Equity Evaluation and Safety Equity

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Equity Evaluation

Type of Equity	Equity Impacts Felt by Users	Units of Equity Measurement	Demographic Categorizations
Horizontal Equity	Differences in Travel Time	Monetary	Racial Demographics
Vertical Equity	Economic Impacts	Per Person	Income Demographics
		Per Travel Unit	Spatial Distribution





Addressing Rural Disparities in Equity Analysis

- There is little framework to inform analytical methods and choices that shape equity outcomes in rural communities
 - Transit
 - Active Transportation



Safety Equity Analysis Issues

Fatality Rates per 100 Million VMT, by Year and Land Use, 2009–2018



Sources: FARS 2009-2017 Final File, 2018 ARF; VMT - FHWA





Safety Equity Analysis Enhancements - Data

PED IN

- Collision Reporting
 - Data discrepancies
 - Database Storage

OCCUPANT								
CASENO	varchar 1							
AGE	int							
AIRBAG	int			ROADWAY				
SEAT_POS	int			1 ROAD_INV	varchar	1	CURVE	
VEHNO	int			BEG_Milepost	float	1 1	CURV_INV	varcha
				END_Milepost	float -	1 *	BEG_Milepost	float
VEHICLE		ACCIDENT		Lane widths	float	*	END_Milepost	floa
CASENO	varchar 1	1 CASENO	varchar 1	Shoulder widths			DIR_CURV	varcha
DRV_SEX	int	ROAD_INV	varchar	AADT	int		DEG_CURV	floa
DRV_AGE	int	Milepost	float 1	mymt	float			
CONTRIB	int	time	timestamp		100L		GRADE	
INTOX	int	WEEKDAY	int			1	GRAD_INV	varcha
VEHCOND	int	FUNC_CLS	varchar	COORDS		*	BEG_Milepost	float
		REPORT	int	CASENO	varchar	<u> </u>	END_Milepost	float
PEDESTRIAN	6	Light	int	lat	float		DIR_GRAD	varcha
CASENO	varchar	Weather	int	Ing	float		PCT_GRAD	float
HELMET	int 1	TOT_INJ	int					
INTOX	int	TOT_KILL	int					
PED_AGE	int	TOT_PED	int					
PED_AGE	varchar	State PLane X	float					
FLU_JEA	varcridr	Errer Direr V	Ø+					



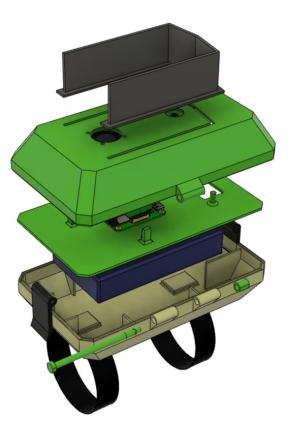


Safety Equity Analysis Enhancements - Data

Low-Cost Data Collection







CTRA Traffic Counter



Safety Equity Analysis Enhancements - Data

• Data Equity Concerns

Income Bracket	Odds Ratio	Representation Ratio		
Intercept	0.08968709	0.0000000		
Less Than \$10,000	0.25117588	0.1650180		
\$10,000 to \$14,999	0.41353887	0.4528046		
\$15,000 to \$24,999	0.77978287	0.4367580		
\$25,000 to \$34,999	0.97030766	0.4937001		
\$35,000 to \$49,999	5.99589433	1.9315133		
\$50,000 to \$74,999	1.70480543	0.3367387		
\$75,000 to \$99,999	2.16974532	0.4993840		
\$100,000 to \$149 ,999	8.48180961	1.2370952		
\$150,000 to \$199,999	13.98075973	3.4849663		
\$200,000 or Above	1.0000000	0.1617624		





Thank you!

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