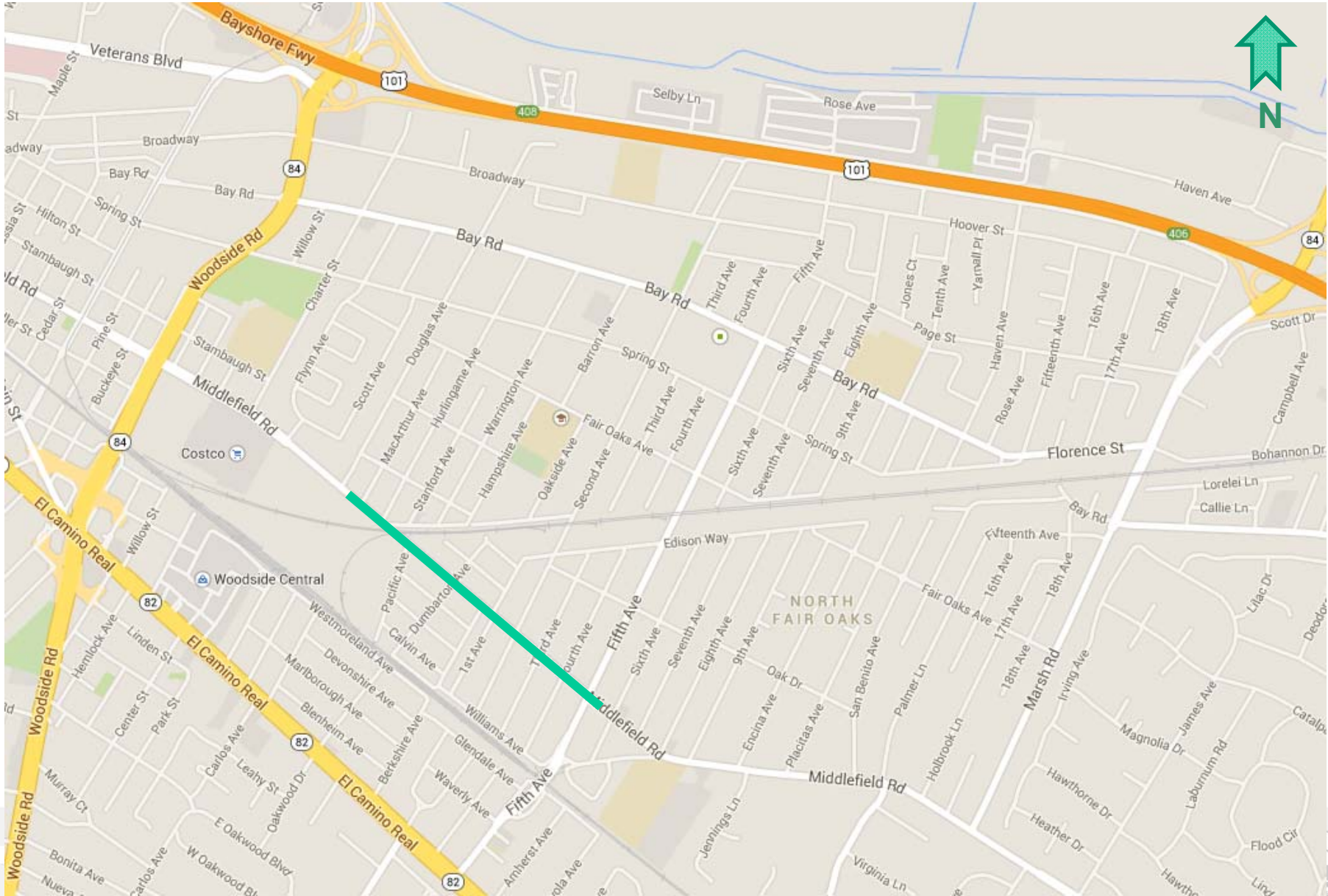




**Middlefield Road Simulation Model
4 Lanes Vs. 3 Lanes Configuration**

Hanieh Houshmandi
07/24/2014

Middlefield Road Simulation Model



Location Map

Project Location 



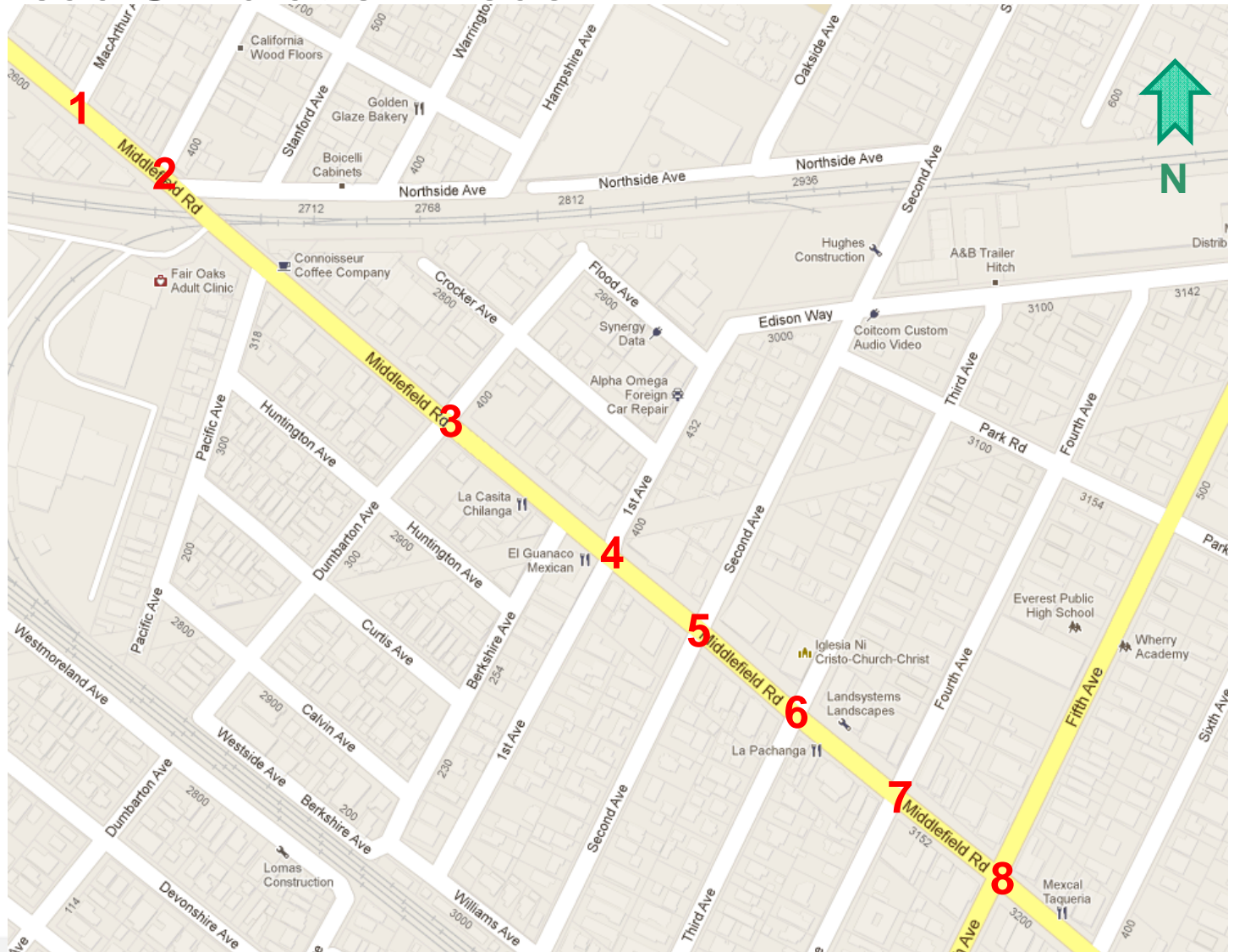
Middlefield Road Simulation Model

Study Intersections

- 1- Middlefield Rd & MacArthur Ave
- 2- Middlefield Rd & Hurlingame Ave
- 3- Middlefield Rd & Dumbarton Ave
- 4- Middlefield Rd & 1st Ave
- 5- Middlefield Rd & 2nd Ave
- 6- Middlefield Rd & 3rd Ave
- 7- Middlefield Rd & 4th Ave
- 8- Middlefield Rd & 5th Ave

