

APPENDIX D – Meeting Summaries

Meeting Minutes

TO:	Deanna Mills, PE Co-Project Manager KYTC Central Office 200 Mero Street Frankfort, KY 40622	Carol Callan-Ramler, PE Co-Project Manager KYTC District 6 Office 421 Buttermilk Pike Covington, KY 41017
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FROM: Brian Aldridge, PE
Project Manager
Stantec Consulting Services Inc.

DATE: October 16, 2018

SUBJECT: CVG Circulation Study
Boone County
KYTC Item No. N/A
Stakeholder Meeting

A Stakeholder Meeting for the subject project was held at the KYTC District 6 Office in Covington, Kentucky on October 15, 2018 at 11:00 a.m. EDT. The following individuals were in attendance:

Mike Bezold	KYTC – District 6
Carol Callan-Ramler	KYTC – District 6
Jeff Earlywine	Boone County
Nikki Hill	KYTC – District 6
James Minckley	KYTC – District 6
Gary Moore	Boone County
Brandon Seiter	KYTC – District 6
Robert Yeager	KYTC – District 6
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

Carol Callan-Ramler welcomed everyone and said the purpose of the meeting was to discuss the scope of work for the Cincinnati/Northern Kentucky International Airport (CVG) Circulation Study. This study will evaluate future traffic operations in the CVG study area (shown in **Figure 1**) that will be impacted by proposed developments and increased traffic.

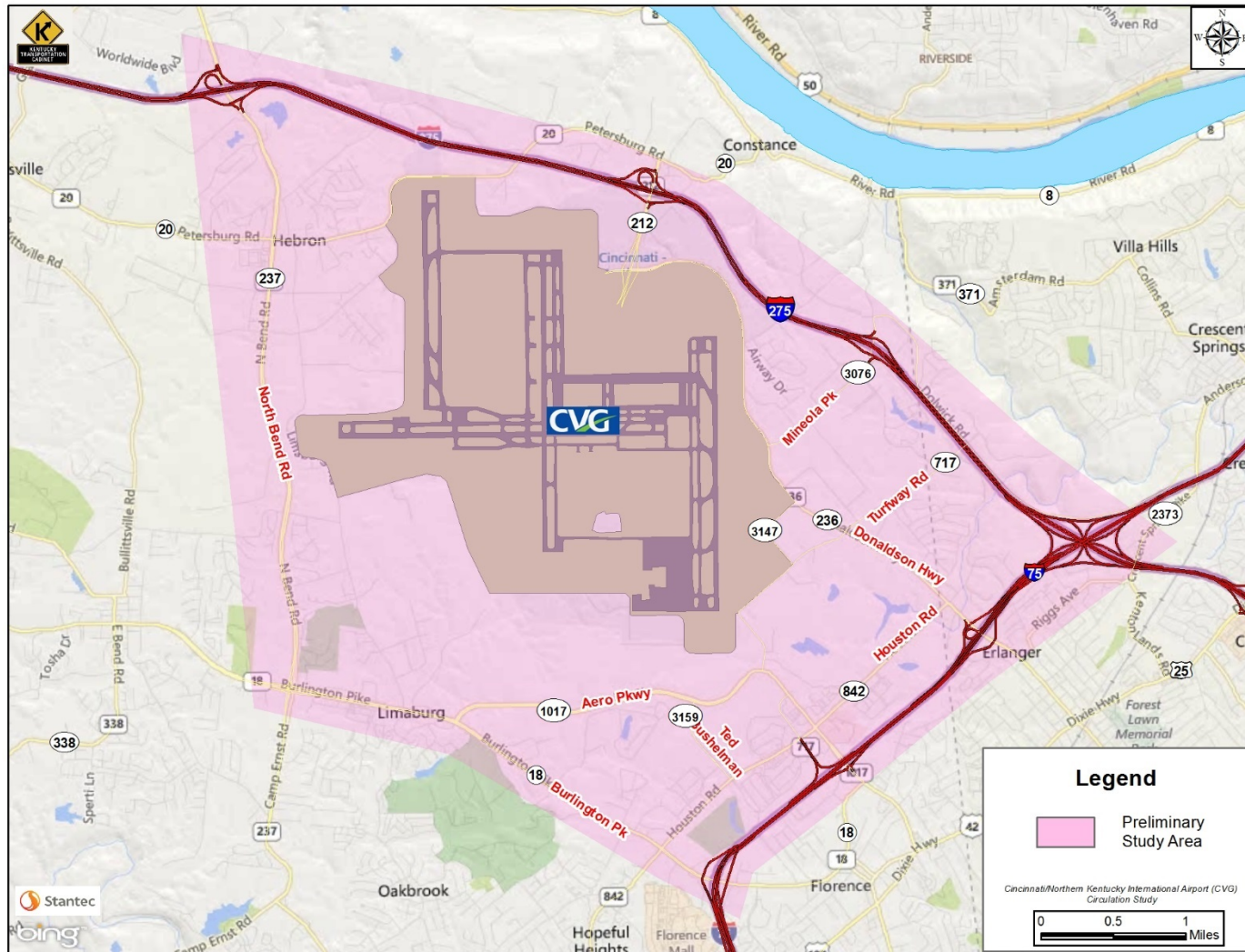


Figure 1: Study Area Map

Brian Aldridge led a discussion. The following enumerated items were discussed.

1. The goal of the study is to evaluate future traffic operations around CVG that will be impacted by proposed developments and analyze improvement alternatives that will address future traffic needs.
2. Boone County and the CVG area are currently undergoing tremendous growth in business and industrial developments. This includes a \$1.5 billion worldwide Amazon Prime Air hub on the south side of CVG's property. The proposed open date is scheduled for 2021 with full operations expected by 2026. This proposed air hub will primarily move parcels from plane to plane, however there will be plane to truck operations. A traffic impact study (TIS) for Amazon's development is currently underway with a draft expected on October 17, 2018.

It was noted that the study area for the CVG Circulation Study, shown in **Figure 1**, includes North Bend Road and the North Bend/KY 18 interchange, which are not included in the TIS.

3. Existing conditions within the study area were briefly discussed. Traffic volumes on I-75 range from 165,500 to 197,400 vehicles per day (VPD) with volumes on I-275 ranging from 33,500 to 83,500 VPD.
4. Stantec is in the process of developing a traffic simulation model for 2021 (Opening Year) and 2030 (Design Year). These models include 65 turning movement counts, mainline and truck volumes, and origin-destination data from Streetlight Data. The model will also include the forecasted Amazon traffic volumes from the TIS. Originally, the simulation model covered the AM peak hour (7:15 AM – 8:15 AM) and the PM Peak hour (4:30 PM – 5:30 PM). However, these peaks were expanded to include Amazon's shift changes: 6:15 AM – 8:15 AM and 2:30 AM – 5:30 PM.
 - Growth rates from the OKI Travel Demand Model were used to forecast background traffic to future years 2021 and 2030.
5. Maps depicting the 2021 PM peak Level of Service (LOS and Volume-to-Capacity Ratio (V/C) with and without Amazon traffic were shown. Under 2021 traffic without Amazon, parts of Houston Road, Burlington Pike, Turfway Road, and Donaldson Highway operate at LOS F during the PM peak hour (4:30 PM – 5:30 PM). With the inclusion of Amazon traffic, Houston Road and Burlington Pike operate at LOS F much earlier, close to 2:30 PM. **Figure 2** shows the PM traffic operations with Amazon traffic between 4:30 PM and 5:30 PM.

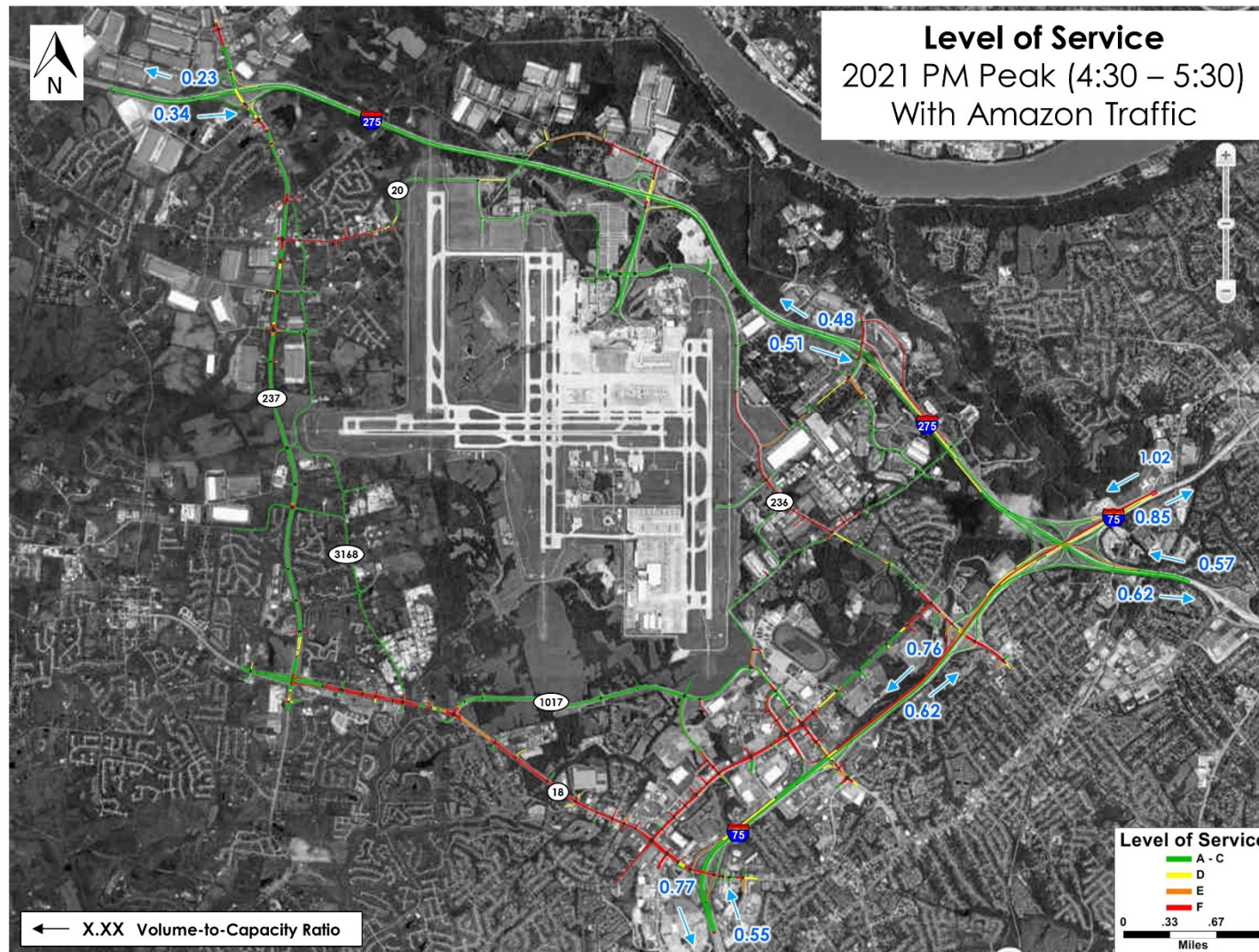


Figure 2: 2021 PM Simulation Model Traffic Operations with Amazon Traffic (4:30 – 5:30)

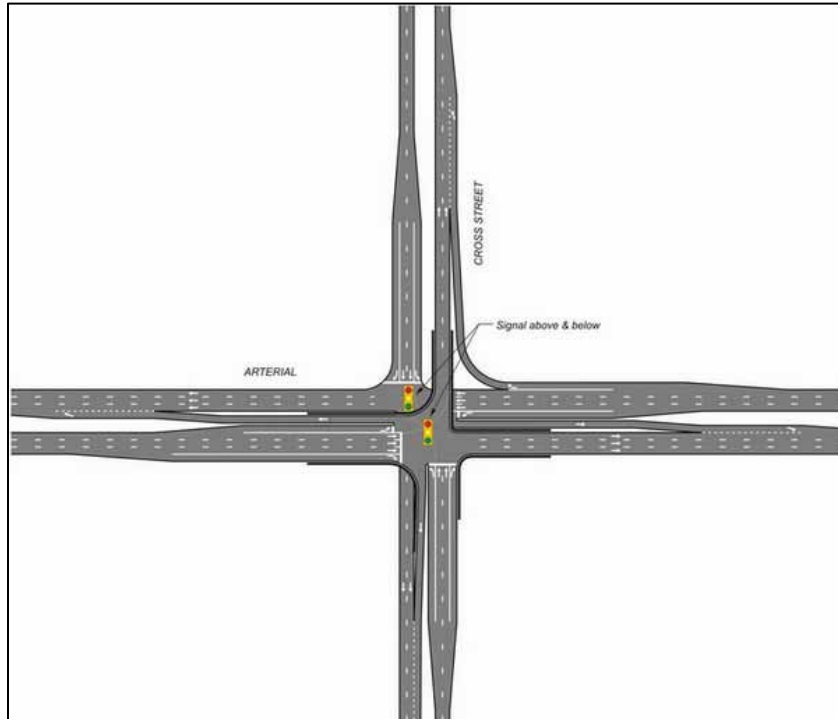
6. Judge Moore mentioned several current or upcoming developments in the study area.
 - Logistics One is a 540,000 square-foot industrial development designed as a multi-tenant building targeting bulk warehouse tenants. Based on the ITE Trip Generation Report and an estimated 800 employees, the following number of trips will be assumed for the simulation model:
 - 7:15 AM – 8:15 AM: 377 total trips, 324 entering and 53 exiting
 - 4:30 PM – 5:30 PM: 369 total trips, 74 entering and 295 exiting
 - There is a residential/commercial development expected on the northeast corner of the Aero Parkway intersection with Burlington Pike. KYTC will provide Stantec with details on the development type and estimated number of employees.
 - The Vantrust development on Ted Bushelman Boulevard is expected to hold three tenants, one of which is Wayfair, which is expected to open a distribution center and retail center. Additional information is required before traffic can be added to the simulation model.
 - CVG Site #7 is a 3,000,000 square-foot plot of land west of the CVG runway prime for development. Additional information is required before traffic can be added to the simulation model.
 - Marydale Business Park is a 270-acre site at the corner of Donaldson Highway and Houston Road. This area is ideal for corporate office development. Additional information is required before traffic can be added to the simulation model.
 - Ignite Institute, a new Boone County tech high school, is planned to open in August 2019 on Olympic Boulevard. Additional information is required before traffic can be added to the simulation model.
7. Under current conditions, trucks traveling to I-275 from the proposed Amazon facility would take Aero Parkway traveling along five different state routes which require three left-turns. This 4.8-mile route would take a minimum of 10 minutes for passenger vehicles and is expected to take longer for trucks. Seeking to minimize travel time to I-275 and maximize development opportunities, the Kenton County Airport Board (KCAB) developed a preliminary improvement concept to realign Mineola Pike south to Aero Parkway and to realign South Airfield Road to Donaldson Highway, as shown in **Figure 3**. This concept reduces the travel from Aero Parkway to I-275 to two state routes and one left-turn.



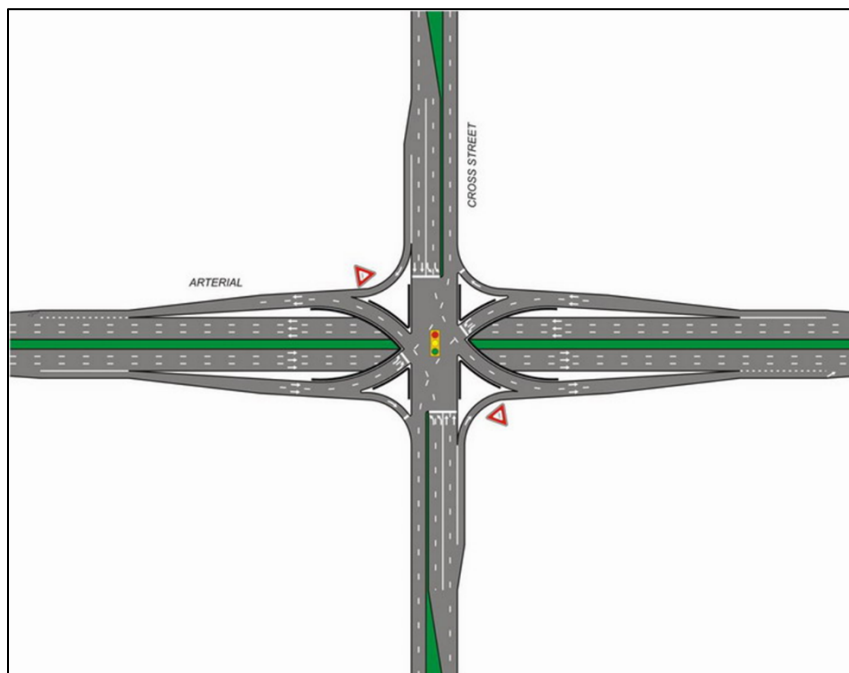
Figure 3: Proposed Turfway Road Realignment

Several alternatives were presented for the Houston Road interchange with Thoroughbred Boulevard including:

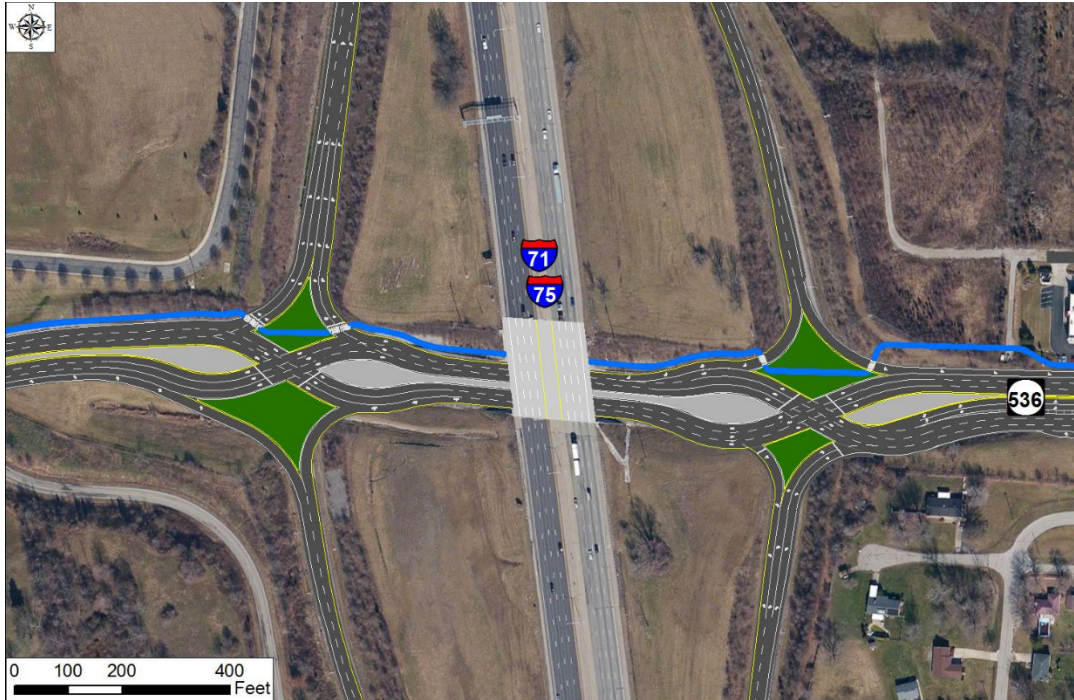
- An Echelon Interchange



- A Single Point Urban Interchange (SPUI)



Another improvement alternative discussed was the reconstruction of the Donaldson Highway interchange with I-75/I-71 to a double crossover diamond interchange, as shown below.



The meeting ended at approximately 12:00 p.m. EDT.

Meeting Minutes

DATE: October 23, 2018

SUBJECT: CVG Circulation Study
Boone County
KYTC Item No. N/A
Stakeholder Meeting

A Stakeholder Meeting was held at the CVG Center Board Room in Erlanger, Kentucky on October 22, 2018 at 11:00 a.m. EDT. Representatives from the following organizations were in attendance:

Boone County
Cincinnati/Northern Kentucky International Airport (CVG)
City of Florence
KYTC Central Office
KYTC District 6
Ohio-Kentucky-Indiana Regional Council of Governments (OKI)
Stantec
Transit Authority of Northern Kentucky (TANK)

Judge Moore welcomed everyone and said the purpose of the meeting was to discuss the transportation needs in Northern Kentucky, especially as related to the recently awarded \$67 million INFRA Grant and the anticipated Amazon development. Handouts included an agenda, a CVG Circulation Study Map, a diagram showing the paths to project funding, and a list of Boone County projects.

The following enumerated items were discussed.

1. Boone County Transportation Plan – Judge Moore discussed the INFRA Grant and the impact it will have on the area, especially the I-75/I-275 interchange.
 - The Boone County Transportation Plan was updated in 2017. Any new projects will be added with an addendum.
2. Kentucky's 2018-2020 Biennial Highway Plan – Bob Yeager discussed the Highway Plan and SHIFT processes.
 - D6 hired a publicist to improve public perception since there are so many projects going on at once
 - Will the availability of contractors/materials be an issue?
 - i. There will always be contractors (some from out of state), however the availability of resources may be an issue when Amazon is built
3. OKI TIP – The process of creating new CHAFs begins in January.
 - There are two projects in Boone County without funding – the I-275/I-75 interchange and the KY 236 project do not have construction funds
 - The Limaburg Road intersection improvements project is a county project with CMAQ funding. This project will widen the Limaburg approaches at the KY 18 intersection.
4. CVG Circulation Study – Len gave an overview of the CVG Circulation study including the purpose and need, the study area, and new developments in the area.
 - Stantec will connect with CVG to understand their Master Plan
 - CVG believes the OKI growth factors may be low
 - Does the simulation model consider internal Amazon shuttles?
 - i. Stantec will use whatever information is in the Traffic Impact Study
 - Should we consider adding the Mall Road interchanges to the simulation model?
 - i. No, the project team (especially TANK) is comfortable with the current study area
 - Can CVG have the simulation model when the project is finished?
 - i. Yes, KYTC D6 has no problem with that
5. Amazon Air Prime Update – The TIS was released Friday October 19th.
 - The TIS considers Background (No-Build) vs. Amazon Improvements (Build)
 - The KYTC guideline of required improvements for a development, 4800' from each entrance, is simply a guideline and not a set-in-stone number.

KYTC has not determined to what extent they will require Amazon to improve Aero Parkway, Turfway Road, etc.

6. Innovative Transportation Technology efforts:

- TANK TransLoc Pilot Projects – This is a Microtransit project that creates an Uber-like platform with a TANK-owned fleet of vehicles.
 - i. Allows users to request a ride
 - ii. The project will be finished in a few weeks and launched in March
- Uber Mobility Lab Transit Study – This is a longer-term project to:
 - i. Expand Uber’s presence in the Cincinnati region
 - ii. Improve the public transportation service
 - iii. Create an employer forum to shape the future of regional commuting
 - iv. Bring the data sharing platform, Movement, to Cincinnati
 - v. Launch a Transit study with TANK and SORTA
- CVG/UC/OKI Partnership – The CVG long-term lot and parking garage are both at capacity. CVG is exploring the use of new transportation technology to solve their needs:
 - i. Autonomous Vehicles – CVG is collaborating with UC to test the feasibility of using autonomous vehicles to shuttle employees to and from parking lots. These vehicles would require a driver, but this driver may not need a CDL license.
 - ii. Personal Rapid Transit – CVG is working with OKI, UC, and TransitX to determine the feasibility of installing an elevated structure over the existing ROW to propel individual pods carrying people and cargo. <http://www.transitx.com/>
 - iii. Hyper Loop – CVG is exploring the possibility of a hyperloop route, like the one proposed between Pittsburgh, Columbus, and Chicago. This would negate the need for cargo trucks.

