



EAST WORKS DISTRICT DEVELOPMENT TRAFFIC IMPACTS

UNDERSTANDING TRAFFIC IMPACTS IN THE COOL SPRINGS AREA



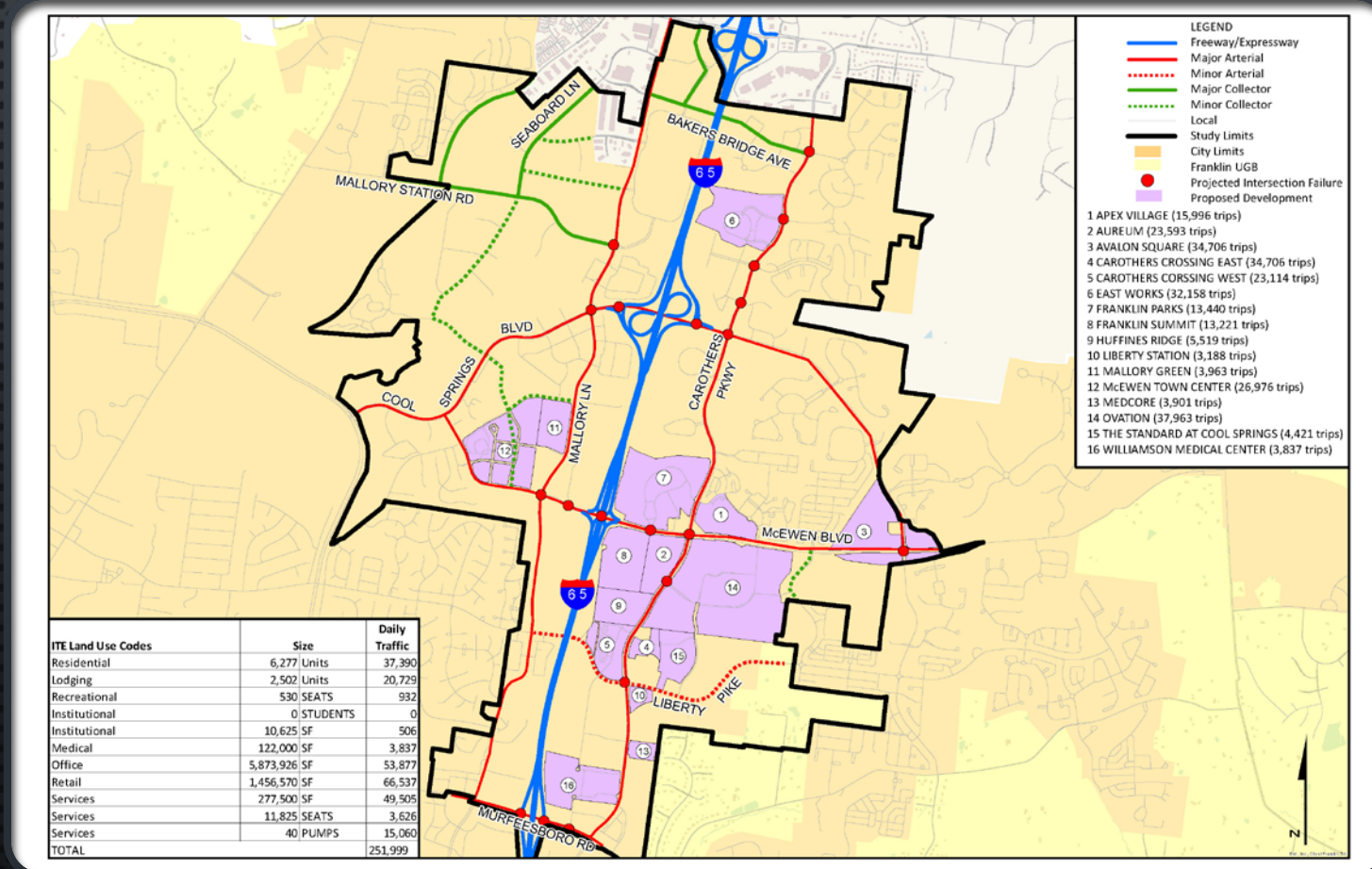
Agenda

- COOL SPRINGS AREA OVERVIEW - BACKGROUND (APPROVED) DEVELOPMENT
- UNDERSTANDING LEVEL OF SERVICE (LOS)
- UPDATED EAST WORKS TRAFFIC STUDY
- EAST WORKS TRAFFIC STUDY CRITICAL INTERSECTION ANALYSIS:
 - RECOMMENDED IMPROVEMENTS
 - LEVEL OF SERVICE (LOS) SUMMARY
- SUMMARY DISCUSSION