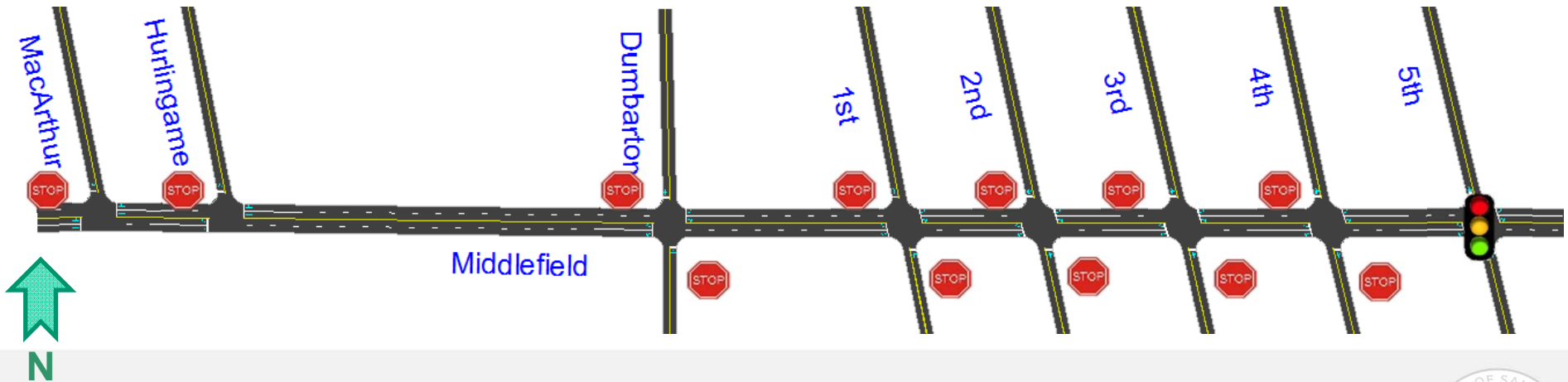
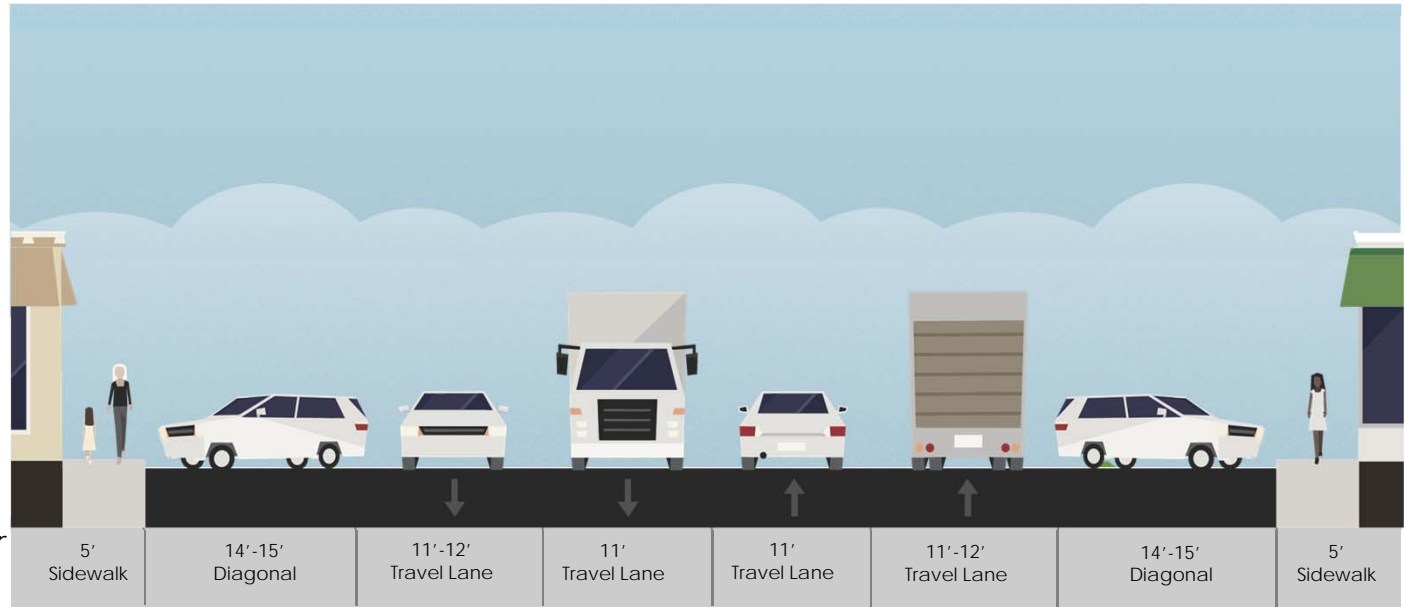
Study Times

