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Development of Speed Models and Calibration of SPF for Urban Segments

by

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“Only those who attempt the absurd can achieve the impossible.”

— Albert Einstein

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INTRODUCTION

Road transportation provides benefits both to nations and to individuals by facilitation the movement of good and people. However, comes with an important negative aspect: Road Traffic Accidents, which result in 1.35 million people dead and between 20 and 50 million more with non-fatal injuries according The Global status report on Road Safety 2018, launched by the World Health Organization in December 2018.

These high numbers put the road safety as a main topic of study, with the objective to reduce the number and severity of crashes within the limits of available resources, science, and technology, while meeting legislatively mandated priorities. Even if there is no such thing as absolute safety, seems unacceptable to have road traffic injury as the leading cause of death for people aged between 5 and 29 years, when accidents can be prevented in most of cases.

In the last twenty years, scientific research has focused on the development of statistically predictive methods instead of descriptive and discursive analysis, in a way to forecast future trends without to be limited to past data.

Most of the research works focus in two major studies, the accident frequency analysis, aimed at analyzing the causes that determine the number of incidents that occur or correspond of road segments or intersections in a given period and the accident severity analysis, that study the effect of different explanatory variables on incidental gravity.

The predictive analysis has as dependent variable the number of expected accidents, which varies according to the gravity and are calculated in this investigation based on the geometric characteristics.

The Highway Safety Manuel (HSM), 2009 gives the first guidelines of the use of predictive methodologies that improve and expand the use of crash estimation methods to new and alternative designs. The more statistically-rigorous predictive methods in the HSM provides a means to estimate crashes based on geometry, operating characteristics, and traffic volumes through the implementation of Safety Performance Functions (SPFs)

The objective of this work is to calibrate different SPFs for a selected segments of Turin road network, considering a time framework of a 5 years period (2006-2012) and using the as explanatory variables the Average Annual Daily Traffic (AADT), the length of the segment, and the speed, being the last one estimated using a Speed Model based on the geometrical characteristics of the road.

In Chapter 1 is going to be detail the theorical information surrounding the models used to estimate the speed and the number of crashes. For Chapter 2 will be explain the data collection, the management of old data and the work done for the new data collected. With the data in Chapter 2 are going to be develop the speed models and SPF described in Chapter 3.

In addition, Chapter 4 will compare, analyze and discuss the models obtained meanwhile Chapter 5 will summarize and draw conclusions about the results.

Finally, the Appendix will contain the tables of the data, the model codes used and their outputs.

Chapter 1. **BACKGROUND**

The following chapter presents the theoretical background for road safety. The first section defines important terminology and the second section presents the base information of the models and safety performance functions.

1.1 GENERALITIES

Road safety is the set of rules and attitudes necessary to ensure a safe interaction in a road (driving or walking). Even if measures are taken undesired events can occur in the road in a casual way:

- **Crash:** Refers to |an event that can cause material damage or leisure due to vehicle collision with another vehicle or with any object present on the road.

This event could be prevented or, at least its causes can be minimized. Is important to recognize that the circumstances that lead to a crash in one event will not necessary lead to a crash in a similar event. This reflects the randomness that is inherent in crashes.

In this thesis the term crash will be use regularly, and sometimes interchange with the term accidents. But independently of the term used, crash severity levels are often divided into 5 levels according to the KABCO scale detail in the *Highway Safety Manual*, nevertheless for this work the accidents were already classified regrouping the KABCO scale into 3 categories:

- **Property damage only** (PDO): Crashes that produce damage only to objects and not people
- **Injury** (INJ): accidents in which the people involve report injuries that could vary
- **Fatality** (FAT): Crashes that as result of the event or of the injuries suffer in the event, causes the death of one or more of the people involved

To have a better understanding of the proportions of these events in relationship with the total flow of vehicles a schematic representation of the proportion of accidents in a road is illustrated in the following event pyramid:

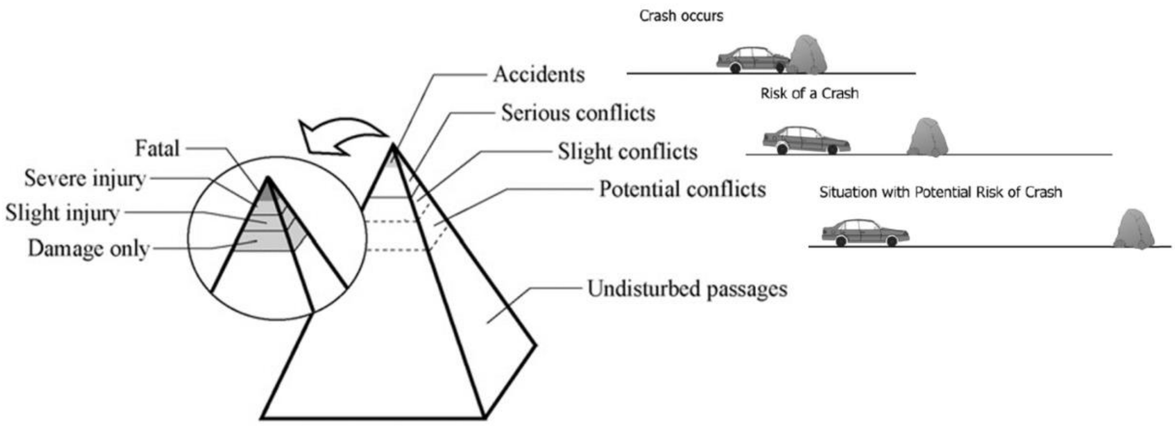

Figure 1.1: The pyramid of events. Taken from: (AASHTO, HSM, 2009)

On the right side of the figure above is represented the continuum of events that might lead to crashes and the conceptual proportion of crash events to non-crash events.

- **Undisturbed passengers**: represent the majority events in the transportation system (In where the movement of one or more vehicles, pedestrians and cyclist are present). The probability of a crash occurring is very low for most events on the transportation network.
- **Situation with Potential Risk of Crash**: It is represented by unexpected change in traffic flow, for example, a person crossing a road, or an unexpected object present in the roadway. In most of these cases, the potential for a crash is avoided by a driver's advance action, such as slowing down, changing lanes, or sounding a horn.
- **Risk of crash**: The possibility of a crash is even higher but could still be avoided.
- **Crash Occurs**: Represent a really small percentage of the total numbers of interactions and is when the accident happens.

1.2 CRASH CONTRIBUITING FACTORS

Crashes are the result of a convergence of a several events which are influenced by some contributing factors, such as, time of day, driver attentiveness, speed, vehicle condition, road design, etc.

It's possible to summarize the crashes in three general categories of contributing factors:

- **Driver:** It includes the age, driver skill, attention, fatigue, experience and sobriety.
- **Vehicle:** It includes design, manufacture and maintenance.
- **Roadway:** Include geometric alignment, cross-section, traffic control devices, surface frictions, grade, and visibility.

According to the HSM, the proportion of the contributing factor can be summarized in the following figure:

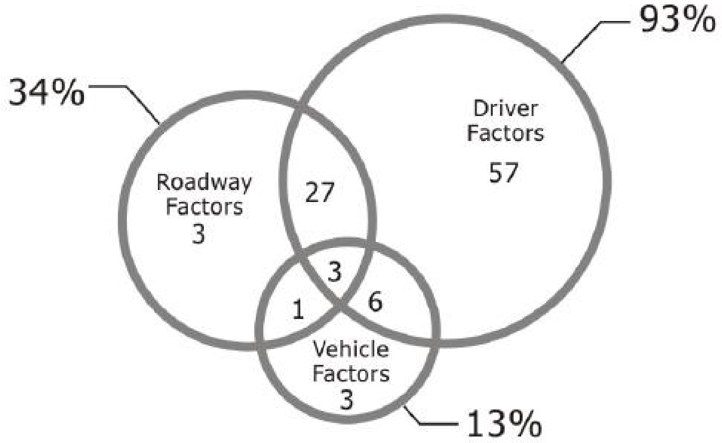

Figure 1.2: Contributing Factors of the accidents. Taken from: (AASHTO, HSM, 2009)

In addition, these factors can be considered into two groups:

- **Deterministic:** That can be controlled, as roadway and vehicle factors.
- **Stochastic:** That cannot be controlled, as driver factors.

This thesis will be focalized in deterministic variables, more specifically in understand of how the roadway factors can influence the number of accidents, modelling the relation.

1.3 ESTIMATION OF SPEED

The urban roads are characterized by an elevated accident risk factor, which is mainly due to high traffic volumes and the coexistence of multiplies categories of road user moving at different speeds.

The speed management remains crucial for creating a safe road system and reduces the fatalities, this is influenced by driver perception of the road environment, in fact, the combination of the geometric features and traffic control system induce the drivers to choose the speed.

High unsafe speeds occur mainly under free flow conditions when low-density streams are mostly composed of isolated vehicle, in this condition there are two group in where it can be characterizing:

- **Safer group:** It composes by user that tend to select a safe speed and respect the PSL (Posted Speed limit).
- **Aggressive group:** It composes by user that frequently exceed the PSL and drive fast and aggressive.

According to a Lamn, Psarianos & Mailaender (1999) for any specific road section the speed of these two groups combined are normally distributed and the 85th percentile of speed distribution is considered a good indicator of the threshold between these two groups, being the most conservative drivers and considered an appropriate indicator for operating speeds and used by road designer.

This 85th percentile of speed distribution, also know an Operating Speed, will be mentioned in our study as V85, which is the speed at or below which 85% of driver are operating their vehicles.

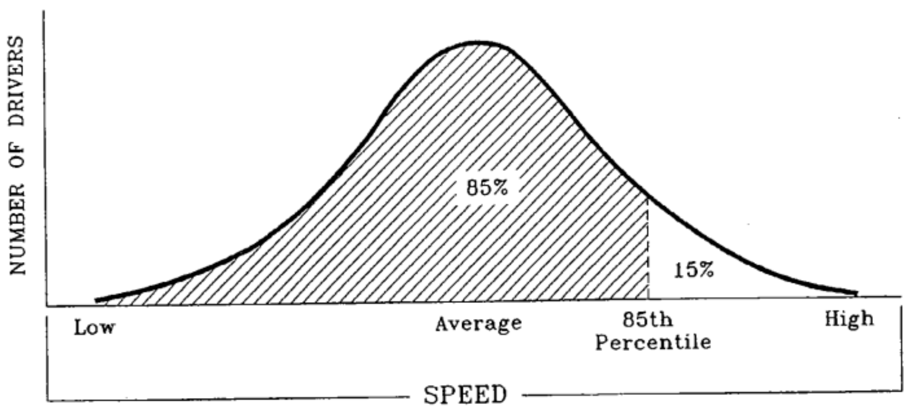

Figure 1.3 Normal distribution of speeds. Taken from: (AASHTO, HCM, 2000)

Nevertheless, V_{85} cannot represent the entire speed distribution by itself, as can be seen in the follow image:

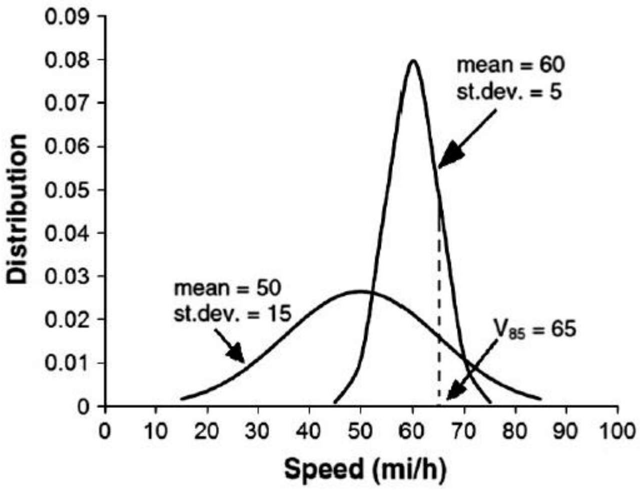

Figure.1.4: Difference between speed distributions. Taken from: (Bassani, Dalmazzo , Marinelli, & Cinzia , 2014)

Then, it is not useful just to know the V85 to establish a possible correlation with accident indicators, therefore, is recommended to used also the average speed (V50) and consider its standard deviation.

1.4 GENERALIZED LINEAR MODEL

A traditional linear model is of the form:

$$\boldsymbol{y_i = x_i' \cdot \beta + \varepsilon_i}$$

Where:

- $\mathbf{y_i}$,is the response variable for the $\boldsymbol{i\ th}$ observation.
- The quantity x_i is a column vector of covariates, or explanatory variables, for observation i that is known from the experimental setting and is considered to be fixed, or non-random.
- The vector of unknown coefficients $\boldsymbol{\beta}$ is estimated by a least square fit to the data y. The expected value of $\mathbf{y_i}$, denoted by μ_i, is:

$$\boldsymbol{\mu_i = x_i' \cdot \beta}$$

While traditional linear models are used extensively in statistical data analysis, there are types of problems such as the following for which they are not appropriate.

For example, the normal distribution (which is continuous) might not be adequate for modeling counts or measured proportions that are considered to be discrete.

If the mean of the data is naturally restricted to a range of values, the traditional linear model might not be appropriate, since the linear predictor $x_i' \cdot \beta$ can take on any value. For example, the mean of a measured proportion is between 0 and 1, but the linear predictor of the mean in a traditional linear model is not restricted to this range.

It might not be realistic to assume that the variance of the data is constant for all observations. For example, it is not unusual to observe data where the variance increases with the mean of the data. A generalized linear model extends the traditional linear model and is therefore applicable to a wider range of data analysis problems. A generalized linear model consists of the following components:

The linear component is defined just as it is for traditional linear models:

$$\eta_i = x_i' \cdot \beta$$

A monotonic differentiable link function $\mathcal{F}$ describes how the expected value of $\boldsymbol{y_i}$ is related to the linear predictor η_i :

$$g(\mu_i) = x_i' \cdot \beta$$

The response variables $\boldsymbol{y_i}$ are independent for $i = 1,2 \ldots n$ and have a probability distribution from an exponential family. This implies that the variance of the response depends on the mean μ through a ***variance function*** $\mathcal{V}$:

$$var(y_i) = \frac{\phi \cdot \mathcal{V}(\mu_i)}{w_i}$$

Where:

ϕ is a constant and w_i is a known weight for each observation. The ***dispersion parameter*** ϕ is either known (for example, for the binomial or Poisson distribution, $\phi = 1$) or must be estimated.

As in the case of traditional linear models, fitted generalized linear models can be summarized through statistics such as parameter estimates, their standard errors, and goodness-of-fit statistics. You can also make statistical inference about the parameters by using confidence intervals and hypothesis tests. However, specific inference procedures are usually based on asymptotic considerations, since exact distribution theory is not available or is not practical for all generalized linear models.

1.5 REGRESSION MODEL

Regression analysis is a set of statistical processes for estimating the relationship between a dependent variable (target) and one or more independent variables (or predictors). This technique is used for forecasting and finding the causal effect relationship between the variables.

The more general expression of a regression model is the following:

$$\lambda = f(\beta X)$$

Where,

- X, it is a vector with independent variables.
- β, it is a vector with an estimable parameter.

The most common relationship between the independent variable and the accidents number is:

$$\lambda = e^{\beta X}$$

or

$$\ln(\lambda) = \beta X$$

Which is the base for the models that are going to be develop in chapter 3. With additional two other models (Gamma and Power functions), to compare and determine which fits better the nature of the crash event.

1.5.1 THE GENMOD PROCEDURE

The GENMOD procedure fits a generalized linear model to the data by maximum likelihood estimation of the parameter vector β . There is, in general, no closed form solution for the maximum likelihood estimates of the parameters estimating the parameters of the model numerically through an iterative fitting process.

The dispersion parameter ϕ is also estimated by maximum likelihood or, optionally, by the residual deviance or by Pearson's chi-square divided by the degrees of freedom. Covariances, standard errors, and P-values are computed for the estimated parameters based on the asymptotic normality of maximum likelihood estimators.

1.5.2 RESPONSE PROBABILITY DISTRIBUTIONS

In generalized linear models, the response is assumed to possess a probability distribution of the exponential form. That is, the probability density of the response Y for continuous response variables, or the probability function for discrete responses, can be expressed as:

$$f(y) = exp\left\{\frac{y(\theta) - b(\theta)}{a(\phi)} + c(y, \phi)\right\}$$

Standard theory for this type of distribution gives expressions for the mean and variance of Y:

$$E(Y) = b'(\theta)$$

$$VAR(Y) = \frac{b''(\theta) \cdot \phi}{w}$$

where the primes denote derivatives with respect to θ. If μ represents the mean of Y then the variance expressed as a function of the mean is:

$$Var(Y) = \frac{\mathcal{V}(\mu) \cdot \phi}{w}$$

Where, $\mathcal{V}$ is the ***variance function***.

Some distributions and associated variance functions are as follows:

- Normal.

$$\mathcal{V}(\mu) = 1$$

- binomial (proportion).

$$\mathcal{V}(\mu) = \mu(1 - \mu)$$

- Poisson.

$$\mathcal{V}(\mu) = \mu$$

- Gamma.

$$\mathcal{V}(\mu) = \mu^2$$

- inverse Gaussian.

$$\mathcal{V}(\mu) = \mu^3$$

- negative binomial.

$$\mathcal{V}(\mu) = \mu + k\mu^2$$

- geometric.

$$\mathcal{V}(\mu) = \mu + \mu^2$$

An important aspect of generalized linear modeling is the selection of explanatory variables in the model. Changes in goodness-of-fit statistics are often used to evaluate the contribution of subsets of explanatory variables to a particular model. The deviance, defined to be twice the difference between the maximum attainable log likelihood and the log likelihood of the model under consideration, is often used as a measure of goodness of fit.

