



APS Stratford Project ***Transportation Analysis Overview***

PFRC #9

February 17, 2016

Outline



1. Key Takeaways
2. TIA
 - A. Document
 - B. Analysis
 - C. Assumptions
 - D. Results—Key
 - E. Results—AM
 - F. Results—PM
3. Key Takeaways



1. Key Takeaways



Arrival Peak Hour

Both Site Plan (Road) and Alternate Site Plan (No Road)

- 5-Points—Need signal timing changes. **NEW**
- Old Dominion & Lorcom—Need signal timing changes. Do not need second northbound thru lane. **NEW**

Site Plan (Road)

- Drop-off/Pick-Up driveway at Old Dominion—2 exit lanes needed. **CONFIRMED**

Alternate Site Plan (No Road)

- 5-Points--Need to extend southbound left-turn lane on Military on approach to 5-Points. **NEW**
- Drop-off/Pick-up driveway at Vacation—2 exit lanes needed. **NEW**

1. Key Takeaways



Dismissal peak hour

- Minimal impacts to vehicle operations. **CONFIRMED**

Old Dominion Signal Warrants

Site Plan (Road)

- Full signal at new driveway exit meets warrants. **CONFIRMED**

Alternate Site Plan (No Road)

- Pedestrian Hybrid Beacon (HAWK) meets warrants. **CONFIRMED**



2A. TIA Document



- Draft to VDOT and County by end of week.
- Will include:
 - Background information
 - Analysis of existing conditions
 - Trip generation
 - Site traffic distribution and assignment
 - Analysis of future conditions without development
 - Analysis of future conditions with development
 - Conclusions
 - Appendices

2B. TIA Analysis

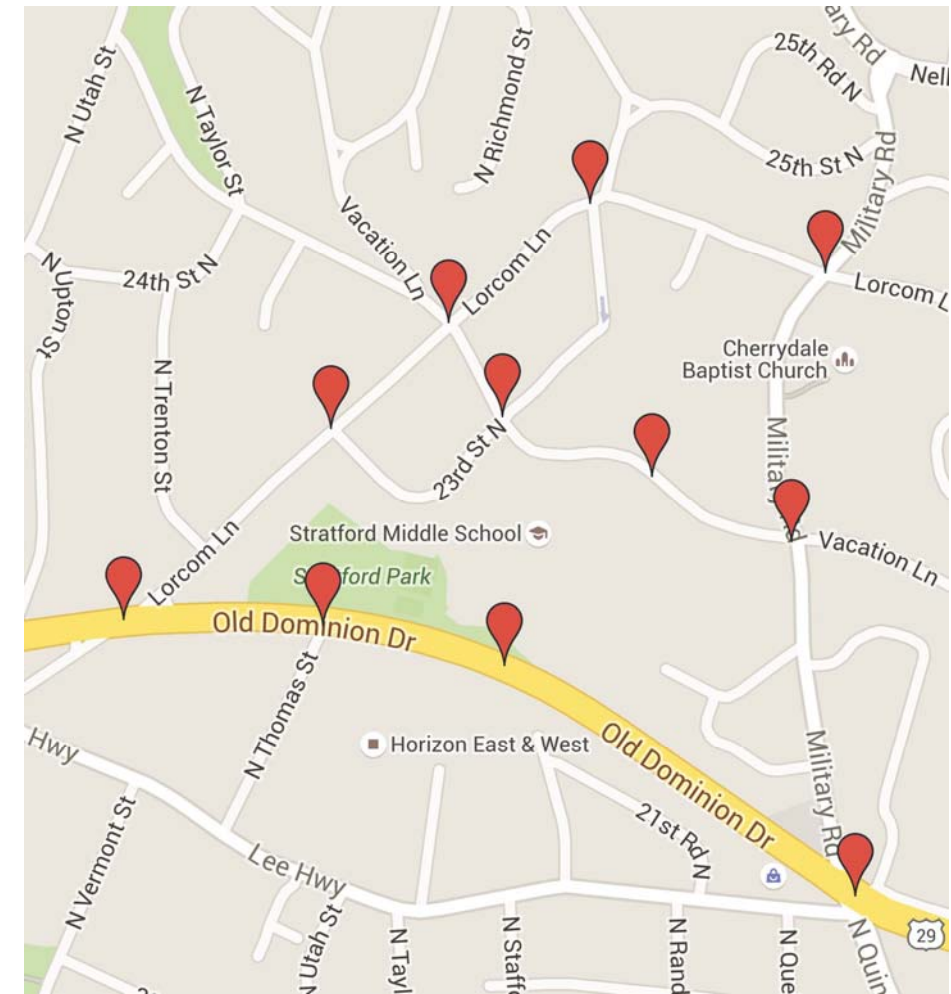


What we analyzed ...

