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# **CITY OF OAK RIDGE NORTH ROBINSON ROAD TRAFFIC STUDY PRESENTATION**

By Sriram Natarajan & Adam Kaliszewski

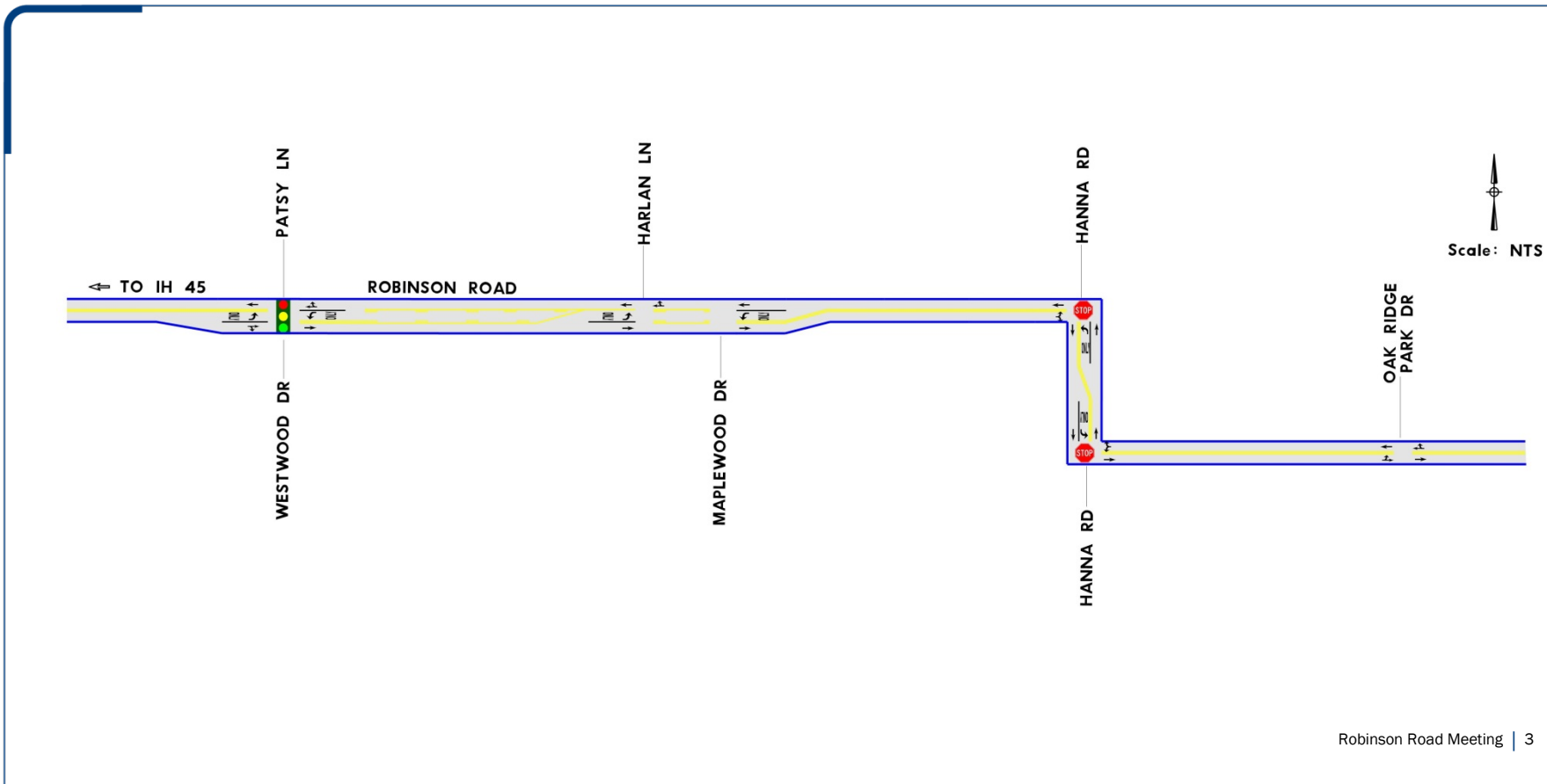
October 10, 2016

# OBJECTIVE

- Background
- Existing Traffic Operations
- Analysis Results
  - └ Travel Times
  - └ Total Delay
  - └ Pros & Cons
- VISSIM Simulation /Model Display

