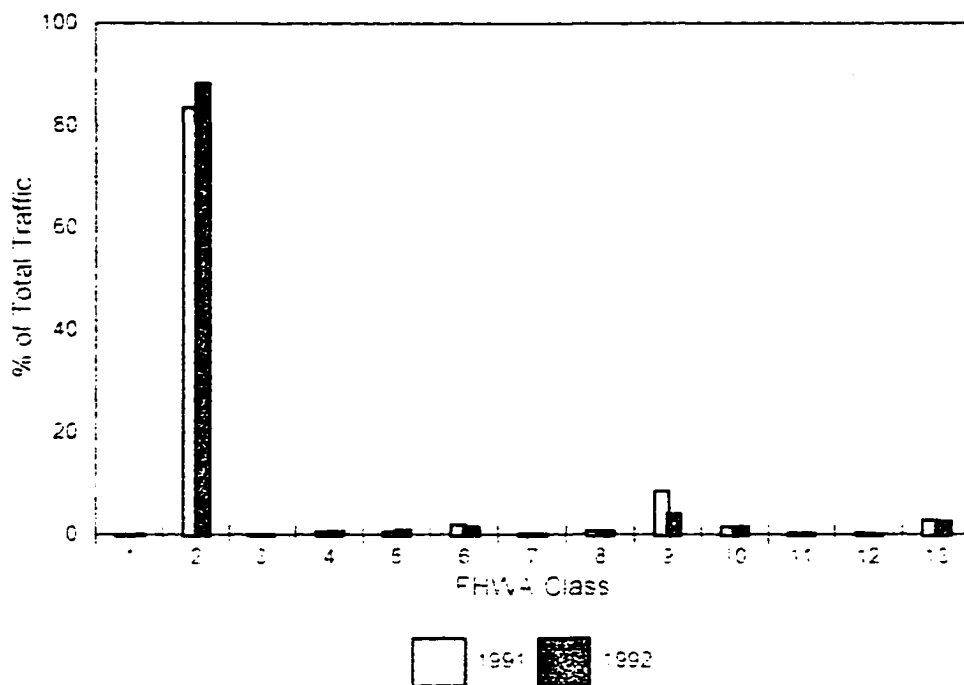
Station 64

Symington AVC Truck Classification
1991-1994



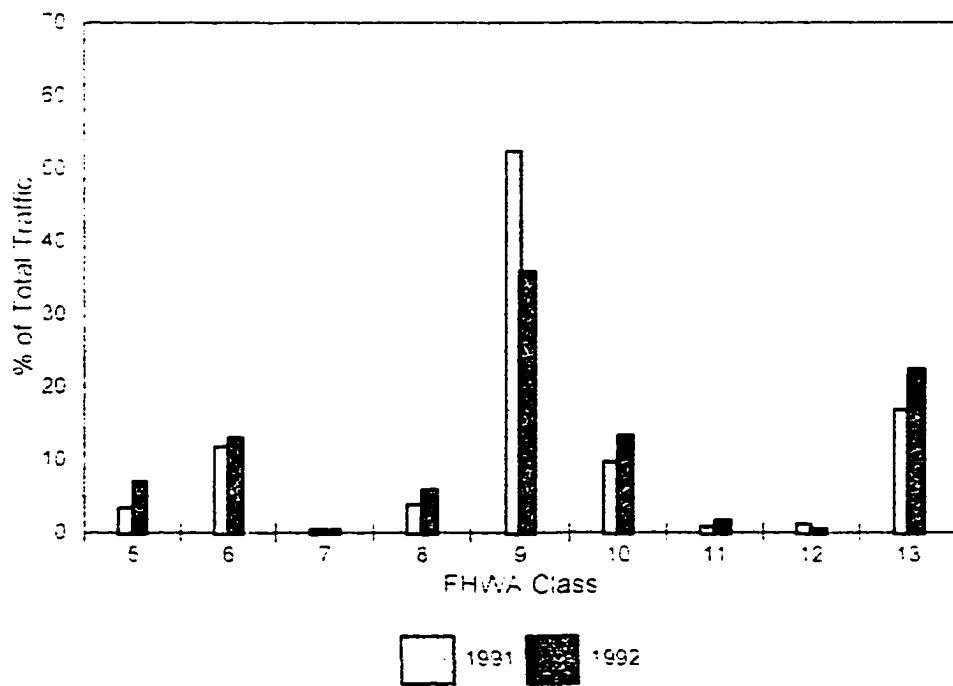
Station 64

Symington WIM Vehicle Percentages
1991-1994



Station 64

Symington WIM Truck Classification
1991-1994



Appendix D
Traffic, Truck Kilometers, TLF per day
TLF-kilometers per day
for Complete Compliance

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF km/day

Hwy No- Provincial Road or Provincial Trunk Highway Number

Conr.Sec.Seq.- Control Section Sequence number used by UMTIG to identify individual highway links

Ld Class - Load Class assigned to each highway link by the MDHT Compliance Branch

L - Length of the link in kilometres

Traff - Corresponds to the number of trucks per day in each class on each link

Trk Km / day - Corresponds to the number of kilometres of travel by each truck class on each link

Cost per day - corresponds to the costs calculated for each truck class for a violation rate of zero on each link

TLF per day - corresponds to the truck load factor calculated for each truck class for a violation rate of zero on each link

TLF km per day - corresponds to the truck load factor kilometres calculated for each truck class for a violation rate of zero on each link

LT - Light Trucks

HT - Heavy Trucks

Sgls - Single Trailer Trucks

Dbls - Double Trailer Trucks

Tot - Total trucks

Appendix D. Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF km/day

Hwy No	Cov Seq	Ld (km)	Trk		Cost		day		Dbls	Tot	HT	Sgls	/day	km/day	TLF	LT	HT	per Sgls	day	Dbls	Tot	TLF	LT	HT	per Sgls	day	Dbls	Tot	TLF	LT	HT	per Sgls	day	Dbls	Tot
			LT	HT	LT	HT	LT	HT																											
1	100122010	RTAC	37	563	128.5	754.3	586.9	1526.0	207.2	472.8	2775.6	2159.8	5615.7	322.74	653.42	3348.21	3060.42	7384.79	40.4	113.3	1138.6	1724.2	3016.7	148.5	417.0	4160.8	6344.9	11101.3							
1	100122020	RTAC	0.3	56.3	128.5	754.3	586.9	1526.0	18.6	42.4	248.9	193.7	503.6	28.94	58.59	300.25	274.44	667.22	40.4	113.3	1138.6	1724.2	3016.7	13.3	37.4	375.6	568.0	965.5							
1	100122030	RTAC	5.2	84.6	183.2	1133.9	882.3	2284.0	439.3	1002.5	5885.1	4579.0	11805.9	684.25	1385.32	7098.57	6488.43	15656.57	60.7	170.4	1711.9	2581.9	4534.9	314.8	884.2	8885.0	13451.9	23535.9							
1	100123010	RTAC	5.5	105.6	171.0	524.1	204.2	1005.0	581.0	940.6	2882.7	1123.2	5527.2	904.85	1789.83	3477.10	1591.57	7273.36	75.7	150.8	781.3	598.9	1817.8	414.8	829.6	4352.1	32987.7	8887.8							
1	100124010	RTAC	2.6	128.7	208.4	638.7	248.9	1224.8	334.7	541.9	1660.7	647.1	3164.4	521.29	748.64	2003.18	816.92	4190.23	92.3	183.6	884.3	731.1	1971.6	238.8	477.9	2507.3	1801.0	5126.1							
1	100125010	RTAC	7.8	128.7	208.4	638.7	248.9	1224.8	974.5	1577.7	4835.3	1884.0	9271.5	1517.78	2120.04	5832.35	2669.64	12200.02	92.3	183.6	884.3	731.1	1971.6	238.8	477.9	2507.3	1801.0	5126.1							
1	100125020	RTAC	2.5	128.7	208.4	638.7	248.9	1224.8	321.8	521.1	1598.9	622.2	3081.9	501.24	780.28	1926.14	881.65	4029.07	92.3	183.6	884.3	731.1	1971.6	238.8	477.9	2507.3	1801.0	5126.1							
1	100125030	RTAC	4.0	81.1	131.1	401.2	156.5	770.0	328.8	528.5	1617.0	630.9	3103.1	508.92	730.28	1950.46	893.93	4083.58	58.1	115.7	605.8	459.9	1238.4	234.2	466.1	2441.3	1653.3	4884.9							
1	100125040	RTAC	4.2	81.1	131.1	401.2	156.5	770.0	368.9	548.1	1677.2	654.3	3218.6	527.87	752.87	2023.05	927.20	4235.58	58.1	115.7	605.8	459.9	1238.4	234.2	466.1	2441.3	1653.3	4884.9							
1	100125050	RTAC	7.0	81.1	131.1	401.2	156.5	770.0	589.2	920.5	2816.8	1088.9	5405.4	886.51	1272.08	3387.57	1557.17	7113.34	58.1	115.7	605.8	459.9	1238.4	234.2	466.1	2441.3	1653.3	4884.9							
1	100126010	RTAC	14.5	261	68.6	423.9	162.4	712.0	378.1	1445.3	6151.1	2358.5	10331.1	588.92	1897.28	7419.52	3339.20	13344.93	18.7	67.9	640.0	471.1	1223.7	271.0	1274.8	9286.7	8822.9	17755.3							
1	100126020	RTAC	13.2	182	125.3	281.6	148.8	552.0	240.3	1652.8	3451.1	1936.7	7280.9	374.22	2283.95	4162.78	2744.32	8565.25	13.1	110.5	395.0	431.4	950.0	172.2	1457.7	5210.4	5889.6	12529.9							
1	100127010	RTAC	13.4	182	125.3	281.6	148.8	552.0	244.1	1678.1	3508.1	1987.5	7396.8	380.18	2320.31	4229.04	2768.02	8717.54	13.1	110.5	395.0	431.4	950.0	172.2	1457.7	5210.4	5889.6	12529.9							
1	100128010	RTAC	13.5	170	118.7	243.8	136.7	514.0	229.0	1575.2	3289.1	1845.8	6939.0	356.65	2178.70	3987.30	2815.48	8116.11	12.2	102.9	387.8	401.7	884.8	184.1	1388.3	4985.7	5422.4	11941.5							
1	100128020	RTAC	5.9	181	69.1	284.1	112.7	484.0	37.2	142.4	605.9	232.1	1017.6	58.01	186.74	730.84	328.92	1314.51	13.0	81.0	444.1	331.0	849.0	26.7	125.6	814.8	681.9	1748.9							
1	100128030	RTAC	5.9	181	69.1	284.1	112.7	484.0	108.7	407.8	1735.4	684.8	2914.6	188.15	563.47	2093.18	942.05	3764.85	13.0	81.0	444.1	331.0	849.0	26.7	125.6	814.8	681.9	1748.9							
1	100130010	RTAC	2.2	21.0	80.2	341.2	130.7	573.0	286.1	1093.4	4853.5	1782.8	7815.7	445.53	1511.00	5613.03	2528.18	10095.73	15.0	70.7	515.1	384.0	884.8	70.5	864.4	7025.6	5237.3	13432.3							
1	100131010	RTAC	9.8	15.8	60.9	259.0	99.2	435.0	152.5	583.0	2481.2	950.8	4187.3	237.55	805.65	2892.84	1346.95	5382.99	15.0	70.7	515.1	384.0	884.8	70.5	864.4	7025.6	5237.3	13432.3							
1	100131020	RTAC	15	18.4	70.5	300.1	115.0	504.0	28.0	107.2	456.1	174.7	766.1	43.67	148.10	590.18	249.58	1059.16	13.2	62.2	453.0	337.7	666.2	20.1	94.5	668.8	513.4	1316.6							
1	100132010	RTAC	4.0	18.4	70.5	300.1	115.0	504.0	73.8	282.0	1200.3	459.8	2016.0	114.82	389.75	1447.83	651.61	2604.11	13.2	62.2	453.0	337.7	666.2	52.9	248.8	1812.2	1350.9	3464.8							
1	200114010	A1	6.3	34.6	45.8	620.2	184.3	885.0	218.3	286.5	3878.3	1027.2	5406.3	336.81	395.96	4875.57	1455.52	6883.88	24.8	36.3	780.9	376.8	1219.9	155.0	228.8	4880.5	2455.7	7818.1							
1	200114020	A1	7.5	28.5	39.1	528.1	140.2	738.0	220.8	292.8	3958.0	1048.8	5520.2	343.91	404.31	4774.15	1486.21	7008.59	21.2	31.0	668.2	321.6	1039.9	150.3	231.6	4890.4	2365.4	7778.7							
1	200114030	A1	10.0	29.5	39.1	528.1	140.2	738.0	284.3	380.0	5275.6	1388.0	7357.9	458.38	538.89	6363.41	1880.86	9341.66	21.2	31.0	668.2	321.6	1039.9	210.9	308.7	6842.4	3208.1	10368.1							
1	200114040	A1	3.5	51.0	67.6	914.2	242.3	1275.0	179.5	237.9	3419.9	852.7	4488.0	278.80	368.14	3861.42	1208.30	6058.04	36.8	53.5	1151.0	558.6	1786.8	128.7	188.3	4051.6	1955.6	6324.1							
1	200114050	A1	6.6	59.6	227.9	889.8	371.6	1829.0	383.5	1504.1	6401.4	2452.4	10751.4	612.86	2078.54	7721.35	3475.04	13887.81	42.7	180.4	1221.2	852.2	2298.5	282.0	1190.7	8059.8	5624.2	15158.8							
1	200118010	A1	8.9	36.7	86.4	519.0	403.8	1050.0	344.8	786.8	4819.2	3584.1	9345.0	537.07	1087.35	5571.72	5092.82	12288.86	27.8	70.7	653.5	928.1	1977.4	247.1	822.9	5818.0	6242.5	14928.5							
1	200118020	A1	8.4	48.5	110.7	650.0	505.7	1315.0	405.2	924.5	5427.5	4223.0	10980.3	631.05	1772.82	8546.70	5894.00	14439.36	34.8	87.7	818.4	1159.9	2100.7	224.3	565.4	5287.2	7481.1	13549.5							
1	200118030	A1	8.1	68.4	158.4	929.8	723.4	1881.0	558.7	1275.0	7484.7	5823.6	15142.1	870.24	1781.87	9028.08	8252.09	18912.26	49.7	125.4	1170.7	1659.1	3004.9	400.5	1008.3	8423.8	13355.8	24189.2							
1	200120010	A1	8.2	57.0	130.0	783.2	593.8	1544.0	485.5	1082.1	6235.3	4851.5	12814.5	724.88	1487.77	7521.06	6874.82	16588.43	40.8	102.9	980.9	1381.8	2468.5	333.6	840.8	7850.8	1128.3	20151.5							
1	200120020	RTAC	6.4	57.0	130.0	783.2	593.8	1544.0	382.4	828.8	4853.9	3788.7	9819.8	584.36	1142.60	5854.83	5351.60	12913.39	40.8	114.7	1152.2	1744.5	3052.2	258.7	728.3	7328.2	1186.0	19412.2							
1	200121010	RTAC	3.9	68.7	134.3	804.9	418.1	1528.0	267.8	523.7	3528.2	1630.7	5851.4	417.12	723.73	4258.90	2310.68	7708.43	49.2	118.4	1368.2	1228.3	2752.2	181.9	461.9	5328.2	4780.5	10772.6							
1	200183010	RTAC	0.8	18.7	32.6	219.4	101.4	370.0	9.2	17.9	120.7	55.8	203.5	14.28	24.75	145.56	79.01	263.58	11.9	28.7	331.3	297.8	668.7	6.6	15.6	182.2	163.8	368.4							
1	300101010	RTAC	6.1	30.8	70.5	413.7	321.8	837.0	188.4	428.8	2523.7	1983.7	5105.7	293.43	584.08	3044.14	2782.50	6714.15	22.1	62.2	624.8	845.7	1654.6	135.0	379.2	3810.2	5788.7	10083.1							
1	300102010	RTAC	11.8	24.4	55.6	328.2	253.8	680.0	283.5	648.9	3787.4	2954.7	7892.4	441.52	893.88	4580.44	4186.74	10102.59	17.5	49.0	492.5	745.7	1304.7	203.2	570.5	5733.1	8680.0	15198.9							
1	300102020	RTAC	17.9	27.1	61.8	382.8	282.3	734.0	483.7	1103.8	6479.9	5041.6	13109.2	753.41	1525.34	7818.05	7144.25	17239.05	19.4	54.5	547.8	828.3	1451.0	348.7	873.5	8783.0	14811.6	25914.8							
1	300103010	RTAC	4.2	28.4	64.8	380.8	288.1	770.0	119.3	272.3	1598.6	1243.8	3234.0	185.88	376.30	1928.18	1782.48	4252.81	20.4	57.2	574.8	870.0	1522.2	85.5	240.2	2413.4	3854.0	6383.1							
1	300104010	A1	0.6	13.0	77.1	371.7	219.6	681.3	7.5	44.7	215.6	127.4	395.2	11.71	260.03	180.48	513.99	9.3	61.0	468.0	503.8	1041.9	27.2	178.6	1371.2	1475.6	3052.8								
1	300104020	A1	2.8	13.0	77.1	371.7	219.6	681.3	36.0	178.8	862.3	509.5	1580.7	46.82	247.07	1040.13	721.83	2058.95	9.3	61.0	468.0	503.8	1041.9	27.2	178.6	1371.2	1475.6	3052.8							
1	300104030	A1	2.3	13.0	77.1	371.7	219.6	681.3	205.6	1223.0	5898.7	3485.1	10812.5	370.29	1690.12	7115.04	4838.41	14063.86	9.3	68.0	561.2	645.1	1263.6	147.4	1076.7	8905.6	10236.4	20370.1							
1																																			

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, T.I./day, T.I./km/day

Hwy No	Seq	Conv	Sec	Ld	Cls	L	(km)	LT	HT	HT	Sgls	Dbhs	Tot	Trk LT	Trk HT	day	km/day	T.I./day	T.I./km/day	Cost LT	Cost HT	per HT	day Sgls	(\$)	Dbhs	Tot	TLF LT	TLF HT	per HT	day Sgls	Dbhs	Tot	TLF LT	TLF HT	per HT	day Sgls	Dbhs	Tot	km HT	per Sgls	day	Dbhs	Tot
1	300106020	A1	3.6	9.4	55.7	268.7	156.7	492.5	33.9	201.7	972.6	574.7	1782.9	52.61	278.68	1173.20	814.29	2318.99	6.7	44.1	336.3	364.1	753.2	24.3	159.6	1224.6	1317.9	2728.5															
1	300106030	A1	6.3	12.1	71.9	346.6	204.6	635.4	78.5	454.9	2194.1	1296.3	4021.9	119.14	628.68	2646.53	1636.90	5231.23	8.7	58.9	436.4	469.7	971.6	54.8	360.1	2762.5	2872.9	6150.4															
1	300106010	A1	0.5	9.2	149.0	456.0	177.9	875.0	49.6	60.5	246.2	96.1	472.5	77.49	111.20	298.99	136.12	621.80	66.0	118.0	574.1	408.0	1166.0	35.7	63.7	310.0	220.3	628.7															
1	300106011	A1	0.6	114.3	184.6	565.4	220.6	1065.0	62.8	101.6	311.0	121.3	596.8	97.87	140.44	375.09	171.91	785.30	81.9	146.3	711.9	505.9	1445.9	45.0	80.5	381.5	276.2	795.2															
1	300110010	A1	2.6	102.2	222.9	460.3	245.6	1031.0	268.7	588.3	1210.5	646.0	2711.4	418.50	810.15	1460.12	915.34	3604.12	73.2	178.5	578.5	563.3	1392.5	192.8	464.1	1524.1	1461.4	795.2															
1	300110020	A1	2.5	48.1	114.1	519.1	350.7	1032.0	27.9	66.2	301.1	203.4	598.8	43.44	91.46	363.16	288.20	786.29	34.5	90.4	653.6	804.2	1582.6	20.0	52.4	379.1	466.4	817.9															
1	300110040	A1	8.5	38.3	80.8	413.0	278.0	821.0	329.3	774.5	3522.6	2379.7	7033.1	508.28	1070.35	4248.93	3371.98	1189.54	27.4	71.9	520.0	639.8	1582.6	20.0	52.4	379.1	466.4	817.9															
1	300110100	A1	8.4	34.7	132.5	563.8	218.0	947.0	289.8	1107.6	4713.7	1805.8	7916.9	451.30	1530.56	5685.71	2558.89	10228.48	24.8	104.9	709.9	465.4	1335.0	20.7	67.6	593.5	4141.4	1160.9															
1	300111020	A1	2.4	32.5	74.2	435.5	338.8	881.0	76.4	174.3	1023.4	786.3	2070.4	118.99	240.80	1234.39	1128.30	2722.57	23.3	58.7	548.3	777.1	1407.4	54.8	136.0	1268.5	1828.1	3307.4															
1	300110300	RTAC	1.4	32.5	74.2	435.5	338.8	881.0	458.1	1045.2	6135.9	4774.2	12413.3	713.41	1444.36	7401.11	6784.97	10323.86	23.3	65.4	657.5	995.4	1741.6	328.3	821.9	8263.7	14025.3	24539.1															
1	300112010	RTAC	5.6	31.5	120.3	512.0	196.2	860.0	175.6	671.4	2857.2	1094.8	4798.8	273.55	927.74	3446.36	1551.08	6196.71	22.6	106.1	773.1	576.3	1478.0	125.9	592.1	4313.7	6247.4	827.4															
1	300112020	RTAC	5.9	31.5	120.3	512.0	196.2	860.0	184.8	706.2	3005.7	1151.5	5048.2	287.77	975.98	3625.47	1631.67	6570.87	22.6	106.1	773.1	576.3	1478.0	132.4	622.8	4537.9	3382.8	6676.0															
1	300113010	RTAC	1.7	34.4	45.8	616.8	163.4	860.0	59.2	78.4	1080.6	281.0	1479.2	92.15	108.34	1279.26	398.25	1678.02	24.7	40.2	930.9	480.0	1475.8	42.4	69.1	1801.2	825.6	2538.4															
1	300113020	RTAC	1.2	32.5	43.1	582.9	154.5	813.0	389.8	516.2	6983.4	1850.8	9739.7	606.78	713.35	8423.37	2622.23	12365.73	23.3	38.0	680.1	453.8	1395.2	279.2	455.3	10543.2	5436.4	16714.1															
10	301001010	RTAC	15.2	2.3	5.3	31.1	24.2	63.0	35.3	60.5	472.4	367.6	955.7	54.93	111.20	569.82	520.84	1256.79	1.7	4.7	47.0	71.2	124.5	25.3	71.0	713.2	1078.8	1689.3															
10	301001020	RTAC	7.2	3.0	6.7	39.5	30.8	80.0	21.3	48.7	285.9	222.5	578.4	33.24	67.30	344.96	315.22	760.61	2.1	5.9	59.7	90.4	156.1	15.3	43.0	431.6	653.5	1143.4															
10	301002010	RTAC	1.8	5.8	12.8	75.1	58.5	152.0	8.9	20.2	118.7	92.4	240.2	13.80	27.94	143.19	130.98	315.82	4.0	11.3	113.4	171.7	300.5	6.4	17.6	179.2	271.3	474.8															
10	301002020	RTAC	1.7	5.6	12.8	75.1	58.5	152.0	9.6	22.3	130.7	101.7	264.5	15.20	30.77	157.69	144.14	347.80	4.0	11.3	113.4	171.7	300.5	7.0	19.6	197.4	296.6	522.8															
10	301002030	RTAC	4.4	5.4	12.2	71.7	55.8	145.0	23.8	54.2	318.2	247.6	643.3	37.00	74.91	383.85	350.98	848.62	3.8	10.8	106.2	163.8	286.8	17.0	47.8	480.4	727.4	1272.7															
10	301002040	RTAC	11.3	5.4	12.2	71.7	55.8	145.0	60.7	136.5	612.6	632.4	1844.8	94.50	191.32	980.37	896.11	2162.30	3.6	10.8	106.2	163.8	286.8	43.5	122.1	1227.1	1857.8	3250.5															
10	301002050	RTAC	6.6	5.1	11.6	68.2	53.1	138.0	33.7	76.8	450.9	350.8	912.2	52.42	108.14	543.86	487.12	1199.54	3.6	10.2	103.0	155.9	272.8	24.1	67.7	660.7	1030.6	1803.2															
10	301003010	RTAC	5.0	4.4	9.8	59.3	45.4	116.0	21.8	49.7	281.8	228.9	590.0	33.91	69.65	321.54	321.54	775.87	3.2	8.1	80.1	133.3	233.3	15.6	43.8	440.3	666.6	1166.3															
10	301004010	RTAC	11.0	4.5	10.3	60.3	48.9	122.0	49.7	113.4	665.6	516.0	1346.9	77.41	158.72	803.04	734.02	1771.16	3.2	8.1	80.1	133.3	233.3	15.6	43.8	440.3	666.6	1166.3															
10	301004020	RTAC	6.3	3.5	7.8	48.5	38.2	94.0	21.7	49.5	280.9	226.3	588.4	33.82	68.47	350.84	320.89	773.82	2.5	7.0	70.1	108.2	185.8	15.6	43.7	439.1	684.9	1163.3															
10	301005010	RTAC	7.8	15.5	34.1	70.0	37.4	157.0	121.2	265.7	548.2	291.5	1224.6	188.82	367.22	658.78	412.69	1627.83	11.1	30.0	105.7	109.8	256.7	86.9	234.4	624.6	856.2	2002.1															
10	301005020	RTAC	5.0	15.5	34.1	70.0	37.4	157.0	171.7	170.3	350.1	186.6	785.0	121.04	235.40	422.30	264.74	1043.48	11.1	30.0	105.7	109.8	256.7	55.7	150.2	528.6	548.9	1283.4															
10	301006010	RTAC	6.4	22.0	48.2	99.0	52.8	222.0	139.6	305.9	628.7	335.5	1409.7	217.37	422.73	758.37	475.42	1873.88	15.8	42.5	148.5	155.2	362.9	100.0	289.8	949.2	985.6	2304.7															
10	301006020	A1	5.2	37.7	82.7	169.9	80.7	381.0	184.3	425.8	875.1	467.0	1882.2	302.55	588.39	1055.57	661.73	2608.24	27.0	65.4	213.9	208.0	514.4	139.2	337.1	1101.6	1071.0	2648.1															
10	301007010	A1	2.5	37.7	82.3	169.9	80.7	380.6	94.3	205.7	424.8	226.7	951.5	146.87	284.31	512.41	321.23	1264.82	27.0	65.1	213.9	208.0	514.4	67.6	162.9	534.9	519.9	1285.2															
10	301007020	A1	2.5	1.8	3.8	8.0	4.3	18.0	4.5	9.7	20.1	10.7	45.0	8.94	13.43	24.21	15.18	59.78	1.3	3.1	10.1	9.6	24.3	3.2	7.7	25.3	24.6	60.7															
10	301008010	A1	7.3	22.7	49.5	102.1	54.5	226.8	184.4	358.6	740.5	395.1	1658.6	258.00	495.57	893.16	559.91	2204.64	16.2	38.2	128.6	125.0	309.0	117.8	283.9	832.3	806.2	2240.2															
10	301008020	A1	7.8	30.7	67.0	138.3	73.8	309.7	237.8	519.9	1071.5	571.8	2400.1	370.45	717.12	1282.48	810.23	3190.27	22.0	53.0	174.1	169.2	418.3	170.5	410.8	1349.1	1311.3	3241.7															
10	301009010	A1	3.7	29.8	65.0	134.2	71.6	300.7	106.7	239.3	484.0	263.6	1106.6	170.80	330.63	595.68	373.56	1470.88	21.4	51.5	169.0	164.3	408.1	78.6	189.4	622.0	604.6	1494.6															
10	301009020	A1	7.9	29.8	65.0	134.2	71.6	300.7	236.0	514.9	1063.2	567.4	2381.5	367.58	711.58	1282.47	803.97	3185.59	21.4	51.5	169.0	164.3	408.1	188.1	407.8	1338.7	1301.2	3218.7															
10	301010010	A1	15.3	19.3	42.1	87.0	48.4	194.8	295.4	644.4	1330.6	710.1	2880.5	460.03	890.55	1605.02	1008.17	3961.77	13.8	33.3	109.5	108.4	263.1	211.7	510.2	1875.4	1628.4	4025.7															
10	301010100	A1	4.5	36.0	78.6	162.3	86.6	363.8	160.7	350.7	724.1	386.4	1621.8	250.32	484.58	873.35	547.50	2155.76	25.8	62.2	204.4	198.7	491.1	115.2	277.8	911.6	696.1	2190.5															
10	301011020	A1	1.8	2.9	11.2	47.6	18.2	80.0	4.8	18.4	78.1	29.9	131.2	7.48	25.38	84.22	42.41	189.47	2.1	8.9	60.0	41.8	112.8	3.4	14.5	98.4	88.6	185.0															
10	301012010	A1	14.4	2.9	11.2	47.6	18.2	80.0	42.0	180.7	684.0	282.0	1148.6	65.48	222.09	625.04	371.31	1483.93	2.1	8.9	60.0	41.8	112.8	30.1	127.2	661.2	601.0	1618.5															
10	301012020	RTAC	6.5	2.9	11.1	47.0	18.0	79.0	24.5	83.6	386.4	152.6	668.1	38.14	129.36	480.55	216.27	864.33	2.1	8.7	71.0	52.8	135.8	17.8	82.6	601.5	448.4	1150.0															
10	301012030	RTAC	7.8	4.1	15.8	67.3	25.8	113.0	32.1	122.8	522.8	200.3	678.0	50.05	169.74	630.98	283.79	1134.14	3.0	13.9	101.8	75.7	184.2	23.0	106.3	789.2	586.4	1509.0															
10	301013010	RTAC	10.7	3.8	14.7	62.5	24.0	105.0	40.9	156.4	665.6	255.1	1118.3	63.75	216.18	803.10	361.44	1444.47	2.8	13.0	94.4	70.4	180.5	29.3	138.0	1005.2	749.3	1921.8															
10	301013020	RTAC	8.4																																								

Appendix D - Complete Compliance: Traffic, Trk, Km/day, Cost/day, TL, F/day, TL, F: Km/day

Hwy No	Com Seq	Cls	L	LT	LT	Trk	HT	km /day	Sgls	Dbhs	Tot	Cost	Per HT	day Sgls	(S)	Dbhs	Tot	TLF LT	Per HT	day Sgls	Dbhs	Tot	TLF LT	km HT	per Sgls	day	Tot	
10	401021010	A1	7.3	2.2	8.4	35.7	13.7	600	18.1	61.4	261.5	100.2	439.2	25.04	84.91	315.42	141.96	587.32	1.6	6.6	45.0	31.4	84.6	11.5	48.6	329.2	229.8	619.2
10	401021020	A1	8.0	2.2	8.4	35.7	13.7	600	19.9	75.9	322.8	123.7	547.4	30.92	104.66	369.54	175.31	700.63	1.6	6.6	45.0	31.4	84.6	14.2	60.1	406.6	263.7	764.6
10	401022010	A1	6.1	5.9	22.5	95.9	36.7	161.0	35.8	136.9	529.8	223.3	978.9	55.80	189.24	703.00	316.39	1264.44	4.2	17.8	120.7	84.2	227.0	25.7	108.4	733.4	512.1	1380.0
10	401022020	A1	10.2	5.9	22.5	95.9	36.7	161.0	60.3	230.4	980.6	375.7	1647.0	93.89	318.42	1182.85	532.35	2127.50	4.2	17.8	120.7	84.2	227.0	43.2	182.4	1234.7	861.6	2321.9
10	401022030	A1	5.3	6.9	34.1	145.3	55.7	244.0	47.2	160.6	768.5	284.4	1290.8	73.58	249.54	928.99	417.20	1687.30	6.4	27.0	182.9	127.8	344.0	33.9	143.0	887.6	675.2	1819.6
10	401023010	RTAC	2.4	13.7	28.8	81.5	32.8	137.9	32.8	71.5	147.7	78.8	300.9	51.07	98.86	178.17	111.70	439.80	9.8	28.3	92.9	98.5	225.5	63.1	233.0	231.8	541.2	1420.5
10	401024010	A1	3.1	13.2	28.7	59.3	31.7	132.9	41.2	69.9	185.7	99.1	415.9	64.19	124.26	223.95	140.39	552.79	9.4	22.7	74.7	72.6	179.5	29.5	71.2	223.0	227.2	561.7
10	401024020	A1	4.1	13.2	28.7	59.3	31.7	132.9	53.9	117.5	242.6	129.5	543.4	83.88	162.37	282.64	183.45	722.33	9.4	22.7	74.7	72.6	179.5	38.6	93.0	305.5	296.9	734.0
10	401024030	A1	2.0	8.5	18.6	38.4	20.5	85.9	17.2	37.5	77.5	41.3	173.5	26.79	51.85	93.48	59.59	230.68	6.1	14.7	49.3	46.9	118.0	12.3	26.7	97.6	84.8	234.4
10	401025010	A1	6.9	2.8	10.9	46.4	17.8	78.0	19.7	75.3	320.4	122.8	536.2	30.68	104.05	368.52	173.96	695.20	2.0	8.6	58.5	40.8	110.0	14.1	59.6	403.5	281.5	758.7
10	401025020	A1	5.8	2.3	8.7	36.9	14.1	82.0	13.2	50.3	214.1	82.0	359.8	20.50	69.52	258.25	116.23	464.50	1.6	6.9	48.5	32.4	87.4	9.4	39.8	269.8	166.1	506.9
10	401026010	A1	4.7	2.0	7.8	33.3	12.8	58.0	9.5	38.4	155.0	59.4	260.4	14.64	50.34	167.01	84.17	336.36	1.5	6.2	42.0	29.3	78.9	6.6	28.6	195.2	136.2	367.1
10	401026020	A1	15.1	2.0	7.8	33.3	12.8	58.0	31.0	118.5	504.5	193.3	847.3	48.30	163.80	608.48	273.88	1094.45	1.5	6.2	42.0	29.3	78.9	22.2	93.8	635.2	443.2	1194.5
10	401026030	A1	18.3	2.0	7.7	32.7	12.5	55.0	36.9	141.0	599.9	229.8	1007.6	57.44	184.60	723.63	325.87	1301.54	1.4	6.1	41.2	28.8	77.5	28.4	111.8	755.4	527.1	1420.5
10	401027010	A1	12.8	2.0	7.7	32.7	12.5	55.0	25.7	96.1	417.5	160.0	701.2	39.87	135.57	503.62	226.66	905.82	1.4	6.1	41.2	28.8	77.5	18.4	77.7	525.7	368.6	988.6
10	401028010	A1	22.3	2.0	7.7	32.7	12.5	55.0	44.8	171.4	729.3	279.4	1224.9	89.82	236.80	879.65	395.89	1582.17	1.4	6.1	41.2	28.8	77.5	32.1	135.7	918.2	640.7	1726.7
10	401029010	A1	1.3	24.2	52.7	108.8	58.1	243.8	31.4	68.5	141.5	75.5	318.9	48.91	94.66	170.64	106.97	421.21	17.3	41.7	137.0	133.2	329.2	22.5	54.2	176.1	173.1	426.0
10	501029010	A1	10.9	2.6	6.1	27.7	18.7	55.0	27.9	66.3	301.5	203.7	599.5	43.51	91.63	363.73	288.66	787.52	1.8	4.8	34.8	42.9	84.3	20.0	52.5	379.7	467.2	919.4
10	501030010	A1	15.0	2.7	10.4	44.1	18.9	74.0	40.6	155.3	680.9	233.2	1110.0	63.27	214.59	797.17	358.77	1433.91	1.9	6.2	55.5	38.7	104.3	29.1	122.9	632.1	560.7	1564.8
10	501030020	A1	25.7	2.4	9.2	39.3	15.1	66.0	62.1	237.3	1009.9	366.9	1698.2	96.69	327.92	1216.16	548.24	2191.02	1.7	7.3	49.5	34.5	93.0	44.5	167.9	1271.6	807.3	2381.2
10	501031010	A1	15.0	2.4	8.1	38.7	14.8	65.0	35.7	136.4	580.5	222.4	975.0	55.58	188.49	700.22	315.14	1259.43	1.7	7.2	48.7	34.0	91.6	25.6	108.0	730.9	510.0	1374.5
10	501032010	A1	17.9	3.3	12.6	53.6	20.5	90.0	59.0	225.4	959.2	367.5	1811.0	91.63	317.45	1156.97	520.70	2090.96	2.4	10.0	67.5	47.1	126.8	42.3	178.4	1207.7	642.7	2271.1
10	501032010	A1	6.5	6.9	28.4	112.5	43.1	189.0	45.0	171.9	731.4	280.2	1228.5	70.03	237.50	882.27	397.07	1586.88	5.0	20.9	141.7	88.9	268.4	32.2	136.1	921.0	642.6	1731.9
10	501032020	A1	6.5	25.3	55.3	114.2	60.9	255.7	164.7	359.4	742.1	398.0	1662.3	258.56	486.69	895.17	581.18	2209.82	19.2	43.8	143.8	139.7	345.4	118.1	284.5	934.4	908.2	2245.3
10	501033010	A1	8.9	6.8	16.1	73.4	49.8	146.0	46.9	111.4	506.7	342.3	1007.4	73.12	153.87	611.21	485.06	1323.35	4.9	12.8	92.5	113.8	223.9	33.8	88.2	638.0	785.0	1544.8
10	501033010	A1	25.8	4.3	16.4	69.7	28.7	117.0	110.5	422.3	1797.3	688.5	3018.6	172.07	583.58	2167.87	975.86	3899.19	3.1	13.0	87.7	61.2	164.9	79.2	334.3	2262.9	1579.1	4255.5
10	501034010	A1	29.6	2.6	9.9	42.3	16.2	71.0	78.9	284.0	1251.3	479.4	2101.6	119.80	406.30	1509.31	679.27	2714.69	1.9	7.9	53.2	37.1	100.1	55.1	232.8	1575.5	1099.4	2862.7
10	501035010	A1	16.0	2.0	7.8	32.2	12.3	54.0	31.6	120.9	514.4	197.1	864.0	49.25	167.04	620.50	279.26	1116.05	2.2	5.5	51.7	73.2	132.6	32.9	63.0	774.8	452.0	1218.0
10	501036020	A1	15.0	3.1	7.0	41.0	31.9	83.0	45.9	104.8	615.4	478.8	1245.0	71.55	144.86	742.30	470.50	1637.21	2.2	5.5	51.7	73.2	132.6	32.9	63.0	774.8	452.0	1218.0
10	501037010	A1	9.3	3.1	7.0	41.0	31.9	83.0	28.5	65.0	381.6	298.9	771.9	44.36	89.82	460.23	420.87	1015.07	2.2	5.5	51.7	73.2	132.6	32.9	63.0	774.8	452.0	1218.0
10	501038010	A1	20.3	2.1	4.8	28.2	21.9	57.0	42.7	97.4	572.0	445.0	1157.1	68.50	134.64	689.89	830.59	1521.62	1.5	3.8	35.5	50.3	91.1	30.6	77.1	720.1	1020.6	1848.5
10	501039010	A1	6.0	3.0	7.1	32.2	21.7	64.0	17.9	42.5	193.2	130.5	384.0	27.87	58.88	232.98	184.89	504.44	2.1	5.6	40.5	40.9	98.1	12.8	33.6	243.2	289.2	588.9
10	501039010	A1	0.6	3.2	7.6	34.7	23.4	69.0	1.9	4.6	20.8	14.1	41.4	3.00	6.33	25.12	19.83	54.38	2.3	6.0	43.7	53.8	105.8	1.4	3.6	26.2	32.3	63.5
10	777777777	A1	30.6	1.8	4.3	19.6	13.3	39.0	56.7	132.2	601.1	406.0	1195.0	88.73	182.64	725.00	575.37	1569.74	1.3	3.4	24.7	30.4	59.8	39.9	104.6	756.8	931.2	1832.5
100	110001010	A1	1.8	115.9	187.5	573.7	223.8	1101.0	208.7	337.5	1032.7	402.9	1981.6	325.02	466.39	1245.68	570.91	2607.99	83.1	148.4	722.4	513.3	1467.2	149.8	267.2	1300.3	924.0	2641.0
100	110002010	A1	4.1	100.1	187.0	495.6	193.3	951.0	407.8	659.2	2017.0	766.8	3670.6	634.78	910.89	2432.85	1115.02	5093.55	71.8	128.2	624.0	443.4	1267.2	292.1	521.8	2539.5	1804.6	5158.0
100	110002020	A1	1.7	112.7	182.2	557.6	217.5	1070.0	194.9	315.2	984.6	376.3	1851.1	303.59	435.63	1163.51	533.26	2435.99	80.8	144.3	702.0	489.9	1425.9	139.7	249.6	1214.5	2468.6	6819.5
100	110002030	A1	1.6	131.6	213.2	652.4	254.5	1252.0	207.0	334.7	1024.3	399.6	1985.6	322.37	482.59	1235.50	566.25	2596.72	84.5	168.8	821.4	583.7	1668.4	148.3	265.0	1288.7	916.5	2619.5
100	110004010	A1	4.0	110.2	178.3	545.6	212.9	1047.0	178.4	285.3	872.9	340.6	1675.2	274.74	394.24	1052.95	482.59	2204.51	79.0	141.2	696.9	488.2	1395.3	126.4	225.8	1098.1	781.0	2232.4
100	110004010	A1	2.0	146.9	237.6	728.9	283.6	1395.0	295.3	477.5	1481.1	570.0	2803.9	459.86	659.87	1795.02	822.69	3758.14	105.3	188.1	915.3	650.4	1859.0	211.6	378.0	1639.7	3736.6	9306.7
100	110004030	A1	2.2	137.9	223.1	662.6	266.3	1310.0	300.7	486.3	1488.2	580.6	2655.6	466.36	672.06	1795.02	822.69	3758.14	105.3	188.1	915.3	650.4	1859.0	211.6	378.0	1639.7	3736.6	9306.7
100	110005010	A1	1.2	155.0	250.7	787.1	299.3	1472.0	179.8	290.8	869.8	347.1	1707.5	280.04	401.84	1073.26	481.90	2247.04	111.1	186.4	965.8	696.3	1961.6	126.9	230.2	1120.3	786.1	2275.5
100	110005020	A1	3.0	132.9	215.2	658.6																						

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF: km/day

Hwy No	Conr Seq	Cls	L (km)	Traff	LT	HT	Sgls	Dbls	Tot	Trk LT	Trk HT	TLF /day	Sgls	Dbls	Tot	Cost LT	Cost HT	per HT	day Sgls	day Dbls	(S)	Tot	TLF LT	TLF HT	per HT	day Sgls	day Dbls	Tot	TLF LT	TLF HT	per HT	day Sgls	day Dbls	Tot
101	10104010	RTAC	2.9	208.8	337.7	1033.3	403.1	1883.0	605.5	979.3	2988.7	1189.1	5750.7	943.14	1353.36	3614.61	1656.64	7587.74	148.7	287.9	1580.1	1184.3	3181.9	434.0	683.8	4524.3	3434.6	9256.6						
101	10105010	RTAC	0.8	175.2	283.4	867.1	336.3	1864.0	140.2	226.7	693.7	270.6	1331.2	218.32	313.28	836.73	383.48	1751.82	125.6	248.9	1308.1	993.8	2678.5	100.5	200.0	1047.3	785.1	2142.8						
101	10106010	RTAC	3.8	131.5	212.7	650.8	253.8	1249.0	512.9	829.5	2536.3	690.3	4711.1	798.68	1146.35	3061.73	1403.25	6410.22	94.3	187.8	982.6	746.0	2010.4	367.6	731.7	3632.2	2809.2	7640.8						
101	10108010	RTAC	5.8	139.9	228.4	684.0	270.4	1330.7	811.2	1313.4	4025.0	1568.3	7717.8	1263.43	1814.92	4855.00	2222.26	10155.62	100.2	189.7	1047.7	784.4	2142.0	561.4	1158.4	6076.8	4607.3	12423.8						
10A	401081010	RTAC	2.3	1.9	4.1	6.5	4.5	19.0	4.3	9.4	19.5	10.4	43.7	6.74	13.04	23.51	14.74	58.03	1.3	3.6	12.8	13.3	31.0	3.1	8.3	28.4	30.6	71.4						
10A	401081020	RTAC	1.1	5.8	12.7	26.3	14.0	58.9	6.4	14.0	28.9	15.4	64.6	10.01	19.37	34.91	21.89	86.18	4.2	11.2	36.7	41.3	86.4	4.8	12.4	43.7	45.4	108.0						
10A	401083010	RTAC	1.4	4.3	9.3	19.2	10.2	43.0	5.8	12.6	26.1	13.9	58.4	9.02	17.46	31.46	19.72	77.66	3.1	8.2	28.0	30.1	70.3	4.1	11.1	36.4	40.9	86.6						
10A	401083020	RTAC	2.8	4.3	9.3	19.2	10.2	43.0	12.1	26.4	54.5	29.1	122.0	18.83	36.45	65.70	41.16	162.16	3.1	8.2	28.0	30.1	70.3	8.7	23.3	62.2	85.4	199.5						
10A	501084010	RTAC	2.0	6.8	14.9	30.8	16.4	68.9	13.7	29.8	61.5	32.8	137.9	21.28	41.19	74.24	46.54	183.25	4.9	13.1	48.5	48.2	112.7	9.8	28.3	92.9	96.5	225.5						
10A	501084020	RTAC	1.2	6.8	14.9	30.8	16.4	68.9	8.2	17.9	36.9	19.7	82.7	12.77	24.72	44.54	27.92	109.85	4.9	13.1	48.5	48.2	112.7	5.8	15.6	55.8	57.9	135.3						
11	101101010	RTAC	9.9	3.3	12.7	54.2	20.8	91.0	32.9	125.8	535.3	205.1	899.1	51.25	173.82	645.69	290.80	1161.36	2.4	11.2	61.8	61.0	156.4	23.6	10.9	608.2	602.5	1545.2						
11	101101020	RTAC	6.5	3.3	12.7	54.2	20.8	91.0	21.7	83.0	353.3	135.3	593.3	33.82	114.71	426.11	191.77	768.40	2.4	11.2	61.8	61.0	156.4	15.6	7.3	533.3	367.6	1019.7						
11	101102010	RTAC	8.5	3.0	11.6	49.4	18.9	83.0	25.8	98.7	420.1	160.9	705.5	40.22	136.39	508.67	228.03	911.31	2.2	10.2	74.6	55.6	142.8	18.5	8.7	634.2	472.8	1212.5						
11	101103010	AT	7.2	1.9	7.3	31.0	11.9	52.0	13.7	52.4	222.8	85.4	374.4	21.34	72.38	268.88	121.01	483.62	1.4	5.8	39.0	27.2	73.3	8.8	41.5	280.7	195.9	527.8						
11	101104010	A1	3.4	2.3	15.9	33.2	16.6	70.0	7.9	54.0	112.8	63.3	238.0	12.23	74.66	136.07	89.71	312.67	1.7	12.6	41.8	42.7	96.7	5.6	42.6	142.0	145.2	335.6						
11	101104020	A1	6.8	1.9	12.9	27.0	15.2	57.0	12.9	68.6	185.1	103.9	380.5	20.07	122.48	223.24	147.17	512.95	1.3	10.2	34.0	34.8	80.4	9.2	70.2	233.0	238.2	550.8						
11	101105010	A1	5.6	4.6	8.9	20.5	10.9	46.0	26.3	57.4	116.6	63.3	265.6	41.00	79.38	143.03	89.87	353.06	3.3	7.8	25.8	25.1	62.1	18.9	45.5	149.3	145.1	358.6						
11	101106020	RTAC	3.2	4.5	9.7	20.1	10.7	45.0	14.3	31.3	64.6	34.5	144.8	22.34	43.25	77.95	48.87	182.41	3.2	6.6	30.3	31.5	73.5	10.3	27.8	97.6	101.3	238.8						
11	101108010	RTAC	8.8	7.8	17.1	35.2	18.8	78.9	68.7	148.8	309.4	165.1	692.9	106.95	202.04	373.14	233.92	921.05	5.6	15.1	53.2	55.2	129.1	49.2	132.1	467.0	485.0	1133.4						
11	101108020	RTAC	6.2	7.8	17.1	35.2	18.8	78.9	48.2	105.1	217.0	115.8	488.2	75.04	145.28	261.80	164.12	646.21	5.6	15.1	53.2	55.2	129.1	34.5	92.7	327.7	340.3	785.2						
11	101108040	RTAC	2.0	7.8	17.1	35.2	18.8	78.9	15.5	33.8	69.8	37.8	156.3	24.12	46.69	84.15	52.75	207.71	5.6	15.1	53.2	55.2	129.1	11.1	29.8	105.3	109.4	255.6						
11	101108050	RTAC	1.1	8.0	17.5	36.1	19.3	80.9	8.7	16.9	39.0	20.8	87.4	13.48	26.11	47.06	29.50	116.16	5.7	15.4	54.5	56.6	132.4	6.2	16.7	58.9	61.2	142.9						
11	101107010	RTAC	20.4	8.0	17.5	36.1	19.3	80.9	163.6	359.9	737.0	393.3	1650.7	254.78	493.23	888.93	557.27	2194.21	5.7	15.4	54.5	56.6	132.4	117.2	314.8	1112.8	1155.3	2700.0						
11	101108010	RTAC	9.3	2.8	6.5	36.1	28.6	77.0	28.3	60.0	352.1	273.9	712.3	40.83	82.87	424.68	388.16	936.63	2.0	5.7	57.5	61.3	142.3	16.4	51.6	518.5	785.0	1241.7						
11	101108020	RTAC	9.7	2.7	6.1	35.6	27.7	72.0	25.6	58.5	343.4	267.2	694.8	39.93	80.84	414.28	378.65	933.68	1.9	5.3	57.5	61.3	142.3	18.0	69.2	649.5	484.1	1241.7						
11	101108030	RTAC	4.3	6.2	23.8	101.2	38.8	170.0	28.4	101.1	430.2	164.8	722.5	41.18	139.88	233.27	45.21	152.8	4.5	21.0	152.8	113.9	282.2	19.0	69.2	649.5	484.1	1241.7						
11	101108020	RTAC	2.7	8.7	33.2	141.1	54.1	237.0	23.0	87.9	373.9	143.3	628.1	35.80	121.42	451.05	203.00	811.27	6.2	29.2	213.0	158.8	407.3	16.5	77.5	564.6	420.9	1079.4						
12	101201010	RTAC	2.6	2.6	10.1	42.9	16.4	72.0	43.8	187.6	713.3	273.3	1198.1	68.30	231.62	860.43	387.24	1547.59	1.9	6.9	84.7	82.6	182.1	31.4	147.8	1077.0	802.8	2059.1						
12	101201010	RTAC	2.0	6.9	40.5	31.5	82.0	62.3	142.2	635.0	649.7	1689.2	97.08	196.55	1007.14	820.58	2221.35	2.2	6.1	61.2	92.6	162.1	21.0	58.8	1260.6	808.8	3389.3							
12	101202010	RTAC	9.7	3.0	6.8	40.5	31.5	82.0	29.3	66.8	382.4	305.3	793.8	45.62	92.36	473.28	432.58	1043.82	2.2	6.1	61.2	92.6	162.1	44.7	125.4	1260.6	808.8	3389.3						
12	101202020	RTAC	16.9	4.1	9.3	54.8	41.5	108.0	67.4	153.9	903.3	702.8	1827.4	105.02	212.82	1089.52	965.87	2403.03	2.9	6.0	60.6	122.0	213.5	48.3	135.7	1363.7	2084.7	3612.4						
12	101203010	RTAC	14.0	4.1	9.3	54.8	42.7	111.0	57.2	130.5	765.9	596.0	1548.6	89.06	180.30	923.68	844.48	2037.72	2.9	6.2	62.8	125.4	219.4	41.0	115.1	1156.4	1750.8	3083.2						
12	101203020	RTAC	22.0	4.1	9.3	54.8	42.7	111.0	80.3	208.0	1209.3	940.9	2446.4	140.60	284.66	1458.63	1333.28	3217.14	2.8	7.9	78.9	120.9	211.5	31.7	89.1	1875.7	2784.1	4836.2						
12	101204010	RTAC	11.2	3.9	9.0	52.8	41.2	107.0	44.3	101.0	592.9	461.3	1199.5	68.94	139.57	715.15	653.69	1577.34	2.8	7.9	78.9	120.9	211.5	31.7	89.1	1875.7	2784.1	4836.2						
12	101204020	RTAC	7.8	3.9	9.0	52.8	41.2	107.0	31.2	71.1	417.3	324.7	844.2	48.52	98.23	503.35	460.09	1110.19	2.8	7.9	78.9	120.9	211.5	22.3	62.7	630.0	853.9	1668.9						
12	101205010	RTAC	11.0	13.8	22.3	66.3	26.8	131.0	151.9	245.6	751.6	293.2	1442.3	236.55	339.43	908.57	415.50	1898.04	8.9	19.7	103.1	78.2	210.9	108.8	216.8	1134.7	861.4	2321.8						
12	101205020	RTAC	8.1	21.2	34.2	104.7	40.9	201.0	171.2	276.8	647.4	330.6	1628.1	268.69	382.88	1022.08	468.44	2139.68	15.2	30.2	158.1	120.0	323.5	122.7	244.2	1279.3	971.2	2617.4						
12	101205030	A1	6.7	26.7	43.3	132.4	51.6	254.0	179.2	289.8	888.6	346.0	1701.8	279.10	400.50	1089.67	480.25	2239.52	19.2	34.2	166.7	116.4	338.5	128.4	229.4	1116.6	793.4	2287.8						
12	101206010	A1	5.5	73.2	159.8	329.8	175.9	736.3	403.1	879.5	1816.1	969.1	4087.8	627.85	1215.42	2180.54	1373.23	5407.04	52.4	126.4	415.0	403.4	987.1	288.9	698.3	2266.8	2222.5	5484.2						
12	101206020	RTAC	3.2	46.2	100.8	208.3	111.1	468.5	146.1	318.8	658.2	351.2	1474.2	227.54	440.48	793.88	497.68	1659.80	33.1	89.0	314.5	328.5	763.1	104.7	281.1	963.7	1031.6	2411.3						
12	101206030	RTAC	2.1	45.0	98.3	202.9	108.3	454.5	321.2	700.7	1446.9	772.1	3240.9	500.22	968.35	1745.24	1064.08	4307.89	32.3	86.7	308.4	318.1	743.5	230.2	616.0	2184.4	2286.3	5300.9						
12	101206040	RTAC	2.6	42.7	93.1	192.2	102.6	430.8	109.2	338.3	482.1	262.8	1102.3	170.13	329.34	593.57	372.10	1465.15	30.6	82.1	280.2	301.3	704.3	78.3	210.2	742.9	771.5	1825.3						
12	101206050	RTAC	1.4																															