1.5.3 NEGATIVE BINOMIAL DISTRIBUTION.

The negative binomial distribution is a discrete distribution of the number of trials required to reproduce a successful event (denoted as X). Each trial has two possible results success or failure. Also, it could be defined as the number of failures before to obtain the specifics results numbers (denoted as Y).

The accidents generally are over dispersed, in other words, the variance is greater than the average.

$$VAR(y_i) \gg E(y_i)$$

Hence a Poisson distribution is not an appropriate distribution because the mean is equal to the variance. In cases where the observations are over dispersed respect to a Poisson distribution, the negative binomial distribution can be used as an alternative.

The negative binomial distribution will be the distribution used for all the Safety Performance Models developed. The database is presented in the following chapter.

Overdispersion is a phenomenon that sometimes occurs in data that are modeled with the binomial or Poisson distributions. If the estimate of dispersion after fitting, as measured by the deviance or Pearson's chi-square, divided by the degrees of freedom, is not near 1, then the data might be ***over dispersed*** if the dispersion estimate is greater than 1 or ***under dispersed*** if the dispersion estimate is less than 1.

A simple way to model this situation is to allow the variance functions of these distributions to have a multiplicative overdispersion factor ϕ :

- Binomial: $\mathcal{V}(\mu) = \mu(1-\mu)$
- Poisson: $\mathcal{V}(\mu) = \phi \cdot \mu$

An alternative method to allow for overdispersion in the Poisson distribution is to fit a negative binomial distribution, where $\mathcal{V}(\mu) = \mu + \mu^2$, instead of the Poisson. The parameter k can be estimated by maximum likelihood, thus allowing for overdispersion of a specific form.

Negative binomial probability distribution:

$$f(y) = \frac{\Gamma\left(y + {}^{1}/_{k}\right)}{\Gamma(y+1) \cdot \Gamma\left({}^{1}/_{k}\right)} \cdot \frac{(k\mu)^y}{(1+k\mu)^{y+{}^{1}/_{k}}} \quad for\ y = 0,1,2,\cdots n.$$

This distribution is used to represent the number of accidents collected in the database.

The following figure illustrates a binomial negative distribution:

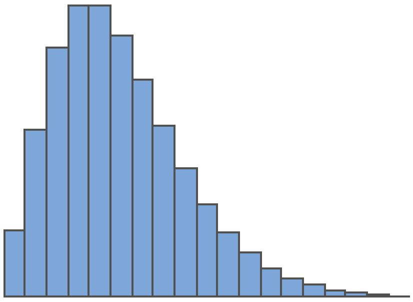

Figure.1.5. Negative binomial distribution that has a probability of 0,5. Taken from: (Minitab, LLC., 2019)

1.5.4 LINK FUNCTION

The mean μ_i the response in the $\mathbf{i}th$ observation is related to a linear predictor through a monotonic differentiable link function g.

$$g(\mu_i) = x_i' \cdot \beta$$

Here, $x_i$is a fixed known vector of explanatory variables, and β is a vector of unknown parameters.

Several link functions and probability distributions are available in the GENMOD procedure. The built-in link functions as:

- identity: $g(\mu) = \mu$
- logit: $g(\mu) = \log(\mu/(1 - \mu)$
- probit: $g(\mu) = \phi^{-1}(\mu)$, where ϕ is the standard normal cumulative distribution function
- power: $g(\mu) = \mu^{\lambda}\ if\ \lambda \neq 0$ or $g(\mu) = \log(\mu)\ if\ \lambda = 0$
- log: $g(\mu) = \log(\mu)$

1.5.5 GOODNESS OF FIT

Two statistics that are helpful in assessing the goodness of fit of a given generalized linear model are the scaled deviance and Pearson's chi-square statistic. For a fixed value of the dispersion parameter ϕ, the scaled deviance is defined to be twice the difference between the maximum achievable log likelihood and the log likelihood at the maximum likelihood estimates of the regression parameters.

If $l(\boldsymbol{y}, \boldsymbol{\mu})$ is the log-likelihood function expressed as a function of the predicted mean values $\boldsymbol{\mu}$ and the vector $\boldsymbol{y}$ of response values, then the scaled deviance is defined by $D^*(\boldsymbol{y}, \boldsymbol{\mu}) = 2(l(\boldsymbol{y}, \boldsymbol{y}) - l(\boldsymbol{y}, \boldsymbol{\mu}))$ where D is the deviance.

The following table displays the deviance for each of the probability distributions available in PROC GENMOD.

Distribution	Deviance
normal	$\sum_i w_i (y_i - \mu_i)^2$
Poisson	$2\sum_i w_i \left[y_i \log\left(\frac{y_i}{\mu_i}\right) - (y_i - \mu_i)^2\right]$
negative binomial	$2\sum_i \left[y \log\left(\frac{y}{\mu}\right) - \left(y + \frac{w_i}{k}\right) \log\left(\frac{y + {w_i}/{k}}{\mu + {w_i}/{k}}\right)\right]$

Pearson's chi-square statistic is defined as

$$X^2 = \sum_i \frac{w_i(y_i - \mu_i)^2}{V(\mu_i)}$$

and the scaled Pearson's chi-square is ${X^2}/{\phi}$

The scaled version of both of these statistics, under certain regularity conditions, has a limiting chi-square distribution, with degrees of freedom equal to the number of observations minus the number of parameters estimated. The scaled version can be used as an approximate guide to the goodness of fit of a given model.

1.5.6 OTHER FIT STATISTICS

The Akaike information criterion (AIC) is a measure of goodness of model fit that balances model fit against model simplicity. AIC has the form: $\boldsymbol{AIC = -2LL + 2p}$

Where p is the number of parameters estimated in the model, and LL is the log likelihood evaluated at the value of the estimated parameters.

The Bayesian information criterion (BIC) is a similar measure. BIC is defined by $\boldsymbol{BIC = -2LL + p * log(n)}$

Chapter 2. **DATABASE**

This research is based on data from previous thesis, papers and data collected using electronic tools as is going to be explain in the subsequent sections.

The database elaboration process can be summarized in two main phases:

- The preparation made for the Speed Model and
- The work done to create a database for the Safety Performance Functions

2.1 SPEED MODEL DATABASE AND MODIFICATIONS

For the development of the Speed Models, was used the database from the paper "The effects of road geometrics and traffic regulations on driver-preferred speeds in northern Italy" (Bassani, 2014). The speed database was the result of an in-field survey consisted of 5339 values observed on 76 lanes (l), 25 single travelled ways, 16 sections (s), and 8 roads, where the longitudinal and transversal measurements of the road were taken. The final dataset considers cars in free-flow conditions moving at a uniform speed.

In order to select this sample was previously done an analysis of the original database in order to classify the initial 8 roads to later select a similar sample for a better fit.

The "Highway Code" (D. L.vo. 285, 1992) present a classification on the basis of the construction, technical and functional characteristics. But was decided to use the geometric characteristics rather than functional ones.

The roads were classified into 3 categories (D, E, F) and divided into four different types identified with the numbers from 1 to 4, defined as follows:

- 1: Roads with a single-track carriageway;
- 2: Roads with a carriageway and two-way traffic;
- 3: Roads with two carriageways and two-way traffic;
- 4: Roads with more than two carriageways and two-way traffic.

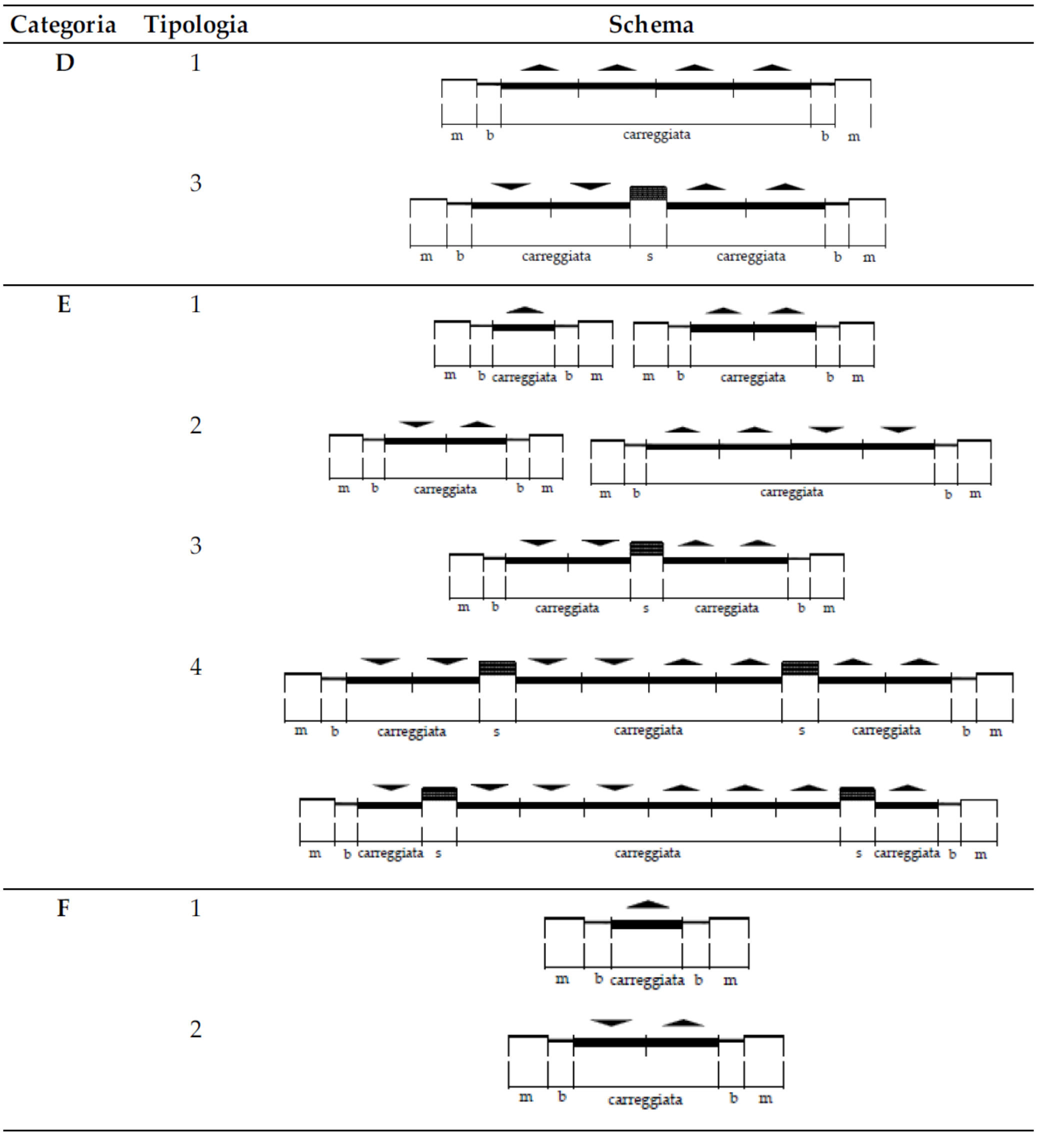

Figure 2.1: Geometrical classification of roads: Taken from:

In this thesis work, only the last three categories (D, E, F) have been taken into consideration as they fall into the categories of urban roads. These are the same 3 categories contained in the paper, where 4 of the 8 roads used for the paper are classified into E categories. Being 50% of the total roads used for the development of the Speed Model, was the decided to use just this classification.

Hence, was decided to develop a dataset focused in the E category with its subcategories with 12 roads from the total network.

The data was collected using electronic tools as Google Maps, Google Earth and MyMaps. The counting was use both with Aerial View and Street View, and the measurements were done to obtain the longitudinal and transversal characteristics. For the density, the methodology use was to consider a window of study that went from the middle of the segment 500m forward and back for a total of 1Km and sometime less if it was at the beginning of at the end of the road selected. In this length was count the number of elements present of a variable as pedestrians crossing, intersections and driveway to later calculated the density of each one.

With all the data, and having 3 models that could calculate speed for every percentile, was decide to select two speeds: Average Speed (V50) and Operating Speed (V85) being the last one defined by the AASHTO as "the speed at which drivers are observed operating their vehicles during free-flow conditions."

Due to the fact that the actual location of the crashes was actually unknown and with the data under disposition was impossible to locale exactly in which lane the crash happened, was decided to calculate V50 for each lane and then average the values, repeating the same procedure for V85 speed.

In the following table are shown the roads selected from the Turin's road network, classified into 3 categories: E2, E3 and E4. The tables with all the data measure is shown in the appendix, listing each road.

Table 1. Geometrical Classification of the selected roads

Roads	Geometrical Classification
Corso Moncalieri	E2
Via Guido Reni	E3
Corso Svizzera	E3
Corso Racconigi	E3
Corso Traiano	E3
Corso Massimo d'Azeglio	E3, E4
Corso Sebastopoli	E3, E4
Via Guglielmo Reiss Remoli	E2
Corso Casale	E2, E3, E4
Via Filadelfia	E2
Corso Regina Margherita	E4
Corso Francia	E4

A graphical representation of the location of these 12 roads in shown in the next Figure and their classification by categories is presented in the Appendix, by color.

Figure 2.2.Graphical representation of the roads selected. Created on: My Maps

For one of each road 24 variables were measure, the same presented in the original database. These variables are listed in the table following:

Table 2. Geometrical Classification of the selected roads.

#	Variable	Symbol	Type	Unit	min	max
1	Lane position	LP	ND	–	1	3
2	Posted speed limit	PSL	ND	km/h	30	70
3	No. of travelled ways	NT	ND	–	1	2
4	Travelled way width	TWW	NC	m	7	17
5	No. of lanes per direction	NL	ND	–	1	3
6	Lane width	LW	NC	m	3	6
7	Median width	MW	NC	m	0	9
8	Right shoulder	RS	B	–	0	1
9	Right shoulder width	RSW	NC	m	0	3
10	Left shoulder	LS	B	–	0	1
11	Left shoulder width	LSW	NC	m	0	1
12	Curvature	$1/R$	NC	m^{-1}	0	4.02 · 10—3
13	Dedicated bus and taxi lane	PUB	B	–	0	1
14	Deviation	Dev	B	–	0	1
15	Deviation density	DevD	NC	No./km	0	8
16	Driveways	D	B	–	0	1
17	Driveway density	DD	NC	No./km	0	18
18	Intersections	I	B	–	0	1
19	Intersection density	ID	NC	No./km	0	10
20	Sidewalk	S	B	–	0	1
21	Pedestrian crossing	Ped	B	–	0	1
22	Pedestrian crossing density	PedD	NC	No./km	0	18
23	Parking lanes	PKL	B	–	0	1
24	Traffic calming devices	TCD	B	–	0	1

This collection was done for 424 points that represent 212 segments with 2 sense of way each.

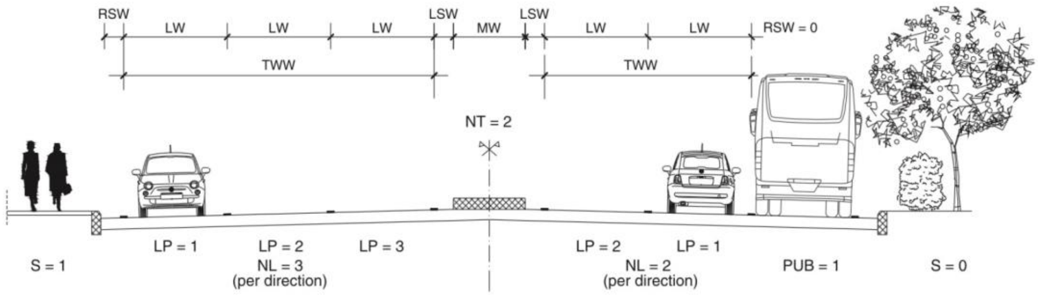

Figure 2.3. Divided Traveled Way (Arterials and Collectors). Taken from: (Bassani, Dalmazzo , Marinelli, & Cinzia , 2014)

For the medium width variable some considerations were made, mostly to respect the maximum number allowed for the model, when the width exceed the maximum value of 9m, that width was consider to be 9m, this to allow the model to work better, with the supposition made.

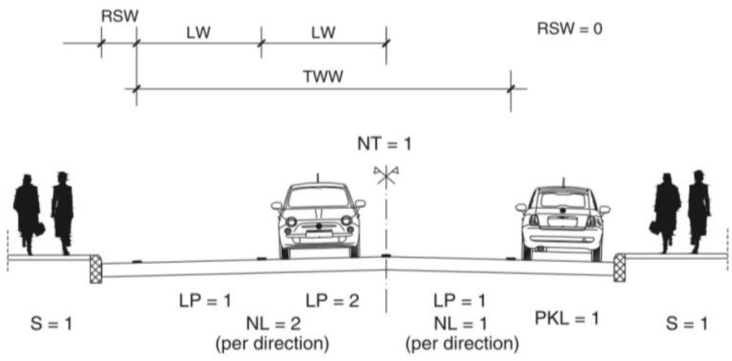

Figure 2.4. Undivided Traveled Way. (Collectors only). Taken from: (Bassani, Dalmazzo , Marinelli, & Cinzia , 2014)

2.2 DATABASE FOR SPF

In this section will be present all the information for the construction of the database for the SPFs, including the previous data and the final ensemble.

2.2.1 ROAD NETWORK

The software use for the representation of the network was Qgis 2.18.27, an open source program where the information was previously organized by Roberto Ellena and then improved by Yessica Garces, containing all the segments and the intersections of the city of Turin, Italy, from which was selected a sample of 212 segments that at the end gave 424 points of information for the development of the Safety Performance Function. The total network can be seen in the Figure 7.

2.2.2 CRASHES

The information used to account the accidents was taken from the database given by the Municipal Police of Turin, which is the main source of information for all levels of crash occur on the communal area of the city.

This database registers the accidents for a time frame from 2006 and 2012, from which was taken the information for our years of consideration (2008-2012).

This database initially had multiple attributes and in the previous thesis was link geographically with the correspondent segment in Qgis.