Cool Springs Area Overview – Background Developments

- THE DEMAND FOR LAND USES IN COOL SPRINGS ARE DEVELOPING TOWARD MORE MIXED-USE
- MULTIPLE MIXED-USE PROJECTS HAVE BEEN APPROVED IN THE COOL SPRINGS AREA OVER THE LAST 15 YEARS
- THESE PROJECTS HAVE IMPACTS ON LOS FOR EXISTING ROADWAYS
- COOL SPRINGS TRANSPORTATION STUDY WILL EVALUATE SOLUTIONS AND HELP GUIDE DEVELOPMENT



Understanding Level of Service (LOS)

- LOS TELLS US HOW EFFICIENTLY A ROADWAY IS OPERATING
- LOS GOALS VARY BY WHAT COMMUNITIES PERCEIVE AS ACCEPTABLE
- LIKE OTHER BACKGROUND DEVELOPMENTS, EAST WORKS DISTRICT HAS IMPACTS TO LOS

| Intersection | | |
|---|---|-------|
| <ul style="list-style-type: none">• Highly stable, free-flow condition with little or no congestion• Delay: <10 seconds/vehicle |  | LOS A |
| <ul style="list-style-type: none">• Stable, free-flow condition with little congestion• Delay: 10 to 20 seconds/vehicle |  | LOS B |
| <ul style="list-style-type: none">• Free-flow condition with moderate congestion• Delay: 20 to 35 seconds/vehicle |  | LOS C |
| <ul style="list-style-type: none">• Approaching unstable condition with increasing congestion• Delay: 35 to 55 seconds/vehicle |  | LOS D |
| <ul style="list-style-type: none">• Unstable, congested condition• Delay: 55 to 80 seconds/vehicle |  | LOS E |
| <ul style="list-style-type: none">• Stop and go• Delay: >80 seconds/vehicle |  | LOS F |