Appendix D - Complete Compliance: Traffic, Trk Km/day, Cost/day, T.I.F./day, T.I.F. km/day

Hwy No	Cont. Seq	Ld	Chs	(km)	L Traffic		HT	Sgls	Dbls	Tot	Trk		km	/day	Sgls	Dbls	Tot	Cost		per HT	day Sgls	(\$)	Dbls	Tot	TLF		per HT	day Sgls	Dbls	Tot	TLF LT	km HT	per Sgls	day	Dbls	Tot
					LT	HT					LT	HT						LT	HT						LT	HT										
12	10121020	RTAC	85	07	5.0	10.4	5.9	22.0	4.7	32.7	68.2	38.3	143.9	7.40	45.13	82.28	54.23	189.02	0.5	4.4	15.7	17.2	37.9	3.4	28.8	103.0	112.4	247.8								
12	101212010	RTAC	12	46	10.9	49.6	33.6	99.0	5.7	13.5	81.3	41.4	121.8	8.04	19.61	73.88	58.63	159.96	3.3	9.7	75.2	98.8	187.0	4.1	11.6	92.5	121.6	230.0								
12	101212020	RTAC	81	38	9.1	41.2	27.9	82.0	34.7	82.3	374.1	252.7	743.7	53.98	113.67	451.24	358.11	977.00	2.7	8.0	62.3	81.9	154.9	24.6	72.6	564.8	742.4	1404.6								
12	101213010	RTAC	40	18	4.2	19.1	12.9	38.0	7.0	16.6	75.7	51.1	150.5	10.92	23.00	91.30	72.48	197.68	1.3	3.7	28.9	37.9	71.8	5.0	14.7	114.3	150.2	284.2								
12	101213020	RTAC	37	18	4.2	19.1	12.9	38.0	6.6	15.7	71.5	48.3	142.1	10.31	21.72	86.23	68.43	188.69	1.3	3.7	28.9	37.9	71.8	5.0	14.7	114.3	150.2	284.2								
13	201301010	RTAC	25	16.9	33.1	223.0	103.0	376.0	42.6	63.7	564.1	280.7	851.3	66.87	115.88	680.43	369.34	1232.13	12.1	29.2	338.6	302.7	680.8	30.7	73.8	851.7	785.7	1721.9								
13	201301020	RTAC	38	7.3	14.3	96.1	44.4	187.0	27.3	53.5	360.2	168.5	607.5	42.58	73.88	434.53	235.67	786.85	5.2	12.8	145.0	130.4	283.2	19.6	47.2	543.9	498.0	1068.6								
13	201303010	RTAC	100	61	11.9	80.1	37.0	135.0	60.8	118.8	800.6	369.9	1350.0	94.82	164.17	965.92	524.15	1740.56	4.4	10.5	120.8	108.7	244.4	43.5	104.8	1208.6	1086.7	2443.8								
13	201303020	RTAC	14.8	9.0	17.6	110.0	54.5	196.0	130.3	254.8	1717.0	793.4	2895.5	202.93	372.82	2071.05	1124.18	3750.27	6.4	15.4	178.2	160.2	320.4	74.2	178.6	2080.0	1852.2	4195.0								
13	201303030	RTAC	2.9	9.0	17.5	118.0	54.5	196.0	25.5	49.9	336.3	155.4	587.2	39.75	68.97	405.87	220.20	734.59	6.4	15.4	178.2	160.2	320.4	74.2	178.6	2080.0	1852.2	4195.0								
14	201401010	B1	50	33.9	73.9	152.5	81.4	341.7	169.3	369.4	762.7	407.0	1708.3	267.67	510.42	919.92	578.69	2270.70	18.8	44.3	136.7	113.8	313.7	84.2	221.7	683.5	568.9	1568.3								
14	201402010	B1	15.2	20.5	44.7	92.3	49.3	208.8	311.5	679.6	1403.3	748.8	3143.3	787.21	1523.91	2748.53	1721.78	6778.43	21.0	48.4	152.3	128.8	348.4	281.2	681.9	2040.6	1698.6	4682.4								
14	201403010	B1	11.7	20.5	44.7	92.3	49.3	208.8	240.2	524.0	1062.0	577.4	2423.6	374.08	724.15	1305.13	818.17	3221.52	11.4	26.8	82.7	68.9	189.8	173.3	407.9	1257.8	1046.8	2885.7								
14	201403020	B1	5.0	17.7	38.7	79.8	42.8	178.8	88.3	192.5	387.6	212.2	890.5	137.45	268.08	479.55	300.63	1183.71	9.9	23.2	71.5	59.6	164.2	49.1	115.6	358.3	286.6	817.6								
15	101501010	B1	1.8	39.7	64.3	198.9	78.7	377.8	71.4	115.7	354.5	138.1	878.7	111.27	159.84	427.58	195.72	694.41	22.1	38.6	178.5	107.3	344.4	39.8	69.4	317.7	193.1	620.0								
15	101502010	B1	2.2	27.6	44.7	137.0	53.4	282.7	58.9	97.0	297.3	115.9	570.1	84.10	120.80	323.18	147.92	675.98	16.4	28.7	131.2	78.7	256.0	30.0	52.5	240.1	145.9	468.5								
15	101502010	B1	4.4	25.6	41.5	127.1	49.5	243.8	112.2	181.7	556.8	217.0	1087.7	174.78	251.07	671.62	307.42	1404.88	14.3	24.8	113.9	69.2	222.3	62.4	58.2	469.0	303.3	973.6								
15	101502021	B1	4.9	30.3	49.1	150.8	58.7	288.7	148.7	240.7	737.8	287.5	1414.7	231.58	332.67	889.92	407.34	1681.52	16.9	29.5	134.9	82.0	263.3	82.7	144.5	681.2	401.9	1290.3								
15	101503010	B1	10.0	5.8	40.2	83.9	47.1	177.0	58.2	400.2	835.6	468.9	1782.9	90.81	553.01	1007.93	664.48	2318.04	3.3	24.1	75.2	65.8	166.4	32.4	240.2	748.9	655.5	1877.0								
15	101503020	B1	1.7	3.4	23.2	48.3	27.1	102.0	5.8	39.6	82.7	48.4	174.4	8.96	54.71	98.72	65.74	229.14	9.9	13.9	43.3	37.9	97.0	14.7	108.8	339.3	297.0	758.7								
15	101503030	B1	7.8	3.4	23.2	48.3	27.1	102.0	28.4	181.3	378.6	212.4	788.7	41.05	250.53	458.62	301.03	1048.24	1.9	13.9	43.3	37.9	97.0	14.7	108.8	339.3	297.0	758.7								
15	101504010	B1	9.8	3.4	23.2	48.3	27.1	102.0	32.3	222.3	464.1	280.5	978.2	50.33	307.17	559.85	368.08	1286.42	1.9	13.9	43.3	37.9	97.0	14.7	108.8	339.3	297.0	758.7								
15	101505010	B1	21.8	1.8	12.5	26.1	14.6	55.0	39.6	272.3	588.6	319.1	1199.6	61.85	376.28	685.83	452.14	1575.81	1.0	7.5	23.4	20.5	52.3	22.0	163.4	508.6	448.1	1141.1								
15	101505020	B1	1.8	1.1	7.7	18.1	9.0	34.0	2.0	13.8	28.8	16.2	60.9	3.13	19.09	34.00	22.94	79.95	0.8	4.8	14.4	12.8	32.3	1.1	8.3	25.9	22.8	57.9								
16	201615010	B1	12.3	9.9	22.6	135.2	103.1	288.0	121.9	278.2	1633.4	1270.9	3304.4	189.81	384.48	1970.18	1800.85	4345.44	5.5	13.5	118.7	144.1	281.9	67.8	167.0	1463.6	1776.8	3475.3								
16	201615020	B1	8.9	13.9	31.6	188.8	145.4	378.0	123.7	282.3	1657.3	1289.5	3352.9	182.69	390.13	1999.08	1827.24	4408.11	7.8	18.1	187.4	203.2	397.5	88.8	188.2	1485.3	1802.7	3528.2								
16	201616020	A1	2.0	14.7	33.6	197.2	153.5	399.0	108.2	249.9	1449.2	1127.6	2931.8	168.49	341.13	1749.00	1597.76	3655.38	8.1	19.9	174.1	211.3	413.3	60.2	148.2	1286.7	1576.3	3083.4								
16	201618000	B1	2.0	14.7	33.6	197.2	153.5	399.0	29.7	87.9	398.4	310.0	808.0	46.32	93.78	480.55	439.24	1058.89	10.6	26.8	248.3	351.9	637.4	21.3	53.7	501.6	710.9	1287.5								
16	201618041	B1	5.8	14.7	33.6	197.2	153.5	399.0	86.1	196.5	1153.8	697.7	2334.2	134.15	271.59	1391.68	1272.08	3069.48	8.2	20.2	178.6	214.5	419.6	47.8	118.0	1034.0	1254.8	2454.8								
16	201618041	B1	4.7	14.7	33.6	197.2	153.5	399.0	68.6	158.6	918.1	715.1	1859.3	108.88	216.35	1108.58	1013.30	2445.09	8.2	20.2	178.6	214.5	419.6	38.2	94.0	823.7	989.7	1955.5								
16	201618010	B1	8.5	8.5	9.2	145.5	70.0	231.2	55.0	78.5	1237.0	594.9	1885.5	85.63	108.53	1482.06	843.03	2528.27	3.8	5.5	130.4	97.8	237.4	30.8	47.1	1108.6	831.7	2016.0								
16	20162020	B1	0.9	5.7	8.1	127.3	61.2	202.2	41.3	59.0	929.0	448.8	1478.1	64.31	81.51	1120.58	633.12	1898.50	3.1	4.8	114.0	85.6	207.8	23.0	35.4	832.8	624.6	1515.5								
16	20162020	B1	2.4	8.0	11.4	180.2	98.7	286.3	19.4	27.7	436.0	209.7	692.8	30.18	36.26	525.95	297.18	891.55	4.5	6.8	181.5	121.1	293.9	10.6	16.8	390.8	293.2	711.3								
16	20162030	B1	4.0	8.7	12.4	195.3	93.9	310.3	34.3	49.0	771.4	371.0	1225.7	53.40	67.69	930.50	525.74	1577.33	4.8	7.4	175.0	131.3	318.6	19.1	29.4	691.3	518.7	1258.5								
16	20162030	B1	4.5	8.7	12.4	195.3	93.9	310.3	38.9	55.6	874.9	420.8	1390.2	60.57	76.77	1055.36	586.28	1788.97	4.8	7.4	175.0	131.3	318.6	21.6	33.3	784.1	588.3	1427.4								
16	20162040	B1	1.9	11.6	16.6	260.8	125.4	414.4	21.8	30.8	485.1	233.3	770.8	33.58	42.56	585.16	330.62	991.92	6.5	9.9	233.7	175.4	425.5	12.0	18.5	434.8	328.2	791.4								
16	20162040	B1	1.0	8.3	11.8	188.5	89.7	286.3	8.6	12.3	193.9	93.3	308.1	13.42	17.02	233.93	132.17	398.54	4.8	7.4	175.0	131.3	318.6	4.8	7.4	173.8	130.4	316.4								
16	20162040	B1	11.9	8.3	11.8	188.5	89.7	286.3	96.9	141.3	2247.7	1070.0	3534.8	154.00	195.20	2683.44	1516.18	4548.78	4.6	7.1	187.1	125.4	304.2	55.0	64.6	1693.7	1495.8	3628.3								
16	20162050	RTAC	6.8	8.2	11.8	185.2	89.1	284.3	54.6	78.0	1228.0	590.6	1851.2	85.01	107.75	1481.22	836.90	2510.87	5.9	10.4	278.8	261.7	557.8	38.1	68.8	1854.0	1738.1	3698.9								
16	20162050	RTAC	7.5	8.5	13.9	139.2	140.7	302.3	63.8	104.7	1049.7	1061.1	2278.4	99.30	144.75	1268.18	640.13	1823.85	6.1	12.3	210.2	413.4	641.9	49.5	92.4	1584.8	1117.3	2480.2								
16	20162050	RTAC	3.2	8.5	13.9	139.2	140.7	302.3	27.1	44.6	446.9	451.7	970.4	42.28	61.62	539.05	640.13	1823.85	6.1	12.3	210.2	413.4	641.9	49.5	92.4	1584.8	1117.3	2480.2								
16	20162050	RTAC	9.2	9.8	15.8	158.6	160.3	344.3	31.4	51.6	517.0	522.6	1122.6	740.51	623.																					

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, T.F. km/day

Hwy No	Corr. Sec	Ld Cls	L (km)	Trk		HT	Sgls	Dbis	Tot	Trk LT	HT	Sgls	Dbis	Tot	Cost LT	per HT	day Sgls	(S) Dbis	Tot	TLF LT	per HT	day Sgls	Dbis	Tot	TLF LT	HT	per Sgls	day	Tot
				LT	HT																								
2	200214010	B1	1.5	8.0	18.2	106.8	83.1	216.0	11.7	26.7	157.0	122.1	317.5	18.25	36.95	189.31	173.04	417.55	4.4	10.9	95.7	116.1	227.2	6.5	16.0	140.7	170.7	333.9	
2	200214020	B1	7.8	8.0	16.2	106.8	83.1	216.0	62.5	142.6	837.1	651.3	1683.4	97.32	197.04	1009.67	922.89	2276.93	4.1	10.9	95.7	116.1	227.2	34.8	85.6	750.2	910.5	1781.0	
2	200214030	B1	9.0	7.4	16.9	99.4	77.3	201.0	66.5	151.8	891.2	693.4	1803.0	103.62	209.78	1074.98	982.58	2376.06	4.1	10.2	89.0	106.1	211.4	37.0	91.1	798.7	969.4	1898.2	
2	200214040	B1	12.3	6.2	14.2	83.5	65.0	169.0	76.8	175.3	1029.2	800.8	2082.1	119.66	242.26	1241.39	1134.69	2736.00	3.5	8.5	74.9	90.9	177.7	42.7	105.2	922.3	1119.4	2199.7	
2	200215010	B1	11.4	6.2	14.1	83.0	64.6	166.0	70.7	161.3	946.7	736.6	1915.2	110.07	222.84	1141.69	1043.74	2516.55	3.4	8.5	74.4	90.3	176.7	39.3	96.8	846.4	1026.7	2014.2	
2	200215020	B1	5.2	6.2	14.1	83.0	64.6	166.0	32.0	73.1	429.3	334.0	868.6	49.82	101.06	517.86	473.35	1142.16	3.4	8.5	74.4	90.3	176.7	17.8	43.8	304.6	487.0	913.5	
2	200215030	B1	4.3	17.7	28.6	87.5	34.2	168.0	76.6	123.9	379.1	147.9	372.4	119.30	171.19	857.28	209.56	957.28	9.8	17.2	78.5	47.7	153.2	42.6	74.4	339.7	206.7	663.4	
2	200215040	B1	3.8	17.7	28.6	87.5	34.2	168.0	67.9	106.9	336.2	131.2	645.1	105.80	151.82	405.49	185.84	848.98	9.8	17.2	78.5	47.7	153.2	37.8	65.9	301.3	183.3	568.4	
2	200216010	B1	1.6	13.5	21.8	66.7	26.0	126.0	21.6	34.9	106.7	41.6	204.8	33.59	48.20	129.73	59.00	269.51	7.5	13.1	59.8	36.4	116.7	12.0	20.9	85.6	251.2	186.8	
2	2002201010	B1	9.0	1.9	4.4	25.7	20.0	52.0	17.3	39.4	231.3	180.0	468.0	26.90	54.45	279.03	255.05	615.43	1.1	2.6	23.0	28.0	54.7	9.8	23.7	207.3	482.2	482.2	
2	2002201020	B1	4.0	1.9	4.4	25.7	20.0	52.0	7.7	17.5	102.6	78.8	207.5	11.92	24.14	123.70	113.07	272.84	1.1	2.6	23.0	28.0	54.7	4.3	10.5	91.9	111.8	216.2	
2	2002201030	B1	21.1	3.0	6.9	40.5	31.5	82.0	63.9	145.6	855.6	665.6	1731.0	99.48	201.41	1032.08	943.37	2276.34	1.7	4.1	36.3	44.1	86.2	35.5	87.5	766.6	930.7	1820.5	
2	2002201010	B1	25.1	3.1	7.0	41.0	31.9	83.0	76.7	175.1	1027.7	799.6	2079.2	119.49	241.92	1239.84	1133.09	2734.15	1.7	4.2	36.8	44.6	87.3	42.7	105.1	821.0	1117.8	2196.6	
2	2002202020	B1	7.0	2.9	6.7	36.0	30.4	79.0	20.3	46.2	271.4	211.2	549.1	31.55	63.89	327.36	299.22	722.02	1.6	4.0	35.0	42.5	83.1	11.3	27.7	243.2	295.2	577.4	
2	2002203010	B1	6.2	2.9	6.6	36.8	30.0	78.0	23.6	53.9	316.2	246.0	639.6	36.76	74.42	361.35	349.57	841.09	1.6	3.8	34.6	41.9	82.0	13.1	32.3	263.3	343.9	672.7	
2	2002204020	B1	5.1	2.5	5.8	34.1	28.5	68.0	13.0	29.6	173.6	135.1	351.2	20.18	40.87	209.40	191.40	461.05	1.4	3.5	30.6	37.1	72.8	7.2	17.8	153.6	188.6	369.4	
2	2002204021	B1	2.1	7.5	17.2	100.8	78.5	204.0	15.4	35.2	206.7	160.8	418.2	24.03	48.68	249.34	227.81	549.95	4.2	10.3	90.4	106.7	214.5	8.8	21.1	185.3	224.6	439.8	
2	2002205010	B1	3.0	8.0	16.3	107.3	83.5	217.0	23.7	54.1	317.5	247.0	642.3	36.92	74.74	382.97	350.05	844.67	4.5	11.0	96.1	116.7	228.2	13.2	32.5	284.5	345.3	675.5	
2	2002205020	B1	0.7	5.0	11.5	67.2	52.3	136.0	33.8	77.2	453.1	352.5	916.6	52.68	108.66	548.52	499.55	1205.41	2.8	6.9	60.2	73.1	143.0	16.6	46.3	406.1	482.8	964.0	
2	2002205030	B1	6.4	4.2	8.6	56.4	43.8	114.0	27.0	61.7	362.3	281.9	733.0	42.13	85.29	437.04	399.48	963.94	2.3	5.6	50.5	61.3	119.8	15.1	37.0	324.7	394.1	770.9	
2	2002206010	B1	4.2	6.6	15.0	88.0	68.5	178.0	27.6	62.9	369.5	287.5	747.6	42.97	86.99	445.74	407.43	983.12	3.7	9.0	78.9	96.7	187.2	15.3	37.8	319.2	401.9	786.3	
2	2002207010	B1	6.8	9.9	21.7	44.8	23.8	100.0	66.8	146.5	301.1	180.7	675.0	104.06	202.41	363.13	227.64	697.26	5.5	13.0	40.0	40.0	81.6	37.2	87.9	269.6	224.6	619.5	
2	2002207020	B1	3.9	11.7	25.6	52.6	28.1	118.0	45.6	99.9	205.2	109.5	460.2	70.98	138.00	247.57	155.20	611.73	6.5	15.4	47.2	39.3	106.3	25.4	59.9	103.9	153.1	422.3	
2	2002207021	B1	1.8	12.2	26.7	54.8	28.3	123.0	19.6	43.0	88.3	47.1	198.0	30.53	59.38	106.53	66.78	263.04	6.8	16.0	49.2	40.9	112.9	10.9	25.8	78.2	65.9	181.7	
2	2002207030	B1	5.3	12.2	26.7	54.8	28.3	123.0	64.7	141.7	291.3	155.4	653.1	100.71	195.96	351.36	220.27	868.19	6.8	16.0	49.2	40.9	112.9	36.0	85.1	261.1	217.3	599.4	
2	2002207040	B1	5.0	12.2	26.7	54.8	28.3	123.0	60.4	132.4	272.1	145.2	610.1	94.07	182.95	328.20	205.75	810.96	6.8	16.0	49.2	40.9	112.9	33.8	79.5	243.6	203.0	559.9	
2	2002208010	B1	2.3	12.7	27.8	57.1	30.5	128.0	29.3	64.2	131.9	70.4	295.7	45.59	88.67	156.07	99.72	393.04	7.1	16.7	51.2	42.6	117.5	16.3	38.5	116.2	98.4	271.4	
2	2002208020	B1	7.5	12.7	27.8	57.1	30.5	128.0	94.4	206.9	425.3	227.0	653.6	147.04	149.05	287.39	321.60	827.60	7.1	16.7	51.2	42.6	117.5	52.5	124.2	381.2	317.3	875.2	
2	2002208030	B1	4.4	11.3	24.7	50.8	27.1	114.0	33.2	72.7	149.5	79.8	335.2	51.68	100.51	180.30	113.03	445.52	6.3	14.8	45.6	37.9	104.6	18.5	43.7	134.0	111.5	307.8	
2	2002208040	B1	2.9	11.3	24.7	50.8	27.1	114.0	48.2	107.9	221.7	119.3	497.0	76.84	149.05	287.39	321.60	827.60	5.5	12.8	39.8	32.9	90.8	72.0	169.4	523.3	434.8	1198.5	
2	2002209010	B1	9.5	3.7	8.0	16.5	8.8	37.0	34.9	76.2	157.3	83.9	352.3	54.37	105.25	189.69	119.92	466.23	2.0	4.8	14.8	12.3	33.9	19.4	45.7	140.9	117.3	323.4	
2	2002210020	B1	1.8	3.7	8.0	16.5	8.8	37.0	6.7	14.5	30.0	16.0	67.3	10.38	20.10	36.23	22.71	89.42	2.0	4.8	14.8	12.3	33.9	3.7	6.7	26.9	22.4	61.8	
20	202001010	B1	12.4	6.8	14.9	30.8	16.4	68.9	84.7	184.6	381.6	203.6	854.7	131.93	255.38	460.28	286.55	1136.15	3.8	8.9	27.6	23.0	63.3	47.1	110.9	342.0	284.7	784.7	
20	202002010	B1	12.4	14.8	32.2	66.5	35.5	148.9	182.9	369.1	624.0	439.7	1845.8	284.89	551.49	993.94	623.10	2453.42	6.2	19.3	59.6	49.8	136.7	101.8	236.5	739.5	614.7	1694.5	
20	202003010	B1	1.6	14.6	32.2	66.5	35.5	148.9	23.6	51.5	109.3	56.7	238.2	36.76	71.16	128.25	60.40	316.57	6.2	19.3	59.6	49.8	136.7	13.1	30.9	85.3	78.3	218.6	
20	202004010	B1	11.8	8.5	14.3	29.4	15.7	65.9	76.8	187.7	346.2	184.7	775.4	119.66	231.66	417.55	261.78	1030.66	3.6	8.6	26.4	22.0	60.5	42.8	100.6	310.2	256.2	711.9	
20	202004020	B1	11.4	4.9	10.6	21.9	11.7	49.0	55.5	121.1	250.0	133.4	560.0	86.43	167.32	301.56	189.05	744.36	2.7	6.4	19.6	16.3	44.9	30.9	72.7	224.1	186.5	514.1	
20	202005010	B1	7.8	5.4	11.9	24.5	13.1	54.9	42.6	92.9	191.8	102.4	429.7	66.32	128.36	231.36	145.05	571.13	3.0	7.1	22.0	16.3	50.4	23.7	55.8	171.9	143.1	394.5	
20	202005020	B1	3.3	5.5	12.1	25.0	13.3	55.9	45.9	100.2	206.6	110.4	463.2	71.50	136.40	249.44	146.37	615.72	3.1	7.3	22.4	16.6	51.4	25.5	60.1	185.3	154.3	425.3	
20	202006010	B1	8.4	5.5	12.1	25.0	13.3	55.9	18.6	40.6	83.9	44.8	188.0	29.01	56.16	101.22	63.48	249.86	3.1	7.3	22.4	16.6	51.4	10.4	24.4	75.2	62.6	172.6	
20	202006020	B1	11.5	4.4	9.5	19.8	10.5	44.6	100.9	125.3	120.2	504.6	77.68	150.77	271.74	170.35	670.75	2.4	5.7	17.6	14.6	40.4	27.8	65.5	201.9	168.1	463.3		
20	202007010	B1	15.3	3.2	6.8	14.3	7.6	32.0	48.3	105.4	217.6	116.1	487.5	75.25	145.68	262.53	164.58	648.01	1.6	4.1	12.8	10.6	29.3	26.9	63.3	185.1	162.4	447.6	
20	202007020	B1	8.4	2.3	5.0	10.3	5.5	23.0	19.0	41.5	65.6	45.8	192.1	29.65	57.39	103.44	64.85	255.33	1.3	3.0									

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF km/day

Hwy No	Contr Seq	Ld	Chs	L	Tranf	LT	HT	Sgls	Dbls	Tot	Trk LT	Trk HT	km /day	Dbls	Tot	Cost LT	Per HT	day Sgls	(%) Dbls	Tot	TLF LT	Per HT	day Sgls	Dbls	Tot	TLF LT	km HT	per Sgls	day Dbls	Tot	
200	120002040	81	96	2.4	5.2	2.4	5.2	10.7	5.7	24.0	2.6	49.7	102.5	54.7	229.7	35.45	68.63	123.69	77.54	305.31	1.3	3.1	9.6	8.0	22.0	12.7	29.6	91.9	76.5	210.9	
200	120003010	81	92	0.7	1.5	0.7	1.5	3.1	1.7	7.0	6.4	14.0	28.6	15.4	64.6	9.97	19.31	34.80	21.61	85.99	0.4	0.9	2.8	2.3	6.4	3.6	8.4	25.9	21.5	59.3	
200	120003020	81	2.1	0.7	1.5	3.1	1.7	3.5	1.7	7.0	1.4	3.1	6.5	3.5	14.5	2.25	4.35	7.83	4.91	19.33	0.4	0.9	2.8	2.3	6.4	3.6	8.4	5.8	4.8	13.4	
200	120003030	81	10.9	1.5	3.2	6.7	3.6	6.7	3.6	15.0	16.2	35.3	72.8	38.6	163.0	25.16	48.71	87.80	55.04	216.71	0.8	1.9	6.0	5.0	13.6	9.0	21.2	65.2	54.3	149.7	
200	120004010	81	2.3	4.8	10.6	21.9	11.7	49.0	11.2	24.3	50.3	26.8	112.8	38.0	112.8	17.38	33.64	60.63	38.01	149.65	2.7	6.4	19.6	16.3	44.9	6.2	14.6	45.0	37.5	103.4	
200	120004020	81	6.4	4.8	10.6	21.9	11.7	49.0	11.2	24.3	50.3	26.8	112.8	38.0	112.8	17.38	33.64	60.63	38.01	149.65	2.7	6.4	19.6	16.3	44.9	6.2	14.6	45.0	37.5	103.4	
200	120004030	81	6.5	11.6	25.3	52.2	27.8	116.9	27.8	116.9	27.8	116.9	27.8	116.9	27.8	116.9	15.371	29.755	53.627	33.618	132.370	6.4	15.2	46.8	38.9	107.3	54.9	129.2	398.4	331.7	914.2
200	120005010	81	4.0	4.8	10.4	21.4	11.4	48.0	19.0	41.5	85.8	45.7	191.8	29.6	64.75	25.496	57.31	103.29	64.75	254.96	2.6	6.2	19.2	16.0	44.0	10.6	24.9	76.7	63.9	176.1	
200	120005020	81	10.3	19.6	43.2	89.2	47.6	189.8	203.5	444.1	817.0	489.3	2053.9	317.02	693.36	37.026	61.370	110.806	693.36	2730.15	11.0	25.9	79.9	66.5	183.4	113.3	268.8	821.8	684.0	1885.7	
201	120105010	81	6.1	9.0	19.7	40.6	21.7	90.9	54.6	119.1	246.0	131.2	550.9	85.03	164.61	85.03	164.61	298.67	165.96	732.26	5.0	11.8	36.4	30.3	83.5	30.4	71.5	220.4	183.5	505.8	
201	120105020	81	3.1	7.7	16.6	34.8	18.8	77.9	23.6	51.4	106.1	56.8	237.7	36.68	71.01	36.68	71.01	127.96	80.23	315.91	4.3	10.1	31.2	26.0	71.5	13.1	30.8	95.1	79.2	218.2	
201	120106010	81	1.3	7.7	16.6	34.8	18.8	77.9	23.6	51.4	106.1	56.8	237.7	36.68	71.01	36.68	71.01	127.96	80.23	315.91	4.3	10.1	31.2	26.0	71.5	13.1	30.8	95.1	79.2	218.2	
201	120106020	81	10.8	6.2	13.6	28.1	15.0	62.9	66.3	144.7	286.7	159.4	689.0	103.28	189.90	103.28	189.90	360.27	225.65	889.28	3.5	8.2	25.2	21.0	57.8	36.9	66.8	287.7	222.8	614.2	
201	120106030	81	1.5	6.2	13.6	28.1	15.0	62.9	66.3	144.7	286.7	159.4	689.0	103.28	189.90	103.28	189.90	360.27	225.65	889.28	3.5	8.2	25.2	21.0	57.8	36.9	66.8	287.7	222.8	614.2	
201	120106040	81	13.6	5.9	13.6	28.1	15.0	62.9	66.3	144.7	286.7	159.4	689.0	103.28	189.90	103.28	189.90	360.27	225.65	889.28	3.5	8.2	25.2	21.0	57.8	36.9	66.8	287.7	222.8	614.2	
201	120107010	81	9.8	16.0	35.0	72.3	39.6	161.8	157.3	343.3	708.8	378.2	1597.6	245.05	474.37	245.05	474.37	854.95	535.96	2110.32	6.9	21.0	64.8	53.9	148.6	87.5	206.0	635.2	528.7	1457.5	
201	120107020	81	10.6	4.7	10.2	21.0	11.2	47.0	49.3	107.5	222.0	118.5	497.2	76.75	149.57	76.75	149.57	207.76	167.86	660.93	2.6	6.1	18.6	15.6	43.1	27.4	64.5	198.9	165.6	456.5	
201	120108010	81	10.9	2.2	4.8	9.8	5.2	22.0	23.7	51.7	106.8	57.0	236.1	36.91	71.45	36.91	71.45	128.77	80.72	317.84	1.2	2.9	8.6	7.3	20.2	13.2	31.0	95.7	79.6	219.5	
201	120108020	81	20.4	3.0	6.5	13.4	7.1	30.0	60.6	132.3	273.2	145.8	612.0	84.46	162.86	84.46	162.86	329.56	206.60	813.47	1.7	3.9	12.0	10.0	27.5	33.7	79.4	244.9	203.8	561.8	
201	120109010	81	11.5	1.6	3.5	7.1	3.6	14.5	29.9	61.8	123.7	63.8	254.3	36.91	71.45	36.91	71.45	128.77	80.72	317.84	1.2	2.9	8.6	7.3	20.2	13.2	31.0	95.7	79.6	219.5	
201	120109020	81	17.2	0.9	1.9	4.0	2.1	9.0	15.3	33.5	69.1	36.9	154.8	23.90	46.26	23.90	46.26	83.37	52.27	205.80	0.5	1.2	3.6	3.0	8.3	8.5	20.1	61.9	51.6	142.1	
201	120110201	81	11.8	0.8	1.3	0.7	3.0	5.6	1.3	0.7	3.0	5.6	15.8	8.4	35.4	5.46	10.57	19.04	11.94	47.01	0.2	0.4	1.2	1.0	2.8	2.0	4.6	14.1	11.8	32.5	
201	120110202	81	9.8	0.3	0.6	1.3	0.7	3.0	5.6	1.3	0.7	3.0	5.6	8.73	15.74	8.73	15.74	15.74	9.86	38.84	0.2	0.4	1.2	1.0	2.8	2.0	4.6	14.1	11.8	32.5	
201	120110203	81	10.3	0.7	1.5	3.1	1.7	7.0	7.1	15.6	32.2	17.2	72.0	11.12	21.52	38.79	24.32	38.79	24.32	95.74	0.4	0.8	2.8	2.3	6.4	4.0	9.3	28.6	24.0	66.1	
201	120110204	81	6.6	0.7	1.5	3.1	1.7	7.0	7.1	15.6	32.2	17.2	72.0	11.12	21.52	38.79	24.32	38.79	24.32	95.74	0.4	0.8	2.8	2.3	6.4	4.0	9.3	28.6	24.0	66.1	
201	120110205	81	5.7	3.2	6.9	14.3	7.6	32.0	18.2	39.8	81.6	43.6	183.2	26.27	54.73	25.53	53.84	98.84	61.84	243.48	1.8	4.1	12.6	10.8	29.3	10.1	23.6	73.3	61.0	166.0	
201	120110301	81	13.3	6.6	14.5	29.8	15.9	66.9	88.1	192.2	386.8	211.8	889.9	137.19	265.58	137.19	265.58	478.66	300.07	1181.51	3.7	8.7	26.6	22.3	61.4	25.5	60.1	185.3	154.3	425.2	
201	120110302	81	7.9	6.6	14.5	29.8	15.9	66.9	88.1	192.2	386.8	211.8	889.9	137.19	265.58	137.19	265.58	478.66	300.07	1181.51	3.7	8.7	26.6	22.3	61.4	25.5	60.1	185.3	154.3	425.2	
201	120110303	81	6.8	6.6	14.5	29.8	15.9	66.9	88.1	192.2	386.8	211.8	889.9	137.19	265.58	137.19	265.58	478.66	300.07	1181.51	3.7	8.7	26.6	22.3	61.4	25.5	60.1	185.3	154.3	425.2	
201	120110401	81	11.4	14.9	32.6	67.3	35.9	150.8	170.7	372.5	789.1	410.4	1721.7	265.88	514.72	265.88	514.72	927.68	581.55	2289.86	6.3	19.6	60.4	50.2	136.5	95.0	223.8	689.2	573.7	1501.3	
201	120110402	81	6.3	14.9	32.6	67.3	35.9	150.8	170.7	372.5	789.1	410.4	1721.7	265.88	514.72	265.88	514.72	927.68	581.55	2289.86	6.3	19.6	60.4	50.2	136.5	95.0	223.8	689.2	573.7	1501.3	
202	120201010	81	2.1	4.1	8.7	3.0	2.6	5.8	2.6	5.8	12.6	6.4	13.2	7.0	14.2	4.82	9.64	17.46	11.22	45.31	23.1	40.4	184.5	112.3	360.2	48.5	66.4	384.8	240.2	770.8	
202	120201020	81	10.5	12.5	20.3	62.0	24.2	119.0	130.9	211.8	648.0	252.8	1243.6	203.95	392.65	203.95	392.65	638.24	358.24	1636.47	7.0	12.2	35.6	33.6	108.5	72.9	127.1	590.7	353.4	1134.1	
202	120201030	81	2.4	12.5	20.3	62.0	24.2	119.0	30.2	48.8	149.4	58.3	266.8	47.03	67.48	47.03	67.48	180.26	82.62	377.41	7.0	12.2	35.6	33.6	108.5	72.9	127.1	590.7	353.4	1134.1	
203	120301010	81	14.5	0.5	1.1	2.2	1.2	5.0	7.2	15.7	32.4	17.3	72.5	11.19	21.87	39.06	24.48	39.06	24.48	96.41	0.3	0.6	2.0	1.7	4.6	4.0	9.4	29.0	24.2	66.6	
203	120301020	81	15.6	0.5	1.1	2.2	1.2	5.0	7.2	15.7	32.4	17.3	72.5	11.19	21.87	39.06	24.48	39.06	24.48	96.41	0.3	0.6	2.0	1.7	4.6	4.0	9.4	29.0	24.2	66.6	
203	120302010	81	6.6	0.5	1.1	2.2	1.2	5.0	4.3	9.3	19.2	10.3	43.1	6.65	12.86	23.19	14.54	23.19	14.54	57.23	0.3	0.8	2.0	1.7	4.6	4.0	9.4	31.5	26.3	72.4	
204	120401010	81	0.8	63.3	102.4	313.2	122.2	456.2	601.0	50.6	81.9	250.5	977.4	480.8	76.85	113.15	302.21	138.51	632.72	35.2	61.4	280.7	170.6	548.1	28.2	48.1	224.5	136.0	436.5		
204	120402010	81	2.1	12.4	20.1	61.5	24.0	118.1	118.1	257.4	416.3	1273.9	497.0	2444.7	400.84	575.32	1536.60	704.25	3317.11	69.2	120.7	551.5	335.6	1077.1	143.2	249.9	1141.7	694.8	2229.6		
204	120402020	81	4.9	26.0	42.1	126.7	50.2	247.0	126.7	205.3	628.1	245.0	1205.4	197.68	283.87	197.68	283.87	757.63	347.24	1596.22	14.5	25.2	115.3	70.2	225.3	70.6	123.2	562.6	342.6	1099.3	
204	120402030	81	9.0	13.5	21.8	66.7	28.0	128.0	121.8	197.1	603.0	235.2	1157.1	169.77	272.31	169.77	272.31	727.31	333.34	1522.73	7.5	13.1									

Appendix D. Complete Compliance: Traffic, Trk Km/day, Cost/day, TL, F/day, TL, F/km/day

Hwy No	Conv Seq	Ld Cts	L (km)	Traff LT	HT	Sgls	Obs	Tot	Trk LT	km HT	/day Sgls	Obs	Tot	Cost LT	HT	per HT	day Sgls	(\$)	Obs	Tot	TLF LT	per HT	day Sgls	Obs	Tot	TLF LT	km HT	per Sgls	day Obs	Tot
205	120504050	81	11.2	7.0	15.3	31.7	169	709	79.0	172.4	355.9	189.9	797.2	123.05	238.21	238.21	429.32	269.14	1059.71	3.9	9.2	28.4	236	65.1	44.0	103.5	319.0	265.5	731.9	
205	220501010	81	6.5	1.4	3.0	6.2	33	140	9.1	19.7	40.8	7.2	30.4	14.10	27.29	27.29	49.18	30.83	121.40	0.8	1.8	5.6	47	12.6	5.0	11.9	36.5	30.4	63.8	
205	220501020	81	1.9	1.6	3.5	7.1	3.6	16.0	3.0	6.6	13.6	2.8	10.4	4.69	9.07	9.07	16.35	10.25	40.37	0.9	2.1	6.4	5.3	14.7	1.7	3.9	12.2	10.1	27.8	
205	220501030	81	6.9	1.2	2.8	5.4	2.9	12.0	8.2	17.8	36.8	19.6	82.4	12.71	24.61	24.61	44.35	27.80	109.47	0.7	1.8	4.8	4.0	11.0	4.5	10.7	33.0	27.4	75.6	
205	220501040	81	5.4	4.8	10.4	21.4	11.4	48.0	25.7	56.1	115.6	61.8	259.4	40.04	77.51	77.51	139.70	67.58	344.83	2.6	6.2	19.2	16.0	44.0	14.3	33.7	103.8	86.4	236.2	
205	220501050	81	6.3	6.9	21.6	44.8	23.8	98.9	61.9	135.0	278.8	148.8	624.4	96.37	186.56	186.56	336.23	210.78	829.93	5.5	13.0	40.0	33.3	91.7	34.4	81.0	249.8	207.9	573.2	
205	220501060	81	6.3	9.7	21.2	43.7	23.3	97.9	60.7	132.5	273.6	146.0	614.5	84.59	183.12	183.12	330.03	206.89	814.64	5.4	12.7	39.2	32.6	89.8	33.8	79.5	245.2	204.1	562.7	
205	220501070	81	2.2	5.0	10.8	22.3	11.8	50.0	10.8	23.5	48.6	25.9	108.9	16.61	32.54	32.54	58.64	36.76	144.74	2.8	6.5	20.0	16.6	45.9	6.0	14.1	43.6	36.3	100.0	
206	120601010	81	6.0	2.8	6.0	12.5	6.7	28.0	22.2	48.4	99.9	53.3	233.6	34.54	66.86	66.86	120.50	75.54	287.45	1.5	3.6	11.2	9.3	25.7	12.3	28.0	89.5	74.5	205.4	
206	120601020	81	6.6	5.4	11.8	24.5	13.1	54.9	37.0	80.8	166.8	89.0	373.6	57.67	111.64	111.64	201.20	126.13	498.63	3.0	7.1	22.0	18.3	50.4	20.8	48.5	149.5	124.4	343.0	
206	120602010	81	2.1	5.4	11.8	24.5	13.1	54.9	11.5	25.2	52.0	27.8	118.5	17.98	34.80	34.80	62.73	39.32	154.83	3.0	7.1	22.0	18.3	50.4	6.4	15.1	46.8	38.8	106.9	
206	120602020	81	3.9	5.4	11.9	24.5	13.1	54.9	21.1	48.1	95.2	50.8	215.2	32.90	63.70	63.70	114.80	71.97	283.37	3.0	7.1	22.0	18.3	50.4	11.8	27.7	85.3	71.0	195.7	
206	120602030	81	1.2	6.5	14.3	29.4	15.7	65.9	7.8	17.1	35.3	18.8	79.1	12.21	23.84	23.84	42.81	26.71	105.17	3.6	8.6	26.4	22.0	60.5	4.4	10.3	31.7	26.4	72.6	
206	120603010	81	4.8	3.9	8.4	17.4	9.3	38.0	18.5	40.4	83.5	44.6	187.0	28.86	55.88	55.88	100.71	63.13	248.58	2.1	5.1	15.8	13.0	35.6	10.3	24.3	74.6	62.3	171.7	
206	120604010	81	3.9	3.2	6.8	14.3	7.6	32.0	12.3	28.9	55.5	29.6	124.4	19.18	37.16	37.16	68.87	41.98	165.30	1.8	4.1	12.8	10.6	28.3	6.9	16.1	49.8	41.4	114.2	
206	120605010	81	3.1	3.2	6.8	14.3	7.6	32.0	9.6	21.4	44.2	23.6	99.1	15.30	29.61	29.61	53.37	33.45	131.73	1.8	4.1	12.8	10.6	28.3	5.5	12.9	39.7	33.0	81.0	
206	120605010	81	2.8	2.42	39.2	119.9	46.8	230.0	70.2	113.8	347.8	135.6	667.0	109.39	196.97	196.97	419.24	192.15	877.75	13.5	23.5	107.4	65.4	209.8	38.1	68.2	311.5	189.8	608.3	
206	120605011	81	2.8	2.42	39.2	119.9	46.8	230.0	66.8	112.3	340.4	132.8	653.2	107.13	153.72	153.72	410.57	188.17	859.59	13.5	23.5	107.4	65.4	209.8	38.3	68.8	305.0	185.6	595.7	
206	120606010	81	3.9	10.8	17.5	53.7	20.9	103.0	42.0	67.9	207.7	81.0	398.6	65.37	93.81	93.81	250.55	114.83	524.58	6.0	10.5	48.1	29.3	93.9	23.4	40.7	186.2	113.3	363.5	
206	120606020	81	4.4	6.6	14.0	42.7	16.7	82.0	37.8	60.9	186.3	72.7	357.5	56.63	84.14	84.14	224.72	102.99	470.49	4.8	8.4	36.3	23.3	74.8	20.9	36.5	167.0	101.6	326.1	
206	120606030	81	4.0	6.3	10.2	31.3	12.2	60.0	25.1	40.8	124.1	48.4	236.2	39.07	56.06	56.06	148.72	68.62	313.46	3.5	6.1	28.0	17.1	54.7	14.0	24.3	111.2	87.7	217.2	
207	120701010	81	6.8	3.4	5.4	16.7	6.5	32.0	35.5	37.0	113.4	44.2	217.4	35.59	51.12	51.12	136.75	62.59	286.04	1.9	3.3	14.9	9.1	29.2	12.7	22.2	101.6	61.8	186.3	
207	120702010	81	7.2	4.9	8.0	24.5	9.5	47.0	35.5	57.5	178.3	68.7	336.1	55.34	79.50	79.50	212.66	97.34	444.84	2.7	4.8	21.9	13.3	42.8	18.8	34.5	158.0	98.0	306.3	
207	120702020	81	6.2	6.2	10.0	30.7	12.0	58.9	50.8	82.2	252.1	98.2	483.3	79.12	113.68	113.68	304.03	139.17	635.98	3.4	6.0	27.5	16.7	53.8	28.3	49.4	235.9	137.3	440.8	
207	120703010	81	7.4	5.8	9.4	28.7	11.2	54.0	42.7	69.2	212.0	82.8	406.6	66.56	95.61	95.61	255.77	117.07	535.02	3.2	5.6	25.7	15.6	50.1	23.8	41.5	190.0	115.5	370.8	
207	120704010	81	3.0	4.13	66.8	204.3	78.7	392.0	121.6	186.9	602.6	235.1	1156.4	189.68	272.14	272.14	728.86	333.13	1521.79	23.0	40.1	183.1	111.4	357.5	67.8	118.2	540.0	328.6	1054.7	
207	120704020	81	2.8	4.13	66.8	204.3	78.7	392.0	115.2	186.9	599.8	223.3	1093.7	179.37	257.38	257.38	697.43	315.08	1439.25	23.0	40.1	183.1	111.4	357.5	68.1	118.8	510.7	310.8	997.5	
208	120801010	81	8.1	0.6	1.3	2.7	1.4	6.0	5.4	11.7	24.2	12.9	54.2	8.37	16.21	16.21	29.21	18.31	72.13	0.3	0.8	2.4	2.0	5.5	3.0	7.0	21.7	18.1	49.6	
208	120801020	81	5.8	2.9	6.3	12.9	6.9	28.0	16.5	36.0	74.4	39.7	166.6	25.71	49.77	49.77	89.71	56.24	221.43	1.8	3.8	11.8	9.8	26.6	9.2	21.6	68.6	55.5	152.9	
20A	402091010	81	2.7	12.8	27.4	56.6	30.2	126.8	33.8	74.1	152.9	81.6	347.8	52.87	102.35	102.35	175.53	115.64	455.33	7.0	16.5	50.8	42.3	116.5	16.9	44.5	137.1	114.1	314.5	
20A	402092010	81	2.4	7.7	16.8	34.8	18.6	77.8	18.5	40.4	83.5	44.6	187.0	28.86	55.88	55.88	100.71	63.13	248.58	4.3	10.1	31.2	26.0	71.5	10.3	24.3	74.8	62.3	171.7	
21	302101010	81	11.8	0.4	0.9	5.4	4.2	11.0	4.7	10.7	63.0	49.0	121.4	7.32	14.82	14.82	27.95	69.42	187.51	0.2	0.8	2.4	2.0	5.5	3.0	7.0	21.7	18.1	49.6	
21	302101020	81	10.8	1.1	2.5	14.8	11.5	30.0	12.0	27.3	160.4	124.8	324.6	16.66	37.77	37.77	193.53	176.80	426.86	0.8	1.5	13.3	16.1	31.6	6.7	16.4	143.8	174.5	341.4	
21	302102010	81	16.1	1.9	4.4	25.7	20.0	52.0	30.9	70.5	413.8	322.0	837.2	48.12	97.41	97.41	489.16	456.28	1100.84	1.1	2.8	23.0	28.0	54.7	17.2	42.3	370.8	450.1	890.5	
21	302102020	81	5.3	1.9	4.3	25.2	19.6	51.0	10.0	22.8	133.6	104.0	270.3	19.53	31.45	31.45	161.16	147.31	355.45	1.0	2.8	22.8	27.4	53.8	5.5	13.7	118.7	145.3	284.3	
21	302103010	81	7.2	1.6	3.7	21.7	16.9	44.0	11.6	26.6	155.9	121.3	315.5	18.13	36.71	36.71	168.10	171.93	414.87	0.9	2.2	19.5	23.7	48.3	6.5	15.9	139.6	169.6	331.8	
21	302103020	81	9.8	1.7	4.0	23.2	18.1	47.0	17.0	38.9	228.4	177.7	462.0	28.55	53.76	53.76	275.46	251.79	607.58	1.0	2.4	20.8	25.3	49.4	9.5	23.4	204.7	248.4	485.9	
21	302104010	81	4.8	1.5	3.5	20.3	15.8	41.0	6.9	15.7	92.2	71.7	186.6	10.72	21.71	21.71	111.23	101.67	245.32	0.8	2.1	18.2	22.0	43.1	3.8	8.4	82.6	100.3	196.2	
21	302104020	81	13.7	1.8	4.1	24.2	18.8	49.0	24.7	56.3	330.6	257.2	668.9	38.44	77.82	77.82	398.78	364.51	879.58	1.0	2.5	21.7	28.3	51.5	13.7	33.8	298.3	358.6	703.4	
21	302105010	81	6.6	1.6	3.7	21.7	16.9	44.0	10.7	24.4	143.3	111.5	290.0	16.66	33.74	33.74	172.88	158.02	381.31	0.8	2.2	18.5	23.7	46.3	6.0	14.7	128.4	155.9	305.0	
21	302105020	81	2.4	1.6	3.7	21.7	16.9	44.0	3.9	6.9	52.0	40.4	105.2	6.04	12.24	12.24	62.70	57.31	139.28	0.9	2.2	19.5	23.7	46.3	2.2	5.3	46.8	56.5	110.6	
21	302105030	81	8.3	1.8	3.7	21.7	16.9	44.0	15.1	34.8	202.9	157.9	410.5	23.59	47.77	47.77	244.76	223.72	539.85	0.9	2.2	19.5	23.7	46.3	8.4	20.7	181.9	220.7	431.7	
21	302105040	81	4.8	1.6	3.7	21.7	16.9	4																						