7-9 AM and 4-6 PM
Average Weekday



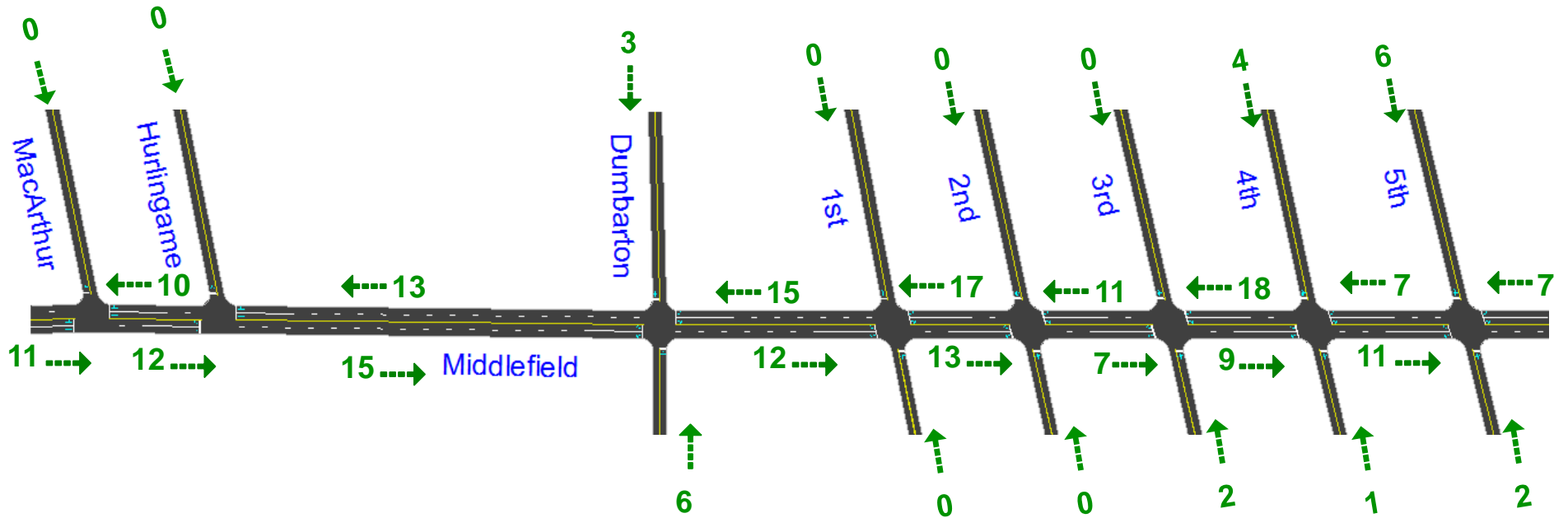
Middlefield Road Simulation Model

- *Parking:* Diagonal
- *Bike Lanes:* NO
- *Sidewalks:* 5 ft wide
- *Space Available:* 86 ft max
- *Daily Traffic:* 9,000 vehicles in each direction per day
18,000 vehicles per day
- *Peak Hourly Traffic:* 850 vehicles in each direction per peak hour



Existing Configuration

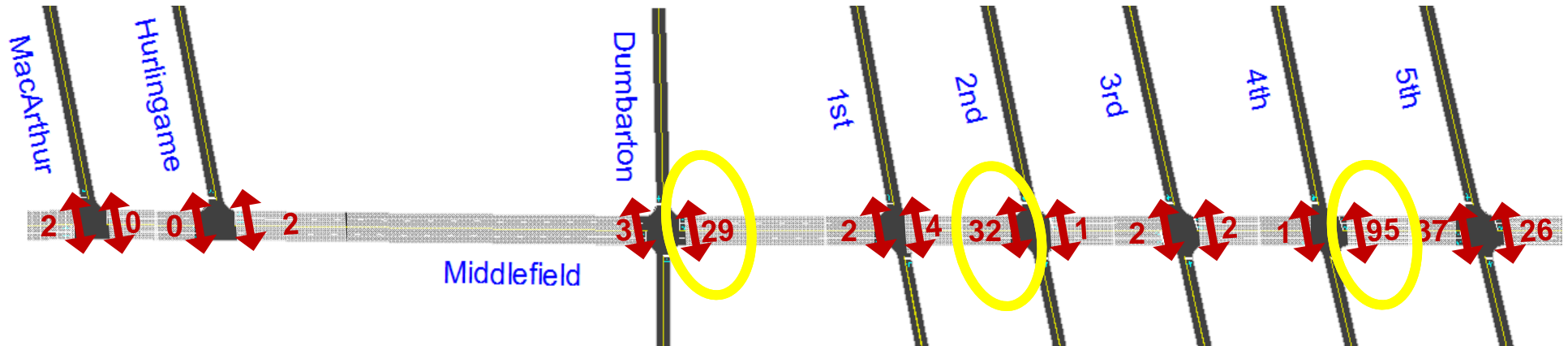
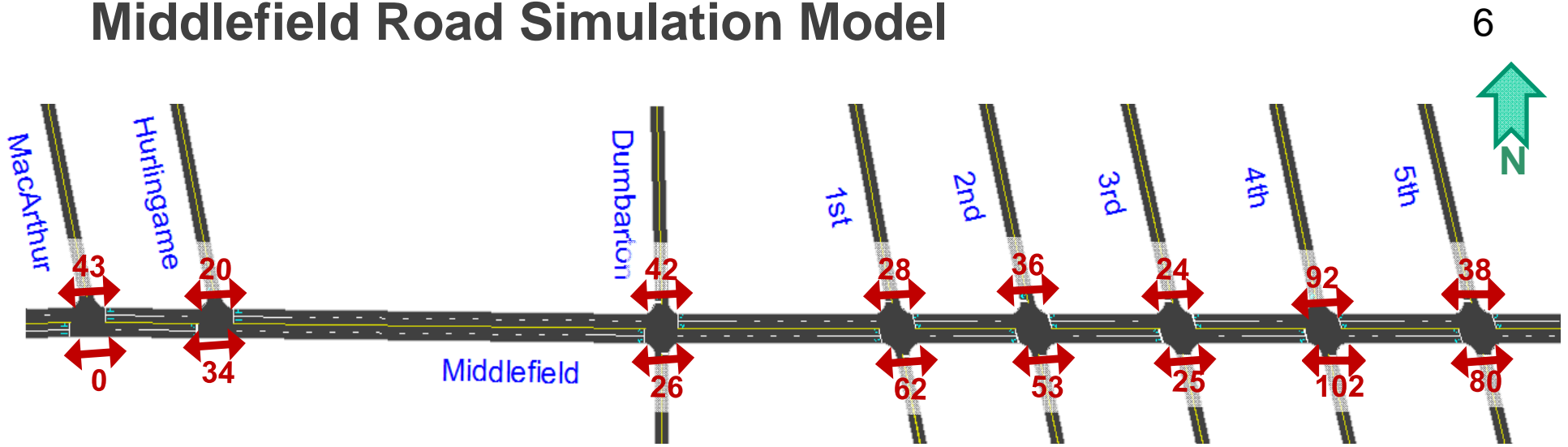
Middlefield Road Simulation Model