The meeting ended at approximately 1:00 p.m. EDT.

Meeting Minutes

TO:	Deanna Mills, PE Co-Project Manager KYTC Central Office 200 Mero Street Frankfort, KY 40622	Carol Callan-Ramler, PE Co-Project Manager KYTC District 6 Office 421 Buttermilk Pike Covington, KY 41017
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FROM: Brian Aldridge, PE
Project Manager
Stantec Consulting Services Inc.

DATE: January 4, 2019

SUBJECT: CVG Circulation Study
Boone County
KYTC Item No. N/A
Project Team Meeting No. 1

The first project team meeting for the subject project was held at the KYTC District 6 Office in Covington, Kentucky on December 19, 2018 at 9:00 a.m. EST. The following individuals were in attendance:

Mike Bezold	KYTC – District 6
Linzy Brefeld	KYTC – District 6
Carol Callan-Ramler	KYTC – District 6
Alison Chadwell	Kenton County Airport Board
Kevin Costello	Boone County
Steve De Witte	KYTC – Central Office Planning
Jeff Earlywine	Boone County
Robert Franxman	KYTC – District 6
Nikki Hill	KYTC – District 6
Daniel Menetrey	Boone County
Deanna Mills	KYTC – Central Office Planning
James Minckley	KYTC – District 6
Gary Moore	Boone County
Scott Pennington	Boone County
Brandon Seiter	KYTC – District 6
Laura Spaeth	CVG
Amanda Spencer	KYTC – Central Office Planning
Scott Thomson	KYTC – Central Office Planning
Robert Yeager	KYTC – District 6
Brian Aldridge	Stantec Consulting Services Inc.
Glenn Hardin	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

Graham Winchester Stantec Consulting Services Inc.

Carol Callan-Ramler welcomed everyone and said the purpose of the meeting was to discuss the existing conditions overview, 2021 traffic analyses, and initial improvement concepts for the Cincinnati/Northern Kentucky International Airport (CVG) Circulation Study. Handouts included an agenda and a printout of the presentation slides. After introductions, Brian Aldridge delivered a presentation. The following enumerated items were discussed.

1. The goal of the study is to evaluate future traffic operations around the CVG study area, shown in **Figure 1**, that will be impacted by proposed developments and analyze improvement alternatives that will address future traffic needs. The purpose of the meeting is to present the future traffic operations analysis and get feedback from the project team on some initial improvement concepts.
2. Boone County and the CVG area are currently undergoing tremendous growth in business and industrial developments. This includes a \$1.5 billion worldwide Amazon Prime Air hub on the south side of CVG's property. The proposed open date is scheduled for 2021 with full operations for Phase 1 expected by 2026. This proposed air hub will primarily move parcels from plane to plane, however there will be plane to truck operations. A draft traffic impact study (TIS) for Amazon's development was submitted to KYTC in October 2018.
 - It was noted that the study area for the CVG Circulation Study, shown in **Figure 1**, includes North Bend Road (KY 237) and the North Bend/KY 18 interchange, which are not included in the TIS.
3. The draft Purpose and Need Statement for this study is as follows:

The purpose of the CVG Circulation Study is to improve safety and reduce congestion for the growing area around the CVG Airport.
4. Existing conditions within the study area were discussed. Traffic volumes on I-75 range from 165,500 to 197,400 vehicles per day (VPD) with volumes on I-275 ranging from 33,500 to 83,500 VPD. Portions of Houston Road, Aero Parkway, Donaldson Highway, and I-275 have Critical Crash Rate Factors (CRFs) above 1.0, indicating crashes are likely not occurring at random.
 - It was noted that some of the crashes on Aero Parkway should be assigned to Turfway Road. The route number was recently changed which is what is causing the mix-up. Stantec will investigate this further.

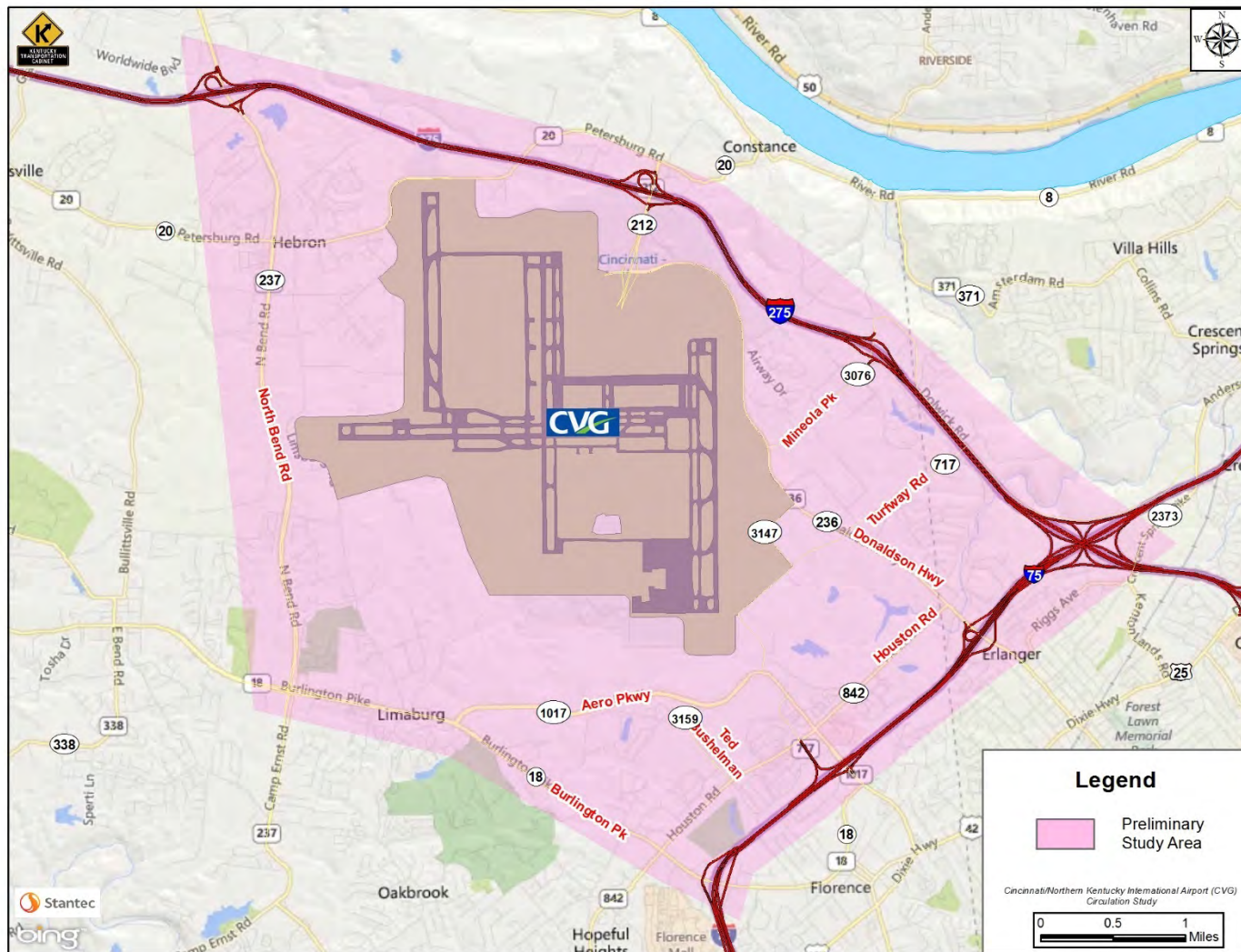


Figure 1: Study Area Map

5. Stantec developed a traffic simulation model for 2017 (Existing Conditions) and 2021 (Opening Year) and is in the process of creating a 2030 (Design Year) scenario. These models include 65 turning movement counts, 60 signal timing plans, mainline and truck volumes, and origin-destination data from Streetlight Data. The model will also include the forecasted Amazon traffic volumes from the draft TIS and other expected developments in the study area. Originally, the simulation model covered the AM peak hour (7:15 AM – 8:15 AM) and the PM Peak hour (4:30 PM – 5:30 PM). However, the simulation model was expanded to cover 6:15 AM – 8:15 AM and 2:30 AM – 5:30 PM to include Amazon’s shift changes (6:30 – 7:30 AM and 2:30 – 3:30 PM).
 - Growth rates from the OKI Travel Demand Model were used to forecast background traffic to future years 2021 and 2030.
 - Question: Does the simulation model include peak holiday or weekend traffic?
 - Answer: No, the model includes typical weekday traffic.
6. Maps depicting the 2017 AM and PM peak Level of Service (LOS) were shown. Under existing 2017 traffic, parts of Houston Road, Burlington Pike, Turfway Road, and Donaldson Highway operate at LOS F during the peak periods. **Figures 2 – 6** present the AM and PM peak period LOS by hour.
7. The CVG Air Cargo Hub draft TIS was received by KYTC in October 2018. The following is a summary of the study:
 - Previously planned projects to be done by 2021 include Wendell Ford Boulevard widening to five lanes with extension to Aero Parkway and widening Ted Bushelman Boulevard to 5 lanes.
 - There are seven access points to the Amazon Cargo Hub. Traffic signals are expected at each of these locations.
 - In 2021, 1,518 Amazon trips are anticipated during the AM peak (6:30 – 7:30) and 1,530 Amazon trips are anticipated during the PM peak (2:30 – 3:30)



Figure 2: 2017 AM Simulation Model Traffic Operations (6:15 – 7:15)

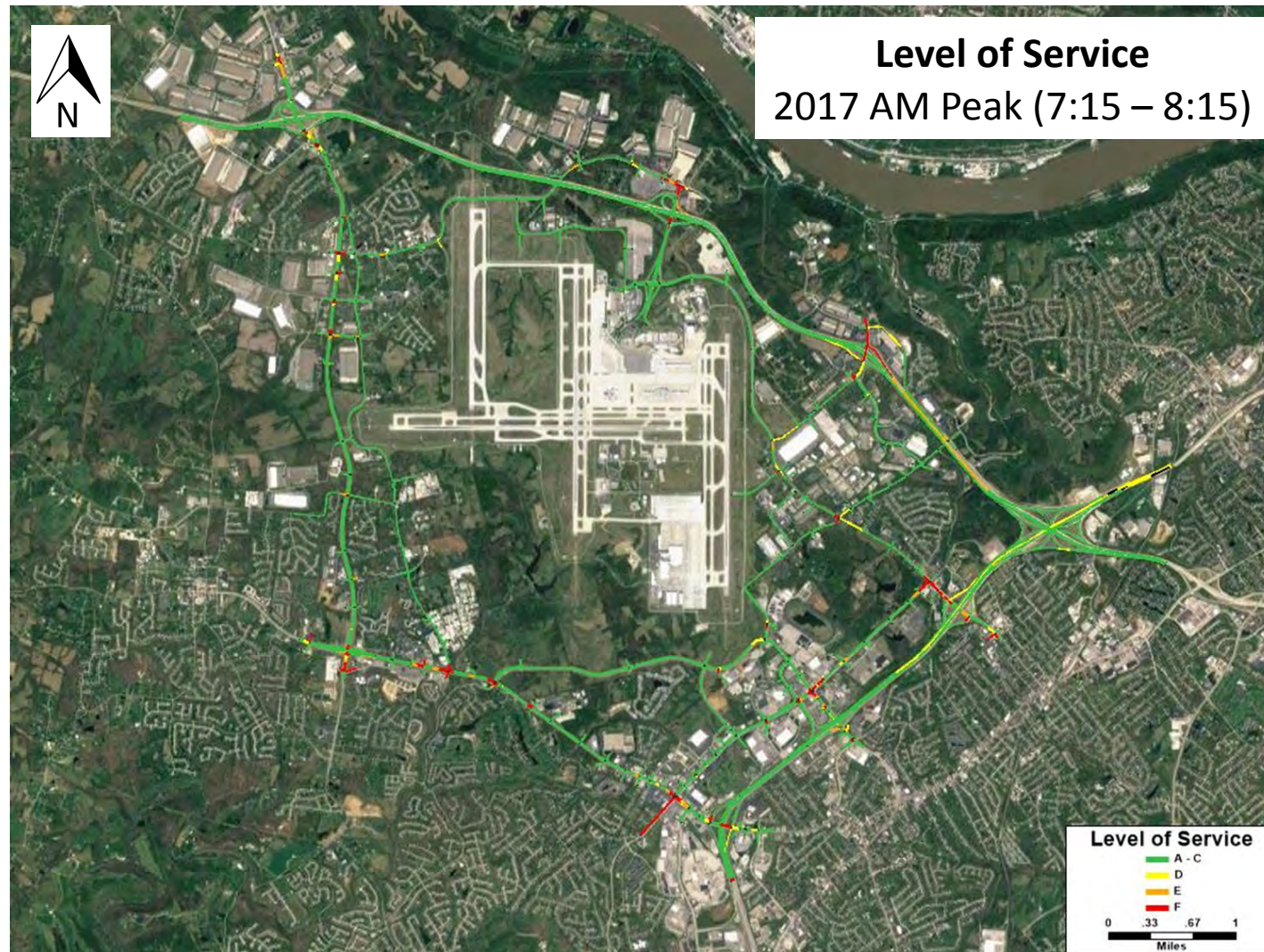


Figure 3: 2017 AM Simulation Model Traffic Operations (7:15 – 8:15)

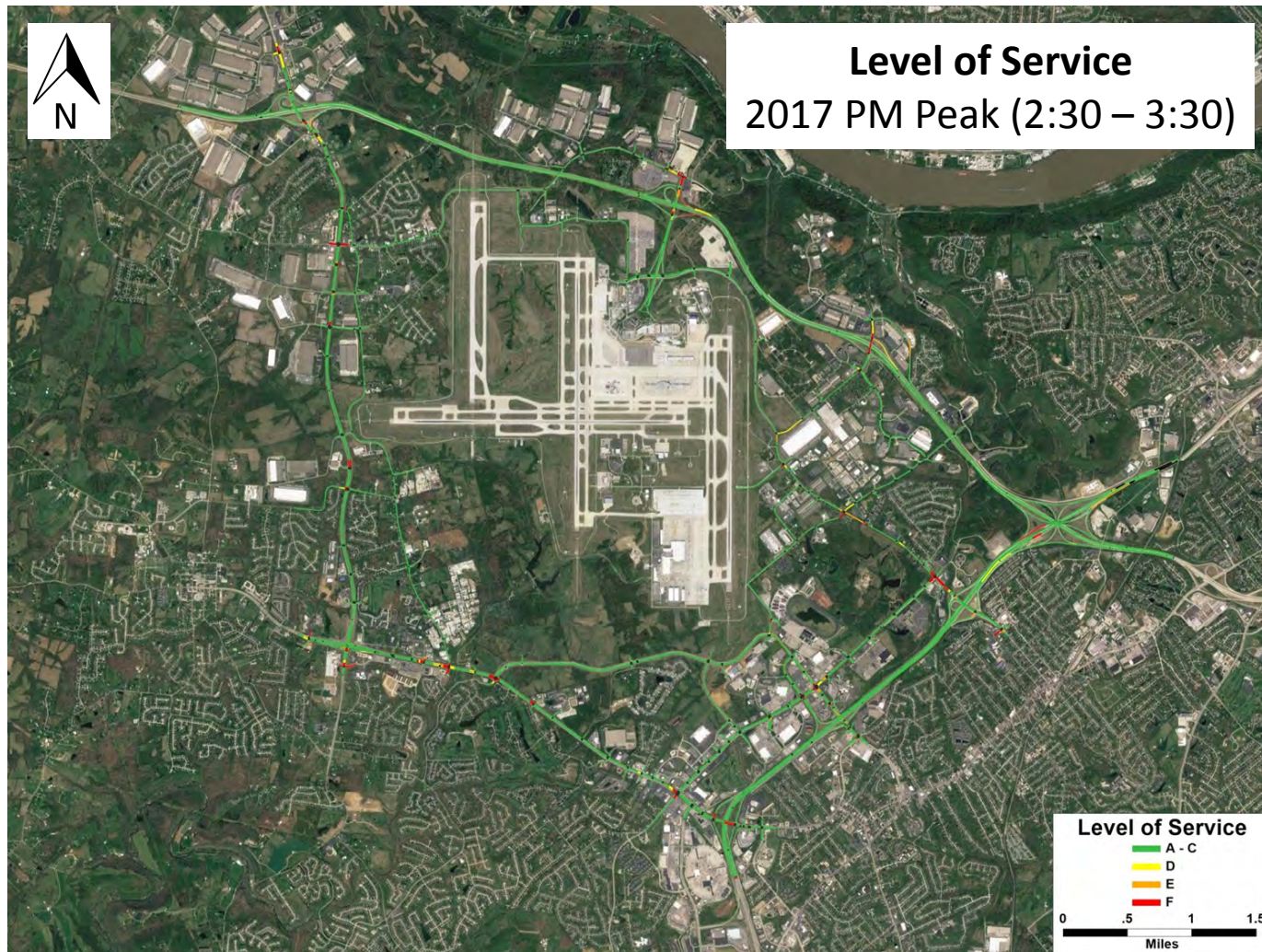


Figure 4: 2017 PM Simulation Model Traffic Operations (2:30 – 3:30)

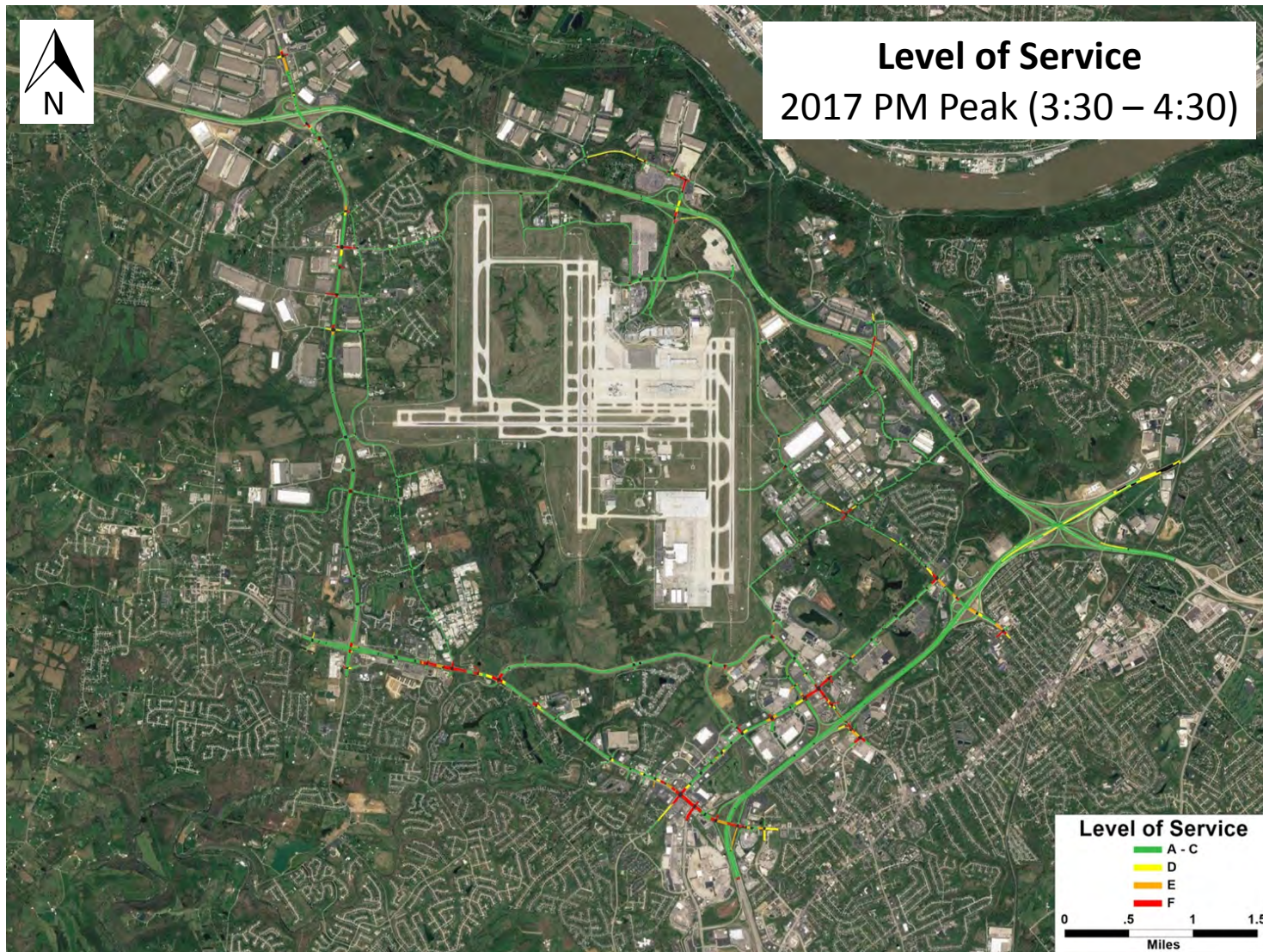


Figure 5: 2017 PM Simulation Model Traffic Operations (3:30 – 4:30)

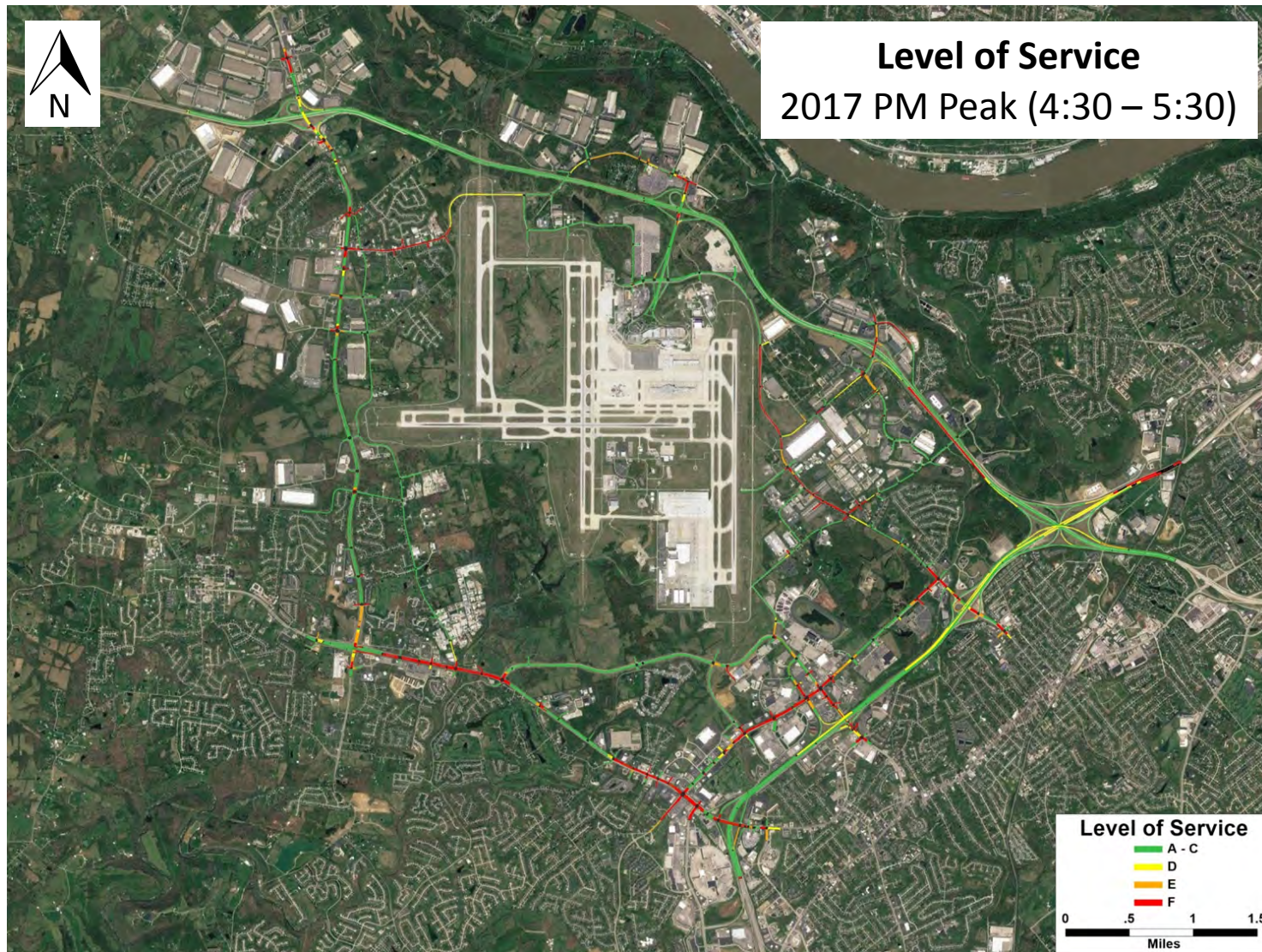


Figure 6: 2017 PM Simulation Model Traffic Operations (4:30 – 5:30)

8. There are nine additional developments expected in the study area. **Figure 7** shows the number of trips produced by each of these developments. It should be noted that the proposed employee directional distribution used in the Amazon TIS was also used for these developments. **Table 1** shows the number of AM peak trips added to the study area and **Table 2** shows the number of PM peak trips added to the study area for all developments (including Amazon).
- It was noted that the Marydale Business Park is 270 acres. However, it is unlikely that the entire park will be developed by 2030. For purposes of trip generation, the Marydale Business Park was assumed to be 90 acres.