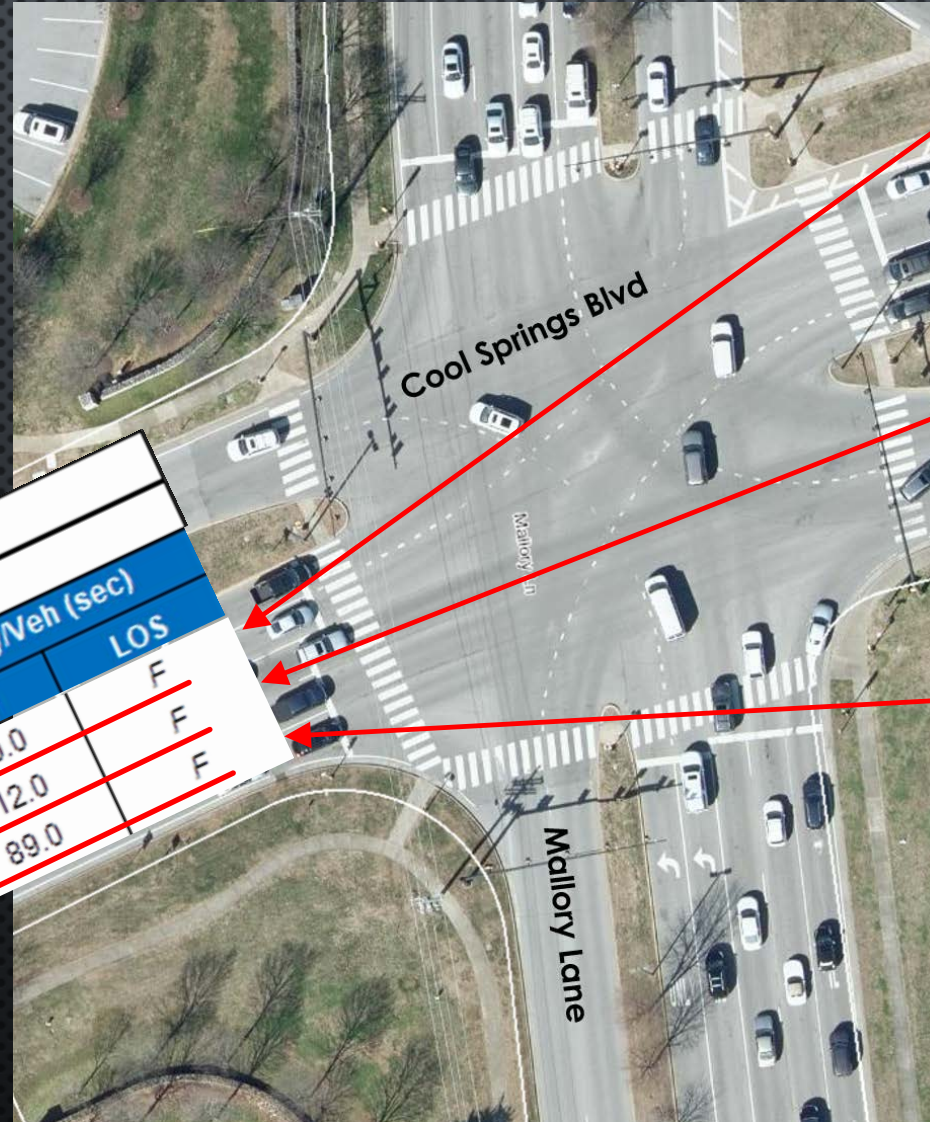
* MARYLAND DOT



Understanding LOS

WHAT DOES LEVEL OF SERVICE "F" LOOK LIKE?
(EXISTING EXAMPLE)

| Intersection: Cool Springs / Mallory Lane | | | | |
|---|----------|---------------|-----------------|-----|
| Approach | Movement | Demand Volume | Noon Peak Hour | |
| | | | Delay/Veh (sec) | LOS |
| EB | Left | 381 | 180.0 | F |
| | Through | 873 | 112.0 | F |
| | Right | 130 | 89.0 | F |