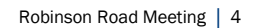


# EXISTING CONDITION





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# TRAVEL TIME SEGMENTS

## PAV TRAVEL TIMES

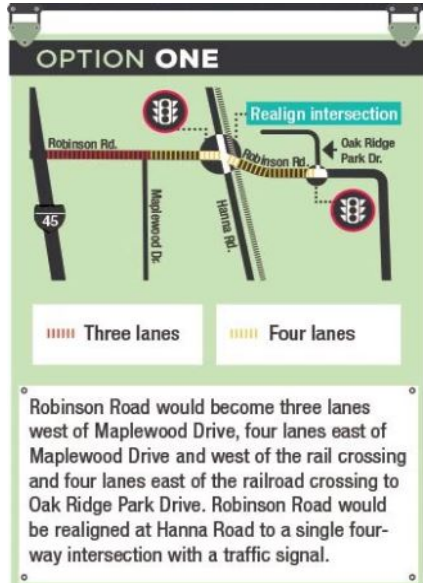




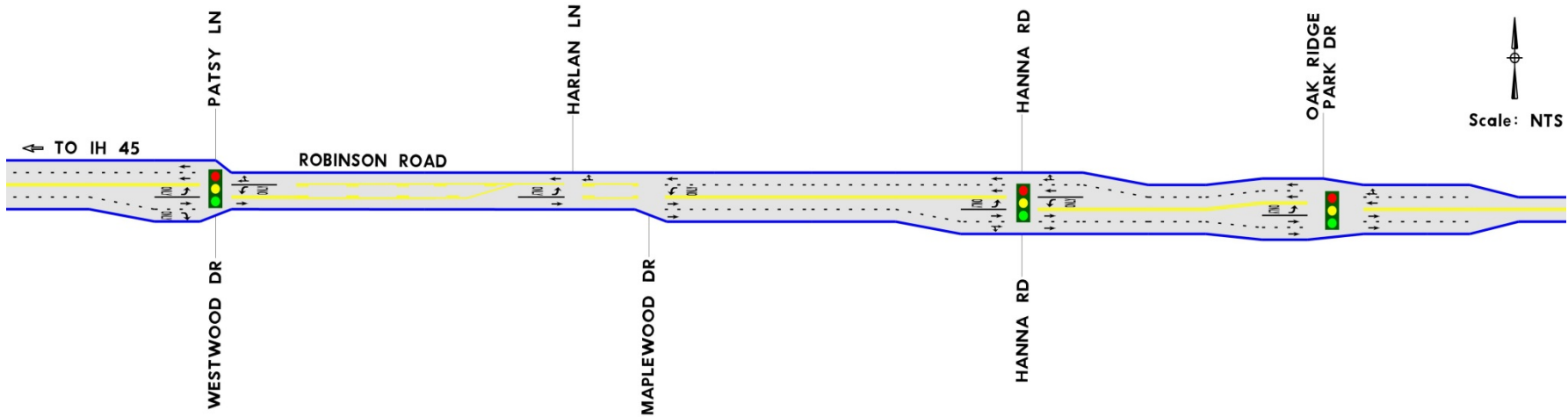
# TRAFFIC MODEL – EXISTING CONDITIONS (PM)