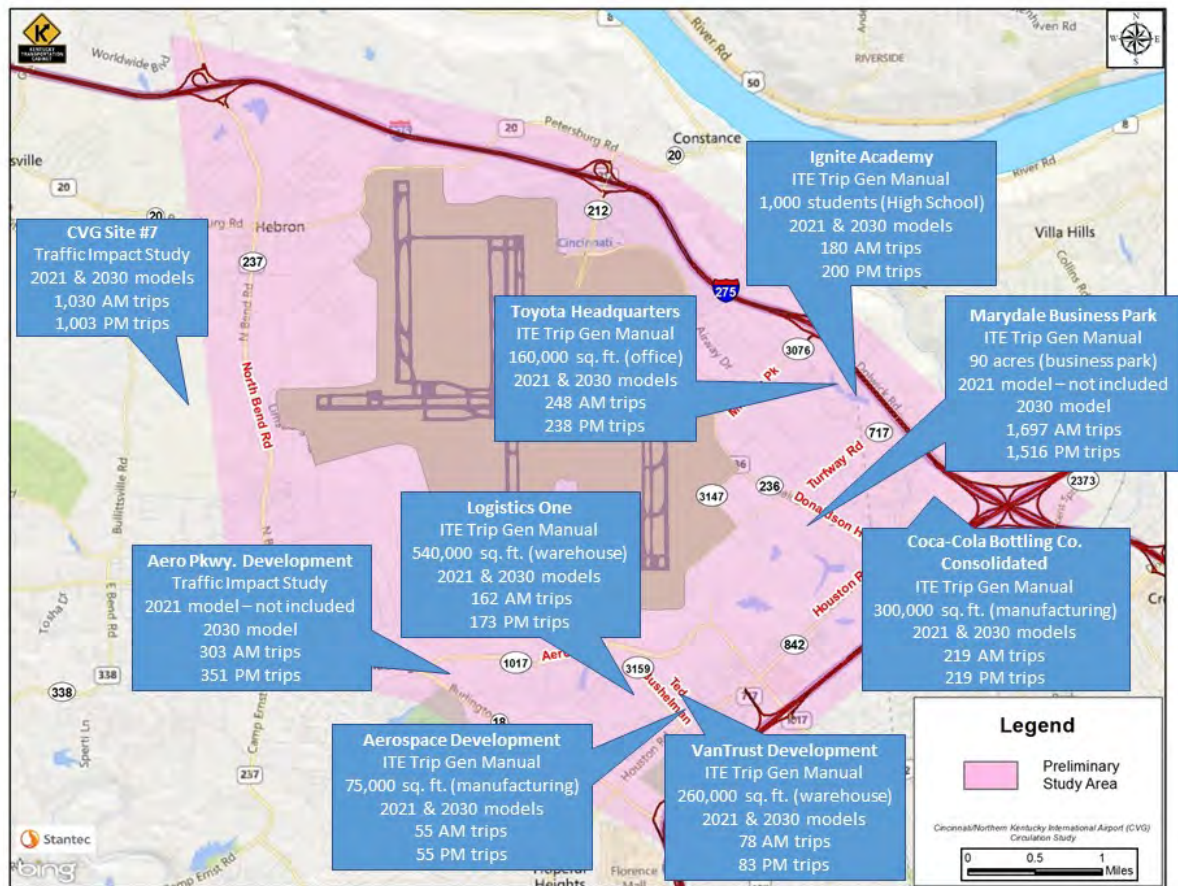


Figure 7: Additional Developments Expected in the Study Area

Table 1: 2021 AM Peak Period Employee Directional Distribution

Year 2021 AM Peak Proposed Employment Directional Distribution					
Road (To/From Direction)		Percent	Total AM Trips (2021)	Inbound Trips	Outbound Trips
I-71/75 (North)		39%	1,361	1,234	127
I-71/75 (South)		9%	314	285	29
I-275 (East)		11%	384	348	36
I-275 (West)		9%	314	285	29
Local Roads	KY 18 (Burlington Pike) (West)	6%	209	190	20
	Oakbrook Drive (South)	1%	35	32	3
	Hopeful Church Road (South)	4%	140	127	13
	Mall Road (South)	3%	105	95	10
	KY 18 (Burlington Pike) (East)	4%	140	127	13
	Turfway Road (East)	5%	175	158	16
	Donaldson Highway (East)	2%	70	63	7
	Houston Road (North)	5%	175	158	16
	Mineola Pike (North)	2%	70	63	7
	Total		100%	3,490	3,164

Table 2: 2021 PM Peak Period Employee Directional Distribution

Year 2021 PM Peak Proposed Employment Directional Distribution					
Road (To/From Direction)		Percent	Total PM Trips (2021)	Inbound Trips	Outbound Trips
I-71/75 (North)		39%	1,365	203	1,162
I-71/75 (South)		9%	315	47	268
I-275 (East)		11%	385	57	328
I-275 (West)		9%	315	47	268
Local Roads	KY 18 (Burlington Pike) (West)	6%	210	31	179
	Oakbrook Drive (South)	1%	35	5	30
	Hopeful Church Road (South)	4%	140	21	119
	Mall Road (South)	3%	105	16	89
	KY 18 (Burlington Pike) (East)	4%	140	21	119
	Turfway Road (East)	5%	175	26	149
	Donaldson Highway (East)	2%	70	10	60
	Houston Road (North)	5%	175	26	149
	Mineola Pike (North)	2%	70	10	60
Total		100%	3,501	521	2,980

- Maps depicting the 2021 AM and PM peak LOS, with traffic from Amazon and the additional developments, were shown. Under 2021 traffic, parts of Houston Road, Burlington Pike, Turfway Road, Donaldson Highway, Mall Road, Mineola Pike, I-275, and I-75 operate at LOS F during the peak periods. **Figures 8 – 12** present the AM and PM peak period LOS by hour.

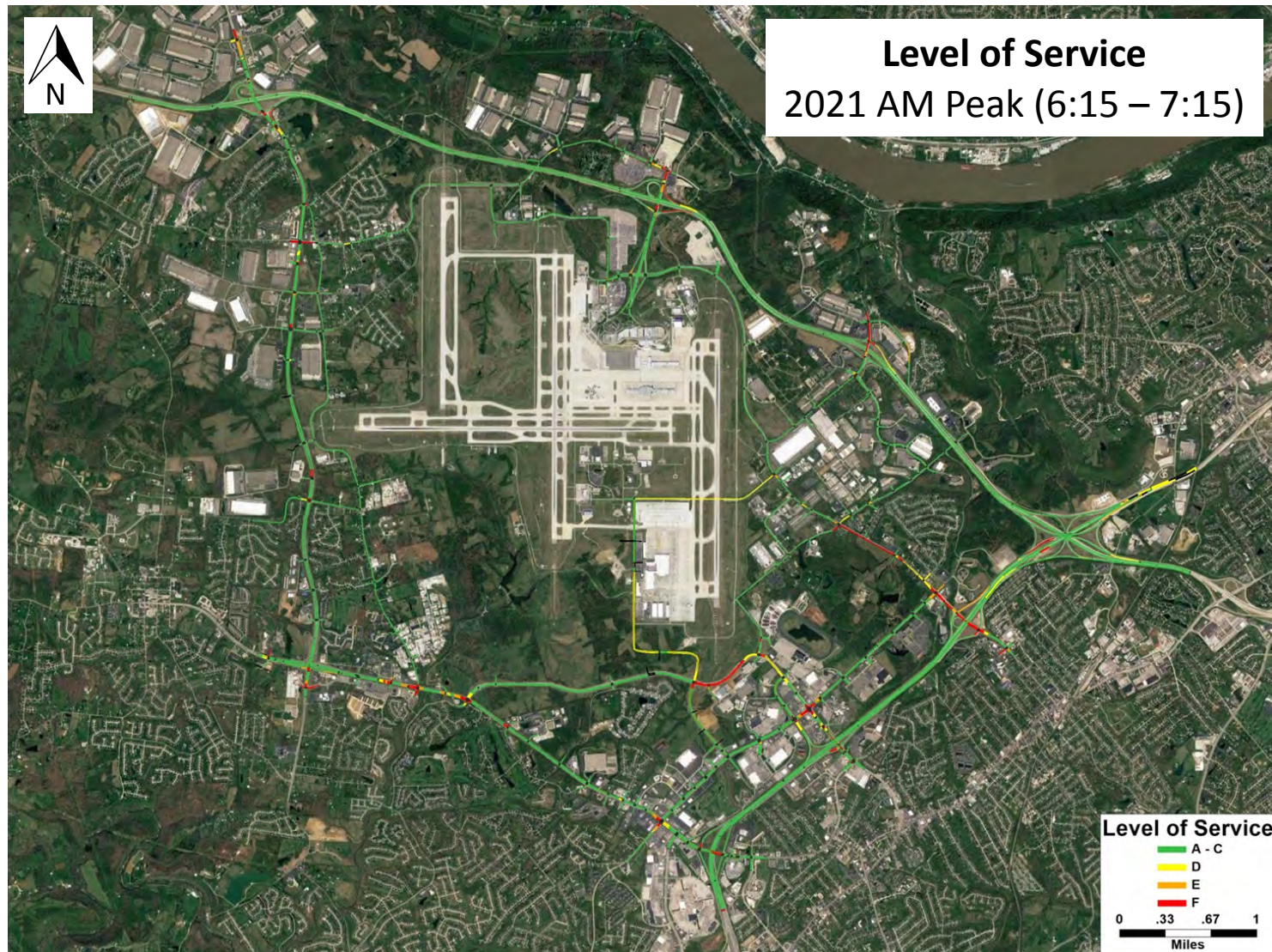


Figure 8: 2021 AM Simulation Model Traffic Operations (6:15 – 7:15)



Figure 9: 2021 AM Simulation Model Traffic Operations (7:15 – 8:15)

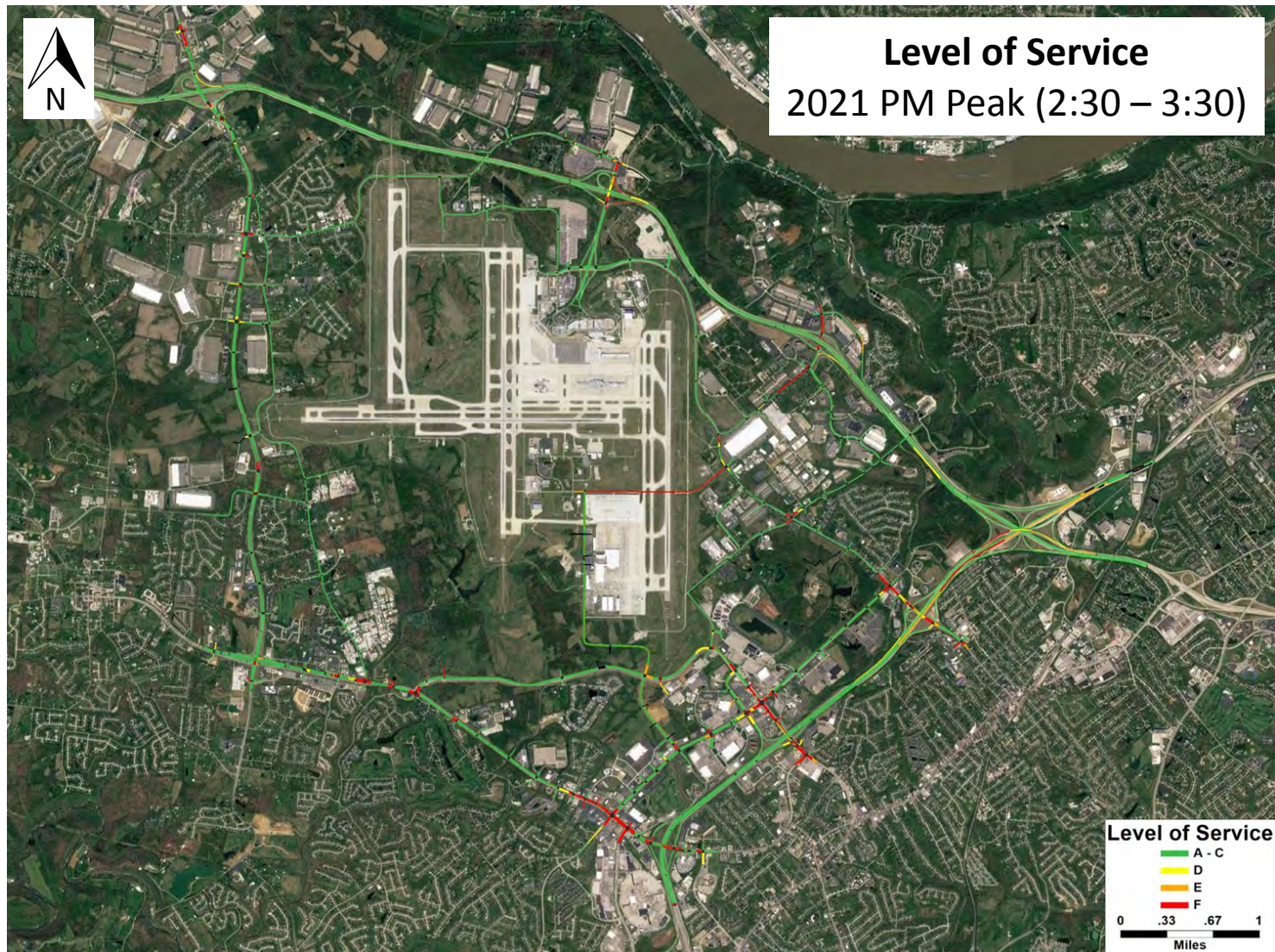


Figure 10: 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)



Figure 11: 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

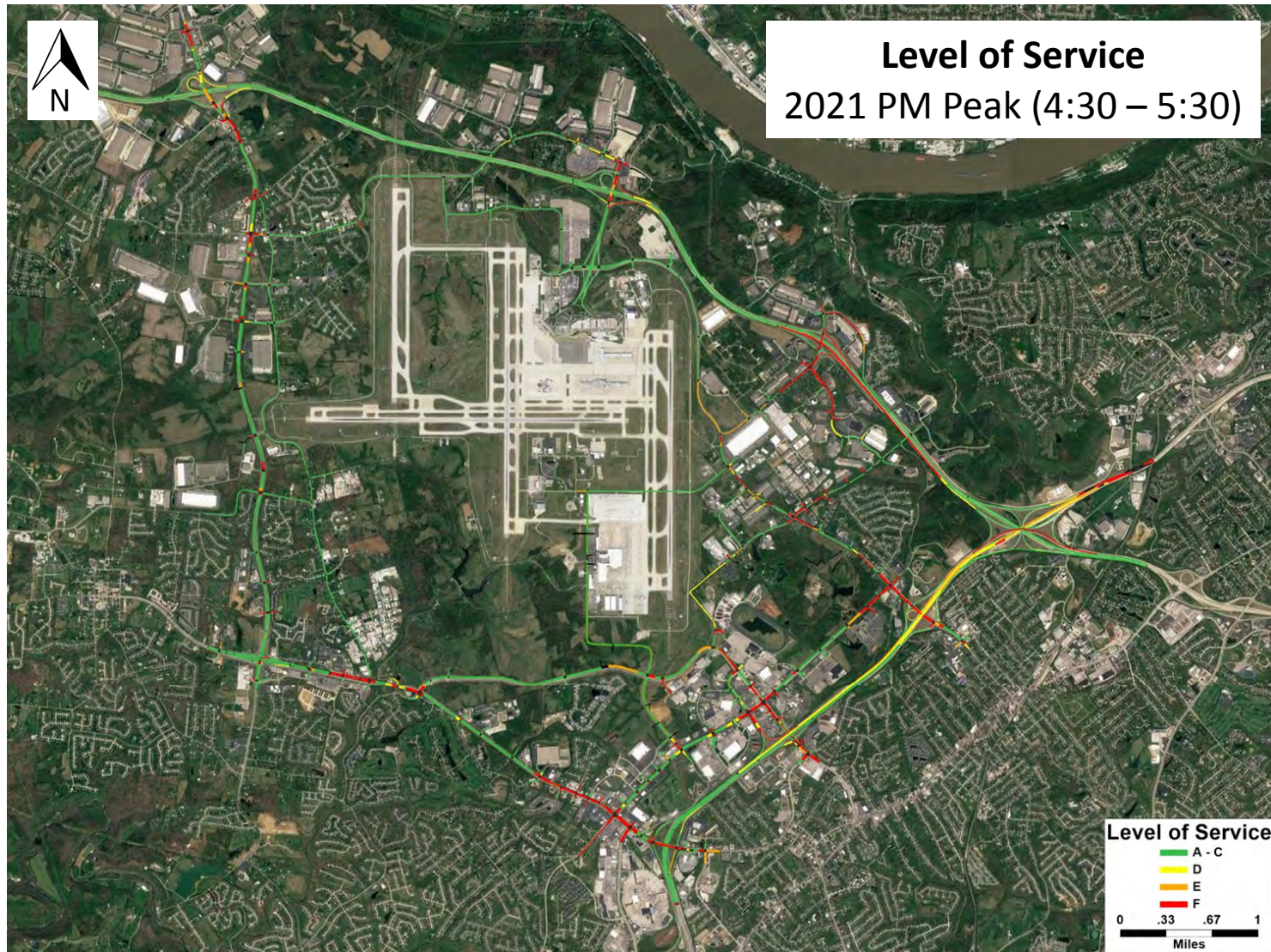


Figure 12: 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

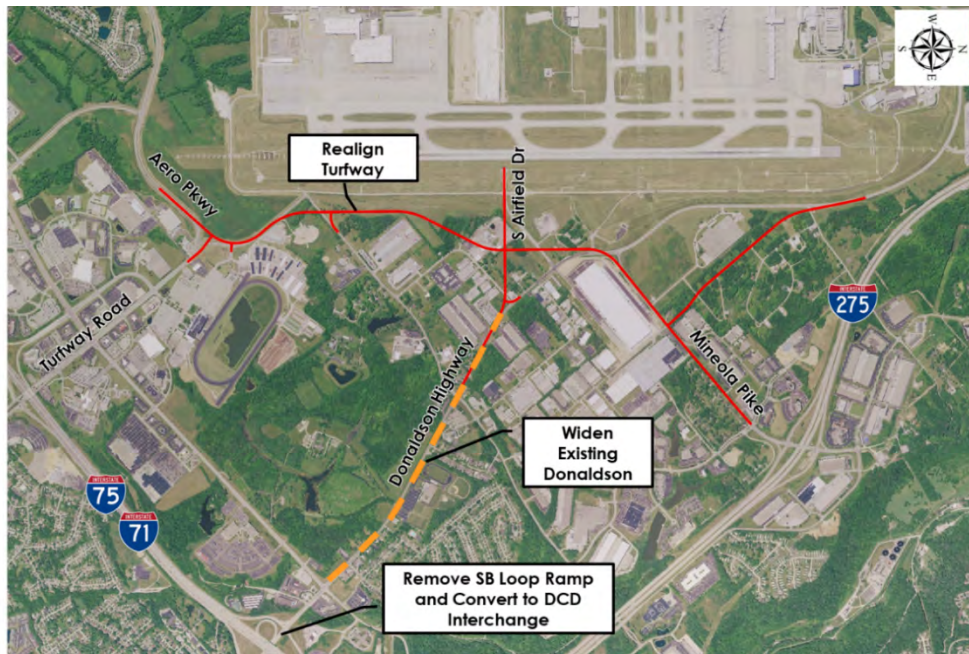
10. Stantec presented several preliminary improvement concepts that may be considered during the alternative development process. The following improvement concepts were discussed:

Alternative 1

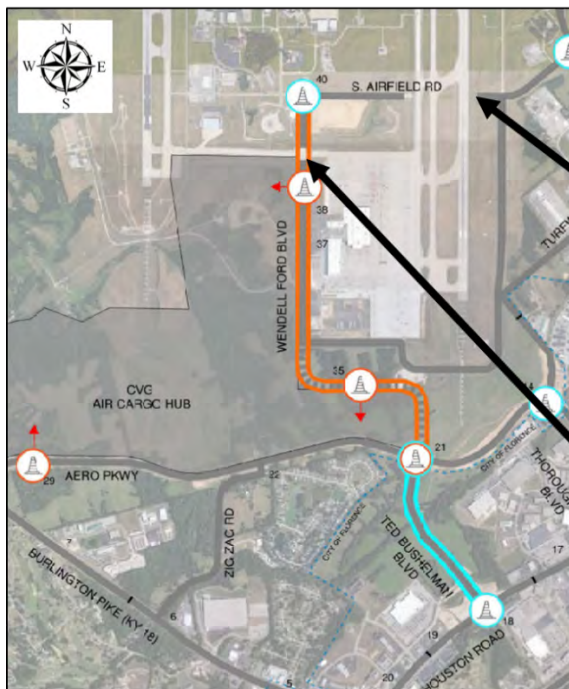
- Lane reassignment on Turfway Road south of the Houston Road intersection. Convert the second northbound turn lane into a southbound through lane.