Appendix D. Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F km/day

Hwy No	Seq	Chs	Ld	L	Trk (km)	LT	HT	Sgls	Dbns	Tot	Trk LT	Trk HT	km /day	Sgls /day	Dbns (\$)	Tot	TLF LT	TLF HT	per HT	Sgls HT	day	Dbns	Tot	TLF LT	TLF HT	km	per Sgls	day	Dbns	Tot	
210	121003010	81	7.6	3.0	65	3.0	65	134	7.1	300	232	507	1046	558	2344	3817	7003	12821	7912	31152	1.7	3.9	120	100	275	129	304	938	78.1	2152	
210	121003020	81	7.1	5.4	119	5.4	119	245	13.1	549	389	848	1751	935	3923	6055	11722	21128	13244	52146	3.0	7.1	220	183	504	216	509	1570	130.7	3602	
210	121003030	81	6.4	8.5	186	8.5	186	384	20.5	859	548	1198	2470	1318	5533	8540	16532	29795	18678	73544	4.7	11.2	344	286	769	305	718	2214	164.3	5080	
210	121004010	81	1.6	6.4	140	290	155	64.9	10.1	220	455	24.3	30.48	54.80	34.42	15.74	30.48	54.80	34.42	13544	3.6	8.4	260	218	596	5.6	13.2	40.8	34.0	83.6	
210	121004020	81	6.1	6.4	140	290	155	64.9	39.1	854	391	854	1783	941	3948	6084	11798	21260	13328	52478	3.6	8.4	260	218	596	218	512	1590	131.5	382.5	
210	121004030	81	4.0	5.9	130	288	143	599	238	518	1070	571	1164	129.11	60.84	318.69	33	78	240	200	550	132	311	95.9	799	311	95.9	799	220.1		
210	121004040	81	4.9	5.9	130	288	143	599	282	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	270.2	
210	121004050	81	3.1	5.9	130	288	143	599	185	403	632	444	1850	2859	89.64	245.95	3.0	7.0	216	180	495	102	240	74.0	61.8	169.9	74.0	61.8	169.9	171.1	
210	121005010	81	3.7	2.4	3.9	12.0	4.7	23.0	4.7	23.0	9.0	146	44.7	174	85.8	14.07	19.19	53.92	24.71	112.90	1.3	2.4	10.7	65	210	50	6.6	40.1	24.4	78.2	
210	121006010	81	3.6	2.4	3.9	12.0	4.7	23.0	8.7	14.1	43.0	168	82.8	13.54	19.43	15.84	12.85	34.32	15.73	71.85	0.9	1.5	7.0	43	13.7	3.2	5.8	25.5	15.5	49.8	
210	121006020	81	9.3	1.8	2.6	7.8	3.0	150	7.8	3.0	150	148	72.4	282	138.9	22.78	32.69	87.31	40.01	182.79	0.9	1.5	7.0	43	13.7	3.2	5.8	25.5	15.5	49.8	
210	121007010	81	4.8	1.5	2.4	7.3	2.8	14.0	7.0	11.4	34.8	136	66.8	10.95	15.72	19.24	12.85	34.32	15.73	71.85	0.9	1.5	7.0	43	13.7	3.2	5.8	25.5	15.5	49.8	
210	121007020	81	4.7	3.7	6.0	18.2	7.1	35.0	17.4	28.2	86.3	33.7	165.6	104.06	47.69	217.86	2.1	3.6	163	99	319	9.7	169	77.3	47.0	151.0	77.3	47.0	151.0	60.9	
210	121008010	81	1.4	6.5	10.8	32.3	12.6	62.0	9.1	148	45.2	178	86.8	14.24	114.23	3.6	6.3	280	176	565	5.1	8.9	40.5	24.7	78.2	8.7	28.2	40.5	24.7	78.2	80.9
211	121101010	81	2.6	9.2	20.1	41.5	22.1	92.9	28.0	56.6	117.0	62.4	282.0	40.44	78.28	141.09	88.45	348.25	5.1	12.1	37.2	30.9	85.3	14.4	34.0	104.8	87.3	240.5	85.3	240.5	
211	121101020	81	7.5	9.2	20.1	41.5	22.1	92.9	69.0	150.5	310.7	165.8	695.9	107.41	207.92	374.73	234.92	824.97	5.1	12.1	37.2	30.9	85.3	14.4	34.0	104.8	87.3	240.5	85.3	240.5	
211	121101030	81	3.7	0.2	20.1	41.5	22.1	92.9	34.0	74.1	153.1	81.7	342.6	52.81	102.43	184.61	115.73	455.69	5.1	12.1	37.2	30.9	85.3	14.4	34.0	104.8	87.3	240.5	85.3	240.5	
212	121201010	81	5.8	3.7	8.0	16.5	8.8	37.0	21.4	48.7	96.4	51.4	215.9	33.32	64.50	116.24	72.87	288.93	2.0	4.8	14.8	12.3	33.9	11.9	28.0	86.4	71.9	186.2	86.4	71.9	
212	121201020	81	5.8	3.7	8.0	16.5	8.8	37.0	21.1	48.0	95.1	50.7	212.9	32.86	63.61	114.65	71.87	283.00	2.0	4.8	14.8	12.3	33.9	11.9	28.0	86.4	71.9	186.2	86.4	71.9	
212	121202010	81	4.7	0.6	1.0	3.1	1.2	6.0	3.0	4.8	14.7	5.7	28.2	4.62	6.64	17.73	8.12	37.11	0.4	0.6	2.8	1.7	5.5	1.7	2.9	13.2	8.0	25.7	8.0	25.7	
212	121202020	81	3.7	0.6	1.0	3.1	1.2	6.0	3.0	4.8	14.7	5.7	28.2	4.62	6.64	17.73	8.12	37.11	0.4	0.6	2.8	1.7	5.5	1.7	2.9	13.2	8.0	25.7	8.0	25.7	
212	121203010	81	2.6	9.1	14.6	44.8	17.5	86.0	27.9	45.1	138.0	53.9	268.9	43.44	82.34	168.49	76.31	348.57	6.5	12.9	87.7	51.4	138.4	20.0	39.8	208.4	158.2	428.4	208.4	158.2	
212	121203020	81	1.1	9.1	14.6	44.8	17.5	86.0	28.1	45.4	139.8	54.2	266.8	43.72	82.74	167.57	76.80	350.84	6.5	12.9	87.7	51.4	138.4	20.0	39.8	208.4	158.2	428.4	208.4	158.2	
213	121301010	81	0.8	58.3	94.3	268.7	112.8	554.0	45.5	73.8	225.2	87.8	432.1	70.97	101.69	271.61	124.48	568.66	32.5	56.6	258.7	157.4	505.3	25.3	44.2	201.8	122.6	394.1	201.8	122.6	
213	121301020	81	0.8	34.9	56.4	172.5	67.3	331.0	32.1	51.8	158.7	61.9	304.5	49.94	71.66	181.41	87.72	400.74	18.4	33.8	154.8	94.1	301.9	17.8	31.1	142.2	86.5	277.7	86.5	277.7	
213	121301030	81	1.0	11.3	18.2	55.8	21.8	107.0	11.3	18.2	55.8	21.8	107.0	17.55	25.18	67.25	30.82	140.81	6.3	10.9	50.0	30.4	97.6	6.3	10.9	50.0	30.4	97.6	30.4	97.6	
213	121302010	RTAC	7.3	9.1	14.6	44.8	17.5	86.0	65.7	108.2	324.8	126.8	623.5	102.26	146.73	391.90	178.62	820.51	6.5	12.9	87.7	51.4	138.4	20.0	39.8	208.4	158.2	428.4	208.4	158.2	
213	121302020	RTAC	3.1	9.1	14.6	44.8	17.5	86.0	27.9	45.1	138.0	53.9	268.9	43.44	82.34	168.49	76.31	348.57	6.5	12.9	87.7	51.4	138.4	20.0	39.8	208.4	158.2	428.4	208.4	158.2	
214	121401010	RTAC	10.4	4.2	9.1	18.7	10.2	42.0	43.2	84.3	184.8	104.0	436.4	67.35	130.38	334.98	147.31	580.02	3.0	8.0	28.3	28.4	68.6	31.0	83.2	284.1	305.4	713.7	284.1	305.4	
214	121402010	RTAC	15.3	4.3	9.3	19.2	10.2	43.0	65.1	142.1	293.4	158.6	657.2	101.44	188.38	437.58	221.87	873.62	3.1	8.2	29.0	30.1	70.3	46.7	125.3	443.0	490.0	1075.0	443.0	490.0	
216	121601010	RTAC	8.9	3.3	7.1	14.7	7.9	33.0	22.5	49.2	101.6	54.2	227.5	35.11	67.97	122.49	78.79	302.36	2.3	6.3	22.2	23.1	53.9	16.2	43.4	153.3	159.2	372.1	153.3	159.2	
216	121602010	RTAC	8.2	9.4	20.5	42.4	22.8	94.9	77.1	169.3	347.4	185.4	778.2	120.12	232.52	419.07	267.71	1034.43	6.7	18.1	64.0	66.4	155.2	55.3	148.4	524.5	544.7	1272.9	524.5	544.7	
216	121603010	RTAC	3.9	12.4	27.0	55.8	29.8	124.9	48.0	104.8	218.3	115.4	484.5	74.78	144.77	260.91	183.58	644.03	8.9	23.8	84.2	87.4	204.2	34.4	82.4	328.8	338.1	792.5	328.8	338.1	
216	121603020	RTAC	4.9	12.4	27.0	55.8	29.8	124.9	60.6	132.3	273.2	145.8	611.9	84.44	162.83	328.50	208.56	813.34	8.9	23.8	84.2	87.4	204.2	34.4	82.4	328.8	338.1	792.5	328.8	338.1	
216	121604010	RTAC	2.8	12.4	27.0	55.8	29.8	124.9	32.4	70.7	148.1	77.9	327.2	50.50	97.78	178.18	110.45	434.89	8.9	23.8	84.2	87.4	204.2	34.4	82.4	328.8	338.1	792.5	328.8	338.1	
216	121604020	RTAC	3.5	3.6	7.8	16.1	8.6	36.0	12.5	27.3	58.4	30.1	126.2	19.48	37.72	87.98	42.81	167.79	2.8	6.9	24.2	25.2	58.8	9.0	24.1	85.1	88.3	206.5	85.1	88.3	
216	121605010	RTAC	4.7	4.4	9.5	19.8	10.5	44.0	20.4	44.8	92.0	49.1	206.2	31.82	61.60	111.01	69.59	274.02	3.1	8.4	28.6	30.8	71.8	14.6	39.3	136.0	144.3	337.2	136.0	144.3	
217	121701010	RTAC	6.1	1.2	2.8	5.4	2.9	12.0	7.2	15.8	32.6	17.4	73.0	11.27	21.81	39.31	24.65	97.04	0.9	2.3	8.1	8.4	19.8	5.2	13.9	49.2	51.1	119.4	49.2	51.1	
217	121701020	RTAC	7.8	2.4	5.2	10.7	5.7	24.0	18.5	40.4	83.5	44.6	187.0	28.86	55.88	100.71	63.13	249.56	1.7	4.6	16.2	16.8	39.2	13.3	35.7	126.1	130.8	305.9	126.1	130.8	
217	121702010	RTAC	5.3	2.0	4.3	8.8	4.8	20.0	10.5	22.9	47.3	25.2	105.9	16.34	31.64	57.02	35.75	140.76	1.4	3.6	13.5	14.0	32.7	7.5	20.2	71.4	74.1	173.2	71.4	173.2	
218	121801010	RTAC	10.3	0.6	1.3	2.7	1.4	6.0	6.1	13.4	27.6	14.7	61.8	9.54	18.46	33.28	20.86	82.14	0.4	1.1	4.0	4.2	9.6	4.4	11.8	41.7	43.3	101.1	41.7	43.3	
218	121801020	RTAC	11.0	1.1	2.4	4.9	2.8	11.0	12.0	26.1	53.8	28.8	120.8	18.64	36.06	65.03	40.77	160.53	0.6	2.1	7.4	7.7	16.0	6.6	23.						

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, Tf,F/day, Tf,F km/day

Hwy No	Conv Seq	Ld	Cls	L (ftm)	Traff LT	HT	Sgls	Dbhs	Tot	Trk LT	km HT	Tf,F/day	Tf,F km/day	Cost LT	per HT	day Sgls	Dbhs (\$)	Tot	TLF LT	per HT	day Sgls	Dbhs	Tot	TLF LT	km HT	per Sgls	day	Dbhs	Tot
220	222001020	RTAC	7.4	7.7	7.7	12.4	36.0	148	73.0	58.8	91.5	280.0	537.3	88.12	126.44	337.71	154.78	707.04	5.5	11.0	57.4	43.6	117.5	40.5	80.7	422.7	320.9	664.8	
220	222001030	RTAC	3.4	3.6	3.6	5.8	17.7	69	34.0	12.2	19.7	60.2	115.6	18.86	27.21	72.66	33.30	152.13	2.6	5.1	26.7	20.3	54.7	8.7	17.4	90.9	69.0	166.1	
220	222002010	RTAC	2.9	1.7	2.7	2.7	8.3	3.3	16.0	4.9	7.9	9.2	46.4	7.61	10.92	28.18	13.37	61.06	1.2	2.4	12.6	9.6	25.8	3.5	7.0	36.5	27.7	74.7	
220	222002020	RTAC	1.1	1.7	2.7	2.7	8.3	3.3	16.0	1.9	3.0	9.2	17.6	2.89	4.14	11.06	5.07	23.16	1.2	2.4	12.6	9.6	25.8	3.5	2.6	13.6	10.5	28.3	
221	122102010	RTAC	3.0	7.5	12.1	12.1	37.0	14.4	71.0	22.7	36.8	112.1	215.1	35.28	50.63	135.22	61.97	283.10	5.4	10.7	55.9	42.4	114.3	16.2	32.3	166.2	128.5	346.3	
221	122102020	RTAC	6.5	7.5	12.1	12.1	37.0	14.4	71.0	48.4	78.2	239.4	459.4	75.34	106.11	268.74	132.33	604.52	5.4	10.7	55.9	42.4	114.3	34.7	69.0	361.4	274.4	736.4	
221	122103010	RTAC	5.8	8.8	13.5	13.5	41.3	18.1	79.4	48.4	78.2	239.4	459.4	75.34	106.11	268.74	132.33	604.52	5.4	10.7	55.9	42.4	114.3	34.7	69.0	361.4	274.4	736.4	
221	122103020	RTAC	1.0	8.8	13.5	13.5	41.3	18.1	79.4	83.6	135.2	413.8	794.0	130.22	166.86	499.07	228.73	1044.88	58.9	119.3	624.7	474.2	1278.1	347.5	891.7	3623.1	2750.4	7412.7	
221	222101010	RTAC	9.4	1.8	2.8	2.8	8.9	3.5	17.1	1.8	2.8	8.2	32.5	15.96	26.16	100.34	45.99	210.07	1.3	2.6	13.4	10.2	27.4	12.0	24.0	125.6	95.3	256.9	
221	222101020	AI	14.1	2.4	3.9	3.9	12.0	4.7	23.0	34.2	55.3	169.1	324.5	53.22	76.37	203.98	93.48	427.07	1.7	3.1	15.1	10.7	30.7	24.5	43.8	212.9	151.3	432.5	
222	222201010	AI	8.4	6.4	15.3	15.3	69.4	48.9	138.0	54.0	128.2	393.9	1159.2	84.13	177.17	704.33	316.99	1522.78	4.8	12.1	67.4	107.5	211.6	36.7	101.5	734.1	903.3	1777.7	
222	222202010	AI	12.0	3.0	11.5	11.5	48.8	18.7	82.0	35.9	137.2	583.9	223.7	55.61	189.60	704.33	316.99	1522.78	2.2	9.1	61.5	42.9	115.6	25.7	108.6	735.2	513.0	1362.6	
222	222202020	AI	9.4	0.9	3.5	3.5	14.9	5.7	25.0	8.6	33.0	140.5	236.0	13.45	45.63	169.49	78.28	304.85	0.7	2.8	18.7	13.1	35.2	8.2	28.1	176.8	123.5	332.7	
222	222203010	AI	8.0	0.4	1.7	1.7	7.1	2.7	12.0	3.5	13.4	57.2	21.9	9.60	5.47	18.56	68.94	31.03	124.01	0.3	1.3	9.0	6.3	16.9	2.5	10.6	72.0	50.2	135.3
222	222203020	AI	4.8	0.7	1.7	1.7	7.5	5.1	15.0	3.4	8.1	37.0	25.0	73.5	5.33	11.23	44.59	35.38	96.55	0.5	1.3	9.5	11.7	23.0	2.5	6.4	48.5	57.3	112.7
224	222401010	AI	19.8	3.8	14.7	14.7	62.5	24.0	105.0	78.0	280.6	1236.6	278.9	118.38	401.52	1481.57	671.29	2682.78	2.8	11.6	78.7	54.9	148.0	54.5	230.0	1557.0	1068.5	2927.9	
224	222401020	AI	25.3	3.8	14.7	14.7	62.5	24.0	105.0	97.3	371.9	1582.9	608.4	151.55	513.98	1809.33	859.31	3434.17	2.8	11.6	78.7	54.9	148.0	69.7	284.4	1993.0	1390.7	3746.0	
225	222501010	RTAC	5.0	1.0	3.6	3.6	15.5	5.9	28.0	4.8	18.2	77.4	29.7	130.0	7.41	25.13	93.96	42.02	167.92	0.7	3.2	23.4	17.4	44.7	3.4	16.0	116.9	87.1	223.4
225	222502010	RTAC	3.8	0.8	3.1	3.1	13.1	5.0	22.0	1.0	4.0	17.0	6.5	28.6	1.63	5.53	20.54	38.94	8.2	2.7	18.8	14.7	37.8	0.6	3.5	25.7	19.2	49.2	
227	222701010	RTAC	9.2	0.5	1.1	1.1	7.1	3.3	12.0	5.0	9.7	65.5	30.3	110.5	7.75	13.44	79.05	42.81	143.15	0.4	0.9	10.7	9.7	21.7	3.6	8.6	88.9	89.0	200.1
227	222701020	RTAC	6.9	2.0	3.9	3.9	26.1	12.1	44.0	13.8	28.7	179.8	83.1	303.2	21.25	36.87	116.84	117.70	392.66	1.4	3.4	39.4	35.4	79.8	9.6	23.5	271.4	244.0	548.7
227	222702010	AI	10.2	1.3	2.6	2.6	11.0	6.0	22.0	9.5	18.5	124.7	210.3	14.74	25.58	150.44	81.66	272.41	0.7	1.5	18.4	13.8	32.5	6.6	14.7	157.0	132.2	310.8	
227	222702020	AI	9.8	1.0	1.9	1.9	13.0	6.0	22.0	9.5	18.5	124.7	210.3	14.74	25.58	150.44	81.66	272.41	0.7	1.5	18.4	13.8	32.5	6.6	14.7	157.0	132.2	310.8	
227	222703010	AI	9.8	1.0	1.9	1.9	13.0	6.0	22.0	9.5	18.5	124.7	210.3	14.74	25.58	150.44	81.66	272.41	0.7	1.5	18.4	13.8	32.5	6.6	14.7	157.0	132.2	310.8	
227	222703020	AI	10.5	2.0	3.9	3.9	26.1	12.1	44.0	11.1	21.6	148.6	247.3	32.23	55.81	328.88	178.52	595.55	1.4	3.1	32.9	27.6	65.0	14.8	32.0	343.3	288.9	879.1	
227	222703030	AI	5.8	2.0	3.9	3.9	26.1	12.1	44.0	11.1	21.6	148.6	247.3	32.23	55.81	328.88	178.52	595.55	1.4	3.1	32.9	27.6	65.0	14.8	32.0	343.3	288.9	879.1	
227	222703040	AI	7.1	2.8	5.6	5.6	38.0	16.1	62.0	20.5	40.1	270.2	124.9	45.73	31.84	325.94	176.92	590.21	2.1	4.5	47.8	40.2	94.5	14.7	31.7	340.2	288.3	673.0	
229	222901010	AI	17.5	0.8	1.1	1.1	7.7	3.6	13.0	10.3	20.1	135.2	62.5	228.0	15.98	27.73	163.10	88.53	295.34	0.4	0.8	9.7	6.2	19.2	7.4	15.9	170.2	143.3	336.8
229	222901020	AI	22.8	0.5	1.1	1.1	7.1	3.3	12.0	12.3	24.1	162.7	75.2	274.3	19.23	33.36	196.21	106.51	355.31	0.4	0.8	9.0	7.5	17.7	6.6	19.1	204.8	172.4	405.2
229	222902010	RTAC	8.7	0.7	1.4	1.4	9.5	4.4	18.0	6.2	12.2	82.3	80.8	136.7	9.72	16.87	99.22	53.86	179.67	0.5	1.2	14.3	12.9	29.0	4.5	10.8	124.2	111.7	251.1
229	222902020	RTAC	9.2	0.7	1.4	1.4	9.5	4.4	18.0	6.0	13.0	87.6	40.5	147.7	10.35	17.96	105.63	57.34	181.28	0.5	1.2	14.3	12.9	29.0	4.5	10.8	124.2	111.7	251.1
229	222903010	AI	6.5	0.8	1.3	1.3	7.8	6.2	16.0	5.0	11.5	67.4	52.4	136.3	7.83	15.86	81.28	74.29	179.28	0.4	1.1	10.0	14.1	25.8	3.6	8.1	84.8	120.2	217.8
229	222903020	AI	6.1	0.7	1.7	1.7	9.9	7.7	20.0	4.5	10.2	60.1	46.8	121.6	6.99	14.15	72.50	66.27	159.91	0.5	1.3	12.4	17.6	31.9	3.2	8.1	75.7	107.3	184.3
229	222904010	AI	3.2	2.0	4.5	4.5	26.2	20.4	53.0	6.3	14.3	83.8	65.2	169.6	9.75	19.73	101.12	92.43	223.03	1.4	3.5	33.0	46.7	84.7	4.5	11.3	105.6	149.6	274.9
23	102312020	AI	4.0	4.4	10.0	10.0	58.8	45.8	119.0	17.6	40.1	235.3	103.1	476.0	27.36	55.39	283.80	259.41	825.95	3.1	7.9	74.1	105.0	180.1	12.6	31.7	286.2	419.8	760.4
23	102312010	RTAC	4.1	6.2	14.1	14.1	63.0	48.8	124.2	54.4	124.2	729.4	587.5	1475.8	84.81	171.69	879.79	804.17	1940.46	3.1	7.9	74.1	105.0	180.1	12.6	31.7	286.2	419.8	760.4
23	102313011	RTAC	4.4	6.2	14.1	14.1	63.0	48.8	124.2	54.4	124.2	729.4	587.5	1475.8	84.81	171.69	879.79	804.17	1940.46	3.1	7.9	74.1	105.0	180.1	12.6	31.7	286.2	419.8	760.4
23	202307010	RTAC	13.1	2.4	5.5	5.5	32.1	25.0	65.0	31.5	71.9	421.9	328.2	853.5	48.05	99.30	508.65	465.11	1122.31	1.7	4.8	48.5	73.4	126.5	22.6	63.4	636.9	984.3	1667.1
23	202307020	RTAC	9.1	12.5	27.3	27.3	56.2	30.0	126.0	11.3	24.8	509.7	272.0	1142.8	34.70	61.48	385.41	1519.12	8.8	24.1	84.8	88.1	208.0	81.1	218.7	789.5	799.0	1868.4	
23	202307030	RTAC	9.1	12.5	27.3	27.3	56.2	30.0	126.0	11.3	24.8	509.7	272.0	1142.8	34.70	61.48	385.41	1519.12	8.8	24.1	84.8	88.1	208.0	81.1	218.7	789.5	799.0	1868.4	
23	202308010	RTAC	15.3	3.8	8.7	8.7	50.8	39.6	103.0	58.2	132.7	779.0	608.1	1575.9	80.57	163.37	939.59	850.83	2072.36	2.7	7.6	78.9	116.4	203.8	41.7	117.0	1176.0	1780.5	3115.3
23	202308020	RTAC	5.3	3.0	6.7	6.7	39.5	30.8	80.0	2.6	6.0	35.2	27.4	71.2	4.09	8.28	42.45	38.60	93.63	2.1	5.9	59.7	90.4	158.1	1.9	5.3	53.1	90.4	140.8
23	202308030	RTAC	9.8	3.2	7.3	7.3	43.0	33.5	87.0	31.4	71.7	421.0	327.8	851.7	48.95	99.10	507.82	464.17	1120.05	2.3	6.5	64.9	98.3	172.0	22.5	63.3	635.6	982.3	1683.7
23	202308040	AI	6.2	1.8	4.0	4.0	23.7	18.5	48.0	10.9																			

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, T.I./day, T.I./km/day

Hwy No	Conr.Sec	Ld	Cls	L		Trk		HT		Sgls		Dbls	Tot	Cost		per		day		(\$)	Tot	TLF		Dbls	Tot	T.I.F		Dbls	Tot	per	day	Dbls	Tot
				LT	LT	LT	LT	LT	LT	LT	LT			LT	LT	LT	LT	LT	LT			LT	LT			LT	LT						
23	202311041	A1	2.1	4.6	10.5	61.6	48.1	125.0	9.5	21.6	126.7	98.6	256.3	14.73	29.82	152.78	8.3	77.8	336.98	33	33	33	110.3	189.7	6.8	17.1	159.5	226.0	409.4				
23	302301010	A1	18.1	1.0	2.3	13.3	10.4	27.0	18.1	41.2	242.0	188.3	489.5	28.13	59.98	291.88	0.7	18.8	643.72	0.7	18.8	23.8	43.1	12.9	32.6	304.7	431.6	782.0					
23	302301020	A1	1.7	1.0	2.3	13.3	10.4	27.0	1.7	3.6	22.3	17.3	45.1	2.59	5.25	26.86	0.7	18.8	58.29	0.7	18.8	23.8	43.1	12.9	32.6	304.7	431.6	782.0					
23	302302010	A1	8.4	4.0	8.7	17.8	9.5	40.0	33.1	72.5	149.0	78.5	334.0	51.50	100.16	179.88	2.8	8.9	443.98	2.8	8.9	22.5	21.8	57.4	187.6	182.3	450.9						
23	302302020	A1	6.1	1.5	3.4	19.8	15.4	40.0	11.9	27.1	159.2	123.8	322.0	18.51	37.47	191.98	1.1	2.7	175.48	1.1	2.7	24.9	35.3	63.9	65	215	200.4	514.4					
23	302303010	A1	11.5	5.9	13.0	26.6	14.3	60.0	68.3	149.7	307.7	164.2	690.0	108.39	208.91	371.20	4.3	10.3	917.20	4.3	10.3	33.7	32.7	61.0	49.0	387.5	376.6	931.6					
23	302304010	A1	15.1	3.9	8.5	17.4	9.3	39.0	58.3	127.8	267.6	140.2	588.9	90.80	178.97	318.81	2.8	6.7	821.81	2.8	6.7	21.8	21.3	52.7	41.8	330.7	321.4	765.1					
23	302305010	A1	15.1	5.4	11.9	24.5	13.1	55.0	62.3	180.5	379.9	197.9	831.6	128.23	249.37	447.37	3.9	9.4	1105.43	3.9	9.4	30.0	30.0	74.3	59.0	467.0	453.8	1122.7					
23	302306020	A1	10.3	4.3	9.3	19.2	10.2	43.0	43.8	95.9	197.1	105.2	442.0	68.16	132.56	237.80	3.1	7.4	587.59	3.1	7.4	24.1	23.5	58.1	31.4	246.2	241.3	598.6					
23	302306010	A1	8.4	4.6	10.0	20.5	10.9	46.0	38.1	83.4	171.5	81.5	364.6	59.30	115.32	208.88	3.3	7.9	511.19	3.3	7.9	25.6	25.1	62.1	27.5	215.9	208.0	519.2					
23	302306020	A1	8.4	4.3	9.3	19.2	10.2	43.0	35.6	78.0	160.3	85.6	359.5	55.43	107.80	193.39	3.1	7.4	477.85	3.1	7.4	24.1	23.5	58.1	31.4	246.2	241.3	598.6					
23	302306030	A1	7.3	4.3	9.3	19.2	10.2	43.0	31.0	67.9	139.6	74.5	313.0	48.27	93.87	168.40	3.1	7.4	416.12	3.1	7.4	24.1	23.5	58.1	31.4	246.2	241.3	598.6					
23	302306040	A1	5.7	4.3	9.3	19.2	10.2	43.0	24.4	53.4	109.7	58.5	248.0	37.93	73.78	132.32	3.1	7.4	326.95	3.1	7.4	24.1	23.5	58.1	31.4	246.2	241.3	598.6					
23	302306050	A1	11.2	4.4	9.5	19.8	10.5	44.0	46.7	108.8	219.6	117.2	492.4	75.92	147.85	264.87	3.1	7.4	654.48	3.1	7.4	24.1	23.5	58.1	31.4	246.2	241.3	598.6					
230	123001010	A1	3.8	15.2	24.5	75.0	29.3	144.0	58.1	93.9	287.4	112.1	551.5	90.45	129.78	348.66	10.8	19.4	725.78	10.8	19.4	84.5	87.1	181.9	41.6	74.4	361.9	257.1	735.0				
230	123001020	A1	5.2	12.3	19.8	61.0	23.8	117.0	63.7	103.0	315.2	123.0	604.9	99.20	142.35	380.20	8.8	15.8	798.02	8.8	15.8	78.8	84.5	155.9	45.7	81.5	386.9	282.0	808.1				
230	123002010	A1	1.6	4.6	7.5	22.9	8.9	44.0	7.4	12.0	36.7	14.3	70.4	11.55	19.57	44.25	3.3	5.9	92.84	3.3	5.9	29.9	20.5	59.6	33.9	95	46.2	32.8	93.6				
231	223101010	A1	13.3	0.4	0.8	4.9	3.8	10.0	4.9	11.2	65.9	51.3	133.4	7.67	15.52	78.54	0.3	0.7	175.43	0.3	0.7	6.2	8.8	16.0	3.5	8.9	83.0	47.9	86.8				
231	223101020	A1	8.1	0.2	0.5	3.0	2.3	6.0	2.0	4.6	28.9	20.9	54.4	3.12	6.33	32.41	0.2	0.4	71.49	0.2	0.4	3.7	5.3	9.6	1.4	3.8	33.8	17.7	64.7				
231	223102010	A1	6.3	1.4	3.2	18.8	14.8	38.0	11.7	26.7	156.7	121.9	316.9	18.21	36.86	188.86	10.2	25.23	416.76	10.2	25.23	33.5	60.7	8.4	21.1	197.2	279.5	508.3					
231	223102020	RTAC	6.5	1.4	3.2	18.8	14.8	38.0	9.1	20.7	121.3	84.4	245.5	14.11	28.58	146.36	10.2	25.23	322.81	10.2	25.23	42.9	75.1	65	18.2	183.2	277.4	485.3					
231	223103010	RTAC	1.6	3.0	6.8	40.0	31.2	81.0	4.8	10.9	64.1	49.8	129.6	7.45	15.08	77.27	1.2	3.2	170.43	1.2	3.2	11.4	11.8	27.8	2.6	7.5	26.7	27.7	84.7				
232	223201010	RTAC	2.3	1.7	3.7	7.8	4.0	17.0	3.9	8.6	17.7	9.4	39.6	6.11	11.82	21.31	1.4	3.8	52.60	1.4	3.8	13.5	14.0	32.7	10.9	28.2	103.3	107.3	250.7				
232	223201020	RTAC	7.7	2.0	4.3	8.9	4.8	20.0	15.2	33.1	68.4	38.5	153.2	23.65	45.79	88.52	1.4	3.8	203.70	1.4	3.8	13.5	14.0	32.7	10.9	28.2	103.3	107.3	250.7				
233	223301010	RTAC	2.8	1.9	3.7	24.9	11.5	42.0	5.5	10.8	73.0	33.7	123.1	8.62	14.86	88.52	1.4	3.8	159.39	1.4	3.8	37.6	33.8	78.0	4.3	10.4	119.6	107.5	241.8				
233	223301020	RTAC	3.2	1.9	3.7	24.9	11.5	42.0	6.0	11.8	78.2	36.6	133.6	9.38	16.24	95.53	1.4	3.8	172.98	1.4	3.8	37.6	33.8	78.0	4.3	10.4	119.6	107.5	241.8				
233	223302010	RTAC	4.9	0.9	1.8	11.9	5.5	20.0	4.4	8.7	58.6	27.1	88.8	6.92	12.01	70.87	0.8	1.8	127.87	0.8	1.8	17.9	16.1	36.2	3.2	7.7	89.5	79.5	178.6				
233	223302020	RTAC	28.1	0.8	1.8	11.9	5.5	20.0	23.5	45.9	309.1	142.8	521.2	36.53	63.38	372.80	0.8	1.8	675.07	0.8	1.8	17.9	16.1	36.2	3.2	7.7	89.5	79.5	178.6				
233	223303010	RTAC	3.1	0.8	1.8	11.9	5.5	20.0	2.8	5.4	38.5	18.9	61.6	4.32	7.49	44.08	0.8	1.8	79.79	0.8	1.8	17.9	16.1	36.2	2.0	4.8	55.1	49.6	111.5				
233	223303020	RTAC	8.5	0.8	1.8	11.9	5.5	20.0	7.8	14.9	100.7	48.5	169.8	12.45	20.65	121.45	0.8	1.8	219.83	0.8	1.8	17.9	16.1	36.2	5.5	13.2	152.0	136.7	307.4				
233	223303030	RTAC	13.0	2.0	4.3	8.9	4.8	20.0	25.8	56.3	116.2	62.0	260.3	10.18	17.78	140.19	1.4	3.8	348.05	1.4	3.8	13.5	14.0	32.7	18.5	49.6	175.5	182.2	425.8				
234	223401010	RTAC	8.9	1.0	3.6	15.5	5.9	26.0	9.4	35.8	152.5	58.4	258.1	14.60	48.51	163.92	0.7	3.2	330.81	0.7	3.2	23.4	17.4	44.7	31.8	230.2	171.6	440.1					
234	223401020	RTAC	5.8	0.4	1.5	6.5	2.3	11.0	2.2	6.5	36.3	13.9	61.1	3.48	11.80	43.84	0.3	1.4	76.86	0.3	1.4	9.9	7.4	16.9	1.6	7.5	54.8	40.9	104.9				
234	223402010	RTAC	3.2	0.4	1.4	6.0	2.3	10.0	11.9	45.3	192.9	73.9	324.0	18.47	82.84	232.89	0.3	1.2	418.52	0.3	1.2	9.0	6.7	17.2	8.5	40.0	281.2	217.1	558.8				
234	223403010	RTAC	13.2	0.5	1.8	7.7	3.0	13.0	6.3	24.0	102.2	39.1	171.6	9.78	33.18	123.24	0.3	1.8	221.66	0.3	1.8	11.7	8.7	22.3	4.5	21.2	154.3	115.0	294.9				
234	223404010	RTAC	28.5	0.5	1.8	7.7	3.0	13.0	13.6	51.8	220.6	84.5	370.5	21.12	71.63	268.08	0.3	1.8	478.58	0.3	1.8	11.7	8.7	22.3	4.5	21.2	154.3	115.0	294.9				
236	223601010	RTAC	7.4	1.2	2.6	5.4	2.8	12.0	6.8	18.2	39.6	21.1	68.7	13.89	26.51	47.77	0.8	2.3	79.95	0.8	2.3	8.1	8.4	18.6	6.3	18.9	59.8	62.1	145.1				
236	223602010	RTAC	8.2	13.8	29.8	61.1	32.8	136.9	111.8	243.5	502.9	268.3	1128.4	173.65	338.55	608.56	9.7	28.1	1497.21	9.7	28.1	97.2	95.8	223.9	80.0	214.8	759.2	788.3	1842.3				
236	223602020	A1	3.1	13.8	29.8	61.1	32.8	136.9	41.8	81.1	188.2	100.4	421.5	65.06	125.95	227.00	9.7	23.4	560.32	9.7	23.4	78.8	74.8	184.9	29.9	72.2	237.0	230.3	589.4				
236	223602030	A1	3.5	13.8	29.8	61.1	32.8	136.9	47.3	103.3	213.2	113.6	477.7	73.72	142.72	257.22	9.7	23.4	634.91	9.7	23.4	78.8	74.8	184.9	33.9	81.6	268.5	261.0	645.1				
236	223603010	A1	4.6	2.8	5.6	11.6	6.2	26.0	11.8	25.7	53.0	28.3	118.7	18.47	63.92	63.92	1.8	4.4	157.78	1.8	4.4	14.8	14.2	35.1	8.4	20.3	66.7	64.8	180.3				
236	223603020	A1	5.6	2.8	5.6	11.6	6.2	26.0	14.3	31.3	64.6	34.5	144.7	22.33	43.23	77.91	1.8	4.4	192.31	1.8	4.4	14.8	14.2	35.1	10.3	24.8	81.3	79.0	195.4				
236	223603030	A1	5.4	1.0	2.2	12.9	10.0	26.0	2.3	5.3	31.1	24.2	62.8	8.13	16.46	84.33	0.7	1.7	166.00	0.7	1.7	16.2	22.8	41.5	3.7	9.4	86						

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, Tl.F/day, Tl.F/km/day

Hwy No	Conv Seq	Ld Cbs	L (km)	Lt Traff	HT	Sgls	Dbils	Tot	Tik LT	km HT	iday Sgls	Dbils	Tot	Cost LT	per HT	day Sgls	(\$)	Tot	Tl.F LT	per HT	day Sgls	Dbils	Tot	Tl.F LT	km HT	per Sgls	day Dbils	Tot
24	302401030	A1	13.7	1.5	3.5	20.8	16.2	42.0	21.2	46.3	283.4	220.5	573.3	32.95	66.71	341.82	312.44	753.91	1.1	2.8	26.1	37.0	67.1	15.2	36.2	356.6	505.7	915.6
24	302402010	A1	11.2	1.2	2.7	15.8	12.3	32.0	13.2	30.1	176.8	137.6	357.8	20.56	41.63	213.31	194.97	470.47	0.6	2.1	19.8	28.2	51.1	9.5	23.8	222.7	315.6	571.5
24	302402020	A1	1.7	1.2	2.7	15.8	12.3	32.0	2.0	4.6	27.2	21.2	55.0	3.16	6.40	32.62	30.00	72.38	0.8	2.1	19.8	28.2	51.1	1.5	3.7	34.3	48.5	87.9
24	302403010	A1	13.2	1.1	2.5	14.8	11.5	30.0	14.6	33.3	195.7	152.3	396.0	22.76	46.08	236.10	215.81	520.75	0.8	2.0	18.7	26.5	47.8	10.5	28.4	246.5	348.3	632.6
24	302404010	A1	14.2	1.0	2.4	13.8	10.8	28.0	14.7	33.5	186.5	152.9	397.8	22.85	46.26	237.06	216.66	522.66	0.7	1.9	17.4	24.7	44.7	10.7	28.5	247.5	350.7	635.2
24	302405010	A1	10.1	1.1	2.4	14.3	11.2	29.0	10.2	23.3	136.1	106.7	276.1	1.56	3.21	16.43	15.01	36.23	0.8	1.9	18.0	25.6	46.3	7.1	1.6	17.1	24.3	44.0
24	302405020	A1	8.0	1.1	2.4	14.3	11.2	29.0	8.5	19.4	114.0	88.7	230.6	13.25	26.83	137.46	125.84	303.16	0.8	1.9	18.0	25.6	46.3	6.1	1.5	14.5	20.4	366.3
240	224001010	A1	10.3	0.8	1.7	3.6	1.9	6.0	8.1	17.7	36.8	19.5	82.0	12.66	24.50	44.16	27.68	108.99	0.6	1.4	4.5	4.4	10.6	6.8	14.0	48.1	47.8	110.8
240	224001020	A1	10.9	0.8	1.7	3.6	1.9	6.0	8.7	18.9	39.0	20.8	87.4	13.49	26.12	47.08	29.52	116.22	0.6	1.4	4.5	4.4	10.6	6.2	15.0	48.1	47.8	118.1
240	224002010	A1	15.0	2.4	5.2	10.7	5.7	24.0	35.6	77.8	160.6	85.7	359.6	55.51	107.46	193.67	121.41	478.04	1.7	4.1	13.5	13.1	32.4	25.5	61.6	202.2	186.5	485.6
240	224003010	A1	10.0	2.4	5.2	10.7	5.7	24.0	32.8	51.8	107.0	57.1	239.8	37.01	71.84	129.11	80.94	318.89	1.7	4.1	13.5	13.1	32.4	17.0	41.0	134.8	131.0	323.8
240	224004010	A1	8.2	4.0	8.6	17.8	8.5	40.0	32.5	70.8	146.3	78.1	327.7	50.58	97.90	178.45	110.62	435.55	2.8	6.8	22.5	21.8	54.0	23.3	56.1	164.2	170.1	422.6
240	224005010	A1	17.0	5.3	11.7	24.1	12.9	53.8	90.9	188.3	408.4	218.5	917.1	141.55	274.01	493.85	309.59	1219.01	3.8	9.2	30.3	29.5	72.8	65.1	157.0	515.5	501.1	1238.7
240	224005020	A1	17.1	1.6	3.5	7.1	3.8	16.0	27.1	59.1	122.0	65.1	273.3	42.19	81.67	147.19	92.27	363.31	1.1	2.7	9.0	8.7	21.8	18.4	46.8	153.6	149.3	369.2
240	224006010	A1	0.9	13.5	28.4	60.7	32.4	135.9	12.3	26.7	52.2	29.5	123.6	19.08	36.94	66.58	41.74	164.34	9.6	23.3	76.4	74.2	183.5	8.6	21.2	69.5	67.6	167.0
240	224006011	A1	0.6	13.5	28.4	60.7	32.4	135.9	7.7	16.7	34.6	18.4	77.4	11.95	23.14	41.70	26.14	102.94	9.6	23.3	76.4	74.2	183.5	5.5	13.3	43.5	42.3	104.6
240	224007010	A1	2.2	12.3	26.8	55.3	28.5	123.9	27.0	58.9	121.7	64.9	272.5	42.08	81.43	148.76	92.00	362.25	8.8	21.2	69.6	67.7	167.3	18.4	46.8	153.2	148.9	368.1
240	224008010	A1	4.7	5.0	10.8	22.3	11.9	50.0	23.3	50.8	104.8	55.9	234.8	36.24	70.15	126.42	79.25	312.06	3.5	6.5	26.1	27.3	67.5	16.7	40.2	132.0	128.3	317.1
240	224008011	A1	4.5	5.0	10.8	22.3	11.9	50.0	22.2	46.5	100.1	53.4	224.3	34.62	67.01	120.77	75.71	298.11	3.5	6.5	26.1	27.3	67.5	15.9	38.4	128.1	122.5	302.9
240	224008020	A1	2.0	3.6	8.2	16.9	9.0	38.0	7.6	16.5	34.1	18.2	76.3	11.78	22.80	41.09	25.76	101.42	2.7	6.5	21.3	20.7	51.3	5.4	13.1	42.8	41.7	103.1
240	224008030	A1	2.7	2.8	5.6	11.6	6.2	26.0	6.8	15.1	31.2	16.8	69.8	10.78	20.86	37.63	23.59	92.67	1.8	4.4	14.6	14.2	35.1	5.0	12.0	39.3	38.2	84.4
240	224008031	A1	2.8	2.8	5.6	11.6	6.2	26.0	6.8	15.1	31.2	16.8	69.8	11.15	21.57	36.88	24.38	95.98	1.8	4.4	14.6	14.2	35.1	5.1	12.4	40.8	39.5	97.5
241	124103010	RTAC	8.7	4.7	7.7	23.4	9.1	45.0	41.1	66.4	203.3	79.3	390.2	63.89	91.82	245.23	112.39	513.43	3.4	6.1	28.5	21.0	60.0	29.4	52.6	256.0	181.9	519.9
241	124103020	RTAC	4.0	13.9	22.5	66.8	26.8	132.0	5.3	8.5	28.1	10.2	50.2	8.23	11.80	31.53	14.45	66.01	10.0	19.8	103.8	78.6	212.5	3.8	7.5	39.5	30.0	80.7
241	124103030	RTAC	4.7	23.1	37.3	114.1	44.5	219.0	107.2	173.4	530.7	207.0	1018.4	167.01	239.66	640.06	283.36	1340.12	16.5	32.8	172.3	130.8	352.5	76.9	153.0	801.2	606.2	1639.2
241	224101010	RTAC	10.9	1.7	2.7	8.3	3.3	16.0	18.3	29.7	80.8	35.4	174.2	28.58	41.01	109.52	50.18	229.28	1.2	2.4	12.6	9.6	25.8	13.1	28.2	137.1	104.1	280.5
241	224101020	RTAC	8.6	1.7	2.7	8.3	3.3	16.0	14.5	23.5	51.6	26.0	137.8	22.58	32.42	66.98	39.69	161.28	1.2	2.4	12.6	9.6	25.8	10.4	20.7	108.4	82.3	221.7
241	224102010	RTAC	4.2	2.8	4.3	13.0	5.1	25.0	11.1	17.9	54.7	21.3	105.0	17.22	24.71	66.00	30.25	136.18	1.9	3.8	18.7	14.8	40.2	7.9	15.8	62.6	62.7	168.0
242	224201010	RTAC	7.8	2.5	5.4	11.2	6.0	25.0	19.5	42.5	87.6	46.8	198.6	30.34	58.73	105.84	66.35	261.28	1.8	4.8	18.8	17.5	40.8	14.0	37.5	132.5	137.8	321.5
242	224201020	A1	4.7	2.5	5.4	11.2	6.0	25.0	11.8	25.3	52.2	27.8	118.9	18.04	34.92	67.82	39.46	155.36	1.8	4.3	14.0	13.6	33.7	8.3	20.0	85.7	63.9	157.9
242	224201030	A1	5.1	2.5	5.4	11.2	6.0	25.0	12.5	27.3	56.3	30.0	128.1	19.47	37.68	67.82	42.58	167.65	1.8	4.3	14.0	13.6	33.7	9.0	21.6	70.9	68.9	170.4
242	224201040	A1	3.2	2.5	5.4	11.2	6.0	25.0	7.8	17.1	35.2	16.8	78.9	12.16	23.56	42.50	26.64	104.90	1.8	4.3	14.0	13.6	33.7	5.8	13.5	44.4	43.1	108.6
242	224202010	A1	11.6	0.8	1.3	2.7	1.4	6.0	6.9	15.0	30.9	16.5	69.2	10.69	20.88	37.28	23.37	92.02	0.4	1.0	3.4	3.3	8.1	4.9	11.8	38.9	37.8	93.5
242	224202020	A1	8.9	2.1	4.5	9.4	5.0	21.0	16.4	40.1	82.9	44.2	185.7	28.68	55.47	99.98	62.68	246.78	1.5	3.6	11.8	11.8	28.3	13.2	31.8	104.4	101.4	250.8
242	224203010	A1	7.1	5.2	11.4	23.6	12.6	52.9	37.4	81.5	168.3	89.8	377.0	58.19	112.64	203.01	127.26	501.09	3.6	9.1	29.8	28.9	71.5	26.8	64.5	211.9	208.0	509.2
242	224203020	A1	2.3	5.2	11.4	23.6	12.6	52.9	12.0	26.2	54.1	28.9	121.2	16.71	36.23	65.29	40.93	161.17	3.6	8.1	28.8	26.9	71.5	6.8	20.8	68.2	66.2	163.6
242	224203040	A1	3.7	5.2	11.4	23.6	12.6	52.9	18.6	42.8	88.4	47.2	196.0	30.58	59.17	106.64	66.85	263.22	3.6	9.1	29.8	28.9	71.5	14.1	33.9	111.3	108.2	267.5
242	224203050	A1	3.7	2.3	5.0	10.3	5.5	23.0	8.4	18.3	37.9	20.2	84.8	13.09	25.33	45.66	28.62	112.70	1.6	3.9	12.9	12.8	31.0	6.0	14.5	47.7	46.3	114.5
242	224204010	A1	17.5	2.9	6.3	12.9	6.9	28.0	50.2	109.8	228.3	120.8	507.0	76.25	151.48	273.02	171.15	673.91	2.1	5.0	16.3	15.6	39.1	36.0	86.6	265.0	277.0	684.8
242	224205010	A1	12.3	5.3	11.7	24.1	12.9	53.8	65.9	143.7	296.7	158.3	664.6	102.58	198.58	357.90	224.36	883.42	3.8	9.2	30.3	29.5	72.8	47.2	113.6	373.6	363.1	897.7
242	224205020	A1	3.8	5.3	11.7	24.1	12.9	53.8	20.2	44.1	91.0	48.6	203.9	31.47	60.93	109.81	68.84	271.05	3.6	8.2	30.3	29.5	72.8	14.5	34.9	114.6	111.4	275.4
242	224206010	A1	6.7	2.0	4.3	8.9	4.8	20.0	13.2	28.8	59.5	31.7	133.3	20.57	38.82	71.76	44.99	177.14	1.4	3.4	11.2	10.9	27.0	9.5	22.8	74.9	72.6	180.0
242	224206020	A1	10.2	2.3	5.0	10.3	5.5	23.0	23.2	50.7	104.7	55.9	234.6	36.21	70.09	126.33	79.20	311.83	1.8	3.9	12.9	12.6	31.0	16.7	40.2	131.9	128.2	316.9
242	224207010	A1	2.1	1.4	3.0	6.2	3.3	14.0	2.8	6.4	13.1	7.0	29.4	4.53	8.78	15.82	9.62	39.04	1.0	2.4	7.9	7.6	18.9	2.1	5.0	16.5	16.0	39.7
242	224208010	A1	6.7	1.1	2.4	4.9	2.6	11.0	2.4																			