The Table X shows the minimum and maximum number of accidents by segment of the road

Table 3. Minimum and Maximum number of crashes by segment

SUMMARY TABLE		
CORSO/VIA	**CRASHES/SECTION**	
	MIN	**MAX**
Via Guido Reni	0	11
Corso Svizzera	0	6
Corso Racconigi	0	5
Via Reiss Remoli	0	10
Corso Sebastopoli	0	11
Corso Moncalieri	0	14
Corso Casale	0	7
Corso Traiano	0	3
Corso Filadelfia	0	5
Corso Massimo d'Azeglio	0	42
Corso Francia	0	15

2.2.3 AADT

The Annual Average Daily Traffic (AADT) used was provided by the company 5T (Tecnologie Telematiche per i Trasporti e il Traffico a Torino S.r.l) which monitory flow of vehicles both at regional level (Piedmont) and municipal (Turin).

The database provides the AADT value measured along each direction of travel. Working an aggregated level implied that two traffic data are associated to one segment, one with the flow data corresponding to a direction of travel, and the other containing the data relating to the opposite direction of travel. Having the aggregate AADT information available, was later link to the select 12 roads listed before.

2.2.4 FINAL DATABASE

For the final database was include the geometrical information measure for the estimation of the speed, the length of each segment following the guideline of the HSM, seen in Figure 10, the AADT for year 2008 to 2012 and its average, the total number of accidents and its classification by severity.

In the Appendix is presented the final database divided by road for a better understanding.

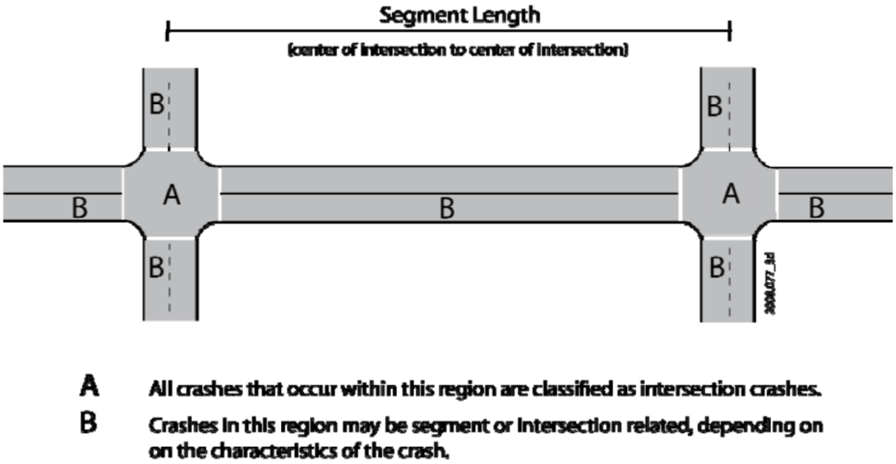

Figure 2.5. Length measurement road segment. Taken from: (AASHTO, HSM, 2009)

Chapter 3. **MODELS**

Several models were developed for the thesis. In Chapter 1 was introduce the theoretical information, and in Chapter 2 meanwhile was explain the data collection some introduction to the models was also mentioned.

The road graph of the city of Turin on Qgis from with were selected the roads segments to study the traffic flows provided by the company 5T and association with the road graph

It was considered to study the behavior from a disaggregate point of view but not having the exact location of each accident, the assignation was almost random by sense of direction, that is why as explain in the previous chapter, was decided to use an aggregate database. Having AADT and Crashes aggregated, with the same length for segment regardless of the direction and individual speeds for direction, was decided estimated the number of crashes.

In this chapter will be describe the methodology used for the development of the Speed Models and the Safety Performance functions.

To predict the speed was decided to consider 3 different model:

1. One from the paper called Calibration Strategy #1 that from now on will be named EQPAPER
2. One using the same exact database and considering a Fixed Effect Model, that will be named MYEQ
3. And a third one changing the variable curvature from a numerical to a Boolean, considering also a Fixed Effect Model. This model will be known as BOOLEANCURV

The equation used was the following, where the parameters changes in function on the modification made for each model. In the equations developed the a terms associated to the random effects weren't considered.

$$V_{rsl,i} = \beta_0 + \sum_{k=1}^{K} {\beta_k}^C \cdot X_{ki} + \sum_{j=1}^{J} {\beta_j}^D \cdot (Z_p \cdot X_{ji}) + (a_r + a_{s|r} + a_{l|sr}) + \varepsilon_{rsl,i}$$

In where:

- $\varepsilon_{rsl,i}$, is the error/bias associated with each measurement. Normally distributed.
- β_0 , is the general mode intercept.
- ${\beta_k}^C$ & ${\beta_j}^D$, are calibration parameters for the variables affecting the estimated mean (X_{ki}), and the estimated standard deviation (X_{ji}).
- Z_p, is the standardized normal variable.
- $(a_r + a_{s|r} + a_{l|sr})$, These are the three random effects, normally distributed.

Also, it was calculated the BIC function in order to understand how well fitted the models were, the outputs of the model are presented in the Appendix.

The development of the speed models was made using the R software following as a base the code used in the paper and making minor changes to a Fixed Effect Model that give a model that can adapt better to other roads, that in our case is useful to estimate the speed of the road sample selected for the development of the SPF.

For the third model was decided to introduce a variation in database, changing the nature of the curvature from a numerical variable to a Boolean one, giving slightly higher results of speed compared to the original values but allowing later to get better results.

Having the models developed and with the segment roads database created before summarizing the 24 geometrical characteristics for each segment, was then obtained the speed for each direction.

For the SPF's was used the Final Database explain at the end of Chapter 3, which combined the database already obtained for the speed with the database that had the AADT information and the number of accidents associated to the segments over the 5 years period selected.

These final database was sort to obtained 54 combinations that are going to be the presented in the Appendix and from which some parameters will be confronted in the Chapter 4, searching for the fittest model.

The models are run using SAS University Edition Software (Version 2.18.27) which predict through explanatory variables the number of crashes, even if the construction of the models varied.

For each model the output featured the calculated regression parameters, the estimation, its deviation, the BIC of the model and others.

For the SPF some of the database used is the same as in the previous thesis (Garces, 2016) and (Ellena , 2015). Remembering, from Chapter 2 was decided to use a 5 years period (2008-2012) verifying that the roads selected for our study maintained their geometrical characteristics during this period.

Was used SAS University Edition. With the coded called PROC GENMOD was executed an analysis that consists of fitting a sequence of models, beginning with a simple model with only an intercept term, and continuing through a model of specified complexity, fitting one additional effect on each step. Likelihood ratio statistics-that is, twice the difference of the log likelihoods- was computed between successive models. The asymptotic distribution of the likelihood ratio statistics, under the hypothesis that the additional parameters included in the model are equal to 0, is a chi-square with degrees of freedom equal to the difference in the number of parameters estimated in the successive models. Thus, these statistics were used to evaluate the significance of term fit.

For the models was always considered the negative binomial distribution, which contains a parameter k, called the negative binomial dispersion parameter. This is not the same as the generalized linear model dispersion ϕ, that can be estimated from a maximal model by the deviance or Pearson's chi-square divided by degrees of freedom, but it is an additional distribution parameter that for our model the PROC GENMOD estimate it by maximum likelihood.

Finally, for the variables consider and in order to understand the variations in terms of severity of the crashes, for the Safety Performance Functions the accidents were sort considering at a time for each model: PDO, INJ+FAT or the TOT (Total sum)

3.1 SAFETY PERFORMACE FUNCTION

For the input data to the Safety Performance functions, the Category of the roads considered were focus in the E classification with subcategories, to have a more homogeneous sample.

In the model the geometrical classifications consider for de data was E2, E3 and E4. In every case the typology of Fixed effect model was maintain, considering that could be broader for posterior studies.

With the Speed, the length and the crash information were later developed 3 different SPF, each one with different models: Exponential, Power and Gamma Function is ordering to understand the fittest model by comparing the output of the criteria for assessment of Goodness of Fit

Crash frequency is used as a fundamental indicator of safety in the evaluation and estimation methods presented in the HSM. The crash frequency is defined as the number of crashes occurring at a particular site, facility or network in a one-year period. Is calculated according as it follows and is measured in number of crashes per year.

$$Crash\ Frequency = \frac{Number\ of\ Crashes}{Period\ in\ Years}$$

Statistical models using regression analysis have been developed to address some of the limitations of just descriptive model. These models reliably estimate expected average crash frequency for not only existing roadway conditions, but also changes to existing conditions or a new roadway design prior to its construction and use.

As with all statistical methods used to make estimation, the reliability of the model is partially a function of how well the model fits the original data and partially a function of how well the model has been calibrated to local data.

For our case as we are calibrating our own data base on Turin's road network is important that the model fits the original database, measure through the Criteria of Assessing Goodness of fit and using the Analysis of Maximum Likelihood.

Instead of calibrating existing SPFs, it was decided to develop our own safety performance functions in order to improve forecast accuracy. The HSM manual suggests that territory-specific safety performance functions are more likely to improve the reliability of the predictive method,

When we think a in a distribution to expresses the probability of a given number of events occurring in a fixed interval of time or space, we think initially in the Poisson distribution, but the main problem with this distribution is that consider the mean equal to the variance which doesn't match the reality, that's why was decided to use the Negative Binomial Distribution.

The negative binomial distribution is especially useful for discrete data over an unbounded positive range whose sample variance exceeds the sample mean. In such cases, the observations are overdispersed with respect to a Poisson distribution, for which the mean is equal to the variance. Hence a Poisson distribution is not an appropriate model. Since the negative binomial distribution has one more parameter than the Poisson, the second parameter can be used to adjust the variance independently of the mean

The models are going to be 3, as mentioned before, each one associated with the same negative binomial distribution.

The first model is going to be the EXPONENTIAL model, recommended in several investigations:

$$E(m) = \beta_0 * L^{\beta_1} * AADT^{\beta_2} * e^{(\beta_3 * V_i)}$$

The second model to be consider is going to be the POWER model, express with the equation shown a continuation:

$$E(m) = \beta_0 * L^{\beta_1} * AADT^{\beta_2} * V_i^{\beta_3}$$

The third model to consider is the GAMMA, express with:

$$E(m) = \beta_0 * L^{\beta_1} * AADT^{\beta_2} * V_i^{\beta_3} * e^{(\beta_4 * V_i)}$$

Where in all the models:

- $E(m)$ is the predect crash frequency
- $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ are the regression parameters
- L is the length of the segment in study
- AADT is the Average Annual Daily Traffic

The code use for each case in presented in the Appendix.

3.1.1 Model Information

The Model Information table displays the data set with the file use as a database for the model, the response distribution and the link function selected previously, the response variable name and the number of observations read and used which can differ because of missing values in data set, invalid observations. In our case all values were considered

Criteria for Assessing Goodness of Fit

In the Criteria for Assessing Goodness of Fit table, PROC GENMOD displays the degrees of freedom for deviance and Pearson's chi-square, equal to the number of observations minus the number of regression parameters estimated, the deviance, the deviance divided by degrees of freedom, the scaled deviance, the scaled deviance divided by degrees of freedom, Pearson's chi-square, Pearson's chi-square divided by degrees of freedom, the scaled Pearson's chi-square, the scaled Pearson's chi-square divided by degrees of freedom, the log likelihood (excludes factorial terms) the full log likelihood, the Akaike information criterion, the corrected Akaike information criterion, and the Bayesian information criterion.

This table contains statistics that summarize the fit of the specified model. These statistics are helpful in judging the adequacy of a model and in comparing it with other models under consideration.

Chapter 4. **ANALYSIS OF RESULTS**

In this chapter are going to be analyze the models and their outputs

For the Speed Model BOOLEANCURV, even if it had the greatest difference between the predict and the observed value, the values were in the same order. The figure below shows the relationship between the Observed and Predicted values for that model.

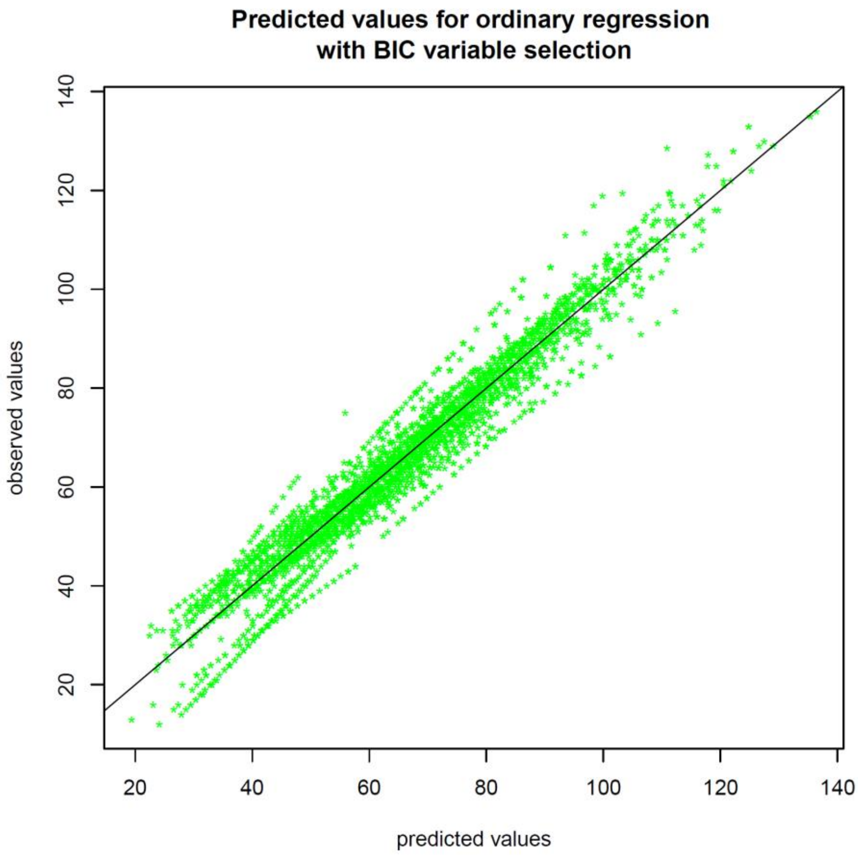

Figure 4.1. Observed-Predicted Values for BOOLEANCURV Speed Model

To analyze the results were create 3 summary table shown next. This present the BIC factor associated to each of 54 models, and give the information related to the estimation of the parameters link to the Speed.

Table 4. Outputs of the SPF for Speed Model with BOOLEANCURV

EXPONENTIAL						
	V50			**V85**		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1925.2575	1800.4842	2350.07	1925.7161	1800.4106	2350.9209
Estimate	0.0019	0.0071	0.0042	0.0014	0.0072	0.004
p-value	0.3129	0.0007	0.0124	0.4543	0.0007	0.0201
GAMMA						
	V50			**LNV5O**		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1931.2169	1805.7713	2355.5486	1931.2169	1805.7713	2355.5486
Estimate	-0.0009	-0.0027	-0.0022	0.2376	0.8548	0.5494
p-value	0.9264	0.8123	0.8005	0.7631	0.3826	0.4459
	V85			**LNV85**		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1931.5231	1804.9076	2355.7986	1931.5231	1804.9076	2355.7986
Estimate	-0.0038	-0.0088	-0.0065	0.4997	1.5584	1.0056
p-value	0.7236	0.5005	0.5047	0.6206	0.2136	0.2736
POWER FUNCTION						
	LNV50			**LNV85**		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1925.1757	1799.778	2349.5625	1925.5976	1799.3127	2350.1889
Estimate	0.1663	0.6264	0.3707	0.1483	0.7261	0.4017
p-value	0.2935	0.0005	0.0089	0.4096	0.0004	0.0128

Table 5. Outputs of the SPF for Speed Model with EQ PAPER

EXPONENTIAL						
	V50			V85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1925.6121	1806.9657	2356.0763	1925.1069	1808.6425	2356.2967
Estimate	-0.0019	0.0059	0.001	-0.0026	0.0048	0.0001
p-value	0.4161	0.027	0.6348	0.2806	0.0746	0.9445
GAMMA						
	V50			LNV50		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1927.5891	1810.9901	1810.9901	1927.5891	1810.9901	1810.9901
Estimate	0.0197	0.0229	0.0229	-1.4467	-1.1366	-1.1366
p-value	0.0749	0.0636	0.0636	0.0442	0.1565	0.1565
	V85			LNV85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1926.7229	1811.8013	2357.963	1926.7229	1811.8013	2357.963
Estimate	0.0223	0.0271	0.0225	-1.8786	-1.6854	-1.6732
p-value	0.0666	0.0454	0.0415	0.036	0.0913	0.0384
POWER FUNCTION						
	LNV50			LNV85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1924.7508	1808.4518	2356.2983	1924.0864	1809.8513	2356.1795
Estimate	-0.1932	0.3227	0.0079	-0.2635	0.2792	-0.0553
p-value	0.218	0.0661	0.9548	0.1401	0.1618	0.727

Table 6. Outputs of the SPF for Speed Model BOOLEANCURV and MYEQ

EXPONENTIAL						
	V50			V85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1997.4493	1865.1535	2440.8578	1996.3238	1865.4284	2439.8425
Estimate	-0.0067	0.0016	-0.0037	-0.0073	0.0004	-0.0044
p-value	0.0126	0.5864	0.1307	0.0067	0.885	0.0689
GAMMA						
	V50			LNV50		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1925.7539	1815.579	2359.5809	1925.7539	1815.579	2359.5809
Estimate	0.0286	0.016	0.021	-2.1817	-0.8158	-1.4699
p-value	0.0604	0.3373	0.1261	0.0308	0.4638	0.1058
	V85			LNV85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1923.9561	1815.453	2357.4488	1923.9561	1815.453	2357.4488
Estimate	0.0342	0.0256	0.0284	-2.9494	-1.7626	-2.2975
p-value	0.0402	0.1601	0.058	0.0184	0.1989	0.0401
POWER FUNCTION						
	LNV50			LNV85		
	INJ+FAT	PDO	TOTACC	INJ+FAT	PDO	TOTACC
BIC	1923.2831	1810.4613	2355.9192	1922.1777	1811.4114	2438.3817
Estimate	-0.3112	0.2366	-0.1001	-0.4117	0.1421	-0.3995
p-value	0.0846	0.2473	0.5367	0.0435	0.5364	0.0292

To understand the relationship between the Speed, that is the new variable included for the Safety Performance Function and the number of accidents, was fundamental to understand how the regression parameters change by modifying the speed model and the SPF.