- Realign Turfway Road, widen Donaldson Highway, and convert Donaldson Highway interchange to a Double Crossover Diamond (DCD) interchange.
11. Maps depicting the Alternative 1 PM peak LOS for the year 2021 were shown. It is evident that peak hour traffic operations are worse in the PM, so AM maps were not shown. Under Alternative 1, there are still backups at the intersections, however traffic operations improve significantly during the PM peak period. **Figures 13 – 15** present the PM peak period LOS by hour.



- Allow four lanes through the tunnels on Wendell Ford Boulevard and South Airfield Road



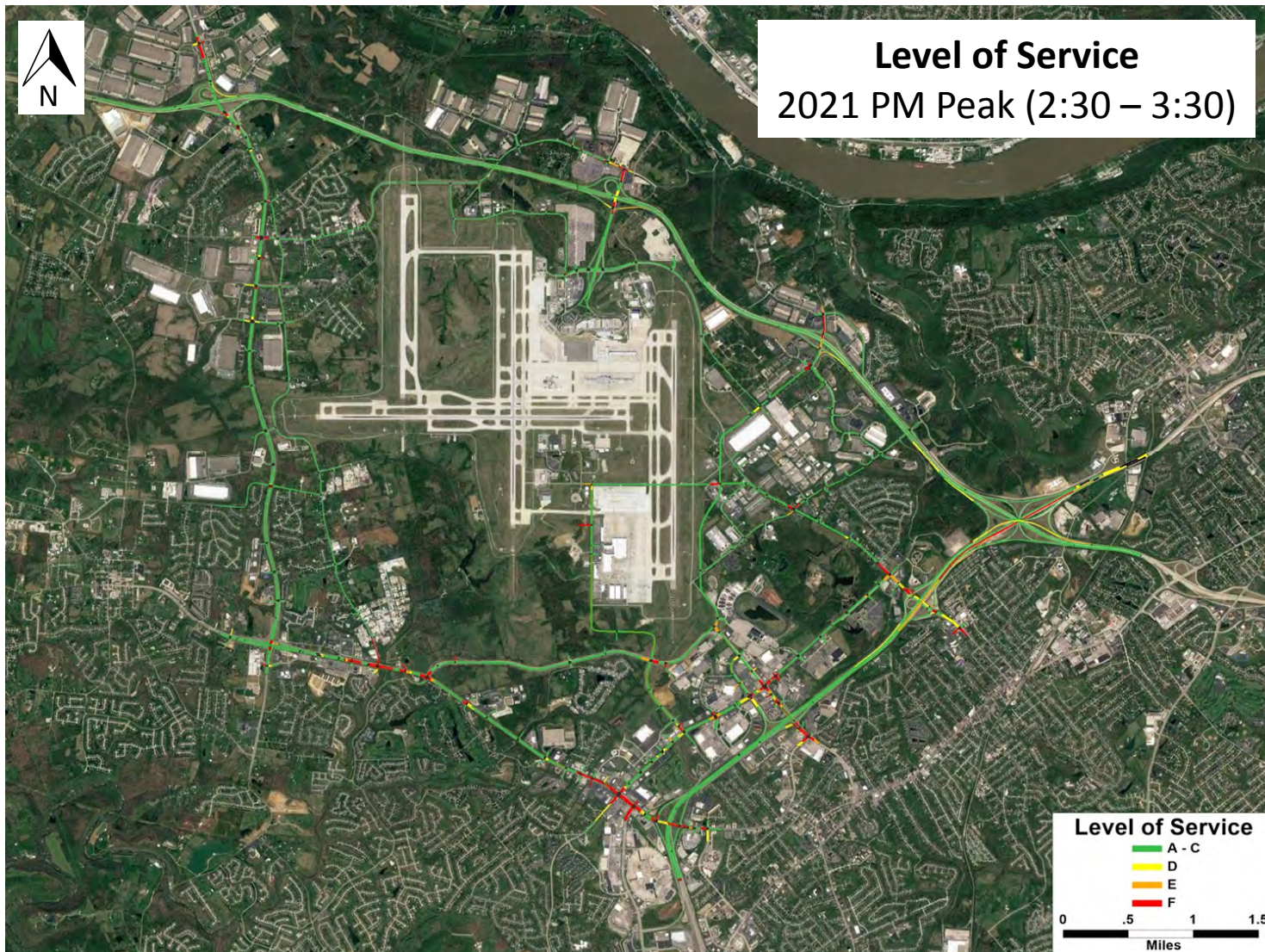


Figure 13: Alternative 1 - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

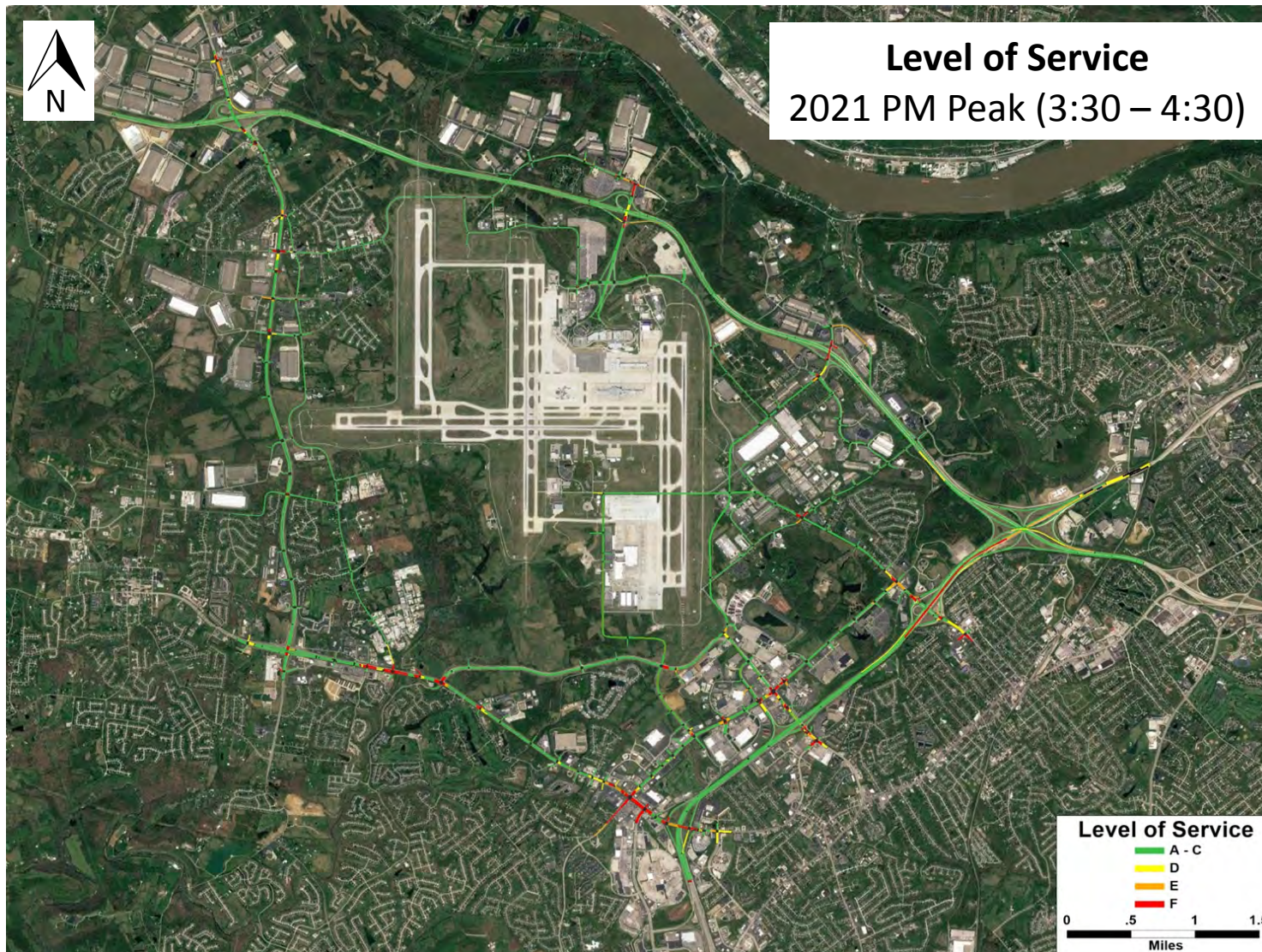


Figure 14: Alternative 1 - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

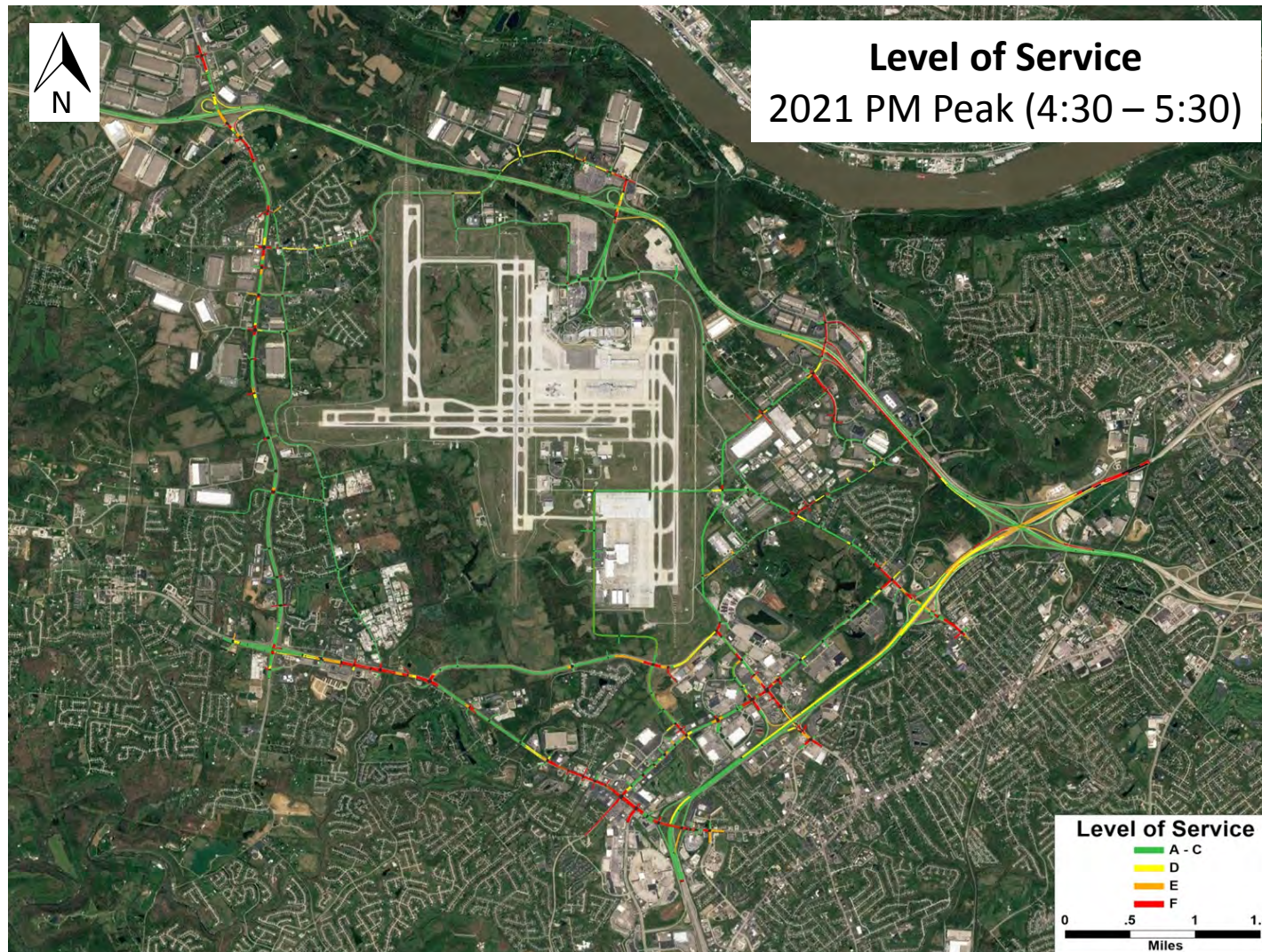
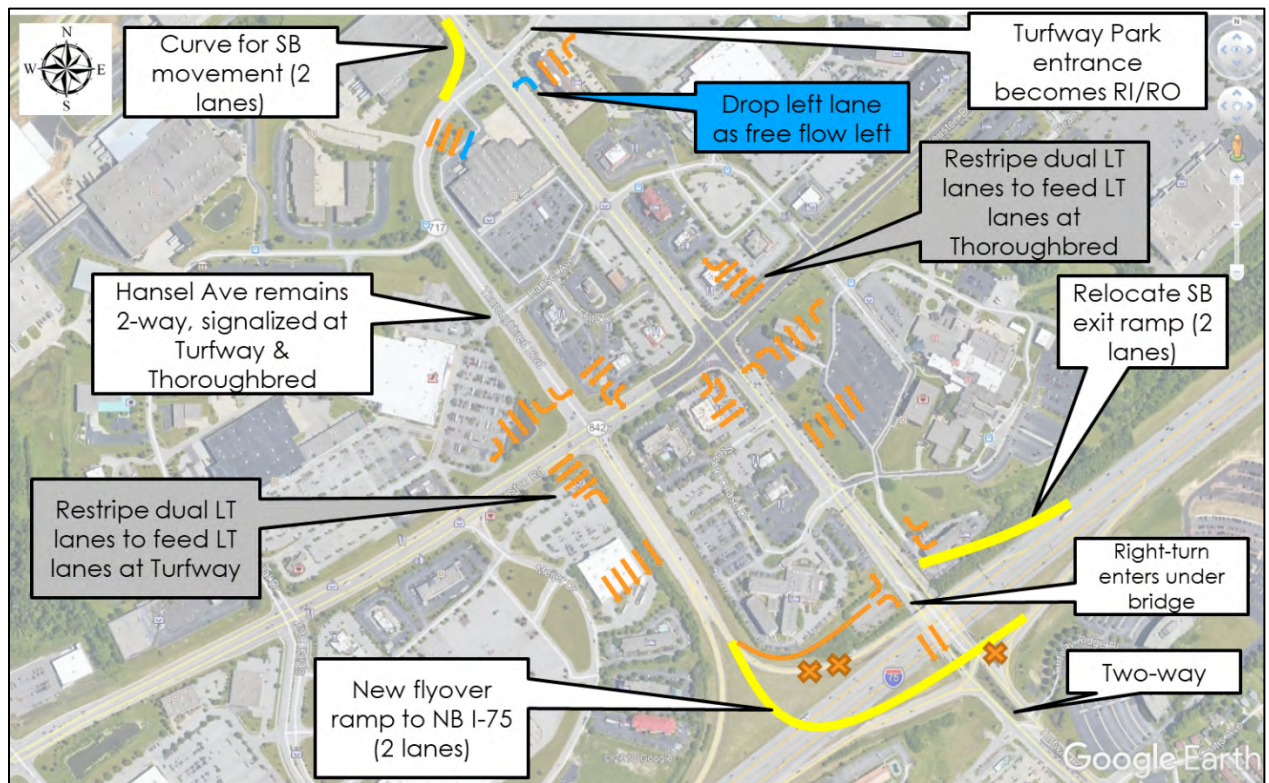


Figure 15: Alternative 1 - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

Alternative 2

- Convert Thoroughbred Boulevard and Turfway Road to a one-way couplet. This alternative involves converting Turfway Road to a northbound one-way street and Thoroughbred Boulevard to a southbound one-way street from Aero Parkway to I-75. The figure below details the one-way couplet, including the addition of a flyover to NB I-75 from Thoroughbred Boulevard, the removal of the SB I-75 off ramp to Thoroughbred Boulevard, the addition of a ramp from Thoroughbred Boulevard to Turfway Road, and the relocation of the SB I-75 ramp to Turfway Road.



Maps depicting the Alternative 2 PM peak LOS for the year 2021 were shown. It is evident that peak hour traffic operations are worse in the PM, so AM maps were not shown. Under Alternative 2, the area near the Turfway Road/Houston Road intersection performs much better, however Mineola Pike and Donaldson Highway still operate at a LOS F. **Figures 16 – 18** present the PM peak period LOS by hour.

