

HSM Applications to Multilane Urban Suburban Multilane Intersections

Exercise III – Prediction of Crash Frequency
Performance for Multilane Intersections and
Comparison to
Substantive Crash
Performance

- Session #09



Exercise III – IL 64 North Avenue from Bloomingdale Road to Main Street-Glen Ellyn

Learning Outcomes:

- ▶ **Apply Multilane Intersection Crash Prediction models**
- ▶ **Compare predicted Crash Frequency performance to Substantive safety performance**

Exercise III – IL 64 North Avenue from Bloomingdale Road to Main Street-Glen Ellyn

Intersection Information:

MINOR ROADS: Three Signalized intersections with
single left turn lanes (no right turn lanes):

Bloomingdale Road	16,100 AADT
Shopping Center (north and south)	2,400 AADT
Main Street-Glen Ellyn	16,700 AADT

MAJOR ROAD: IL 64 North Avenue is 37,000 ADT

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Unsignalized T- Intersections w/o left turn lanes:

Mildred	700 AADT
Virginia	700 AADT
Bernice	700 AADT
Western	700 AADT
Pearl	1,500 AADT
Diane	700 AADT
Evergreen	700 AADT
Amy	700 AADT
Newton	700 AADT

Signalized 4-Approach Intersections with left turn lanes:

Bloomingdale Road	16,100 AADT
Shopping Center (north and south)	2,400 AADT
Main Street-Glen Ellyn	16,700 AADT

Crash data for 1986, 1987, 1988 – 3 years

Intersections:	Total	Injury	Day	Night
Mildred	9	2	6	3
Virginia	12	3	9	3
Bernice	16	3	11	5
Western	11	4	7	4
Pearl	22	6	16	6
Diane	16	5	11	5
Evergreen	11	4	7	4
Amy	7	4	4	3
Newton	12	5	8	4
Bloomingtondale Rd	170	68	122	48
Shopping Center	18	5	13	5
Main St-Glen Ellyn	146	45	100	46
Totals:	450	154	314	136

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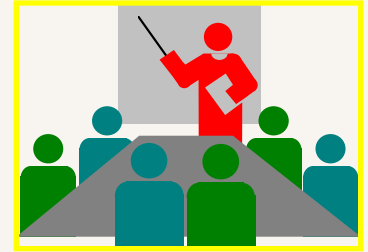
Study Section:

Crash data for 1986, 1987, 1988 – 3 years

	Total Crashes	Injury Crashes	Day	Night
Rdwy Segment	84	26	57	27
12 Intersections	450	154	314	136
Totals:	534	180	371	163

Exercise III – IL 64 North Avenue from Bloomingdale Road to Main Street-Glen Ellyn

1. Predict the Crash Frequency Performance for the intersections using the Rural Multilane intersection models for the following:



- a. **Bloomingdale Road (signalized)**
- b. **Shopping Center (signalized)**
- c. **Main Street-Glen Ellyn (signalized)**
- d. **Eight “T” non-signalized intersections (700 ADT)**
- e. **One “T” non-signalized intersection (1,500 ADT)**

Use Worksheet Exercise III

Exercise III – IL 64 North Avenue from Bloomingdale Road to Main Street-Glen Ellyn

2. Total the Predicted Crash Frequency performance for all intersections

Bloomingdale Road (signalized)	?
Shopping Center (signalized)	?
Main Street-Glen Ellyn (signalized)	?
Eight “T” non-signalized intersections (700 ADT)	?
One “T” non-signalized intersection (1,500 ADT)	<u>?</u>
Total	?

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3. Compare the Substantive Intersection
Crash Frequency Performance to the
Predicted Crash Frequency Performance:

Substantive Safety Performance = ? in 3 yrs
? per year

**Predicted Crash Frequency
Performance = ? per year**

**Substantive Safety Performance
less than Predicted Crash
Frequency? YES/NO**

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Learning Outcomes:

- ▶ **Applied Multilane Intersection Crash Frequency Prediction models**
- ▶ **Compared predicted Crash Frequency performance to Substantive Safety performance**

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Questions and Discussion