- Vehicular delay--all study intersections
- Level of Service (LOS)—all study intersections
- Queueing—all study intersections and Vacation Lane

Analysis tools

- SimTraffic used for unsignalized intersections.
- Synchro used for signalized intersections (including 5-Points).



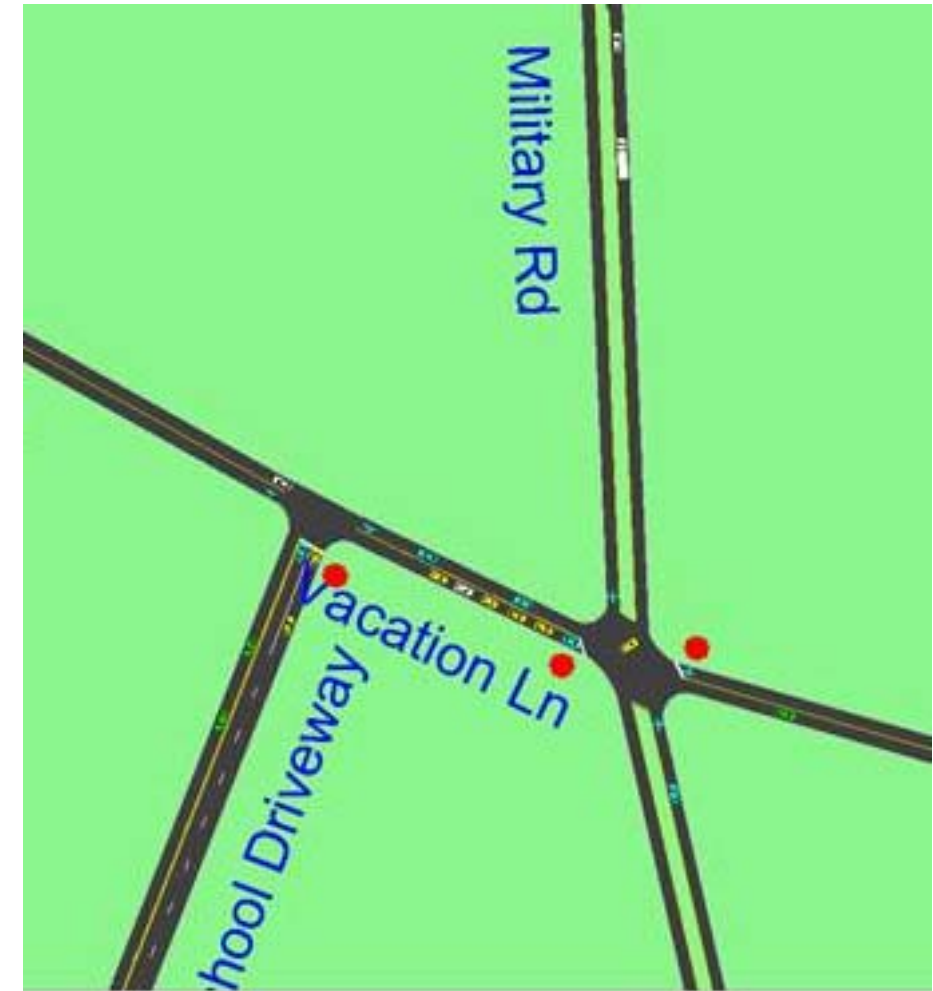
Study Intersections

2B. TIA Analysis



How TIA analysis differs from previous analysis...

- Includes future year of 2019 (previously 2021) based on VDOT requirements
- Refined analysis of 5-points
- Revised trip distribution
- Analyzed impact of pedestrian crossings
- Included HAWK in Alternate Site Plan Analysis



Example of SimTraffic simulation

2C. TIA Assumptions



Arrival

- 35% drive rate
- 804 trips
- Trip distribution
 - Inbound – Generally evenly distributed
 - Outbound – Weighted slightly towards DC
- 2019 analysis year