- It was noted that the St. Elizabeth Hospital does not send out ambulances



Figure 16: Alternative 2 - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

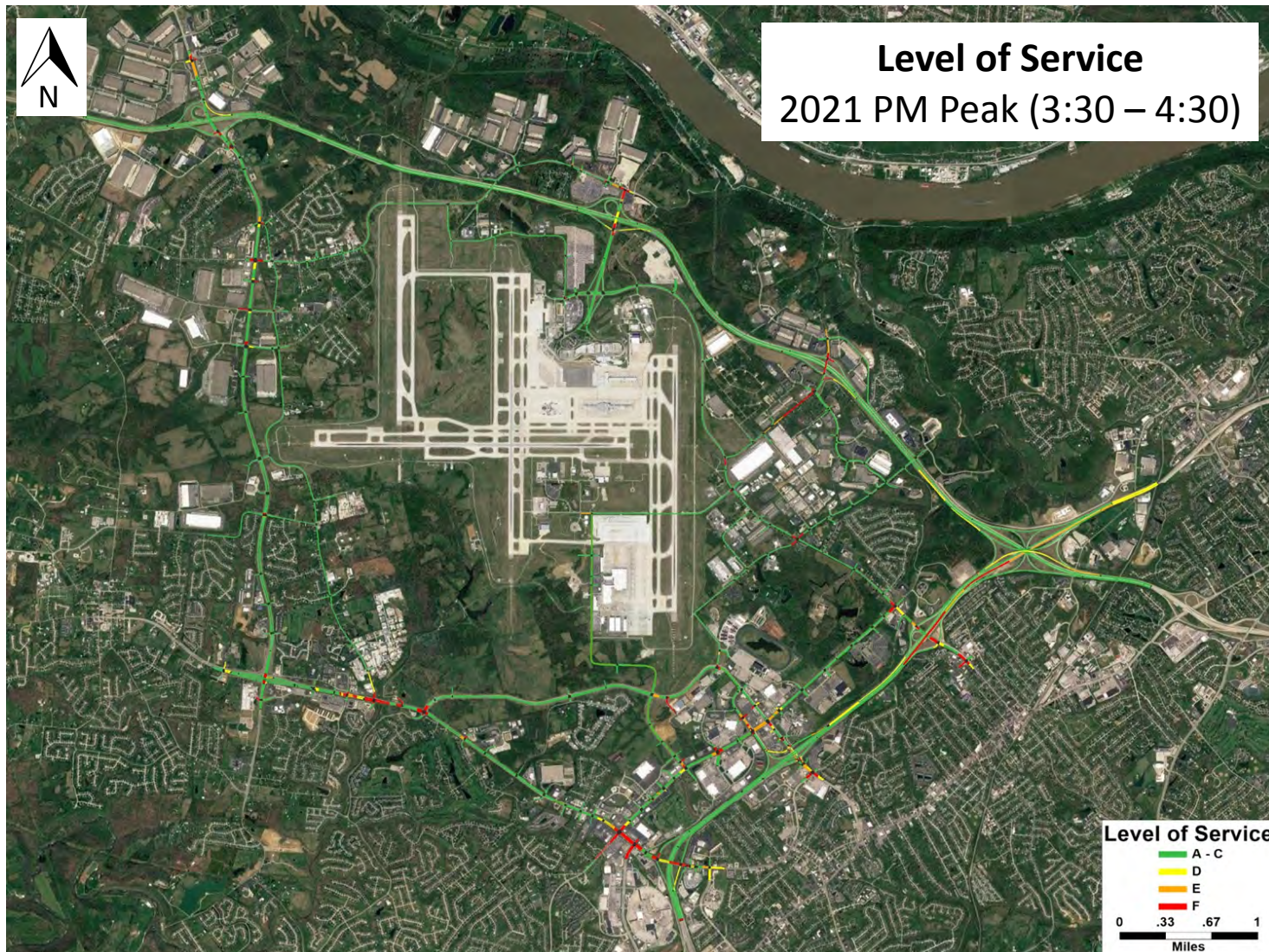


Figure 17: Alternative 2 - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

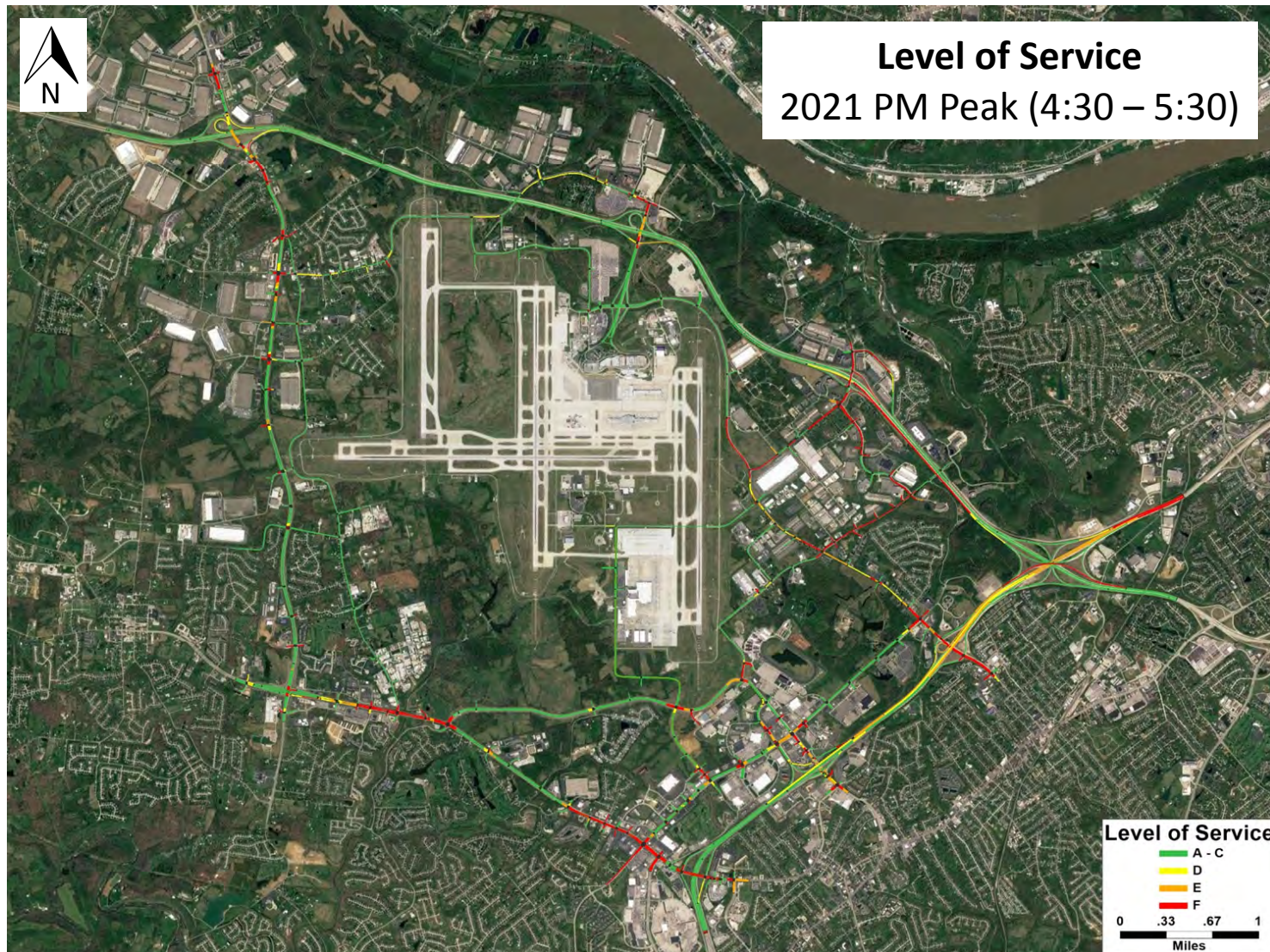


Figure 18: Alternative 2 - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

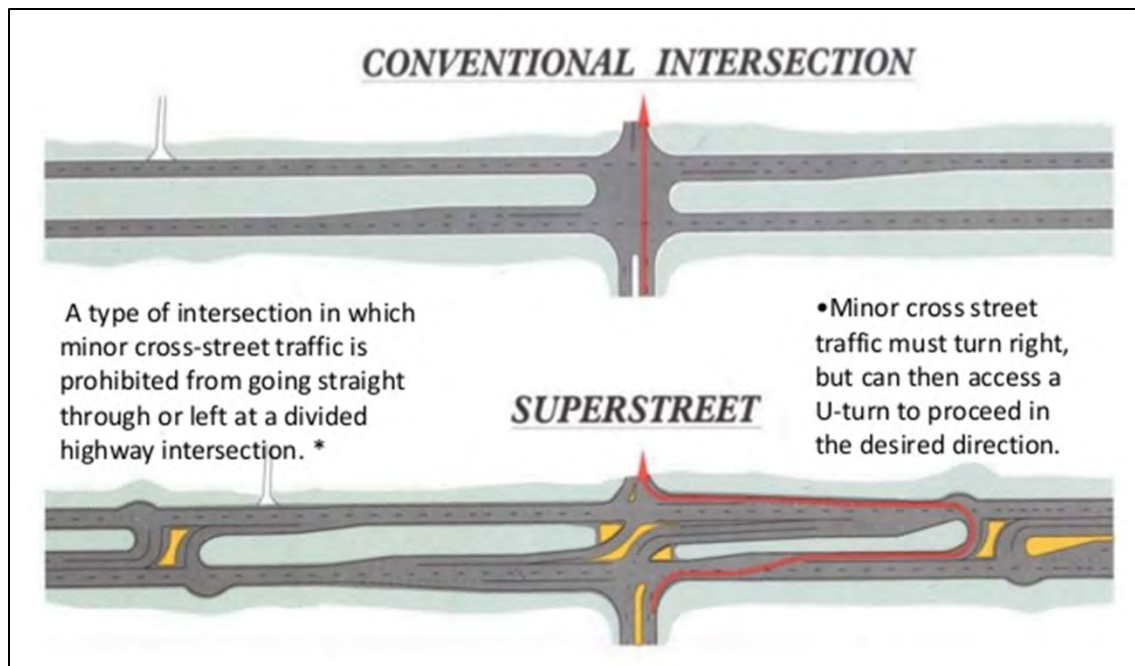
Alternative 3

- Extension of Ted Bushelman Boulevard to an interstate collector-distributor system. This alternative is a long-term option to construct a northbound and southbound connector-distributor system from the I-75/I-275 interchange to south of Burlington Pike, extend Ted Bushelman Boulevard south through the Houston Road intersection, and add on and off ramps to the Ted Bushelman extension.
- This alternative is cost prohibitive as part of this study but will be examined further as part of the I-75/I-275 Study.

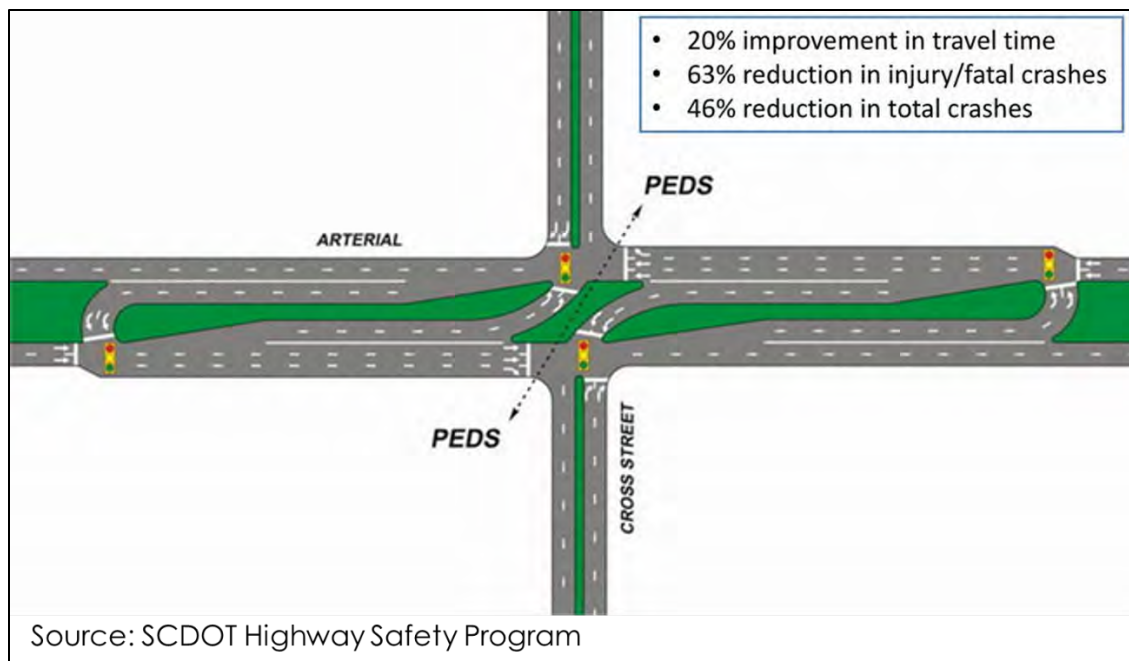


Alternative 4

- Converting Burlington Pike to a “Superstreet” between Houston Road and North Bend Road. This alternative forces minor cross-street traffic to turn right, creating two-phased signals at all intersections.
 - Question: Should lanes be added on Burlington?
 - Answer: A four-lane superstreet has similar capacity to a regular six-lane section.
 - The northbound leg at the intersection of Burlington Pike and Aero Parkway could be converted to a jughandle.



With fewer traffic signal phases, superstreets have been found to improve travel time by 20%. Superstreets are also safer, with an expected 46% reduction in crashes due to the decrease in the number of conflicts at each intersection.



There were several general comments during the discussion of the improvement alternatives:

- Amazon groundbreaking is set for February 1st, 2019
- The Donaldson Highway and Mineola Pike improvement projects should move forward.
- Question: Can we use the \$2 millions from Amazon to purchase right-of-way or construct some of the interstate improvements?
 - Answer: Not until after an interchange justification study (IJS) is performed.
- Question: Is a S. Airfield Road connection to North Bend Road to the west possible?
 - Answer: It is possible to connect Aero Parkway to North Bend Road from Site Access 29. However, this would be very expensive and may not provide much benefit.

12. Brian ended the meeting with a discussion of the project schedule and next steps. The next step will be for Stantec to continue the development of improvement alternatives in preparation for the second Project Team Meeting in late winter. At this meeting, Stantec will present the results from combining Alternatives 1 and 2, as well as results from the Burlington Pike Superstreet.

The meeting ended at approximately 11:00 a.m. EST.

Meeting Minutes

TO:	Deanna Mills, PE Co-Project Manager KYTC Central Office 200 Mero Street Frankfort, KY 40622	Carol Callan-Ramler, PE Co-Project Manager KYTC District 6 Office 421 Buttermilk Pike Covington, KY 41017
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FROM: Brian Aldridge, PE
Project Manager
Stantec Consulting Services Inc.

DATE: March 20, 2019

SUBJECT: CVG Circulation Study
Boone County
KYTC Item No. N/A
Project Team Meeting No. 2

The second project team meeting for the subject project was held at the KYTC District 6 Office in Covington, Kentucky on March 18, 2019 at 1:30 p.m. EDT. The following individuals were in attendance:

Mike Bezold	KYTC – District 6
Linzy Brefeld	KYTC – District 6
Carol Callan-Ramler	KYTC – District 6
Steve De Witte	KYTC – Central Office Planning
Stacey Hans	KYTC – District 6
James Minckley	KYTC – District 6
Scott Thomson	KYTC – Central Office Planning
Robert Yeager	KYTC – District 6
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

Carol Callan-Ramler welcomed everyone and said the purpose of the meeting was to prioritize the improvement concepts for the Cincinnati/Northern Kentucky International Airport (CVG) Circulation Study. Plots of the study area were made available to attendees. After introductions, Brian Aldridge delivered a presentation. The following enumerated items were discussed.

1. The goal of the study is to evaluate future traffic operations around the CVG study area, shown in **Figure 1**, that will be impacted by proposed developments and analyze improvement alternatives that will address future traffic needs. The purpose of the meeting is to present the future traffic operations analysis and get feedback from the project team on some initial improvement concepts.
2. Boone County and the CVG area are currently undergoing tremendous growth in business and industrial developments. This includes a \$1.5 billion worldwide Amazon Prime Air hub on the south side of CVG's property. The proposed open date is scheduled for 2021 with full operations for Phase 1 expected by 2026. This proposed air hub will primarily move parcels from plane to plane, however there will be plane to truck operations. A draft traffic impact study (TIS) for Amazon's development was submitted to KYTC in October 2018.

3. The draft Purpose and Need Statement for this study is as follows:

The purpose of the CVG Circulation Study is to improve safety and reduce congestion for the growing area around the CVG Airport.

4. Existing conditions within the study area were briefly discussed
 - It was noted that the original crash map showed Aero Parkway as a location with a high CRF. However, many of the crashes on Aero Parkway should have been assigned to Turfway Road. This was caused by a 2014 Official Order in which CR 1293 (Aero Parkway) was designated as part of State Secondary route KY 1017.
5. Stantec developed a traffic simulation model for 2017 (Existing Conditions), 2021 (Opening Year) and 2030 (Design Year). These models include 65 turning movement counts, 60 signal timing plans, mainline and truck volumes, and origin-destination data from Streetlight Data. The models also include the forecasted Amazon traffic volumes from the draft TIS and other expected developments in the study area. Originally, the simulation model covered the AM peak hour (7:15 AM – 8:15 AM) and the PM Peak hour (4:30 PM – 5:30 PM). However, the simulation model was expanded to cover 6:15 AM – 8:15 AM and 2:30 AM – 5:30 PM to include Amazon's shift changes (6:30 – 7:30 AM and 2:30 – 3:30 PM).

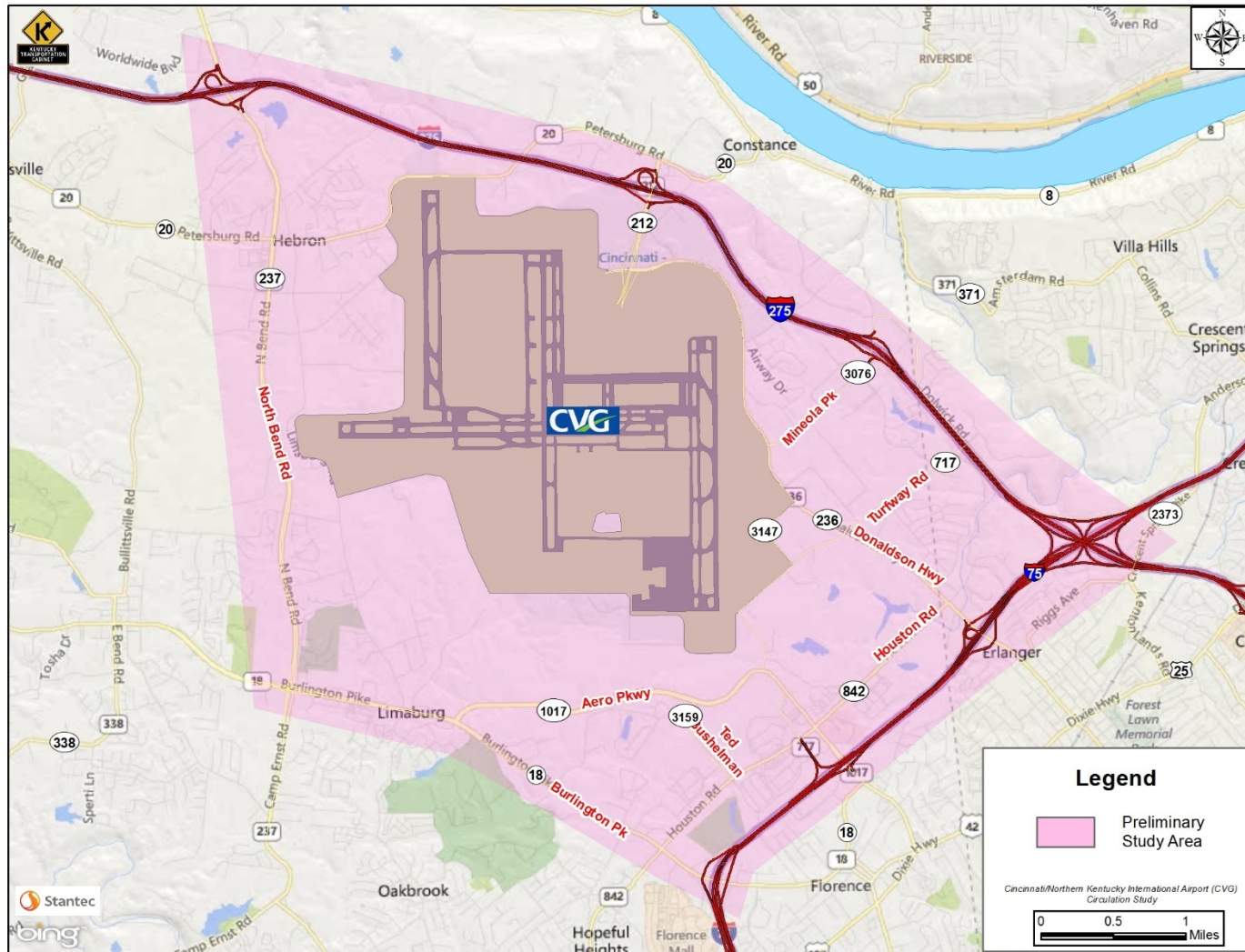


Figure 1: Study Area Ma

6. Maps depicting the No-Build 2021 AM and PM peak Level of Service (LOS) were shown. Under No-Build 2021 traffic, parts of Houston Road, Burlington Pike, North Bend Road, Turfway Road, Donaldson Highway, I-75, and I-275 operate at LOS F during the peak periods. Figures 2 – 4 present the PM peak period LOS by hour.
 - It was noted that the maps now show intersection LOS for the surface streets and segment LOS for the interstates. This differs slightly from the original maps, which showed segment LOS for the entire study area.
7. Stantec presented three improvement concepts:
 - **Alternative 1** – Realign Turfway and Improve Donaldson
 - **Alternative 2** – Convert Thoroughbred and Turfway to a one-way couplet
 - **Alternative 3** – Convert Burlington to a superstreet with grade separation at Houston and Mall Road and a Single-Point Urban Interchange (SPUI) at the Burlington/I-75 interchange
8. Alternative 1 includes the realignment of Turfway Road with a SPUI at South Airfield Road, four lanes through the tunnel on South Airfield Road, widening Donaldson Highway, and converting the Donaldson Highway interchange with I-75 to a Double Crossover Diamond (DCD) interchange.