2012 PM Peak Hour Bicycle Counts



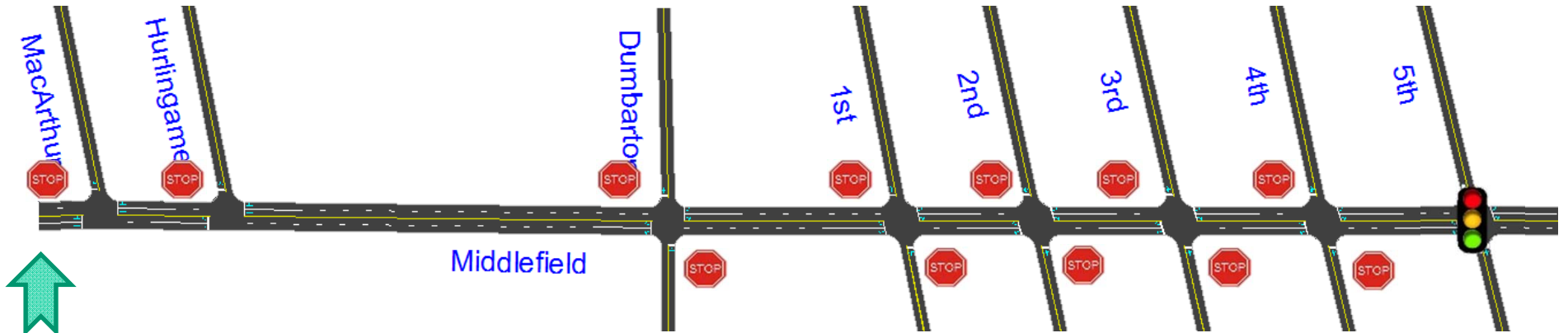
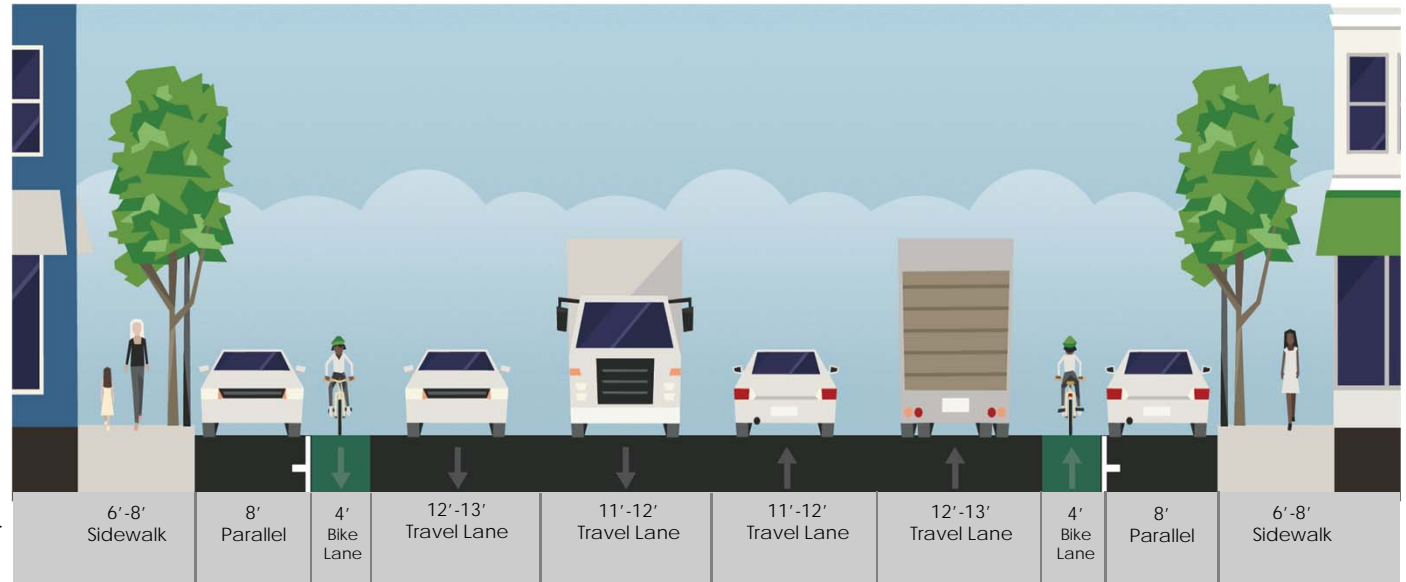
Middlefield Road Simulation Model