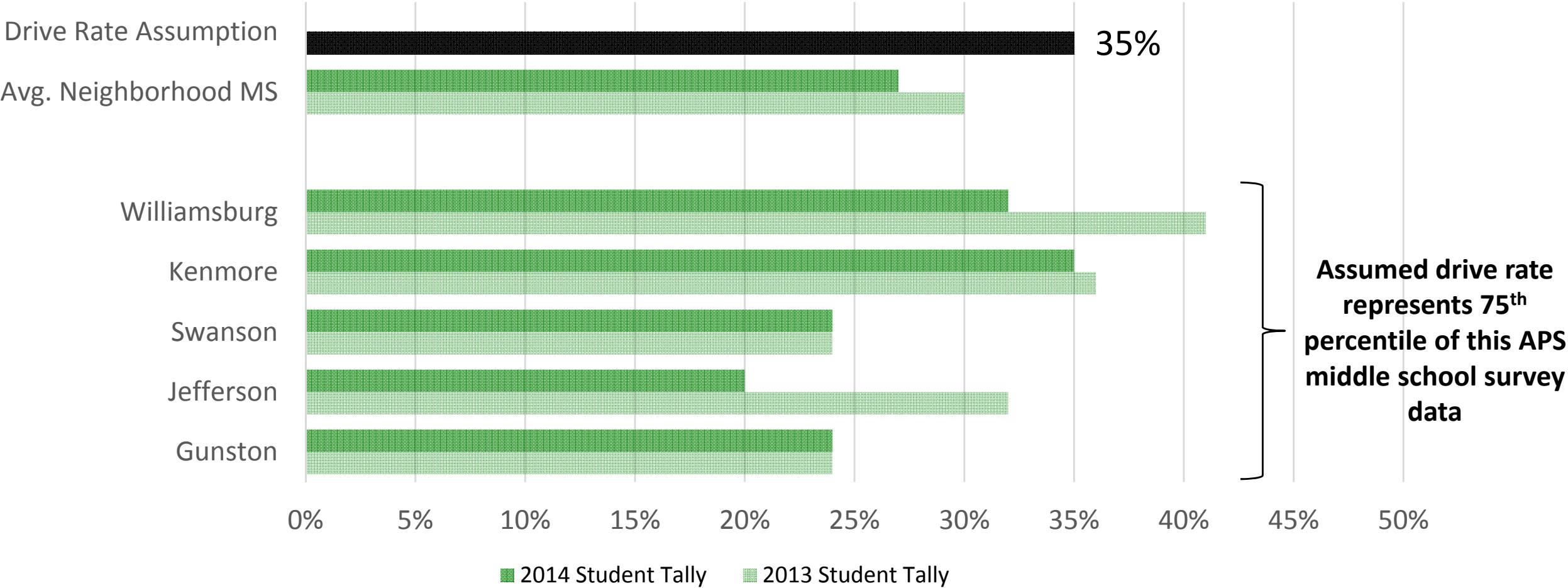
Dismissal

- 22% drive rate
- 505 trips
- Trip distribution
 - Inbound – Weighted slightly toward DC
 - Outbound – Generally evenly distributed
- 2019 analysis year