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F/km/day

Hwy No	Conr. Seq	Ld Cts	L (km)	LT	HT	Trk LT	Trk HT	TLF /day	Sgls /day	Dbhs	Tot	Cost LT	per HT	day Sgls	day Dbhs	TLF LT	TLF HT	per Sgls	per Dbhs	Km HT	Tot	day Dbhs	Tot					
243	224301040	A1	6.7	1.3	2.8	5.8	3.1	130	86	188	388	207	889	13.41	25.96	46.78	29.33	115.49	0.9	2.2	7.3	7.1	17.5	6.2	14.9	40.8	47.5	117.3
243	224302020	A1	11.8	0.7	1.5	3.1	1.7	70	82	178	368	198	824	12.71	24.61	44.36	27.81	109.50	0.5	1.2	3.9	3.6	9.4	5.9	14.1	46.3	45.0	111.3
243	224303020	A1	10.4	1.2	2.6	5.4	2.9	120	124	270	558	298	1248	19.28	37.32	67.27	42.17	166.04	0.9	2.1	6.7	6.5	16.2	8.9	21.4	70.2	68.2	188.7
244	224401010	A1	8.3	7.2	15.8	32.8	17.4	729	596	1301	2888	1433	6010	92.98	179.77	323.99	203.11	799.72	5.2	12.5	41.0	39.8	98.5	42.7	103.0	338.2	328.7	812.8
244	224401020	A1	8.2	4.7	10.2	21.0	11.2	470	379	827	1708	912	3827	59.06	114.34	208.07	129.18	508.65	3.3	8.0	26.4	25.7	63.4	27.2	65.5	215.1	208.1	518.9
244	224402010	A1	13.2	6.7	19.0	39.2	20.8	879	1150	2509	5181	2765	11604	179.11	348.73	624.90	391.74	1542.48	8.2	15.0	49.4	48.0	119.7	82.4	189.6	652.3	634.0	1567.4
244	224403010	A1	3.0	7.0	15.3	31.7	16.9	70.9	212	462	953	509	2135	32.95	63.79	114.97	72.07	283.78	5.2	12.1	39.8	38.6	95.8	15.2	36.5	120.0	116.6	288.4
244	224403020	A1	4.0	7.0	15.3	31.7	16.9	70.9	280	612	1263	674	2830	43.68	84.56	152.40	95.54	376.18	5.0	12.1	39.8	38.6	95.8	20.1	48.4	158.1	154.8	382.2
244	224403030	B1	4.4	7.0	15.3	31.7	16.9	70.9	312	681	1408	750	3149	48.61	94.10	169.59	106.31	418.61	3.9	8.2	28.4	23.6	65.1	17.4	40.9	128.0	104.9	288.1
245	224502010	B1	8.0	1.0	2.2	4.5	2.4	100	7.9	17.3	35.8	191	80.2	12.36	23.97	43.20	27.08	106.63	0.6	1.3	4.0	3.3	9.2	4.4	10.4	32.1	26.7	73.6
245	224502020	B1	3.3	1.0	2.2	4.5	2.4	100	3.2	7.1	14.8	7.8	32.7	5.04	9.76	17.59	11.03	43.42	0.8	1.3	4.0	3.3	9.2	1.8	4.2	13.1	10.9	30.0
245	224503010	B1	2.8	2.4	5.2	10.7	5.7	240	6.1	13.3	27.5	14.7	61.8	9.51	18.41	33.18	20.80	81.90	1.3	3.1	9.8	8.0	22.0	3.4	8.0	24.7	20.5	56.6
245	224503020	B1	2.4	2.4	5.2	10.7	5.7	240	5.7	12.3	25.5	13.6	57.1	8.81	17.05	30.73	19.26	75.85	1.3	3.1	9.8	8.0	22.0	3.1	7.4	22.6	19.0	52.4
245	224504010	B1	8.7	2.8	5.6	11.6	6.2	280	22.3	48.7	100.5	538	225.2	34.76	67.29	121.27	76.02	299.33	1.4	3.4	10.4	8.7	23.8	12.4	29.2	90.1	75.0	208.7
245	224504020	B1	6.8	2.8	5.6	11.6	6.2	280	18.9	36.9	76.2	407	170.6	26.34	50.99	91.90	57.61	228.63	1.4	3.4	10.4	8.7	23.8	9.4	22.1	68.3	56.8	156.7
245	224504030	B1	1.9	6.2	13.6	28.1	15.0	82.9	11.8	25.3	52.3	27.9	117.1	18.07	34.98	63.04	39.52	155.80	3.5	8.2	25.2	21.0	57.8	6.5	15.2	46.8	38.0	107.5
245	224505010	B1	5.1	6.2	13.6	28.1	15.0	82.9	32.1	69.9	144.4	77.1	323.5	49.93	98.66	174.20	109.21	430.00	3.5	8.2	25.2	21.0	57.8	17.8	42.0	128.4	107.7	287.0
245	224505020	B1	7.3	7.0	15.3	31.7	16.9	70.9	51.0	111.3	228.9	122.7	514.9	79.48	153.86	277.30	173.64	684.48	3.9	9.2	28.4	23.6	65.1	28.4	68.8	208.0	171.5	472.8
245	224505030	B1	11.9	5.0	10.8	22.3	11.9	50.0	58.9	128.5	265.4	141.6	594.4	81.74	177.60	320.09	200.66	790.10	2.8	6.5	20.0	16.6	45.9	32.8	77.1	237.8	188.0	545.7
245	324501010	RTAC	6.4	0.4	0.9	1.8	1.0	4.0	2.5	5.5	11.4	6.1	25.5	3.93	7.81	13.71	8.59	33.83	0.3	0.8	2.7	2.8	8.5	1.8	4.9	17.2	17.8	41.6
245	324501020	RTAC	6.3	0.5	1.1	2.2	1.2	5.0	3.1	6.6	14.1	7.5	31.6	4.86	9.45	17.03	10.67	42.03	0.4	1.0	3.4	3.5	8.2	2.2	6.0	21.3	22.1	51.7
245	324501030	RTAC	7.0	0.8	1.7	3.6	1.9	8.0	5.5	12.1	25.0	13.3	55.9	8.63	16.72	30.13	18.89	74.36	0.6	1.5	5.4	5.6	13.1	4.0	10.7	37.7	39.2	81.5
246	124601010	RTAC	0.7	12.5	27.2	56.2	30.0	125.9	9.2	20.1	41.6	22.2	93.1	14.38	27.83	50.16	31.44	123.81	8.9	24.0	64.8	88.1	205.9	6.8	17.8	62.8	65.2	152.4
246	124601020	RTAC	9.9	2.0	4.3	8.9	4.8	20.0	19.5	42.8	88.0	47.0	197.2	30.44	58.92	106.19	66.57	262.13	1.4	3.8	13.5	14.0	32.7	14.0	37.8	132.8	21.7	50.8
246	124602010	RTAC	4.2	1.4	3.0	6.2	3.3	14.0	5.8	12.8	26.0	13.9	58.2	8.98	17.38	31.33	19.64	77.34	1.0	2.7	9.4	9.6	22.8	4.1	11.1	39.2	40.7	95.2
246	124602020	B1	6.4	1.2	2.8	5.4	2.9	12.0	7.5	16.5	34.0	18.1	76.1	11.75	22.74	40.96	25.70	101.19	0.7	1.6	4.8	4.0	11.0	4.2	9.9	30.5	25.4	69.9
246	124602030	B1	2.3	1.4	3.0	6.2	3.3	14.0	3.1	6.9	14.2	7.6	31.7	4.90	9.49	17.10	10.72	42.20	0.8	1.8	5.8	4.7	12.8	1.8	4.1	12.7	10.8	28.1
246	124602040	B1	4.8	1.0	2.2	4.5	2.4	10.0	4.6	10.0	20.6	11.0	46.2	7.12	13.79	24.65	15.56	61.35	0.6	1.3	4.0	3.3	8.9	2.5	6.0	18.5	15.4	42.4
246	124602050	B1	5.8	1.6	3.5	7.1	3.8	16.0	9.2	20.0	41.4	22.1	82.7	14.31	27.70	49.82	31.30	123.23	0.9	2.1	6.4	5.3	14.7	5.1	12.0	37.1	30.9	85.1
247	224701010	B1	16.1	0.2	0.4	2.4	1.1	4.0	2.9	5.7	38.3	17.6	64.6	4.52	7.85	46.18	25.07	83.62	0.1	0.2	2.1	1.5	4.0	1.3	2.8	28.4	20.5	53.0
247	224701020	B1	13.4	0.2	0.4	2.4	1.1	4.0	2.4	4.7	31.7	14.6	53.4	3.75	6.50	38.22	20.75	69.22	0.1	0.2	2.1	1.5	4.0	1.3	2.8	28.4	20.5	53.0
247	224702010	B1	3.6	0.5	0.9	5.9	2.7	10.0	1.6	3.2	21.3	9.9	38.0	2.52	4.36	25.75	13.96	46.63	0.3	0.5	5.3	3.8	9.9	0.9	1.9	18.1	13.8	35.7
247	224702020	B1	7.7	0.5	0.9	5.9	2.7	10.0	3.5	6.6	45.9	21.2	77.4	5.42	9.41	55.36	30.05	100.25	0.3	0.5	5.3	3.8	9.9	0.8	1.3	13.1	9.4	24.4
247	224702030	B1	2.5	0.5	0.9	5.9	2.7	10.0	1.1	2.2	14.6	6.7	24.8	1.72	2.99	17.60	9.55	31.86	0.3	0.5	5.3	3.8	9.9	0.8	1.3	13.1	9.4	24.4
247	224703010	B1	3.3	0.5	0.8	7.4	1.4	10.0	1.6	2.6	24.5	4.6	33.3	2.54	3.64	29.56	6.46	42.20	0.3	0.5	6.6	1.9	9.3	0.9	1.8	22.0	8.4	30.8
247	224703011	B1	2.4	0.5	1.1	5.0	3.4	10.0	1.1	2.6	11.8	6.0	23.5	1.71	3.59	14.26	11.32	30.87	0.3	0.7	4.5	4.8	10.2	0.6	1.6	10.8	11.2	23.8
247	224703012	B1	1.5	0.5	1.1	5.0	3.4	10.0	0.7	1.6	7.4	5.0	14.8	1.07	2.28	6.98	7.13	19.44	0.3	0.7	4.5	4.8	10.2	0.4	1.0	6.7	7.0	15.1
247	224704010	B1	3.4	0.6	1.8	8.6	5.8	17.0	2.7	6.3	28.8	19.5	57.3	4.16	8.76	34.76	27.58	75.28	0.4	1.1	7.7	8.1	17.3	1.5	3.8	25.8	27.2	56.3
247	224704011	B1	3.0	0.6	1.3	12.5	2.3	17.0	2.5	4.1	37.9	7.1	51.8	3.93	5.62	45.73	10.00	65.26	0.5	0.8	11.2	3.3	15.7	1.4	2.4	34.0	9.9	47.7
246	224801010	B1	8.2	0.6	1.1	7.7	3.6	13.0	4.8	0.4	63.2	28.2	106.6	7.47	12.86	76.25	41.39	138.07	0.3	0.7	6.9	5.0	12.9	2.7	5.6	56.7	40.8	105.6
246	224801020	B1	6.5	1.7	3.3	22.5	10.4	38.0	14.5	28.4	191.5	88.5	323.0	22.64	39.28	231.03	125.41	418.36	1.0	2.0	20.2	14.6	37.7	8.1	17.1	171.7	123.7	320.5
248	224802010	B1	10.9	2.5	4.8	33.2	15.3	56.0	27.4	53.6	361.3	186.9	609.3	42.70	74.09	435.80	236.56	789.18	1.4	3.0	29.8	21.4	55.6	15.3	32.2	323.8	233.4	604.8
248	224802020	B1	4.0	2.5	4.8	33.2	15.3	56.0	10.1	19.8	133.2	61.5	224.6	15.74	27.31	160.82	87.19	290.86	1.4	3.0	29.8	21.4	55.6	5.8	11.9	119.3	88.0	222.8
248	224802021	B1	1.4	10.9	23.8	48.1	26.2	109.9	15.0	32.8	67.7	36.1	151.6	23.41	45.31	81.66	51.19	201.57	6.1	14.3	44.0	36.6	100.9	6.4	19.7	60.7	50.5	136.2
248	224803010	B1	5.9	7.8	15.3	33.2	47.7	174.0	45.9	89.7	604.6	279.4	1019.6	71.46	124.00	729.32	395.88	1320.87	4.4	9.2	92.5	66.6	172.7	25.5	53.9	541.9	380.6	1011.8
248	224803020	B1	6.2	4.5	8.6	18.6	9.9	27.7	101.0	28.4	55.5	373.7	44.17	76.64	450.80	244.70	816.31	2.5										

Appendix D - Complete Compliance: Traffic, Trk.Km/day, Cost/day, Trk.LT/day, TLF.Km/day

Hwy No	Cont. Sec	Ld	Cls	(ftm)	L	Trkff	LT	HT	Sgls	Dbls	Tot	Trk	LT	HT	Sgls	Dbls	Tot	Cost	LT	HT	per	day	TLF	LT	HT	per	day	TLF	LT	HT	Sgls	Dbls	Tot	per	day	TLF	LT	HT	Sgls	Dbls	Tot
25	302502010	81	83	3.2	7.2	425	33.1	860	433	988	5803	4515	11739	87.47	138.59	899.91	639.75	1543.71	1.8	4.3	38.1	48.2	90.4	24.1	59.3	520.0	631.1	1234.8													
25	302502020	81	83	2.1	4.8	282	219	570	174	396	2324	1809	4703	27.03	54.72	280.37	256.26	618.39	1.2	2.8	25.3	30.6	59.9	9.7	23.6	208.3	252.8	484.6													
250	325001010	81	5.3	4.9	10.6	219	11.7	490	638	1393	287.6	153.5	844.2	98.43	192.48	346.90	217.47	858.28	2.7	6.4	19.8	16.3	44.9	35.5	83.6	257.7	214.5	581.4													
250	325001020	81	5.3	4.9	10.6	219	11.7	490	638	1393	287.6	153.5	844.2	98.43	192.48	346.90	217.47	858.28	2.7	6.4	19.8	16.3	44.9	35.5	83.6	257.7	214.5	581.4													
250	325001030	81	6.2	6.0	13.2	272	14.5	609	373	813	167.8	89.6	376.0	38.82	77.06	138.92	87.09	342.90	3.7	7.9	24.4	20.3	55.9	14.2	33.5	103.2	85.9	236.8													
250	325002010	81	0.9	3.0	6.5	13.4	7.1	300	2.6	5.6	11.6	6.2	26.1	4.02	7.78	14.04	8.80	34.66	1.7	3.9	12.0	10.0	27.5	1.4	3.4	10.4	125.2	345.2													
250	325002020	81	8.6	3.0	6.5	13.4	7.1	300	2.6	5.6	11.6	6.2	26.1	4.02	7.78	14.04	8.80	34.66	1.7	3.9	12.0	10.0	27.5	1.4	3.4	10.4	125.2	345.2													
250	325002030	81	11.6	3.0	6.5	13.4	7.1	300	34.5	75.2	155.2	82.8	347.7	53.66	103.87	187.21	117.36	482.11	1.7	3.9	12.0	10.0	27.5	19.2	45.1	136.1	115.8	319.2													
250	325002040	81	1.3	3.0	6.5	13.4	7.1	300	3.8	8.2	17.0	9.1	38.1	5.87	11.37	20.50	12.85	50.59	1.7	3.9	12.0	10.0	27.5	1.4	3.4	10.4	125.2	345.2													
250	325003010	81	1.4	5.3	11.7	24.1	12.9	539	73	160	330	176	739	11.41	22.06	39.80	24.95	98.24	3.0	7.0	21.8	18.0	48.5	4.1	9.8	29.6	24.8	67.9													
250	325003020	81	2.2	5.3	11.7	24.1	12.9	539	119	260	537	287	1203	18.57	35.94	64.78	40.81	159.91	3.0	7.0	21.8	18.0	48.5	4.1	9.8	29.6	24.8	67.9													
250	325003030	81	8.9	6.4	14.0	29.0	15.5	64.9	44.1	98.2	198.6	108.0	444.8	88.65	132.90	239.53	150.16	591.24	3.8	8.4	28.0	21.8	59.8	24.5	57.7	176.0	146.1	408.4													
250	325004010	81	11.4	4.2	9.1	18.7	10.0	42.0	47.4	103.4	213.5	114.0	476.3	73.83	142.92	257.58	161.47	635.80	2.3	5.4	16.8	14.0	38.5	28.4	62.1	191.4	159.3	439.1													
250	325005010	81	1.7	3.6	7.8	16.1	8.6	36.0	6.2	13.5	27.8	14.8	62.2	9.60	18.59	33.50	21.00	82.70	2.0	4.7	14.4	12.0	33.0	3.4	8.1	24.9	20.7	57.1													
250	325005020	81	3.8	1.7	4.0	18.1	12.2	38.0	6.4	15.2	69.2	46.7	137.5	9.88	21.02	63.44	66.22	180.65	0.8	2.4	16.2	17.1	36.7	3.8	8.1	62.0	65.3	140.0													
250	325005030	81	3.0	3.6	7.8	16.1	8.6	36.0	10.7	23.4	48.3	25.8	108.3	16.71	32.34	58.29	36.54	143.89	2.0	4.7	14.4	12.0	33.0	6.0	14.0	43.3	36.1	89.4													
250	325005040	81	1.4	3.6	7.8	16.1	8.6	36.0	5.1	11.0	22.8	12.2	51.1	7.88	15.26	27.50	17.24	67.88	2.0	4.7	14.4	12.0	33.0	2.8	6.6	20.4	17.0	46.9													
250	325006010	81	8.4	2.9	6.3	12.9	6.9	28.0	24.0	52.4	108.1	57.7	242.2	37.38	72.37	130.42	81.76	321.93	1.6	3.8	11.6	9.6	26.6	13.4	31.4	98.9	80.7	223.4													
250	325006020	81	11.2	2.9	6.3	12.9	6.9	28.0	32.3	70.4	145.4	77.6	325.6	50.28	97.30	175.38	109.83	432.84	1.8	3.8	11.6	9.6	26.6	18.0	42.3	130.3	108.4	289.0													
250	325007010	81	12.5	3.0	6.5	13.4	7.1	300	37.1	81.0	167.3	89.3	374.6	57.82	111.93	201.74	128.47	497.88	1.7	3.9	12.0	10.0	27.5	20.7	48.6	148.9	124.8	343.9													
251	325101010	81	14.8	0.3	0.7	4.0	3.1	8.0	4.4	10.0	58.5	45.5	118.4	6.80	13.78	70.59	64.53	155.70	0.2	0.4	3.5	4.3	8.4	2.4	6.0	52.4	83.7	124.5													
251	325102010	A1	10.0	0.6	1.3	7.8	6.2	16.0	5.9	13.5	78.1	61.5	160.0	9.20	18.62	95.40	87.20	210.40	0.4	1.1	10.0	14.1	25.8	4.2	10.7	98.8	141.1	255.6													
251	325102020	A1	8.8	0.8	1.9	11.4	8.8	23.0	8.3	18.0	111.4	86.7	225.4	12.95	26.23	134.39	122.84	298.40	0.6	1.5	14.3	20.3	36.7	6.0	15.0	140.3	198.6	360.1													
251	325103010	A1	8.0	1.0	2.4	13.8	10.8	28.0	8.3	18.0	111.4	86.7	225.4	12.95	26.23	134.39	122.84	298.40	0.6	1.5	14.3	20.3	36.7	6.0	15.0	140.3	198.6	360.1													
251	325103020	A1	5.4	1.0	2.4	13.8	10.8	28.0	5.6	12.7	74.7	58.2	151.2	8.69	17.59	90.15	82.40	198.83	0.7	1.9	17.4	24.7	44.7	5.9	15.0	139.8	188.1	358.7													
251	325103030	81	4.8	1.0	2.4	13.8	10.8	28.0	4.7	10.8	63.4	49.3	128.2	7.37	14.92	76.48	69.89	168.64	0.6	1.4	12.4	15.1	29.4	2.8	6.5	56.6	86.9	134.9													
252	325201010	81	10.1	0.3	0.6	1.3	0.7	3.0	6.5	13.4	7.2	30.1	101.1	6.80	13.78	70.59	64.53	155.70	0.2	0.4	3.5	4.3	8.4	2.4	6.0	52.4	83.7	124.5													
252	325201020	81	14.8	0.2	0.4	0.9	0.5	2.0	2.8	6.4	13.2	7.0	29.5	4.55	8.81	15.87	9.95	39.17	0.1	0.3	0.8	0.7	1.8	1.8	3.8	11.8	9.8	27.1													
253	325301010	81	12.8	0.6	1.3	2.7	1.4	6.0	7.5	16.3	33.6	17.9	75.3	11.62	22.49	40.34	25.41	100.07	0.3	0.8	2.4	2.0	5.5	4.2	9.8	30.1	25.1	69.1													
253	325301020	81	4.8	2.3	5.0	10.3	5.5	23.0	10.9	23.7	48.0	28.2	108.8	16.95	32.82	59.14	37.08	145.99	1.3	3.0	9.2	7.7	21.1	6.1	14.3	43.9	36.8	100.8													
253	325301030	81	8.3	1.5	3.2	6.7	3.6	15.0	12.3	28.8	55.3	29.5	123.8	19.10	36.98	66.85	41.78	164.53	0.8	1.9	6.0	5.0	13.8	6.8	16.1	49.5	41.2	113.6													
253	325302010	81	13.4	2.3	5.0	10.3	5.5	23.0	30.5	68.5	137.4	73.3	307.7	47.48	91.93	165.66	103.86	408.95	1.3	3.0	9.2	7.7	21.1	17.0	39.9	123.1	102.5	282.5													
253	325303010	81	3.5	2.2	4.8	9.8	5.2	22.0	7.6	16.7	34.4	18.4	77.1	11.81	23.05	41.54	26.04	102.54	1.2	2.9	8.8	7.3	20.2	4.3	9.8	30.9	25.7	70.8													
253	325303020	81	7.8	4.2	8.1	18.7	10.0	42.0	31.5	68.8	142.0	75.8	318.0	49.09	95.03	171.27	107.37	422.75	2.3	5.4	16.8	14.0	38.5	17.5	41.3	127.2	105.9	282.0													
254	325401010	81	16.9	0.4	1.0	5.9	4.6	12.0	7.5	17.1	100.2	78.0	202.8	11.66	23.60	120.91	110.52	268.69	0.2	0.8	5.3	8.5	12.8	4.2	10.2	69.8	109.0	213.3													
254	325402010	81	8.8	0.2	0.5	3.0	2.3	6.0	1.9	4.4	28.1	20.3	52.7	3.03	6.14	31.44	28.74	69.35	0.1	0.3	2.7	3.2	6.3	1.1	2.7	23.4	26.4	55.5													
254	325402011	81	8.8	0.1	0.3	2.0	1.5	4.0	1.3	3.0	17.4	13.5	35.2	2.02	4.09	20.96	19.16	46.24	0.1	0.2	1.6	2.2	4.2	0.7	1.6	15.9	37.0	50.3													
254	325403010	81	9.8	0.1	0.3	1.5	1.2	3.0	1.1	2.4	14.2	11.1	28.8	1.65	3.35	17.15	15.68	37.83	0.1	0.2	1.3	1.6	3.2	0.6	1.5	12.7	16.5	30.3													
254	325403011	81	12.7	0.3	0.8	3.5	2.7	7.0	3.3	7.5	44.1	34.3	89.2	5.13	10.38	53.17	42.80	117.27	0.1	0.4	3.1	3.8	7.4	1.6	4.5	39.5	47.9	93.8													
254	325403020	81	8.6	0.1	0.3	1.5	1.2	3.0	0.9	2.2	12.7	9.9	25.7	1.48	2.99	15.33	14.01	33.81	0.1	0.2	1.3	1.6	3.2	0.5	1.3	11.4	13.8	27.0													
254	325404020	81	8.0	0.3	0.8	4.4	3.5	9.0	2.7	6.1	35.6	27.7	72.1	4.14	8.39	42.98	39.29	94.60	0.2	0.5	4.0	4.8	9.5	1.5	3.6	31.9	30.8	75.0													
254	325404030	81	5.2	0.3	0.8	4.4	3.5	9.0	1.7	3.9	23.0	17.9	46.4	2.67	5.40	27.69	25.31	61.07	0.2	0.5	4.0	4.8	9.5	1.0	2.3	20.8	25.0	48.8													
254	325404040	81	4.9	0.5	1.1	6.4	5.0	13.0	2.4	5.4	31.7	24.7	64.2	3.68	7.47	38.29	35.00	84.45	0.3	0.7	5.8	7.0	13.7	1.3	3.2	28.4	34.5	67.5													
254	325405010	81	6.2	0.3	0.6	4.4	3.5	9.0	2.1	4.7	27.5	21.4	55.7	3.20	6.48	33.22	30.36	73.26	0.2	0.5	4.0	4.8	9.5	1.1	2.8	24.7	30.0	56.8													
254	325405020	81	5.5	0.3	0.6	4.4	3.5	9.0	1.8	4.1	24.3	18.9	49.2	2.83	5.73	29.35	28.83	64.74	0.2	0.5	4.0	4.8	9.5	1.0	2.5	21.8	28.5	51.8													
2																																									

Appendix D. Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F/km/day

Hwy No	Comr Seq	Ld	Cls	L (km)	LT	HT	Trk LT	Tot	Dbls	Sgls	Km/day	HT	per HT	day Sgls	(\$)	Tot	TLF LT	per HT	day Sgls	Dbls	Tot	TLF LT	Km HT	per Sgls	day Dbls	Tot	
																											Cost LT
262	326201010	B1	7.9	0.7	7.0	55	119	246	131	55.2	8.52	16.49	29.71	18.63	73.34	0.4	0.9	2.8	2.3	8.4	3.0	7.2	22.1	18.4	50.7		
262	326201020	B1	10.1	1.7	3.7	170	371	767	409	171.7	26.50	51.30	92.46	57.96	226.23	0.9	2.2	6.8	5.7	15.6	9.5	22.3	66.7	57.2	157.8		
262	326202010	B1	3.9	4.4	7.2	21.9	85	420	17.4	86.0	27.07	38.84	103.75	47.55	217.21	2.5	4.3	19.6	11.8	38.3	9.7	16.9	77.1	48.9	150.5		
262	326202011	B1	2.4	2.3	5.0	10.3	55	230	5.4	11.8	8.41	16.27	29.32	16.38	72.36	1.3	3.0	9.2	7.7	21.1	3.0	7.1	21.8	18.1	50.0		
262	326202020	B1	6.4	1.3	2.8	5.8	31	130	6.3	18.1	12.89	24.85	44.97	28.19	111.00	0.7	1.7	5.2	4.3	11.9	4.6	10.8	33.4	27.6	76.7		
262	326203010	B1	3.1	1.1	2.4	4.8	2.8	11.0	3.3	7.2	5.17	10.01	18.05	11.31	44.55	0.8	1.4	4.4	3.7	10.1	1.8	4.3	13.4	11.2	30.8		
262	326203020	B1	2.9	1.1	2.4	4.9	2.8	11.0	3.1	6.8	4.87	9.42	16.98	10.85	41.92	0.8	1.4	4.4	3.7	10.1	1.7	4.1	12.6	10.5	29.0		
262	326204010	RTAC	7.5	0.7	1.5	3.1	17	7.0	5.2	11.3	8.10	15.67	28.24	17.71	69.71	0.5	1.3	4.7	4.9	11.4	3.7	10.0	35.4	36.7	85.8		
262	326204020	RTAC	10.2	1.4	3.0	6.2	33	140	14.2	31.0	22.11	42.79	77.12	48.35	190.37	1.0	2.7	9.4	9.8	22.9	10.2	27.3	98.5	100.2	234.2		
264	326401010	B1	5.4	0.7	1.6	9.4	7.3	19.0	3.8	8.7	5.99	11.98	61.40	56.12	135.42	0.4	1.0	8.4	10.2	20.0	2.1	5.2	45.6	55.4	106.3		
264	326401020	B1	8.7	0.7	1.6	9.4	7.3	19.0	6.8	15.5	10.57	21.40	109.68	100.23	241.86	0.4	1.0	8.4	10.2	20.0	3.8	9.3	81.5	98.9	193.4		
264	326402010	RTAC	5.5	0.1	0.3	1.5	12	3.0	0.6	1.4	3.28	6.84	34.03	31.11	75.06	0.1	0.2	1.8	2.2	3.4	5.9	0.4	1.2	12.4	16.7	32.8	
264	326402030	RTAC	6.8	0.8	2.1	12.4	9.8	25.0	6.1	13.9	8.17	19.23	98.53	90.06	217.31	0.7	1.9	18.7	28.2	49.4	4.4	12.3	123.3	186.7	326.7		
264	326403010	RTAC	5.0	0.1	0.2	1.0	0.8	2.0	0.4	0.8	0.57	1.16	5.96	5.45	13.15	0.1	0.1	1.5	2.3	4.0	0.3	0.7	7.5	11.3	19.8		
264	326404010	RTAC	8.5	0.5	1.1	6.4	5.0	13.0	4.1	9.3	5.47	12.69	66.04	60.36	145.65	0.3	1.0	9.7	14.7	25.7	2.8	8.2	82.7	125.1	219.0		
264	326404020	B1	7.3	0.5	1.1	6.4	5.0	13.0	3.5	6.0	4.67	11.00	56.35	51.00	124.28	0.3	0.7	5.8	7.0	13.7	1.9	4.8	41.9	50.8	96.4		
264	326405010	B1	3.7	1.1	2.6	15.3	11.9	31.0	4.2	9.6	6.54	13.24	67.83	62.00	149.61	0.8	1.6	13.7	16.7	32.6	2.3	5.7	50.4	61.2	118.7		
264	326405020	B1	16.3	0.4	0.8	4.8	3.8	10.0	6.0	13.7	8.07	19.00	97.36	88.99	214.74	0.2	0.5	4.4	5.4	10.5	3.4	8.3	72.3	87.8	171.7		
264	326406010	B1	15.0	0.1	0.3	2.0	1.5	4.0	2.2	5.1	2.97	6.88	35.77	32.70	78.90	0.1	0.2	1.8	2.2	4.2	1.2	3.0	26.6	32.3	63.1		
264	326406020	B1	4.3	0.2	0.4	2.5	1.9	5.0	0.8	1.7	1.01	2.38	12.20	11.15	26.91	0.0	0.1	0.9	1.1	2.1	0.4	1.0	9.1	11.0	21.5		
264	326406030	B1	4.9	0.2	0.5	3.0	2.3	6.0	1.1	2.5	1.45	3.42	17.53	16.02	38.66	0.1	0.3	2.7	3.2	6.3	0.6	1.5	13.0	15.8	30.9		
265	326501010	B1	15.0	0.2	0.4	3.0	1.4	5.0	3.4	6.6	4.44	9.11	53.57	29.06	97.01	0.1	0.3	2.7	1.9	5.0	1.9	4.0	39.8	28.7	74.3		
265	326501020	B1	15.0	0.9	1.8	12.5	5.8	21.2	9.8	18.7	12.60	25.84	152.01	82.51	275.28	0.5	1.1	11.2	8.0	20.8	5.3	11.2	112.9	81.4	210.9		
265	426502010	B1	8.7	0.4	0.8	5.3	2.5	9.0	3.5	6.9	4.63	9.50	55.88	30.33	101.18	0.2	0.5	4.6	3.4	8.9	2.0	4.1	41.5	29.9	77.5		
265	426502020	B1	10.6	0.4	0.7	4.7	2.2	8.0	3.8	7.5	5.05	10.35	80.88	33.05	110.25	0.2	0.4	4.3	3.1	7.9	2.1	4.5	45.2	32.6	84.5		
265	426502030	B1	8.7	0.9	1.8	11.9	5.5	20.0	7.8	15.3	10.29	21.11	124.17	67.40	224.85	0.5	1.1	10.6	7.7	19.8	4.3	9.2	92.3	66.5	172.3		
265	426503010	B1	13.6	0.5	1.0	6.5	3.0	11.0	6.7	13.2	8.67	18.19	107.01	58.08	193.77	0.3	0.6	5.8	4.2	10.9	3.7	7.9	79.5	57.3	148.5		
265	426503020	B1	13.6	0.4	0.7	4.7	2.2	8.0	4.9	9.6	6.45	13.23	77.82	42.24	140.92	0.2	0.4	4.3	3.1	7.9	2.7	5.7	57.8	41.7	106.0		
265	426504010	B1	2.1	0.4	0.9	4.0	2.7	6.0	0.8	1.6	0.4	2.54	10.10	8.01	21.86	0.2	0.5	3.6	3.8	8.1	0.4	1.1	7.5	7.9	16.9		
265	426504020	B1	5.8	0.8	1.7	3.6	1.9	8.0	4.6	10.1	20.9	13.99	25.22	15.81	62.25	0.4	1.0	3.2	2.7	7.3	2.8	6.1	18.7	15.6	43.0		
266	426601010	B1	23.8	5.5	12.1	25.0	13.3	55.9	131.9	287.9	584.4	387.83	717.00	448.48	1789.92	3.1	7.3	22.4	18.6	51.4	73.4	172.8	532.7	443.4	1222.4		
266	426601020	B1	7.7	1.7	3.7	7.8	4.0	17.0	12.9	28.2	20.16	39.02	70.33	44.09	173.80	0.9	2.2	6.6	5.7	15.6	7.2	16.9	52.3	43.5	119.9		
266	426601030	B1	6.8	0.6	1.3	2.7	1.4	6.0	4.0	8.0	18.1	12.11	21.82	13.66	53.66	0.3	0.8	2.4	2.0	5.5	2.2	5.3	18.2	13.5	37.2		
267	426701010	B1	8.8	0.2	0.4	2.5	1.9	5.0	1.6	3.7	2.17	16.9	44.0	2.53	5.12	26.23	23.96	0.1	0.3	2.2	2.7	5.3	0.9	2.2	19.5	23.7	46.3
267	426702010	B1	14.8	0.4	0.9	5.4	4.2	11.0	6.0	13.7	8.04	16.83	97.00	88.66	213.84	0.2	0.6	4.9	5.9	11.6	3.3	8.2	72.1	87.5	171.1		
267	426702020	B1	9.0	0.5	1.2	6.9	5.4	14.0	4.7	10.8	6.24	14.68	75.21	68.74	165.88	0.3	0.7	6.2	7.5	14.7	2.6	6.4	55.9	67.8	132.7		
268	426801010	B1	14.8	0.2	0.4	3.9	4.8	10.0	2.9	6.3	3.92	8.716	157.09	98.48	387.75	1.1	2.6	8.0	6.7	18.3	16.1	37.9	118.7	97.2	267.8		
268	426802010	B1	8.3	3.2	6.9	14.3	7.6	32.0	26.3	57.4	118.6	79.37	143.06	59.68	353.11	1.8	4.1	12.8	10.6	29.3	17.3	40.8	125.7	104.7	268.5		
268	426802020	B1	9.8	3.2	6.9	14.3	7.6	32.0	31.1	67.9	140.3	93.89	169.22	109.08	417.70	1.8	4.1	12.8	10.6	29.3	17.3	40.8	125.7	104.7	268.5		
268	426802030	B1	3.4	3.2	6.9	14.3	7.6	32.0	10.8	23.6	48.8	32.67	58.87	36.91	145.32	1.8	4.1	12.8	10.6	29.3	6.0	14.2	43.7	36.4	100.4		
269	426901010	B1	12.8	0.4	0.9	5.4	4.2	11.0	5.2	11.8	6.94	16.33	83.89	76.49	184.58	0.2	0.8	4.9	5.9	11.6	2.9	7.1	62.2	75.5	147.6		
269	426901020	B1	15.5	0.3	0.7	4.0	3.1	6.0	4.6	10.5	6.15	14.47	74.12	67.75	163.48	0.2	0.4	3.5	4.3	8.4	2.6	6.3	55.1	66.6	130.7		
269	426902010	B1	8.3	0.5	1.2	6.9	5.4	14.0	4.3	9.6	5.76	13.57	69.53	63.58	153.36	0.3	0.7	6.2	7.5	14.7	2.4	5.9	51.7	62.7	122.8		
269	426902020	B1	7.0	0.7	1.5	8.9	6.9	18.0	4.7	10.6	6.25	14.70	75.34	66.86	166.17	0.4	0.9	6.0	9.7	16.9	2.6	6.4	56.0	67.9	132.9		
269	426902030	B1	8.5	0.7	1.7	9.9	7.7	20.0	6.3	14.3	8.39	17.76	101.24	92.54	232.29	0.4	1.0	8.9	10.6	21.0	3.5	8.6	75.2	81.3	176.8		
269	426902040	B1	14.5	0.7	1.6	9.4	7.3	19.0	10.2	23.2	36.2	32.08	164.26	150.14	382.29	0.4	1.0	8.4	10.2	20.0	5.7	13.9	122.0	148.1	289.7		
269	426902050	B1	10.4	0.4	0.9	5.4	4.2	11.0	4.2	9.6	5.63	13.25	67.86	62.05	149.72	0.2	0.6	4.9	5.9	11.6	2.3	5.8	50.4	61.2	118.7		
270	327001010	B1	2.9	3.8	6.7	50.9	39.6	103.0	11.0	25.2	147.6	34.76	178.09	182.78	392.80	2.1	5.2	45.6	55.4	108.3	6.1	15.1	132.3	160.8	314.1		
270	327001020	B1	7.8	3.8	8.2	16.9	9.0	38.0	32.8	78.3	328.7	50.73	98.20	110.95	436.88	2.6	6.1	18.8	15.6	43.1	18.1	42.7	131.5	109.5	301.7		
270	327002010	B1	3.2	0.4	0.8	1.8	1.0	4.0	1.3	2.9	5.8	3.86	6.95	4.36	97.40	2.1	4.9	15.2	12.6	34.9	15.9	37.4	115.4	86.1	264.9		
270	327002030	B1	4.6	0.4	0.9	1.8	1.0	4.0	1.3	2.9	5.8	3.86	6.95	4.36	97.40	2.1	4.9	15.2	12.6	34.9</							

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL, F/day, TL, F km/day

Hwy No	Seq	Ld	Cls	(fm)	L	LT	HT	LT	HT	TL, F/day	TL, F km/day	Trk	LT	HT	Sgls	Dbts	Tot	LT	HT	Cost	per HT	day Sgls	(\$)	Dbts	Tot	LT	HT	per HT	day Sgls	Dbts	Tot	TLF	LT	HT	km	per Sgls	day	Tot	TLF	LT	HT	per Sgls	day	Dbts	Tot
270	327003010	B1	42	07	15	17	70	28	63	130	70	282	451	873	1574	987	3865	04	09	28	09	28	23	64	16	38	117	97	286																
270	327003020	B1	40	07	15	31	70	28	61	126	67	283	438	844	1521	954	3755	04	08	28	08	28	23	64	16	37	113	94	259																
270	327004010	B1	71	08	17	38	19	60	56	123	135	567	876	1695	3056	1916	7542	04	10	32	10	32	27	73	31	74	227	189	521																
270	327005010	B1	114	07	15	31	70	79	172	354	189	794	1225	2372	4274	2679	10550	04	09	28	09	28	23	64	44	103	316	284	728																
270	327005020	B1	141	07	15	31	70	87	212	439	234	883	1516	2936	5291	3317	13060	04	08	28	08	28	23	64	54	128	393	327	902																
270	327006010	B1	137	04	09	18	10	44	118	244	130	547	844	1635	2946	1847	7272	02	05	16	13	37	30	71	219	182	502	502	502																
270	327006020	B1	38	13	28	58	31	130	47	102	211	473	730	1412	2548	1596	6264	07	17	52	17	52	43	119	28	61	189	157	434																
270	327006030	B1	33	35	76	156	83	350	113	247	510	272	1785	3416	6157	3860	15198	19	45	140	19	45	140	118	321	83	148	457	361	1050															
271	427101010	B1	23	10	22	45	24	100	23	50	103	55	358	892	1248	782	3081	06	13	40	13	40	33	92	13	30	93	77	213																
271	427101020	B1	48	10	22	45	24	100	49	106	220	117	760	1472	2652	1683	6547	06	13	40	13	40	33	92	27	64	197	164	452																
271	427101030	B1	81	08	17	38	19	60	84	140	289	154	999	1934	3488	2185	8605	04	10	32	10	32	27	73	38	84	259	186	584																
271	427101040	B1	60	08	17	38	19	60	47	103	213	478	735	1423	2565	1608	6331	04	10	32	10	32	27	73	28	62	191	159	437																
271	427101050	B1	36	08	13	27	14	60	22	47	97	52	336	650	1172	735	2892	03	08	24	08	24	20	55	12	28	87	72	200																
272	427201010	B1	61	22	53	241	183	480	138	323	983	2923	2122	4468	17736	14075	38400	12	32	218	32	218	228	489	78	194	1318	1389	2878																
272	427201020	B1	51	22	53	241	183	480	114	271	1234	833	1780	3748	14882	11810	32221	12	32	218	32	218	228	489	64	163	1108	1185	2497																
273	427301010	B1	75	03	08	13	07	30	22	49	100	54	225	347	872	1210	759	2988	02	04	12	10	28	12	28	90	75	206																	
274	427401010	B1	81	06	13	79	62	160	48	109	642	500	1298	1459	7477	6834	16490	01	03	22	08	22	27	53	26	63	556	874	1319																
274	427401020	B1	251	02	04	25	19	50	46	106	620	482	1254	721	1459	7477	6834	16490	01	03	22	08	22	27	53	26	63	556	874	1319															
274	427401030	B1	120	17	38	222	173	450	199	455	2869	2077	5400	3103	6283	32196	29429	71012	09	23	199	242	473	111	273	2392	2803	5878																	
274	427402010	B1	119	03	08	14	35	90	39	90	529	411	1069	1244	2458	32058	29302	70707	08	22	195	237	463	110	272	2382	2891	5655																	
274	427403010	B1	103	03	08	14	35	90	34	78	456	355	823	531	1074	5506	5032	12143	02	05	40	48	95	22	54	47	575	1124	971																
274	427403020	B1	119	06	14	64	65	170	75	171	1003	781	2030	1167	2362	12102	11062	26892	03	09	75	91	179	42	103	889	1091	2135																	
275	427501010	B1	34	13	28	58	120	64	270	196	427	881	14571	28207	50838	31870	125486	41	97	300	108	300	250	688	521	1225	3773	3144	8687																
275	427501020	B1	126	74	182	335	179	749	838	2041	4215	2249	9441	14571	28207	50838	31870	125486	41	97	300	108	300	250	688	521	1225	3773	3144	8687															
276	427601020	B1	25	42	81	187	100	420	103	224	463	247	1038	3097	5581	3498	13776	23	54	188	140	188	140	385	57	135	415	345	951																
276	427601030	B1	130	35	76	158	83	350	450	982	2028	1082	4542	13571	24459	15333	60373	19	45	140	116	321	250	589	1817	1513	4170	3717	3177																
276	427601040	B1	116	35	76	158	83	350	401	875	1808	865	4048	12098	21804	13669	53820	19	45	140	116	321	250	589	1817	1513	4170	3717	3177																
276	427601050	B1	92	27	58	120	64	270	245	534	1102	588	2468	3808	7374	43290	13290	32808	15	35	108	90	248	138	320	967	822	2286																	
276	427602010	B1	97	28	58	116	62	260	250	546	1126	602	2527	3801	7551	43609	6532	33593	14	34	104	87	238	139	328	1011	842	2320																	
276	427602020	B1	109	26	58	116	62	260	280	612	1263	674	2828	4366	8451	45332	9548	37598	14	34	104	87	238	139	328	1011	842	2320																	
276	427603010	B1	93	13	28	58	31	130	119	281	538	287	1205	15232	2532	9548	37598	14	34	104	87	238	139	328	1011	842	2320																		
276	427603020	B1	111	29	63	129	69	290	318	693	1431	763	3204	4846	9574	17255	10817	42591	18	38	116	96	266	177	416	1282	1087	2842																	
276	427603030	B1	140	31	67	138	74	310	431	940	1841	1038	4348	6111	12891	23414	14678	57795	17	40	124	103	284	240	584	1740	1448	3982																	
276	427604010	B1	114	20	43	89	48	200	228	494	1020	544	2284	3525	6823	12298	7709	30356	11	26	80	67	183	126	296	914	761	2087																	
276	427601010	B1	417	23	50	103	55	230	850	2072	4276	2283	9581	14789	26828	51596	32345	127358	13	30	92	77	211	528	1243	3833	3181	8798																	
278	427801010	B1	68	05	11	22	12	50	34	73	151	81	339	523	1013	1828	1145	4508	03	08	20	17	48	19	44	138	113	311																	
278	427801011	B1	33	05	11	22	12	50	16	36	73	39	164	254	481	865	555	2184	03	08	20	17	48	19	44	138	113	311																	
278	427801020	B1	72	05	11	22	12	50	36	78	161	86	361	557	1079	1945	1219	4800	03	08	20	17	48	19	44	138	113	311																	
278	427801030	B1	75	25	54	112	60	250	188	408	838	447	1878	2899	5612	10114	6340	24864	14	32	100	83	229	104	244	751	675	1724																	
280	528001010	B1	420	02	07	26	44	80	84	312	1102	1861	3160	4318	13283	26377	45296	01	04	24	62	81	47	168	868	2602	3824																		
280	528002010	B1	303	02	07	23	39	70	53	187	696	1175	2121	828	2728	6391	18650	28593	01	04	21	54	80	30	118	623	1843	2414																	
280	528003010	B1	540	02	07	23	39	70	95	352	1240	2094	3780	1472	4858	14855	28674	50958	01	04	21	54	80	30	118	623	1843	2414																	
280	528004010	B1	162	02	06	20	33	60	24	80	319	538	972	378	1248	3846	7630	13104	01	03	16	46	68	14	54	286	753	1108																	
280	528005010	B1	573	02	06	20	33	60	33	86	320	1128	1905	13602	46348	1339	46348	1339	46348	01	03	16	46	68	14	54	286	753	1108																
280	528006010	B1	313	01	05	16	28	50	38	146	513	867	1585	609	2011	6182	12268	21098	01	03	15	39	57	22	87	460	1212	1781																	
280	528007010	B1	303	01	05	16	28	50	38	141	497	839	1515	590	1947	5994	11893	30424	01	03	15	39	57	22	87	460	1212	1781																	
280	528008010	B1	95	08	28	98	168	300	71	265	935	1579	2850	1110	3663	11278	22373	39421	04	17	68	232	341	40	159	638	2207	3244																	
280	528009020	B1	125	05	17	59	100	180	56	209	738	1247	2250	876	2892	8902	17663	30332	03	10	53	139	205	31	128	681	1743	2561																	
280	528009030	B1	86	05	19	66	111	200	43	160	564	953	1720	670	2210	6805	13502	23187	03	11	59	155	228	24	98	508	1332	1958																	
282	528201010	B1	150	01																																									

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TI.F/day, TI.F: km/day

Hwy No	Cont	Seq	Ld	Cls	L (ftm)		Trk		HT		Sgts		Dbts		Tot	Cost	per HT	TLF LT	per HT	day Sgts	(\$)	Dbts	Tot	TLF LT	per HT	day Sgts	Dbts	Tot	TLF LT	per HT	day Sgts	Dbts	Tot	day	per Sgts	km HT	day	per Sgts	Tot
					L	L	LT	LT	LT	LT	LT	LT	LT	LT																									
3	300312020	RTAC	11.1	3.6	7.8	8.6	36.0	39.6	66.4	178.4	65.2	399.6	61.67	119.38	215.16	134.68	531.10	2.6	6.9	24.2	25.2	56.8	28.4	76.2	208.3	279.6	653.5												
3	300313010	RTAC	6.6	3.5	7.6	8.3	35.0	22.9	48.9	103.0	55.0	230.6	35.62	68.95	124.27	77.80	308.74	2.5	6.7	23.6	24.5	57.2	16.4	44.0	155.5	161.5	377.5												
3	300314010	RTAC	5.1	4.1	8.9	18.3	9.8	41.0	20.7	45.2	93.3	49.8	208.9	32.24	62.41	112.48	270.66	2.9	7.8	27.6	28.7	87.0	14.8	38.8	140.8	146.2	341.7												
3	300315010	RTAC	8.1	8.4	16.4	37.9	20.2	84.9	76.8	167.6	346.1	184.7	775.3	119.66	231.64	417.49	261.72	1030.51	8.0	16.2	57.2	58.4	138.9	55.1	147.8	522.6	1268.1												
3	300315020	RTAC	4.1	8.0	17.5	36.1	19.3	80.9	32.6	71.2	147.0	78.5	328.3	50.83	98.40	177.35	111.18	437.77	5.7	15.4	54.5	56.6	132.4	23.4	62.8	222.0	538.7												
3	300391010	RTAC	4.0	2.0	4.3	8.9	4.8	20.0	7.9	17.2	35.4	19.9	79.3	12.24	23.70	42.71	26.78	105.43	1.4	3.8	13.5	14.0	32.7	5.6	15.1	53.5	55.5	128.7											
3	300391020	RTAC	7.3	2.0	4.3	8.9	4.8	20.0	14.5	31.7	65.4	34.9	146.5	22.60	43.76	76.87	49.44	184.87	1.4	3.8	13.5	14.0	32.7	5.6	15.1	53.5	55.5	128.7											
30	203001010	RTAC	3.0	5.4	12.3	72.2	56.2	146.0	15.9	36.3	212.9	165.6	430.7	24.75	50.11	256.79	234.72	566.38	3.9	10.8	109.0	165.0	288.8	11.4	32.0	321.4	486.6	651.4											
30	203001040	RTAC	1.7	5.4	12.3	72.2	56.2	146.0	9.3	21.1	124.1	96.6	251.1	14.43	29.22	149.72	136.85	330.23	3.9	10.8	109.0	165.0	288.8	6.8	18.6	187.4	263.7	486.4											
30	203001030	RTAC	4.6	5.4	12.3	72.2	56.2	146.0	24.8	56.5	332.0	258.3	671.6	38.60	78.14	400.42	366.01	883.17	3.9	10.8	109.0	165.0	288.8	17.8	49.9	501.2	758.8	1327.6											
30	203001040	RTAC	3.2	5.5	12.6	74.1	57.7	150.0	17.5	39.9	234.3	182.3	474.0	27.24	55.15	282.61	258.32	623.32	4.0	11.1	111.9	169.5	296.5	12.5	35.2	353.7	535.6	937.0											
30	203001050	RTAC	3.7	5.5	12.6	74.1	57.7	150.0	20.7	47.2	277.3	215.8	561.0	32.24	65.28	334.48	305.73	737.73	4.0	11.1	111.9	169.5	296.5	14.8	41.7	418.7	633.9	1109.0											
30	203001080	RTAC	5.7	5.6	12.9	75.8	58.6	153.0	32.3	73.8	433.3	337.2	876.7	50.38	102.01	522.70	477.78	1152.87	4.0	11.4	114.2	172.9	302.5	23.2	65.1	654.2	960.5	1733.1											
300	130001010	RTAC	19	2.0	3.2	9.8	3.8	19.0	3.8	6.1	16.7	7.3	35.9	5.87	8.44	22.57	10.33	47.21	1.4	2.8	14.8	11.3	30.6	2.7	5.4	28.2	21.4	57.7											
300	130001020	RTAC	3.4	2.0	3.2	9.8	3.8	19.0	6.8	11.0	33.8	13.2	64.7	10.60	15.22	40.72	18.64	85.17	1.4	2.8	14.8	11.3	30.6	4.9	9.7	51.0	38.6	104.2											
301	130101010	RTAC	8.4	1.2	2.9	13.1	8.8	26.0	11.4	27.1	123.2	83.2	244.9	17.76	37.43	148.90	117.93	321.73	0.8	2.5	18.7	26.0	48.1	8.2	23.8	166.0	244.5	462.8											
301	130101020	RTAC	2.2	1.2	2.9	13.1	8.8	26.0	2.6	6.3	28.5	19.3	58.7	4.11	8.68	34.39	27.29	74.46	0.8	2.5	18.7	26.0	48.1	1.9	5.5	43.0	56.6	107.0											
302	130201010	RTAC	8.2	2.3	5.0	10.3	5.5	23.0	18.6	40.6	83.9	44.8	188.0	29.01	56.16	101.21	63.45	249.83	1.6	4.4	15.5	16.1	37.8	13.3	35.6	126.7	131.5	307.4											
302	130201020	RTAC	8.0	2.4	5.2	10.7	5.7	24.0	21.4	46.8	96.6	51.5	216.3	33.36	64.62	116.46	73.01	287.46	1.7	4.6	16.2	16.8	36.2	15.4	41.2	145.6	151.4	353.7											
302	130202010	RTAC	9.5	2.2	4.8	9.8	5.2	22.0	22.9	50.0	103.3	55.1	231.4	35.72	68.15	124.63	78.13	307.82	1.6	4.2	14.8	15.4	35.9	16.4	44.1	159.0	162.0	378.5											
302	130202011	RTAC	9.0	2.2	4.8	9.8	5.2	22.0	19.6	42.6	86.4	47.2	198.0	30.56	59.17	106.84	66.85	263.22	1.6	4.2	14.8	15.4	35.9	14.1	37.8	133.5	136.6	323.9											
302	130202020	RTAC	5.0	2.2	4.8	9.8	5.2	22.0	10.8	23.6	48.7	26.0	109.0	16.63	32.57	58.70	36.80	144.80	1.6	4.2	14.8	15.4	35.9	7.7	20.8	73.5	78.3	178.3											
302	130203010	RTAC	5.4	2.2	4.8	9.8	5.2	22.0	11.8	25.9	53.4	28.5	119.6	18.45	35.72	64.38	40.36	158.92	1.6	4.2	14.8	15.4	35.9	8.5	22.8	80.6	83.7	196.6											
302	130203020	RTAC	12.8	2.2	4.8	9.8	5.2	22.0	27.8	60.8	125.2	66.6	280.4	43.28	83.78	151.02	84.67	372.77	1.6	4.2	14.8	15.4	35.9	18.9	53.5	189.0	196.3	456.7											
302	130204010	RTAC	4.9	1.9	4.1	8.5	4.5	19.0	9.1	19.9	41.1	21.9	92.1	14.21	27.51	49.57	31.08	122.37	1.3	3.8	12.8	13.3	31.0	6.5	17.6	82.0	64.4	150.6											
302	130204020	RTAC	5.2	1.9	4.1	8.5	4.5	19.0	9.7	21.1	43.6	23.3	97.8	15.09	29.21	52.64	33.00	128.93	1.3	3.8	12.8	13.3	31.0	6.9	18.6	85.9	68.4	159.9											
302	130205010	RTAC	5.6	1.9	4.1	8.5	4.5	19.0	10.5	22.9	47.2	25.2	105.7	16.32	31.59	56.93	35.69	140.53	1.3	3.8	12.8	13.3	31.0	7.5	20.2	71.3	74.0	173.9											
302	130205020	RTAC	10.8	1.9	4.1	8.5	4.5	19.0	20.4	44.4	81.8	49.0	205.6	31.73	61.42	110.70	69.40	273.24	1.3	3.6	12.8	13.3	31.0	14.6	39.2	136.8	143.9	338.2											
302	130206010	RTAC	6.9	10.2	22.2	45.9	24.5	102.9	70.0	152.6	315.1	168.2	705.9	108.95	210.91	393.12	238.28	598.26	7.3	19.6	69.4	72.2	168.3	50.1	134.6	475.8	494.0	1154.5											
302	130206020	RTAC	13.2	8.8	19.2	38.7	21.2	88.9	118.7	254.5	525.5	280.4	1177.2	181.69	351.73	630.92	397.40	936.74	6.3	17.0	59.9	62.2	145.4	63.6	224.5	793.4	823.9	1925.4											
303	130301010	RTAC	6.7	3.0	6.5	13.4	7.1	30.0	20.0	43.6	90.0	48.1	201.7	31.13	60.27	108.82	68.09	288.10	2.1	5.7	20.2	21.0	48.0	14.3	38.5	135.9	141.2	328.9											
303	130301020	RTAC	8.4	3.0	6.5	13.4	7.1	30.0	19.8	41.3	85.2	45.5	190.9	28.47	57.04	102.81	64.45	253.76	2.1	5.7	20.2	21.0	48.0	13.6	36.4	126.7	133.6	317.3											
304	130401010	RTAC	3.9	4.3	9.3	19.2	10.2	43.0	16.6	36.2	74.8	39.9	167.5	25.86	50.06	90.22	56.56	222.69	3.1	8.2	29.0	30.1	70.3	11.9	31.9	112.8	117.3	274.0											
304	130402010	RTAC	10.5	10.9	23.8	48.1	26.2	109.8	114.5	249.7	515.8	275.2	1154.9	178.28	345.08	621.94	389.89	935.16	7.6	21.0	74.1	76.9	179.7	82.0	220.2	776.3	808.3	1869.1											
304	130403010	RTAC	11.1	10.3	22.5	46.4	24.8	103.9	114.2	249.1	514.4	274.5	1152.2	177.84	344.27	620.47	388.97	935.54	7.4	19.8	70.0	72.7	169.9	81.8	219.7	776.6	806.4	1864.6											
304	130404010	RTAC	3.0	2.6	6.1	27.7	18.7	55.0	78.1	185.3	642.7	569.3	1875.3	121.59	256.05	1016.44	806.65	2200.73	1.6	5.4	41.8	41.8	54.9	56.0	163.4	1272.2	1672.4	3164.0											
304	130404010	RTAC	23.5	1.2	2.9	13.1	8.8	26.0	28.5	67.6	307.3	207.6	811.0	44.35	93.38	370.71	294.19	802.83	0.8	2.5	19.7	26.0	48.1	20.4	59.6	404.0	809.9	1153.8											
304	130405010	A1	15.9	1.2	2.9	13.1	8.8	26.0	19.3	45.7	207.9	140.5	413.4	30.00	63.18	250.82	199.05	543.08	0.9	2.3	16.5	20.3	39.9	13.8	36.2	261.8	322.2	634.0											
304	130406010	A1	23.8	0.5	1.1	5.0	3.4	10.0	11.1	26.3	119.7	80.9	238.0	17.27	36.38	144.40	114.60	312.84	0.3	0.9	6.3	7.6	15.3	7.9	20.6	150.7	343.7	676.3											
304	130406020	A1	14.7	0.2	0.6	2.5	1.7	5.0	3.4	6.1	36.8	26.2	77.1	5.60	11.78	46.78	37.12	101.28	0.3	0.8	6.3	7.6	15.3	2.8	6.8	48.8	60.1	118.2											
304	130406010	A1	15.6	0.2	0.6	2.5	1.7	5.0	3.6	6.8	39.2	26.5	78.0	5.68	11.92	47.56	35.37	98.49	0.2	0.4	3.2	3.9	7.7	2.5	6.4	46.5	57.2	112.8											
304	130406020	A1	5.5	0.1	0.2	1.0	0.7	2.0	0.5	1.2	5.5	3.7	11.0	0.80	1.68	6.67	5.30	14.45	0.1	0.2	1.3	1.6	3.1	0.4	1.0	7.0	8.6	16.9											
305	130507010	A1	0.6	3.4	5.5	50.8	9.5	69.1	2.0	3.2	29.5	5.5	40.1	3.05	4.37	35.53	7.77	30.25	2.4	4.3																			