# SUB-COMMITTEE OPTIONS



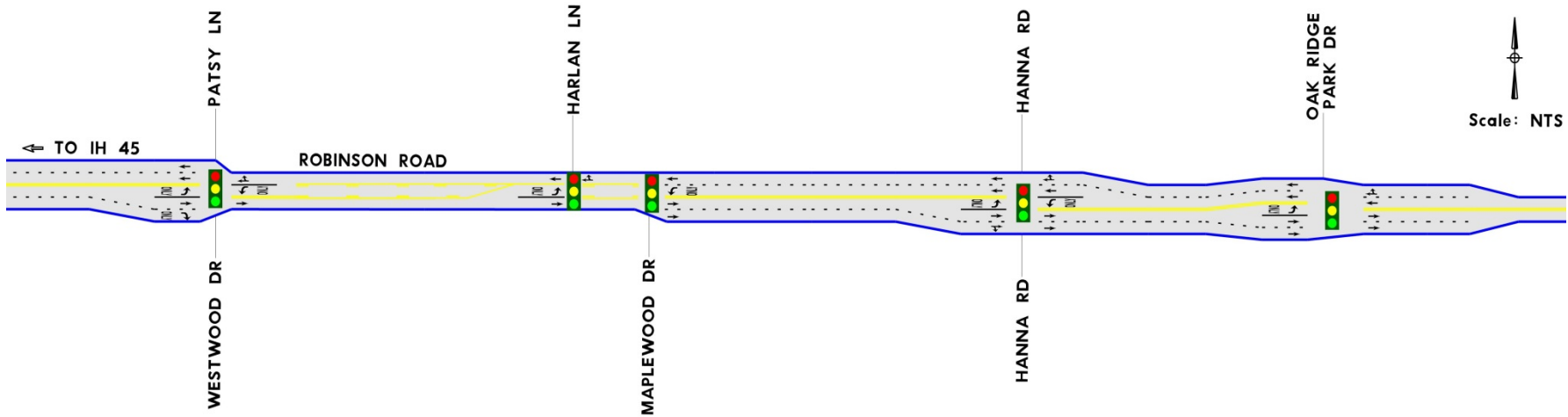
# OPTION 1 – CONCEPTUAL LAYOUT



\*PROPOSED TRAFFIC SIGNALS CONTINGENT ON RESULTS OF TRAFFIC SIGNAL WARRANT ANALYSIS

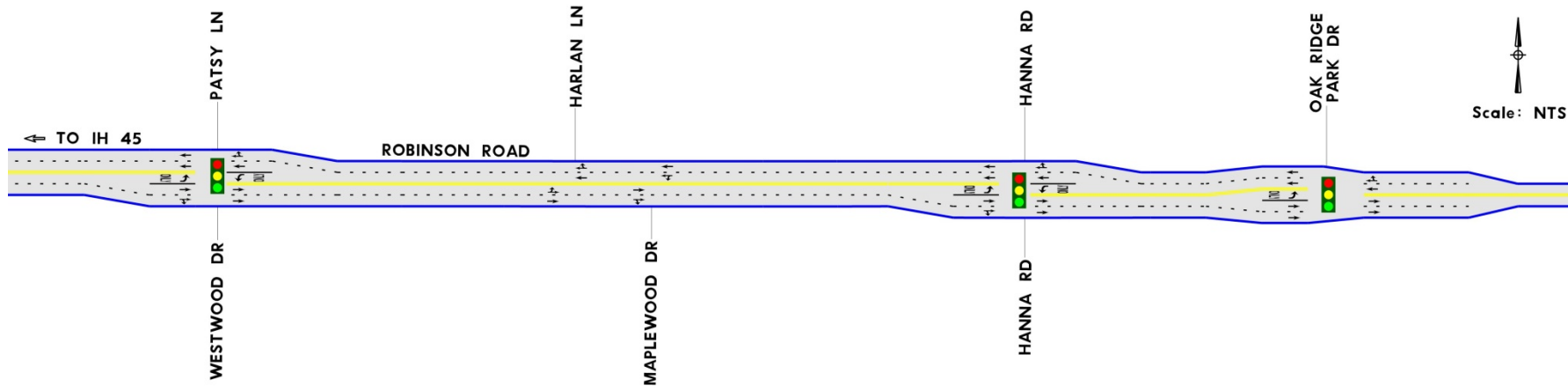


# OPTION 2 – CONCEPTUAL LAYOUT



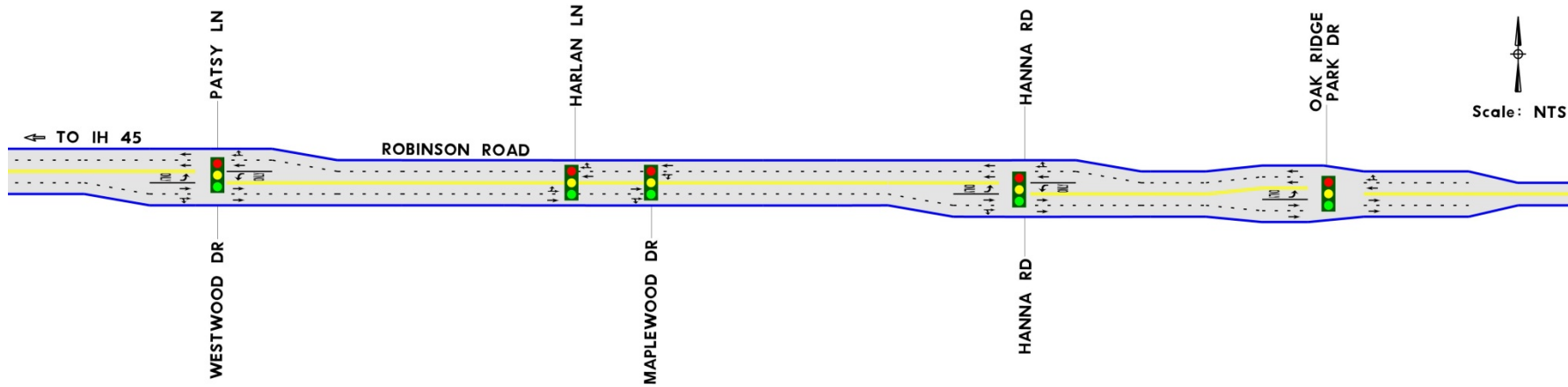
\*PROPOSED TRAFFIC SIGNALS CONTINGENT ON RESULTS OF TRAFFIC SIGNAL WARRANT ANALYSIS