2C. TIA Assumptions



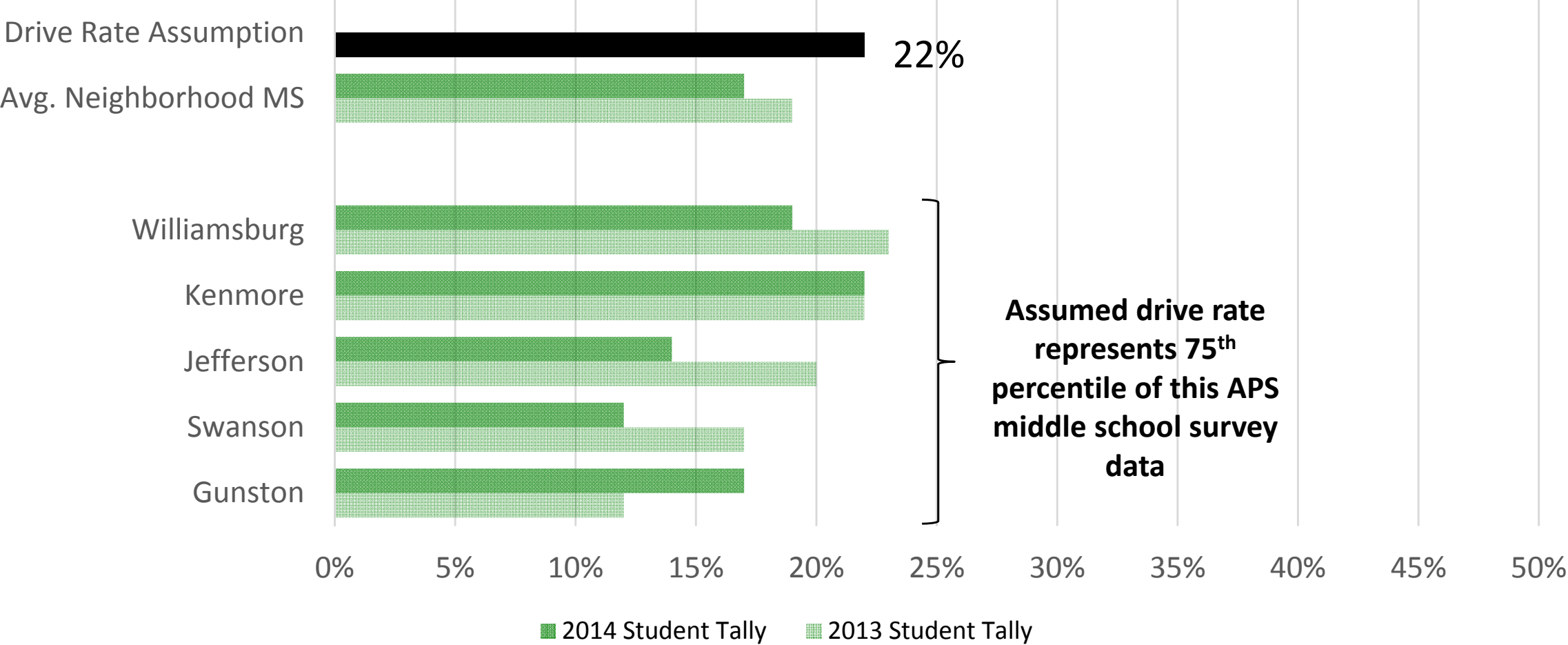
**Assumed AM Drive Rate vs.
Drive Rate at Other APS Neighborhood Middle Schools**



2C. TIA Assumptions



Assumed PM Drive Rate vs.
Drive Rate at Other APS Neighborhood Middle Schools



2C. TIA Assumptions



Trip Generation

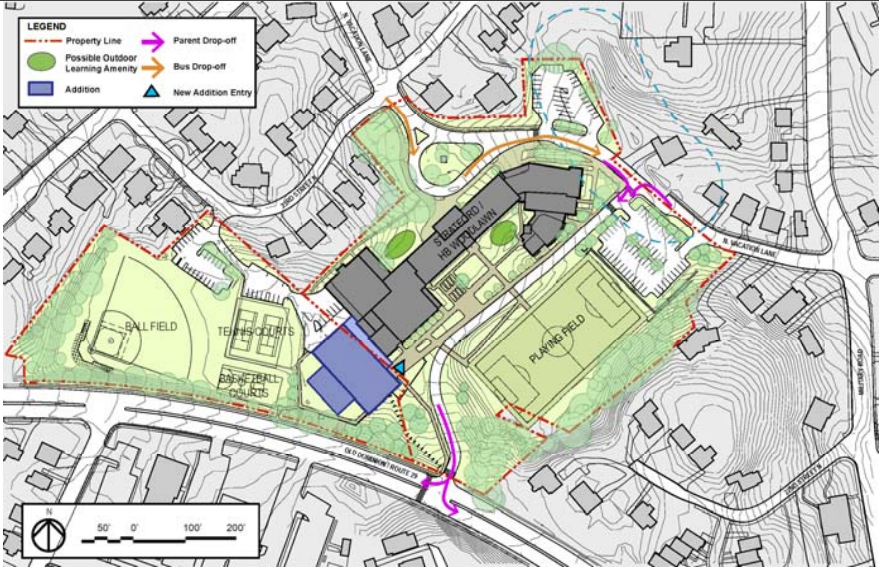
	AM Peak Hour Trips	PM Peak Hour Trips
Student Drop Offs	706	438
Staff	62	31
Visitors	10	10
Buses	26	26
TOTAL	804	505