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, T.I.F./day, T.I.F. km/day

Hwy No	Cont. Sec	Ld	Cls	(km)	L	LT	HT	Sgls	Dbits	Tot	Trk LT	km HT	/day Sgls	Dbits	Tot	Cost LT	per HT	day Sgls	(\$)	Tot	T.I.F. LT	per HT	day Sgls	Dbits	Tot	T.I.F. LT	km HT	per Sgls	day	Dbits	Tot
305	230504020	A1	7.8	1.1	2.2	14.8	6.8	25.0	6.8	194.5	6.8	17.1	115.3	53.3	194.5	13.63	23.85	139.12	75.52	251.92	0.8	1.7	18.7	15.7	38.9	6.3	13.5	145.2	122.2	287.3	
305	230504030	A1	7.0	1.1	2.2	14.8	6.8	25.0	7.6	174.3	7.6	15.3	103.3	47.7	174.3	12.21	21.19	124.64	67.85	225.89	0.8	1.7	18.7	15.7	38.9	5.8	12.1	130.1	109.5	257.4	
305	230504040	A1	7.8	1.1	2.2	14.8	6.8	25.0	6.9	196.8	6.9	17.3	116.7	53.9	196.8	13.78	23.93	140.73	78.39	254.84	0.8	1.7	18.7	15.7	38.9	6.3	13.7	148.9	123.6	289.6	
305	230505010	A1	9.2	1.1	2.2	14.8	6.8	25.0	10.4	203.3	10.4	20.3	137.0	63.3	203.3	16.19	28.08	165.23	89.89	289.20	0.8	1.7	18.7	15.7	38.9	7.5	16.7	172.5	145.2	341.2	
305	230505020	A1	8.3	1.1	2.2	14.8	6.8	25.0	8.3	182.2	8.3	18.2	122.5	56.6	206.5	14.47	25.11	147.70	80.18	267.48	0.8	1.7	18.7	15.7	38.9	6.7	14.4	154.2	128.6	305.0	
305	230506010	A1	6.3	1.2	2.4	18.4	3.4	25.0	7.7	124.4	7.7	12.4	115.7	21.5	157.4	12.00	17.17	139.60	30.53	199.30	0.9	1.8	23.2	7.9	33.5	5.5	9.8	145.7	49.4	210.5	
305	230506020	A1	5.8	1.5	2.4	22.8	4.2	31.0	6.8	142.3	6.8	14.2	132.6	24.7	180.3	13.75	19.68	159.90	34.96	228.27	1.1	1.8	28.7	8.7	41.5	6.3	11.3	166.9	58.6	241.1	
306	230601010	A1	8.6	5.5	12.1	25.0	13.3	55.8	47.5	103.5	47.5	103.5	213.8	114.1	478.9	73.91	143.08	257.88	161.86	636.54	4.0	8.8	31.4	30.6	75.6	34.0	82.0	289.2	281.8	648.8	
306	230601020	A1	8.8	2.7	5.8	12.0	6.4	27.8	23.8	51.8	23.8	51.8	108.5	58.8	238.4	36.80	74.68	128.40	80.48	316.94	1.9	4.8	15.2	14.2	36.4	16.9	40.8	134.0	130.3	322.1	
306	230602010	A1	1.1	7.7	16.8	34.8	18.6	77.8	8.2	17.8	8.2	17.8	36.9	19.7	82.6	12.75	24.64	44.48	27.88	109.78	5.5	13.3	43.8	42.6	105.2	5.8	14.1	46.4	45.1	111.6	
306	230602011	A1	5.8	1.8	3.8	8.0	4.3	18.0	10.0	21.8	10.0	21.8	45.0	24.0	100.7	15.54	30.08	54.23	33.99	133.85	1.3	3.1	10.1	8.8	24.3	7.2	17.2	58.6	55.0	138.0	
306	230602020	A1	9.7	0.3	0.6	1.3	0.7	3.0	2.8	6.3	2.8	6.3	13.0	6.9	28.1	4.50	8.70	15.69	9.83	38.72	0.2	0.5	1.7	1.6	4.0	2.1	5.0	16.4	15.8	39.3	
307	130701010	A1	9.8	0.8	1.9	6.6	5.8	17.0	7.7	18.3	7.7	18.3	83.4	56.3	165.8	12.03	25.33	100.56	79.81	217.73	0.6	1.5	10.6	13.2	28.1	5.5	14.5	105.0	128.2	254.2	
307	130701020	A1	13.6	0.8	1.9	6.6	5.8	17.0	10.7	25.5	10.7	25.5	115.9	78.3	230.4	16.72	35.21	139.76	110.91	302.60	0.6	1.5	10.6	13.2	28.1	7.7	20.2	145.9	178.5	353.3	
307	130702010	A1	8.4	0.5	1.1	5.0	3.4	10.0	3.9	9.3	3.9	9.3	42.4	28.6	84.3	6.12	12.88	51.15	40.59	110.74	0.3	0.8	6.3	7.8	15.3	2.8	7.4	53.4	65.7	129.3	
307	130702020	A1	28.0	0.5	1.1	5.0	3.4	10.0	12.1	28.7	12.1	28.7	130.6	88.2	259.7	18.85	39.88	157.58	125.04	341.15	0.3	0.8	6.3	7.8	15.3	6.7	22.7	164.5	202.4	388.3	
307	130703010	A1	17.8	1.4	3.3	15.1	10.2	30.0	24.7	58.5	24.7	58.5	268.2	179.8	529.2	38.41	80.88	321.08	254.81	695.17	1.0	2.8	19.0	23.4	48.0	17.7	46.3	335.2	412.4	811.8	
308	130801010	A1	4.8	2.1	5.0	22.8	15.3	45.0	10.1	24.0	10.1	24.0	109.3	73.9	217.3	15.78	33.22	131.87	104.65	285.52	1.5	3.9	28.5	35.1	69.0	7.3	19.0	137.7	169.4	333.3	
308	130801020	RTAC	14.0	1.6	3.8	17.1	11.8	34.0	22.1	52.5	22.1	52.5	238.9	161.4	475.0	34.47	72.80	288.18	228.70	623.95	1.1	3.3	25.8	33.9	64.2	15.9	48.3	360.7	474.1	897.0	
308	130801030	RTAC	16.6	1.8	3.8	17.1	11.8	34.0	26.3	62.4	26.3	62.4	283.9	181.8	564.4	40.86	86.78	342.43	271.76	741.41	1.1	3.3	25.8	33.9	64.2	18.9	55.1	428.8	583.4	1085.9	
308	130802010	A1	9.4	1.8	3.8	17.1	11.8	34.0	14.8	35.4	14.8	35.4	161.1	108.8	320.3	23.25	48.95	194.32	154.21	420.73	1.1	3.0	21.5	28.5	52.1	10.7	28.0	202.8	249.6	481.2	
308	130802020	A1	25.5	1.6	3.8	17.1	11.8	34.0	40.4	65.8	40.4	65.8	435.8	284.4	868.3	62.88	132.41	525.81	417.13	1138.03	1.1	3.0	21.5	28.5	52.1	28.9	75.8	540.7	675.1	1328.5	
308	130803010	A1	22.7	1.8	3.8	17.1	11.8	34.0	36.0	85.4	36.0	85.4	388.2	282.3	771.8	58.02	117.98	488.27	371.62	1013.86	1.1	3.0	21.5	28.5	52.1	25.8	67.6	488.8	601.4	1183.6	
308	130804010	A1	5.9	1.5	3.8	17.1	11.8	34.0	6.2	14.7	6.2	14.7	68.7	45.1	132.6	9.62	20.27	80.45	63.85	174.19	1.1	3.0	21.5	28.5	52.1	4.4	11.6	84.0	103.3	203.3	
308	130804020	A1	5.4	1.5	3.8	17.1	11.8	34.0	6.3	19.7	6.3	19.7	89.6	60.6	172.3	12.93	27.24	108.12	85.90	234.09	1.1	2.8	20.9	25.7	50.6	6.0	15.6	112.9	134.9	273.3	
308	130805010	A1	12.2	0.7	1.7	7.5	5.1	15.0	8.5	20.2	8.5	20.2	92.0	62.2	183.0	13.28	27.87	111.03	88.11	240.39	0.5	1.3	9.5	11.7	23.0	6.1	16.0	115.9	142.6	280.6	
31	203101010	RTAC	2.1	0.4	0.5	7.2	1.9	10.0	0.8	1.1	14.9	4.0	20.8	1.30	1.52	17.99	5.60	28.41	76.05	261.87	0.3	0.5	19.8	5.6	17.2	0.6	1.0	27.5	11.8	35.7	
31	203101020	RTAC	20.6	2.9	6.3	12.9	6.9	29.0	58.2	129.2	58.2	129.2	266.7	142.3	597.4	92.20	178.48	321.69	201.87	784.05	2.1	5.5	19.5	20.3	47.4	42.4	113.9	402.8	418.1	977.1	
310	131001010	RTAC	4.0	0.4	0.8	4.8	3.8	10.0	1.5	3.4	1.5	3.4	18.8	15.4	40.0	2.30	4.65	23.85	21.80	52.60	0.3	0.7	7.5	11.3	18.8	1.1	3.0	29.9	45.2	79.1	
311	131101010	RTAC	5.5	12.9	28.1	58.0	30.9	129.9	68.2	154.4	68.2	154.4	318.9	170.2	714.3	110.25	213.42	384.65	241.13	649.44	9.2	24.8	87.5	90.9	212.4	50.7	136.2	481.4	499.9	1186.3	
311	131101020	RTAC	5.3	12.9	28.1	58.0	30.9	129.9	68.2	148.8	68.2	148.8	307.3	164.0	688.3	106.24	205.66	370.86	232.36	614.82	9.2	24.8	87.5	90.9	212.4	48.9	131.3	483.9	481.7	1125.8	
311	131102010	RTAC	3.8	10.5	22.9	47.3	25.2	105.9	38.2	83.3	38.2	83.3	172.1	91.8	385.5	59.49	115.17	207.57	130.12	512.35	7.5	20.2	71.4	74.1	173.2	27.4	73.5	259.8	288.8	630.5	
311	131102011	RTAC	3.2	15.6	34.1	70.5	37.6	157.8	50.5	110.2	50.5	110.2	227.6	121.5	509.8	78.69	152.33	274.55	172.11	677.68	11.2	30.1	106.4	110.5	256.2	36.2	97.2	343.8	358.6	833.9	
311	131102020	RTAC	4.9	16.3	35.6	73.8	39.3	164.8	78.6	173.6	78.6	173.6	358.4	191.2	802.7	123.90	239.05	432.28	270.99	1087.03	11.7	31.4	111.1	115.4	289.8	57.0	153.1	541.1	581.8	1313.0	
311	131102030	RTAC	4.9	17.3	37.8	78.1	41.7	174.8	84.0	183.3	84.0	183.3	378.5	202.0	847.8	130.87	253.34	456.60	286.24	1126.37	12.4	33.3	117.8	122.4	285.9	60.2	161.7	571.5	583.4	1368.0	
311	131103010	RTAC	4.8	8.6	18.8	38.8	20.7	88.9	41.3	80.2	41.3	80.2	188.2	99.4	417.2	64.39	124.65	224.85	140.83	554.53	8.2	18.6	58.6	60.8	142.2	28.8	79.8	281.2	292.0	682.4	
311	131103020	RTAC	3.8	8.6	18.8	38.8	20.7	88.9	33.8	73.7	33.8	73.7	152.1	81.2	340.7	52.59	101.80	183.47	115.01	452.87	6.2	16.6	58.6	60.8	142.2	24.2	65.0	229.8	238.4	557.3	
311	131103030	RTAC	4.8	8.6	18.8	38.8	20.7	88.9	41.2	89.8	41.2	89.8	185.5	99.0	415.4	64.12	124.13	223.72	140.25	552.22	6.2	16.6	58.6	60.8	142.2	28.5	79.2	280.0	290.8	678.5	
312	131201010	RTAC	5.5	0.9	2.2	10.1	6.8	20.0	5.1	12.2	5.1	12.2	55.3	37.4	100.0	7.98	16.81	66.74	52.86	144.50	0.7	2.0	15.2	20.0	37.6	3.7	10.7	83.5	108.8	207.7	
313	131301010	RTAC	1.2	18.6	36.7	75.8	40.5	169.8	20.0	43.7	20.0	43.7	90.2	48.1	210.1	31.19	60.38	108.83	68.22	288.63	12.1	32.4	114.5	118.9	277.8	14.4	38.5	136.2	141.4	330.6	
313	131301020	RTAC	4.5	18.6	36.7	75.8	40.5	169.8	75.2	164.1	75.2	164.1	338.9	180.9	759.1	117.17	228.82	408.80	258.27	1009.07	12.1	32.4	114.5	118.9	277.8	53.9	144.8	511.7	531.3	1241.7	
313																															

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF: km/day

Hwy No	Cont. Seq.	Ld	L (km)	Traffic	LT	HT	Sgls	Dbls	Tot	Trk LT	HT	km /day	TLF/day	Cost LT	HT	per HT	Sgls	day	(\$)	Tot	TLF LT	HT	km	per Sgls	day	Dbls	Tot	TLF LT	HT	per Sgls	day	Dbls	Tot	TLF LT	HT	km	per Sgls	day	Dbls	Tot
317	131702010	A1	10.0	3.4	132	560	214	840	940	344	1315	5587	2144	5358	18173	67508	30382	121422	25	104	705	492	1325	24.7	104.1	704.7	481.7	1325.2												
317	131702020	A1	5.4	3.2	69	143	78	320	411	1728	373	771	411	2684	9298	30792	5828	22848	33	55	180	175	432	12.3	29.5	97.0	84.3	233.2												
317	131703010	A1	20.3	4.5	97	201	107	450	912	1470	1872	4072	2173	14079	27254	49119	30792	121243	22	77	253	246	607	64.6	158.1	512.7	488.4	1232.0												
317	131703020	A1	8.7	3.6	78	161	86	380	238	52	52	107.7	575	3725	7210	12895	8147	32077	26	62	202	186	486	17.1	41.3	135.6	131.6	325.9												
317	131703030	A1	5.7	2.7	58	120	64	270	152	332	686	386	153.7	2373	4584	8279	5190	20436	18	46	152	147	364	10.9	28.3	86.4	84.0	207.7												
317	131704010	A1	0.9	1.3	30	138	92	270	11	27	122	83	243	176	371	1474	1170	3192	0.8	2.4	17.1	210	415	0.8	2.1	15.4	18.9	37.3												
318	131801010	A1	6.0	0.7	18	80	54	180	45	106	483	326	980	697	1487	5824	4822	12611	0.5	1.4	101	125	245	3.2	6.4	80.8	74.8	147.2												
32	203201010	RTAC	2.5	4.1	89	183	98	410	102	223	461	246	1032	1593	3084	5558	3484	13720	29	78	276	287	670	7.3	19.7	69.6	72.2	168.8												
32	203201020	RTAC	4.3	4.1	69	183	88	410	174	378	783	418	1753	2706	5238	8440	5918	23302	28	78	276	287	670	7.3	19.7	69.6	72.2	168.8												
32	203201030	A1	4.5	19.5	426	879	469	1988	885	1932	3989	2129	8935	13791	28898	48115	30183	118784	140	337	1106	1075	2858	63.5	152.9	502.2	488.2	1208.8												
32	203201040	A1	1.7	19.5	426	879	469	1988	334	728	1502	802	3365	5194	10055	18122	11361	44733	140	337	1106	1075	2858	63.5	152.9	502.2	488.2	1208.8												
32	203201050	A1	4.4	34.8	782	1574	840	3526	1520	3317	6849	3865	15340	23670	45835	82607	51788	203905	250	604	1982	1927	4763	109.0	262.8	882.3	838.1	2071.9												
32	203201060	A1	1.8	48.6	1017	2101	1121	4705	818	1780	3878	1982	8234	12709	24803	44342	27798	108452	334	804	2645	2571	6355	58.5	140.9	482.9	449.9	1112.2												
320	132001010	A1	6.1	1.1	1.7	52	20	100	64	104	318	124	610	1000	1436	3634	1757	8027	0.8	1.3	6.6	4.7	133	4.6	6.2	40.0	28.4	81.3												
320	132002010	RTAC	3.5	1.2	1.9	5.7	2.2	11.0	4.1	6.6	20.1	7.8	38.6	6.33	9.09	24.27	11.12	50.81	0.8	1.7	8.7	6.6	17.7	2.9	5.8	30.4	23.1	62.1												
320	132002011	RTAC	3.8	1.2	1.9	5.7	2.2	11.0	4.1	6.7	20.4	8.0	39.2	6.42	9.22	24.61	11.28	51.53	0.8	1.7	8.7	6.6	17.7	2.9	5.8	30.8	23.4	63.0												
321	232101010	RTAC	1.2	1.8	4.1	6.5	4.5	19.0	2.2	4.8	9.8	5.2	22.0	3.40	6.58	11.96	7.43	29.27	1.3	3.6	12.6	13.3	31.0	1.6	4.2	14.6	15.4	36.0												
321	232101020	RTAC	8.2	2.0	3.2	9.9	3.9	19.0	16.3	28.4	80.8	31.5	155.0	25.43	38.49	97.45	44.86	20403	1.4	2.9	14.9	11.3	30.6	11.7	23.3	122.0	92.6	249.6												
321	232101030	RTAC	8.1	2.0	3.2	9.9	3.9	19.0	16.2	28.1	80.0	31.2	153.5	25.18	38.43	96.50	44.23	20203	1.4	2.9	14.9	11.3	30.6	11.6	23.1	120.8	91.7	247.1												
321	232102010	RTAC	8.6	1.3	2.0	6.3	2.4	12.0	6.3	13.5	41.3	16.1	79.2	12.99	18.64	49.78	22.82	10422	0.8	1.6	9.4	7.2	19.3	6.0	11.9	62.3	47.3	127.5												
321	232103010	RTAC	5.0	0.5	0.9	2.6	1.0	5.0	2.6	4.3	13.0	5.1	25.0	4.10	5.68	15.71	7.20	32.90	0.4	0.8	3.9	3.0	8.0	1.8	3.8	17.9	14.9	40.2												
322	232201010	RTAC	0.8	1.2	2.3	15.4	7.1	28.0	0.9	1.8	11.9	5.5	20.0	1.40	2.43	14.32	7.77	25.93	0.8	2.0	23.3	20.8	47.1	0.6	1.6	17.9	16.1	36.2												
322	232201020	RTAC	6.1	1.2	2.3	15.4	7.1	28.0	7.2	26.0	17.5	117.9	54.5	114.00	19.38	114.00	61.88	20643	0.8	2.0	23.3	20.8	47.1	5.1	12.4	142.7	128.3	288.5												
322	232202010	RTAC	6.6	1.4	2.6	17.8	8.2	30.0	9.0	17.5	117.9	54.5	198.9	13.94	24.19	142.27	77.22	25762	1.0	2.3	26.9	24.1	54.3	6.4	15.4	178.1	160.1	360.0												
322	232202020	RTAC	3.2	1.8	3.8	24.3	11.2	41.0	5.8	11.4	77.1	35.8	130.0	9.11	15.81	92.96	50.46	16834	1.3	3.2	36.7	33.0	74.2	4.2	10.1	116.4	104.6	235.3												
322	232203010	RTAC	12.8	0.5	0.9	5.9	2.7	10.0	5.8	11.3	78.4	35.3	128.9	9.03	15.88	92.20	50.05	16898	0.3	0.8	9.0	8.0	18.1	4.2	10.0	115.4	103.8	233.3												
322	232203020	RTAC	11.7	0.2	0.4	3.0	1.4	5.0	2.8	5.2	34.7	16.0	58.6	4.10	7.12	41.88	22.73	75.84	0.2	0.4	4.5	4.0	9.1	1.9	4.5	52.4	47.1	106.0												
323	232301010	RTAC	10.1	0.8	1.2	6.3	3.8	14.0	6.4	12.4	83.9	36.7	141.4	9.81	17.20	101.14	54.90	18315	0.5	1.1	12.5	11.3	25.3	4.8	11.0	126.8	113.8	255.9												
323	232302010	RTAC	8.2	0.4	0.7	4.7	2.2	8.0	3.0	5.8	38.9	18.0	65.7	4.80	7.99	48.98	25.50	85.07	0.3	0.8	7.2	6.4	14.5	2.1	5.1	58.6	52.9	118.9												
323	232302020	RTAC	5.0	0.4	0.7	4.7	2.2	8.0	1.7	3.5	23.7	10.9	39.9	2.80	4.85	28.55	15.50	51.71	0.3	0.6	7.2	6.4	14.5	1.3	3.1	35.7	32.1	72.3												
324	232401010	RTAC	1.6	1.7	3.7	7.6	4.0	17.0	2.7	5.9	12.1	8.5	27.2	4.18	8.12	14.63	9.17	36.12	1.2	3.2	11.4	11.9	27.8	1.8	5.2	18.3	19.0	44.4												
325	232503010	RTAC	2.4	0.4	0.8	4.9	3.8	10.0	8.3	18.9	110.7	66.2	224.0	12.87	26.06	133.55	122.06	28457	0.3	0.7	7.5	11.3	19.8	5.9	16.8	167.2	253.1	442.8												
325	232504020	RTAC	3.0	4.6	10.4	61.3	47.7	124.0	13.6	31.0	182.0	141.8	368.3	21.17	42.85	219.58	200.70	48430	3.3	9.2	92.5	140.1	245.1	8.7	27.3	274.8	416.1	728.0												
325	232504030	RTAC	24.7	0.1	0.3	2.0	1.5	4.0	3.7	6.3	48.9	38.1	99.0	5.69	11.51	58.00	53.93	130.14	0.1	0.3	3.0	4.5	7.9	2.6	7.3	73.9	111.8	195.6												
325	432501010	RTAC	12.2	0.7	1.7	9.9	7.7	20.0	8.0	20.6	120.9	84.1	244.8	14.08	28.48	145.84	133.30	321.66	0.5	1.5	14.9	22.6	39.5	6.5	18.2	182.5	276.4	483.5												
325	432501020	RTAC	17.8	0.8	1.6	10.4	8.1	21.0	13.6	31.1	182.4	141.9	369.0	21.21	42.93	219.98	201.08	48521	0.8	1.6	15.7	23.7	41.5	9.8	27.4	275.4	416.9	728.4												
325	432502011	RTAC	10.4	1.5	3.5	20.3	15.8	41.0	15.8	36.0	211.2	164.3	427.2	24.55	49.71	254.72	232.83	581.81	1.1	3.0	30.8	46.3	81.1	11.3	31.7	316.8	482.7	844.5												
326	432601010	A1	1.1	8.8	192	387	212	888.8	94	206	425	227.7	95.1	14.68	28.43	51.23	32.12	12646	6.3	15.2	50.0	48.6	120.1	6.8	37.3	348.6	484.0	884.7												
326	232601011	A1	2.5	5.8	127	263	140	568	148	322	668	355	149.1	23.02	44.56	60.30	50.34	18821	4.2	10.1	33.1	32.2	78.6	10.6	25.5	83.8	81.5	201.4												
326	232601020	A1	3.4	4.1	6.9	16.3	9.8	41.0	13.8	30.0	62.0	33.1	138.9	21.43	41.49	74.77	48.87	18456	2.9	7.0	23.0	22.4	55.3	9.9	23.6	78.0	75.9	187.5												
326	232601030	A1	4.7	2.2	4.8	9.6	5.2	22.0	10.2	22.2	45.9	24.5	102.9	15.88	30.73	55.39	34.72	13672	1.6	3.8	12.4	12.0	29.7	7.3	17.6	57.8	56.2	138.9												
326	232601040	A1	6.7	0.7	1.5	3.1	1.7	7.0	4.7	10.2	21.0	11.2	47.0	7.25	14.04	25.31	15.68	6246	0.5	1.2	3.8	3.6	8.4	3.3	8.0	28.4	25.7	63.5												
327	532701010	A1	21.2	1.4	3.0	6.2	3.3	14.0	29.4	64.1	132.4	70.6	288.5	45.78	88.58	159.67	100.09	38412	1.0	2.4	7.9	7.8	18.9	21.1	50.8	186.7	182.0	400.5												
328	432802010	A1	8.5	1.6	3.5	7.1	3.8	16.0	10.3	22.5	46.5	24.6	104.2	16.09	31.4	56.12	35.18	13853	1.1	2.7	9.0	8.7	21.6	7.4	17.8	58.6	56.8	140.6												
328	432802020	A1	7.8	0.4	0.8	1.8	1.0	4.0	3.1	6.8	14.0	7.5	31.3	4.84	9.36	16.87	10.58	41.64	0.3	0.7	2.2	2.2	5.4	2.2	5.4	17.6	17.1	42.3												
328	432803010	A1	9.3	0.2	0.4	0.9	0.5	2.0	1.8	4.0	8.3	4.4	18.7	2.88	5.56	10.																								

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF/km/day

Hwy No	Contr Seq	Ld (km)	Trf		HT	Sgls	Dbls	Tot	Trk LT	HT	TLF /day	Dbls	Tot	Cost LT	HT	per HT	day Sgls	(\$)	Tot	TLF LT	HT	per HT	day Sgls	Dbls	Tot	TLF LT	HT	per HT	day Sgls	Dbls	Tot	TLF LT	HT	per HT	day Sgls	Dbls	Tot
			LT	HT																																	
329	232802020	A1	3.7	1.2	2.6	5.4	29	120	43	9.5	19.5	10.4	43.6	6.75	13.07	23.56	14.77	58.16	0.9	2.1	6.7	65	162	3.1	7.5	24.8	23.9	56.1									
328	232802030	A1	6.9	2.9	6.3	12.9	69	280	196	43.2	89.1	47.6	199.6	30.81	59.64	107.48	67.39	285.33	2.1	5.0	16.3	15.8	39.1	14.2	34.2	112.2	109.1	288.6									
328	232802040	A1	6.3	4.2	9.1	18.7	100	420	264	57.5	118.6	63.4	266.0	41.06	79.48	143.25	89.80	353.59	3.0	7.2	23.8	22.9	56.7	18.9	45.5	148.5	145.3	369.3									
328	232803010	A1	1.7	2.9	6.3	12.9	69	280	49	10.6	21.9	11.7	49.0	7.56	14.63	28.37	18.53	65.08	2.1	5.0	16.3	15.8	39.1	14.2	34.2	112.2	109.1	288.6									
328	232803020	A1	4.6	0.3	0.8	1.3	0.7	3.0	1.4	3.0	6.2	3.3	13.6	2.13	4.13	7.44	4.66	16.36	0.2	0.5	1.7	1.6	4.0	1.0	2.4	7.6	7.5	18.7									
330	233001010	A1	9.6	0.6	1.0	9.6	18	130	6.1	9.9	91.9	17.1	124.9	9.52	13.62	110.79	24.23	156.17	0.5	0.8	12.0	4.1	17.4	4.4	7.8	115.8	39.2	167.0									
330	233001020	A1	11.9	1.5	2.4	22.1	41	300	17.5	28.2	263.0	49.0	357.7	27.27	39.01	317.20	68.36	452.63	1.1	1.9	27.8	9.4	40.2	12.5	22.3	331.1	112.3	478.3									
330	233001030	A1	1.7	1.5	2.4	22.1	41	300	2.5	4.0	37.3	6.9	50.8	3.67	5.53	45.01	9.84	64.26	1.1	1.9	27.8	9.4	40.2	12.5	22.3	331.1	112.3	478.3									
330	233002020	A1	4.0	1.9	3.0	28.0	52	380	7.4	11.9	111.3	20.7	153.4	11.54	16.27	29.36	29.36	181.68	1.3	2.4	35.2	11.9	50.9	12.4	22.1	328.6	110.8	472.0									
330	233002030	A1	1.0	1.8	2.8	28.5	49	360	1.8	3.0	27.6	5.1	37.5	2.86	4.08	33.24	7.27	47.45	1.3	2.3	33.4	11.3	49.2	1.3	2.3	34.7	11.8	50.1									
330	233003010	A1	9.0	7.4	11.9	110.4	20.6	163.0	68.2	106.7	993.6	185.0	1351.4	103.03	147.38	1198.48	262.07	1710.88	5.3	9.4	139.0	47.1	200.8	47.4	84.4	1251.0	424.2	1607.0									
331	233101011	A1	12.0	7.3	14.3	98.7	44.7	163.0	88.2	172.8	1162.8	537.3	1860.9	137.43	238.46	1402.58	781.33	2539.80	5.3	11.4	121.7	102.4	240.7	3.8	8.2	87.8	73.7	173.3									
331	233102010	A1	8.4	1.3	2.5	16.6	7.7	280	10.6	20.7	139.5	64.4	235.2	16.48	26.60	168.23	81.32	304.64	0.8	2.0	20.9	17.6	41.4	7.6	16.4	175.6	147.8	347.4									
332	233201010	A1	9.6	1.8	3.9	8.0	4.3	180	17.1	37.3	77.0	41.1	172.4	26.62	51.53	92.86	58.22	229.22	1.3	3.1	10.1	9.6	24.3	12.2	29.5	96.9	94.2	232.9									
332	233201020	A1	8.6	2.8	5.6	11.6	6.2	260	22.2	48.4	99.8	53.3	223.6	34.52	66.82	120.43	75.50	297.26	1.6	4.4	14.6	14.2	35.1	15.9	36.3	125.7	122.2	302.1									
332	233202010	A1	8.0	1.9	4.1	8.5	4.5	180	15.1	33.0	68.0	36.3	152.4	23.53	45.54	82.08	51.45	202.60	1.3	3.2	10.7	10.4	25.6	10.8	26.1	85.7	83.3	205.9									
332	233202020	A1	8.8	1.0	2.2	4.5	2.4	100	6.5	18.5	38.2	20.4	85.6	13.21	25.56	48.10	26.90	113.80	0.7	1.7	5.6	5.5	13.5	6.1	14.7	48.1	48.8	115.8									
332	233203010	A1	4.3	1.2	2.6	5.4	2.8	120	5.1	11.2	23.1	12.3	51.7	7.97	15.44	27.82	17.44	68.68	0.8	2.1	6.7	6.5	16.2	3.7	8.8	28.0	28.2	68.8									
332	233203020	A1	6.0	1.5	3.2	6.7	3.6	150	6.9	19.4	40.1	21.4	89.8	13.85	26.82	48.34	30.30	119.31	1.1	2.6	8.4	8.2	20.2	6.4	15.4	50.5	49.0	121.2									
332	233204010	A1	9.5	0.8	1.3	2.7	1.4	80	5.6	12.3	25.4	13.6	56.9	8.78	17.01	30.68	18.22	75.69	0.4	1.0	3.4	3.3	8.1	4.0	9.7	32.0	31.1	76.9									
332	233205010	A1	10.0	2.4	5.2	10.7	5.7	240	23.8	51.8	107.0	57.1	238.8	37.01	71.64	129.11	60.94	318.69	1.7	4.1	13.5	13.1	32.4	17.0	41.0	134.8	131.0	323.8									
332	233206010	A1	14.8	2.3	5.0	10.3	5.5	230	33.7	73.5	151.8	81.0	340.1	52.48	101.61	183.12	114.80	452.02	1.8	3.9	12.8	12.6	31.0	24.2	56.2	181.2	165.8	459.3									
334	133403010	A1	1.6	0.9	1.5	4.7	1.8	90	2.7	4.4	13.4	5.2	25.7	2.69	3.85	10.30	4.72	21.56	0.7	1.2	5.9	4.2	12.0	1.2	2.2	10.7	7.6	21.8									
334	133403020	A1	2.9	0.9	1.5	4.7	1.8	90	3.6	5.9	17.9	7.0	34.4	5.64	8.09	21.61	7.39	33.75	0.7	1.2	5.9	4.2	12.0	1.2	2.2	10.7	7.6	21.8									
334	133403030	A1	3.8	0.9	1.5	4.7	1.8	90	3.6	5.9	17.9	7.0	34.4	5.64	8.09	21.61	7.39	33.75	0.7	1.2	5.9	4.2	12.0	1.2	2.2	10.7	7.6	21.8									
334	133404010	A1	1.0	1.3	2.1	6.8	2.5	124.0	13.1	21.1	64.6	25.2	124.0	20.34	29.18	77.94	35.72	163.16	9.4	16.7	61.4	57.8	165.2	9.4	16.7	61.4	57.8	165.2									
334	133405020	A1	2.9	1.2	1.9	5.7	2.2	110	3.4	5.5	16.7	6.5	32.0	5.25	7.53	20.12	9.22	42.12	0.8	1.5	7.2	5.1	14.7	2.4	4.3	21.0	14.9	42.7									
334	133405030	A1	9.5	1.2	1.9	5.7	2.2	110	11.0	17.6	54.4	21.2	104.4	17.12	24.57	65.61	30.07	137.37	0.8	1.5	7.2	5.1	14.7	2.4	4.3	21.0	14.9	42.7									
334	233401010	A1	6.0	0.6	1.0	3.1	1.2	60	3.8	6.1	18.6	7.3	35.6	5.86	8.42	22.48	10.30	47.06	0.5	0.8	3.9	2.8	6.0	2.7	4.8	23.5	18.7	47.7									
334	233402010	A1	8.5	2.4	3.9	12.0	4.7	230	20.7	33.5	102.4	39.9	186.4	32.21	48.23	123.46	56.58	256.48	1.7	3.1	15.1	10.7	30.7	14.8	26.5	128.9	91.6	261.6									
334	233402010	A1	8.6	1.6	3.5	7.1	3.8	160	13.7	29.8	61.5	32.8	98.0	16.07	23.06	61.60	28.23	126.86	0.8	1.3	6.6	4.7	13.3	7.4	13.2	64.3	45.7	130.6									
336	233601020	A1	8.0	1.6	3.5	7.1	3.8	160	12.6	27.6	58.9	30.4	127.6	19.69	36.11	68.69	43.06	169.55	1.1	2.7	9.0	8.7	21.8	9.8	23.6	77.4	75.3	186.1									
336	233601010	A1	7.8	1.4	3.0	6.2	3.3	140	10.6	23.1	47.8	25.4	108.7	18.47	31.88	57.47	36.02	141.85	1.0	2.4	7.9	7.8	19.9	7.6	18.3	60.0	58.3	144.1									
338	233801020	RTAC	7.2	0.9	1.9	4.0	2.1	90	6.4	13.9	28.8	15.4	64.5	8.95	19.26	34.71	21.78	85.69	0.8	1.7	6.1	6.3	14.7	4.6	12.3	43.5	45.1	105.4									
338	233802010	RTAC	5.3	1.1	2.4	4.9	2.6	110	5.8	12.6	26.1	13.9	58.4	9.01	17.43	31.42	18.70	77.56	0.8	2.1	7.4	7.7	18.0	4.1	11.1	39.3	40.8	95.4									
34	203402010	RTAC	10.8	3.2	6.9	14.3	7.6	320	34.2	74.5	153.9	82.1	344.6	53.18	102.97	185.58	116.34	458.07	2.3	6.1	21.5	22.4	52.3	24.5	65.7	232.3	241.2	563.7									
34	203402020	A1	8.2	3.2	6.9	14.3	7.6	320	25.6	56.3	116.3	62.1	260.5	40.21	77.85	140.30	87.85	346.31	2.3	5.5	18.0	17.5	43.2	18.5	44.8	148.5	142.3	351.9									
34	203402030	A1	0.8	3.2	6.9	14.3	7.6	320	1.8	3.9	8.1	4.3	18.2	2.81	5.44	9.81	6.15	24.22	2.3	5.5	18.0	17.5	43.2	1.3	3.1	10.0	24.6	24.6									
34	203403010	A1	10.1	3.7	8.0	16.5	8.8	370	36.9	80.6	166.3	88.8	372.6	57.51	111.32	200.64	125.78	495.25	2.6	6.3	20.8	20.2	48.9	28.5	63.8	209.4	503.2	503.2									
34	203403020	A1	4.0	3.7	8.0	16.5	8.8	370	14.8	32.2	66.5	35.5	149.0	22.98	44.51	80.22	50.29	196.00	2.6	6.3	20.8	20.2	48.9	10.8	25.5	83.7	81.4	201.2									
34	203403030	A1	8.8	2.8	6.0	12.5	6.7	280	24.3	52.9	109.3	58.3	244.8	37.78	73.13	131.80	82.63	325.33	2.0	4.8	15.7	15.3	37.8	17.4	41.9	137.6	133.7	330.6									
34	203404010	A1	27.1	1.5	3.2	6.7	3.6	150	40.2	87.7	181.1	96.6	405.6	62.61	121.20	218.44	136.94	539.18	1.1	2.8	8.4	8.2	20.2	26.8	69.4	228.0	221.6	544.4									
34	203404020	A1	14.4	4.5	9.7	20.1	10.7	450	64.3	140.3	289.6	154.5	648.7	100.12	193.82	349.33	218.99	862.27	3.2	7.7	25.3	24.8	60.7	48.1	111.0	364.6	354.4	878.2									
34	203405010	A1	14.3	5.7	12.5	25.9	13.8	579	82.3	179.5	370.7	197.8	830.3	128.16	248.08	447.12	280.30	1103.67	4.1	9.9	32.6	31.7	78.3	59.0	142.1	466.7	453.7	1121.5									
34	203405020	A1	15.0	4.8	9.8	20.5	10.9	460	68.2	148.7	307.1	163.9	687.9	106.18	205.55																						

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL, F/day, TL, F: km/day

Hwy No	Chr Seq	Ld	L (ft/m)	LT	LT	LT	Trk	km	HT	Sgls	Dbts	Tot	Cost	LT	HT	per	TLF	LT	HT	per	TLF	LT	Tot	Dbts	Tot	km	HT	per	Sgls	Dbts	day	Tot
340		334001030	A1	12.0	0.8	20	100	238	1083	732	2153	1562	3290	13061	10366	28280	0.6	1.6	114	1.6	114	140	276	72	188	186	1383	1676	3301			
340		334002011	A1	5.5	10.3	22.8	46.4	123.7	254.2	135.6	569.9	87.88	170.90	306.60	192.20	757.58	7.4	17.9	58.4	17.9	58.4	58.8	140.4	40.4	97.9	320.0	3111	786.5				
340		334003020	A1	5.8	3.8	7.8	18.1	38.0	83.3	49.8	209.2	32.25	62.72	112.52	70.54	278.03	2.6	8.2	20.2	8.2	20.2	19.6	48.6	14.8	35.9	117.5	1142	282.4				
341		334101010	A1	20.2	0.5	1.2	6.9	5.4	139.9	108.9	283.1	16.27	32.84	168.78	154.27	372.28	0.4	0.9	8.7	0.9	8.7	12.3	22.4	7.5	18.9	178.2	248.7	452.2				
341		334101020	A1	13.8	0.5	1.2	6.9	5.4	140.7	74.2	192.9	11.09	22.45	115.02	105.14	250.70	0.4	0.8	8.7	0.8	8.7	12.3	22.4	5.1	12.9	170.2	308.2	170.2	308.2			
342		334201010	A1	12.0	0.4	10	59	48	120	53	121	71.1	167.4	85.78	78.41	189.21	0.3	0.8	7.5	0.8	7.5	10.6	19.2	3.8	9.6	69.5	126.9	228.8	126.9			
342		334201020	A1	1.7	0.4	10	59	48	120	0.8	17	101	2.39	12.23	11.18	26.98	0.3	0.8	7.5	0.8	7.5	10.6	19.2	0.5	1.4	12.8	18.1	32.6	18.1	32.6		
342		334202010	A1	8.1	0.2	0.4	2.5	1.9	3.4	199	155	40.4	4.69	24.08	21.99	53.06	0.1	0.3	3.1	0.3	3.1	4.4	8.0	1.1	2.7	25.1	36.6	64.5	36.6	64.5		
342		334203010	A1	6.1	0.3	0.7	4.0	3.1	8.0	2.4	5.4	31.9	7.51	38.49	35.16	83.90	0.2	0.5	5.0	0.5	5.0	7.1	12.6	1.7	4.3	40.2	56.9	103.1	56.9	103.1		
342		334203020	A1	12.7	0.2	0.4	2.5	1.9	5.0	2.3	63.5	3.65	7.39	37.86	34.61	84.90	0.1	0.3	3.1	0.3	3.1	4.4	8.0	1.7	4.2	39.5	56.0	101.4	39.5	56.0		
342		334203020	A1	3.4	0.3	0.7	4.0	3.1	6.0	1.0	2.3	13.6	1.58	3.19	14.95	36.08	0.2	0.5	5.0	0.5	5.0	7.1	12.6	0.7	1.8	17.1	24.2	43.6	17.1	24.2		
342		334203030	A1	2.2	1.1	2.4	14.3	11.2	29.0	2.3	5.2	30.8	3.58	7.25	37.17	33.88	81.99	0.8	1.9	18.0	1.9	18.0	25.6	46.3	1.6	4.2	38.6	55.0	99.6	18.0	55.0	
343		334301010	A1	9.8	0.1	0.2	1.0	0.8	2.0	0.7	1.7	9.7	2.29	11.73	10.73	25.88	0.1	0.1	1.2	0.1	1.2	1.8	3.2	0.5	1.3	12.2	17.4	31.4	1.2	17.4		
343		334301020	A1	6.2	0.1	0.3	2.0	1.5	4.0	1.2	2.7	16.1	1.88	3.90	17.78	42.82	0.1	0.3	2.5	0.3	2.5	3.5	6.4	0.9	2.2	20.3	28.8	52.1	2.5	28.8		
344		334401010	A1	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
345		334501010	A1	7.6	0.4	0.8	4.9	3.8	10.0	2.8	6.4	37.3	8.78	45.01	41.15	99.28	0.3	0.7	6.2	0.7	6.2	8.8	16.0	2.0	5.0	47.0	66.6	120.6	6.2	66.6		
345		334501020	A1	3.3	0.4	0.8	4.9	3.8	10.0	1.2	2.8	16.4	1.90	3.85	19.74	43.53	0.3	0.7	6.2	0.7	6.2	8.8	16.0	0.9	2.2	20.8	29.2	52.9	2.2	29.2		
345		334501030	A1	9.4	0.4	0.8	4.9	3.8	10.0	3.5	7.9	46.5	5.41	10.95	56.10	123.74	0.3	0.7	6.2	0.7	6.2	8.8	16.0	2.5	6.3	58.6	83.0	150.3	6.2	83.0		
345		334501040	A1	11.9	0.4	0.8	4.9	3.8	10.0	4.4	10.0	59.0	6.86	13.88	71.13	165.88	0.3	0.7	6.2	0.7	6.2	8.8	16.0	3.2	8.0	74.2	105.2	180.6	7.4	105.2		
345		334502010	A1	19.8	0.4	0.9	5.4	4.2	11.0	8.0	18.4	107.8	25.38	130.05	118.88	289.65	0.3	0.7	6.8	0.7	6.8	9.7	17.8	5.8	14.5	135.8	182.4	348.5	9.7	182.4		
345		334502020	A1	13.2	0.4	0.9	5.4	4.2	11.0	5.3	12.2	71.8	16.86	86.38	78.95	186.51	0.3	0.7	6.8	0.7	6.8	9.7	17.8	3.8	9.7	90.2	127.8	231.4	8.7	127.8		
346		334601010	A1	4.8	1.1	2.4	4.9	2.8	11.0	5.3	11.6	23.7	8.21	15.97	28.64	70.77	0.8	1.9	18.0	1.9	18.0	26.0	49.8	3.8	9.1	29.9	28.1	71.9	2.8	71.9		
346		334601020	A1	10.0	0.5	1.1	2.2	1.2	5.0	4.9	10.8	22.2	14.92	28.78	18.78	66.13	0.4	0.9	2.8	0.9	2.8	2.7	6.8	3.5	8.5	27.9	27.2	67.2	2.7	67.2		
346		334601030	A1	11.4	0.3	0.7	1.3	0.7	3.0	3.4	7.4	15.3	34.2	10.26	18.41	45.50	0.2	0.5	1.7	0.5	1.7	1.6	4.1	2.4	5.9	19.2	16.7	46.2	1.6	46.2		
346		334602010	A1	11.8	0.3	0.7	1.3	0.7	3.0	3.5	7.7	15.8	5.47	10.64	19.09	47.18	0.2	0.5	1.7	0.5	1.7	1.6	4.1	2.5	6.1	18.9	19.4	47.9	1.7	47.9		
346		334602020	A1	12.4	0.3	0.7	1.3	0.7	3.0	3.7	8.1	18.8	5.72	11.13	19.98	49.33	0.2	0.5	1.7	0.5	1.7	1.6	4.1	2.6	6.4	20.8	20.3	50.1	1.6	50.1		
347		334701010	A1	8.5	0.3	0.8	4.4	3.5	9.0	2.8	6.5	37.8	4.41	8.93	45.77	102.05	0.2	0.8	5.8	0.8	5.8	7.9	14.4	2.0	5.1	47.8	67.7	122.6	5.8	122.6		
347		334701020	A1	8.5	0.6	1.3	2.7	1.4	6.0	5.1	11.1	22.8	7.89	15.35	17.26	68.03	0.4	1.0	3.4	1.0	3.4	3.3	8.1	3.8	8.1	28.7	27.8	69.1	3.3	69.1		
348		334801020	A1	4.0	0.1	0.3	1.5	1.2	3.0	0.4	1.0	5.9	1.39	7.10	6.49	16.17	0.1	0.2	1.8	0.2	1.8	2.6	4.8	0.3	0.8	7.7	10.8	19.6	1.8	19.6		
348		334801010	RTAC	5.0	0.3	0.6	3.5	2.7	7.0	1.3	3.0	17.4	10.33	21.92	112.31	102.66	247.71	0.4	1.1	9.3	1.1	9.3	11.3	22.1	3.8	8.5	83.4	101.3	198.1	1.1	198.1	
348		334801030	B1	4.7	0.3	0.8	3.5	2.7	7.0	1.2	2.7	16.1	1.87	3.80	19.45	42.90	0.1	0.4	3.1	0.4	3.1	3.8	7.4	0.9	2.1	18.8	22.8	44.7	0.9	44.7		
350		335001010	B1	3.8	0.4	0.9	5.4	4.2	11.0	1.5	3.5	20.7	4.84	25.33	23.16	55.86	0.1	0.6	4.9	0.6	4.9	5.9	11.6	0.8	2.1	16.5	22.5	44.0	0.6	44.0		
350		335001020	B1	17.4	0.2	0.4	2.5	1.9	5.0	3.2	7.3	43.0	5.00	10.13	51.90	114.47	0.1	0.3	2.2	0.3	2.2	2.7	5.3	1.8	4.4	38.6	46.8	91.6	2.2	91.6		
350		335001030	B1	9.0	0.8	1.8	10.4	8.1	21.0	7.0	15.9	93.1	10.63	21.92	112.31	102.66	247.71	0.4	1.1	9.3	1.1	9.3	11.3	22.1	3.8	8.5	83.4	101.3	198.1	1.1	198.1	
350		335002010	B1	11.7	0.9	2.1	12.4	9.8	25.0	10.8	24.6	144.7	16.82	34.06	174.54	384.98	0.5	1.3	11.1	1.3	11.1	13.4	28.3	6.0	14.8	129.7	157.4	307.9	1.3	307.9		
350		335002020	B1	13.1	0.9	2.1	12.4	9.8	25.0	12.1	27.6	161.8	18.81	38.08	195.11	430.34	0.5	1.3	11.1	1.3	11.1	13.4	28.3	6.7	16.5	145.0	175.9	344.2	1.3	344.2		
351		335101010	B1	7.5	1.6	3.5	7.1	3.8	16.0	11.9	25.9	53.5	35.82	64.56	40.47	159.35	0.8	2.1	6.4	2.1	6.4	5.3	14.7	6.8	15.6	48.0	39.8	110.1	6.4	110.1		
351		335101020	B1	3.8	1.6	3.5	7.1	3.8	16.0	6.0	13.2	27.2	14.5	80.9	20.56	80.95	0.9	2.1	6.4	2.1	6.4	5.3	14.7	3.4	7.9	24.4	20.3	55.9	2.1	55.9		
351		335101030	B1	1.4	1.6	3.5	7.1	3.8	16.0	2.2	4.6	9.9	3.43	8.64	11.96	28.53	0.9	2.1	6.4	2.1	6.4	5.3	14.7	1.2	2.8	8.9	7.4	20.4	2.1	20.4		
351		335102010	B1	8.5	1.6	3.5	7.1	3.8	16.0	15.0	32.8	67.8	23.44	45.37	31.77	112.31	0.8	2.1	6.4	2.1	6.4	5.3	14.7	8.4	19.7	60.8	50.6	138.4	2.1	138.4		
351		335102020	B1	8.5	1.6	3.5	7.1	3.8	16.0	13.5	29.4	60.7	20.97	40.59	37.16	160.59	0.8	2.1	6.4	2.1	6.4	5.3	14.7	7.5	17.6	54.4	45.2	124.7	2.1	124.7		
352		335201010	B1	10.1	0.6	1.3	7.9	6.2	18.0	6.0	13.8	60.2	9.30	18.82	96.45	80.16	212.72	0.3	0.8	7.1	0.8	7.1	6.6	16.8	3.3	6.2	71.7	87.0	170.1	0.8	170.1	
352		335201020	B1	8.7	0.6	1.3	7.9	6.2	18.0	5.1	11.7	68.7	5.35	13.90	82.90	75.77	182.84	0.3	0.8	7.1	0.8	7.1	6.6	16.8	2.9	7.0	61.8	74.8	146.2	0.8	146.2	
352		335202010	B1	20.6	0.8	1.9	10.9	8.5	22.0	15.9	36.3	213.1	24.78	50.17	257.09	567.04	0.5	1.1	9.7	1.1	9.7	11.6	23.1	8.9	21.6	191.0	110.8	216.7	1.1	216.7		
352		335202010	B1	19.8	0.8	1.9	10.9	8.5	22.0	15.9	36.3	213.1	24																			