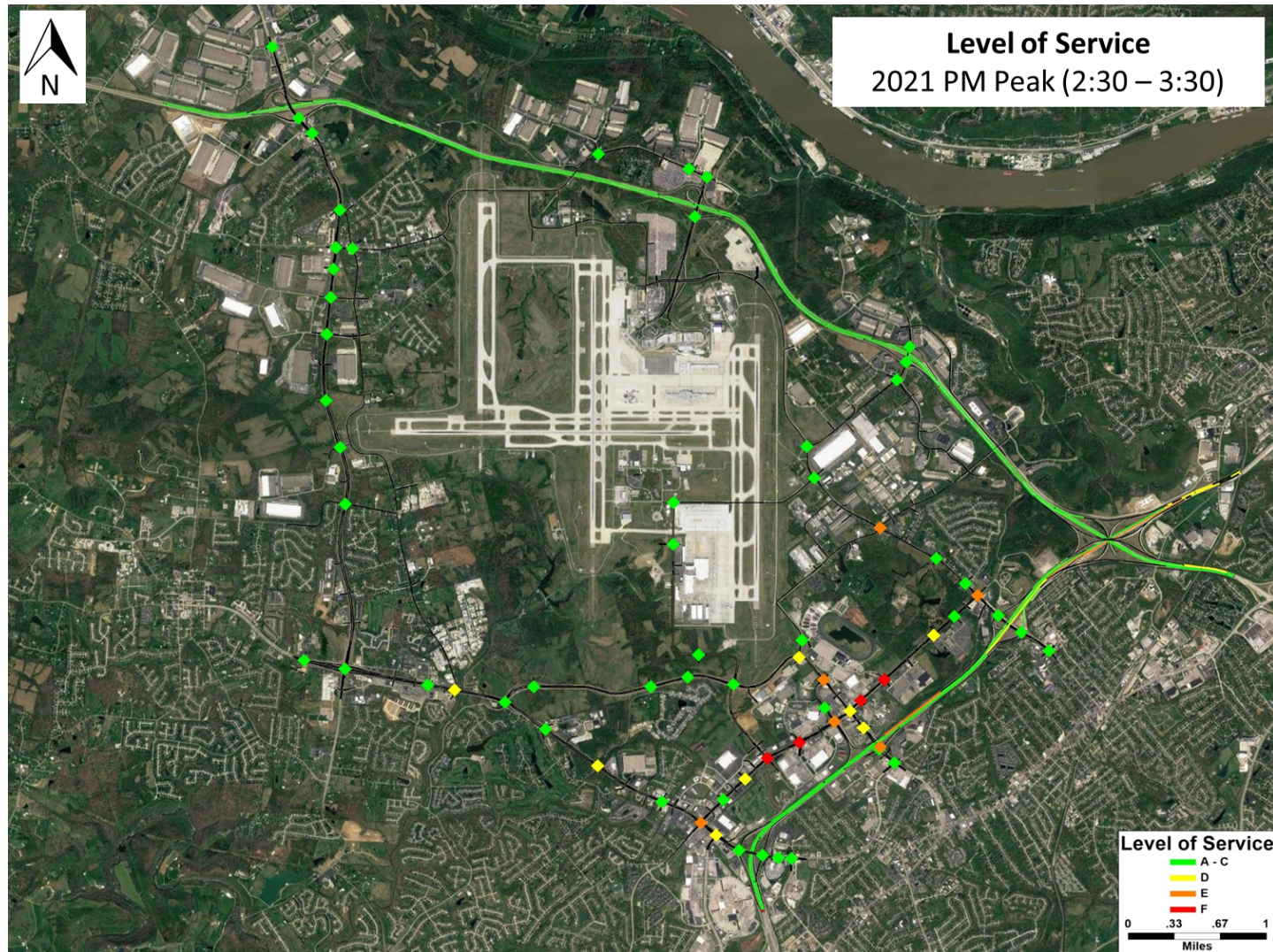


Figure 2: No-Build - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

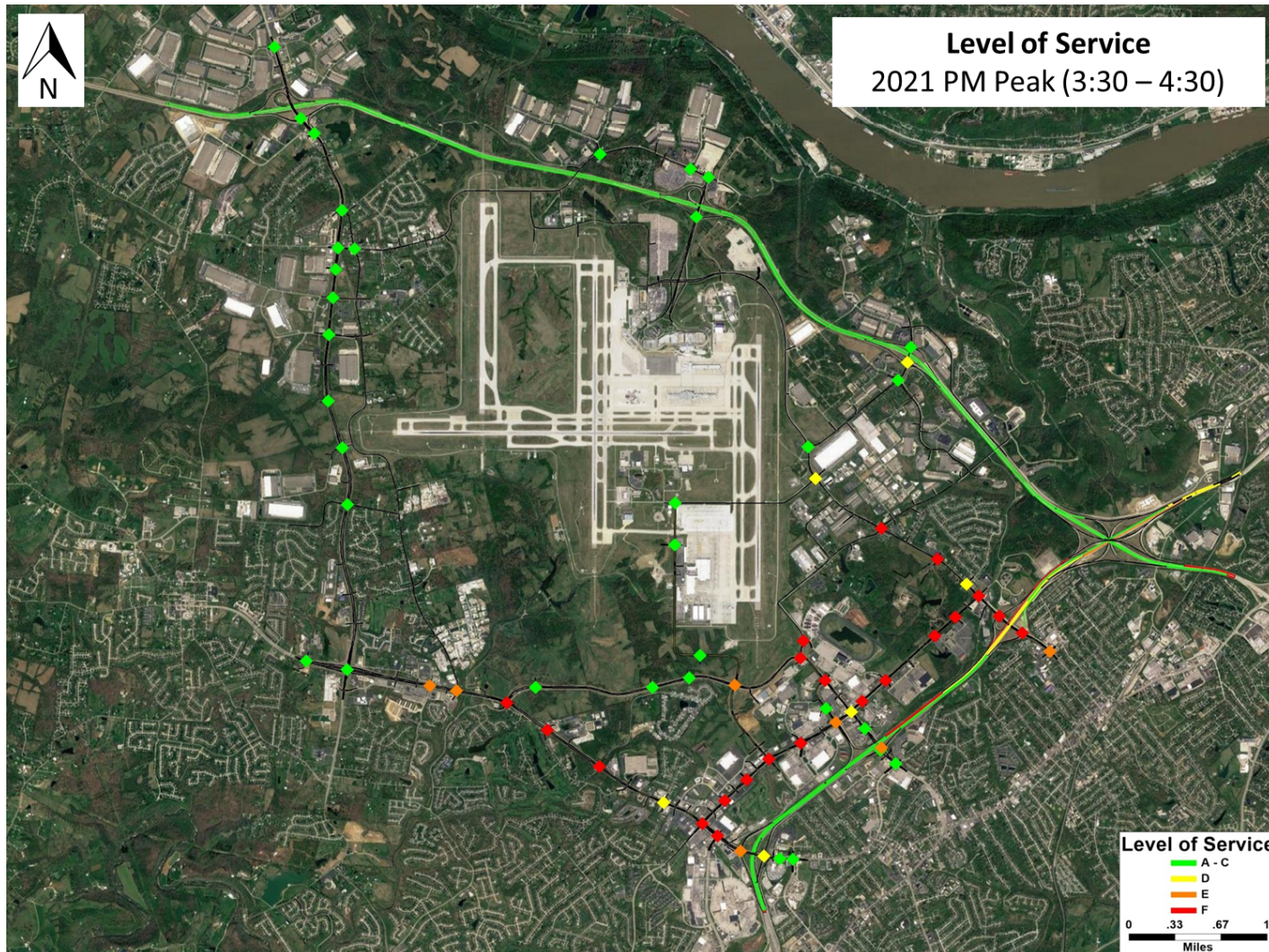


Figure 3: No-Build - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

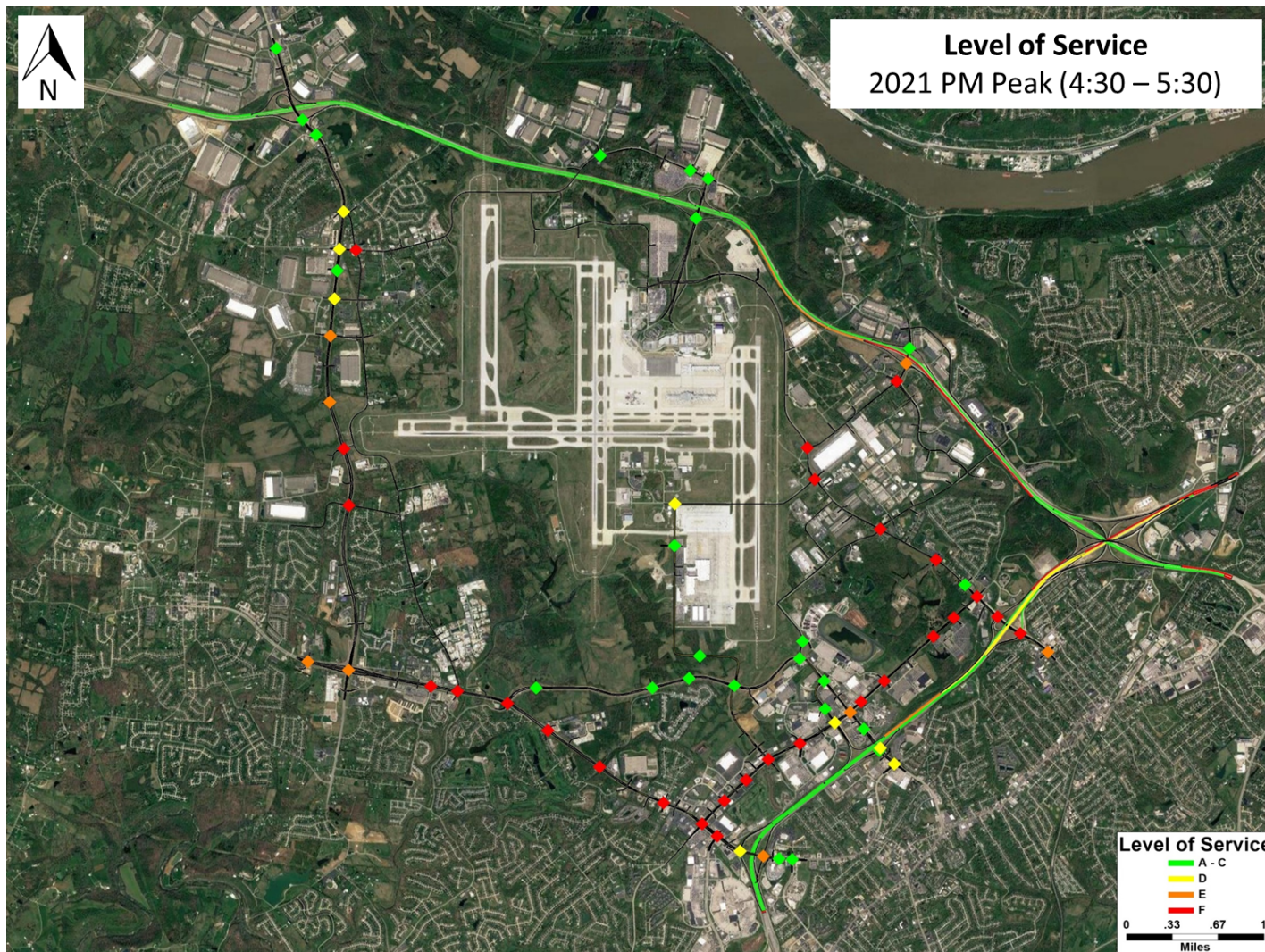
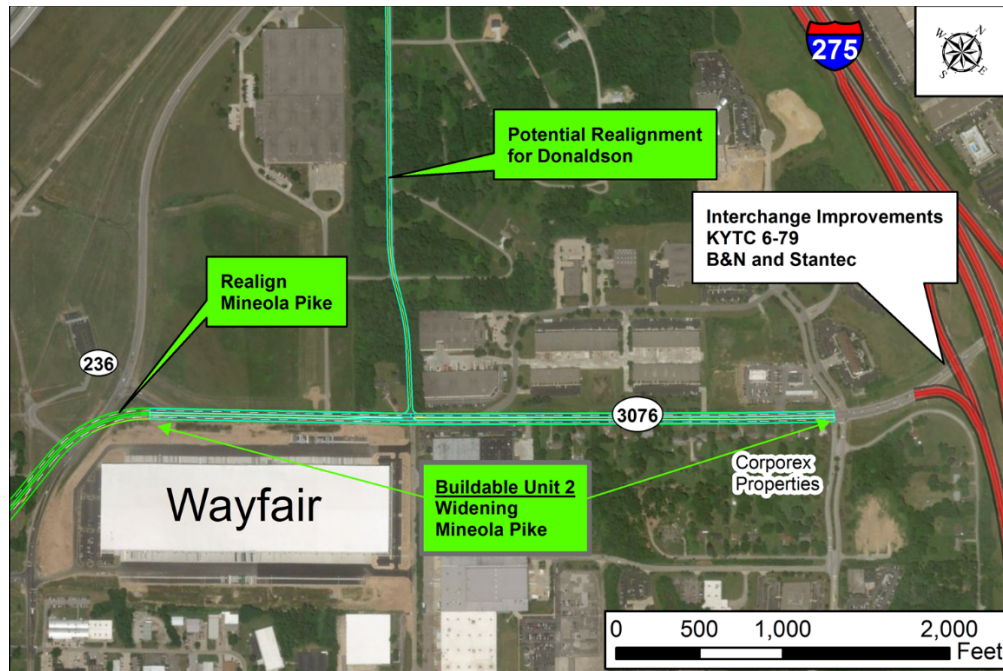


Figure 4: No-Build - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)



Maps depicting the Alternative 1 PM peak LOS for the year 2021 were shown. It is evident that peak hour traffic operations are worse in the PM, so AM maps were not shown. Under Alternative 1, there are still backups on Burlington Pike and North Bend Road, however traffic operations improve significantly during the PM peak period. **Figures 5 – 7** present the PM peak period LOS by hour.

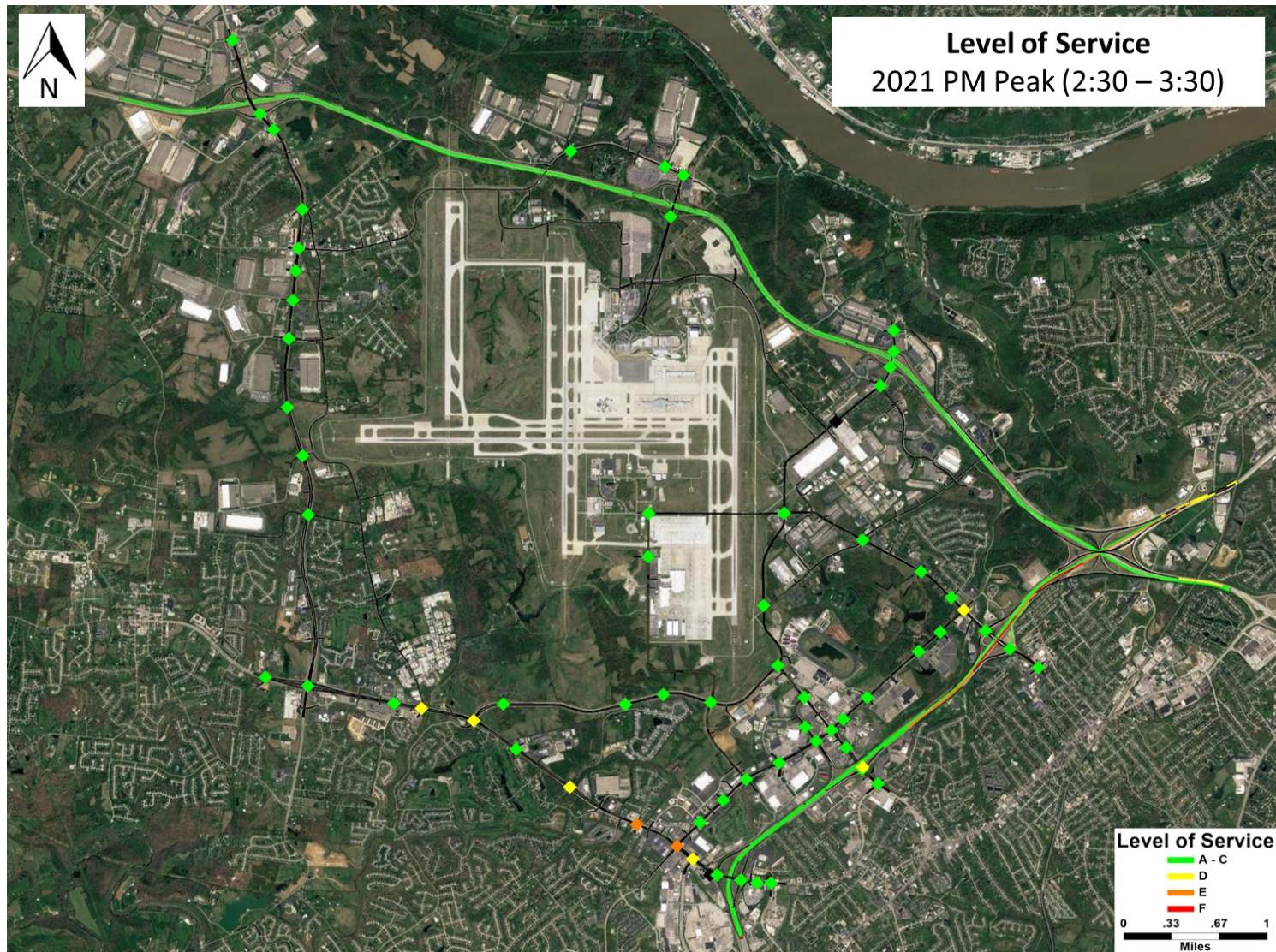


Figure 5: Alternative 1 - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

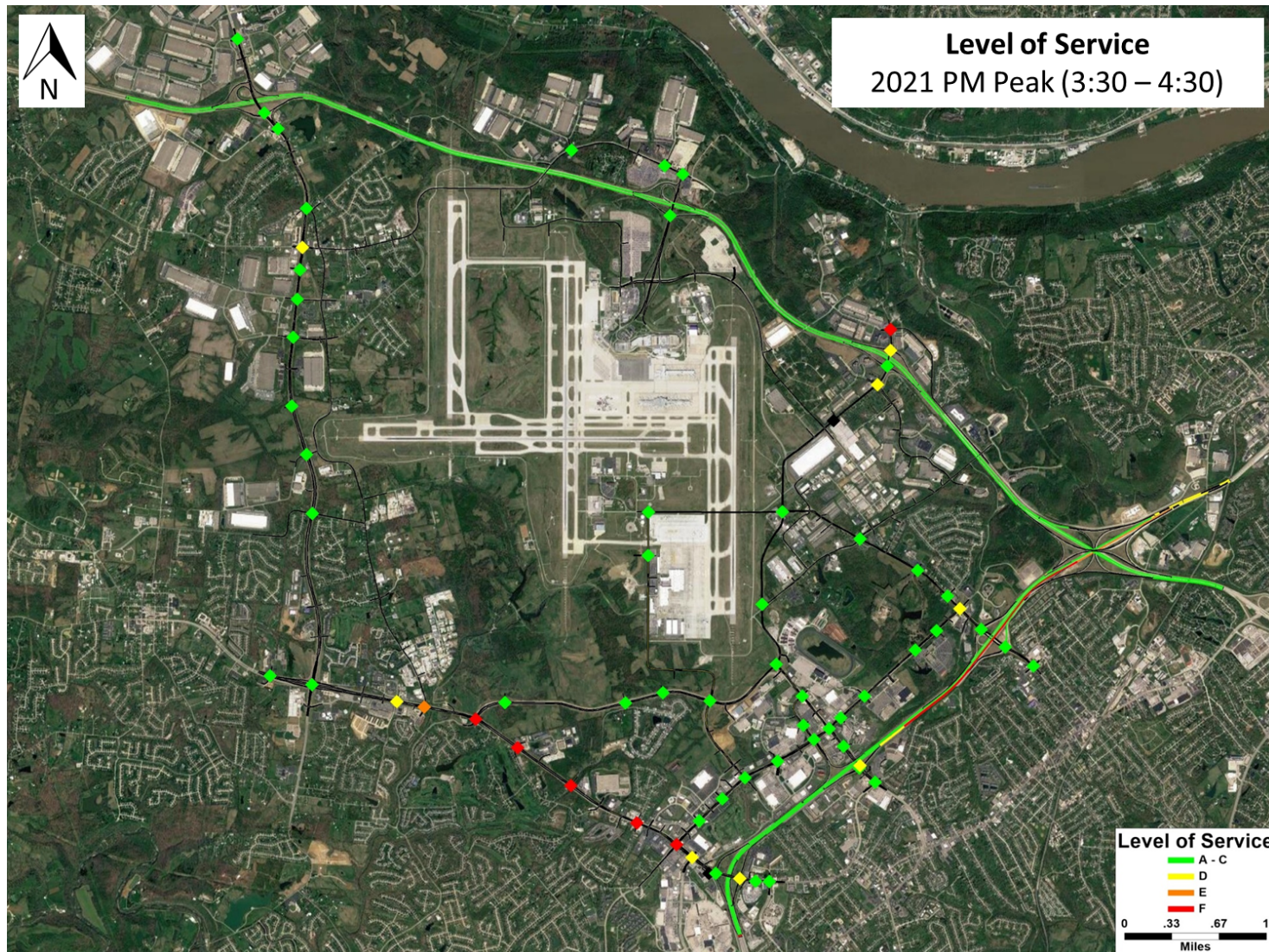


Figure 6: Alternative 1 - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

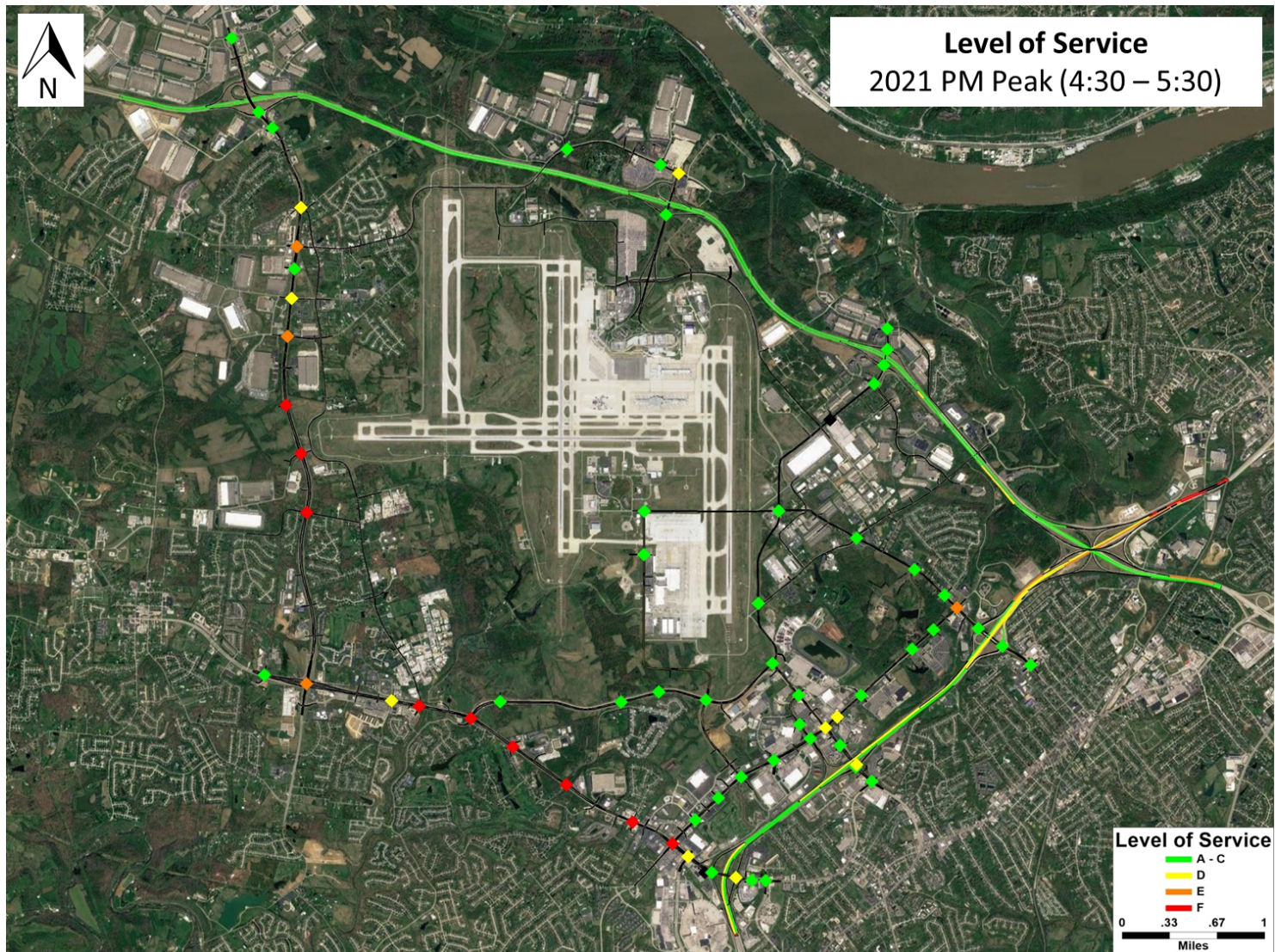
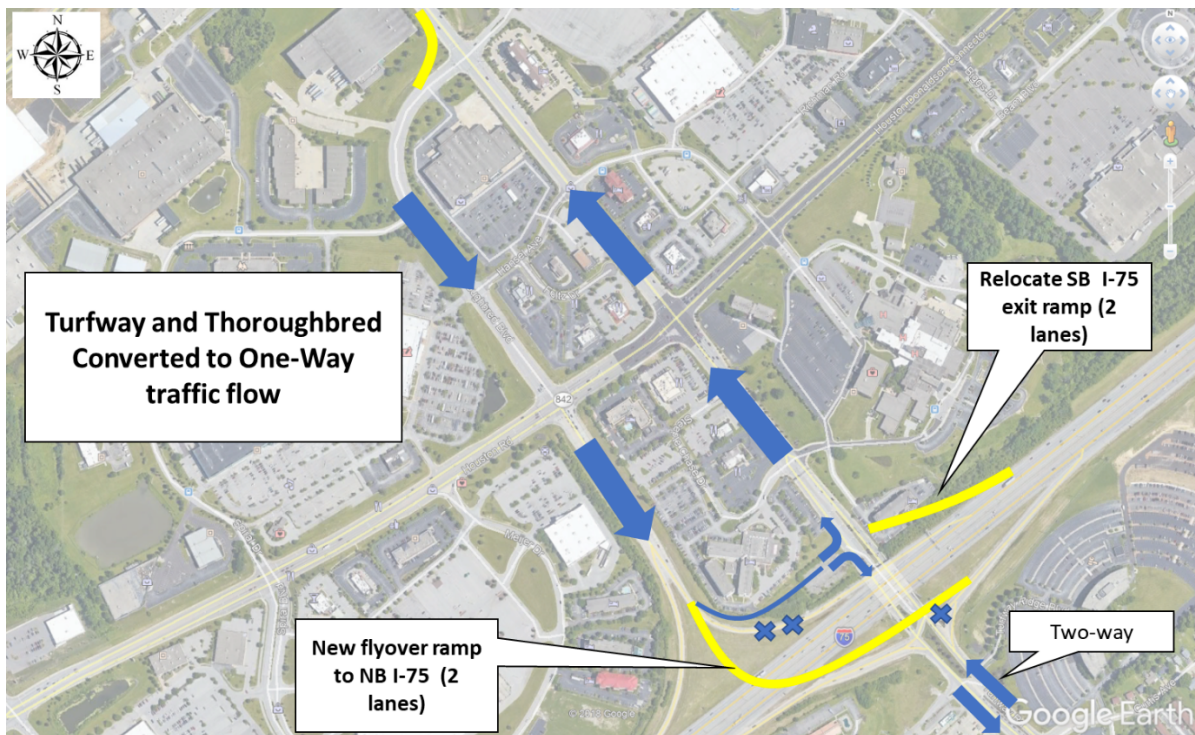


Figure 7: Alternative 1 - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

9. Alternative 2 includes converting Thoroughbred Boulevard and Turfway Road to a one-way couplet. Under this alternative, Turfway Road is converted to a northbound one-way street and Thoroughbred Boulevard to a southbound one-way street from Aero Parkway to I-75. The figure below details the one-way couplet, including the addition of a flyover to NB I-75 from Thoroughbred Boulevard, the removal of the SB I-75 off ramp to Thoroughbred Boulevard, the addition of a ramp from Thoroughbred Boulevard to Turfway Road, and the relocation of the SB I-75 ramp to Turfway Road.



Maps depicting the Alternative 2 PM peak LOS for the year 2021 were shown. It is evident that peak hour traffic operations are worse in the PM, so AM maps were not shown. Under Alternative 2, the area near the Turfway Road/Houston Road intersection performs much better, however intersections along Mineola Pike, Donaldson Highway, Burlington Pike, and North Bend Road still operate at a LOS F. **Figures 8 – 10** present the PM peak period LOS by hour.