"F" 180 SEC/VEH = CAN EXPECT 2 – 3 SIGNAL CYCLES TO GET THROUGH

"F" 112 SEC/VEH = POSSIBLY 2 CYCLES OF THE SIGNAL TO GET THROUGH

"F" 89 SEC/VEH = LIKELY NOT CLEARING ENTIRE QUEUE OF VEHICLES EVERY SIGNAL CYCLE



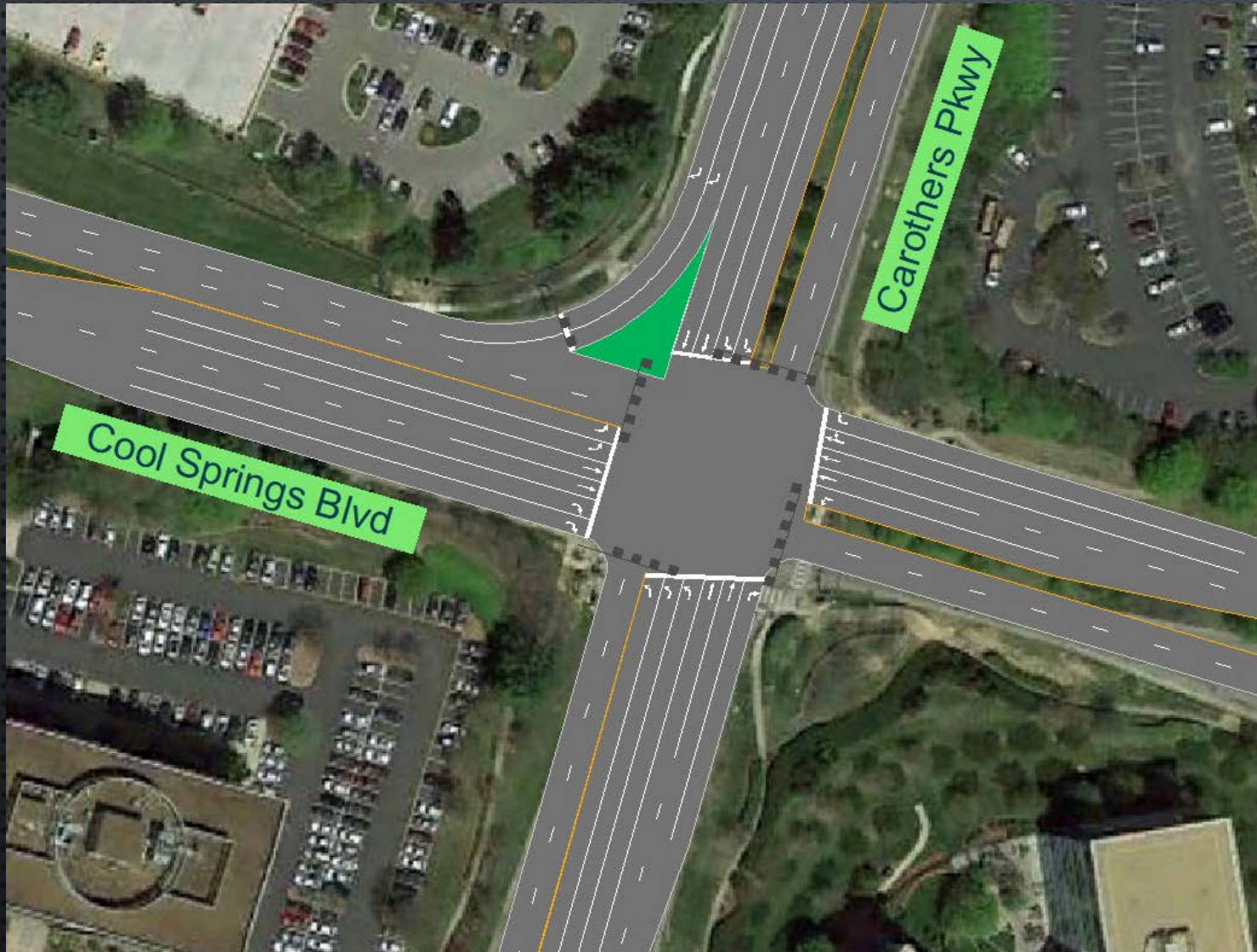


Updated East Works Traffic Study

- EXPANDED STUDY AREA TO INCLUDE BAKERS BRIDGE INTERSECTIONS (NORTH ACCESS):
 - GALLERIA (I-65 OFF RAMP)
 - MARKET EXCHANGE CT
- RE-EVALUATE TRIP DISTRIBUTION ASSIGNMENT
- INCLUDE MARKET EXCHANGE CONNECTION
- IDENTIFY CRITICAL INTERSECTIONS – LEVEL OF SERVICE (LOS)



Critical Intersection Analysis — Recommended Improvements



- **BUILD-OUT SCENARIOS:**
 - COOL SPRINGS @ CAROTHERS
 - TRIPLE LEFTS NORTHBOUND
 - DOUBLE RIGHTS WESTBOUND



Critical Intersection Analysis— Recommended Improvements



- **BUILD-OUT SCENARIOS:**

- COOL SPRINGS @ I-65 NB RAMP
- SIGNALIZE RIGHT TURNS
- DOUBLE RIGHTS
- MOVE RAMP FOR STORAGE/QUEUES



Critical Intersection Analysis— Recommended Improvements



- **BUILD-OUT SCENARIOS:**
 - MARKET EXCHANGE CT CONNECTION
 - PROVIDES ACCESS TO BAKERS BRIDGE WITHOUT UTILIZING CAROTHERS
 - NEED TO ACQUIRE RIGHT-OF-WAY
 - REVIEW ROUNDABOUT AND CONNECTIONS

Critical Intersection Analysis — Level Of Service

**Critical Intersections
PM Peak Hour LOS Comparison**

| Intersection | Level of Service (Delay in sec/veh) | | | |
|--|-------------------------------------|----------------------------|----------------------------|---|
| | Existing | Background no improvements | Background w/ improvements | Background + East Works w/ improvements |
| Carothers Parkway and Cool Springs Boulevard | D (50.9) | F (173.8) | F (99.6) | F (114.4) |
| Cool Springs Boulevard and I-65 NB On Ramp | C (33.5) | F (142.6) | D (35.2) | D (37.3) |

NOTE: BACKGROUND = APPROVED DEVELOPMENTS IN AFFECTED AREA



Summary

- THERE CURRENTLY EXIST **MOVEMENTS** AT LEVEL OF SERVICE “**F**” IN FRANKLIN
- THERE CURRENTLY EXIST **INTERSECTIONS** WITH LEVEL OF SERVICE “**E**” IN FRANKLIN
- **INTERSECTION IMPROVEMENTS** CANNOT RAISE THE LOS OF CAROTHERS @ COOL SPRINGS ABOVE LOS “**F**” WITH OR WITHOUT EAST WORKS DEVELOPMENT
- WITHOUT **MAJOR ACQUISITIONS (CONNECTIONS)**, “**F**” DELAY WOULD INCREASE FOR CAROTHERS @ COOL SPRINGS AND OTHER INTERSECTION IMPROVEMENTS WILL BE NECESSARY
- THE COOL SPRINGS TRANSPORTATION STUDY WILL HELP EVALUATE POTENTIAL SOLUTIONS AND HELP BOMA/STAFF GUIDE DEVELOPMENT



Critical Intersection Analysis — Recommended Improvements



BUILD-OUT SCENARIOS:

- COOL SPRINGS @ CAROTHERS
- COOL SPRINGS @ I-65 NB RAMP