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF/km/day

Hwy No	Cont. Seq	Ld	Cl	L	Traffic	LT	HT	Sgls	Dbils	Tot	Trk LT	HT	km/day	Sgls/day	Dbils/day	Tot	Cost LT	HT	per HT	per HT	TLF LT	TLF HT	per HT	Sgls/day	Dbils/day	Tot	TLF LT	TLF HT	km HT	per Sgls	day	Day	Tot
353	335301050	B1		39	1.7	3.7	7.6	4.0	17.0	66.2	6.6	14.3	296	158	22.36	10.22	19.79	35.67	19.79	0.9	0.9	2.2	6.6	5.7	15.6	3.7	3.7	6.6	8.6	26.5	22.1	60.8	
353	335302010	B1		80	1.8	3.5	7.1	3.8	16.0	127.9	12.7	27.6	571	305	43.17	19.74	38.21	68.96	38.21	0.8	0.8	2.1	6.4	5.3	14.7	7.1	7.1	16.8	16.8	51.2	42.6	117.4	
354	335401010	B1		82	0.6	1.3	2.7	1.4	6.0	49.2	4.9	10.6	219	117	85.33	7.59	14.69	26.47	14.69	0.3	0.3	0.8	2.4	2.0	5.5	2.7	2.7	6.4	10.7	18.4	45.1		
354	335402010	B1		65	0.6	1.3	2.7	1.4	6.0	39.0	3.9	8.4	174	93	13.15	6.01	11.64	20.98	11.64	0.3	0.3	0.8	2.4	2.0	5.5	2.1	2.1	5.1	15.6	13.0	35.8		
354	335402020	B1		57	0.5	1.1	2.2	1.2	5.0	28.2	2.8	6.1	126	67	9.53	4.36	8.43	15.20	8.43	0.3	0.3	0.6	2.0	1.7	4.8	1.8	1.8	3.7	11.3	9.4	25.9		
354	335402030	B1		15	0.5	1.1	2.2	1.2	5.0	7.4	1.4	3.3	18	7	2.50	1.16	2.21	3.96	2.21	0.3	0.3	0.6	2.0	1.7	4.8	0.4	0.4	1.0	3.0	2.5	6.6		
354	335402040	B1		79	0.4	0.8	1.8	1.0	4.0	31.4	3.1	6.8	140	75	10.62	4.85	9.40	16.84	9.40	0.2	0.2	0.5	1.6	1.3	3.7	1.7	1.7	4.1	12.6	10.5	28.9		
354	335402050	B1		48	1.1	2.4	4.9	2.6	11.0	52.0	5.2	11.5	236	126	17.66	8.18	15.83	29.52	15.83	0.8	0.8	1.4	4.4	3.7	10.1	2.9	2.9	6.9	21.2	17.6	48.6		
354	335402060	B1		14	4.7	10.2	21.0	11.2	47.0	64.8	14.0	28.9	154	84	21.67	10.00	19.36	34.69	19.36	2.6	2.6	6.1	18.6	15.6	43.1	3.6	3.6	8.4	25.9	21.6	58.5		
354	335403010	B1		68	1.8	4.1	8.5	4.5	19.0	129.6	12.8	28.0	579	309	43.76	20.01	38.74	69.81	38.74	1.0	1.0	2.5	7.6	6.3	17.4	7.1	7.1	16.8	51.9	43.2	119.0		
354	335403020	B1		87	1.9	4.1	8.5	4.5	19.0	164.6	16.3	35.6	795	392	55.55	25.40	49.17	88.62	49.17	1.0	1.0	2.5	7.6	6.3	17.4	8.1	8.1	21.4	65.6	54.8	151.1		
354	335404010	B1		47	3.4	7.3	15.2	8.1	34.0	34.7	15.9	34.7	71.6	38.2	54.12	24.74	47.90	86.33	47.90	1.9	1.9	4.4	13.6	11.3	31.2	6.6	6.6	20.8	64.1	53.4	147.2		
354	335404020	B1		44	0.6	1.3	2.7	1.4	6.0	26.3	2.6	5.7	11.7	6.3	8.66	4.05	7.84	14.14	7.84	0.3	0.3	0.8	2.4	2.0	5.5	1.4	1.4	3.4	10.5	8.7	24.1		
354	335404030	B1		125	0.4	0.9	1.8	1.0	4.0	50.0	5.0	10.8	223	119	16.66	7.71	14.92	28.90	14.92	0.2	0.2	0.5	1.6	1.3	3.7	2.8	2.8	6.5	20.0	16.6	45.9		
354	335404040	B1		68	0.3	0.6	1.3	0.7	3.0	26.3	2.6	5.7	11.7	6.3	8.66	4.05	7.84	14.14	7.84	0.2	0.2	0.5	1.6	1.3	3.7	2.8	2.8	6.5	20.0	16.6	45.9		
354	335404050	B1		50	1.0	2.2	4.5	2.4	10.0	49.9	10.8	22.3	119	49.9	16.66	7.71	14.92	28.90	14.92	0.6	0.6	1.3	4.0	3.3	9.2	2.8	2.8	6.5	20.0	16.6	45.9		
354	335404060	B1		65	1.3	2.8	5.6	3.1	13.0	84.8	16.3	37.8	202	84.8	28.63	13.08	25.34	45.67	25.34	0.7	0.7	1.7	5.2	4.3	11.9	4.7	4.7	11.0	33.9	28.2	77.9		
355	335501010	B1		53	1.1	2.4	4.8	2.6	11.0	57.9	5.7	12.5	25.9	13.6	19.55	8.94	17.30	31.19	17.30	0.6	0.6	1.4	4.4	3.7	10.1	3.2	3.2	7.5	23.2	18.3	53.2		
355	335501020	B1		53	1.1	2.4	4.8	2.6	11.0	57.9	5.7	12.5	25.9	13.6	19.55	8.94	17.30	31.19	17.30	0.6	0.6	1.4	4.4	3.7	10.1	3.2	3.2	7.5	23.2	18.3	53.2		
355	335501030	B1		62	1.1	2.4	4.8	2.6	11.0	66.1	6.6	14.7	30.4	16.2	23.00	10.52	20.36	36.68	20.36	0.6	0.6	1.4	4.4	3.7	10.1	3.8	3.8	6.8	27.3	22.7	62.5		
355	335501040	B1		70	1.1	2.4	4.8	2.6	11.0	78.9	7.8	16.6	34.3	18.3	25.97	11.87	22.88	41.42	22.88	0.6	0.6	1.4	4.4	3.7	10.1	4.1	4.1	9.0	30.8	25.6	70.8		
355	335501050	B1		68	1.1	2.4	4.8	2.6	11.0	74.4	7.4	16.2	33.5	17.9	25.34	11.56	22.43	40.42	22.43	0.6	0.6	1.4	4.4	3.7	10.1	4.1	4.1	9.0	30.8	25.6	70.8		
355	335502010	B1		75	0.5	1.1	2.2	1.2	5.0	37.5	3.7	8.1	16.7	8.9	12.65	5.78	11.19	20.17	11.19	0.3	0.3	0.8	2.4	2.0	5.5	1.4	1.4	4.9	15.0	12.5	34.4		
355	335503010	B1		114	1.3	2.8	5.6	3.1	13.0	147.1	32.0	66.1	353	148.1	49.98	22.85	44.24	79.73	44.24	0.7	0.7	1.7	5.2	4.3	11.9	6.2	6.2	18.2	59.2	49.3	135.9		
355	335504010	B1		41	0.6	1.4	3.1	1.6	6.5	4.4	13.0	2.5	5.8	26.5	17.9	3.82	8.05	13.94	25.35	8.05	0.3	0.3	0.9	5.9	5.2	13.2	1.4	1.4	3.5	23.7	25.0	53.6	
355	335504020	B1		41	1.3	2.8	5.6	3.1	13.0	53.0	5.3	11.5	23.7	12.8	17.68	8.18	15.83	28.53	15.83	0.7	0.7	1.7	5.2	4.3	11.9	2.9	2.9	6.9	21.2	17.6	48.6		
355	335505010	B1		55	1.3	2.8	5.6	3.1	13.0	171.1	19.5	37.0	171.1	92.4	39.60	11.08	21.42	36.60	21.42	0.7	0.7	1.7	5.2	4.3	11.9	4.0	4.0	9.3	28.7	23.9	65.8		
355	335505020	B1		59	2.0	4.3	8.9	4.8	20.0	117.5	11.8	25.4	52.4	28.0	42.66	18.13	35.10	63.26	35.10	1.1	1.1	2.6	8.0	6.7	18.3	6.5	6.5	15.2	47.0	38.1	107.9		
355	335506010	B1		27	8.8	19.4	40.1	21.4	89.9	24.1	52.5	108.4	57.8	242.8	81.95	37.47	72.53	130.73	72.53	5.0	5.0	11.7	36.0	29.9	82.5	13.4	13.4	31.5	97.1	60.8	222.9		
355	335507020	B1		47	0.2	0.4	0.8	0.4	2.0	23.2	2.3	5.1	11.5	6.9	9.66	4.34	8.27	13.66	8.27	0.3	0.3	0.7	2.2	1.9	5.3	0.5	0.5	1.2	10.3	12.5	24.5		
355	335507010	B1		61	1.5	3.2	6.4	3.4	14.0	94.4	9.4	21.0	109.9	57.4	25.17	14.35	28.67	48.67	28.67	0.8	0.8	1.8	5.4	4.6	13.1	3.9	3.9	9.2	34.3	24.9	65.8		
357	335701010	B1		97	3.1	6.7	13.8	7.4	31.0	29.7	64.9	134.0	71.5	300.1	101.31	46.32	89.66	161.60	89.66	1.7	1.7	4.0	12.4	10.3	28.4	16.5	16.5	38.9	120.1	99.9	275.5		
357	335701030	B1		191	2.1	4.5	9.4	5.0	21.0	398.6	86.5	178.6	953.4	400.1	135.08	61.75	119.54	215.44	119.54	1.2	1.2	2.7	8.4	7.0	19.3	22.1	22.1	51.8	160.1	133.2	367.3		
359	335901010	B1		60	0.1	0.3	0.6	0.3	1.5	4.0	1.2	2.7	15.7	12.2	17.33	1.83	3.70	18.96	3.70	0.1	0.1	0.2	0.8	0.7	2.2	0.7	0.7	1.6	14.1	17.1	33.4		
359	335902020	B1		93	0.1	0.2	0.4	0.2	1.0	18.5	1.8	4.1	21.5	16.1	24.33	1.08	2.15	11.03	24.33	0.0	0.0	0.1	0.8	1.1	2.1	0.4	0.4	0.9	6.2	8.9	19.5		
359	335902010	B1		150	0.0	0.1	0.5	0.4	1.0	58.4	5.8	12.8	74.4	36.9	61.7	8.84	1.75	8.84	17.5	1.75	0.0	0.0	0.1	0.4	0.5	1.1	0.3	0.3	0.8	6.8	8.1	15.8	
360	436001010	B1		169	0.4	0.8	1.8	1.0	4.0	67.4	6.7	14.6	30.1	16.1	22.76	10.40	20.14	36.30	20.14	0.2	0.2	0.5	1.6	1.3	3.7	3.7	3.7	8.7	27.0	22.5	61.9		
360	436001020	B1		135	2.8	6.0	12.5	6.7	28.0	375.5	81.8	169.0	90.2	378.5	127.76	58.41	113.08	203.80	113.08	1.5	1.5	3.6	11.2	9.3	25.7	20.8	20.8	48.1	151.4	126.0	347.5		
361	436101010	B1		23	1.7	3.7	7.6	4.0	17.0	36.9	3.6	8.5	17.6	9.4	12.44	5.68	11.01	19.85	11.01	0.9	0.9	2.2	6.8	5.7	15.6	2.0	2.0	4.8	14.7	12.3	33.6		
361	436101020	B1		23	1.7	3.7	7.6	4.0	17.0	36.9	3.6	8.5	17.6	9.4	12.44	5.68	11.01	19.85	11.01	0.9	0.9	2.2	6.8	5.7	15.6	2.0	2.0	4.8	14.7	12.3	33.6		
362	436201010	B1		70	2.1	4.8	9.4	5.0	21.0	398.6	86.5	178.6	953.4	400.1	135.08	61.75	119.54	215.44	119.54	1.2	1.2	2.7	8.4	7.0	19.3	22.1	22.1	51.8	160.1	133.2	367.3		
362	436201020	B1		113	1.1	2.4	4.8	2.6	11.0	28.0	12.1	27.5	161.6	125.7	178.12	18.78	38.03	194.88	38.03	0.6	0.6	1.5	4.8	4.0	11.0	6.3	6.3	20.4	178.8	170.0	424.6		
362	436201030	B1		111	0.7	1.7	3.7	2.0	8.2	221.4	8.2	18.8	109.4	85.2	120.66	29.15	58.70	132.00	58.70	0.4	0.4	1.0	3.0	2.5	6.6	1.5	1.5	4.5	11.2				

Appendix D: Complete Compliance Traffic, Trk Km/day, Cost/day, TLF/day, TLF: Km/day

Hwy No	Cont. Sec	Ld Chs	L (km)	Traffic LT	HT	Sgts	Dbls	Tot	Trk LT	HT	TLF/day	Cost LT	per HT	day Sgts	(S) Dbls	Tot	TLF LT	per HT	day Sgts	Dbls	Tot	TLF LT	km HT	per Sgts	day Dbls	Tot
366	436603010	B1	11.3	0.4	0.8	1.6	1.0	4.0	4.5	9.7	20.1	6.94	13.43	24.21	15.18	58.76	0.2	0.5	1.6	1.3	3.7	2.5	5.6	16.0	15.0	41.3
366	436603020	B1	12.0	0.6	1.7	3.6	1.9	8.0	9.5	20.7	42.7	14.75	28.58	51.47	32.27	127.05	0.4	1.0	3.2	2.7	7.3	5.3	12.4	38.2	31.8	87.8
366	436603030	B1	11.2	3.4	3.7	15.2	8.1	34.0	37.7	82.3	169.8	58.72	113.67	204.86	126.42	505.66	1.9	4.4	13.6	11.3	31.2	21.0	49.4	157.2	126.7	349.2
366	436604010	B1	2.4	3.2	6.8	14.3	7.6	32.0	7.5	16.4	33.8	11.69	22.64	40.80	25.56	100.71	1.8	4.1	12.8	10.8	29.3	4.2	9.6	30.3	25.2	68.8
366	436604011	B1	3.6	2.9	6.3	12.9	6.9	29.0	10.4	22.7	46.8	16.19	31.34	56.48	35.40	139.40	1.6	3.8	11.6	9.8	26.6	5.8	13.6	42.0	34.9	86.3
366	436604030	B1	21.7	0.7	1.5	3.1	1.7	7.0	15.1	32.8	67.8	23.44	45.38	81.79	51.27	201.89	0.4	0.9	2.8	2.3	6.4	8.4	19.7	60.6	50.6	139.4
366	436605010	B1	22.2	0.7	1.5	3.1	1.7	7.0	15.4	33.6	69.3	23.96	46.39	83.60	52.41	206.35	0.4	0.9	2.8	2.3	6.4	8.6	20.1	62.1	51.7	142.5
366	436606010	B1	30.6	1.6	3.5	7.1	3.8	16.0	48.5	106.8	218.4	75.48	146.14	263.39	165.12	650.14	0.9	2.1	6.4	5.3	14.7	27.0	63.5	195.7	162.9	449.0
366	436607010	B1	28.4	1.8	3.5	7.1	3.8	16.0	45.0	98.2	202.7	70.07	135.83	244.45	153.24	603.40	0.9	2.1	6.4	5.3	14.7	25.0	59.9	181.8	151.2	416.8
366	436607020	B1	2.5	2.1	4.5	9.4	5.0	21.0	5.2	11.4	23.6	8.16	15.80	28.47	17.85	70.27	1.2	2.7	8.4	7.0	19.3	2.9	6.9	21.2	17.8	48.5
366	436607030	B1	2.5	2.1	4.5	9.4	5.0	21.0	5.2	11.4	23.5	8.13	15.73	28.38	17.78	69.99	1.2	2.7	8.4	7.0	19.3	2.9	6.8	21.1	17.5	46.3
367	436701010	B1	6.9	1.8	3.9	8.0	4.3	18.0	15.8	34.5	71.2	24.62	47.66	85.89	53.84	212.01	1.0	2.3	7.2	6.0	16.5	8.8	20.7	63.8	53.1	146.4
367	436701020	B1	5.3	1.1	2.4	4.8	2.8	11.0	5.6	12.7	26.1	9.04	17.50	31.54	19.77	77.85	0.6	1.4	4.4	3.7	10.1	3.2	7.6	23.4	19.5	53.8
367	436701030	B1	15.2	0.9	1.9	4.0	2.1	9.0	13.5	29.5	61.0	21.09	40.83	73.59	46.14	181.88	0.5	1.2	3.6	3.0	8.3	7.5	17.7	54.7	45.5	125.5
367	436702010	B1	8.2	1.3	2.8	5.8	3.1	13.0	11.8	25.7	53.1	18.36	35.54	64.06	40.16	158.13	0.7	1.7	5.2	4.3	11.9	6.6	15.4	47.6	39.6	109.2
367	436702020	B1	19.5	1.1	2.4	4.8	2.8	11.0	21.3	48.4	95.8	33.13	64.12	115.57	72.45	285.27	0.6	1.4	4.4	3.7	10.1	11.8	27.9	85.8	71.5	197.0
367	436702030	B1	2.5	1.3	2.8	5.8	3.1	13.0	3.2	6.9	14.3	7.78	14.95	27.27	10.83	42.64	0.7	1.7	5.2	4.3	11.9	1.8	4.2	12.8	10.7	28.4
367	436703010	B1	29.1	1.6	3.5	7.1	3.8	16.0	46.1	100.6	207.7	71.79	138.88	250.48	157.02	618.27	0.9	2.1	6.4	5.3	14.7	25.6	60.4	186.1	154.9	427.0
373	537301010	B1	22.0	1.4	5.2	18.4	31.0	56.0	30.8	114.6	404.1	47.97	158.33	487.42	287.14	1660.87	0.6	3.1	16.5	43.4	63.7	17.1	68.8	367.1	854.1	1402.2
373	537301020	B1	22.8	1.5	3.5	18.1	10.9	32.0	33.7	80.0	383.8	52.48	110.53	438.78	348.22	950.02	0.6	2.1	14.4	15.2	32.6	18.8	48.0	328.0	343.5	736.3
373	537302010	B1	35.2	0.7	2.5	6.9	15.0	27.0	23.8	68.4	311.7	37.01	122.14	376.01	746.08	1281.24	0.4	1.5	7.8	20.9	30.7	13.2	53.1	279.4	736.0	1081.7
373	537303010	B1	1.8	1.0	3.7	13.1	22.2	40.0	1.8	6.8	24.0	2.85	9.41	26.96	57.46	98.68	0.6	2.2	11.8	31.0	45.5	1.0	4.1	21.5	56.7	83.3
373	537303011	B1	6.2	1.0	3.7	13.1	22.2	40.0	6.2	23.2	81.8	138.3	32.08	98.75	185.84	336.49	0.6	2.2	11.8	31.0	45.5	3.5	13.9	73.4	183.3	284.1
373	537304010	B1	58.4	1.0	3.7	13.1	22.2	40.0	58.4	217.2	788.2	90.98	300.22	924.20	1833.80	3149.16	0.6	2.2	11.8	31.0	45.5	32.5	130.4	686.7	1809.1	2658.7
373	537305010	B1	24.8	1.5	5.7	20.0	33.8	61.0	37.8	140.7	496.2	58.90	184.42	598.51	1187.56	2039.41	0.8	3.4	17.9	47.2	69.4	21.0	84.4	444.7	1171.6	1721.8
374	537401010	B1	12.9	0.5	1.2	5.5	3.7	11.0	6.6	15.7	71.5	10.31	21.72	68.23	68.43	186.69	0.3	0.7	5.0	5.2	11.2	3.7	9.4	64.1	67.5	144.7
374	537401020	B1	14.7	0.5	1.2	5.5	3.7	11.0	7.5	17.8	81.4	11.74	24.73	88.17	77.91	212.58	0.3	0.7	5.0	5.2	11.2	4.2	10.7	72.9	76.9	164.7
375	537501010	B1	6.2	0.9	2.1	9.6	6.5	19.0	7.2	17.2	78.2	11.28	23.75	94.30	74.83	204.16	0.5	1.3	8.8	9.0	19.3	4.0	10.3	70.1	73.8	158.2
384	538402010	B1	45.0	1.2	2.8	5.4	2.9	12.0	53.5	118.8	240.8	83.28	161.18	290.50	35.24	138.74	0.4	1.0	3.2	2.7	7.3	5.8	13.5	41.6	34.8	95.8
39	503902010	B1	29.8	2.5	9.4	33.1	56.0	101.0	74.7	218.0	980.8	116.41	384.21	1182.79	2348.89	4030.30	1.4	5.6	29.7	78.2	115.0	41.6	168.9	876.8	215.3	3402.6
39	503901010	B1	20.0	1.6	3.5	7.1	3.8	16.0	31.7	69.1	142.7	49.34	95.52	172.15	107.92	424.93	0.9	2.1	6.4	5.3	14.7	17.6	41.5	127.9	106.5	293.5
39	503901020	B1	22.5	2.5	5.4	11.2	6.0	25.0	55.7	121.5	250.9	66.73	187.90	302.61	189.70	748.94	1.4	3.2	10.0	8.3	22.9	31.0	72.9	224.8	187.1	515.9
39	503902010	B1	19.8	2.5	5.4	11.2	6.0	25.0	49.0	108.9	220.8	76.33	147.75	268.28	166.94	657.31	1.4	3.2	10.0	8.3	22.9	27.3	64.2	187.8	164.7	454.0
39	503903010	B1	19.0	2.5	5.4	11.2	6.0	25.0	47.0	102.6	211.9	73.24	141.78	255.53	160.19	630.75	1.4	3.2	10.0	8.3	22.9	26.2	61.6	189.9	158.0	435.6
39	503903020	B1	20.2	3.4	7.3	15.2	8.1	34.0	68.0	148.3	308.3	105.80	205.00	369.47	231.62	912.00	1.8	4.4	13.8	11.3	31.2	37.8	89.0	274.5	228.5	629.8
39	503904010	B1	16.0	0.7	2.5	8.9	15.0	27.0	12.2	45.2	159.4	18.92	42.46	192.28	361.52	855.18	0.4	1.5	7.9	20.9	30.7	6.8	27.1	142.8	376.4	553.1
39	503905010	B1	13.3	0.8	3.3	11.8	19.9	36.0	12.0	44.6	157.4	18.69	41.67	189.86	376.71	849.93	0.5	2.0	10.8	27.8	41.0	6.7	28.8	141.1	371.8	549.2
39	503905020	B1	14.3	0.8	3.3	11.8	19.9	36.0	12.2	44.6	157.4	18.69	41.67	189.86	376.71	849.93	0.5	2.0	10.8	27.8	41.0	6.7	28.8	141.1	371.8	549.2
391	539101010	B1	7.0	3.5	12.9	45.6	77.0	138.0	24.3	80.5	319.1	37.88	125.05	384.95	763.82	1311.71	1.9	7.8	40.9	107.6	159.2	13.5	54.3	288.0	753.5	1107.4
391	539101020	B1	6.8	1.0	3.8	13.4	22.7	41.0	7.0	25.9	91.4	10.96	35.83	110.30	218.88	375.85	0.8	2.3	12.1	31.8	48.7	3.9	15.8	82.0	215.9	317.3
391	539102010	B1	38.6	0.4	1.6	5.8	9.4	17.0	16.4	61.0	215.2	25.55	64.33	258.81	515.13	884.63	0.2	0.8	5.0	13.2	19.3	9.1	36.6	192.8	508.2	746.8
391	539103010	B1	19.5	0.5	1.8	6.2	10.5	19.0	9.2	34.4	121.3	14.40	47.52	146.28	280.25	498.45	0.3	1.1	5.6	14.7	21.6	5.1	20.6	106.7	288.3	420.6
391	539104010	B1	19.8	0.4	1.3	4.6	7.8	14.0	6.8	24.5	86.2	14.78	33.79	104.02	206.40	354.44	0.2	0.4	1.8	4.1	10.8	3.7	14.7	77.3	203.6	296.2
391	539105010	B1	64.1	0.3	1.1	3.8	6.6	12.0	19.2	71.5	252.3	28.95	98.86	304.32	603.84	1036.98	0.2	0.7	3.5	9.3	13.7	10.7	42.9	226.1	595.7	875.5
391	539106010	B1	15.0	0.2	0.7	2.6	4.4	8.0	3.0	11.2	39.4	4.67	15.42	47.46	94.20	161.77	0.1	0.4	2.4	6.2	9.1	1.7	8.7	35.3	82.9	136.6
391	539106020	B1	28.3	0.4	1.5	5.2	8.9	16.0	10.5	38.1	138.0	54.08	166.48	330.34	567.28	924.41	0.2	0.9	4.7	12.4	16.2	5.9	23.5	123.7	325.9	476.9
391	539107010	B1	14.8	0.5	1.9	6.6	11.1	20.0	7.4	27.6	97.3	11.55	38.12	117.34	232.84	399.85	0.3	1.1	5.9	15.5	22.8	4.1	16.8	87.2	229.7	337.6
391	539107020	B1	14.6	0.3	0.9	3.3	5.5	10.0	6.6	13.8	47.8	8.74	18.74	57.68	114.46	196.55	0.1	0.6	2.9	7.7	11.4	2.0	8.1	42.9	112.9	165.9

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F/km/day

Hwy No	Seq.	Ld Cont. Sec	Cls	L (km)	LT	HT	Trk LT	Trk HT	TL,F/day	TL,F/km/day	Cost LT	Cost HT	per HT	day Sgls	Dbls	Tot	TLF LT	TLF HT	per HT	day Sgls	Dbls	Tot	TLF LT	TLF HT	km	per Sgls	day Dbls	Tot		
393	539301010	B1	97	02	07	02	17	63	223	376	679	264	873	2688	5330	9154	01	04	04	21	54	60	08	38	38	200	52.6	77.3		
394	539401010	B1	30	01	02	01	06	06	20	33	60	023	077	236	468	803	00	01	06	08	15	23	01	03	03	1.6	4.6	6.6		
394	539401020	B1	169	01	02	07	1.1	187	11.1	187	33.7	1.31	4.34	13.35	2649	4549	00	01	06	08	15	23	05	1.8	8.9	26.1	36.4	39.6		
394	539401030	B1	174	01	02	07	1.1	209	32	114	34.8	1.36	4.47	13.78	2733	4694	00	01	06	08	15	23	05	1.9	10.2	27.0	39.6	41.2		
394	539402010	B1	192	05	18	62	10.5	190	9.1	33.9	119.7	14.20	46.88	144.33	26637	48179	03	1.1	5.6	14.7	21.6	51	20.4	107.2	282.5	415.2	452	477.5		
395	539501010	B1	130	03	11	39	6.6	120	3.9	14.5	86.4	6.07	20.05	61.72	12246	21030	02	0.7	3.5	9.3	13.7	22	6.7	45.9	120.8	177.5	210.8	234.4		
396	539601010	B1	200	01	02	07	1.1	20	3.7	13.1	22.2	4.00	5.14	15.63	3140	5382	00	0.1	0.6	1.5	2.3	0.6	2.2	11.8	31.0	45.5	58.1	63.0		
396	539601020	B1	254	03	09	33	5.5	100	6.4	23.6	83.3	10.49	32.64	100.49	19939	34242	01	0.8	2.9	7.7	11.4	3.5	14.2	74.7	196.7	288.1	351.0	403.0		
397	539701010	B1	16	04	13	46	7.6	140	0.6	2.1	7.3	0.87	2.86	6.61	1747	3001	02	0.8	4.1	10.6	15.8	0.3	1.2	6.5	17.2	25.3	32.3	35.3		
397	539701020	B1	14	07	25	6.8	150	270	0.9	3.5	12.3	1.46	4.82	14.85	2946	5059	04	1.5	7.9	20.9	30.7	0.5	2.1	11.0	29.1	42.3	56.3	61.3		
398	539801010	B1	12.9	02	07	2.8	4.4	60	2.6	9.6	33.8	4.01	13.24	40.77	80.89	138.91	01	0.4	2.4	6.2	9.1	1.4	5.8	30.3	79.8	117.7	147.3	177.3		
398	539801020	B1	9.6	02	07	2.8	4.4	60	2.0	7.3	25.7	3.05	10.07	30.98	61.48	105.58	01	0.4	2.4	6.2	9.1	1.1	4.4	23.0	60.7	88.1	107.3	137.3		
399	539901010	B1	0.5	02	07	2.3	3.9	70	0.1	0.3	1.1	0.14	0.45	1.38	2.75	4.72	01	0.4	2.1	5.4	8.0	0.0	0.2	2.7	4.0	5.4	7.3	8.0		
4	100401010	B1	23	27	61	361	281	730	61	136	812	9.44	19.11	97.93	89.51	215.89	1.5	3.7	32.3	39.2	78.8	3.4	6.2	72.8	88.3	172.7	217.2	272.7		
4	100401020	B1	22	5.6	13.7	62.4	421	1240	12.5	29.6	134.7	19.44	40.94	162.50	128.96	351.84	3.2	8.2	55.9	58.9	128.2	6.9	17.8	120.7	127.2	272.7	327.2	377.2		
4	100401030	B1	18	1.5	3.5	20.3	15.8	41.0	2.7	6.2	36.3	4.22	8.54	43.78	40.00	96.51	0.8	2.1	18.2	22.0	43.1	1.5	3.7	32.5	39.5	77.2	92.5	107.5		
4	100402010	B1	27	4.4	9.8	58.3	45.4	118.0	11.6	28.8	157.5	18.31	37.07	169.86	173.63	418.97	2.4	6.0	52.3	63.4	124.1	6.5	16.1	141.1	171.3	335.1	403.1	458.1		
403	140301010	B1	4.7	2.4	5.6	32.6	25.4	66.0	11.4	28.1	153.3	17.83	36.09	164.95	169.05	407.82	1.4	3.3	29.2	35.5	69.4	8.4	15.7	137.4	166.8	328.2	383.2	438.2		
403	140301020	B1	3.2	2.5	5.6	33.1	25.8	67.0	7.8	17.9	105.0	12.21	24.71	126.63	115.75	278.30	1.4	3.4	29.7	36.0	70.5	4.4	10.7	94.1	114.2	223.4	273.4	328.4		
403	140301030	B1	10.5	0.6	1.3	7.9	6.2	160	6.2	14.1	82.8	9.63	19.49	99.88	91.29	220.29	0.3	0.8	7.1	8.6	16.8	3.4	8.5	74.2	90.1	178.2	218.2	263.2		
403	140301040	B1	7.3	0.1	0.3	1.5	1.2	30	0.8	1.8	10.8	8.4	21.8	12.99	11.87	28.04	01	0.2	1.3	1.6	3.2	0.4	1.1	9.8	11.7	22.9	27.9	32.9		
404	140401010	B1	0.6	0.2	0.4	0.9	0.5	20	0.1	0.3	0.5	0.18	0.35	0.63	0.40	1.57	01	0.3	0.8	0.7	1.6	0.1	0.2	0.5	0.4	1.1	1.6	2.1	2.6	
404	140401020	B1	9.3	0.2	0.4	0.9	0.5	20	0.1	0.3	0.5	0.18	0.35	0.63	0.40	1.57	01	0.3	0.8	0.7	1.6	0.1	0.2	0.5	0.4	1.1	1.6	2.1	2.6	
404	140401030	B1	14.3	0.6	1.3	2.7	1.4	60	6.5	16.5	36.1	20.3	65.4	46.00	28.83	113.53	03	0.8	2.4	20	55	47	11.1	34.2	26.4	78.4	93.4	108.4		
405	140501010	B1	9.3	0.6	1.3	2.7	1.4	60	5.5	12.0	24.8	13.3	8.59	16.62	29.95	18.78	73.94	03	0.8	2.4	20	55	3.1	7.2	22.3	18.5	51.1	66.1	81.1	
405	140501020	B1	7.1	0.8	1.3	2.7	1.4	60	4.2	9.2	19.1	10.2	6.59	12.75	22.86	14.41	56.73	03	0.8	2.4	20	55	2.4	5.5	17.1	14.2	39.2	48.2	58.2	
406	140601010	B1	3.9	1.0	2.2	4.5	2.4	100	3.6	8.4	17.3	9.2	38.6	20.87	13.09	51.52	0.6	1.3	4.0	3.3	9.2	2.1	5.0	15.5	12.9	35.6	44.6	53.6	62.6	
408	140801020	B1	5.1	1.3	2.6	5.8	3.1	130	6.6	14.4	29.7	15.8	19.87	35.81	22.45	88.36	07	1.7	5.2	4.3	11.9	3.7	8.6	28.6	22.1	61.0	74.0	87.0	96.0	
408	140801030	B1	5.6	0.7	1.5	3.1	1.7	70	3.8	6.4	17.4	9.3	39.0	60.1	11.64	30.15	51.77	04	0.9	2.8	2.3	6.4	2.1	5.1	15.6	13.0	35.6	44.6	53.6	
408	140801040	B1	8.1	1.1	2.4	4.9	2.6	110	8.9	19.3	39.9	13.79	26.69	48.11	30.16	118.75	0.6	1.4	4.4	4.4	3.7	10.1	4.9	11.6	35.7	29.8	82.0	97.0	106.0	
409	240901010	B1	4.7	4.8	60	24.5	9.6	470	23.3	37.6	115.1	44.9	36.23	136.85	63.64	290.70	2.8	4.8	21.9	13.4	42.9	12.8	22.6	103.2	67.8	201.5	246.5	291.5		
41	304101010	B1	6.6	0.6	1.4	6.4	6.5	170	4.1	9.4	55.5	43.2	112.2	64.5	13.06	66.90	61.5	147.55	03	0.9	7.5	9.1	17.8	23	5.7	49.7	60.3	118.0	148.0	
41	304101020	B1	7.7	0.7	1.5	8.9	6.9	180	5.1	11.7	68.6	53.4	138.8	7.98	18.15	75.63	182.50	04	0.9	8.0	9.7	18.9	2.6	7.0	61.5	74.8	148.0	183.0	218.0	
41	304101030	B1	11.3	1.1	2.4	14.3	11.2	290	12.1	27.5	161.7	125.8	327.1	18.80	38.06	195.04	178.27	0.6	1.5	12.8	15.6	30.5	6.7	16.5	144.8	175.9	344.0	419.0	484.0	
41	304101040	B1	7.6	0.7	1.6	9.4	7.3	190	5.3	12.2	71.5	55.6	144.6	8.31	16.82	86.21	180.14	04	1.0	6.4	10.2	20.0	3.0	7.3	64.1	77.7	152.1	187.1	232.1	
41	304102010	B1	100	0.7	1.6	9.4	7.3	190	70	180	93.7	72.9	189.6	10.90	22.06	113.06	103.34	10.4	10	84	102	200	3.9	9.6	640	1019	1964	2419	2864	
41	304102020	B1	93	0.8	1.9	10.8	8.5	220	7.6	17.3	101.4	78.9	205.0	11.78	23.86	122.25	248.36	05	1.1	9.7	11.8	23.1	4.2	10.4	80.8	110.2	215.6	260.6	315.6	
41	304103010	B1	84	0.7	1.7	9.9	7.7	200	8.2	14.1	82.5	64.2	187.0	9.60	19.43	99.57	91.01	219.61	04	1.0	8.9	10.8	21.0	3.4	8.4	740	88.8	175.6	210.6	255.6
41	304103020	B1	98	0.7	1.6	9.4	7.3	190	6.9	15.8	92.5	72.0	187.2	10.78	21.76	111.56	101.99	246.11	04	1.0	8.4	10.2	20.0	3.6	9.5	62.9	100.6	196.6	241.6	286.6
410	141001010	B1	0.8	0.5	0.8	2.8	10	50	0.4	0.7	2.1	0.8	0.84	2.51	1.15	5.28	03	0.5	2.3	1.4	4.6	0.2	0.4	1.9	1.1	3.6	4.6	5.6	6.6	
410	141002010	B1	2.4	0.5	0.8	2.8	10	50	1.3	2.0	6.3	2.4	1.20	3.46	1.579	3.03	0.5	2.3	1.4	4.6	0.7	1.2	5.6	3.4	10.9	13.6	16.6	20.6	24.6	
411	241101010	B1	11.6	1.5	3.2	6.7	3.6	150	17.5	38.2	78.8	42.1	176.5	52.74	95.06	58.59	234.64	0.8	1.9	60	50	13.6	9.7	22.9	70.6	58.8	162.1	197.1	232.1	
411	241101020	B1	100	1.3	2.8	5.8	3.1	130	12.8	27.9	57.7	30.8	129.2	19.94	38.61	69.59	43.62	171.76	07	1.7	5.2	4.3	11.9	7.1	18.6	51.7	43.0	116.6	141.6	176.6
411	241101030	B1	12	1.3	2.8	5.8	3.1	130	15	33	6.6	3.6	15.2	2.35	4.54	6.18	5.13	20.20	07	1.7	5.2	4.3	11.9	0.8	20	6.1	5.1	13.9	16.9	20.9
415	241501010	B1	8.3	0.5	1.0	6.5	30	110	4.1	8.1	54.4	25.1	6.43	11.16	65.82	35.82	118.82	03	0.8	5.8	4.2	10.8	2.3	4.8	48.8	35.1	91.0	111.0	136.0	
415	241501020	B1	7.4	0.3	0.6	4.2	1.9	70	2.3	4.6	30.7	14.2	51.8	3.63	6.30	37.05	20.11	67.09	02	0.4	3.7	2.7	6.9	1.3	2.7	27.5	19.8	30.7	37.8	44.8
415	24150																													

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL.F/day, TL.F km/day

Hwy No	Conv Seq	Ld	Chs	L (km)	L Trefl	LT	HT	Sgls	Dbts	Tot	Trk LT	HT	km /day	Sgls /day	Dbts	Cost LT	HT	per	TLF LT	HT	per	Sgls	day	Dbts	Tot	TLF LT	HT	km	per	Sgls	day	Dbts	Tot
417	441701020	81	8.4	1.2	2.9	2.9	13.1	88	260	101	241	108.5	739	2178	15.78	33.28	132.03	104.78	285.97	0.7	1.7	11.7	11.7	12.4	28.5	5.6	14.4	98.1	103.4	221.6			
418	441801010	81	14.8	0.3	0.5	3.8	1.8	60	60	40	78	52.7	243	88.8	6.22	10.80	63.52	34.48	115.02	0.2	0.3	3.2	3.2	2.3	6.0	2.2	4.7	47.2	34.0	88.1			
419	441901010	81	11.7	0.2	0.4	2.4	1.1	40	2.1	4.1	27.8	12.8	48.8	48.8	3.28	5.89	33.47	18.17	60.82	0.1	0.2	2.1	2.1	1.5	4.0	1.2	2.5	24.9	17.9	48.4			
419	441901020	81	3.8	1.1	2.4	4.8	2.8	110	3.9	8.8	17.7	9.5	36.7	6.12	11.85	21.36	13.39	52.73	0.6	1.4	4.4	4.4	3.7	10.1	2.2	5.1	15.9	13.2	38.4				
419	441902010	81	14.4	1.5	3.2	6.7	3.6	150	21.4	46.6	98.3	51.4	215.6	33.28	64.43	116.12	72.79	286.63	0.8	1.9	6.0	6.0	5.0	13.8	11.9	28.0	86.3	71.8	188.0				
419	441902011	81	1.8	1.3	2.8	1.7	2.8	7.9	29.0	2.0	4.0	2.8	12.3	44.9	3.15	5.47	32.15	17.45	58.88	0.3	0.6	5.8	5.8	4.2	10.9	3.3	6.8	68.3	50.0	129.5			
419	441902020	81	10.5	0.1	0.2	1.2	0.5	20	0.8	1.8	12.5	5.8	21.0	1.47	2.56	15.04	8.16	27.23	0.1	0.1	1.1	1.1	0.8	2.0	0.5	1.1	11.2	8.1	20.9				
42	304201010	81	4.6	3.7	6.0	18.5	8.8	37.0	169	369	782	40.7	170.8	26.36	51.02	91.96	57.65	228.99	2.0	4.8	14.8	14.8	12.3	33.9	9.4	22.2	88.3	58.9	158.8				
42	304201020	81	11.7	3.6	7.8	16.1	8.6	38.0	41.6	90.8	187.5	100.1	420.1	64.83	125.51	228.20	141.81	558.35	2.0	4.7	14.4	14.4	12.0	33.0	23.2	54.5	188.1	139.9	385.6				
42	304202010	81	2.7	5.5	12.1	25.0	13.3	55.9	15.0	32.7	87.4	38.0	151.0	23.31	45.13	81.34	50.99	204.78	3.1	7.3	22.4	22.4	18.6	51.4	8.3	19.8	60.4	50.3	138.7				
42	304203010	81	6.8	2.5	5.4	11.2	6.0	25.0	21.2	48.2	85.4	50.9	213.8	33.00	63.88	115.12	72.17	284.17	1.4	3.2	10.0	10.0	8.3	22.9	11.8	27.7	85.5	71.2	198.3				
42	304203020	81	11.7	2.5	5.4	11.2	6.0	25.0	28.1	83.4	130.9	89.9	293.2	45.28	87.61	157.89	98.98	369.74	1.4	3.2	10.0	10.0	8.3	22.9	11.8	27.7	85.5	71.2	198.3				
42	304204010	81	11.2	3.8	8.2	18.9	9.0	38.0	42.1	91.9	189.8	101.3	425.2	65.92	127.04	228.96	143.53	565.15	2.1	4.8	15.2	15.2	12.6	34.9	23.4	55.2	170.1	141.6	380.3				
42	304204020	81	2.0	2.8	6.0	12.5	6.7	28.0	5.5	12.1	25.0	13.3	55.9	8.63	16.72	30.13	18.89	74.36	1.5	3.6	11.2	11.2	9.3	25.7	3.1	7.3	22.4	16.6	51.4				
420	242001010	81	8.6	1.0	2.2	4.5	2.4	10.0	6.5	14.3	28.4	15.7	65.9	10.18	19.70	35.51	22.28	87.64	0.8	1.3	4.0	4.0	3.3	9.2	3.6	8.6	28.4	22.0	60.5				
421	242101010	81	11.2	5.8	12.3	25.4	13.6	56.9	63.3	136.1	285.2	152.2	638.9	98.61	180.90	344.05	215.68	849.24	3.1	7.4	22.8	22.8	18.0	52.3	35.2	82.9	255.8	212.8	588.6				
421	242101020	81	8.4	1.8	3.9	8.0	4.3	18.0	18.7	38.5	75.3	40.2	168.7	26.03	50.40	90.83	56.94	224.20	1.0	2.3	7.2	7.2	6.0	16.5	9.3	21.8	67.5	56.2	154.9				
422	242201010	81	6.4	3.5	7.8	15.8	8.3	35.0	22.3	48.8	100.4	53.6	224.8	34.70	67.18	121.07	75.90	298.84	1.9	4.5	14.0	14.0	11.6	32.1	12.4	29.2	90.0	74.9	206.4				
422	242201020	81	5.2	4.6	9.9	20.5	10.9	48.0	23.5	51.4	108.1	58.8	237.6	36.87	70.99	127.94	80.20	315.80	2.5	6.0	18.4	18.4	15.3	42.2	13.1	30.8	95.1	78.1	218.1				
423	242301010	81	10.8	1.8	4.1	8.5	4.5	19.0	20.3	44.2	91.3	48.7	204.6	31.58	61.14	110.19	69.07	271.98	1.0	2.5	7.8	7.8	6.3	17.4	11.3	28.8	81.9	68.1	187.8				
423	242301020	81	9.0	1.9	4.1	8.5	4.5	19.0	17.0	37.0	78.4	40.8	171.2	28.43	51.18	92.20	57.80	227.57	1.0	2.5	7.8	7.8	6.3	17.4	11.3	28.8	81.9	68.1	187.8				
424	242401010	81	5.5	1.8	2.9	8.9	3.5	17.0	9.9	18.0	48.1	19.1	94.2	15.45	22.16	59.20	27.13	123.94	1.0	1.7	7.8	7.8	4.8	15.5	5.5	9.8	44.0	26.8	85.9				
424	242401020	81	4.7	1.8	2.9	8.9	3.5	17.0	8.3	13.5	41.3	16.1	79.2	12.89	18.64	49.79	22.82	104.25	1.0	1.7	7.8	7.8	4.8	15.5	5.5	9.8	44.0	26.8	85.9				
425	142501010	81	6.0	0.8	1.0	3.1	1.2	6.0	3.8	6.1	18.8	7.3	38.0	5.90	8.47	22.63	10.37	47.37	0.4	0.6	2.6	2.6	1.7	5.5	2.1	3.7	16.8	10.2	32.8				
425	142501020	81	8.2	3.3	5.3	18.2	6.3	31.0	26.8	43.3	132.6	51.7	254.5	41.74	59.90	159.97	73.32	334.93	1.8	3.2	14.5	14.5	8.6	28.3	14.8	28.0	118.9	72.3	232.1				
427	142701020	81	1.2	3.3	5.3	18.2	6.3	31.0	4.0	6.5	20.0	7.8	38.4	6.30	9.05	24.16	11.07	50.59	1.8	3.2	14.5	14.5	8.6	28.3	2.3	3.9	18.0	10.9	35.1				
427	142701030	81	1.8	3.3	5.3	18.2	6.3	31.0	5.3	8.6	26.2	10.2	50.2	8.24	11.82	31.57	14.47	66.09	1.8	3.2	14.5	14.5	8.6	28.3	2.9	5.1	23.5	14.3	45.8				
428	242801010	81	9.7	6.7	18.0	39.2	20.9	87.0	84.2	163.8	379.5	202.5	850.1	131.21	254.00	457.79	286.98	1129.98	4.8	11.4	35.2	35.2	29.3	80.7	46.9	110.3	340.1	283.1	780.5				
428	242801020	81	8.8	5.2	11.4	23.6	12.6	52.9	45.3	98.8	204.0	108.9	458.9	70.53	136.53	248.06	154.25	607.37	2.8	6.0	21.2	21.2	17.6	48.6	25.2	59.3	182.8	152.2	419.5				
430	243001010	81	4.6	3.3	6.4	4.3	2.0	7.3	15.0	29.4	187.8	91.4	333.6	23.38	40.57	238.62	129.53	432.10	1.8	3.9	38.8	38.8	28.0	72.4	8.4	17.8	177.3	127.8	331.1				
430	243002010	81	5.7	2.9	5.7	38.5	17.8	65.0	16.7	32.6	218.7	101.5	370.5	25.97	45.06	265.01	143.85	479.88	1.8	3.4	34.5	34.5	24.9	64.5	9.3	19.8	186.9	141.9	387.7				
430	243002020	81	3.4	1.4	2.7	18.4	8.5	31.0	4.7	9.1	61.8	28.5	103.9	7.28	12.63	74.28	40.32	134.51	0.8	1.6	18.5	18.5	11.9	30.8	2.6	5.5	55.2	39.8	103.1				
430	243002030	81	14.0	3.0	5.8	38.1	18.1	68.0	41.4	81.0	548.0	252.3	920.7	64.53	111.86	658.56	357.47	1192.52	1.7	3.5	35.1	35.1	25.3	65.5	23.1	48.8	489.3	352.7	913.6				
430	243002040	81	5.2	1.8	3.4	23.1	10.7	39.0	9.1	17.8	120.3	55.6	202.8	14.21	24.68	145.06	76.74	262.87	1.0	2.1	20.7	20.7	14.9	38.7	5.1	10.7	107.8	77.7	201.2				
432	243201010	81	4.5	1.5	3.2	6.7	3.8	15.0	6.7	14.8	30.1	18.1	87.4	10.41	20.15	38.31	22.76	89.63	0.8	1.9	8.0	8.0	5.0	13.8	3.7	8.8	27.0	22.5	61.9				
432	243201020	81	8.5	1.8	3.9	8.0	4.3	18.0	11.6	25.2	52.1	27.8	116.7	18.01	34.87	62.85	39.40	155.12	1.0	2.3	7.2	7.2	6.0	16.5	6.4	15.1	46.7	36.9	107.1				
432	243202020	81	9.3	5.4	11.9	24.5	13.1	54.9	57.3	125.0	227.6	121.5	508.9	78.72	152.35	274.58	172.13	677.76	3.0	7.1	22.0	22.0	18.3	50.4	28.1	68.2	204.0	168.8	468.1				
432	243202030	81	10.5	5.4	11.9	24.5	13.1	54.9	57.3	125.0	258.1	137.7	578.0	89.22	172.71	311.27	195.13	769.32	3.0	7.1	22.0	22.0	18.3	50.4	31.8	75.0	231.3	182.5	530.7				
433	143301010	81	4.5	1.5	3.5	16.1	10.9	32.0	6.7	15.9	72.4	48.9	144.0	10.45	22.01	87.37	69.34	189.18	0.8	2.1	14.4	14.4	15.2	32.8	3.7	9.6	64.9	68.4	149.8				
434	143401010	81	1.4	1.7	3.7	7.8	4.0	17.0	2.4	5.1	10.8	5.7	23.8	3.67	7.10	12.80	8.03	31.80	0.8	2.2	6.8	6.8	5.7	15.6	1.3	3.1	9.5	7.8	21.8				
435	143501010	81	11.5	0.8	1.4	6.5	4.4	13.0	7.0	16.5	75.3	50.8	148.8	10.88	22.87	80.76	72.05	186.58	0.3	0.8	5.9	5.9	8.2	13.2	3.9	9.8	67.5	71.1	152.3				
435	143502010	81	10.1	0.5	1.1	2.2	1.2	5.0	5.0	10.9	22.5	12.0	50.4	7.78	15.08	27.14	17.01	68.98	0.3	0.8	5.9	5.9	8.2	13.2	3.9	9.8	67.5	71.1	152.3				
435	143502020	81	6.4	0.7	1.5	3.1	1.7	7.0	5.8	12.8	28.3	14.1	59.0	9.11	17.83	31.78	19.92	78.45	0.4	0.9	2.8	2.8	2.3	6.4	3.3	7.7	23.6	19.7	54.2				
44	104401010	81	0.5	12.7	20.6	63.1	24.6	121.0	8.8	10.7	32.8	10.8																					