The lowest BIC, which means a better model, are mark in blue, and 4 of 5 are for the BOOLEANCURV Speed Model (V50 and LNV50) for the Exponential and Power function in which cases the relationship between speed and number of crashes was positive, which it was the expected, also the p-value is low enough to give a 95% confidence interval in each case

The complete information with the estimation of all the parameters including also the graphs is display in the Appendix. There can be see that the other explanatory variables, AADT and Length were positive and significative for every model.

After comparing the models can be notice that the best combination between Speed Model and SPF is BOOLEANCURV with Exponential Model or Power function. As a matter of that why it was decided to run additional models dividing the data by geometrical as mentioned in previous chapters. For this case again the PDO gave the best results, even if most cases the Total accidents had a positive trend didn't enter into the confidence interval.

Concerning the sing of the regression parameter, other studies (Baruya, 1998) revealed that traffic flow is the main predictor of collisions; as we can see in our outputs. In contrast, higher average speed was found to result in lower collisions. This because a dispersion could lead to a negative trend in terms of the model in general, even if a group with similar characteristics could have in their own positive trend.

Chapter 5. **CONCLUSION**

The present work has been developed with the objective of investigate, in the urban sector, the best model that link the relation between the number of crashes, the AADT, length and Speed.

Especially the last variable speed, has been the more studied because represent a new addition to the development of the SPF in comparison to the previous thesis that have been working with some of the data used.

For the speed model can be concluded that even if the predicted speed was closer to the measured speed in the EQPAPER and MYEQ model, the third model of BOOLEANCURV was the one estimation that gave better p-values and better BIC in almost each model, showing also a positive trend between speed and crashes.

For the SPF's we can appreciate in the output of the models the positive relation between AADT and length with the number of accidents.

From the study in terms of geometrical categorization can be seen that in terms of severity the best model was obtain for the calculation of PDO. Even if we could have expected a higher regression parameter for the speed in INJ+FAT scenarios, this wasn't the case.

For the future works, in order to improve some deficiencies, could be important to include more roads to have a larger sample of Torino's road network. Also, could be an interesting idea to include more explanatory variables into the calibration of the SPFs, possibly leading to better results.

Another aim for future works could be also research for countermeasures that could focus in an action plan to help in the process of reducing the number of victims in the road and actually save lives.

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```
/* Generated Code (IMPORT) */
/* Source File: Exp_v50_INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.Exp_v50_INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/Exp_v50_INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.Exp_v50_INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_v50_INJFAT; RUN;
\% web_open_table(WORK.Exp_v50_INJFAT);
proc genmod data=work.Exp_v50_INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.1 – Boolean Curve: Exponential Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: Exp_V50_PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
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    OUT=WORK.Exp_V50_PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_V50_PDO; RUN;
\% web_open_table(WORK.Exp_V50_PDO);
proc genmod data=work.Exp_V50_PDO plots=all;
model PDO=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.2 – Boolean Curve: Exponential Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: Exp_V50_totAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
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FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/Exp_V50_totAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.Exp_V50_totAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_V50_totAcc; RUN;
\% web_open_table(WORK.Exp_V50_totAcc);
proc genmod data=work.Exp_V50_totAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.3 – Boolean Curve: Exponential Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
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    DBMS=XLSX
    OUT=WORK.Exp_v85_INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_v85_INJFAT; RUN;
\% web_open_table(WORK.Exp_v85_INJFAT);
proc genmod data=work.Exp_v85_INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.4 – Boolean Curve: Exponential Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
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    OUT=WORK.Exp_V85_PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_V85_PDO; RUN;
\% web_open_table(WORK.Exp_V85_PDO);
proc genmod data=work.Exp_V85_PDO plots=all;
model PDO=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.5 – Boolean Curve: Exponential Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
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\% web_drop_table(WORK.Exp_V85_PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/ExpV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85TotAcc; RUN;
\% web_open_table(WORK.ExpV85TotAcc);
proc genmod data=work.ExpV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.6 – Boolean Curve: Exponential Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50INJFAT; RUN;
\% web_open_table(WORK.PowerV50INJFAT);
proc genmod data=work.PowerV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.7 – Boolean Curve: Power Function Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50PDO; RUN;
\% web_open_table(WORK.PowerV50PDO);
proc genmod data=work.PowerV50PDO plots=all;
model PDO=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.8 – Boolean Curve: Power Function Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50TotAcc; RUN;
\% web_open_table(WORK.PowerV50TotAcc);
proc genmod data=work.PowerV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.9 – Boolean Curve: Power Function TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85INJFAT; RUN;
\% web_open_table(WORK.PowerV85INJFAT);
proc genmod data=work.PowerV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.10 – Boolean Curve: Power Function INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85PDO; RUN;
\% web_open_table(WORK.PowerV85PDO);
proc genmod data=work.PowerV85PDO plots=all;
model PDO=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.11 – Boolean Curve: Power Function Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/PowerV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85TotAcc; RUN;
\% web_open_table(WORK.PowerV85TotAcc);
proc genmod data=work.PowerV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.12 – Boolean Curve: Power Function Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50INJFAT; RUN;
\% web_open_table(WORK.GammaV50INJFAT);
proc genmod data=work.GammaV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.13 – Boolean Curve: Gamma Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50PDO; RUN;
\% web_open_table(WORK.GammaV50PDO);
proc genmod data=work.GammaV50PDO plots=all;
model PDO=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.14 – Boolean Curve: Gamma Model PDO with speed V50

```
* Generated Code (IMPORT) */
/* Source File: GammaV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50TotAcc; RUN;
\% web_open_table(WORK.GammaV50TotAcc);
proc genmod data=work.GammaV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.15 – Boolean Curve: Gamma Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85INJFAT; RUN;
\% web_open_table(WORK.GammaV85INJFAT);
proc genmod data=work.GammaV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV85 V85 /dist=negbin;
run;
```

Listing A.16 – Boolean Curve: Gamma Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85PDO; RUN;
\% web_open_table(WORK.GammaV85PDO);
proc genmod data=work.GammaV85PDO plots=all;
model PDO=LNAADT LNLENGTH LNV85 V85 /dist=negbin;
run;
```

Listing A.17 – Boolean Curve: Gamma Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/BOOLEAN */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/BOOLEAN/GammaV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85TotAcc; RUN;
\% web_open_table(WORK.GammaV85TotAcc);
proc genmod data=work.GammaV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV85 V85 /dist=negbin;
run;
```

Listing A.18 – Boolean Curve: Gamma Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/ExpV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50INJFAT; RUN;
\% web_open_table(WORK.ExpV50INJFAT);
proc genmod data=work.ExpV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.19 – Eq Paper: Exponential Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/ExpV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50PDO; RUN;
\% web_open_table(WORK.ExpV50PDO);
proc genmod data=work.ExpV50PDO plots=all;
model PDO=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.20 – Eq Paper: Exponential Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/EqPaper/ExpV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50TotAcc; RUN;
\% web_open_table(WORK.ExpV50TotAcc);
proc genmod data=work.ExpV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.21 – Eq Paper: Exponential Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/ExpV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85INJFAT; RUN;
\% web_open_table(WORK.ExpV85INJFAT);
proc genmod data=work.ExpV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.22 – Eq Paper: Exponential Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/ExpV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85PDO; RUN;
\% web_open_table(WORK.ExpV85PDO);
proc genmod data=work.ExpV85PDO plots=all;
model PDO=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.23 – Eq Paper: Exponential Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/ExpV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85TotAcc; RUN;
\% web_open_table(WORK.ExpV85TotAcc);
proc genmod data=work.ExpV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.24 – Eq Paper: Exponential Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/PowerV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50PDO; RUN;
\% web_open_table(WORK.PowerV50INJFAT);
proc genmod data=work.PowerV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.25 – Eq Paper: Power Function Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/EQPAPER/PowerV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50PDO; RUN;
\% web_open_table(WORK.PowerV50PDO);
proc genmod data=work.PowerV50PDO plots=all;
model PDO=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.26 – Eq Paper: Power Function Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/PowerV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50TotAcc; RUN;
\% web_open_table(WORK.PowerV50TotAcc);
proc genmod data=work.PowerV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.27 – Eq Paper: Power Function TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 2:52 AM */
\% web_drop_table(WORK.PowerV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/PowerV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85INJFAT; RUN;
\% web_open_table(WORK.PowerV85INJFAT);
proc genmod data=work.PowerV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.28 – Eq Paper: Power Function INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 2:52 AM */
\% web_drop_table(WORK.PowerV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/PowerV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85PDO; RUN;
\% web_open_table(WORK.PowerV85PDO);
proc genmod data=work.PowerV85PDO plots=all;
model PDO=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.29 – Eq Paper: Power Function Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 2:52 AM */
\% web_drop_table(WORK.PowerV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/PowerV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85TotAcc; RUN;
\% web_open_table(WORK.PowerV85TotAcc);
proc genmod data=work.PowerV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.30 – Eq Paper: Power Function Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 2:52 AM */
\% web_drop_table(WORK.GammaV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50INJFAT; RUN;
\% web_open_table(WORK.GammaV50INJFAT);
proc genmod data=work.GammaV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V50 LNV50 /dist=negbin;
run;
```

Listing A.31 – Eq Paper: Gamma Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 2:55 AM */
\% web_drop_table(WORK.GammaV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50PDO; RUN;
\% web_open_table(WORK.GammaV50PDO);
proc genmod data=work.GammaV50PDO plots=all;
model PDO=LNAADT LNLENGTH V50 LNV50 /dist=negbin;
run;
```

Listing A.32 – Eq Paper: Gamma Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 3:06 AM */
\% web_drop_table(WORK.GammaV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50TotAcc; RUN;
\% web_open_table(WORK.GammaV50TotAcc);
proc genmod data=work.GammaV50PDO plots=all;
model PDO=LNAADT LNLENGTH V50 LNV50 /dist=negbin;
run;
```

Listing A.33 – Eq Paper: Gamma Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 3:10 AM */
\% web_drop_table(WORK.GammaV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85INJFAT; RUN;
\% web_open_table(WORK.GammaV85INJFAT);
proc genmod data=work.GammaV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V85 LNV85 /dist=negbin;
run;
```

Listing A.34 – Eq Paper: Gamma Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 3:20 AM */
\% web_drop_table(WORK.GammaV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85PDO; RUN;
\% web_open_table(WORK.GammaV85PDO);
proc genmod data=work.GammaV85PDO plots=all;
model PDO=LNAADT LNLENGTH V85 LNV85 /dist=negbin;
run;
```

Listing A.35 – Eq Paper: Gamma Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 3:23 AM */
\% web_drop_table(WORK.GammaV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq0/EQPAPER/GammaV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85TotAcc; RUN;
\% web_open_table(WORK.GammaV85TotAcc);
proc genmod data=work.GammaV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V85 LNV85 /dist=negbin;
run;
```

Listing A.36 – Eq Paper: Gamma Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/ExpV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50PDO; RUN;
\% web_open_table(WORK.ExpV50PDO);
proc genmod data=work.ExpV50PDO plots=all;
model PDO=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.37 – MyEq: Exponential Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/ExpV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50PDO; RUN;
\% web_open_table(WORK.ExpV50PDO);
proc genmod data=work.ExpV50PDO plots=all;
model PDO=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.38 – MyEq: Exponential Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: ExpV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/EQPAPER */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/ExpV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV50TotAcc; RUN;
\% web_open_table(WORK.ExpV50TotAcc);
proc genmod data=work.ExpV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V50 /dist=negbin;
run;
```

Listing A.39 – MyEq: Exponential Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: Exp_V85_INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.Exp_V85_INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/Exp_V85_INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.Exp_V85_INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.Exp_V85_INJFAT; RUN;
\% web_open_table(WORK.Exp_V85_INJFAT);
proc genmod data=work.Exp_V85_INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.40 – MyEq: Exponential Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/ExpV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85PDO; RUN;
\% web_open_table(WORK.ExpV85PDO);
proc genmod data=work.ExpV85PDO plots=all;
model PDO=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.41 – MyEq: Exponential Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: ExpV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.ExpV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/ExpV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.ExpV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.ExpV85TotAcc; RUN;
\% web_open_table(WORK.ExpV85TotAcc);
proc genmod data=work.ExpV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH V85 /dist=negbin;
run;
```

Listing A.42 – MyEq: Exponential Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/PowerV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50INJFAT; RUN;
\% web_open_table(WORK.PowerV50INJFAT);
proc genmod data=work.PowerV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.43 – MyEq: Power Function Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/PowerV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50PDO; RUN;
\% web_open_table(WORK.PowerV50PDO);
proc genmod data=work.PowerV50PDO plots=all;
model PDO=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.44 – MyEq: Power Function Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/PowerV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV50TotAcc; RUN;
\% web_open_table(WORK.PowerV50TotAcc);
proc genmod data=work.PowerV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV50 /dist=negbin;
run;
```

Listing A.45 – MyEq: Power Function TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/PowerV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85INJFAT; RUN;
\% web_open_table(WORK.PowerV85INJFAT);
proc genmod data=work.PowerV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.46 – MyEq: Power Function INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/PowerV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85PDO; RUN;
\% web_open_table(WORK.PowerV85PDO);
proc genmod data=work.PowerV85PDO plots=all;
model PDO=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.47 – MyEq: Power Function Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: PowerV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.PowerV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/PowerV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.PowerV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.PowerV85TotAcc; RUN;
\% web_open_table(WORK.PowerV85TotAcc);
proc genmod data=work.PowerV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.48 – MyEq: Power Function Model TOTACC with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/GammaV50INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50INJFAT; RUN;
\% web_open_table(WORK.GammaV50INJFAT);
proc genmod data=work.GammaV50INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.49 – MyEq: Gamma Model INJ+FAT with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/GammaV50PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50PDO; RUN;
\% web_open_table(WORK.GammaV50PDO);
proc genmod data=work.GammaV50PDO plots=all;
model PDO=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.50 – MyEq: Gamma Model PDO with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV50TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV50TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MyEq/GammaV50TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV50TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV50TotAcc; RUN;
\% web_open_table(WORK.GammaV50TotAcc);
proc genmod data=work.GammaV50TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV50 V50 /dist=negbin;
run;
```

Listing A.51 – MyEq: Gamma Model TOTACC with speed V50

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85INJFAT.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85INJFAT);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/GammaV85INJFAT.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85INJFAT;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85INJFAT; RUN;
\% web_open_table(WORK.GammaV85INJFAT);
proc genmod data=work.GammaV85INJFAT plots=all;
model INJFAT=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.52 – MyEq: Gamma Model INJ+FAT with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85PDO.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85PDO);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/GammaV85PDO.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85PDO;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85PDO; RUN;
\% web_open_table(WORK.GammaV85PDO);
proc genmod data=work.GammaV85PDO plots=all;
model PDO=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.53 – MyEq: Gamma Model PDO with speed V85

```
/* Generated Code (IMPORT) */
/* Source File: GammaV85TotAcc.xlsx */
/* Source Path: /home/valdrianiluzvasq0/MYEQ */
/* Code generated on: 7/14/19, 1:14 PM */
\% web_drop_table(WORK.GammaV85TotAcc);
FILENAME REFFILE '/home/valdrianiluzvasq/MYEQ/GammaV85TotAcc.xlsx';
PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.GammaV85TotAcc;
    GETNAMES=YES;
RUN;
PROC CONTENTS DATA=WORK.GammaV85TotAcc; RUN;
\% web_open_table(WORK.GammaV85TotAcc);
proc genmod data=work.GammaV85TotAcc plots=all;
model TOT5YEARS=LNAADT LNLENGTH LNV85 /dist=negbin;
run;
```

Listing A.54 – MyEq: Gamma Model TOTACC with speed V85

Table A.1 – VIA GUIDO RENI

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
170	S-N	1	50	2	9	3	3	4.1	0	0	0	0	0	1	1	1.83	1	5.49	1	7.33	1	1	9.16	0	0	92
	N-S	1	50	2	9.9	3	3.3	4.1	0	0	0	0	0	0	0	0.00	1	1.83	1	7.33	1	1	9.16	0	0	92
171	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.57	1	4.71	1	7.85	1	1	10.99	1	0	90
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	1.83	1	7.85	1	1	10.99	1	0	90
172	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.32	1	3.96	1	6.59	1	1	9.23	1	0	153
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	0	0.00	1	1.32	1	6.59	1	1	9.23	1	0	153
173	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.03	1	3.10	1	7.22	1	1	10.32	1	0	268
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	0	0.00	1	2.06	1	7.22	1	1	10.32	1	0	268
174	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	2.00	1	2.00	1	5.00	1	1	10.00	1	0	205
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	3.00	1	5.00	1	1	10.00	1	0	205
175	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	3.00	1	4.00	1	5.00	1	1	9.00	1	0	149
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	1.00	1	5.00	1	1	9.00	1	0	149
176	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	4.00	1	2.00	1	6.00	1	1	11.00	1	0	163
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	4.00	1	6.00	1	1	11.00	1	0	163
177	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	4.00	1	2.00	1	5.00	1	1	10.00	1	0	183
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	5.00	1	5.00	1	1	10.00	1	0	183
178 & 179	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	5.00	1	2.00	1	5.12	1	1	9.22	1	0	162
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	1.00	1	4.10	1	5.12	1	1	9.22	1	0	162
180	S-N	1	50	2	9	3	3	7.1	0	0	0	0	0	0	1	4.30	1	2.87	1	8.60	1	1	8.60	1	0	395
	N-S	1	50	2	9	3	3	7.1	0	0	0	0	0	0	0	0.00	1	4.30	1	8.60	1	1	8.60	0	0	395