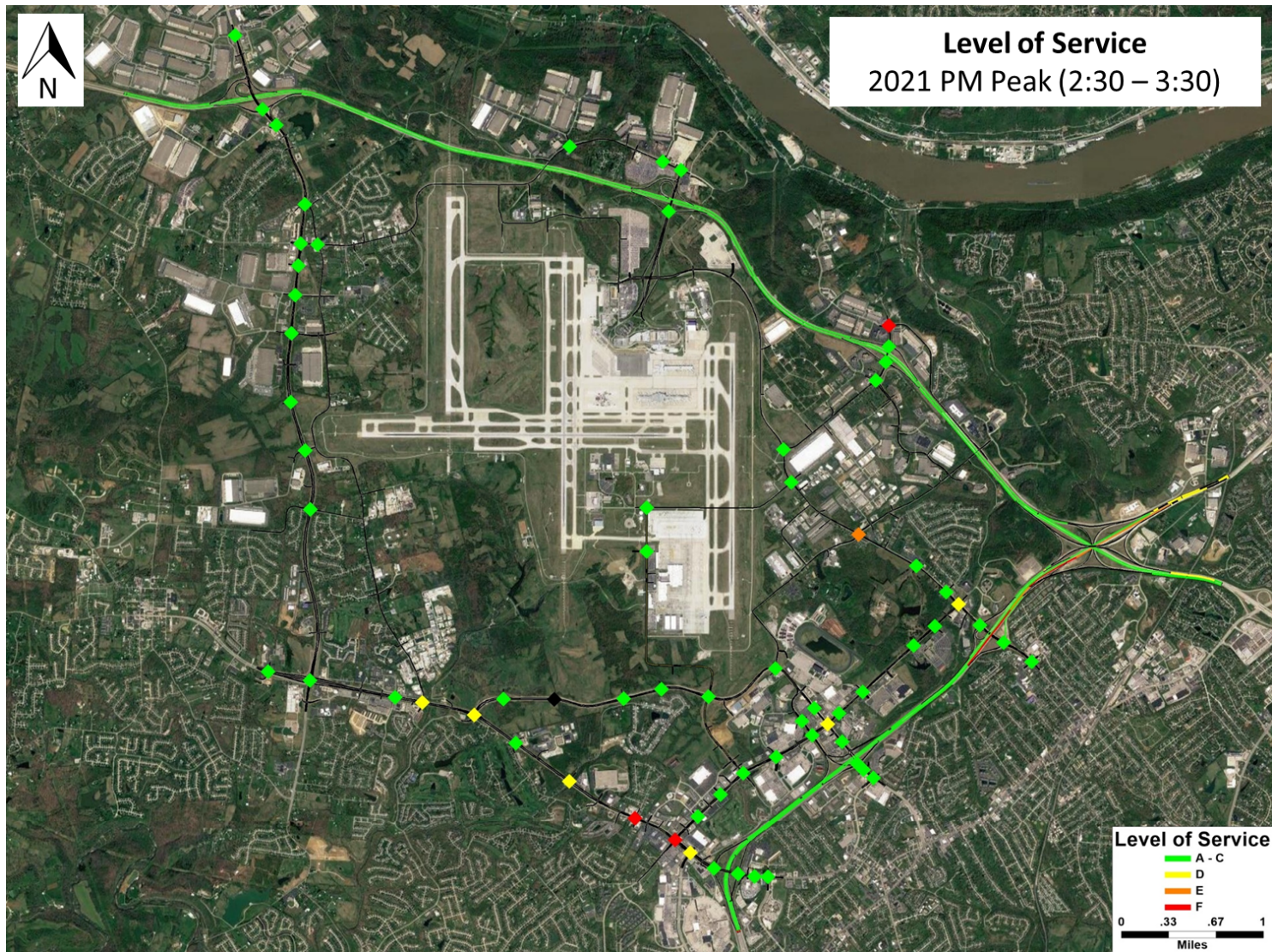


Figure 8: Alternative 2 - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

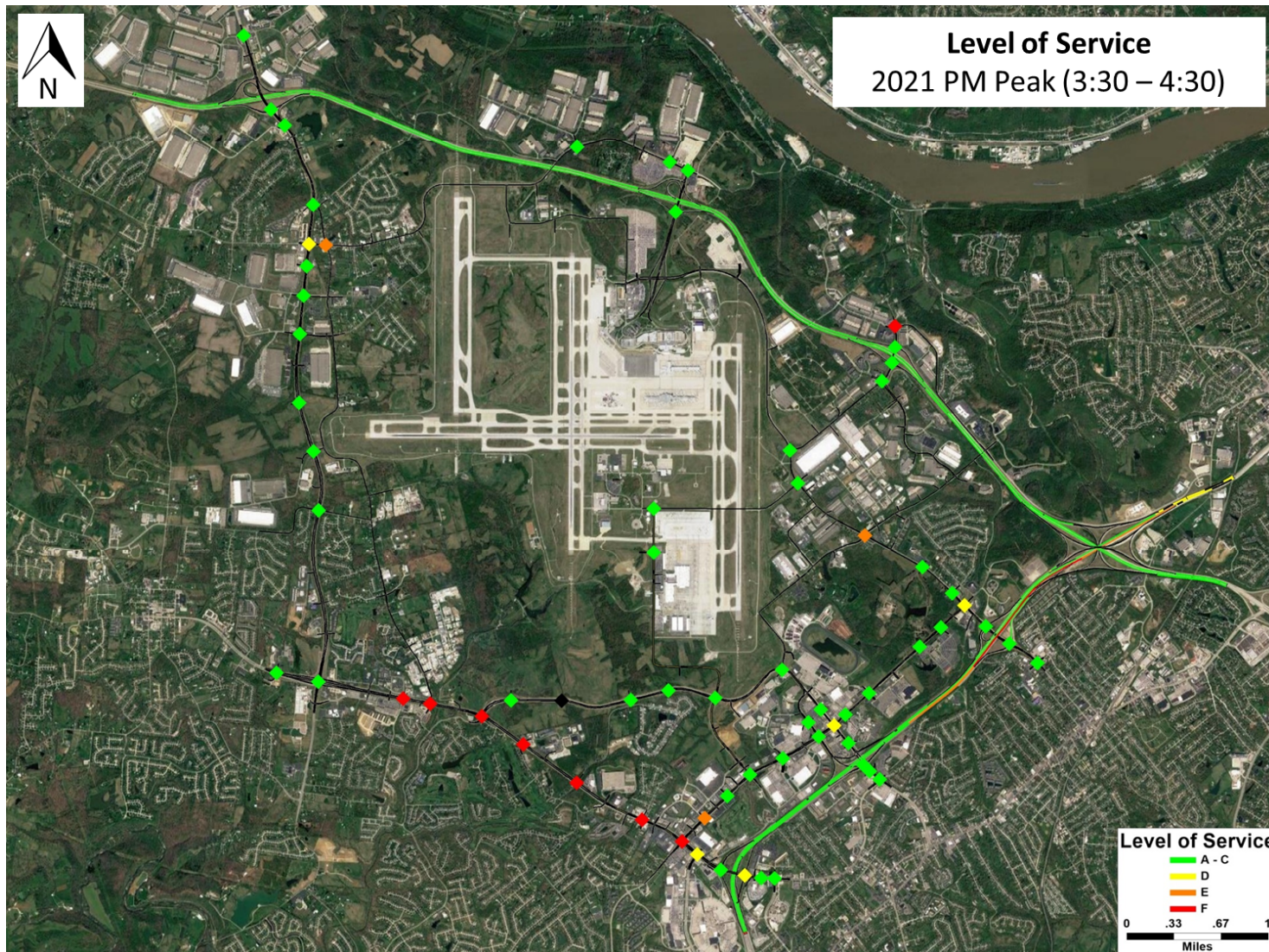


Figure 9: Alternative 2 - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

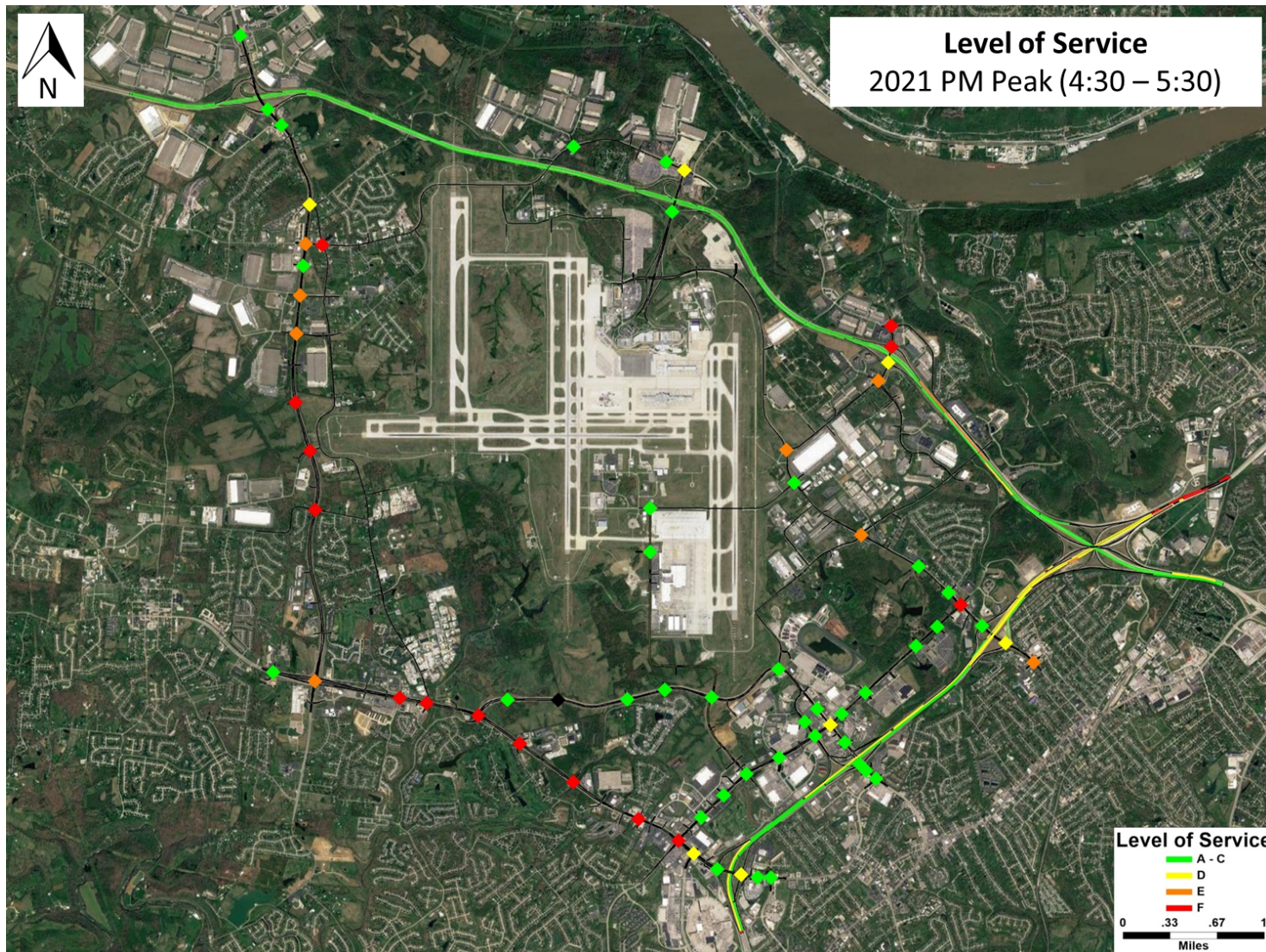
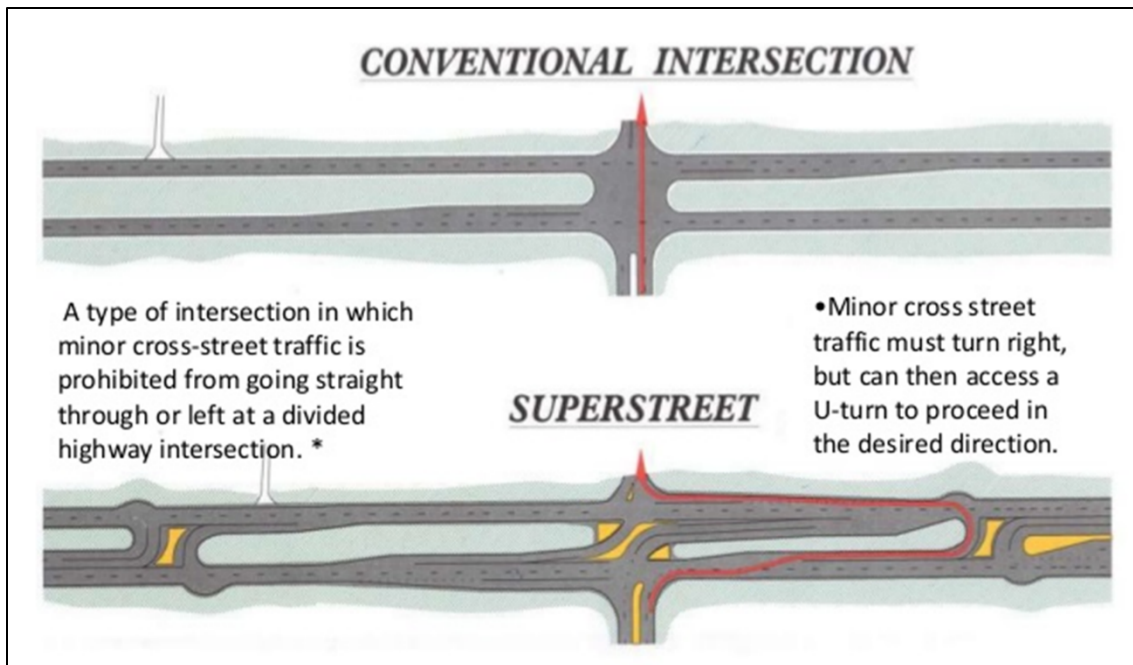
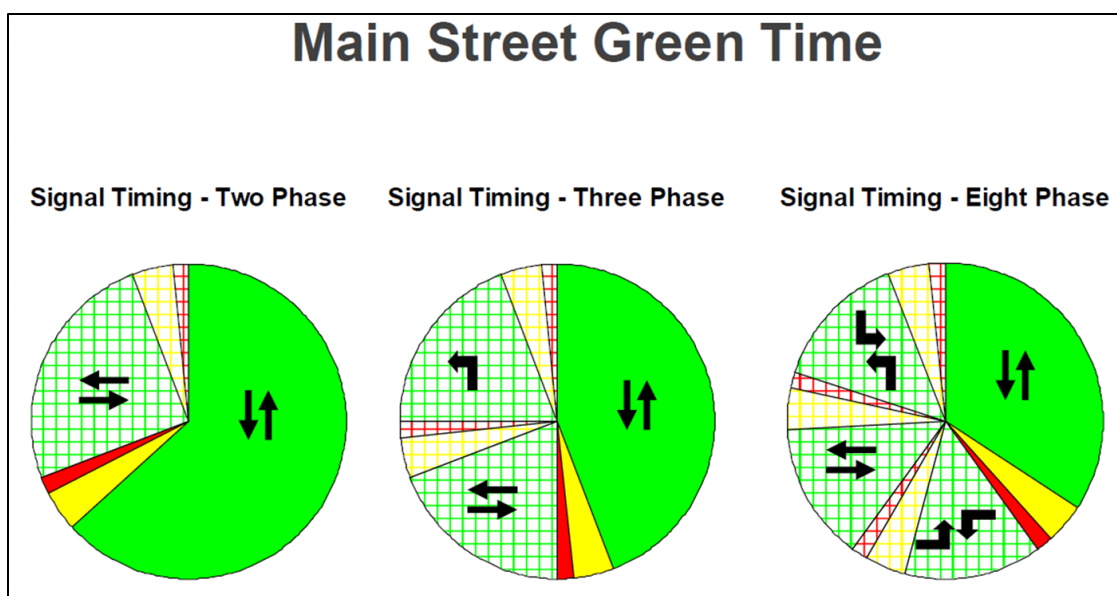


Figure 10: Alternative 2 - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

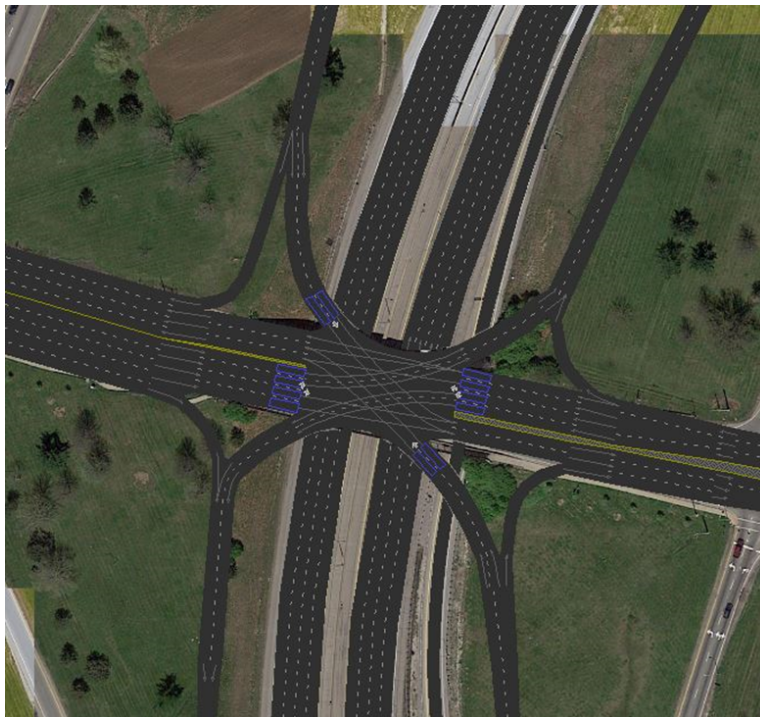
10. Alternative 3 includes converting Burlington Pike to a “Superstreet” between Houston Road and North Bend Road. This superstreet alternative forces minor cross-street traffic to turn right, then make a U-turn to proceed in the desired direction, creating two-phased signals at all intersections.



With fewer traffic signal phases, superstreets have been found to improve travel time by 20%. Superstreets are also safer, with an expected 46% reduction in crashes due to the decrease in the number of conflicts at each intersection.



Along with the superstreet, alternative 3 includes grade separating the Burlington Pike intersections with Houston Road and Mall Road and a SPUI at the I-75 interchange.



Maps depicting the Alternative 3 PM peak LOS for the year 2021 were shown. It is evident that peak hour traffic operations are worse in the PM, so AM maps were not shown. Under Alternative 3, Burlington Pike performs much better, however intersections along Donaldson Highway, Mineola Pike, and Houston Road still operate at a LOS F. **Figures 11 – 13** present the PM peak period LOS by hour.