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F km/day

hwy No	Contr. Sec	Seq	Ld	L	Trk (km)	LT	HT	HT	Sgls	Dbbs	Tot	Trk LT	Trk HT	/day	Sgls	Dbbs	(\$)	Tot	Cost LT	Per HT	TLF LT	TLF HT	Per HT	day Sgls	day Dbbs	Tot	TLF LT	TLF HT	km HT	per Sgls	day Dbbs	Tot
459	345901020	B1	1.8	7.3	16.0	33.0	17.6	73.9	13.6	29.6	61.1	32.6	136.8	21.11	40.86	73.65	46.17	181.79	4.1	9.6	28.6	24.6	67.8	7.5	17.7	54.7	125.6					
459	345901021	B1	1.3	13.6	22.3	69.3	26.6	131.0	17.6	28.6	88.1	34.4	169.0	27.72	39.77	106.22	48.68	227.39	7.7	13.4	61.2	37.2	119.5	9.9	17.3	78.9	48.0					
462	446201010	B1	10.3	0.2	0.4	2.5	1.9	5.0	1.9	4.4	25.8	19.9	51.7	2.97	6.02	30.82	28.18	67.99	0.1	0.3	2.2	2.7	5.3	1.1	2.6	22.9	27.8					
462	446201020	B1	4.1	0.5	1.1	6.4	5.0	13.0	2.0	4.5	26.3	20.5	53.3	3.08	6.20	31.78	29.05	70.09	0.3	0.7	5.8	7.0	13.7	1.1	2.7	23.6	28.7					
462	446201021	B1	2.3	1.1	2.6	15.3	11.9	31.0	2.8	5.9	34.8	27.1	70.4	4.04	8.19	41.96	38.35	92.54	0.6	1.8	13.7	16.7	32.6	1.4	3.6	31.2	37.8					
462	446202010	B1	10.1	0.4	0.9	5.4	4.2	11.0	4.1	9.4	54.9	42.7	111.1	6.39	12.83	66.24	60.55	148.10	0.2	0.6	4.9	5.9	11.6	2.3	5.8	48.2	56.7					
462	446203010	B1	16.7	0.1	0.2	1.0	0.8	2.0	1.2	2.8	18.5	12.8	33.4	1.92	3.88	19.89	18.18	43.87	0.0	0.1	0.9	1.1	2.1	0.7	1.7	14.8	17.9					
462	446205011	B1	9.9	0.2	0.4	2.5	1.9	5.0	1.8	4.2	24.5	19.1	49.6	2.85	5.77	29.57	27.03	65.23	0.1	0.3	2.2	2.7	5.3	1.0	2.5	22.0	26.7					
463	346301010	B1	3.7	0.6	1.3	2.7	1.4	6.0	2.2	4.8	9.9	5.3	22.2	3.42	6.63	11.94	7.49	29.48	0.3	0.8	2.4	2.0	5.5	1.2	2.9	6.9	7.4					
464	346401010	B1	10.0	0.5	1.2	6.9	5.4	14.0	5.2	11.8	69.2	53.8	140.0	8.05	16.29	83.47	76.30	184.10	0.3	0.7	6.2	7.5	14.7	2.9	7.1	62.0	75.3					
464	346401020	B1	7.9	0.5	1.2	6.9	5.4	14.0	4.1	9.3	54.7	42.5	110.6	6.36	12.87	65.94	60.27	145.44	0.3	0.7	6.2	7.5	14.7	2.3	5.8	48.0	58.5					
464	346402010	B1	6.5	0.5	1.2	6.9	5.4	14.0	4.4	10.0	58.9	45.8	119.1	6.85	13.66	71.03	64.93	156.67	0.3	0.7	6.2	7.5	14.7	2.4	6.0	52.8	64.1					
464	346402020	B1	11.3	0.5	1.2	6.9	5.4	14.0	5.8	13.3	78.1	60.8	158.1	9.08	18.39	94.24	86.14	207.85	0.3	0.7	6.2	7.5	14.7	3.2	8.0	70.0	85.0					
465	346501010	B1	11.2	0.1	0.3	1.5	1.2	3.0	1.2	2.8	16.6	12.9	33.6	1.93	3.81	20.03	18.31	44.19	0.1	0.2	1.3	1.6	3.2	0.7	1.7	14.8	18.1					
465	346502010	B1	10.0	0.1	0.2	1.0	0.8	2.0	0.7	1.7	9.9	7.7	20.0	1.15	2.33	11.92	10.90	26.30	0.0	0.1	0.9	1.1	2.1	0.4	1.0	8.9	10.6					
466	346601010	RTAC	10.0	0.2	0.4	2.5	1.9	5.0	1.8	4.2	24.7	19.2	50.0	2.67	5.82	29.81	27.25	65.75	0.1	0.4	3.7	5.8	9.9	1.3	3.7	37.3	58.5					
467	346701010	RTAC	10.0	0.3	0.7	4.0	3.1	8.0	3.0	6.7	39.5	30.8	80.0	4.60	9.31	47.70	43.60	105.20	0.2	0.8	6.0	9.0	15.8	2.1	5.9	59.7	80.4					
467	346702010	RTAC	7.5	0.3	0.7	4.0	3.1	8.0	2.2	5.1	29.7	23.1	60.0	3.45	6.98	35.77	32.70	78.90	0.2	0.6	6.0	9.0	15.8	1.6	4.5	44.8	67.8					
467	346702020	RTAC	10.5	0.3	0.7	4.0	3.1	8.0	3.1	7.1	41.5	32.3	84.0	4.03	9.77	50.08	45.78	110.48	0.2	0.8	6.0	9.0	15.8	2.2	6.2	62.7	84.9					
468	346801010	RTAC	3.5	0.5	1.2	6.9	5.4	14.0	1.8	4.1	24.2	18.8	49.0	2.82	5.70	28.22	26.70	64.44	0.4	1.0	10.4	15.8	27.7	1.3	3.6	36.6	55.4					
468	346802010	RTAC	9.5	0.5	1.2	6.9	5.4	14.0	5.4	12.4	72.7	56.5	147.0	8.45	17.10	87.65	80.11	193.31	0.4	1.0	10.4	15.8	27.7	3.9	10.8	108.7	166.1					
468	346802020	RTAC	8.3	0.2	0.5	3.0	2.3	6.0	2.1	4.7	27.8	21.5	55.8	3.21	6.48	33.27	30.41	73.38	0.2	0.4	4.5	8.8	11.9	1.5	4.1	41.8	63.0					
469	346901010	RTAC	6.6	0.4	0.8	1.8	1.0	4.0	2.7	5.9	12.1	6.5	27.2	4.19	8.12	14.63	9.17	36.12	0.3	0.8	2.7	2.8	6.5	1.9	5.2	18.3	19.0					
469	346901020	RTAC	6.8	1.3	2.8	5.8	3.1	13.0	8.8	19.1	39.4	21.0	68.3	13.63	26.39	47.56	29.81	117.39	0.9	2.5	8.8	9.1	21.2	6.3	16.8	58.5	61.6					
470	347002010	RTAC	4.1	0.1	0.2	1.0	0.7	2.0	0.4	0.9	4.1	2.8	8.2	0.58	1.17	4.86	3.94	10.06	0.1	0.2	1.5	2.0	3.8	0.3	0.8	6.2	8.2					
470	347002020	RTAC	3.8	0.1	0.2	1.0	0.7	2.0	0.4	0.8	3.9	2.6	7.7	0.56	1.17	4.65	3.69	10.06	0.1	0.2	1.5	2.0	3.8	0.3	0.7	5.8	7.6					
470	347002030	RTAC	10.0	0.8	1.7	3.6	1.8	8.0	7.9	17.3	35.7	19.0	77.2	12.34	23.88	43.04	26.98	108.23	0.6	1.5	5.4	5.6	13.1	5.7	15.2	53.9	55.9					
471	347101010	RTAC	7.9	0.2	0.5	3.0	2.3	6.0	1.7	4.0	23.3	18.2	47.2	3.81	7.81	13.72	8.60	33.66	0.2	0.8	2.0	2.1	4.9	1.8	4.8	17.2	17.8					
471	347101020	RTAC	9.8	0.1	0.3	2.0	1.5	4.0	1.4	3.3	19.4	15.1	39.3	2.26	4.57	23.42	21.41	51.65	0.1	0.3	3.0	4.5	7.9	1.0	2.8	29.3	44.4					
471	347101030	RTAC	6.0	0.3	0.7	4.0	3.1	8.0	1.8	4.0	23.8	18.5	48.1	2.76	5.59	28.67	26.20	63.23	0.2	0.8	6.0	9.0	15.8	1.3	3.6	35.9	54.3					
472	347201010	RTAC	9.0	0.3	0.6	3.5	2.7	7.0	2.3	5.3	31.1	24.2	63.0	3.62	7.33	37.66	34.33	82.65	0.2	0.5	5.2	7.9	13.8	1.7	4.7	47.0	71.2					
474	347401010	RTAC	8.5	0.3	0.6	1.3	0.7	3.0	2.5	5.5	11.4	6.1	25.5	3.93	7.81	13.72	8.60	33.66	0.2	0.8	2.0	2.1	4.9	1.8	4.8	17.2	17.8					
474	347401020	RTAC	7.4	0.5	1.1	2.2	1.2	5.0	3.7	6.0	16.5	8.8	37.0	5.71	11.04	19.90	12.46	49.13	0.4	1.0	3.4	3.5	8.2	2.6	7.0	24.9	25.9					
475	347501010	RTAC	4.0	0.3	0.8	4.4	3.5	9.0	1.3	3.0	17.8	13.8	36.0	2.07	4.19	21.48	18.62	47.34	0.2	0.7	6.7	10.2	17.6	1.0	2.7	26.9	40.7					
475	347501020	RTAC	4.4	0.7	1.6	8.4	7.3	18.0	3.1	7.0	41.3	32.2	83.6	4.80	9.73	49.84	45.56	109.94	0.5	1.4	14.2	21.5	37.6	2.2	6.2	62.4	84.5					
476	347601010	RTAC	8.5	0.3	0.6	3.5	2.7	7.0	2.2	5.0	29.3	22.8	59.4	3.41	6.91	35.39	32.35	78.06	0.2	0.5	5.2	7.9	13.8	1.6	4.4	44.3	67.1					
476	347601020	A1	3.0	0.3	0.6	3.5	2.7	7.0	0.6	1.8	10.4	6.1	21.1	1.21	2.48	12.60	11.52	27.80	0.2	0.5	4.4	6.2	11.2	0.6	1.4	13.2	18.6					
476	347602010	A1	11.5	0.3	0.6	3.5	2.7	7.0	3.0	6.8	39.6	31.0	80.5	4.63	9.37	48.00	43.87	105.86	0.2	0.5	4.4	6.2	11.2	2.1	5.4	50.1	71.0					
476	347603010	A1	7.3	0.3	0.7	4.0	3.1	8.0	2.2	4.9	28.9	22.5	58.6	3.37	6.81	34.91	31.91	77.01	0.2	0.5	5.0	7.1	12.8	1.5	3.9	36.4	51.7					
476	347603020	A1	13.0	0.3	0.7	4.0	3.1	8.0	3.8	8.8	51.4	40.0	104.0	5.88	12.10	62.01	56.68	136.78	0.2	0.5	5.0	7.1	12.8	2.8	6.9	64.7	91.7					
476	347601010	A1	1.8	0.3	0.6	3.5	2.7	7.0	0.5	1.1	6.4	5.0	12.9	0.74	1.50	7.68	7.02	16.94	0.2	0.5	4.4	6.2	11.2	0.3	0.9	6.0	11.4					
476	347601020	A1	4.1	0.8	1.8	10.4	6.1	21.0	3.2	7.3	42.8	33.3	86.5	4.87	10.07	51.59	47.15	113.78	0.6	1.4	13.1	18.5	33.5	2.3	5.8	53.8	76.3					
476	347601030	A1	3.8	0.6	1.8	10.4	6.1	21.0	2.8	6.3	37.2	28.9	75.2	4.32	8.75	44.82	40.97	98.66	0.6	1.4	13.1	18.5	33.5	2.0	5.0	46.8	66.3					
476	347601040	RTAC	1.7	1.2	2.8	16.3	12.7	33.0	2.1	4.8	27.9	21.7	56.4	3.24	6.57	33.64	30.75	74.21	0.8	2.5	24.8	37.3	65.2	1.5	4.2	42.1	63.8					
476	347602010	RTAC	12.0	0.2	0.5	3.0	2.3	6.0	2.7	6.1	35.8	27.7	71.9	4.13	8.37	42.88	39.21	94.60	0.2	0.4	4.5	6.8	11.9	1.9	5.3	53.7	81.3					
476	347602020	RTAC	12.0	0.2	0.5	3.0	2.3	6.0	2.7	6.1	35.8	27.7	71.9	4.14	8.36	42.98	39.27	94.76	0.2	0.4	4.5	6.8	11.9	1.9	5.4	53.8	81.4					
476	347603010	RTAC	10.6	0.2	0.5	3.0	2.3	6.0	2.3	5.4	31.4	24.5	63.6	3.66	7.40	37.92	34.66	83.64	0.2	0.4	4.5	6.8	11.9	1.7	4.7	47.5	71.9					
480	448001010	RTAC	12.5	4.0	8.6	17.8	9.5	40.0	49.6	108.3	223.5	119.3	500.7	77.28	149.60	269.63	169.03	685.54	2.8	7.8	28.9	28.0	65.4	3.8	9.5	35.0	41.8					
480	448001020																															

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, Tl.F./Day, Tl.F.:km/day

Hwy No	Seq	Conc	Sec	Ld	Cls	L (km)	Traff		HT	Sgls	Dbils	Tot	Trk LT	km HT	day Sgls	Cost LT	per HT	TLF LT	per HT	day Sgls	(\$)	Dbils	Tot	TLF LT	per HT	day Sgls	Dbils	Tot	TLF LT	km HT	per Sgls	day Dbils	Tot
							LT	HT																									
481	448103000	RTAC	5.9	1.1	2.4	4.9	2.6	11.0	6.4	14.0	28.8	15.4	64.6	9.97	9.97	19.31	34.80	21.81	85.09	0.8	2.1	7.4	7.7	16.0	4.6	12.3	43.6	105.7					
481	448104010	RTAC	7.5	0.5	1.1	2.2	1.2	5.0	3.7	8.0	16.6	8.9	37.2	5.74	5.74	11.12	20.04	12.58	49.46	0.4	1.0	3.4	3.5	8.2	2.8	7.1	25.1	28.0	60.9				
481	448104020	RTAC	6.7	0.5	1.1	2.2	1.2	5.0	4.3	9.3	19.3	10.3	43.2	6.67	14.59	12.91	23.27	14.59	57.43	0.4	1.0	3.4	3.5	8.2	3.1	6.2	29.1	30.2	70.7				
482	448201010	A1	6.4	2.1	4.5	8.4	5.0	21.0	17.5	38.2	78.0	42.1	176.9	27.30	59.70	52.84	95.24	59.70	235.08	1.5	3.6	11.8	11.5	28.3	12.8	30.3	99.4	98.6	238.9				
482	448201020	RTAC	3.6	1.4	3.0	6.2	3.3	14.0	5.0	11.0	22.7	12.1	50.9	7.88	15.21	15.21	27.41	17.19	87.87	1.0	2.7	9.4	9.8	22.8	3.6	9.7	34.3	35.6	83.3				
482	448201030	RTAC	16.5	1.4	3.0	6.2	3.3	14.0	22.9	50.0	103.2	55.1	231.2	35.68	89.08	89.08	124.50	78.05	307.30	1.0	2.7	9.4	9.8	22.8	16.4	44.1	155.8	161.8	378.1				
482	448202010	RTAC	18.1	0.7	1.5	3.1	1.7	7.0	12.5	27.4	56.5	30.2	126.6	19.54	37.82	37.82	68.16	42.73	166.24	0.5	1.3	4.7	4.9	11.4	9.0	24.1	85.3	88.8	207.0				
484	448401010	RTAC	8.3	0.6	1.3	2.7	1.4	6.0	4.9	10.7	22.1	11.8	49.5	14.82	16.69	14.82	28.63	16.69	65.73	0.4	1.1	4.0	4.2	9.8	3.5	9.4	33.3	34.6	80.9				
484	448401020	RTAC	16.4	0.6	1.3	2.7	1.4	6.0	9.7	21.2	43.8	23.3	96.0	15.13	33.08	28.28	52.77	33.08	130.27	0.4	1.1	4.0	4.2	9.8	7.0	18.7	66.1	68.6	160.3				
485	448501010	RTAC	6.2	0.6	1.3	2.7	1.4	6.0	3.7	8.1	16.7	8.9	37.3	5.78	12.61	11.16	20.36	12.61	49.64	0.4	1.1	4.0	4.2	9.8	2.7	7.1	25.2	26.1	61.1				
485	448501020	RTAC	10.2	0.5	1.1	2.2	1.2	5.0	5.0	11.0	22.7	12.1	50.8	7.84	15.18	15.18	27.36	17.15	67.52	0.4	1.0	3.4	3.5	8.2	3.6	9.7	34.2	35.6	83.1				
486	448601010	RTAC	9.7	0.2	0.4	0.8	0.5	2.0	1.9	4.2	8.7	4.6	18.4	2.99	5.79	5.79	10.44	6.54	25.78	0.1	0.4	1.3	1.4	3.3	1.4	3.7	13.1	13.6	31.7				
486	448601020	RTAC	7.4	0.6	1.3	2.7	1.4	6.0	4.4	9.5	19.7	10.5	44.1	6.80	13.16	13.16	23.72	14.87	58.58	0.4	1.1	4.0	4.2	9.8	3.1	8.4	28.7	30.8	72.1				
486	448601030	RTAC	6.3	2.4	5.2	10.7	5.7	24.0	14.9	32.6	67.3	35.9	150.8	23.28	45.08	45.08	81.21	50.81	200.46	1.7	4.6	16.2	16.6	38.2	10.7	28.6	101.6	105.5	248.7				
486	448601040	RTAC	5.2	2.0	4.3	8.9	4.8	20.0	10.2	22.3	46.0	24.6	103.1	15.81	30.80	30.80	55.52	34.80	137.04	1.4	3.8	13.5	14.0	32.7	7.3	19.7	69.5	72.2	168.8				
487	448701010	RTAC	7.6	1.8	3.9	8.0	4.3	18.0	13.5	29.5	60.8	32.5	136.3	21.04	40.73	40.73	73.40	48.01	181.16	1.3	3.4	12.1	12.6	29.4	9.7	28.0	91.9	95.4	222.9				
487	448701020	RTAC	10.0	1.8	3.9	8.0	4.3	18.0	17.8	36.9	60.3	42.8	178.8	27.75	53.73	53.73	98.83	60.70	239.02	1.3	3.4	12.1	12.6	29.4	12.8	34.3	121.2	125.9	294.1				
487	448701030	RTAC	7.7	1.8	3.9	8.0	4.3	18.0	13.8	30.0	62.0	33.1	138.8	21.43	41.48	41.48	74.78	48.86	184.52	1.3	3.4	12.1	12.6	29.4	9.9	28.5	93.6	97.2	227.1				
488	448801010	RTAC	12.9	0.8	1.7	3.6	1.9	8.0	10.2	22.2	45.9	24.5	102.9	15.88	30.73	30.73	55.39	34.72	136.72	0.6	1.5	5.4	5.8	13.1	7.3	19.6	69.3	72.0	168.2				
488	448801020	RTAC	4.2	0.7	1.5	3.1	1.7	7.0	2.9	6.4	13.2	7.0	28.6	4.57	8.84	8.84	15.93	9.98	38.32	0.5	1.3	4.7	4.9	11.4	2.1	5.6	19.9	20.7	48.4				
488	448801030	RTAC	4.5	1.8	3.5	7.1	3.8	16.0	7.1	15.8	32.1	17.1	71.9	11.10	21.49	21.49	38.73	24.28	95.61	1.1	3.0	10.8	11.2	26.1	5.1	13.7	48.5	50.3	117.8				
488	448801040	RTAC	9.8	0.3	0.6	1.3	0.7	3.0	2.0	4.3	8.8	4.7	19.7	3.04	5.88	5.88	10.60	6.85	28.17	0.2	0.6	2.0	2.1	4.9	1.4	3.8	13.3	13.6	32.2				
489	448901020	RTAC	6.6	1.2	2.8	6.3	12.7	33.0	1.9	4.4	28.1	14.6	59.4	9.95	18.25	18.25	34.70	21.75	85.65	0.4	0.8	2.8	2.7	6.7	4.8	11.0	36.2	35.2	87.0				
490	449001010	A1	12.9	0.5	1.1	2.2	1.2	5.0	6.4	13.9	28.8	15.4	64.4	9.95	18.25	18.25	34.70	21.75	85.65	0.4	0.8	2.8	2.7	6.7	4.8	11.0	36.2	35.2	87.0				
491	449101010	A1	9.2	0.4	0.9	5.4	4.2	11.0	3.7	8.5	50.0	38.9	101.2	5.82	11.78	11.78	21.49	38.73	150.35	1.2	2.9	9.8	9.5	23.5	2.4	6.7	25.4	26.2	61.7				
5	300501010	A1	10.0	0.9	1.8	4.0	2.1	9.0	8.9	19.4	40.1	21.4	89.9	13.88	28.86	28.86	48.42	30.35	119.51	0.6	1.5	5.1	4.9	12.1	6.4	15.4	50.5	48.1	121.4				
5	300502010	A1	10.5	2.4	5.2	10.7	5.7	24.0	25.0	54.5	112.5	60.0	252.0	38.89	75.29	75.29	135.70	85.07	334.95	1.7	4.1	13.5	13.1	32.4	17.9	43.1	141.8	137.7	340.4				
5	300502020	A1	10.5	2.4	5.2	10.7	5.7	24.0	25.0	54.5	112.5	60.0	252.0	38.89	75.29	75.29	135.70	85.07	334.95	1.7	4.1	13.5	13.1	32.4	17.9	43.1	141.8	137.7	340.4				
5	300503010	A1	1.5	2.5	5.4	11.2	6.0	25.0	3.6	7.8	16.2	8.6	36.2	5.59	10.82	10.82	19.50	12.23	44.18	1.8	4.3	14.0	13.6	33.7	2.8	6.2	20.4	19.8	48.9				
5	300503020	RTAC	13.4	2.5	5.4	11.2	6.0	25.0	3.0	7.2	14.6	7.9	33.4	5.14	8.92	8.92	17.55	11.25	43.18	1.8	4.3	14.0	13.6	33.7	2.8	6.2	20.4	19.8	48.9				
5	300504010	RTAC	6.4	4.0	8.6	17.8	9.5	40.0	25.5	55.6	114.7	61.2	256.9	39.86	76.77	76.77	136.36	86.74	341.53	2.8	7.6	26.9	28.0	65.4	18.2	49.0	173.2	178.8	420.3				
5	300504020	RTAC	7.5	4.2	8.1	18.7	10.0	42.0	31.3	68.3	141.1	75.3	315.9	48.78	84.40	84.40	170.14	106.68	419.88	3.0	8.0	28.3	29.4	68.6	22.4	60.3	213.0	221.1	518.8				
5	300505010	RTAC	11.1	2.3	5.3	31.1	24.2	63.0	25.8	58.8	345.7	289.0	689.3	40.19	81.37	81.37	416.94	381.10	1495.84	1.7	4.7	15.8	15.8	39.6	17.2	44.5	151.9	136.2	340.4				
5	300506010	RTAC	20.7	4.4	10.0	56.8	45.8	119.0	90.7	207.0	1215.3	845.6	2458.5	141.30	286.07	286.07	598.21	350.57	1360.35	12.4	29.9	98.3	85.5	235.2	65.0	182.6	634.7	2777.8	4860.1				
5	300506020	A1	5.9	17.3	37.8	78.1	41.7	174.8	102.9	224.5	463.8	247.4	1038.5	160.28	310.28	310.28	598.21	350.57	1360.35	12.4	29.9	98.3	85.5	235.2	65.0	182.6	634.7	2777.8	4860.1				
5	300507010	A1	3.4	20.1	43.8	90.5	49.3	202.8	68.3	149.1	307.8	164.3	689.5	106.42	208.02	208.02	371.30	232.77	919.51	14.4	34.7	114.0	110.8	273.9	49.0	116.0	367.6	376.7	931.3				
5	300508010	A1	4.9	2.7	6.2	36.8	28.5	74.0	13.4	30.5	179.2	139.5	362.8	59.47	115.13	115.13	207.48	130.08	512.17	14.4	34.7	114.0	110.8	273.9	27.4	68.0	216.6	210.5	520.4				
5	300508020	A1	4.9	2.7	6.2	36.8	28.5	74.0	13.4	30.5	179.2	139.5	362.8	59.47	115.13	115.13	207.48	130.08	512.17	14.4	34.7	114.0	110.8	273.9	27.4	68.0	216.6	210.5	520.4				
5	300509030	A1	11.2	2.7	6.2	36.8	28.5	74.0	30.6	69.8	409.7	318.6	828.8	47.63	96.44	96.44	184.15	451.68	1089.90	2.0	4.9	16.1	16.1	38.2	9.8	24.2	75.7	75.7	192.2				
5	300509010	A1	9.3	2.7	6.2	36.8	28.5	74.0	25.4	58.1	340.9	265.3	689.7	39.64	80.25	80.25	411.20	375.86	908.95	2.0	4.9	16.1	16.1	38.2	9.8	24.2	75.7	75.7	192.2				
5	300509020	A1	3.2	7.3	18.0	33.0	17.8	73.9	23.7	51.6	108.8	56.9	238.8	38.86	71.35	71.35	128.58	80.61	317.38	5.3	12.7	41.6	40.4	99.8	17.0	40.9	134.2	130.5	322.5				
5	300510010	A1	1.4	4.9	10.8	21.9	11.7	49.0	6.8	14.8	30.6	16.3	68.6	10.58	20.48	20.48	38.90	23.14	91.09	3.5	8.4	27.5	28.7	68.1	4.9	11.7	38.5	37.4	82.6				
5	300511010	A1	11.1	6.5	14.8	30.6	17.8	73.9	23.7	51.6	108.8	56.9	238.8	38.86	71.35	71.35	128.58	80.61	317.38	5.3	12.7	41.6	40.4	99.8	17.0	40.9	13						

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TL,F/day, TL,F: km/day

Hwy No	Corr Seq	Ld Cbs	L (km)	LT	HT	Sgls	Dbls	Tot	Trk LT	km HT	iday Sgls	Dbis	Tot	Cost LT	HT	per HT	day Sgls	(\$)	TLF LT	HT	per HT	day Sgls	Dbls	Tot	TLF LT	HT	km	per Sgls	day Dbls	Tot
5	400515030	RTAC	60	48	110	64.8	50.4	131.0	28.9	66.0	387.2	301.3	783.4	45.02	81.15	467.07	426.93	1030.17	3.5	9.7	87.6	148.0	259.0	20.7	58.2	685.1	1548.6			
5	400516010	RTAC	1.6	6.1	14.5	65.9	44.5	131.0	10.0	23.6	107.4	72.6	213.5	15.50	32.64	129.55	102.81	260.50	4.4	12.8	96.5	130.8	247.4	7.1	20.8	162.2	213.2	403.3		
5	400516020	RTAC	8	59	135	79.1	81.5	180.0	57.6	131.4	711.1	600.0	1560.0	89.86	181.52	830.11	850.17	2051.45	4.2	11.9	119.4	180.8	316.3	41.3	115.9	184.2	3083.9			
5	400516030	RTAC	8	49	11.3	66.2	51.5	134.0	40.2	91.6	537.8	418.5	1088.1	62.53	126.60	482.74	582.86	1430.86	3.5	10.0	100.0	151.4	264.9	28.8	60.8	812.0	1229.4	2151.0		
5	400517010	RTAC	10.2	29	6.7	39.0	30.4	79.0	29.8	68.1	399.9	311.1	809.0	48.49	84.13	482.32	440.87	1063.81	2.1	5.9	59.0	89.3	156.2	21.4	60.1	914.0	1599.2			
5	400517020	RTAC	10.1	27	6.2	36.8	28.5	74.0	27.5	62.7	368.0	286.3	744.4	42.78	88.62	443.85	405.70	878.96	2.0	5.5	55.2	83.6	146.3	19.7	55.3	555.6	641.1	1471.6		
5	400518010	AI	4.2	3.8	8.6	50.4	39.2	102.0	15.8	36.1	211.8	164.8	428.4	24.62	49.85	255.42	233.47	563.36	2.7	6.8	63.5	90.0	162.9	11.3	28.8	286.6	377.9	684.4		
5	400518010	AI	5.1	9.7	21.2	43.7	23.3	97.9	49.5	108.0	222.8	119.0	489.3	77.07	149.19	268.68	168.56	663.66	7.0	16.8	55.0	53.5	132.2	35.5	85.5	280.7	272.6	674.4		
5	400520010	AI	7.9	28.2	57.2	118.2	63.1	264.7	206.5	450.5	930.2	496.4	2083.5	321.58	622.52	1121.95	703.34	2769.39	18.8	45.3	148.8	144.8	357.8	148.0	356.8	1171.1	1138.3	2814.1		
5	400520020	AI	8.9	28.2	57.2	118.2	63.1	264.7	181.8	398.7	819.1	437.1	1834.6	283.17	548.18	887.95	619.34	2438.81	18.8	45.3	148.8	144.8	357.8	148.0	356.8	1171.1	1138.3	2814.1		
5	400521010	AI	4.4	9.8	21.4	44.2	23.8	98.8	42.8	93.4	193.0	103.0	432.2	66.71	129.14	232.74	145.90	574.49	7.0	16.9	53.8	54.0	133.6	30.7	74.0	242.9	236.1	583.8		
5	400521020	AI	3.9	13.3	28.9	58.6	31.9	133.9	52.3	114.0	235.5	125.7	527.4	81.41	157.58	284.02	178.05	701.07	9.5	22.8	75.2	73.1	180.8	37.5	90.3	286.5	288.2	712.4		
5	400522010	AI	4.5	16.7	36.5	75.4	40.2	169.8	75.3	164.3	339.2	181.0	759.7	117.28	227.00	409.12	259.48	1009.86	12.0	28.9	94.9	92.2	228.0	54.0	130.0	427.1	415.1	1028.2		
5	400523010	AI	25.0	8.4	18.4	37.8	20.2	84.9	210.5	459.2	948.1	508.0	2123.7	327.78	634.55	1143.63	716.93	2822.90	6.0	14.5	47.7	46.4	114.7	150.8	363.5	1193.8	2888.4			
5	400523020	AI	13.5	6.3	13.8	28.5	15.2	63.9	85.5	186.5	385.1	205.5	862.5	133.12	257.70	484.48	291.16	1148.45	4.5	10.9	35.9	34.9	86.4	61.3	147.6	464.8	471.2	1164.9		
5	400524010	AI	10.3	6.3	13.8	28.5	15.2	63.9	65.3	142.4	284.0	158.9	658.5	101.64	188.78	354.63	222.31	875.35	4.5	10.9	35.9	34.9	86.4	48.8	112.7	370.2	359.8	888.5		
5	400525010	AI	0.1	8.8	19.2	39.7	21.2	88.9	0.9	1.9	4.0	2.1	8.9	1.37	2.66	4.79	3.00	11.82	6.3	15.2	50.0	48.6	120.1	0.6	1.5	5.0	4.9	12.0		
5	400526010	AI	6.8	6.2	13.6	28.1	15.0	62.8	42.2	92.0	189.9	101.4	425.5	65.67	127.12	229.11	143.63	563.52	4.5	10.8	35.4	34.4	85.0	30.2	72.6	236.2	232.5	574.8		
5	400526020	AI	6.8	4.3	9.3	19.2	10.2	43.0	29.1	63.5	131.2	70.0	293.8	45.35	87.78	158.23	99.19	380.56	3.1	7.4	24.1	23.5	58.0	20.9	50.3	165.2	160.5	396.9		
5	400526030	AI	0.8	18.1	39.5	81.6	43.8	182.8	140.0	30.4	62.8	33.5	140.8	21.73	42.08	75.80	47.52	187.11	13.0	31.3	102.8	98.8	248.9	10.0	24.1	79.1	76.9	180.1		
5	4005001010	AI	9.9	5.0	11.0	22.7	12.1	50.9	49.9	108.9	225.0	120.0	503.9	77.77	150.56	271.34	170.10	669.78	3.6	6.7	26.8	27.8	68.8	35.8	86.2	263.2	275.3	680.8		
5	4005001020	AI	7.8	5.0	11.0	22.7	12.1	50.9	38.4	83.8	173.1	92.4	387.7	59.84	115.85	208.79	130.89	515.37	3.6	8.7	28.6	27.8	68.8	27.5	66.4	217.8	211.8	523.7		
5	4005001030	AI	3.8	1.1	2.2	10.2	57.5	71.0	4.3	8.4	38.7	219.1	270.5	6.74	11.59	48.66	310.48	147.2	3.1	6.6	40.7	32.2	79.8	34.8	83.9	275.7	287.9	682.4		
5	4005001040	AI	1.0	7.0	15.3	31.7	16.9	70.9	12.8	27.9	57.6	30.8	129.1	19.92	38.57	69.52	43.58	171.59	5.0	12.1	39.9	38.8	95.8	9.2	22.1	72.8	70.5	174.4		
5	4005002010	AI	10.0	8.9	19.4	40.1	21.4	89.9	92.1	184.0	401.4	214.2	899.1	138.77	268.64	484.17	303.52	1195.10	6.4	15.4	50.5	49.1	121.4	63.9	153.9	505.4	481.2	1214.4		
5	4005003010	AI	13.7	8.9	19.4	40.1	21.4	89.9	121.1	266.3	549.9	293.5	1231.8	190.12	368.04	663.31	415.82	1637.28	6.4	15.4	50.5	49.1	121.4	63.9	153.9	505.4	481.2	1214.4		
5	4005004010	AI	8.3	5.8	12.7	26.3	14.0	58.9	48.6	108.0	218.9	118.8	480.4	75.69	148.52	264.08	165.55	651.84	4.2	10.1	33.1	32.2	79.8	34.8	83.9	275.7	287.9	682.4		
5	4005004020	AI	8.7	2.5	5.4	11.2	6.0	25.0	21.6	47.2	97.5	52.0	218.3	33.69	65.22	117.50	73.69	280.14	1.8	4.3	14.0	13.6	33.7	15.5	37.4	122.7	119.3	294.8		
5	4005005010	AI	17.9	2.5	5.4	11.2	6.0	25.0	21.6	47.2	97.5	52.0	218.3	33.69	65.22	117.50	73.69	280.14	1.8	4.3	14.0	13.6	33.7	15.5	37.4	122.7	119.3	294.8		
5	4005006020	AI	11.0	2.8	6.0	12.5	6.7	28.0	30.6	66.6	137.9	73.6	306.8	47.66	92.27	166.30	104.25	410.48	2.0	4.6	15.7	15.3	37.8	21.9	52.9	173.6	166.7	417.1		
5	4005006020	AI	1.8	4.5	9.7	20.1	10.7	45.0	7.3	15.9	32.9	17.6	73.7	11.38	22.03	39.70	24.89	88.00	3.2	7.7	25.3	24.6	60.7	5.2	12.6	41.4	40.3	99.8		
5	4005006020	AI	5.4	2.4	5.2	10.7	5.7	24.0	12.8	28.0	57.8	30.8	128.5	19.98	38.68	69.72	43.71	172.10	1.7	4.1	13.5	13.1	32.4	9.2	22.2	72.8	70.7	174.9		
5	150001010	AI	5.4	2.4	5.2	10.7	5.7	24.0	12.8	28.0	57.8	30.8	128.5	19.98	38.68	69.72	43.71	172.10	1.7	4.1	13.5	13.1	32.4	9.2	22.2	72.8	70.7	174.9		
5	1500101010	AI	6.3	2.6	5.6	11.6	6.2	26.0	16.2	35.4	73.1	39.0	163.6	25.26	48.89	88.12	55.24	217.51	1.8	4.4	14.6	14.2	35.1	11.8	28.0	92.0	89.4	221.0		
5	150101010	AI	9.8	5.5	12.1	25.0	13.3	55.9	54.3	118.5	244.8	130.6	548.3	84.82	163.81	285.24	165.08	728.75	4.0	9.6	31.4	30.8	75.8	38.9	83.8	308.2	299.5	740.5		
5	150102010	AI	5.8	6.9	15.1	31.2	18.7	69.8	36.7	84.4	174.2	93.0	390.2	60.23	116.59	210.13	131.73	518.68	5.0	12.0	39.3	38.2	94.5	27.7	68.8	219.3	213.2	527.0		
5	150102020	AI	5.7	5.4	11.9	24.5	13.1	54.9	30.8	67.2	138.8	74.1	311.0	48.00	92.92	167.47	104.98	413.37	3.9	9.4	30.9	30.0	74.2	22.1	53.2	174.8	169.9	420.0		
5	150102030	AI	2.4	2.8	5.6	11.6	6.2	26.0	6.0	13.2	27.3	14.5	61.0	9.42	18.24	32.87	20.61	81.13	1.8	4.4	14.8	14.2	35.1	4.3	10.4	34.3	33.2	79.6		
5	150102040	AI	2.8	2.1	4.5	9.4	5.0	21.0	5.8	12.7	26.3	14.0	59.0	8.10	17.61	31.75	19.80	78.36	1.5	3.6	11.8	11.5	28.3	4.2	10.1	33.1	32.2	79.6		
5	150201010	AI	1.5	7.9	18.8	85.5	57.8	170.0	11.8	28.0	127.4	86.1	253.3	18.36	38.71	153.68	121.98	332.74	5.7	14.9	107.7	132.5	260.7	6.5	22.2	160.4	187.4	388.4		
5	150201020	AI	4.1	4.1	9.7	44.3	29.9	86.0	16.9	40.0	181.9	122.8	361.7	26.25	55.28	218.44	174.15	475.11	2.8	7.7	55.7	66.6	135.0	12.1	31.7	228.1	261.9	554.7		
5	150301010	AI	13.8	0.1	0.2	1.0	0.7	2.0	1.3	3.1	13.9	9.4	27.7	2.01	4.23	16.78	13.32	38.34	0.1	0.2	1.3	1.6	3.1	0.8	2.4	17.5	21.6	42.4		
5	150301020	AI	12.5	0.1	0.2	1.0	0.7	2.0	1.2	2.6	12.5	8.5	24.9	1.81	3.81	15.13	12.01	32.76	0.1	0.2	1.3	1.6	3.1	0.8	2.4	17.5	21.6	42.4		
5	150301010	AI	8.9	0.2	0.4	2.0	1.4	4.0	1.7	3.9	17.8	12.1	35.6	2.58	5.44	21.60	17.14	46.77	0.1	0.4	2.5	3.1	6.1	1.2	3.1					

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF/km/day

Hwy No	Conr Seq	Ld Seq	L Trk (km)		HT	Sgls	Dbles	Tot	Trk LT	Trk HT	T/day Sgls	T/day Dbles	Tot	Cost LT	Cost HT	per HT	day Sgls	(\$)	TLF LT	per HT	day Sgls	Dbles	Tot	TLF LT	km HT	per Sgls	day Dbles	Tot
			LT	HT																								
509	150901010	B1	1.6	7.6	16.6	34.3	18.3	76.9	12.2	28.6	54.9	29.3	123.1	19.00	36.77	66.28	41.55	163.60	4.2	10.0	30.6	25.6	70.6	6.8	16.0	49.2	41.0	113.0
512	451201010	B1	5.9	0.1	0.3	2.0	1.5	4.0	0.9	2.0	11.6	9.1	23.6	1.35	2.74	14.05	12.84	30.98	0.1	0.2	1.8	2.2	4.2	0.5	1.2	10.4	12.7	24.6
512	451201020	B1	8.7	0.1	0.3	2.0	1.5	4.0	1.4	3.3	19.2	14.9	38.6	2.23	4.52	23.16	21.17	51.08	0.1	0.2	1.8	2.2	4.2	0.8	2.0	17.2	20.9	40.8
513	451301010	B1	10.1	2.2	4.8	9.6	5.2	22.0	2.0	4.9	89.1	52.9	222.0	34.26	66.32	119.54	74.94	295.06	1.2	2.9	8.8	7.3	20.2	12.2	28.8	88.8	73.9	203.6
513	451302010	B1	23.7	1.3	2.6	5.6	3.1	13.0	30.5	66.5	137.4	73.3	307.8	47.51	91.96	165.75	103.91	408.12	0.7	1.7	5.2	4.3	11.9	17.0	39.9	123.1	102.5	282.6
513	451303010	B1	47.8	0.8	1.7	3.6	1.9	6.0	37.9	82.8	170.9	91.2	382.8	59.09	114.38	208.15	129.23	508.85	0.4	1.0	3.2	2.7	7.3	2.1	49.7	153.2	127.5	351.5
518	251801010	B1	13.4	1.3	2.8	5.6	3.1	13.0	17.2	37.5	41.3	37.5	149.4	7.66	14.63	26.74	18.78	66.00	0.3	0.6	2.0	1.7	4.6	2.7	6.4	19.9	16.5	45.6
518	251801020	B1	8.9	0.5	1.1	2.2	1.2	5.0	4.9	10.7	22.2	11.8	49.7	7.66	14.63	26.74	18.78	66.00	0.3	0.6	2.0	1.7	4.6	2.7	6.4	19.9	16.5	45.6
519	251901010	B1	2.7	1.8	3.9	8.0	4.3	18.0	4.8	10.5	21.7	11.6	48.6	7.46	14.51	26.15	16.39	64.54	1.0	2.3	7.2	6.0	16.5	2.7	6.3	19.4	16.2	44.6
52	105201010	B1	7.5	17.8	36.9	80.3	42.8	179.8	134.0	292.4	603.7	322.2	1352.2	208.71	404.04	728.19	456.50	1797.44	9.8	23.3	71.9	59.9	165.1	74.6	175.5	541.0	450.4	1241.4
52	105201020	B1	1.2	17.8	36.9	80.3	42.8	179.8	20.7	45.1	93.1	49.7	208.6	32.20	62.32	112.33	70.42	277.26	9.8	23.3	71.9	59.9	165.1	11.5	27.1	83.5	68.5	191.5
52	105201030	B1	3.8	34.0	74.1	153.0	81.6	342.7	127.7	278.6	575.2	308.9	1288.4	198.86	364.86	693.80	434.94	1712.56	18.9	44.5	137.1	114.1	314.6	71.0	167.2	515.5	429.1	1182.8
52	105201040	B1	5.3	34.0	74.1	153.0	81.6	342.7	179.8	391.9	808.3	431.8	1812.7	279.78	541.60	976.12	611.92	2409.42	18.8	44.5	137.1	114.1	314.6	100.0	235.3	725.2	603.7	1664.1
52	105201050	B1	1.4	46.0	106.9	220.8	117.6	494.5	68.6	149.7	308.1	164.9	692.3	106.86	206.85	372.81	233.71	920.23	27.3	64.2	197.8	164.7	454.0	38.2	89.8	277.0	230.6	635.6
52	105201061	B1	1.0	52.1	84.3	237.9	100.8	495.0	53.7	88.6	265.7	103.7	509.9	83.62	119.99	320.47	146.86	670.95	29.0	50.8	231.2	140.7	451.4	29.9	52.1	238.1	144.9	485.0
52	105202010	B1	1.0	32.6	52.8	161.5	63.0	310.0	33.9	54.9	168.0	65.5	322.4	52.86	75.87	202.64	92.98	424.27	16.2	31.7	144.8	88.1	282.7	16.9	33.0	150.6	91.8	294.0
52	105202020	B1	1.2	20.0	32.4	99.0	38.8	180.0	23.4	37.9	115.8	45.2	222.3	36.48	52.32	139.73	64.04	292.54	11.1	19.4	88.7	54.0	173.3	13.0	22.7	103.8	63.2	202.7
52	105202030	B1	6.5	12.4	27.0	55.8	29.8	124.9	80.8	178.3	364.0	194.3	815.4	125.86	243.64	439.11	275.28	1083.69	8.9	16.2	50.0	41.6	114.6	45.0	105.8	328.3	271.6	746.6
52	105202040	B1	5.0	12.0	26.1	54.0	28.6	120.9	59.4	129.6	267.7	142.8	598.6	92.54	179.14	322.87	202.40	796.95	8.7	15.7	48.4	40.3	111.0	33.1	77.8	239.8	188.7	550.4
520	152001010	B1	7.4	1.1	2.4	4.9	2.6	11.0	8.1	17.6	38.4	19.4	81.4	12.57	24.33	43.85	27.49	108.24	0.6	1.4	4.4	3.7	10.1	4.5	10.6	32.6	27.1	74.6
520	152001020	B1	1.1	1.2	2.8	5.4	2.9	12.0	6.4	16.4	37.9	20.2	85.0	13.12	25.40	45.77	28.69	112.96	0.7	1.6	4.8	4.0	11.0	4.7	11.0	34.0	28.3	78.0
520	152002010	B1	10.1	1.3	2.8	5.6	3.1	13.0	13.0	28.4	56.6	31.2	131.2	20.25	39.19	70.63	44.28	174.35	0.7	1.7	5.2	4.3	11.9	7.2	17.0	52.5	43.7	120.4
521	252101010	B1	5.1	1.0	2.2	4.5	2.4	10.0	5.0	11.0	22.7	12.1	50.9	7.86	15.22	27.44	17.20	67.72	0.6	1.3	4.0	3.3	9.2	2.8	6.6	20.4	17.0	46.8
524	252401010	B1	3.2	0.5	1.1	2.2	1.2	5.0	1.8	3.5	7.1	3.8	16.0	2.47	4.78	8.61	5.40	21.25	0.6	1.3	4.0	3.3	9.2	2.8	6.6	20.4	17.0	46.8
525	152501010	B1	9.7	0.2	0.6	2.5	1.7	5.0	2.3	5.4	24.4	16.5	48.5	3.52	7.41	29.43	23.35	63.71	0.1	0.3	2.3	2.4	5.1	1.3	3.2	21.9	23.0	48.4
528	252801010	B1	4.8	1.0	2.2	4.5	2.4	10.0	4.7	10.3	21.2	11.3	47.5	7.32	14.18	25.55	16.02	63.07	0.6	1.3	4.0	3.3	9.2	2.8	6.6	18.0	15.8	43.6
528	252801020	B1	2.4	1.4	3.0	6.2	3.3	14.0	3.3	7.1	14.7	7.8	32.9	5.07	9.62	17.70	11.10	43.69	0.8	1.8	5.6	4.7	12.8	1.8	4.3	13.2	10.9	30.2
530	353001010	B1	9.1	0.5	1.1	2.2	1.2	5.0	4.5	9.8	20.3	10.8	45.5	7.02	13.58	24.48	15.34	60.42	0.3	0.8	2.0	1.7	4.6	2.5	5.9	16.2	15.1	41.7
532	353201010	B1	8.0	1.1	2.4	4.9	2.6	11.0	6.6	14.4	29.8	15.8	68.4	10.24	19.63	35.74	22.41	88.23	0.6	1.4	4.4	3.7	10.1	3.7	8.8	26.8	22.1	60.9
541	354101010	B1	6.8	0.3	0.7	4.0	3.1	6.0	1.9	4.4	26.1	20.3	52.8	3.03	6.14	31.48	26.77	69.43	0.2	0.4	3.5	4.3	8.4	1.1	2.7	23.4	28.4	55.5
542	354201020	B1	11.0	1.5	3.2	6.7	3.6	15.0	16.3	35.6	73.6	39.3	164.8	25.44	49.25	88.78	55.85	219.10	0.8	1.9	6.0	5.0	13.8	8.1	21.4	66.0	54.8	151.3
543	354301010	B1	11.8	0.2	0.4	2.5	1.9	5.0	2.1	4.9	28.7	22.3	58.0	3.33	6.75	34.58	31.61	78.27	0.1	0.3	2.2	2.7	5.3	1.2	2.9	25.7	31.2	61.0
545	354501010	B1	8.9	0.1	0.3	2.0	1.5	4.0	1.3	3.0	17.6	13.7	35.6	2.05	4.14	21.23	19.40	48.82	0.1	0.2	1.8	2.2	4.2	0.7	1.8	15.8	19.1	37.4
547	454701010	A1	3.2	0.3	0.8	3.5	2.4	7.0	1.0	2.5	11.3	7.6	22.4	1.63	3.42	13.58	10.78	29.43	0.2	0.6	4.4	5.5	10.7	0.7	2.0	14.2	17.5	34.4
549	454901011	B1	3.4	0.4	0.9	4.0	2.7	8.0	1.3	3.0	13.6	9.2	27.0	1.86	4.13	16.41	13.02	35.52	0.2	0.5	3.6	3.8	8.1	0.7	1.6	12.2	12.8	27.5
564	356401010	B1	14.8	0.1	0.6	2.7	1.8	5.0	1.4	8.4	40.3	23.6	73.9	2.19	11.56	48.65	33.76	96.16	0.1	0.3	2.4	2.3	5.1	0.8	5.0	36.1	33.3	75.3
568	356801010	B1	7.4	0.2	0.4	0.9	0.5	2.0	1.5	3.2	6.6	3.5	14.8	2.28	4.42	7.97	5.00	19.88	0.1	0.3	0.8	0.7	1.8	0.8	1.9	5.9	4.9	13.8
568	356801020	B1	2.8	0.3	0.6	1.3	0.7	3.0	0.8	1.8	3.7	2.0	8.3	1.28	2.48	4.47	2.80	11.03	0.2	0.4	1.2	1.0	2.8	0.5	1.1	3.3	2.8	7.6
568	356801030	B1	6.5	0.3	0.6	1.3	0.7	3.0	1.9	4.2	8.7	4.8	19.5	3.01	5.83	10.51	6.99	25.93	0.2	0.4	1.2	1.0	2.8	0.5	1.1	3.3	2.8	7.6
567	456701010	B1	7.6	0.1	0.2	1.0	0.7	2.0	1.7	7.8	5.2	15.2	15.2	1.52	3.22	9.22	7.32	19.97	0.1	0.1	0.9	1.0	2.0	0.4	1.0	6.9	7.2	15.5
568	356801010	B1	6.8	0.3	0.7	4.0	3.1	6.0	2.0	4.5	26.7	20.8	54.0	3.10	6.28	32.20	29.43	71.01	0.2	0.4	3.5	4.3	8.4	1.1	2.7	23.9	28.0	58.8
568	356801020	B1	13.6	0.2	0.4	2.5	1.8	5.0	2.5	5.7	33.5	28.1	67.7	3.89	7.88	40.38	36.92	89.09	0.1	0.3	2.2	2.7	5.3	1.4	3.4	30.0	36.4	71.3
569	456901010	B1	5.8	1.2	2.9	13.1	8.5	28.0	7.0	16.7	75.9	51.2	150.8	10.94	23.05	91.49	72.61	198.10	0.7	1.7	11.7	12.4	26.5	3.9	10.0	68.0	71.6	153.5
57	405701010	B1	3.9	1.3	3.1	14.1	9.5	28.0	5.1	12.1	55.2	37.3	109.8	7.97	16.78	66.59	52.85	144.18	0.7	1.9	12.6	13.3	28.5	2.8	7.3	49.5	52.1	111.7
57	405701011	B1	4.3	1.3	3.1	14.1	9.5	28.0	5.6	13.3	60.6	40.9	120.4	8.74	18.40	73.05	57.87	158.16	0.7	1.9	12.6	13.3	28.5	3.1	8.0	54.3	57.2	122.8
571	357101010																											

Appendix D: Complete Compliance: Traffic, Trk, Km/day, Cost/day, TLF/day, TLF/km/day