2012 PM Peak Hour Pedestrian Counts 

Middlefield Road Simulation Model

- *Parking: ALL Parallel*
- *Bike Lanes: YES*
- *Sidewalks: 6 ft – 8 ft wide*
- *Space Available: 86 ft max*
- *Daily Traffic: 9,000 vehicles in each direction per day
18,000 vehicles per day*
- *Peak Hourly Traffic: 850 vehicles in each direction per peak hour*

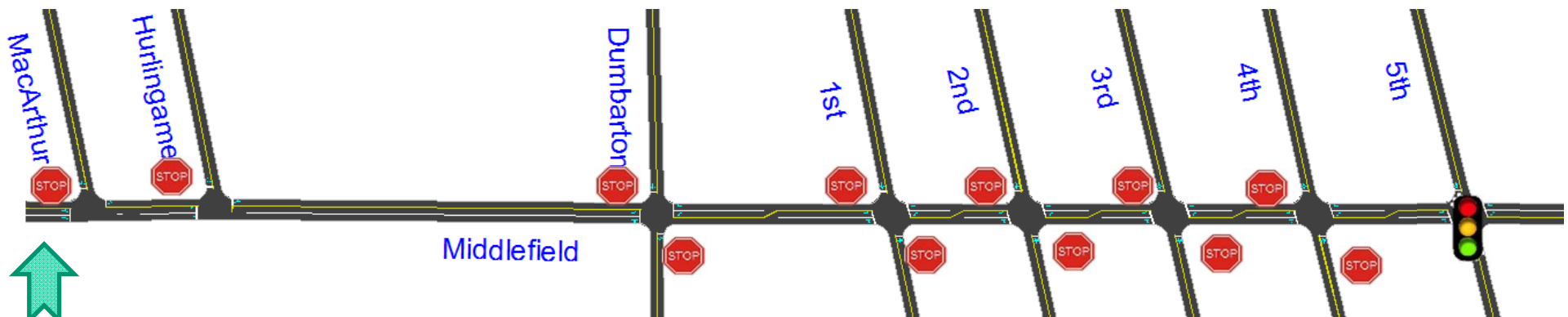
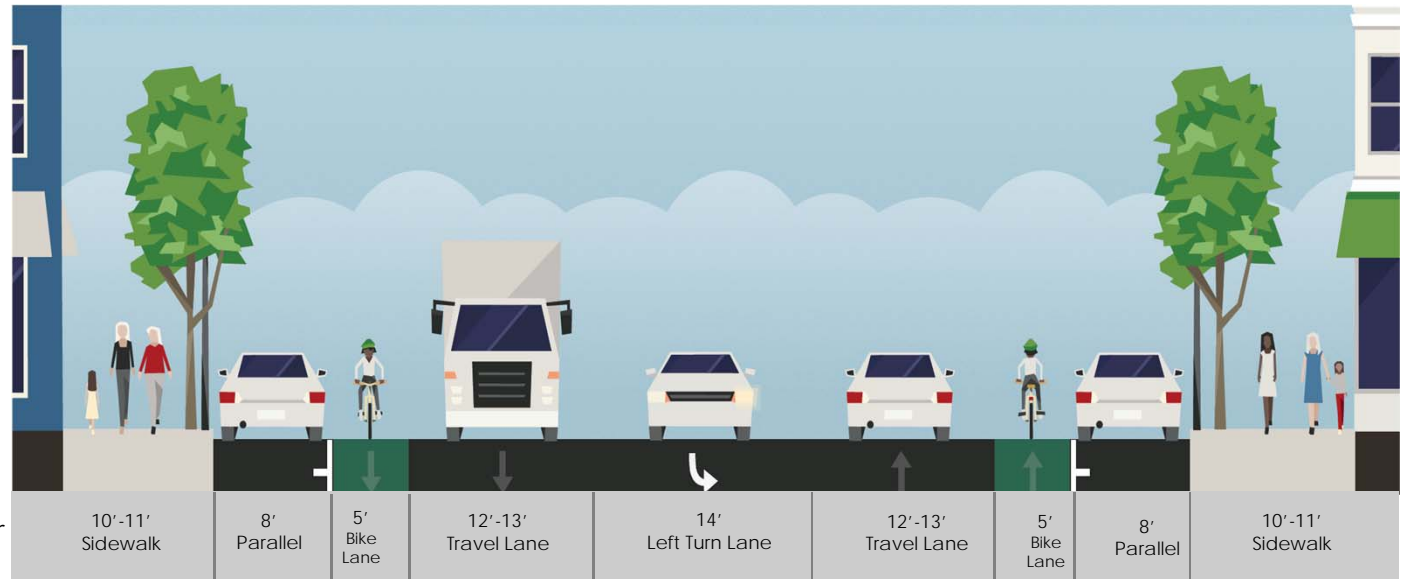