2D.TIA Results—Key



Level of
Service Codes

LOS A or B
LOS C or D
LOS E or F
N/A



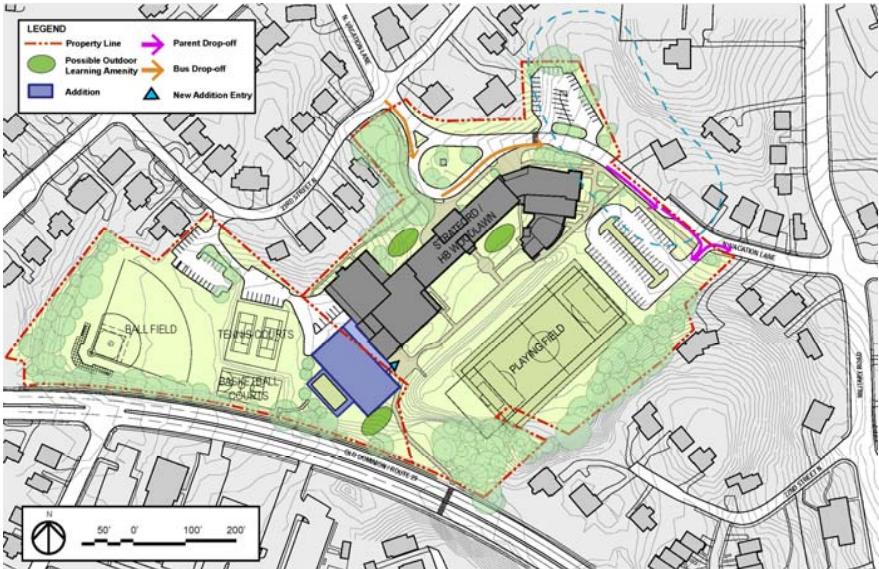
Site Plan

Scenario
Codes

Existing	No Build
E	NB
SP	ASP

Site Plan

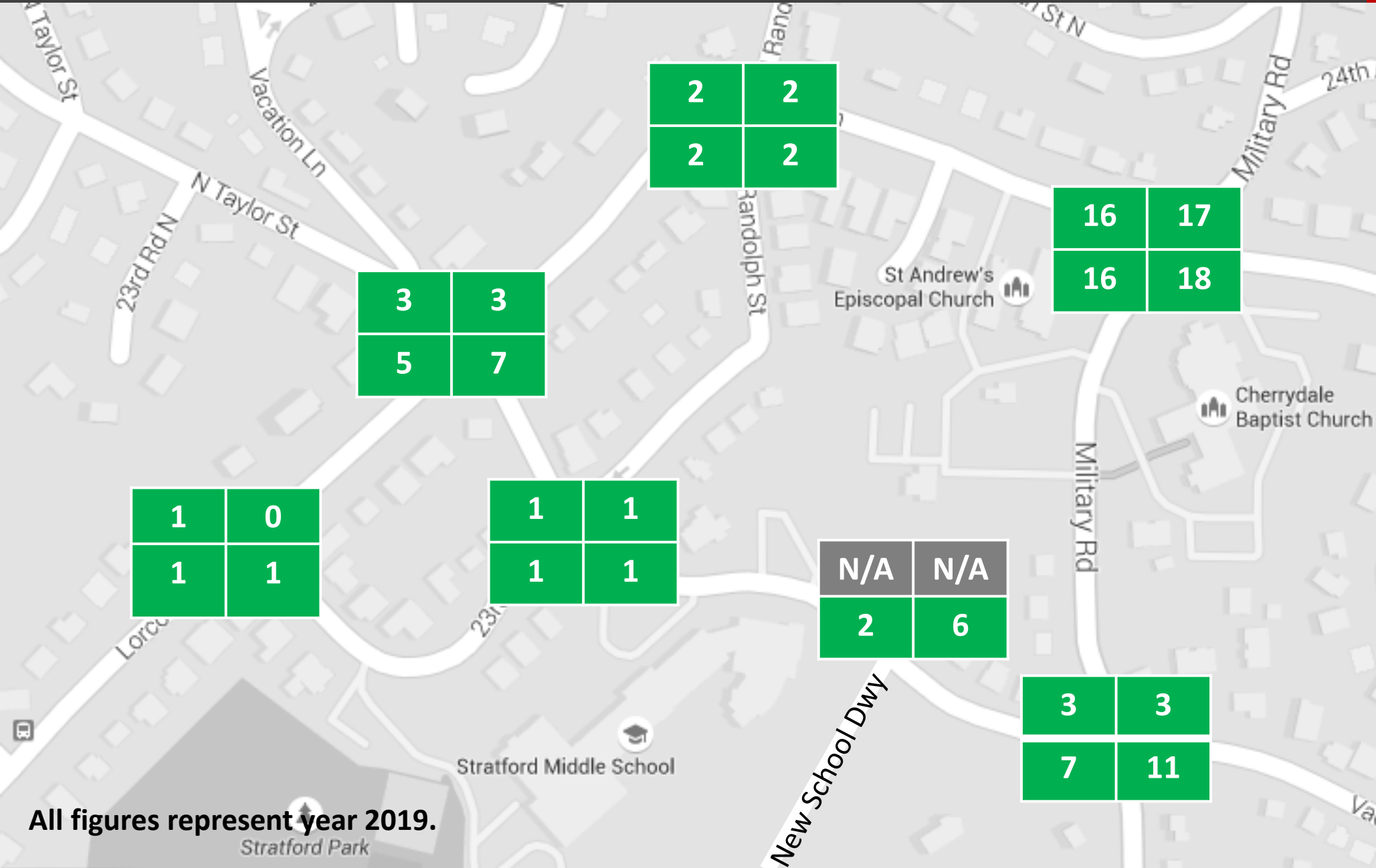
Alternate Site Plan



Alternate