Hwy No	Conr Seq	Ld	L		Cis (km)	L		Trk	LT	HT	/day	Sgls	Dbls	Tot	Cost	LT	HT	per	Sgls	day	(\$)	Dbls	Tot	TLF	LT	HT	per	Sgls	day	Dbls	Tot	TLF	LT	HT	per	Sgls	day	Dbls	Tot	TLF	LT	HT	per	Sgls	day	Dbls	Tot
			LT	HT		LT	HT																																								
579	357901010	81	13.0	0.1	0.3	0.1	0.3	1.4	3.3	19.3	150	390	2.24	4.54	23.25	21.25	51.29	0.1	0.2	1.3	1.8	3.2	0.6	2.0	17.3	21.0	41.0																				
578	357801020	81	13.4	0.2	0.4	0.2	0.4	2.5	5.6	33.1	258	670	3.85	7.80	39.95	36.51	88.11	0.1	0.3	2.2	2.7	5.3	1.4	3.4	29.7	36.0	70.5																				
582	458201010	81	8.1	1.5	3.2	6.7	3.6	15.0	12.1	28.3	290	1217	18.78	36.52	68.52	41.08	161.74	0.8	1.9	6.0	5.0	13.8	6.7	15.0	46.7	40.5	113.7																				
562	458201020	81	8.3	1.5	3.2	6.7	3.6	15.0	12.3	28.6	296	1241	19.15	37.07	68.82	41.89	164.82	0.8	1.9	6.0	5.0	13.8	6.6	16.1	46.6	41.3	113.9																				
583	458301010	81	6.7	1.4	3.0	6.2	3.3	14.0	9.3	20.3	223	93.7	14.46	28.00	50.48	31.63	124.58	0.8	1.8	5.6	4.7	12.6	5.2	12.2	37.5	31.2	86.0																				
583	458301020	81	6.6	1.4	3.0	6.2	3.3	14.0	11.9	28.0	237	120.3	18.56	35.94	64.77	40.60	159.88	0.8	1.8	5.6	4.7	12.6	6.6	15.8	46.1	40.1	110.4																				
584	458401010	81	6.6	1.3	2.9	6.1	3.2	13.5	9.3	19.8	210	82.7	13.81	27.56	48.98	30.83	118.98	0.8	1.8	5.6	4.7	12.6	6.6	15.8	46.1	40.1	110.4																				
584	458401020	81	4.9	0.7	1.5	3.1	1.7	7.0	3.4	7.5	15.4	6.2	34.5	5.33	10.32	18.80	11.66	45.92	0.4	0.8	2.6	2.3	6.4	1.9	4.5	13.8	11.5	31.7																			
584	458402010	81	10.0	0.3	0.6	1.3	0.7	3.0	6.5	13.3	7.1	29.8	4.61	8.92	16.07	10.48	39.86	0.2	0.4	1.2	1.0	2.8	1.8	3.9	11.9	8.9	27.4																				
584	458402020	81	12.7	0.5	1.1	2.2	1.2	5.0	6.3	13.8	28.4	63.8	9.82	19.01	34.27	21.48	84.59	0.3	0.6	2.0	1.7	4.8	3.5	8.3	25.5	21.2	58.4																				
584	458403010	81	10.9	0.5	1.1	2.2	1.2	5.0	5.4	11.8	24.3	54.3	8.39	16.24	29.27	18.35	72.24	0.3	0.6	2.0	1.7	4.8	3.0	7.1	21.7	16.1	49.9																				
584	458403020	81	26.0	0.2	0.6	2.5	1.7	5.0	6.1	14.4	65.4	130.1	9.44	19.88	78.83	62.84	170.90	0.1	0.3	2.3	2.4	5.1	3.4	8.6	58.6	61.8	132.5																				
587	458701010	81	9.4	1.1	2.4	4.9	2.6	11.0	10.2	22.3	46.0	24.5	15.69	30.77	55.45	34.78	136.87	0.8	1.4	4.4	3.7	10.1	5.7	13.4	41.2	34.3	94.5																				
587	458701020	81	9.9	0.2	0.4	0.9	0.5	2.0	4.3	8.9	4.7	19.8	3.08	5.93	10.68	6.70	26.37	0.1	0.3	0.8	0.7	1.8	1.1	2.6	7.9	6.6	18.2																				
588	458801010	81	6.7	0.8	1.9	8.8	5.8	17.0	5.3	12.7	57.5	38.9	11.44	8.30	17.49	69.41	55.08	150.29	0.4	1.1	7.7	6.1	17.3	3.0	7.6	51.8	54.3	116.5																			
588	458801020	81	6.2	0.1	0.2	1.0	0.7	2.0	0.6	1.4	6.2	4.2	12.3	0.80	1.89	7.49	5.94	18.21	0.1	0.1	0.9	1.0	2.0	0.3	0.8	5.6	5.9	12.8																			
58	105801010	81	8.8	2.6	9.8	41.7	18.0	70.0	22.4	85.8	365.1	139.8	813.2	34.98	118.55	440.38	198.20	792.08	1.4	5.9	37.4	22.3	67.0	12.5	51.5	327.2	185.5	596.7																			
58	105801020	81	6.2	1.0	3.8	16.4	6.3	24.0	6.0	10.5	42.5	392.8	172.2	88.16	332.96	1236.86	558.66	2224.65	5.6	23.2	147.3	68.0	264.1	35.1	144.8	918.0	548.2	1647.8																			
58	105802010	81	14.4	2.8	5.1	10.6	5.8	23.8	3.9	7.9	15.1	34.2	5.28	10.22	18.43	11.55	40.1	30.9	95.1	79.2	218.3	188.7	444.0	1368.9	1139.5	3141.1																					
58	105802020	81	8.8	2.8	5.1	10.6	5.8	23.8	23.1	50.4	104.3	360.0	6.96	9.1	12.56	12.56	41.00	34.1	30.8	95.1	79.2	218.3	128.6	302.7	933.2	778.6	2141.3																				
58	105802030	81	2.3	1.8	2.8	8.1	3.2	13.8	3.2	8.1	14.0	5.1	49.59	94.05	189.51	108.27	418.42	7.5	17.8	54.8	45.6	125.6	17.4	40.9	125.9	104.8	288.0																				
58	105802040	81	3.9	1.8	2.8	8.1	3.2	13.8	5.2	11.5	15.4	28.3	82.39	159.48	287.43	180.19	709.49	7.5	17.8	54.8	45.6	125.6	29.4	69.3	213.6	177.8	490.0																				
58	105803010	81	8.0	1.9	8.8	5.8	17.0	5.3	12.7	57.5	38.9	11.44	8.30	17.49	69.41	55.08	150.29	0.4	1.1	7.7	6.1	17.3	3.0	7.6	51.8	54.3	116.5	1418.8																			
58	105803020	81	1.4	1.8	4.0	8.2	4.0	18.4	2.8	4.5	11.8	6.3	26.6	41.08	79.52	143.31	89.84	353.75	10.2	24.0	73.9	61.6	169.7	14.7	34.5	108.5	68.6	244.3																			
58	105804010	81	10.7	1.8	4.0	8.2	4.0	18.4	19.6	47.8	68.1	273.8	304.65	589.78	1062.91	686.33	2623.65	10.2	24.0	73.9	61.6	169.7	108.8	256.2	789.7	657.4	1812.1																				
58	105804020	81	2.6	2.8	4.8	14.2	8.5	27.4	7.2	11.9	36.8	14.3	27.4	115.49	165.72	442.61	202.86	926.68	18.1	28.0	128.0	77.9	248.9	41.3	72.0	328.9	200.1	642.2																			
58	105804030	81	5.5	2.8	4.8	14.2	8.5	27.4	15.9	25.7	37.3	15.1	248.05	355.94	950.67	435.14	1890.38	18.1	28.0	128.0	77.9	248.9	88.6	154.8	706.3	429.6	1379.4																				
58	105804040	81	8.1	3.4	5.9	17.0	9.6	32.8	28.1	45.4	73.8	54.2	43.88	82.83	187.18	169.14	513.53	19.2	33.5	153.2	93.2	269.1	158.4	272.9	1248.9	758.8	2438.0																				
58	105804050	81	1.1	5.0	9.8	28.1	11.2	55.0	80.9	98.5	301.5	117.6	76.0	124.80	179.06	478.30	219.21	1001.40	32.3	56.3	257.3	156.6	502.5	33.9	59.1	270.2	184.4	527.8																			
58	105805010	81	6.7	5.0	9.8	28.1	11.2	55.0	387.6	628.8	1918.0	748.3	3680.7	603.95	868.20	2313.49	1080.32	4843.66	32.3	56.3	257.3	156.6	502.5	215.7	378.2	1718.9	1046.1	3358.8																			
58	105805020	81	2.4	6.0	9.8	28.1	11.2	55.0	143.2	371.3	709.8	276.6	1360.4	223.11	320.15	855.07	391.89	1780.22	33.6	56.7	266.1	163.1	523.5	78.7	138.1	635.3	386.6	1240.7																			
58	105805030	81	3.9	6.0	9.8	28.1	11.2	55.0	232.7	378.3	1151.6	449.3	2209.9	382.43	520.07	1389.03	636.62	2908.16	33.6	56.7	266.1	163.1	523.5	78.7	138.1	635.3	386.6	1240.7																			
58	105806010	81	1.3	7.8	11.3	35.9	14.0	68.0	94.3	152.5	466.7	182.1	895.7	148.90	210.79	592.99	259.03	1178.71	40.4	70.4	321.8	195.8	628.4	52.5	108.4	486.1	301.5	968.2																			
58	105806020	81	6.6	1.0	9.8	28.1	11.2	55.0	111.6	180.6	553.6	215.7	1081.5	173.77	248.63	667.77	305.66	1388.83	103.5	180.7	828.8	502.6	1613.7	62.1	108.4	486.1	301.5	968.2																			
58	105806030	81	1.4	14.0	22.8	69.2	27.2	133.8	194.4	314.4	982.2	375.4	1848.4	302.82	434.54	1180.58	531.92	2428.86	78.4	138.8	624.8	300.3	1220.3	108.2	188.7	882.3	524.8	1684.0																			
58	105806040	81	4.2	6.1	10.6	32.3	12.7	62.8	278.1	451.3	1381.0	538.8	2650.2	434.84	623.66	1865.76	783.43	3487.53	36.8	64.2	293.3	178.5	572.7	156.3	270.9	1237.8	753.2	2417.0																			
58	105806050	81	9.2	16.3	28.6	75.5	118.6	349.0	150.3	356.7	1021.1	1085.8	3224.8	234.05	482.87	1856.52	1552.71	4236.15	9.0	23.2	157.3	185.8	355.3	83.6	214.1	1453.7	1531.8	3283.2																			
58	105806060	81	2.1	7.0	15.2	31.3	168.3	708.3	147.7	322.2	885.3	355.0	1490.3	230.02	445.28	802.52	503.09	1980.91	38.9	91.7	282.6	235.2	648.4	82.2	193.4	588.3	496.3	1368.2																			
58	105810010	81	2.7	3.8	7.3	15.2	8.1	34.0	8.9	19.5	22.8	40.3	115.1	90.7	139.34	486.13	486.13	1199.85	18.8	44.2	136.3	113.5	312.7	49.8	117.2	361.2	300.7	828.8																			
58	105810020	81	3.0	2.9	6.3	13.1	6.8	7.0	28.4	17.5	38.2	78.9	42.1	176.8	27.29	52.83	95.22	235.04	21.9	38.2	117.9	98.1	270.6	9.8	22.9	70.7	58.9	162.3																			
58	105810030	81	4.8	3.4	7.5	15.7	8.3	34.8	16.0	34.9	20.9	38.4	181.3	249.18	482.32	869.28	544.95	2145.70	19.2	45.2	136.5	116.1	320.1	82.3	217.2	689.6	557.4	1536.4																			
58	105810040	81	3.6	5.7	13.0	7.6	11.6	59.2	21.8	49.3	108.3	225.1	585.2	33.63	68.09	348.91	318.92	768.58	3.2	7.8	68.2	82.8	182.0	12.0	28.6	259.2	314.6	815.5																			
58	105810050	81	4.6	3.4	7.5	15.7	8.3	34.8	16.0	34.9	20.9	38.4	181.3	249.18	482.32	869.28	544.95	2145.70	19.2	45.2																											

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TLF/day, TLF km/day

Hwy No	Seq	Conv	Sec	Ld	Chs	L		LT		HT		Sgls	Dbils	Tot	Trk	km		TLF	LT	LT	per	HT	day	Sgls	Dbils	Tot	km	HT	per	day	Sgls	Dbils	Tot
						(ftm)	LT	LT	HT	TLF	LT					LT	per																
591	459101010	81	55	07	18	80	54	160	41	87	440	287	875	635	1338	5310	4214	11497	04	1.1	72	76	163	23	58	395	416	691					
591	459101020	81	32	05	12	55	37	110	17	39	179	121	355	258	543	2156	1711	4867	03	07	50	52	112	08	2.4	180	189	362					
592	459201010	81	264	05	11	22	12	50	131	285	589	314	1319	2035	3940	7101	4452	17528	03	08	20	17	46	73	171	528	439	1211					
593	459301010	81	52	01	02	04	02	10	05	11	23	12	52	081	156	282	177	698	01	01	04	03	08	03	07	21	17	48					
593	459301020	81	78	07	15	31	17	70	54	117	242	129	543	838	1621	2922	1832	7213	04	08	28	23	64	30	70	217	161	498					
594	459401010	81	37	05	11	22	12	50	16	35	72	38	160	247	479	1406	3478	3478	04	08	28	23	64	14	34	105	67	240					
594	459401030	81	157	05	11	22	12	50	78	169	349	188	782	1207	2337	4212	2841	10397	03	08	20	17	46	08	2.1	64	53	147					
598	459901010	81	64	01	02	07	11	20	04	18	55	93	168	065	216	865	1319	2265	00	01	06	15	23	02	09	48	130	181					
5A	400591010	81	37	93	203	418	224	839	344	751	1551	828	3475	5363	10381	18710	11729	46184	52	122	376	313	662	192	451	1390	1157	3190					
5A	400593020	81	18	181	395	818	438	1828	350	763	1575	841	3528	5446	10542	19000	11911	46900	101	237	731	609	1878	195	450	1412	1175	3239					
6	200601010	81	06	184	298	812	356	1750	114	185	565	221	1085	1779	2553	6820	3126	14278	103	178	817	487	1598	84	111	507	308	990					
6	200601020	81	18	184	298	812	356	1750	328	530	1623	633	3115	5109	7331	19579	8974	40992	103	178	817	487	1598	183	318	1495	885	2841					
6	200601030	81	98	184	298	812	356	1750	180	292	664	348	17168	28156	40402	107806	48455	225919	103	179	817	497	1598	1008	1755	8017	4878	15857					
6	200601040	81	15	184	298	812	356	1750	267	432	1322	518	2538	4182	5972	15849	7310	33393	103	179	817	497	1598	149	259	1185	721	2314					
6	200601050	81	66	217	351	1073	419	2080	1874	3031	9275	3818	17798	29190	41986	111872	51273	234221	121	211	962	585	1879	1043	1818	6312	5058	16232					
6	200602010	81	25	75	288	1227	470	2080	190	726	3081	1184	5191	2959	10036	37282	16779	67056	42	173	1089	657	1871	108	438	2770	1855	4887					
6	200602020	81	74	121	462	1985	753	3300	884	3418	14540	5570	24420	13920	47211	175377	78930	315436	67	277	1761	1052	3157	363	1821	10301	8156	10471					
6	200602030	81	59	121	462	1985	753	3300	707	2701	11494	4403	19350	11005	37322	138843	62387	249367	67	277	1761	1052	3157	363	1821	10301	8156	10471					
6	200602040	81	39	70	268	1131	433	1800	271	1037	4412	1680	7410	4224	14326	53217	23950	95717	39	160	1014	606	1816	151	622	3854	2363	7090					
6	200602050	81	23	70	268	1131	433	1800	162	819	2836	1010	4427	2524	8559	14309	57185	39	160	1014	606	1816	90	372	2362	1412	4236	17818					
6	200603010	81	88	70	268	1131	433	1800	681	2805	11068	4247	18620	10814	35898	133724	60183	240519	39	160	1014	606	1816	379	1564	9935	5937	17818					
6	200603020	81	138	69	264	1125	431	1880	955	3648	15529	5949	26082	14888	50424	187313	84302	336907	38	159	1008	603	1808	531	2190	13817	8317	24855					
6	200604010	81	220	69	264	1125	431	1880	1522	5817	24757	8484	41580	23702	80386	30968	134384	369078	38	159	1008	603	1808	847	3492	23178	13259	39784					
6	200605010	81	129	69	264	1125	431	1880	882	3411	14516	5561	24381	13888	47135	175087	78804	314935	38	159	1008	603	1808	497	2047	13009	7774	23288					
6	400606010	81	196	74	281	1187	458	2010	1442	5512	23456	8986	39398	22457	78163	282937	127335	506887	41	169	1073	641	1923	602	3308	21021	12562	37694					
6	400607010	81	108	69	158	829	723	1680	735	1878	8850	7684	19828	11453	23187	118818	108603	262059	39	85	833	1011	1877	409	1007	8828	10714	20858					
6	400608010	81	288	61	140	821	638	1860	1784	4025	23631	18387	47880	27476	55827	285043	260543	628690	34	84	735	882	1748	982	2416	21178	25704	50280					
6	400609010	81	18	70	180	839	731	1900	125	285	1872	1301	3382	1944	3935	20164	18431	44474	39	86	842	1022	1998	69	171	1488	1818	3557					
6	400609020	81	21	70	180	839	731	1900	150	342	2010	1564	4068	2337	4731	24242	22158	53469	39	86	842	1022	1998	69	171	1488	1818	3557					
6	400609021	81	54	70	180	839	731	1900	377	861	5053	3931	10222	5875	11984	69946	55708	134422	39	86	842	1022	1998	210	517	4578	5488	10750					
6	400609030	81	17	70	180	839	731	1900	116	268	1559	1213	3154	1813	3670	18805	17189	41476	39	86	842	1022	1998	65	159	1367	1686	3317					
6	400609040	81	183	70	180	839	731	1900	1140	2814	15346	11940	31064	17843	36124	185104	169184	408284	39	86	842	1022	1998	637	1569	13753	16882	37851					
6	400610010	81	90	48	110	646	504	1310	433	987	5785	4509	11725	6738	13642	89804	63896	154181	27	88	580	704	1378	241	593	5184	6304	12331					
6	400610020	81	144	58	133	781	608	1580	837	1809	11207	8720	22873	13031	26981	135182	123583	298157	32	80	700	849	1682	466	1148	10044	12190	23845					
6	400611010	81	140	58	133	781	608	1580	818	1863	10934	8507	22120	12713	25738	131885	120549	298085	32	80	700	849	1682	454	1116	9789	11883	23284					
6	400612010	81	395	30	69	405	315	820	1186	2729	16018	12484	32406	18825	37707	183215	176608	426154	17	41	363	441	862	665	1638	14355	17423	34082					
6	400613010	81	392	30	69	405	315	820	1186	2707	15889	12363	32144	18474	37401	191650	175178	422703	17	41	363	441	862	660	1625	14239	17282	33908					
6	400614010	81	504	30	69	405	315	820	1525	3480	20428	15895	41328	23752	48088	246408	225229	543476	17	41	363	441	862	649	2089	16308	17220	43465					
6	500615010	81	169	28	59	348	289	700	437	998	5848	4550	11930	6789	13785	70533	64471	155588	14	35	310	376	736	243	598	5240	6360	12442					
6	500616010	81	100	27	62	368	285	740	273	623	3658	2846	7400	4253	8610	44121	40328	87312	15	37	328	398	778	152	374	3278	3979	7783					
6	500618020	81	233	24	80	318	537	970	585	2102	7413	12521	22880	8800	28046	88417	177422	304865	13	54	285	751	1104	314	1262	6844	17503	25723					
6	500619010	81	459	31	113	410	876	1220	1400	5208	16367	13023	55989	21804	71967	221547	439584	754912	17	88	359	845	1369	778	3128	16481	43368	63733					
6	500619010	81	392	57	135	614	415	1220	2229	5288	24055	18251	47824	34710	73093	280157	230271	628232	32	81	550	580	1242	1028	2832	17873	18834	40368					
6	500619010	81	241	20	75	288	449	810	488	1815	6403	10815	19621	7801	25088	240584	180913	520855	32	81	550	580	1242	1028	2832	17873	18834	40368					
6	500621010	81	330	38	90	407	275	810	1246	2958	13445	9083	26730	18401	40854	162176	128704	351134	11	45	238	385	825	693	1090	5738	12687	22118					
6	500623010	81	122	22	63	282	493	890	271	1007	3553	6001	10831	4319	13920	42852	85028	146017	12	50	282	609	1013	151	605	3164	6386	12328					
6	500624010	81	136	21	76	269	454																										

Appendix D: Complete Compliance: Traffic, Trk Km/day, Cost/day, TT.F/day, TT.F km/day

Hwy No	Cont/Seq	Ld	Cls	(ftm)	L	LT	HT	Sgls	DBts	Tot	Trk LT	HT	km /day	Sgls	DBts	Tot	Cost LT	HT	per HT	day Sgls	DBts (\$)	Tot	TLF LT	HT	per HT	day Sgls	DBts	Tot	TLF LT	HT	km HT	per Sgls	day DBts	Tot
60	5060001010	81			21.6	1.1	4.3	18.5	7.1	31.0	24.5	83.8	386.2	152.9	870.5	38.22	129.83	481.56	216.73	869.14	0.6	2.8	16.5	9.8	28.7	13.7	58.3	357.8	213.8	641.6				
60	5060001020	81			22.0	1.2	4.6	19.6	7.5	33.0	26.5	101.4	431.7	165.4	725.0	41.33	140.16	520.68	234.34	836.51	0.7	2.8	17.6	10.5	31.6	14.6	60.9	366.9	231.2	893.7				
60	5060002010	81			50.1	1.2	4.6	19.6	7.5	33.0	60.5	231.3	884.4	371.1	1653.0	84.23	318.63	1187.35	534.38	2135.60	0.7	2.8	17.6	10.5	31.6	33.7	138.8	882.2	634.2	1581.9				
60	5060003010	81			59.5	1.2	4.8	20.2	7.8	34.0	72.8	278.3	1184.3	453.7	1989.0	113.38	384.53	1428.44	642.88	2569.23	0.7	2.8	18.1	10.8	32.5	40.5	167.0	1061.3	657.2	1803.1				
67	108704010	81			61	17.7	28.6	87.5	34.2	168.0	108.1	174.8	534.9	208.7	1028.5	168.35	241.57	926.70	286.70	1350.82	9.6	17.2	78.5	47.7	153.2	60.1	104.9	479.4	281.7	988.2				
67	108704020	81			15	13.5	21.8	68.7	32.0	128.0	20.4	32.9	100.7	39.3	193.3	31.70	45.49	121.49	55.68	250.35	7.5	13.1	59.8	36.4	118.7	11.3	18.8	90.3	54.9	178.3				
67	108704030	81			16	9.2	14.8	45.3	17.7	87.0	14.5	23.4	71.6	27.9	137.5	22.54	32.35	86.40	39.60	180.89	5.1	8.9	40.8	24.7	79.3	8.1	14.1	64.2	39.1	125.4				
67	208701010	81			7.0	3.8	8.6	50.4	38.2	102.0	28.2	59.8	350.9	273.0	709.8	40.80	82.60	423.27	386.89	933.57	2.1	5.2	45.2	54.8	107.3	14.6	35.9	314.5	381.7	748.6				
67	208701020	81			7.8	3.8	8.6	50.4	38.2	102.0	28.5	67.3	395.3	307.6	799.7	45.98	93.05	474.79	435.81	1051.60	2.1	5.2	45.2	54.8	107.3	16.4	40.4	354.2	428.9	841.0				
67	208702010	81			14	10.9	24.8	145.8	113.5	285.0	15.1	34.5	202.7	157.7	410.1	23.57	47.71	248.48	223.47	938.23	6.1	14.9	130.7	158.6	310.3	8.4	20.7	181.8	220.5	431.3				
67	208702020	81			5.0	10.8	24.8	145.8	113.5	285.0	54.5	124.4	730.6	588.4	1478.0	84.84	171.97	881.19	805.45	1843.55	6.1	14.9	130.7	158.6	310.3	30.3	74.7	654.7	784.8	1554.4				
67	208703010	81			6.4	17.8	29.4	87.0	34.0	187.0	148.1	239.5	732.7	285.9	1408.1	230.81	330.82	883.83	405.08	1850.44	9.8	17.1	78.0	47.5	152.3	82.4	143.7	658.7	398.6	1282.4				
67	208703020	81			6.2	18.2	29.5	90.2	35.2	173.0	112.6	182.1	557.1	217.4	1069.1	175.34	251.81	872.01	307.98	1408.98	10.1	17.7	80.6	48.2	157.8	82.6	109.3	498.3	303.8	875.1				
68	208808010	81			8.8	0.6	1.4	8.4	8.5	17.0	4.2	9.7	56.8	44.2	114.9	8.60	13.37	68.52	82.63	151.12	0.3	0.9	7.5	9.1	17.9	2.4	5.8	50.9	61.8	120.9				
68	208808011	81			6.3	1.0	2.3	13.3	10.4	27.0	6.2	14.3	83.7	65.1	169.3	9.73	19.70	100.83	92.26	222.82	0.6	1.4	12.0	14.5	28.4	3.5	8.6	75.0	91.0	178.0				
68	208807010	81			11.7	1.6	4.0	23.7	18.5	48.0	20.6	47.1	278.4	215.1	559.2	32.14	65.07	333.41	304.75	735.37	1.0	2.4	21.3	25.8	50.5	11.5	28.3	247.7	300.7	588.1				
68	208807020	81			10.7	2.7	6.1	35.6	27.7	72.0	28.5	64.9	381.2	298.6	711.1	44.32	89.72	459.78	420.24	1014.05	1.5	3.8	31.9	38.7	75.7	15.8	39.0	341.8	414.8	811.0				
68	208807030	81			5.1	5.3	12.0	70.7	53.0	143.0	27.1	61.9	363.3	282.7	735.0	42.24	85.52	438.24	400.57	888.57	2.8	7.2	63.3	78.9	150.4	15.1	37.1	325.8	395.2	773.0				
68	208808010	81			0.6	4.1	8.4	55.4	43.1	112.0	2.6	8.0	35.4	27.8	61.9	4.12	8.34	42.74	39.08	94.26	2.3	5.7	49.6	60.2	117.8	1.5	3.6	31.8	38.5	75.4				
68	208808020	81			7.8	4.1	15.7	86.7	25.5	112.0	31.1	118.8	505.5	193.6	649.0	48.39	184.13	609.70	274.40	1098.82	2.3	9.4	59.8	35.7	107.2	17.3	71.3	453.0	270.7	612.3				
68	408801010	81			6.8	1.3	4.8	20.8	8.0	35.0	8.7	33.2	141.3	54.1	237.3	13.53	45.88	170.42	76.70	308.53	0.7	2.9	18.7	11.2	33.5	4.8	19.9	126.6	75.7	227.0				
68	408801030	81			10.5	2.1	4.9	28.7	22.3	58.0	22.4	51.0	289.6	233.1	608.1	34.83	70.52	361.37	330.31	787.04	1.2	2.9	25.7	31.2	81.0	12.4	30.8	288.5	325.9	637.4				
68	408802010	81			6.4	2.6	6.5	38.1	29.6	77.0	18.3	41.8	241.5	190.7	495.9	26.50	57.70	295.66	270.24	652.10	1.6	3.8	34.1	41.4	81.0	10.2	25.1	219.7	288.6	521.5				
68	408802020	81			17.8	1.8	4.1	24.2	18.8	49.0	32.2	73.5	431.6	335.8	873.2	50.18	101.60	520.81	475.88	1148.28	1.0	2.5	21.7	28.3	51.5	17.9	44.1	388.8	489.5	918.3				
68	408802030	81			27.8	1.8	4.1	24.2	18.8	49.0	49.9	113.8	688.0	519.8	1351.4	77.67	157.25	805.75	736.49	1777.16	1.0	2.5	21.7	28.3	51.5	27.7	68.3	588.7	728.6	1421.3				
68	408803010	81			11.5	1.7	3.8	22.7	17.7	48.0	19.5	44.5	281.5	203.5	529.0	30.40	61.55	315.40	288.29	695.65	0.9	2.3	20.4	24.7	48.4	10.9	28.7	234.3	284.4	558.4				
68	408804010	81			3.8	1.8	3.8	21.3	16.5	43.0	14.8	33.8	188.3	154.3	401.2	23.08	46.88	239.20	218.64	527.56	0.8	2.2	19.0	23.1	45.2	6.2	20.3	177.7	215.7	421.8				
68	408804020	81			11.6	1.7	3.8	22.2	17.3	45.0	19.2	43.6	258.9	198.9	519.8	29.87	60.48	309.89	283.25	683.49	0.9	2.3	19.8	24.2	47.3	10.7	28.3	230.2	279.4	548.6				
68	408804030	81			9.1	1.7	4.0	23.2	18.1	47.0	15.7	35.9	210.5	163.8	425.8	24.47	48.59	252.88	232.08	559.97	1.0	2.4	20.8	25.3	49.4	8.7	21.5	198.6	228.9	447.8				
68	408805010	81			8.8	2.0	4.8	27.2	21.2	55.0	9.8	22.3	131.0	102.0	265.1	15.24	30.85	158.08	144.47	348.61	1.1	2.6	24.4	28.6	57.8	5.4	13.4	142.5	278.8	478.8				
68	408805011	RTAC			6.2	0.8	1.9	10.9	8.5	22.0	5.1	11.6	87.9	52.8	137.3	7.89	15.97	81.85	74.81	180.53	0.8	1.8	16.4	24.9	43.5	3.6	10.2	102.4	166.1	271.4				
7	200701010	RTAC			1.6	12.3	199.4	610.2	330.1	1171.0	197.3	319.1	976.3	309.9	1873.6	307.28	440.93	1759.82	1804.8	4141.4	281.4	175.9	821.3	698.4	1482.9	141.4	1474.0	1118.0	3015.8					
7	200702010	RTAC			6.1	95.7	154.8	473.7	184.8	809.0	770.5	1246.2	3613.1	1487.6	7317.5	1200.10	1722.07	4599.38	2107.88	9629.54	68.6	136.5	715.1	542.9	1483.2	562.2	1098.1	5758.9	4370.3	2178.5				
7	200702020	RTAC			1.4	84.0	152.1	465.3	181.5	893.0	332.8	214.4	658.1	256.0	1258.1	208.50	298.32	781.43	382.73	1658.98	67.4	134.1	702.8	533.3	1437.4	95.0	109.1	890.6	752.0	2028.6				
7	200702030	RTAC			3.4	94.0	152.1	465.3	181.5	893.0	320.7	518.6	1598.9	619.1	3045.1	489.42	718.63	1914.02	877.23	4007.30	67.4	134.1	702.8	533.3	1437.4	229.8	487.4	2395.7	1816.7	4901.6				
7	200702040	RTAC			3.8	65.9	108.8	328.2	127.3	626.0	238.3	387.0	1184.1	482.0	2272.4	372.88	534.78	1428.31	654.82	2890.38	47.2	84.0	492.5	373.9	1007.8	171.5	341.3	1787.8	1387.2	3857.7				
7	200703010	RTAC			4.7	18.2	41.6	244.2	190.0	484.0	88.0	198.3	1152.5	898.8	2331.7	134.01	271.30	1390.21	1270.71	3068.23	13.1	38.7	368.7	558.1	978.8	61.7	173.2	1740.1	2634.5	4809.4				
7	200703020	RTAC			8.8	18.2	41.6	244.2	190.0	484.0	181.1	387.7	2158.6	1679.5	4367.0	250.88	508.12	2803.68	2378.90	5742.89	13.1	38.7	368.7	558.1	978.8	115.5	324.3	3258.9	4834.0	8632.8				
7	200703030	AI			13.0	8.1	18.4	108.3	84.2	219.0	104.8	239.2	1404.0	1092.4	2840.4	183.24	300.50	1693.53	1547.87	3735.25	5.8	14.6	138.3	193.2	348.8	75.1	189.3	1787.8	2505.3	4537.5				
7	200703040	AI			1.5	8.1	18.4	108.3	84.2	219.0	119.2	271.1	1581.3	123.8	321.9	18.50	37.46	191.94	175.44	423.35	5.8	14.6	138.3	193.2	348.8	8.5	21.5	200.4	283.9	514.3				
7	200704010	AI			14.2	3.9	8.9	52.4	40.8	108.0	55.5	128.7	744.0	578.9	1505.2	86.51	175.14	897.44	820.30	1979.38	2.8	7.1	66.0	83.5	189.3	39.8	100.3	838.8	1327.6	2404.5				
7	200705010	AI			18.7	3.2	7.3	43.0	33.5	87.0	53.7	122.																						

Appendix E
Future Enforcement Options

This chapter examines enforcement strategies using WIM technology.

E.1 Introduction

There are two main aspects in which advanced technologies such as Weigh in Motion and Automatic Vehicle Classifiers can be used by the Compliance Branch of the Manitoba Department of Highways and Transportation. The first is as a traffic monitoring tool for better determining the most effective allocation of present enforcement resources. The second is to use WIM technology as a tool for roving patrol teams to monitor vehicle weights.

E.2 Traffic Monitoring

E.2.1 Truck Classifications

At the present time the University of Manitoba Transport Information Group, under contract to the Manitoba Department of Highway and Transportation prepares an annual report on Truck Traffic on Manitoba Highways. This report analyzes WIM and AVC data to obtain vehicle classifications at thirteen sites. Each site is classified using the 13 class FHWA scheme F on a yearly basis for each lane where equipment is installed. The sites are not evaluated on a monthly or daily basis.

Vehicle classifications can be done at each site to determine monthly, day of week and hourly variations in truck traffic and classifications for the time periods in which the equipment is operating. This would aid the Compliance Branch in determining at any specific time which region appears to have more truck traffic present allowing the Branch to better allocate its limited resources.

E.2.2 Truck Weights

At the present time, five of the thirteen advanced technology sites in Manitoba are equipped with WIM. The truck weights recorded at each of the five locations is not used in any form by either the University of Manitoba Traffic Information Group or the Manitoba Department of Highways and Transportation. This has been due to the obvious

calibration problems at the WIM sites which increasingly overestimate axle weights over time. It has been shown at one of these sites, that when calibrated, the dynamic weights recorded by the WIM sensor can be closely related to the actual static weight of the truck. In addition previous studies (Fekpe, 1993), (UMTIG, 1995) show that for a specific type of vehicle, the GVW distribution will follow predictable pattern. UMTIG is currently developing a procedure to 'correct' these WIM weights using the known GVW distributions of the trucks. It is possible that a procedure can be developed which would automatically correct these values on a weekly basis. In essence, this would provide for an auto-calibrated site.

In addition to vehicle weight data from 5 WIM sites, there are 10 Highway Inspection Stations operated by the Compliance Branch at various time of the year. At the present time, no data on vehicle weights or traffic is collected. A study has been proposed by the University of Manitoba to implement a program to collect truck data at these sites.

Using the WIM site and Inspection Scale data, vehicle weight distribution patterns for specific truck types can be found at each site to determine seasonal variations in truck weights for the time periods in which the scales are operating. This would aid the Compliance Branch in determining at any specific time which region appears to have more loaded and overloaded truck traffic present allowing the Branch to better allocate its limited resources.

E.3 Roving Patrols

As discussed in Chapter 4, when properly calibrated, dynamic WIM axle weights are close to the actual static weights for each truck type. Assuming that the proper calibration and correction procedures are used, the real time weight displayed by a sensor is close to the actual static weight of the vehicle. It is possible for a roving patrol inspector to connect a laptop computer to a local port at each WIM site displaying the truck weights as the traffic goes by. This can be used as a tool to decide if a patrol team will inspect a truck passing the WIM site using portable scales. At the very least, it would

eliminate trucks which are obviously well under the legal axle weight limit for that truck type and road class.

E.4 Enforcement Networks

The current enforcement network is mainly comprised of 10 permanent weigh stations. Figure E-1 shows these sites on the Manitoba Highway Network. This figure illustrates how widespread the stations are and how easily they can be bypassed. The vast majority of highways around the province do not have a permanent weigh station and must be enforced using patrol teams.

Figure E-1 highlights the road links which are assumed to be enforced to some degree by this static network. The diamonds correspond to the location of a permanent weigh station. The thickness of the lines corresponds to the average total truck traffic volume per day. The red links are those which are considered to be under a 'zone of influence' of the nearest permanent weigh station. These links were selected based on the proximity to a permanent weigh station,

It is proposed that using the existing 10 permanent weigh stations in conjunction with the 13 existing WIM and AVC sites that a truck monitoring network for enforcement purposes can be implemented. Figure E-2 shows these sites on the Manitoba Highway Network. Figure E-2 also highlights the road links which are assumed to be enforced to some degree by this modified network.

The MDHT has recently purchased several new WIM and AVC sensors and has proposed installing these at 6 new sites. These are located at PTH 1 near Kenmay, PTH 6 near Woodlands, PTH 14 near Winkler, PTH 16 near Minnedosa, PTH 52 near Steinbach, and PTH 60 east of PTH 10. This would add six sites to the enforcement network as shown in Figure E-3. Figure E-3 also shows the altered Manitoba Highway Network highlighting road links which are assumed to be enforced to some degree by the new enforcement network.

Figure E-1 Current Enforcement Network-1996

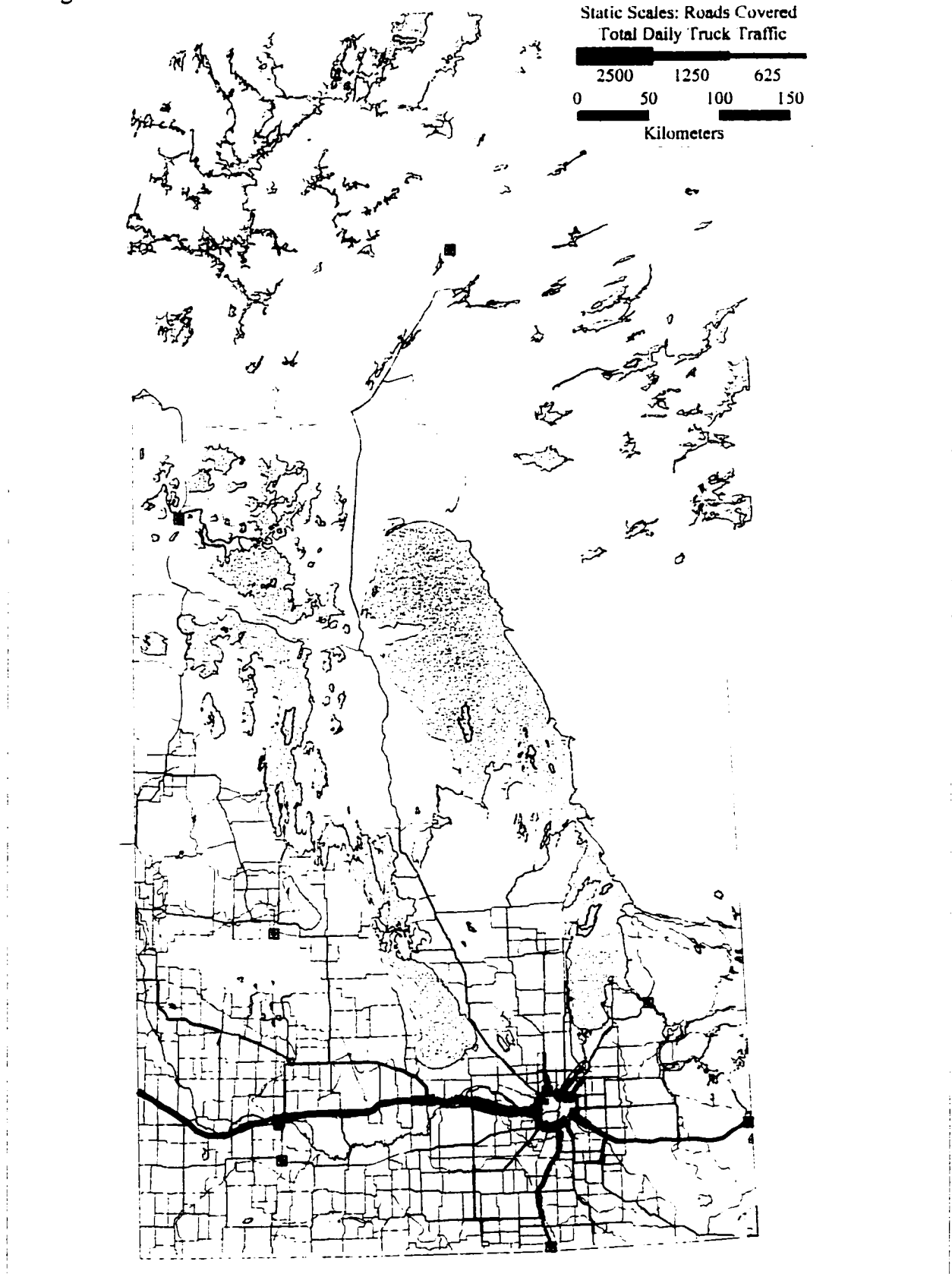


Figure E-2 Modified Enforcement Network-1996

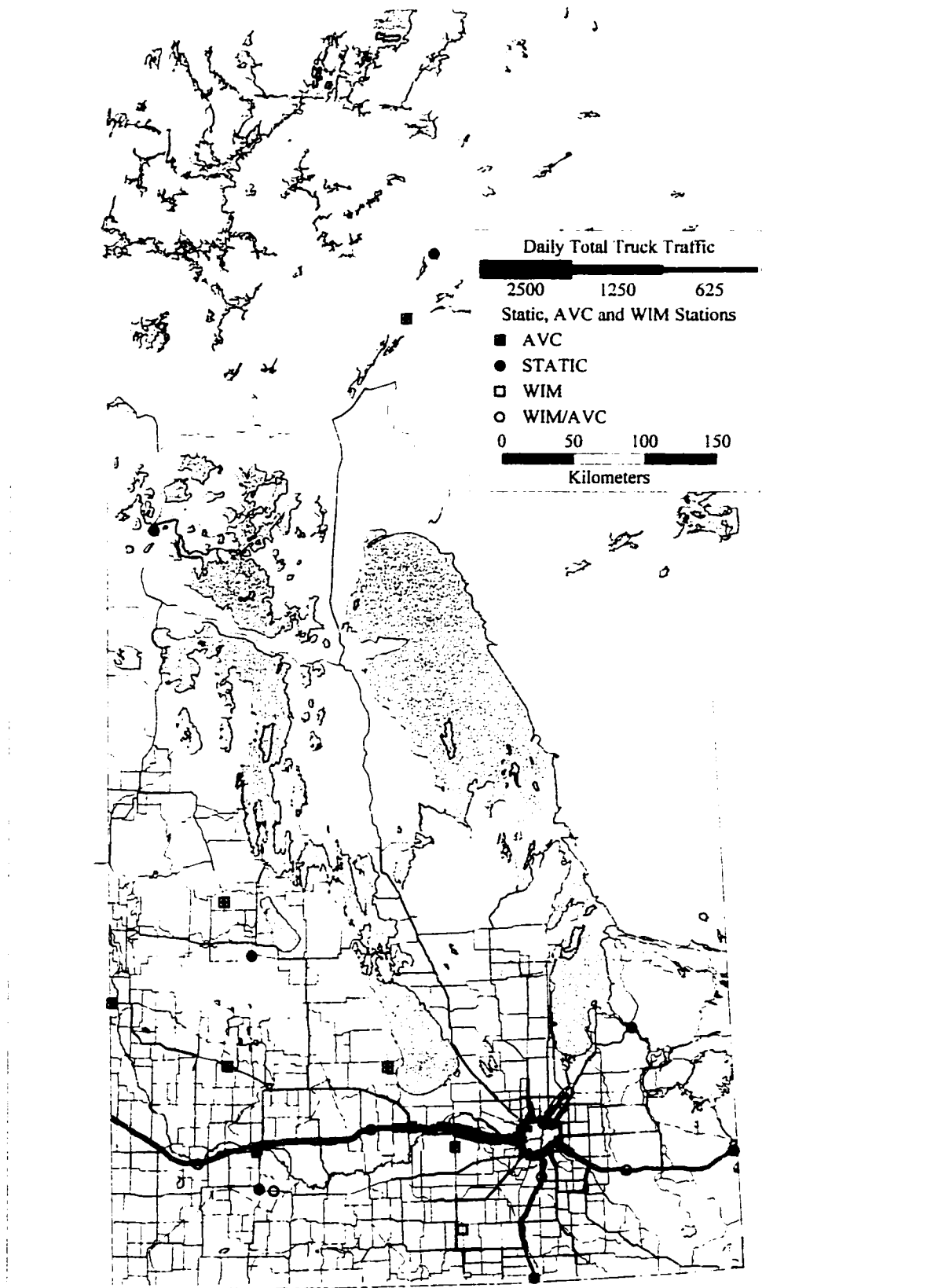
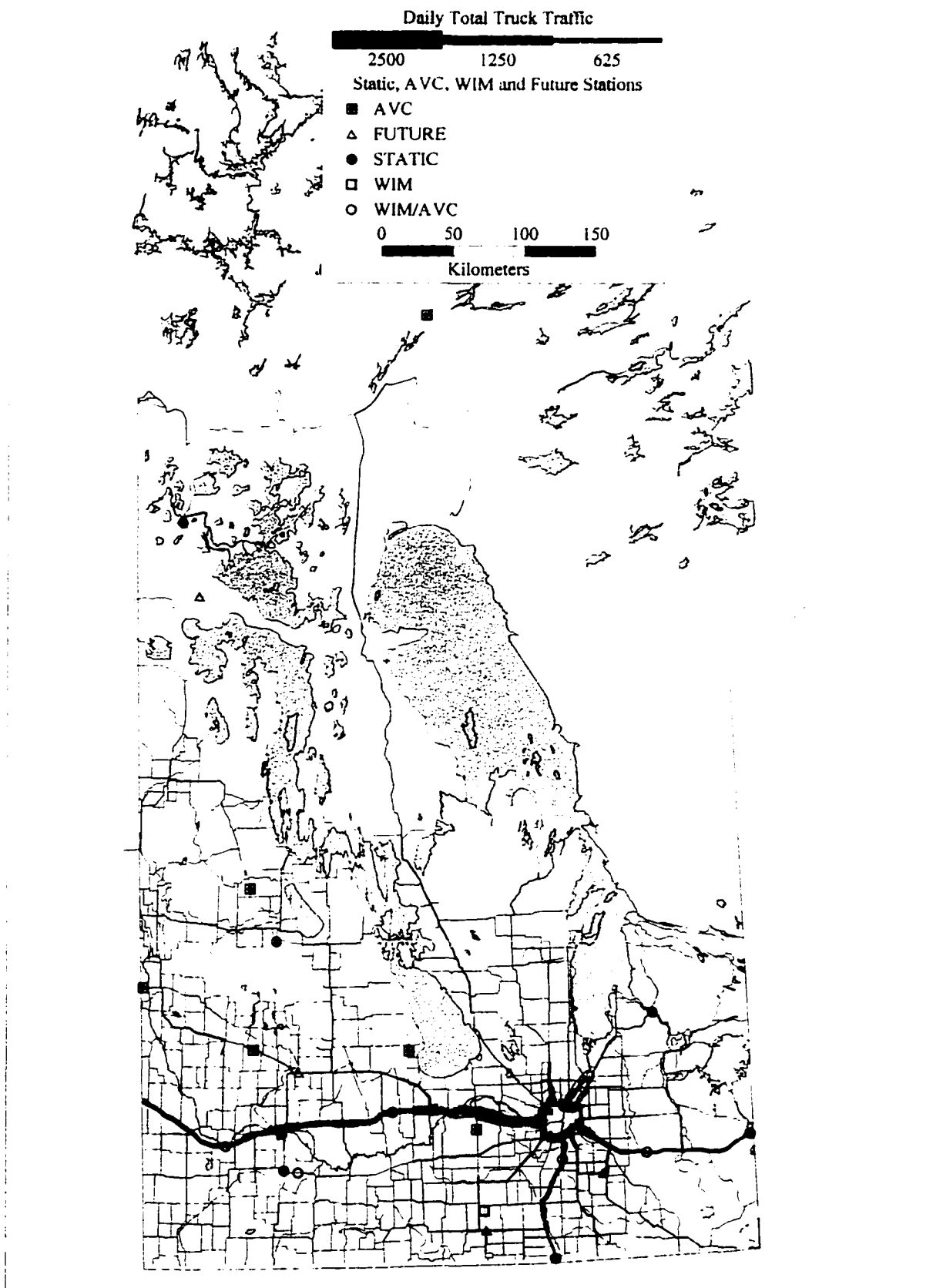


Figure E-3 Future Enforcement Network



E.5 Comparison of Enforcement Networks

Figures E-1, E-2 and E-3 summarize the road network which is considered to be enforced to some degree by WIM, AVC and permanent inspection stations. This section compares the kilometers of highway considered to be in the 'zone of influence' for the three strategies.

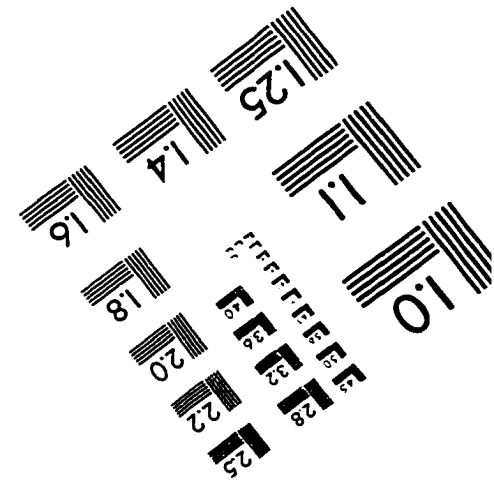
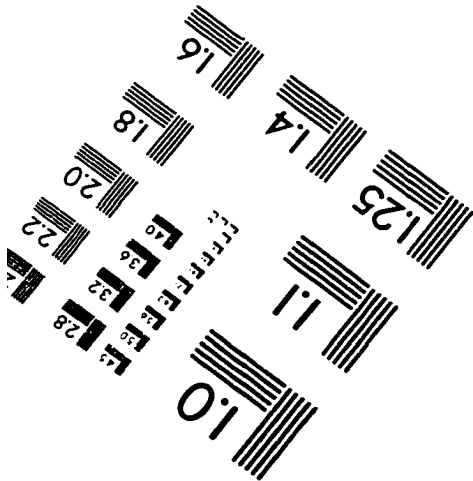
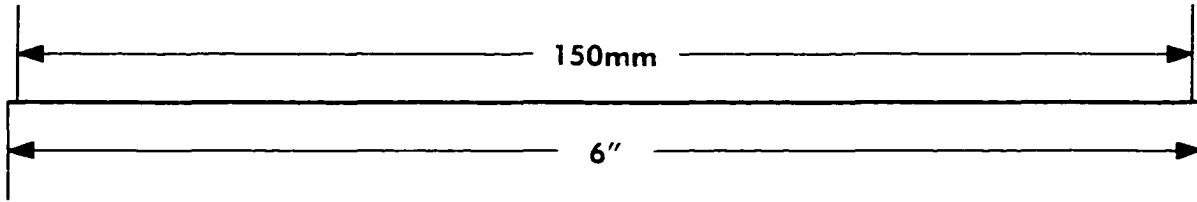
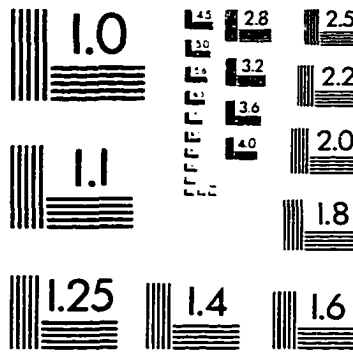
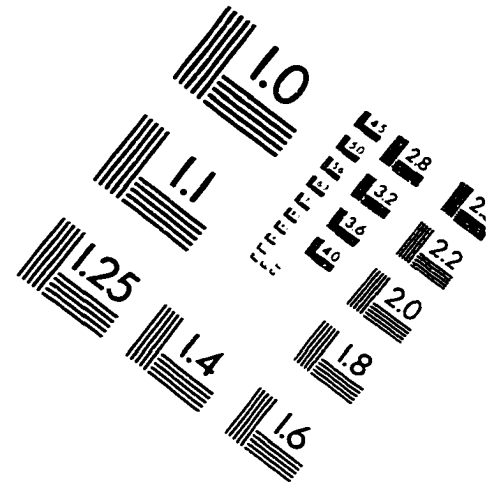
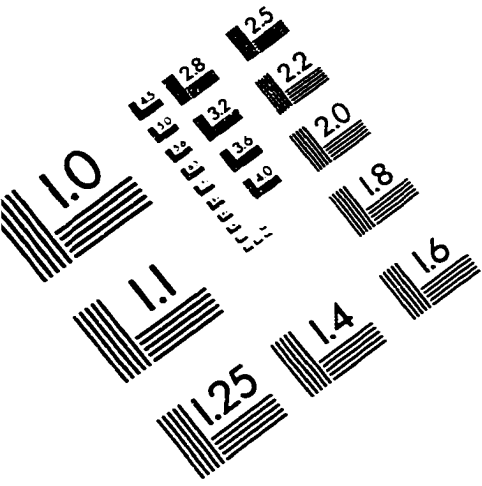
Table E-1 Summarizes the truck kilometers of travel which is considered to be influenced to some degree by the 3 enforcement networks. Table E-1 also summarizes the percentage of the total truck kilometers of travel on Manitoba highways which is considered to be covered by each of the 3 strategies.

Table E-1 Truck Kilometers Covered By Each Strategy

	Current	Modified	Future
Total	1489451	1489451	1489451
Not Covered	1121078	781615	712986
Covered	368373 24.7%	707836 47.5%	776464 52.1%

As seen in Table E-1 the truck kilometers of travel covered by each enforcement strategy increases as more WIM and AVC sites are introduced into the Province. These technologies offer tremendous potential as an enforcement tool with little increased cost to the MDHT Compliance Branch.

IMAGE EVALUATION TEST TARGET (QA-3)



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