4 Lane Configuration



Middlefield Road Simulation Model

- *Parking: ALL Parallel*
- *Bike Lanes: YES*
- *Sidewalks: 10 ft -11 ft wide*
- *Space Available: 86 ft max*
- *Daily Traffic: 9,000 vehicles in each direction per day
18,000 vehicles per day*
- *Peak Hourly Traffic: 850 vehicles in each direction per peak hour*



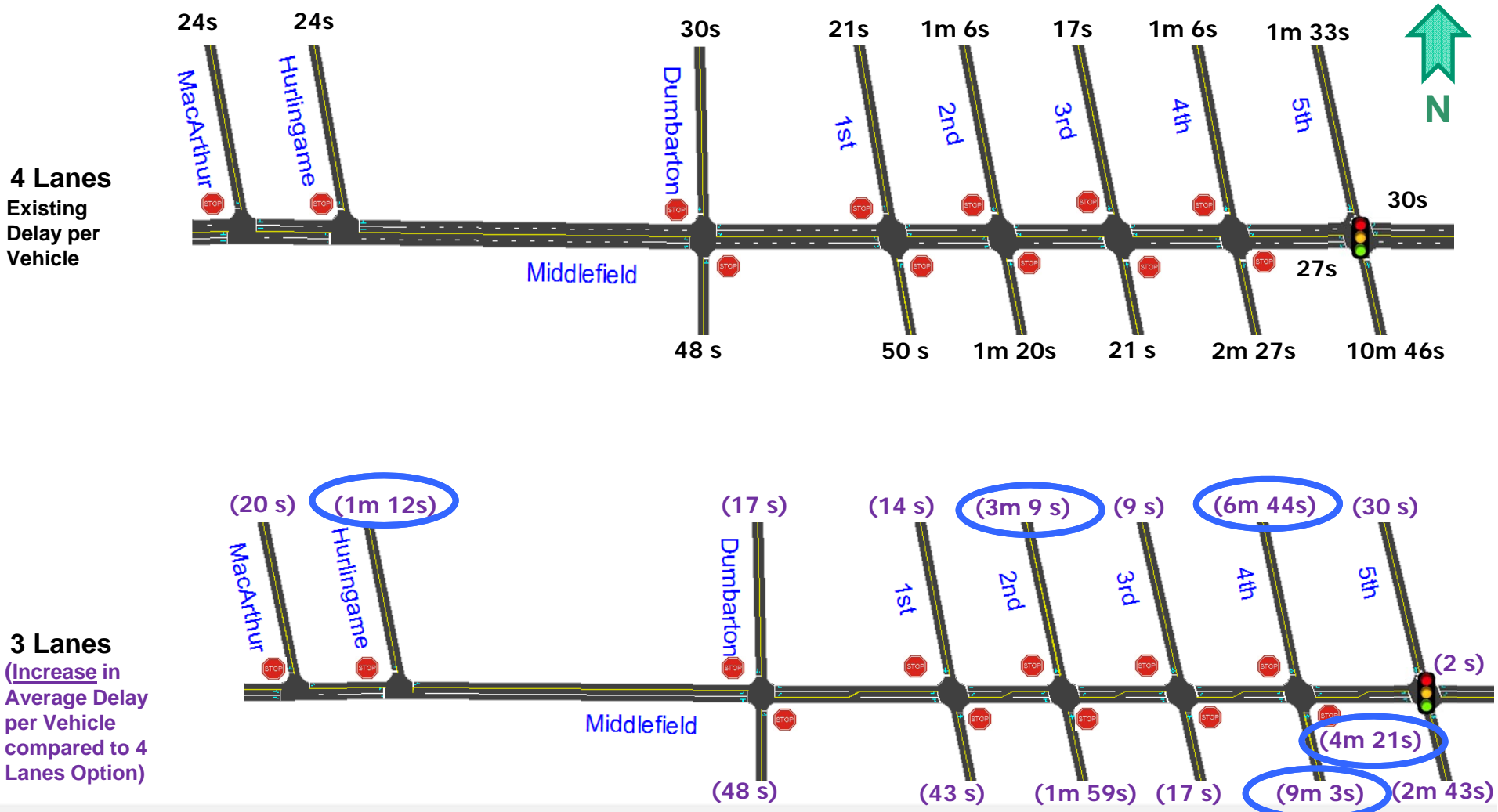
3 Lane Configuration

4 Lanes Vs. 3 Lanes Existing Traffic Counts

- Data collected at all study intersections via video processing in 2012
- Data includes all vehicular movements, bicycles and pedestrians
- PM peak hour, the most congested hour of the day selected as study hour
- Simulation model developed for study hour and Level of Service (LOS) calculated for both alternatives using 2012 Volumes