Site Plan

2E. TIA Results – AM

Average Delay per Vehicle (unit: Seconds)



LOS A or B
LOS C or D
LOS E or F
N/A

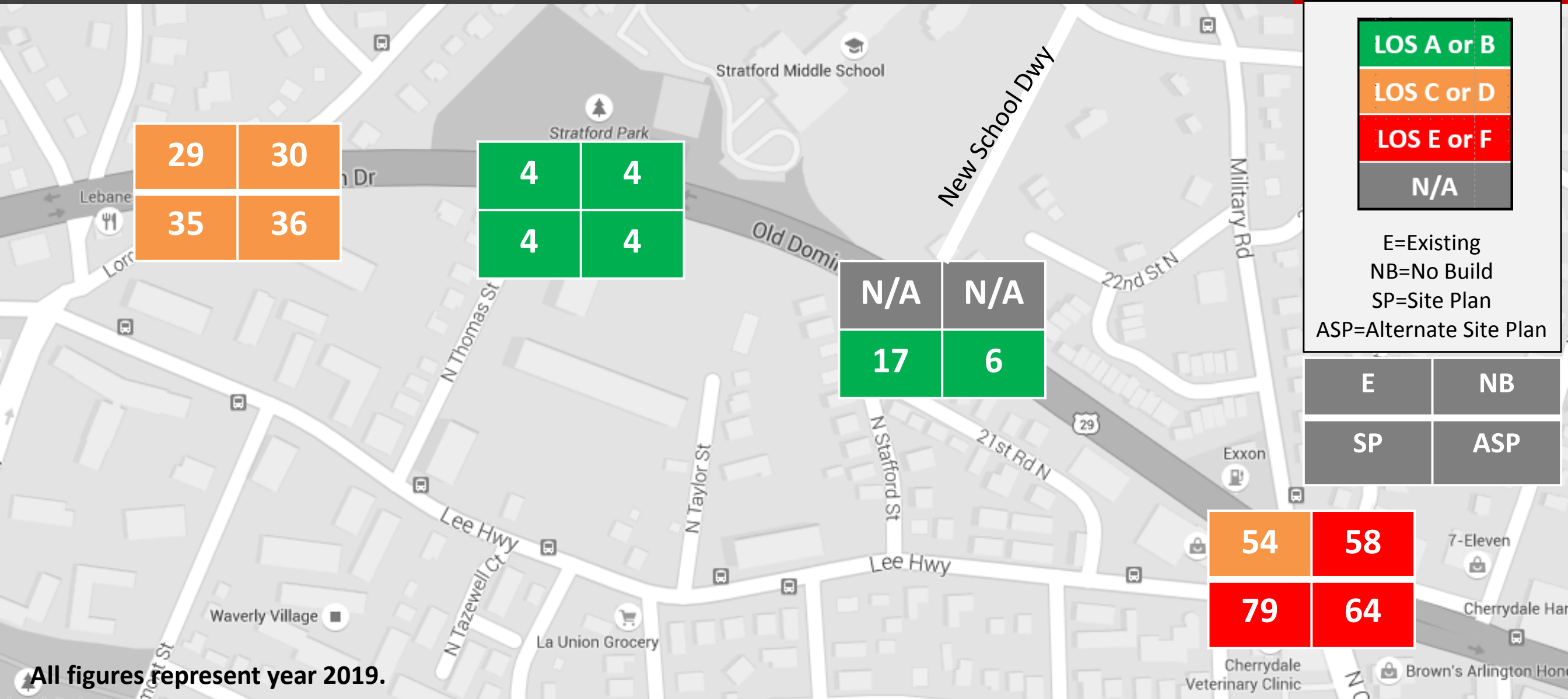
E=Existing
NB=No Build
SP= Site Plan
ASP=Alternate Site Plan

E	NB
SP	ASP

All figures represent year 2019.