Table A.2 – VIA GUIDO RENI2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	2008	2009	2010	2011	2012	06-'12	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT
170	28131	13619	13205	15548	20774	18255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	17313	12048	12570	14400	18921	15050	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
172	17313	12048	12570	14400	18921	15050	0	0	0	0	0	0	1	3	1	2	0	7	0	0	0	0	0	0	1	3	1	2	0	7
173	17313	12048	12570	14400	18921	15050	0	0	1	0	0	1	0	1	1	0	0	2	0	0	0	0	0	0	0	1	2	0	0	3
174	14525	13550	14961	17466	21569	16414	0	1	0	2	0	3	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	2	0	4
175	14525	13550	14961	17466	21569	16414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	14525	13550	14961	17466	21569	16414	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
177	13921	12884	13629	16078	17954	14893	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2
178 & 179	13921	12884	13629	16078	17954	14893	0	1	2	1	0	4	1	1	0	0	0	2	0	0	0	0	0	0	1	2	2	1	0	6
180	43035	25297	25454	27950	29285	30204	3	3	3	5	0	14	6	2	5	6	3	22	0	0	0	0	0	0	9	5	8	11	3	36

Table A.3 – CORSO SVIZZERA

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
7092	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	0	0.00	0	0.00	1	11.77	1	1	15.14	1	0	189
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.68	0	0.00	1	8.41	1	1	15.14	1	0	189
8643	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	0	0.00	0	0.00	1	10.61	1	1	13.26	1	0	130
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.33	0	0.00	1	6.63	1	1	13.26	1	0	130
7789	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.18	0	0.00	1	10.60	1	1	11.78	1	0	60
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	2.36	0	0.00	0	7.07	1	1	11.78	1	0	60
8511	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.10	0	0.00	0	9.86	1	0	12.05	1	0	67
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	2.19	1	1.10	0	6.58	1	0	12.05	1	0	67
7046	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.02	1	1.02	1	10.24	1	1	11.26	1	0	92
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	2.04	1	1.02	1	7.15	1	1	11.23	1	0	92
8839	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	1.00	1	9.00	1	1	12.00	1	0	92
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	1.00	1	6.00	1	1	12.00	1	0	92
8838	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	3.00	1	10.00	1	1	12.00	1	0	71
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	1.00	1	6.00	1	1	12.00	1	0	71
8642	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	3.00	1	10.00	1	1	11.00	1	0	165
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	2.00	1	6.00	1	1	11.00	1	0	
7736	S-N	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	1.00	1	3.00	1	9.00	1	1	10.00	1	0	163
	N-S	1	50	2	6.0	2	3.00	7	0	0	0	0	0.00	0	1	2.00	1	3.00	1	5.00	1	1	10.00	1	0	
8094	S-N	1	50	2	7.5	2	3.75	2	0	0	0	0	0.01	0	1	1.00	1	3.00	1	7.00	1	1	9.00	1	0	131
	N-S	1	50	2	9.0	2	4.50	2	0	0	0	0	0.01	0	1	2.00	1	5.00	1	4.00	1	1	9.00	1	0	
7999&	S-N	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	1.00	1	3.00	1	3.00	1	1	7.00	1	0	165
8092	N-S	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	2.00	1	5.00	1	4.00	1	1	7.00	1	0	165
8890	S-N	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	0.00	1	4.00	0	3.00	1	1	7.00	1	0	127
	N-S	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	1.00	1	5.00	1	4.00	1	1	7.00	1	0	127
375	S-N	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	1.02	1	3.05	1	4.07	1	0	5.08	1	0	374
	N-S	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	1.02	1	3.05	0	3.05	1	0	5.08	1	0	374
376	S-N	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	1	1.54	0	1.54	0	1.54	1	1	4.63	1	0	297
	N-S	1	50	2	7.5	2	3.75	9	0	0	0	0	0.00	0	0	0.00	0	1.54	0	3.08	1	1	4.63	1	0	297

Table A.4 – CORSO SVIZZERA2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	2008	2009	2010	2011	2012	06-’12	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT
7092	12577	13790	14658	12848	8983	12571	0	0	1	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	1	0	3
8643	12577	13790	14658	12848	8983	12571	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
7789	9831	9656	9765	9222	5169	8729	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
8511	9831	9656	9765	9222	5169	8729	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
7046	9831	9656	9765	9222	5169	8729	2	0	0	0	2	4	1	1	0	0	0	2	0	0	0	0	0	0	3	1	0	0	2	6
8839	9831	9656	9765	8801	5169	8644	1	1	0	2	1	5	0	0	1	0	0	1	0	0	0	0	0	0	1	1	1	2	1	6
8838	9831	9656	9765	8801	5169	8644	0	0	0	0	2	2	0	0	1	2	1	4	0	0	0	0	0	0	0	0	1	2	3	6
8642	9831	9656	9765	8801	5169	8644	0	1	0	0	1	2	1	0	0	1	0	2	0	0	0	0	0	0	1	1	0	1	1	4
7736	4558	13045	14018	12753	7420	10359	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2
8094	7663	10926	10984	8892	5324	8758	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7999 & 8092	7663	10926	10984	8892	5324	8758	0	0	0	0	0	0	3	0	0	2	0	5	0	0	0	0	0	0	4	0	0	2	0	6
8890	5966	10897	10867	8747	3895	8074	0	0	0	1	0	1	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	1	0	3
375	29232	24816	30660	37279	38186	32035	1	3	2	0	1	7	2	1	0	0	0	3	0	0	0	0	0	0	3	4	2	0	1	10
376	26494	23508	25263	28953	23677	25579	3	1	1	0	0	5	3	0	0	0	2	5	0	0	0	0	0	0	6	1	1	0	2	10

Table A.5 – CORSO RACCONIGI

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
7493	S-N	1	50	2	7.5	2	3.75	9	0	0	0	0	0	0	1	1.68	1	3.36	1	6.73	1	1	8.41	1	0	239
	N-S	1	50	2	7.5	2	3.75	9	0	0	0	0	0	0	1	1.68	1	1.68	1	6.73	1	1	8.41	1	0	239
8777 &	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.33	1	2.65	1	6.63	1	1	7.96	1	0	147
8249	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.33	1	1.33	1	7.96	1	1	7.96	1	0	147
7868	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.13	1	2.27	1	6.80	1	1	6.80	1	0	100
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.13	1	1.13	1	6.80	1	1	6.80	1	0	100
7869	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.05	1	1.05	1	6.32	1	1	7.37	1	0	145
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.05	1	1.05	1	6.32	1	1	7.37	1	0	145
6699	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	7.00	1	1	5.00	1	0	127
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.00	1	1.00	1	8.00	1	1	5.00	1	0	127
8909	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	6.00	1	0	87
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	1	1.00	1	1.00	1	8.00	1	1	6.00	1	0	87
8908	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	6.00	1	0	139
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	6.00	1	0	139
8172	S-N	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	6.00	1	0	83
	N-S	1	50	2	8.0	2	4.00	9	0	0	0	0	0	0	0	0.00	1	1.00	1	7.00	1	1	6.00	1	0	83
8577	S-N	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	7.00	1	0	82
	N-S	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	9.00	1	1	7.00	1	0	82
6833	S-N	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	8.00	1	0	68
	N-S	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	8.00	1	0	68
8576	S-N	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	9.00	1	1	8.00	1	0	62
	N-S	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	7.00	1	1	8.00	1	0	62
7141	S-N	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	9.00	1	1	9.00	1	0	127
	N-S	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	3.00	1	7.00	1	1	8.00	1	0	127
7377	S-N	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	9.00	1	1	9.00	1	0	59
	N-S	1	50	2	9.0	2	4.50	9	0	0	0	0	0	0	0	0.00	1	3.00	1	8.00	1	1	8.00	1	0	59
8128	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	1.00	1	8.00	1	1	9.00	1	0	156
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	4.00	1	8.00	1	1	8.00	1	0	156
8253 &	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	7.00	1	1	8.00	1	0	146
8130	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	5.00	1	6.00	1	1	8.00	1	0	146
8406	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	7.00	1	1	8.00	1	0	147
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	5.00	1	5.00	1	1	8.00	1	0	147
7408	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	7.00	1	1	8.00	1	0	194
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	5.00	1	6.00	1	1	8.00	1	0	194
8129	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	6.00	1	1	6.00	1	0	145
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	5.00	1	6.00	1	1	6.00	1	0	145
8131	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	6.00	1	1	5.00	1	0	111
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	3.00	1	5.00	1	1	5.00	1	0	111
8671	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	5.33	1	1	5.33	1	0	116
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.13	1	4.27	1	1	5.33	1	0	116
8247	S-N	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	7.28	1	1	7.28	1	0	211
	N-S	1	50	2	3.5	1	3.50	9	0	0	0	0	0	0	0	0.00	1	2.00	1	5.82	1	1	7.28	1	0	211

Table A.6 – CORSO RACCONIGI2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
7493	10477	14832	16722	16452	17452	15187	0	0	0	1	0	1	2	2	0	1	1	6	0	0	0	0	0	0	2	2	0	2	1	7
8777 & 8249	13448	14272	16088	14660	12656	14225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7868	13448	14272	16088	14660	12656	14225	0	0	0	0	0	0	0	1	1	1	4	7	0	0	0	0	0	0	0	1	1	1	4	7
7869	13448	14272	16088	14660	12656	14225	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	2
6699	13448	14272	16088	14660	12656	14225	1	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	3
8909	13448	14272	16088	14660	12656	14225	0	0	1	0	0	1	0	2	2	0	0	4	0	0	0	0	0	0	0	2	3	0	0	5
8908	13448	14272	16088	14660	12656	14225	0	1	0	0	1	2	0	0	0	3	0	3	0	0	0	0	0	0	0	1	0	3	1	5
8172	23933	10360	11500	11743	15596	14626	2	0	0	0	1	3	0	0	0	2	0	2	0	0	0	0	0	0	2	0	0	2	1	5
8577	23933	10360	11500	11743	15596	14626	0	2	1	0	0	3	1	0	2	0	1	4	0	0	0	0	0	0	1	2	3	0	1	7
6833	23933	10360	11500	11743	15596	14626	0	0	1	0	0	1	1	1	2	0	0	4	0	0	0	0	0	0	1	1	3	0	0	5
8576	23933	10360	11500	11743	15596	14626	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2
7141	13468	9931	11540	15003	14914	12971	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7377	13468	9931	11540	15003	14914	12971	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8128	10832	9098	11886	13238	14665	11944	1	0	0	0	1	2	1	1	2	1	1	6	0	0	0	0	0	0	2	1	2	1	2	8
8253 & 8130	5827	5358	12070	12055	10552	9172	2	0	2	2	0	6	0	2	0	0	0	2	0	0	0	0	0	0	2	2	2	2	0	8
8406	5827	5358	12070	12055	10552	9172	1	0	1	1	0	3	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0	4
7408	5827	5358	12070	12055	10552	9172	1	0	0	0	3	4	2	1	1	2	2	8	0	0	0	1	0	1	3	1	1	3	5	13
8129	7206	5899	6131	6893	6202	6466	1	0	0	1	0	2	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	1	0	3
8131	7206	5899	6131	6893	6202	6466	0	0	0	2	1	3	1	1	0	0	0	2	0	0	0	0	0	0	1	1	0	2	1	5
8671	7206	5899	6130	6893	6202	6466	1	2	1	1	3	8	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	3	8
8247	14352	13880	13062	11897	10183	12675	0	0	0	0	1	1	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1	1	3

Table A.7 – VIA REISS REMOLI

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
362	W-E	1	50	2	6.5	2	3.75	2.1	1	1.8	0	0	0.002	0	0	0	1	3.35	1	3.35	1	1	3	1	0	195
	E-W	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.002	0	0	0	1	3.35	1	5.02	1	1	3	1	0	195
363	W-E	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.000	0	0	0	1	4.00	1	2.00	1	1	5	1	0	242
	E-W	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.000	0	0	0	1	2.00	1	3.00	1	1	5	1	0	242
364	W-E	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.002	0	0	0	1	2.00	1	2.00	1	1	6	1	0	234
	E-W	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.002	0	0	0	1	3.00	1	2.00	1	1	6	1	0	234
365	W-E	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.000	0	0	0	1	4.00	1	2.00	1	1	6	1	0	403
	E-W	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.000	0	0	0	1	1.00	1	2.00	1	1	6	1	0	403
366	W-E	1	50	2	6.5	2	3.25	2.1	1	1.8	0	0	0.000	0	0	0	1	2.00	1	3.00	1	1	5	1	0	184
	E-W	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	1.00	1	2.00	1	1	5	1	0	184
367	W-E	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	3.00	1	3.00	1	1	4	1	0	431
	E-W	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	2.00	1	1.00	1	1	4	1	0	431
368	W-E	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	5.00	1	2.00	1	1	4	1	0	395
	E-W	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	3.00	1	1.00	1	1	4	1	0	395
369	W-E	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	1	1	1	6.00	1	3.00	1	1	4	1	0	488
	E-W	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	2.00	1	1.00	1	1	4	1	0	488
370	W-E	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	1	1	1	3.00	1	2.00	1	1	3	1	0	84
	E-W	1	50	2	6.5	2	3.25	2.1	0	0.0	0	0	0.000	0	0	0	1	1.00	1	1.00	1	1	3	1	0	84

Table A.8 – VIA REISS REMOLI2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
362	16859	13909	12849	13678	11479	13755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
363	9730	6943	6189	8295	5022	7236	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	2
364	9730	6943	6189	8295	5022	7236	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
365	9730	6943	6189	8295	5022	7236	0	0	0	0	0	0	1	2	1	1	3	8	0	0	0	0	0	0	1	2	1	1	3	8
366	25290	14052	13490	14997	8804	15327	0	0	0	0	0	0	2	2	2	2	1	9	0	0	0	0	0	0	2	2	2	2	1	9
367	20247	15033	14243	15847	9527	14979	2	1	0	1	1	5	0	2	2	0	1	5	0	0	0	0	0	0	2	3	2	1	2	10
368	30437	17127	20283	23835	16857	21708	1	1	1	1	1	5	2	1	5	0	0	8	0	1	0	0	0	1	3	3	6	1	1	14
369	30437	17127	24763	25693	22178	24040	2	2	1	3	1	9	5	8	1	1	3	18	0	0	0	0	0	0	7	10	2	4	4	27
370	30437	17127	24763	25693	22178	24040	0	0	1	0	0	1	1	0	0	1	2	4	0	0	0	0	0	0	1	0	1	1	2	5

Table A.9 – CORSO SEBASTOPOLLI

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
187	W-E	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	1.65	1	4.94	1	4.94	1	1	6.58	1	0	215
	E-W	1	70	2	7.0	2	3.50	4.0	0	0	0	0.0	0	1	1	1.65	1	6.58	1	4.94	1	1	6.58	1	0	215
188	W-E	1	70	2	8.2	2	4.10	4.0	0	0	0	0.0	0	0	1	1.22	1	3.65	1	6.09	1	1	7.30	1	0	213
	E-W	1	70	2	7.4	2	3.70	4.0	0	0	0	0.0	0	1	1	1.22	1	4.87	1	6.09	1	1	7.30	1	0	213
6846	W-E	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	3.00	1	5.00	1	1	7.00	1	0	227
	E-W	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	4.00	1	6.00	1	1	7.00	1	0	227
8763	W-E	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	1.00	1	3.00	1	5.00	1	1	8.00	1	0	104
	E-W	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	4.00	1	7.00	1	1	8.00	1	0	104
8285	W-E	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	2.00	1	2.00	1	5.00	1	1	8.00	1	0	108
	E-W	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	1.00	1	2.00	1	8.00	1	1	8.00	1	0	108
6949	W-E	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	1.00	1	1.00	1	6.00	1	1	10.00	1	0	119
	E-W	1	70	2	8.4	2	4.20	4.0	0	0	0	0.0	0	0	1	2.00	1	1.00	1	9.00	1	1	10.00	1	0	119
8770	W-E	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	1.00	1	7.00	1	1	9.00	1	0	89
	E-W	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	2.00	1	8.00	1	1	9.00	1	0	89
8912	W-E	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	1.00	1	8.00	1	1	9.00	1	0	83
	E-W	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	2.00	1	8.00	1	1	9.00	1	0	83
8913	W-E	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	1.00	1	8.00	1	1	8.00	1	0	75
	E-W	1	70	2	7.0	2	3.50	4.0	0	0	0	0.0	0	0	1	1.00	1	3.00	1	8.00	1	1	8.00	1	0	75
7728	W-E	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	1.00	1	8.00	1	1	9.00	1	0	60
	E-W	1	70	2	8.0	2	4.00	4.0	0	0	0	0.0	0	0	1	1.00	1	3.00	1	8.00	1	1	9.00	1	0	60
7494	W-E	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	1.00	1	8.00	1	1	8.00	1	0	113
	E-W	1	70	2	7.0	2	3.50	4.0	0	0	1	2.5	0	0	1	1.00	1	3.00	1	8.00	1	1	8.00	1	0	113
8593	W-E	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	1.00	1	8.00	1	1	8.00	1	0	84
	E-W	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	3.00	1	7.00	1	1	8.00	1	0	84
7262	W-E	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	1.00	1	7.00	1	1	6.00	1	0	71
	E-W	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	3.00	1	6.00	1	1	6.00	1	0	71
7495	W-E	1	70	2	7.0	2	3.50	4.0	0	0	1	2.5	0	0	1	1.00	1	1.00	1	7.00	1	1	6.00	1	0	72
	E-W	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	3.00	1	5.00	1	1	6.00	1	0	72
7820	W-E	1	70	2	7.0	2	3.50	4.0	0	0	1	2.5	0	0	1	1.00	1	1.00	1	6.00	1	1	5.00	1	0	102
	E-W	1	70	2	5.0	1	5.00	4.0	0	0	1	2.5	0	0	1	1.00	1	3.00	1	4.00	1	1	5.00	1	0	102
4872	W-E	1	70	2	7.0	1	7.00	4.0	0	0	1	2.5	0	0	0	0.00	0	0.00	1	4.00	1	1	6.00	1	0	133
	E-W	1	70	2	7.0	1	7.00	4.0	0	0	1	2.5	0	0	0	0.00	0	0.00	1	3.00	1	1	6.00	1	0	133
4359	W-E	1	70	2	4.0	1	4.00	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	4.22	1	1	6.33	1	0	165
	E-W	1	70	2	4.0	1	4.00	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	3.16	1	1	6.33	1	0	165
1313	W-E	1	70	2	3.8	1	3.75	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	4.89	1	1	7.33	1	0	95
	E-W	1	70	2	7.5	2	3.75	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	3.67	1	1	7.33	1	0	95
507	W-E	1	70	2	4.5	1	4.50	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	5.76	1	1	8.64	1	0	153
	E-W	1	70	2	4.5	1	4.50	0.5	0	0	0	0.0	0	0	0	0.00	0	0.00	1	4.32	1	1	8.64	1	0	153
3739	W-E	1	70	2	9.0	2	4.50	9.0	0	0	0	0.0	0	0	0	0.00	0	0.00	1	7.16	1	1	10.73	1	0	118
	E-W	1	70	2	6.0	1	6.00	9.0	0	0	0	0.0	0	0	0	0.00	0	0.00	1	5.37	1	1	10.73	1	0	118