# OPTION 3 – CONCEPTUAL LAYOUT



\*PROPOSED TRAFFIC SIGNALS CONTINGENT ON RESULTS OF TRAFFIC SIGNAL WARRANT ANALYSIS

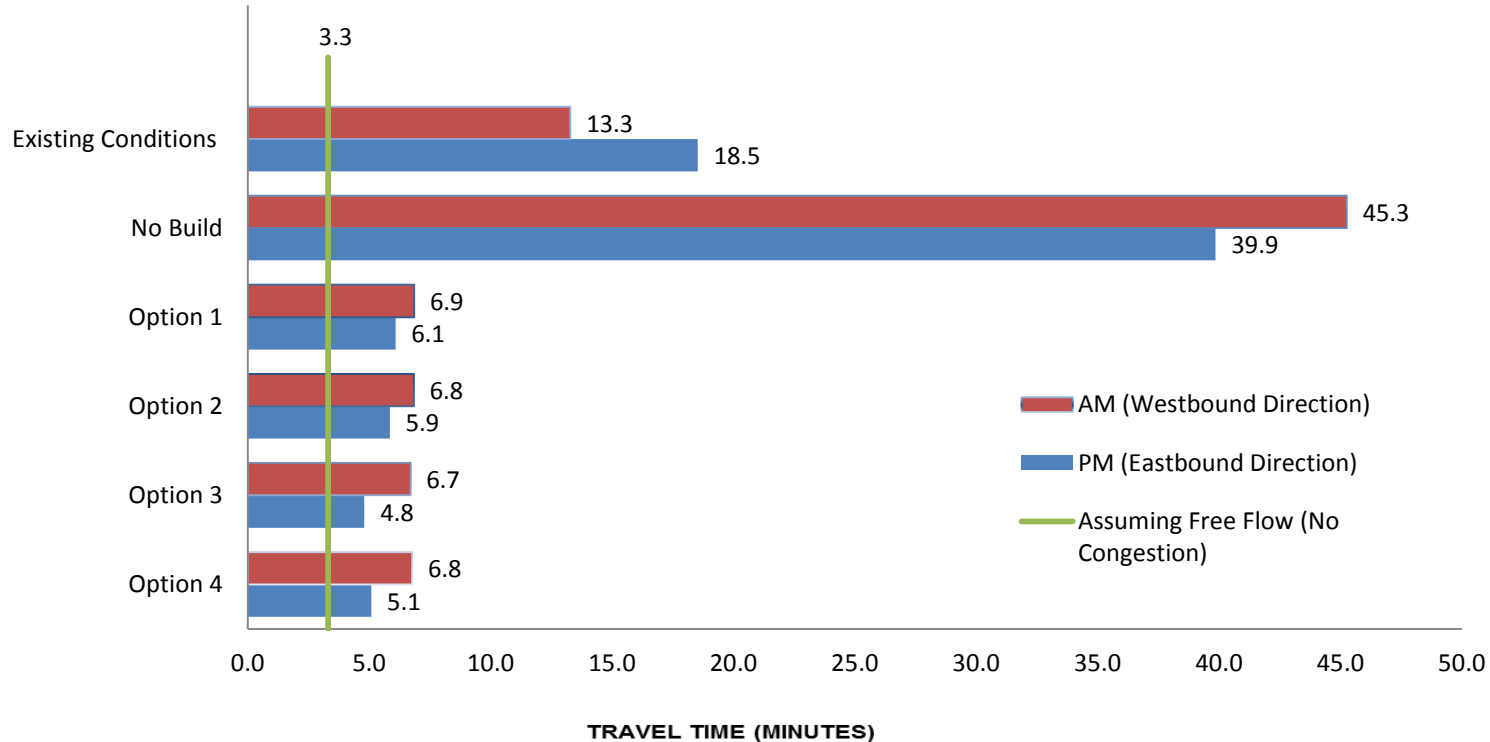