2E. TIA Results – AM

Average Delay per Vehicle (unit: Seconds)



All figures represent year 2019.

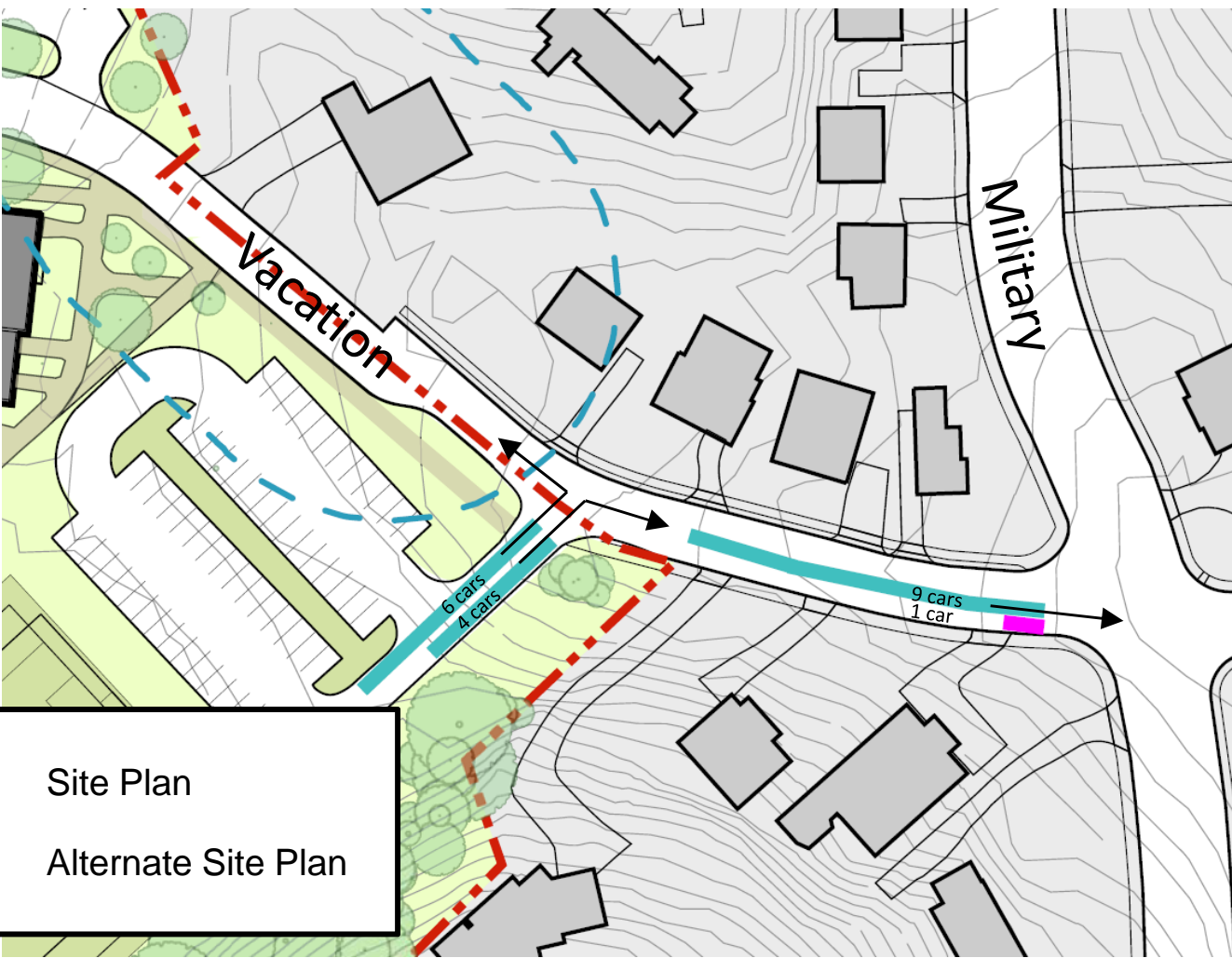
2E. TIA Results—AM



Average Queue



Peak Queue



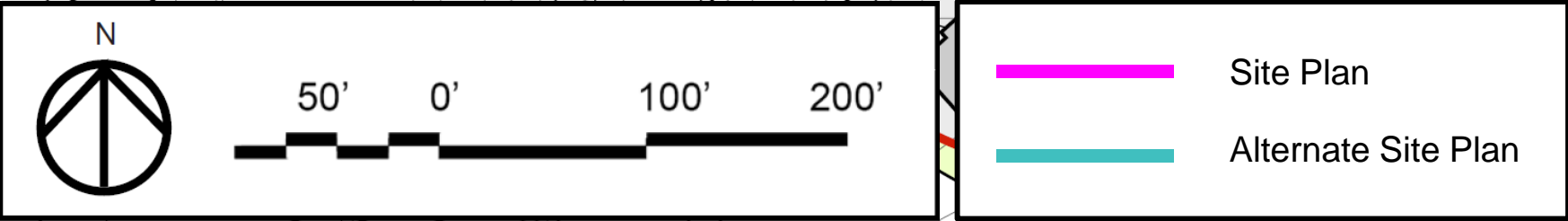
2E. TIA Results—AM



Average Queue

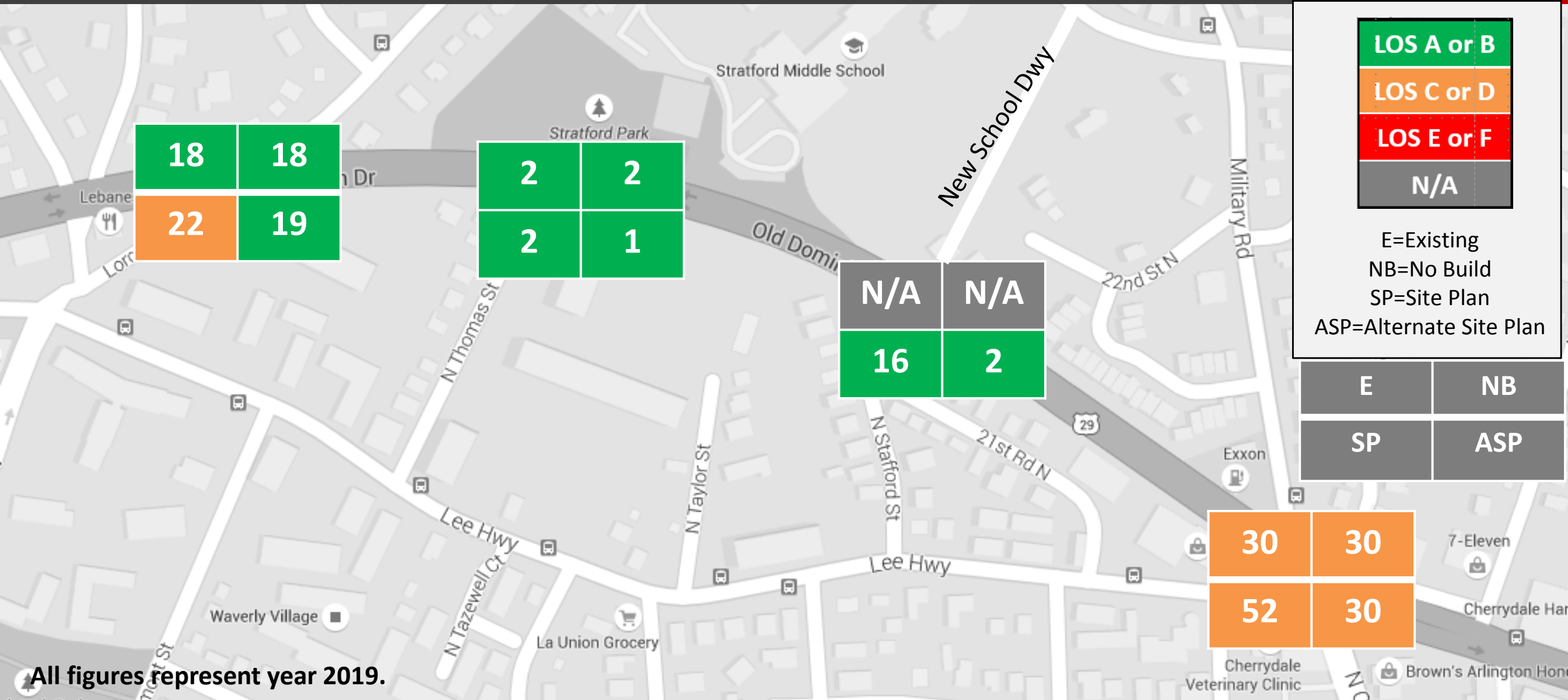


Peak Queue



2F. TIA Results – PM

Average Delay per Vehicle (unit: Seconds)



All figures represent year 2019.

3. Key Takeaways



Arrival Peak Hour

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Site Plan

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Questions?