Middlefield Road Simulation Model

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2012 Traffic Volumes

COUNTY OF SAN MATEO



4 Lanes Vs. 3 Lanes Future Traffic Forecast

- 20 year horizon condition established
- 5% growth factor applied to 2012 traffic counts to forecast future traffic conditions
- Growth applied to all vehicular movements, bicycles and pedestrians
- PM peak hour, the most congested hour of the day selected as study hour
- Simulation model developed for study hour and Level of Service (LOS) calculated for both alternatives using 2032 Volumes

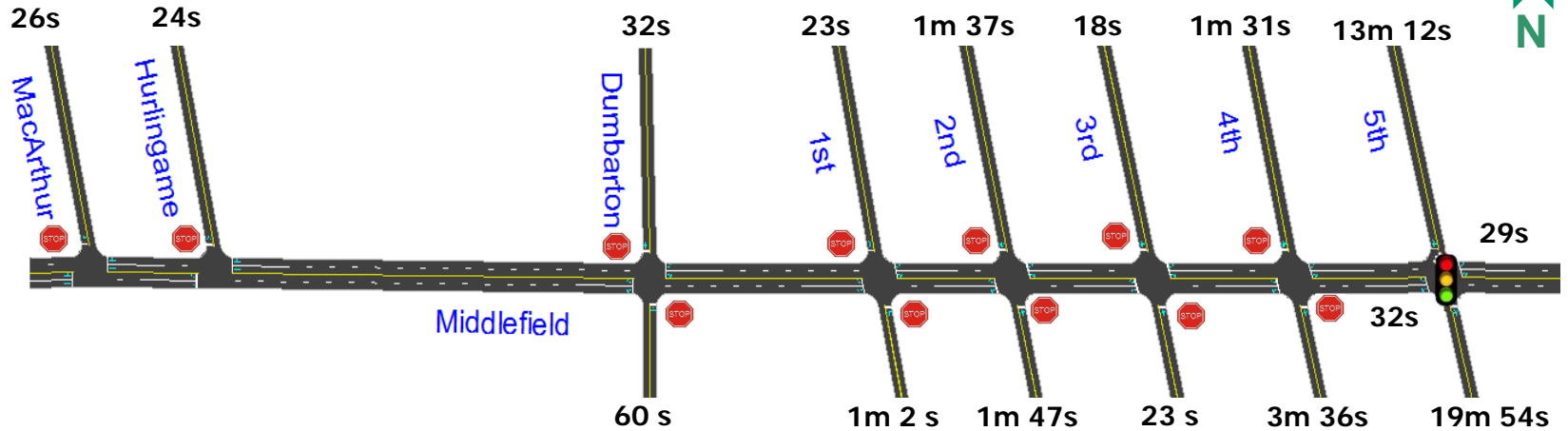
Middlefield Road Simulation Model

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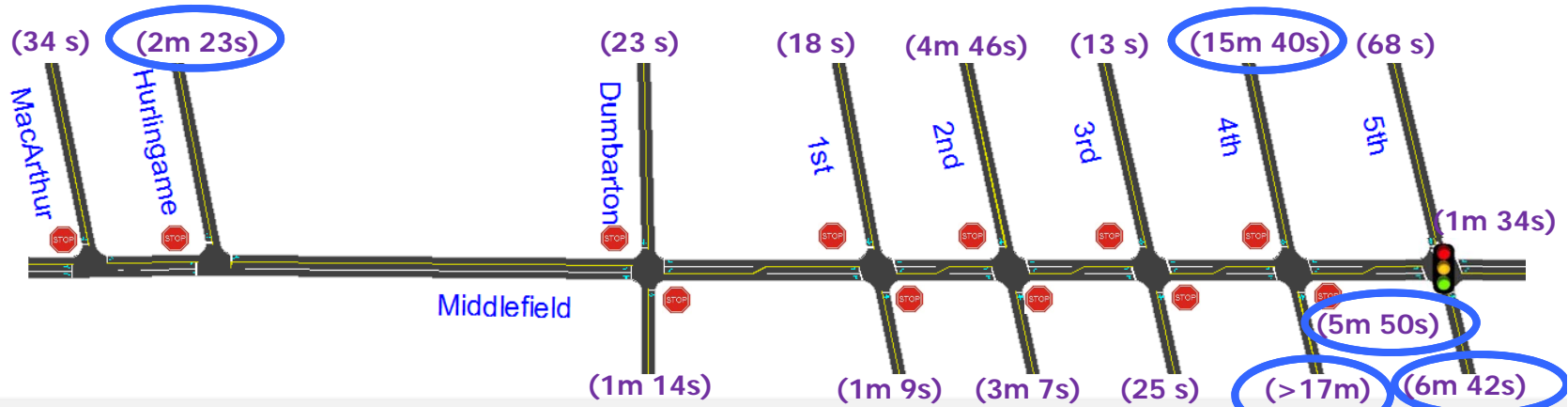
4 Lanes

Existing Delay per Vehicle



3 Lanes

(Increase in Average Delay per Vehicle compared to 4 Lanes Option)



2032 Traffic Volumes

Questions?

THANK YOU