# OPTION 4 – CONCEPTUAL LAYOUT



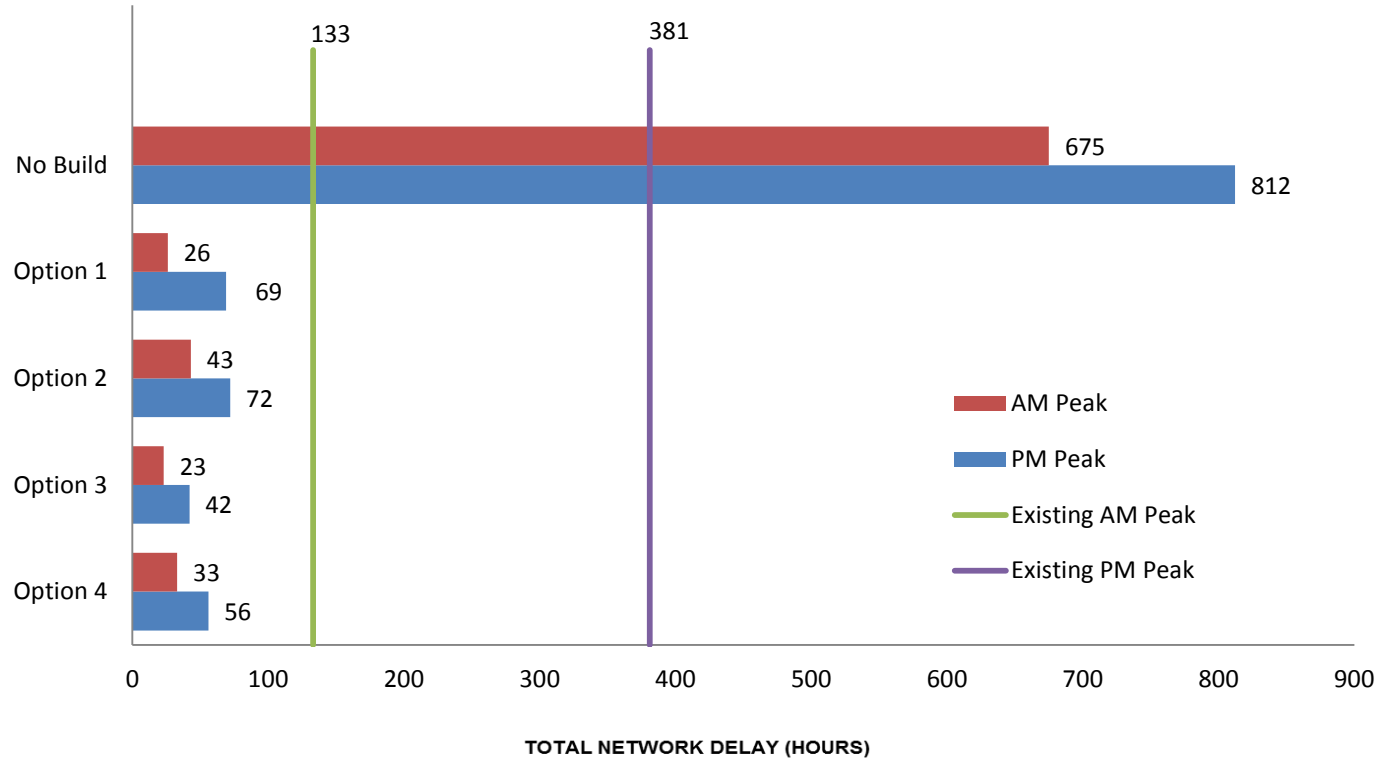
\*PROPOSED TRAFFIC SIGNALS CONTINGENT ON RESULTS OF TRAFFIC SIGNAL WARRANT ANALYSIS