Table A.10 – CORSO SEBASTOPOLLI2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
187	28081	26825	26293	25787	21646	25726	0	3	1	0	0	4	1	0	0	0	2	3	0	0	0	0	0	0	1	3	1	0	2	7
188	28081	26825	26293	25787	21646	25726	0	0	0	0	0	0	1	1	3	0	1	6	0	0	0	0	0	0	1	1	3	0	1	6
6846	21248	16941	20848	18703	14584	18465	2	2	1	2	2	9	1	1	2	2	2	8	0	0	0	0	0	0	3	3	3	4	4	17
8763	21248	16941	20848	18703	14584	18465	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
8285	21248	16941	20848	18703	14584	18465	2	0	0	0	2	4	0	0	1	1	2	4	0	0	0	0	0	0	2	0	1	1	4	8
6949	21248	16941	20848	18703	14584	18465	1	2	1	0	0	4	0	0	1	1	1	3	0	0	0	0	0	0	1	2	2	1	1	7
8770	16500	12251	13752	13727	14547	14155	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8912	16500	12251	13752	13727	14547	14155	0	0	1	0	1	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	3
8913	16500	12251	13752	13727	14547	14155	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
7728	16500	12251	13752	13727	14547	14155	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
7494	12683	9900	10602	10869	11808	11172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8593	12595	10514	10445	10583	11265	11080	0	0	0	1	1	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	1	3
7262	12595	10514	10445	10583	11265	11080	1	0	0	0	0	1	0	0	0	1	1	2	0	0	0	0	0	0	1	0	0	1	1	3
7495	12595	10514	10445	10583	11265	11080	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
7820	12595	10514	10445	10583	11265	11080	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4872	8429	5777	5342	4621	5210	5876	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4359	4528	4385	4371	4640	4947	4574	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
1313	4528	4385	4371	4640	4947	4574	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
507	6181	4557	4412	4665	4930	4949	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	2
3739	3529	3313	2991	3068	4983	3577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A.11 – CORSO MONCALLIERI

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
702	S-N	1	70	1	5.0	1	5.0	0	0	0	0	0	0.000	0	0	0	1	8.61	1	1.72	1	1	6.89	0	0	161
	N-S	1	70	1	3.0	1	3.0	0	0	0	0	0	0.000	0	0	0	1	10.34	1	1.72	1	1	6.89	1	0	161
209	S-N	1	70	1	6.5	1	6.5	0	0	0	0	0	0.004	0	0	0	1	4.00	1	0.00	1	1	2.00	1	0	1663
	N-S	1	70	1	6.5	1	6.5	0	0	0	0	0	0.004	0	1	1	1	6.00	1	0.00	1	1	2.00	1	0	1663
210	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	3.00	1	3.00	1	1	6.00	1	0	130
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	5.00	1	3.00	1	1	6.00	1	0	130
211	S-N	1	70	1	4.8	1	4.8	0	0	0	0	0	0.000	0	0	0	1	1.00	1	4.00	1	1	7.00	1	0	307
	N-S	1	70	1	4.8	1	4.8	0	0	0	0	0	0.000	0	0	0	1	5.00	1	4.00	1	1	7.00	1	0	307
212	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	3.00	1	6.00	1	1	7.00	1	0	249
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	2.00	1	6.00	1	1	7.00	1	0	249
213	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.002	0	0	0	1	2.00	1	6.00	1	1	6.00	1	0	131
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.002	0	0	0	1	3.00	1	6.00	1	1	6.00	1	0	131
214	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	2.00	1	6.00	1	1	7.00	1	0	74
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	6.00	1	1	7.00	1	0	74
215	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	6.00	1	1	7.00	1	0	101
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	6.00	1	1	7.00	1	0	101
480	S-N	1	70	1	4.5	1	4.5	0	1	1	0	0	0.000	0	0	0	1	1.00	1	7.00	1	1	7.00	1	0	50
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	7.00	1	1	7.00	1	0	50
481	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	2.00	1	1	6.00	1	0	133
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	6.00	1	1	6.00	1	0	133
216	S-N	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	4.00	1	1	5.00	1	0	87
	N-S	1	70	1	4.5	1	4.5	0	0	0	0	0	0.000	0	0	0	1	1.00	1	5.00	1	1	5.00	1	0	87
217	S-N	1	70	1	6.0	1	6.0	0	0	0	0	0	0.000	0	0	0	1	1.00	1	2.00	1	1	5.00	1	0	43
	N-S	1	70	1	6.0	1	6.0	0	0	0	0	0	0.000	0	0	0	1	1.00	1	3.00	1	1	5.00	1	0	43
218	S-N	1	70	1	6.4	2	3.2	0	0	0	0	0	0.002	0	0	0	1	2.00	1	3.00	1	1	4.00	0	0	858
	N-S	1	70	1	6.4	2	3.2	0	0	0	0	0	0.002	0	0	0	0	0.00	1	1.00	1	1	4.00	0	0	858
219	S-N	1	70	1	7.0	2	3.5	0	0	0	0	0	0.002	0	0	0	1	2.00	1	4.00	1	1	4.00	0	0	93
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.002	0	0	0	0	0.00	1	1.00	1	1	4.00	0	0	93
220	S-N	1	70	1	6.0	2	3.0	0	0	0	0	0	0.001	0	0	0	1	4.00	1	5.00	1	1	5.00	1	0	195
	N-S	1	70	1	7.4	2	3.7	0	0	0	0	0	0.001	0	0	0	0	0.00	1	2.00	1	1	5.00	0	0	195
221	S-N	1	70	1	6.2	2	3.1	0	0	0	0	0	0.000	0	0	0	1	3.00	1	6.00	1	1	5.00	1	0	102
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.000	0	0	0	0	0.00	1	2.00	1	1	5.00	0	0	102
222 &	S-N	1	70	1	6.2	2	3.1	0	0	0	0	0	0.001	0	0	0	1	3.00	1	6.00	1	1	5.00	1	0	292
223	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.001	0	0	0	0	0.00	1	1.00	1	1	5.00	0	0	292
331	S-N	1	70	1	6.0	2	3.0	0	0	0	0	0	0.000	0	0	0	1	2.00	1	5.00	1	1	4.00	1	0	100
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.000	0	0	0	0	0.00	1	2.00	1	1	4.00	0	0	100
332	S-N	1	70	1	6.0	2	3.0	0	0	0	0	0	0.000	0	0	0	1	2.00	1	5.00	1	1	4.00	0	0	114
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.000	0	0	0	0	0.00	1	2.00	1	1	4.00	0	0	114
333	S-N	1	70	1	7.0	2	3.5	0	0	0	0	0	0.001	0	0	0	1	1.20	1	6.00	1	1	4.80	0	0	357
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.001	0	0	0	0	0.00	1	2.40	1	1	4.80	0	0	357
334	S-N	1	70	1	6.6	2	3.3	0	0	0	0	0	0.000	0	0	0	0	0.00	1	5.19	1	1	3.46	1	0	115
	N-S	1	70	1	7.0	2	3.5	0	0	0	0	0	0.000	0	0	0	0	0.00	0	12.90	1	1	3.46	0	0	115

Table A.12 – CORSO MONCALLIERI2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
702	22552	11746	13494	13255	12797	14769	0	0	0	2	0	2	0	1	0	2	0	3	0	0	0	0	0	0	0	1	0	4	0	5
209	22552	11746	13494	13255	12797	14769	4	4	1	5	1	15	7	5	3	4	7	26	0	0	0	0	1	1	11	9	4	9	9	42
210	22666	12058	13358	13179	12597	14772	0	0	0	0	0	0	1	0	1	0	1	3	0	0	0	0	0	0	1	0	1	0	1	3
211	22666	12058	13358	13179	12597	14772	0	2	1	0	0	3	1	1	5	1	2	10	0	0	0	0	0	0	1	3	6	1	2	13
212	33450	26624	29734	29286	28413	29501	0	3	0	1	2	6	1	2	2	1	0	6	0	0	0	0	0	0	1	5	2	2	2	12
213	16704	15808	19062	18423	16313	17262	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
214	16704	15808	19062	18423	16313	17262	0	0	0	0	1	1	0	2	1	0	0	3	0	0	0	0	0	0	0	2	1	0	1	4
215	16704	15808	19062	18423	16313	17262	1	0	1	0	0	2	1	2	3	0	0	6	0	0	0	0	0	0	2	2	4	0	0	8
480	19084	13947	16176	15773	14255	15847	3	0	0	0	0	3	1	0	1	1	1	4	0	0	0	0	0	0	4	0	1	1	1	7
481	16704	15808	19062	18423	16313	17262	2	1	0	0	0	3	0	1	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	4
216	31709	22585	25148	24633	22238	25263	0	1	1	0	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	3
217	50996	41339	46619	44834	39828	44723	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218	50996	41339	46619	44834	39828	44723	5	5	4	3	4	21	7	5	5	11	7	35	0	0	0	0	0	0	12	10	9	14	11	56
219	29954	31750	36131	35042	32078	32991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
220	29954	31750	36131	35042	32078	32991	0	1	0	3	2	6	3	2	1	3	2	11	0	0	0	0	0	0	3	3	1	6	4	17
221	29954	31750	36131	35042	32078	32991	1	0	0	1	0	2	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	2	0	3
222 & 223	29954	31750	36131	35042	32078	32991	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2
331	29954	31750	36131	35042	32078	32991	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
332	42417	37107	39245	38928	37349	39009	0	0	0	1	4	5	2	1	1	1	0	5	0	0	0	0	0	0	2	1	1	2	4	10
333	42417	37107	39245	38928	37349	39009	0	0	0	0	0	0	2	0	0	3	0	5	0	0	0	0	0	0	2	0	0	3	0	5
334	42417	37107	39245	38928	37349	39009	1	0	0	1	0	2	2	2	0	2	5	11	0	0	0	0	0	0	3	2	0	3	5	13

Table A.13 – CORSO CASALE

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
335	S-N	1	70	2	7.00	2	3.50	2.0	0	0	0	0	0.002	0	1	1.76	1	1.76	1	3.53	0	1	3.53	0	0	134
	N-S	1	70	2	6.00	2	3.00	2.0	0	0	0	0	0.002	1	0	0.00	0	0.00	1	1.76	0	1	3.53	0	0	134
336	S-N	1	70	2	6.00	2	3.00	1.0	0	0	0	0	0.000	0	1	0.72	1	0.72	1	5.54	0	1	5.54	0	0	176
	N-S	1	70	2	9.00	3	3.00	1.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	2.77	0	1	5.54	0	0	176
337	S-N	1	70	2	6.00	2	3.00	1.0	0	0	0	0	0.002	0	1	0.97	1	0.97	1	6.16	0	1	5.14	0	0	327
	N-S	1	70	2	9.00	3	3.00	1.0	0	0	0	0	0.002	0	0	0.00	0	0.00	1	3.08	0	1	5.14	0	0	327
338	S-N	1	70	2	6.00	2	3.00	1.0	0	0	0	0	0.000	0	1	1.00	0	0.00	1	6.00	0	1	6.00	0	0	70
	N-S	1	70	2	9.00	3	3.00	1.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	4.00	0	1	6.00	0	0	70
339	S-N	1	70	2	6.00	2	3.00	1.0	0	0	0	0	0.001	0	1	1.00	0	0.00	1	6.00	0	1	6.00	0	0	155
	N-S	1	70	2	9.00	3	3.00	1.0	0	0	0	0	0.001	0	0	0.00	0	0.00	1	4.00	0	1	6.00	0	0	155
340	S-N	1	70	2	9.00	3	3.00	1.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	0	1	6.00	0	0	130
	N-S	1	70	2	6.00	2	3.00	1.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	5.00	0	1	6.00	0	0	130
7739	S-N	1	70	1	7.00	2	3.50	0.0	0	0	0	0	0.002	0	0	0.00	0	0.00	1	8.00	1	1	8.00	1	0	156
	N-S	1	70	1	6.00	2	3.00	0.0	0	0	0	0	0.002	0	0	0.00	0	0.00	1	6.00	1	1	8.00	1	0	156
6912	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	7.00	1	0	217
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	7.00	1	0	217
8027	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	6.00	1	1	8.00	1	0	75
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	6.00	1	1	8.00	1	0	75
7157	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	9.00	1	0	66
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	9.00	1	0	66
7641	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	7.00	1	0	158
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	7.00	1	0	158
8226	S-N	1	70	1	3.50	1	3.50	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	8.00	1	1	8.00	1	0	250
	N-S	1	70	1	6.00	1	6.00	0.0	0	0	0	0	0.000	0	0	0.00	0	0.00	1	7.00	1	1	8.00	0	0	250
7052	S-N	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	1	1.00	0	0.00	1	7.00	1	1	9.00	0	0	81
	N-S	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	0	0.00	1	2.00	1	6.00	1	1	9.00	0	0	81
8362	S-N	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	1	1.00	1	1.00	1	6.00	1	1	8.00	0	0	103
	N-S	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	0	0.00	1	2.00	1	5.00	1	1	8.00	0	0	103
6987	S-N	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	1	1.00	1	1.00	1	6.00	1	1	8.00	0	0	71
	N-S	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.000	0	0	0.00	1	3.00	1	5.00	1	1	8.00	0	0	71
8522 &	S-N	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.005	0	1	3.00	1	2.00	1	7.00	1	1	11.00	1	0	315
8328	N-S	1	70	1	5.00	1	5.00	0.0	0	0	0	0	0.005	0	0	0.00	1	4.00	1	6.00	1	1	11.00	1	0	315
7580	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	1	4.00	1	3.00	1	5.00	1	1	8.00	0	0	134
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	1	4.00	1	4.00	1	1	8.00	0	0	134
8395	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	1	3.00	1	4.00	1	3.00	1	1	7.00	0	0	420
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.000	0	0	0.00	1	5.00	1	3.00	1	1	7.00	0	0	420
8478 & 8521	S-N	1	70	1	5.75	1	5.75	0.0	0	0	0	0	0.001	0	1	2.00	1	5.00	1	3.00	1	1	7.00	0	0	328
& 8228	N-S	1	70	1	5.00	1	5.00	0.0	0	0	0	0	0.001	0	1	3.00	1	8.00	1	3.00	1	1	7.00	0	0	328
8468 & 8198	S-N	1	70	1	6.00	2	3.00	0.0	0	0	0	0	0.000	0	1	1.00	1	7.00	1	3.00	1	1	7.00	0	0	251
& 7403	N-S	1	70	1	6.00	2	3.00	0.0	0	0	0	0	0.000	0	1	2.00	1	8.00	1	3.00	1	1	7.00	0	0	251
7306	S-N	1	70	2	6.00	2	3.00	1.6	0	0	0	0	0.001	0	1	3.00	1	4.00	1	4.00	1	1	5.00	0	0	275
	N-S	1	70	2	6.00	2	3.00	1.6	0	0	0	0	0.001	0	1	2.00	1	7.00	1	4.00	0	1	5.00	0	0	275
415	S-N	1	70	2	7.00	2	3.50	3.0	0	0	0	0	0.001	0	1	1.00	1	5.00	1	5.00	1	1	4.00	1	0	257
	N-S	1	70	2	8.50	2	4.25	3.0	0	0	0	0	0.001	0	1	2.00	1	5.00	1	5.00	0	1	4.00	0	0	257
416	S-N	1	70	1	6.00	2	3.00	0.0	0	0	0	0	0.000	0	0	0.00	1	7.00	1	5.00	1	1	6.00	0	0	153
	N-S	1	70	1	6.00	2	3.00	0.0	0	0	0	0	0.000	0	1	1.00	1	4.00	1	5.00	1	1	6.00	0	0	153
417	S-N	1	70	1	4.25	1	4.25	0.0	0	0	0	0	0.000	0	0	0.00	1	9.00	1	5.00	1	1	7.00	0	0	141
	N-S	1	70	1	4.50	1	4.50	0.0	0	0	0	0	0.000	0	1	1.00	1	7.00	1	5.00	1	1	7.00	0	0	141
418	S-N	1	70	1	4.50	1	4.50	0.0	0	0	0	0	0.000	0	0	0.00	1	12.00	1	4.00	1	1	7.00	0	0	169
	N-S	1	70	1	4.50	1	4.50	0.0	0	0	0	0	0.000	0	1	1.00	1	9.00	1	4.00	1	1	7.00	0	0	169
419	S-N	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.001	0	0	0.00	1	8.77	1	1.10	1	1	5.48	0	0	825
	N-S	1	70	1	4.00	1	4.00	0.0	0	0	0	0	0.001	0	0	0.00	1	6.58	1	1.10	1	1	5.48	0	0	825

