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Abstract

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Glossary

Highway Safety Manual The Highway Safety Manual (HSM), published by the American Association of State Highway Transportation Officials (AASHTO) is the recognized source of information and methods for quantitatively evaluating traffic safety performance on existing or proposed roadways. 1

Chapter 1

Introduction

- Example reference: (Zhang et al., 2022b,a, 2023); Zhang et al. (2022b).
- Example cross reference: Section 1.1

1.1 Example cross-reference

1.1.1 Example subsection

Example terms: Highway Safety Manual

Example equation:

$$N_{predicted} = N_{SPF_x} \times (CMF_{1x} \times CMF_{2x} \times \dots CMF_{yx}) \times C_x \quad (1.1)$$

Example cross-reference of equation: Equation 1.1.

Example table:

Table 1.1 provides an overview of prior studies on deriving associations of work zone configurations with work zone crash risks.

Figure 1.1 presents the workflow of data processing.

Table 1.1: A review on crash risk association with work zone configurations (1)

Study	Model	Regression equations	Normalization of crash counts			Work zone configurations		
			Duration	Length	VMT	Duration	Length	Closure setting
(Graham et al., 1977)	Linear regression	(1)			X	-	-	Y
(Garber and Woo, 1990)	Linear regression	(2)			X	+	+*	\
(Ullman et al., 2008)	Empirical	\		X		\	\	Y
(Ozturk et al., 2014)	Bayesian Negative binomial	(2)	X			\	+	\
(Yang et al., 2015)	Rare event logistic	(1)	X			0	+	Y
(Chen and Tarko, 2014)	Random effect negative binomial	(1)	X			\	+	Y
(Yang et al., 2013)	Negative binomial with measurement error	(1)	X			\	+	Y
(Ozturk et al., 2013)	Negative binomial	(1)	X			+	+	Y
(Qi et al., 2005)	Truncated negative binomial and Poisson	(1)				+	+	Y
(Khattak et al., 2002)	Negative binomial	(2)	X			+	+	\
(Venugopal and Tarko, 2000)	Negative binomial	(1)				+	+	Y
(Pal and Sinha, 1996)	Negative binomial and Poisson	(1)			X	+	+	Y
(La Torre et al., 2017)	Empirical Bayesian	\	X			\	\	Y
(Srinivasan et al., 2011)	Empirical Bayesian	\	X			\	\	Y

Notes: “+” positive effect, “-” negative effect, “0” no significant changes, “\” not applicable “Y” associated, “N” not associated; “X” used.

*: Garber and Woo (1990) found work zone crash risk decreased with increase in work zone length for work zone lengths up to 0.6 mile, and work zone crash risk increased with increase in work zone length for work zone lengths longer than 0.6 mile.

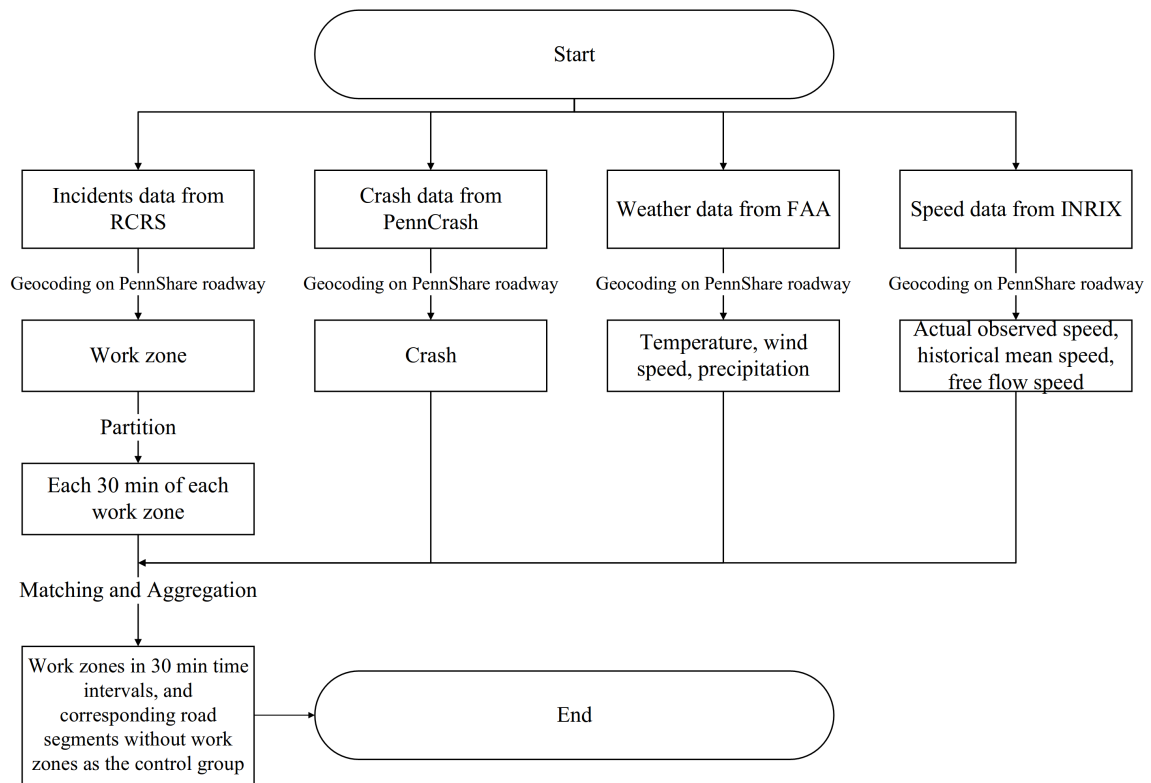


Figure 1.1: Data processing workflow

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