# ANALYSIS RESULTS – TRAVEL TIME



# ANALYSIS RESULTS –TOTAL DELAY (YEAR 2025)



# PROS & CONS OF EACH OPTION

## No Build (Do Nothing)

### Cons

Substantial delay and travel time increase

Increased level of cut-through on neighborhood streets

Potential Grid-Lock

## Option 1

Pros	Cons
Two-Way Left-Turn Lane	More potential cut-through traffic
Less expensive	No lane continuity, lane drops
Shorter construction timeline	Less capacity

## Option 2

Pros	Cons
Similar to Option 1	Similar to Option 1
	Additional signals cause further delay to Robinson Road traffic
	Increased delay on Harlan & Maplewood

## Option 3

Pros	Cons
Less overall delay and travel times	Design constraints/challenges
Phased Construction	More expensive
Reduced cut-through traffic. More capacity	No dedicated turn lane between major intersections

## Option 4

Pros	Cons
Similar to Option 3	Similar to Option 3
	Additional signals cause further delay to Robinson Road traffic
	Increased delay on Harlan & Maplewood



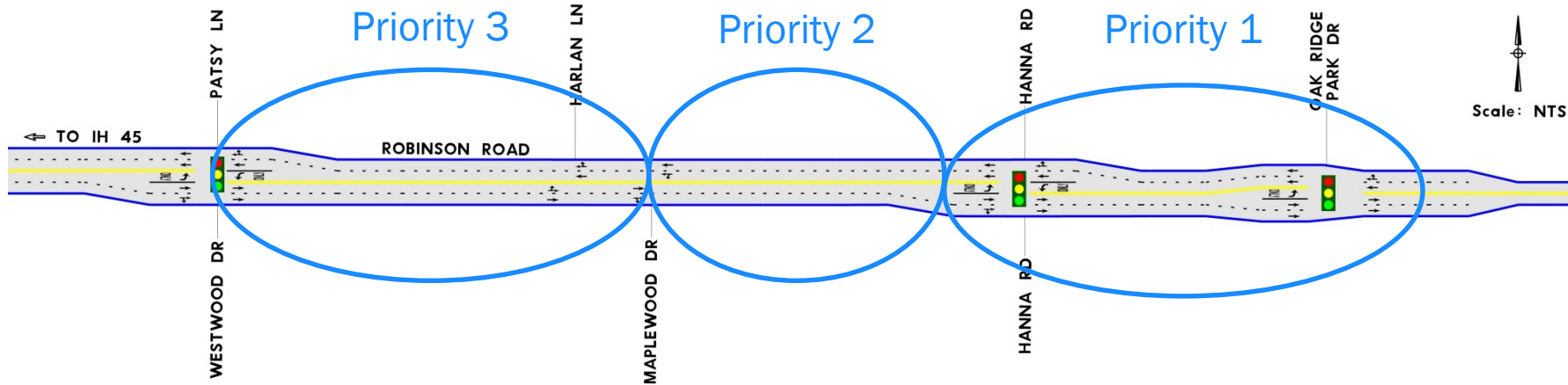
# BENEFIT COST ANALYSIS

Evaluation Factor	Option 1	Option 2	Option 3	Option 4
Annual Economic Savings (\$)	\$7,697,760	\$7,587,160	\$7,863,660	\$7,730,940
Preliminary Planning-Level Cost Estimate	\$4,700,000	\$5,000,000	\$5,200,000	\$5,500,000
B/C Ratio	14.0	12.9	12.9	12.0

# TRAFFIC MODEL – OPTION 3 (PM)



# PHASED CONSTRUCTION OF OPTION 3





# QUESTIONS/COMMENTS