Table A.14 – CORSO CASALE2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
335	47694	35661	36523	33465	29097	36488	0	2	1	1	2	6	0	1	1	1	0	3	0	0	0	1	0	1	0	3	2	3	2	10
336	47694	35661	36523	33465	29097	36488	1	2	0	0	0	3	1	0	2	2	0	5	0	0	0	0	0	0	2	2	2	2	0	8
337	47694	35661	36523	33465	29097	36488	3	0	0	3	0	6	0	1	0	4	0	5	0	0	0	0	0	0	3	1	0	7	0	11
338	47694	35661	36523	33465	29097	36488	0	0	0	1	0	1	1	1	0	0	0	2	0	0	0	0	0	0	1	1	0	1	0	3
339	47694	35661	36523	33465	29097	36488	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	2
340	46255	36976	36399	32664	28135	36086	1	0	0	2	1	4	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	2	1	5
7739	26848	25599	26325	23826	18403	24200	0	1	1	0	0	2	3	2	3	1	2	11	1	0	0	0	0	1	4	3	4	1	2	14
6912	26848	25599	26325	23826	18403	24200	1	1	2	0	1	5	1	0	0	2	1	4	0	0	0	0	0	0	2	1	2	2	2	9
8027	26848	25599	26325	23826	18403	24200	0	0	0	0	1	1	2	0	1	1	0	4	0	0	0	0	0	0	2	0	1	1	1	5
7157	26848	25599	26325	23826	18403	24200	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	1	2	0	3
7641	26848	25599	26325	23826	18403	24200	2	0	3	1	0	6	1	0	1	1	0	3	0	0	0	0	0	0	3	0	4	2	0	9
8226	26848	25599	26325	23826	18403	24200	0	1	0	0	0	1	0	1	3	1	1	6	0	0	0	0	0	0	0	2	3	1	1	7
7052	22477	20985	21415	19961	16214	20210	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
8362	18105	16371	16505	16095	14025	16220	0	0	0	0	0	0	1	1	0	0	1	3	0	0	0	0	0	0	1	1	0	0	1	3
6987	18105	16371	16505	16095	14025	16220	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
8522 & 8328	18105	16371	16505	16095	14025	16220	2	0	0	1	1	4	3	2	0	0	2	7	0	0	0	0	0	0	5	2	0	1	3	11
7580	34056	24902	23370	23329	25682	26268	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	2	1	0	3
8395	34056	24902	23370	23329	25682	26268	1	1	0	4	0	6	1	0	3	2	2	8	0	0	0	0	0	0	2	1	3	6	2	14
8478 & 8521 & 8228	18454	13114	12578	11258	15870	14255	1	0	0	3	0	4	0	1	2	0	0	3	0	0	0	0	0	0	1	1	2	3	0	7
8468 & 8198 & 7403	18454	13114	12578	11258	15520	14185	2	3	0	0	2	7	1	0	3	1	2	7	0	0	0	0	0	0	3	3	3	1	4	14
7306	8546	10714	12199	13178	5741	10076	0	1	1	0	0	2	1	1	1	0	0	3	0	0	0	0	0	0	1	2	2	0	0	5
415	10260	19696	20241	20237	22007	18488	1	1	1	0	0	3	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	1	4
416	10260	19696	20241	20237	22007	18488	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
417	10260	19696	20241	20237	22007	18488	0	0	0	1	1	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	3
418	9101	12395	12553	11995	11994	11608	0	0	0	0	0	0	2	0	1	0	0	3	0	0	1	0	0	1	2	0	2	0	0	4
419	9101	12395	12553	11995	11994	11608	1	0	0	0	0	1	0	1	1	2	3	7	0	0	0	0	0	0	1	1	1	2	3	8

Table A.15 – CORSO TRAIANO

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
8897	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.47	1	5.21	1	5.21	1	1	10.42	0	0	152
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	0	1	1.74	0	0.00	1	10.42	1	1	10.42	0	0	152
6926	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	2.85	1	4.28	1	2.85	1	1	8.56	0	0	98
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	2.85	0	0.00	1	8.56	1	1	8.56	0	0	98
7252	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.80	1	3.80	1	2.53	1	1	7.60	0	0	78
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.80	0	0.00	1	7.60	1	1	7.60	0	0	78
7867	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.37	1	3.37	1	8.97	1	1	7.85	0	0	127
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.37	0	0.00	1	2.24	1	1	7.85	0	0	127
7080	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	5.00	1	4.00	1	1	8.00	0	0	118
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	1.00	1	8.00	1	1	8.00	0	0	118
6862	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	4.00	1	4.00	1	1	7.00	0	0	97
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	1.00	1	10.00	1	1	7.00	0	0	97
6686	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	3.00	1	4.00	1	1	7.00	0	0	169
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	2.00	1	9.00	1	1	7.00	0	0	169
6863	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	2.00	1	6.00	1	1	8.00	0	0	162
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.00	1	4.00	1	7.00	1	1	8.00	0	0	162
8151	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	1.00	1	7.00	1	1	10.00	0	0	89
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	3.00	1	8.00	1	1	10.00	0	0	89
6927	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	2.00	1	6.00	1	1	8.00	0	0	84
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	3.00	1	6.00	1	1	8.00	0	0	84
7366	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	3.00	1	6.00	1	1	9.00	0	0	82
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.00	1	3.00	1	5.00	1	1	9.00	0	0	82
6864	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.28	1	3.28	1	7.64	1	1	9.83	0	0	120
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	4.37	1	3.28	1	6.55	1	1	9.83	0	0	120
8001	S-N	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.87	1	2.58	1	9.03	1	1	9.03	0	0	161
	N-S	1	50	2	7	2	3.5	9	0	0	0	0	0	1	1	3.87	1	2.58	1	7.74	1	1	9.03	0	0	161
8152	S-N	1	50	2	8	2	4.0	9	0	0	0	0	0	1	1	5.03	1	3.35	1	8.37	1	1	11.72	0	0	195
	N-S	1	50	2	8	2	4.0	9	0	0	0	0	0	1	1	5.03	1	3.35	1	5.02	1	1	11.72	0	0	195

Table A.16 – CORSO TRAIANO2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	2008	2009	2010	2011	2012	06-'12	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT
8897	18193	15547	14738	12270	6928	13535	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6926	23086	20577	21944	19241	17562	20482	0	0	0	0	2	2	0	0	1	1	3	5	0	0	0	0	0	0	0	0	1	1	5	7
7252	23086	20577	21944	19241	17562	20482	1	1	1	1	1	5	2	2	2	0	0	6	0	0	0	0	0	0	3	3	3	1	1	11
7867	23086	20577	21944	19241	17562	20482	0	0	1	0	1	2	1	1	1	0	1	4	0	0	0	0	0	0	1	1	2	0	2	6
7080	23086	20577	21944	19241	17562	20482	0	0	1	0	1	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	3
6862	23086	20577	21944	19241	17562	20482	0	0	2	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
6686	23086	20577	21944	19241	17562	20482	1	1	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	3
6863	21908	20579	21944	19077	17230	20148	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	2
8151	21908	20579	21944	19077	17230	20148	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6927	21908	20579	21944	19077	17230	20148	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
7366	20369	19352	20091	18609	21673	20019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6864	20369	19352	20091	18609	21673	20019	0	0	0	1	0	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	3	0	3
8001	20369	19352	20091	18609	21673	20019	0	0	1	1	0	2	2	0	0	0	1	3	0	0	0	0	0	0	2	0	1	1	1	5
8152	20369	19352	20091	18609	21673	20019	2	1	1	0	0	4	0	1	2	1	1	5	0	0	0	0	0	0	2	2	3	1	1	9

Table A.17 – CORSO FILADELFIA

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
8388	S-N	1	70	1	9.0	1	4.5	0	0	0	0	0	0	0	1	1.82	1	3.64	1	9.09	1	1	10.91	1	0	100
	N-S	1	70	1	9.0	1	4.5	0	0	0	0	0	0	0	1	1.82	1	3.64	1	7.27	1	1	10.91	1	0	100
7264	S-N	1	70	1	9.0	1	4.5	0	0	0	0	0	0	0	1	1.53	1	3.06	1	7.65	1	1	9.17	1	0	108
	N-S	1	70	1	9.0	1	4.5	0	0	0	0	0	0	0	1	1.53	1	3.06	1	6.12	1	1	9.17	1	0	108
8115	S-N	1	70	1	10.8	2	3.1	0	0	0	0	0	0	0	1	1.32	1	5.29	1	6.61	1	1	9.26	1	0	96
	N-S	1	70	1	10.8	1	4.6	0	0	0	0	0	0	0	1	1.32	1	2.65	1	5.29	1	1	9.26	1	0	96
7499	S-N	1	70	1	10.8	2	3.1	0	0	0	0	0	0	1	1	1.16	1	4.65	1	5.81	1	1	8.13	0	0	114
	N-S	1	70	1	10.8	1	4.6	0	0	0	0	0	0	0	1	1.16	1	2.32	1	4.65	1	1	8.13	1	0	114
7931 &	S-N	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	1.02	1	5.08	1	6.09	1	1	9.14	1	0	134
7066	N-S	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	1.02	1	2.03	1	5.08	1	1	9.14	1	0	134
8594	S-N	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	1.00	1	4.00	1	6.00	1	1	9.00	1	0	395
	N-S	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	1.00	1	2.00	1	4.00	1	1	9.00	1	0	395
6724	S-N	1	70	1	13.2	3	2.2	0	0	0	0	0	0	0	1	2.00	1	4.00	1	6.00	1	1	10.00	1	0	58
	N-S	1	70	1	13.2	3	2.2	0	0	0	0	0	0	0	1	2.00	1	2.00	1	4.00	1	1	10.00	1	0	58
8407	S-N	1	70	1	8.6	1	4.3	0	0	0	0	0	0	0	1	1.00	1	5.00	1	6.00	1	1	10.00	1	0	115
	N-S	1	70	1	8.6	1	4.3	0	0	0	0	0	0	0	1	1.00	1	2.00	1	4.00	1	1	10.00	1	0	115
7273	S-N	1	70	1	11.8	2	3.8	0	0	0	0	0	0	0	1	2.00	1	4.00	1	6.00	1	1	11.00	1	0	58
	N-S	1	70	1	11.8	1	4.2	0	0	0	0	0	0	0	1	2.00	1	2.00	1	5.00	1	1	11.00	1	0	58
8389 &	S-N	1	70	1	8.3	1	4.1	0	0	0	0	0	0	0	1	2.00	1	4.00	1	6.00	1	1	10.00	1	0	114
7065	N-S	1	70	1	8.3	1	4.2	0	0	0	0	0	0	0	1	2.00	1	2.00	1	5.00	1	1	10.00	1	0	114
7928	S-N	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	2.00	1	4.00	1	6.00	1	1	10.00	1	0	135
	N-S	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	2.00	1	2.00	1	5.00	1	1	10.00	1	0	135
7501	S-N	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	2.00	1	4.00	1	5.00	1	1	7.00	1	0	162
	N-S	1	70	1	8.4	1	4.2	0	0	0	0	0	0	0	1	2.00	1	2.00	1	4.00	1	1	7.00	1	0	162
8935	S-N	1	70	1	8.0	1	4.0	0	0	0	0	0	0	0	1	2.00	1	4.00	1	3.00	1	1	7.00	1	1	420
	N-S	1	70	1	8.0	1	4.0	0	0	0	0	0	0	0	1	2.00	1	4.00	1	2.00	1	1	7.00	1	1	420
7063 & 8596	S-N	1	70	1	7.2	1	3.6	0	0	0	0	0	0	0	1	2.32	1	4.65	1	4.65	1	1	8.13	1	0	250
& 8669	N-S	1	70	1	7.2	1	3.6	0	0	0	0	0	0	0	1	2.32	1	2.32	1	3.48	1	1	8.13	1	0	250
8299 &	S-N	1	70	1	9.2	1	4.6	0	0	0	0	0	0	0	1	2.98	1	4.47	1	5.96	1	1	10.43	1	0	130
8391	N-S	1	70	1	9.2	1	4.6	0	0	0	0	0	0	0	1	2.98	1	2.98	1	4.47	1	1	10.43	1	0	130
8127	S-N	1	70	1	8.2	1	4.1	0	0	0	0	0	0	0	1	3.62	1	3.62	1	7.23	1	1	10.85	1	0	106
	N-S	1	70	1	8.2	1	4.1	0	0	0	0	0	0	0	1	3.62	1	3.62	1	5.42	1	1	10.85	1	0	106

Table A.18 – CORSO FILADELFIA

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	2008	2009	2010	2011	2012	06-'12	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT
8388	7477	6972	7514	7746	7293	7400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7264	7477	6972	7514	7746	7293	7400	0	1	0	0	1	2	1	0	0	0	1	2	0	0	0	0	0	0	1	1	0	0	2	4
8115	7477	6972	7514	7746	7293	7400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7499	7477	6972	7514	7746	7293	7400	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1	0	2
7931 & 7066	6787	8457	9121	9371	9601	8667	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
8594	6787	8457	9121	9371	9601	8667	1	1	0	0	0	2	2	0	0	2	1	5	0	0	0	0	0	0	3	1	0	2	1	7
6724	5967	7054	8441	8980	9112	7911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8407	11752	10676	11355	12128	13201	11822	2	4	0	4	0	10	0	1	2	0	1	4	0	0	0	0	0	0	2	5	2	4	1	14
7273	11752	10676	11355	12128	13201	11822	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
8389 & 7065	11752	10676	11355	12128	13201	11822	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
7928	11752	10676	11355	12128	13201	11822	1	0	0	0	0	1	0	0	1	2	1	4	0	0	0	0	0	0	1	0	1	2	1	5
7501	11752	10676	11355	12128	13201	11822	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2
8935	13347	13951	13650	14005	13375	13666	2	2	0	2	0	6	1	1	1	0	1	4	0	0	0	0	0	0	3	3	1	2	1	10
7063 & 8596 & 8669	3673	2601	2029	1736	2146	2437	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
8299 & 8391	3673	2601	2029	1736	2146	2437	1	0	0	0	1	2	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0	1	3
8127	3673	2601	2029	1736	2146	2437	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1

Table A.19 – CORSO MASSIMO D'AZEGLIO

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
8948	S-N	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.83	1	3.65	1	2.74	1	1	12.79	0	0	95
	N-S	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.83	1	1.83	1	2.74	1	1	12.79	0	0	95
8947	S-N	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.59	1	3.19	1	3.14	1	1	12.75	0	0	65
	N-S	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.59	1	1.59	1	3.14	1	1	12.75	0	0	65
8946	S-N	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.42	1	2.85	1	7.12	1	1	11.39	1	0	85
	N-S	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.42	1	1.42	1	7.12	1	1	11.39	1	0	85
8945	S-N	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.26	1	2.52	1	7.56	1	1	11.34	1	0	98
	N-S	1	50	2	7.0	2	3.50	2.0	0	0	0	0	0	0	1	1.26	1	1.26	1	7.56	1	1	11.34	1	0	98
8944	S-N	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	2.23	1	2.23	1	6.69	1	1	11.15	1	0	108
	N-S	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	2.23	1	2.23	1	6.69	1	1	11.15	0	0	108
8943	S-N	1	50	2	9.0	2	4.50	2.5	0	0	0	0	0	0	1	2.00	1	2.00	1	7.00	1	1	10.00	1	0	99
	N-S	1	50	2	7.0	2	3.50	2.5	0	0	0	0	0	0	1	2.00	1	2.00	1	7.00	1	1	10.00	0	0	99
193	S-N	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	2.00	1	2.00	1	7.00	1	1	10.00	0	0	245
	N-S	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	1.00	1	2.00	1	7.00	1	1	10.00	0	0	245
194	S-N	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	2.00	0	0.00	1	5.00	1	1	7.00	0	0	187
	N-S	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	1.00	1	1.00	1	7.00	1	1	7.00	0	0	187
195	S-N	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	1.00	0	0.00	1	7.00	0	1	8.00	0	0	85
	N-S	1	50	2	9.0	3	3.00	2.0	0	0	0	0	0	0	1	1.00	1	1.00	1	9.00	1	1	8.00	0	0	85
196	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	7.00	0	1	8.00	0	0	129
	N-S	1	50	2	10.0	3	3.30	5.5	0	0	0	0	0	0	1	1.00	1	1.00	1	9.00	1	1	8.00	0	0	129
197	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	8.00	0	1	8.00	0	0	86
	N-S	1	50	2	6.6	2	3.30	5.5	0	0	0	0	0	1	1	1.00	1	1.00	1	10.00	1	1	8.00	0	0	86
198	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	8.00	0	1	0.00	1	0	107
	N-S	1	50	2	6.6	2	3.30	5.5	0	0	0	0	0	1	1	1.00	1	1.00	1	10.00	1	1	0.00	0	0	107
199	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	9.00	0	1	7.00	1	0	67
	N-S	1	50	2	6.6	2	3.30	5.5	0	0	0	0	0	1	1	1.00	0	0.00	1	11.00	1	1	7.00	0	0	67
200	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	10.00	0	1	7.00	1	0	74
	N-S	1	50	2	6.6	2	3.30	5.5	0	0	0	0	0	1	1	1.00	0	0.00	1	11.00	1	1	7.00	0	0	74
201	S-N	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	10.00	0	1	6.00	1	0	83
	N-S	1	50	2	6.6	2	3.30	5.5	0	0	0	0	0	1	0	0.00	0	0.00	1	11.00	1	1	6.00	0	0	83
202	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	11.00	0	1	4.00	1	0	83
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	12.00	1	1	4.00	1	0	83
203	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.00	0	0.00	1	11.00	0	1	6.00	1	0	81
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	11.00	1	1	6.00	1	0	81
204	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.12	0	0.00	1	12.33	0	1	5.61	1	0	76
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	12.33	1	1	5.61	1	0	76
205	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.22	0	0.00	1	12.23	0	1	6.12	1	0	73
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	12.23	1	1	6.12	1	0	73
206	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.37	0	0.00	1	6.87	0	1	6.87	1	0	106
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	6.87	1	1	6.87	1	0	106
207	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.57	0	0.00	1	12.60	0	1	6.30	1	0	80
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	12.60	1	1	6.30	1	0	80
208	S-N	1	50	2	7.4	2	3.70	5.5	0	0	0	0	0	0	1	1.83	0	0.00	1	14.61	0	1	5.48	1	0	95
	N-S	1	50	2	8.0	2	4.00	5.5	0	0	0	0	0	0	0	0.00	0	0.00	1	14.61	1	1	5.48	1	0	95

Table A.20 – CORSO MASSIMO D’AZEGLIO

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-’12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
8948	44733	46437	54780	53711	49115	49755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8947	44733	46437	54780	53711	49115	49755	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2
8946	44733	46437	54780	53711	49115	49755	0	1	1	2	0	4	1	2	2	1	1	7	0	0	0	0	0	0	1	3	3	3	1	11
8945	44733	46437	54780	53711	49115	49755	2	0	1	1	0	4	1	0	0	0	0	1	0	0	0	0	0	0	3	0	1	1	0	5
8944	44733	46437	54780	53711	49115	49755	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8943	44733	46437	54780	53711	49115	49755	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
193	41999	34848	39841	39287	34764	38148	3	0	2	1	1	7	2	2	2	5	3	14	0	0	0	0	0	0	5	2	4	6	4	21
194	41712	35283	41003	40778	37924	39340	1	1	0	2	1	5	2	2	1	4	3	12	0	0	0	0	0	0	3	3	1	6	4	17
195	41424	35718	42164	42269	41083	40532	2	2	2	1	2	9	0	1	1	2	0	4	0	0	0	0	0	0	2	3	3	3	2	13
196	42888	41826	43071	43068	40643	42299	1	0	1	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	1	1	2	0	0	4
197	42888	41826	43071	43068	40643	42299	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
198	49042	47232	49040	47803	44214	47466	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
199	49042	47232	49040	47803	44214	47466	0	1	0	0	1	2	0	1	0	1	0	2	0	0	0	0	0	0	0	2	0	1	1	4
200	49042	47232	49040	47803	44214	47466	0	1	0	0	0	1	0	1	1	1	0	3	0	0	0	0	0	0	0	2	1	1	0	4
201	49042	47232	49040	47803	44214	47466	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	1	0	1	0	0	2
202	47783	45265	47844	46094	44218	46241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203	47783	45265	47844	46094	44218	46241	2	1	0	0	0	3	1	2	0	1	1	5	0	0	0	0	0	0	3	3	0	1	1	8
204	47783	45265	47844	46094	44218	46241	0	0	0	0	0	0	0	0	2	1	1	4	0	0	0	0	0	0	0	0	2	1	1	4
205	46466	43690	47443	46044	42825	45294	1	1	0	1	0	3	2	0	0	0	2	4	0	0	0	0	0	0	3	1	0	1	2	7
206	46466	43690	47443	46044	42825	45294	0	0	0	1	0	1	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	1	0	3
207	46466	43690	47443	46044	42825	45294	1	0	0	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	1	0	3
208	46466	43690	47443	46044	42825	45294	1	1	1	2	1	6	0	0	0	1	2	3	0	0	0	0	0	0	1	1	1	3	3	9

Table A.21 – CORSO REGINA MARGHERITA

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
4 & 5	W-E	1	50	2	9.0	3	3.00	2	0	0	0	0	0	0	1	2	1	2	1	2	0	0	0	0	0	825
	E-W	1	50	2	9.0	3	3.00	2	0	0	0	0	0	0	1	2	1	2	1	2	0	0	0	0	0	825
6	W-E	1	50	2	9.0	3	3.00	2	0	0	0	0	0	0	1	1	1	2	0	0	0	1	1	0	0	1583
	E-W	1	50	2	9.0	3	3.00	2	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	1583
301	W-E	1	50	2	6.0	2	3.00	2	0	0	0	0	0	1	0	0	0	0	1	3	0	1	8	0	0	312
	E-W	1	50	2	9.0	3	3.00	2	0	0	0	0	0	0	0	0	1	1	1	3	0	1	8	0	0	312
302	W-E	1	50	2	7.0	2	3.50	2	0	0	0	0	0	0	0	0	0	0	1	4	0	1	8	0	0	90
	E-W	1	50	2	7.0	2	3.50	2	0	0	0	0	0	0	0	0	1	1	1	4	0	1	8	0	0	90
303	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	6	0	1	8	0	0	288
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	6	0	1	8	0	0	288
304	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	8	0	0	231
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	8	0	0	231
305	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	8	0	0	232
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	8	0	0	232
306	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	7	0	0	170
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	7	0	0	170
307	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	6	0	1	6	0	0	215
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	6	0	1	6	0	0	215
308	W-E	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	6	0	0	213
	E-W	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	6	0	0	213
309	W-E	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	4	0	0	298
	E-W	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	4	0	0	298
310	W-E	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	4	0	0	130
	E-W	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	4	0	0	130
311	W-E	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	7	0	0	286
	E-W	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	7	0	0	286
312	W-E	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	11	0	0	358
	E-W	1	50	1	5.0	2	2.50	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	11	0	0	358
313	W-E	1	50	1	3.0	1	3.00	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	12	0	0	247
	E-W	1	50	1	3.0	1	3.00	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	12	0	0	247
314	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	12	0	0	293
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	12	0	0	293
315	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	5	0	1	9	0	0	258
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	5	0	1	9	0	0	258
316	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	6	0	1	8	0	0	105
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	6	0	1	8	0	0	105
317	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	9	0	0	150
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	9	0	0	150
318	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	5	0	1	9	0	0	312
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	5	0	1	9	0	0	312
319	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	0	0	1	4	0	1	8	0	0	258
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	8	0	0	258
320	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	1	1	0	0	1	4	0	1	8	0	0	195
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	8	0	0	195
321	W-E	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	1	1	0	0	1	4	0	1	7	0	0	301
	E-W	1	50	1	5.5	2	2.75	0	0	0	0	0	0	1	0	0	1	1	1	4	0	1	7	0	0	301
322	W-E	1	50	2	9.0	3	3.00	9	0	0	0	0	0	1	1	1	0	0	1	2	1	1	5	0	0	221
	E-W	1	50	2	9.0	3	3.00	9	0	0	0	0	0	1	0	0	0	0	1	2	1	1	5	0	0	221

Table A.22 – CORSO REGINA MARGHERITA2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	**2008**	**2009**	**2010**	**2011**	**2012**	**06-'12**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**	**2008**	**2009**	**2010**	**2011**	**2012**	**TOT**
4 & 5	61882	65297	62272	63232	62528	63042	18	13	15	17	9	72	23	12	26	17	13	91	1	0	1	0	0	2	42	25	42	34	22	165
6	56093	52173	47643	49093	52434	51487	0	1	0	0	0	1	1	0	2	0	1	4	0	0	0	0	0	0	1	1	2	0	1	5
301	35143	26890	26859	27781	29348	29204	0	3	1	1	0	5	3	1	1	2	1	8	0	0	0	0	0	0	3	4	2	3	1	13
302	23507	21033	21217	20071	22091	21584	1	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3
303	26402	26856	25827	22081	24155	25064	2	0	2	2	2	8	1	1	1	0	3	6	0	0	0	0	0	0	3	1	3	2	5	14
304	26471	26163	25719	21588	23578	24704	3	0	1	1	1	6	2	1	1	1	1	6	0	0	0	0	0	0	5	1	2	2	2	12
305	26521	25225	25585	21574	23213	24424	1	2	0	0	1	4	3	0	1	0	0	4	0	0	0	0	0	0	4	2	1	0	1	8
306	24915	26022	25121	18956	23362	23675	0	2	1	2	2	7	1	1	3	0	0	5	0	0	0	0	0	0	1	3	4	2	2	12
307	32549	31326	31091	14747	23897	26722	3	3	0	2	1	9	3	1	1	2	1	8	0	0	0	0	0	0	6	4	1	4	2	17
308	35924	33000	34278	42935	31999	35627	0	0	0	1	2	3	0	0	1	3	1	5	0	0	0	0	0	0	0	0	1	4	3	8
309	39114	35971	38271	44946	35721	38805	0	0	0	6	2	8	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	6	3	10
310	27279	28186	28770	13582	27961	25156	5	1	2	0	0	8	2	0	1	2	0	5	0	0	0	0	0	0	7	1	3	2	0	13
311	33337	34884	33309	30802	35841	33635	1	3	4	5	3	16	3	2	6	7	3	21	0	0	0	0	0	0	4	5	10	12	6	37
312	44669	43236	44522	42037	46154	44124	4	10	3	9	2	28	3	3	2	5	4	17	0	0	0	0	0	0	7	13	5	14	6	45
313	36059	35134	37277	35960	40943	37075	2	3	1	1	2	9	3	0	3	0	1	7	0	0	0	0	0	0	5	3	4	1	3	16
314	37229	39889	42269	41555	44149	41018	2	1	3	1	1	8	2	3	3	1	3	12	0	0	0	0	0	0	4	4	6	2	4	20
315	15715	15061	15226	17372	16575	15990	1	0	3	1	3	8	1	1	2	1	0	5	0	0	0	0	0	0	2	1	5	2	3	13
316	16287	14421	15126	14899	13679	14882	1	0	0	0	1	2	2	0	0	0	0	2	0	0	0	0	0	0	3	0	0	0	1	4
317	16438	16543	16535	17683	18343	17108	1	1	1	1	1	5	0	2	0	1	0	3	0	0	0	0	0	0	1	3	1	2	1	8
318	15239	14924	15148	16816	18244	16074	0	0	1	1	2	4	1	0	1	0	2	4	0	0	0	0	0	0	1	0	2	1	4	8
319	14078	13812	13815	13584	13475	13753	1	0	1	0	0	2	0	1	2	0	1	4	0	0	0	0	0	0	1	1	3	0	1	6
320	10750	9019	8953	8861	8097	9136	1	1	0	0	0	2	0	2	1	1	0	4	0	0	0	0	0	0	1	3	1	1	0	6
321	8507	9459	12378	12899	13539	11356	0	1	1	2	0	4	0	0	0	1	1	2	0	0	0	0	0	0	0	1	1	3	1	6
322	36445	24158	30532	34002	35402	32108	0	0	1	0	0	1	2	1	2	1	1	7	0	0	0	0	0	0	2	1	3	1	1	8

Table A.23 – CORSO FRANCIA

Segment	Direction	LP	PSL	NT	TWW	NL	LW	MW	RS	RSW	LS	LSW	1/R	PUB	Dev	DevD	D	DD	I	ID	S	Ped	PedD	PKL	TCD	L (m)
269	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.89	0	0.00	1	9.43	0	1	9.43	0	0	61
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	0	0.00	1	1.88	1	7.54	0	1	9.43	0	0	61
270	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.64	0	0.00	1	8.18	0	1	8.18	0	0	100
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	0	0.00	1	1.64	1	6.55	0	1	8.18	0	0	100
271	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.41	0	0.00	1	8.44	0	1	9.85	0	0	100
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	0	0.00	1	1.41	1	7.03	0	1	9.85	0	0	100
272	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.66	0	0.00	1	7.24	0	1	8.44	0	0	136
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	0.83	1	0.83	1	6.03	0	1	8.44	0	0	136
273	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	3.00	0	0.00	1	5.00	0	1	8.00	0	0	281
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.00	1	1.00	1	4.00	0	1	8.00	0	0	281
274	W-E	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	4.00	0	0.00	1	3.00	0	1	7.00	0	0	404
	E-W	1	50	2	9.0	3	3.25	2.0	0	0	0	0	0	0	1	1.00	1	1.00	1	2.00	0	1	7.00	0	0	404
275	W-E	1	50	2	6.5	2	3.25	4.4	0	0	0	0	0	0	1	2.00	1	1.00	1	2.00	0	1	7.00	0	0	383
	E-W	1	50	2	6.5	2	3.25	4.4	0	0	0	0	0	0	1	1.00	0	0.00	1	2.00	0	1	7.00	0	0	383
276	W-E	1	50	2	6.5	2	3.25	4.4	0	0	0	0	0	0	0	0.00	0	0.00	1	2.00	0	1	7.00	0	0	362
	E-W	1	50	2	6.5	2	3.25	4.4	0	0	0	0	0	0	0	0.00	0	0.00	1	2.00	0	1	7.00	0	0	362
277	W-E	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	1.00	0	0.00	1	2.00	0	1	6.00	0	0	539
	E-W	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	1.00	0	0.00	1	2.00	0	1	6.00	0	0	539
278	W-E	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	3.00	0	0.00	1	2.00	0	1	6.00	0	0	611
	E-W	1	50	2	7.0	2	3.50	5.0	0	0	0	0	0	0	1	3.00	0	0.00	1	2.00	0	1	6.00	0	0	611
279	W-E	1	50	2	6.0	2	3.00	4.5	0	0	0	0	0	0	1	3.00	0	0.00	1	2.00	0	1	5.00	0	0	421
	E-W	1	50	2	6.0	2	3.00	4.5	0	0	0	0	0	0	1	3.00	0	0.00	1	2.00	0	1	5.00	0	0	421
280	W-E	1	50	2	7.0	2	3.50	4.5	0	0	0	0	0	0	1	2.00	1	1.00	1	2.00	0	1	6.00	0	0	613
	E-W	1	50	2	7.0	2	3.50	4.5	0	0	0	0	0	0	1	2.00	1	1.00	1	2.00	0	1	6.00	0	0	613
6730 & 8685	W-E	1	50	2	6.0	2	3.00	4.0	0	0	0	0	0	0	1	3.00	1	1.00	1	3.00	0	1	6.00	0	0	392
& 7679 & 7407	E-W	1	50	2	6.0	2	3.00	4.0	0	0	0	0	0	0	1	3.00	1	1.00	1	3.00	0	1	6.00	0	0	392
6820 & 7959	W-E	1	50	2	6.5	2	3.25	4.5	0	0	0	0	0	0	1	2.00	1	1.00	1	4.00	0	1	6.00	0	0	280
& 7941 & 8606	E-W	1	50	2	6.5	2	3.25	4.5	0	0	0	0	0	0	1	2.00	1	1.00	1	4.00	0	1	6.00	0	0	280
8670 & 7836	W-E	1	50	2	6.5	2	3.25	4.5	0	0	0	0	0	0	1	2.00	1	1.00	1	3.00	0	1	5.00	0	0	266
& 7702	E-W	1	50	2	6.5	2	3.25	4.5	0	0	0	0	0	0	1	2.00	0	0.00	1	3.00	0	1	5.00	0	0	266

Table A.24 – CORSO FRANCIA2

	AADT					Average	PDO						INJ						FAT						Total Accidents					
Segment	2008	2009	2010	2011	2012	06-'12	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT	2008	2009	2010	2011	2012	TOT
269	40666	32375	32659	32434	32573	34141	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
270	40666	32375	32659	32434	32573	34141	0	0	0	0	2	2	0	3	0	0	0	3	0	0	0	0	0	0	0	3	0	0	2	5
271	40666	32375	32659	32434	32573	34141	4	0	0	2	0	6	0	4	2	3	4	13	0	0	0	0	0	0	4	4	2	5	4	19
272	46761	38067	38101	37642	38391	39792	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
273	46572	35760	35381	36880	37310	38381	0	0	2	0	0	2	2	2	0	1	2	7	0	0	0	0	0	0	2	2	2	1	2	9
274	56607	37663	36776	36067	32843	39991	0	0	0	2	0	2	1	1	0	2	2	6	0	0	0	0	0	0	1	1	0	4	2	8
275	79221	68391	68399	71689	73209	72182	2	1	5	4	1	13	6	4	4	5	3	22	0	0	0	0	0	0	8	5	9	9	4	35
276	19706	14171	14836	13971	11812	14899	1	2	2	2	0	7	0	1	1	1	1	4	0	0	0	0	0	0	1	3	3	3	1	11
277	15478	10565	11551	11456	10051	11820	4	1	2	2	1	10	3	3	2	3	2	13	0	0	0	0	0	0	7	4	4	5	3	23
278	30577	11903	13768	13547	12218	16403	3	3	2	2	1	11	2	4	2	2	0	10	0	0	0	0	0	0	5	7	4	4	1	21
279	19145	14187	14154	13527	8948	13992	2	0	0	0	1	3	1	0	0	1	0	2	0	0	0	0	0	0	3	0	0	1	1	5
280	16991	15670	16334	16567	11972	15506	6	1	2	1	1	11	6	1	2	1	1	11	3	2	2	2	0	9	15	4	6	4	2	31
6730 & 8685 & 7679 & 7407	15783	15005	16667	20296	16901	16930	0	3	0	1	0	4	0	0	0	2	1	3	0	0	0	0	0	0	0	3	0	3	1	7
6820 & 7959 & 7941 & 8606	15229	10963	11141	12560	11555	12289	1	0	0	0	0	1	0	0	1	1	1	3	0	0	0	0	0	0	1	0	1	1	1	4
8670 & 7836 & 7702	12448	11830	12495	14503	13178	12891	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1