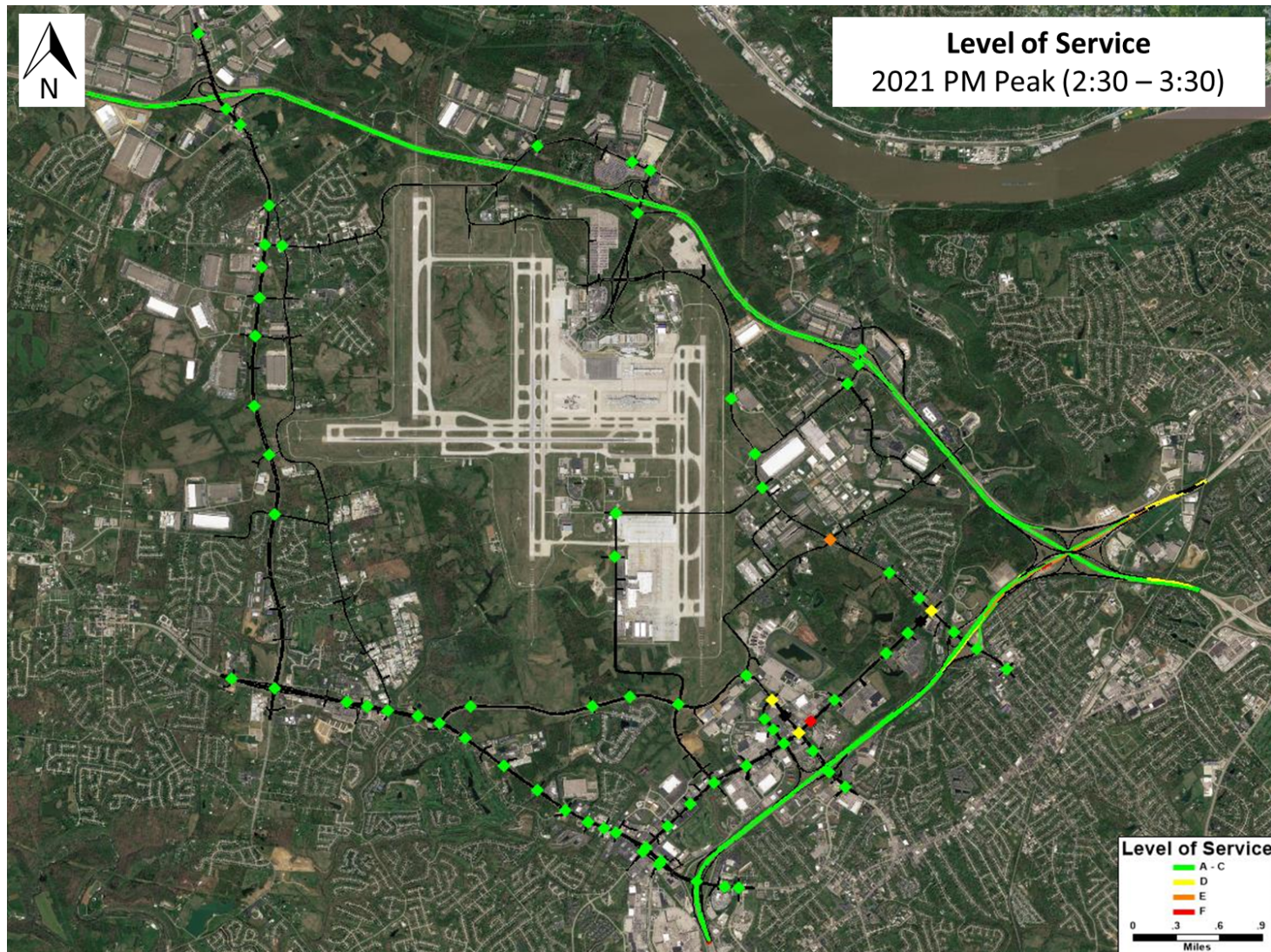


Figure 11: Alternative 3 - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

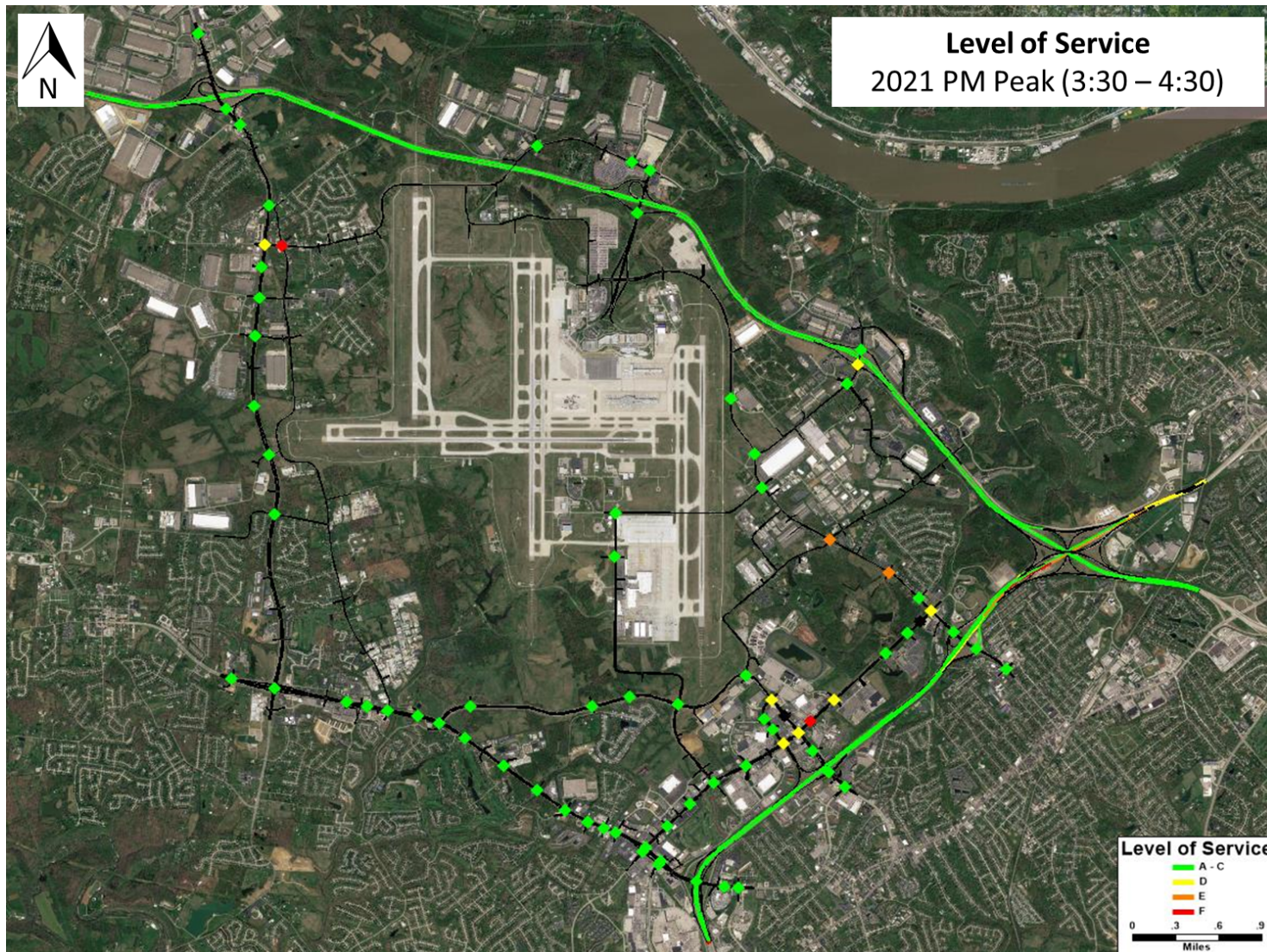


Figure 12: Alternative 3 - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

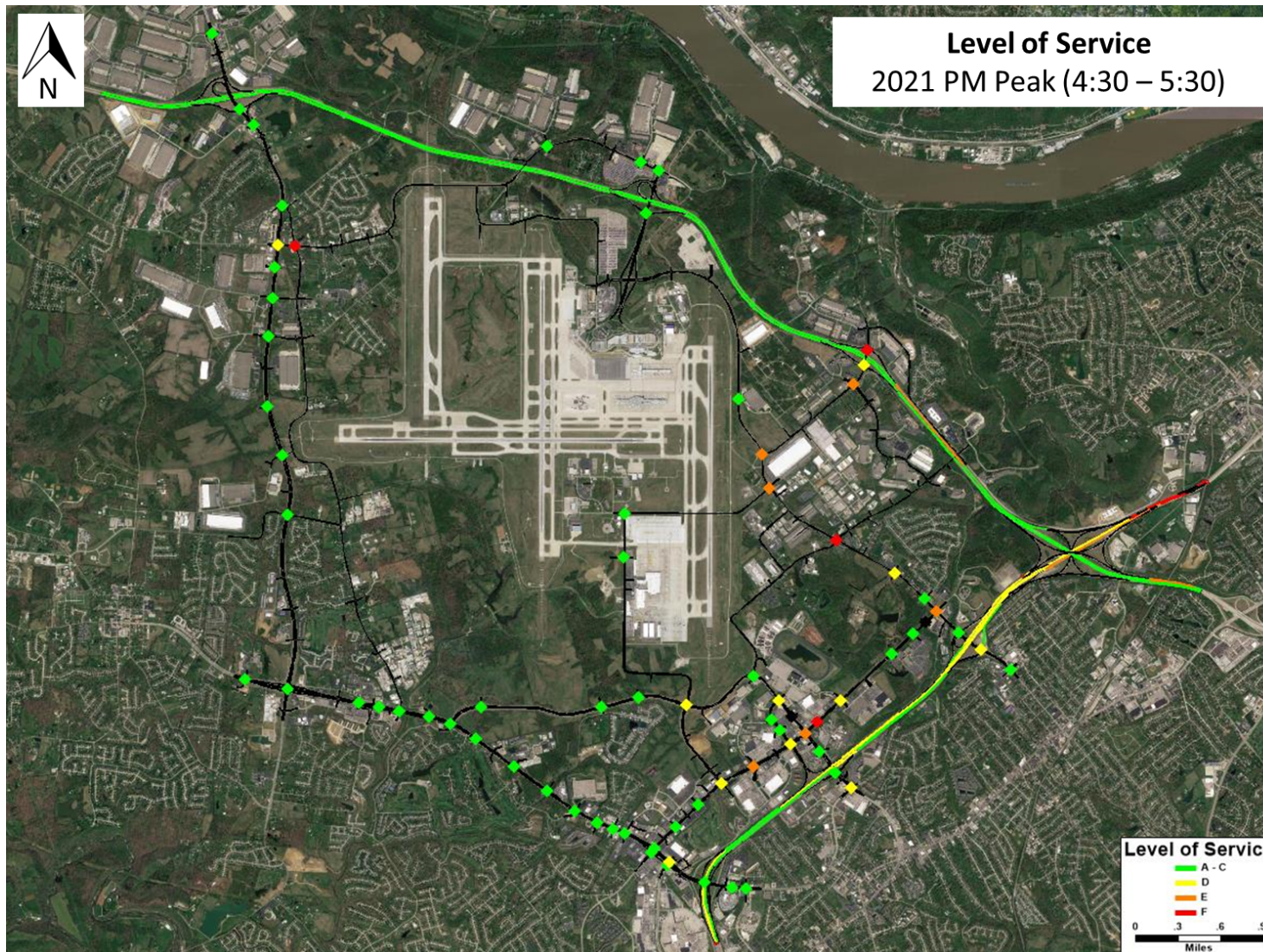


Figure 13: Alternative 3 - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

The following maps depict the 2021 PM peak LOS for the combination of Alternatives 1-3. Combining the alternatives alleviates much of the congestion along the major corridors in the study area. With improved traffic operations on the surface streets, more vehicles are able to access the interstates, increasing congestion on I-75. **Figures 14 – 16** present the PM peak period LOS by hour.

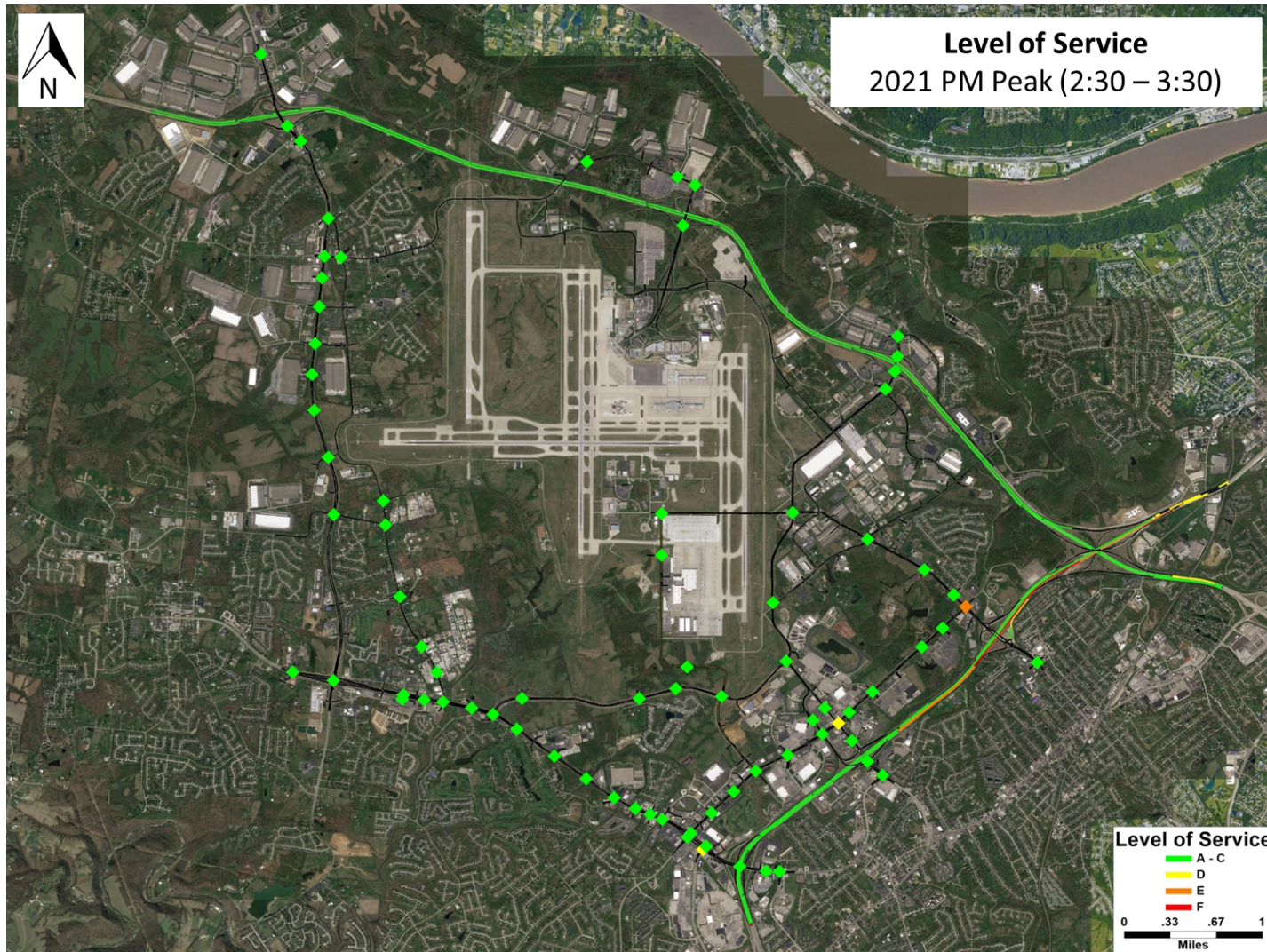


Figure 14: Combined Alternatives - 2021 PM Simulation Model Traffic Operations (2:30 – 3:30)

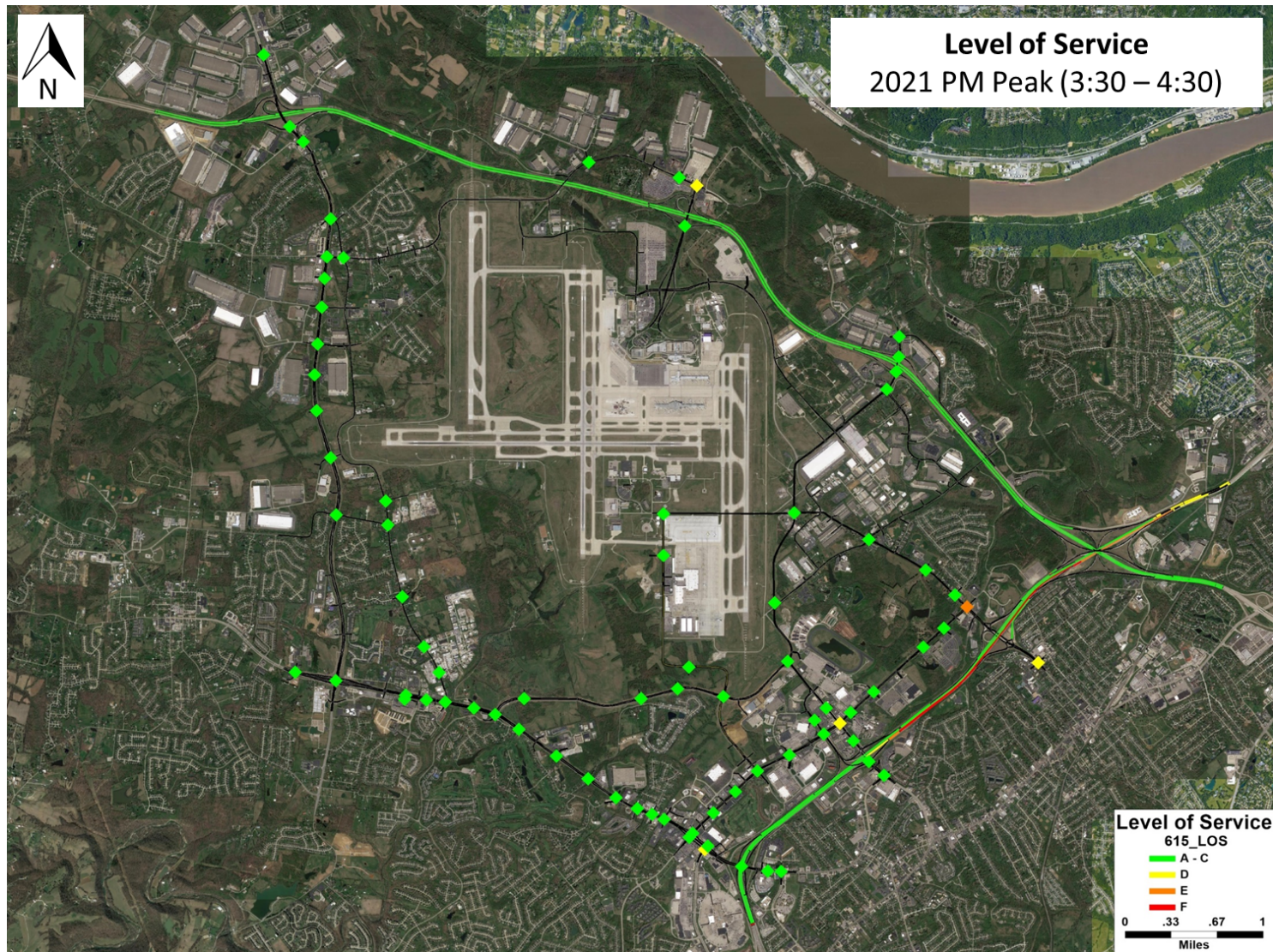


Figure 15: Combined Alternatives - 2021 PM Simulation Model Traffic Operations (3:30 – 4:30)

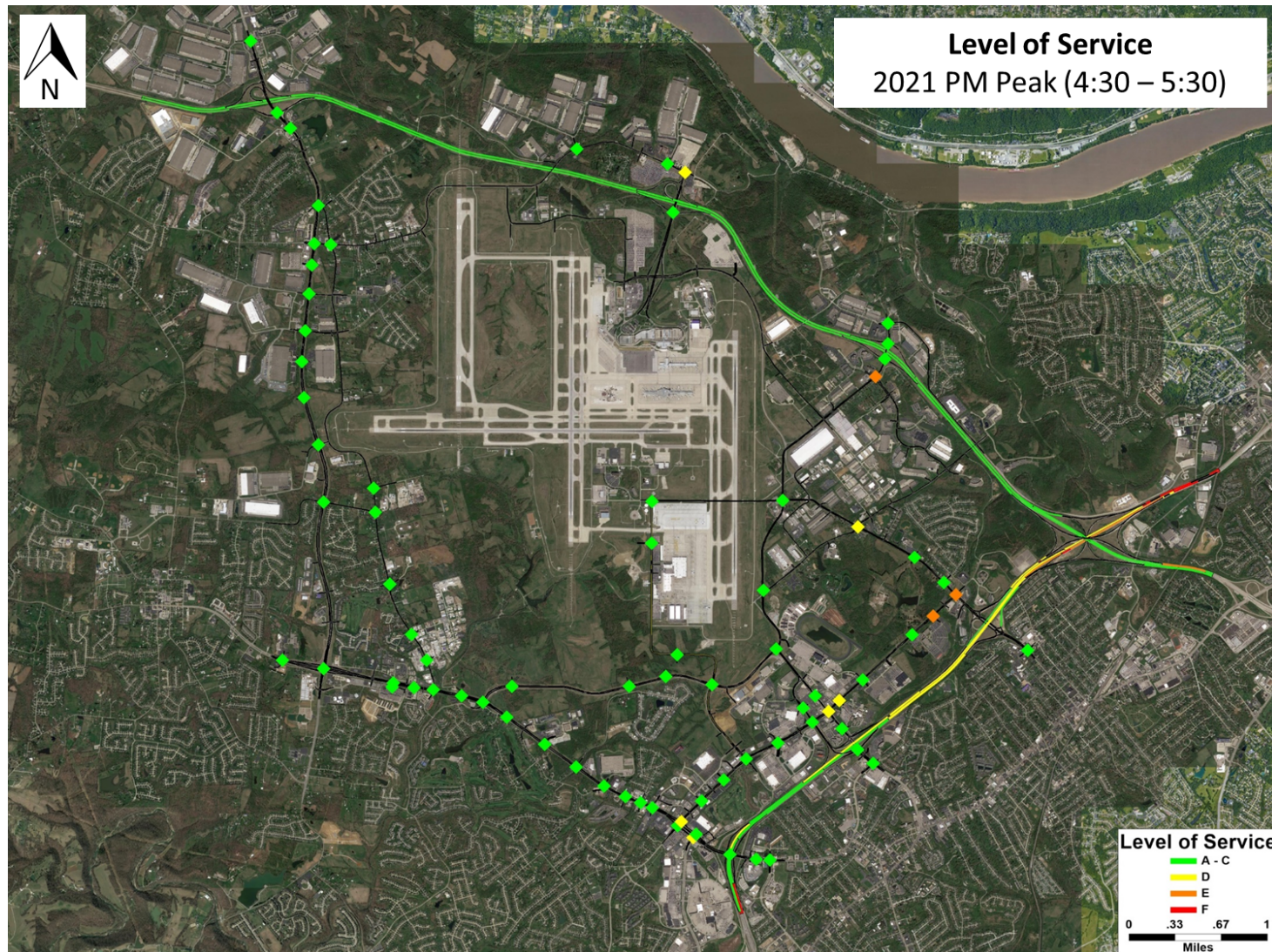


Figure 16: Combined Alternatives - 2021 PM Simulation Model Traffic Operations (4:30 – 5:30)

Maps from the 2030 No-Build simulation model were then shown. In addition to 2021 traffic, this model includes the 2026 Design Year Amazon traffic, several developments with expected completion dates between the years 2021 and 2030, and increased background traffic based on OKI forecasts. **Figures 17 – 19** present the 2030 No-Build PM peak period LOS by hour.

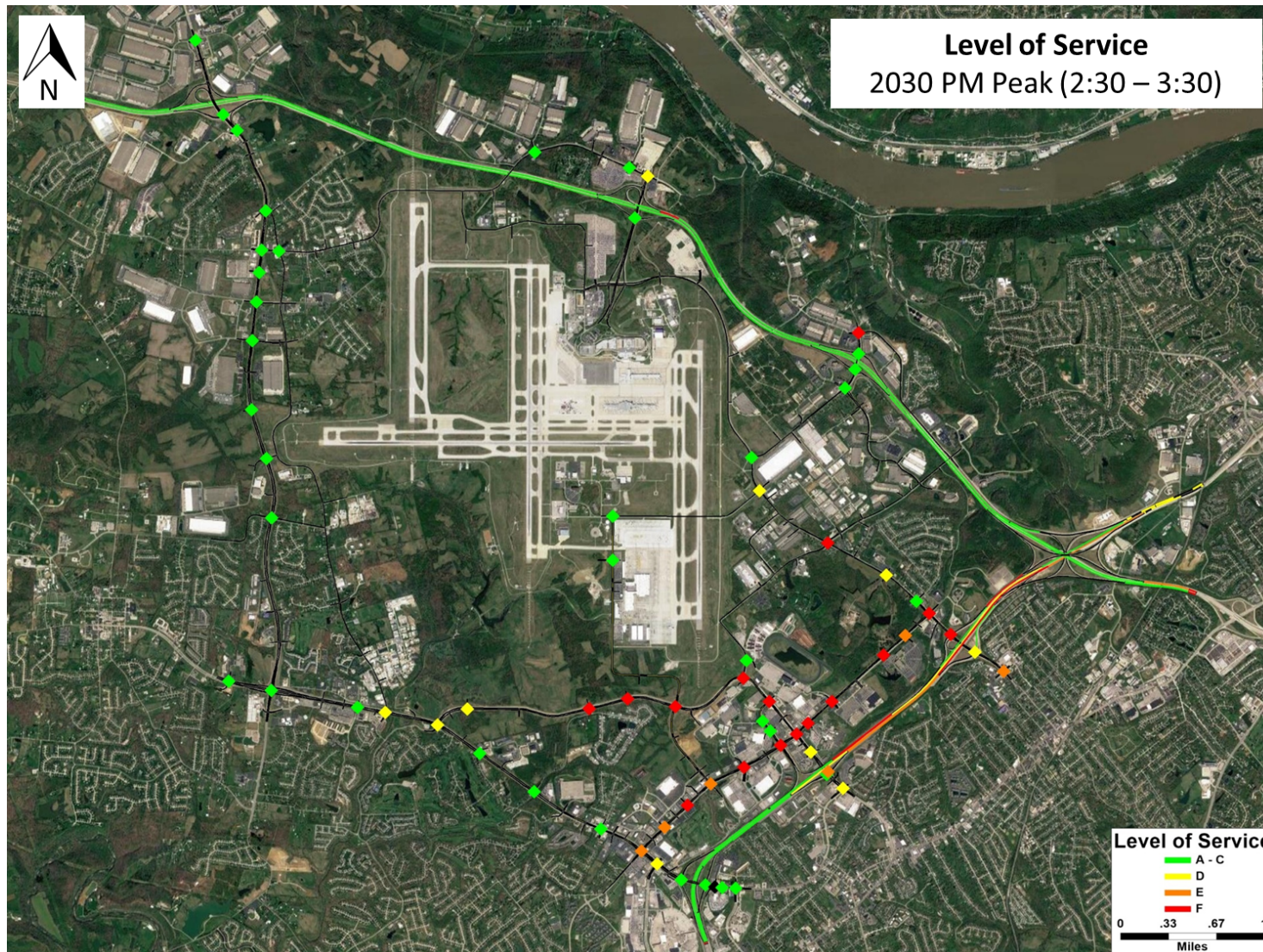


Figure 17: No-Build - 2030 PM Simulation Model Traffic Operations (2:30 – 3:30)

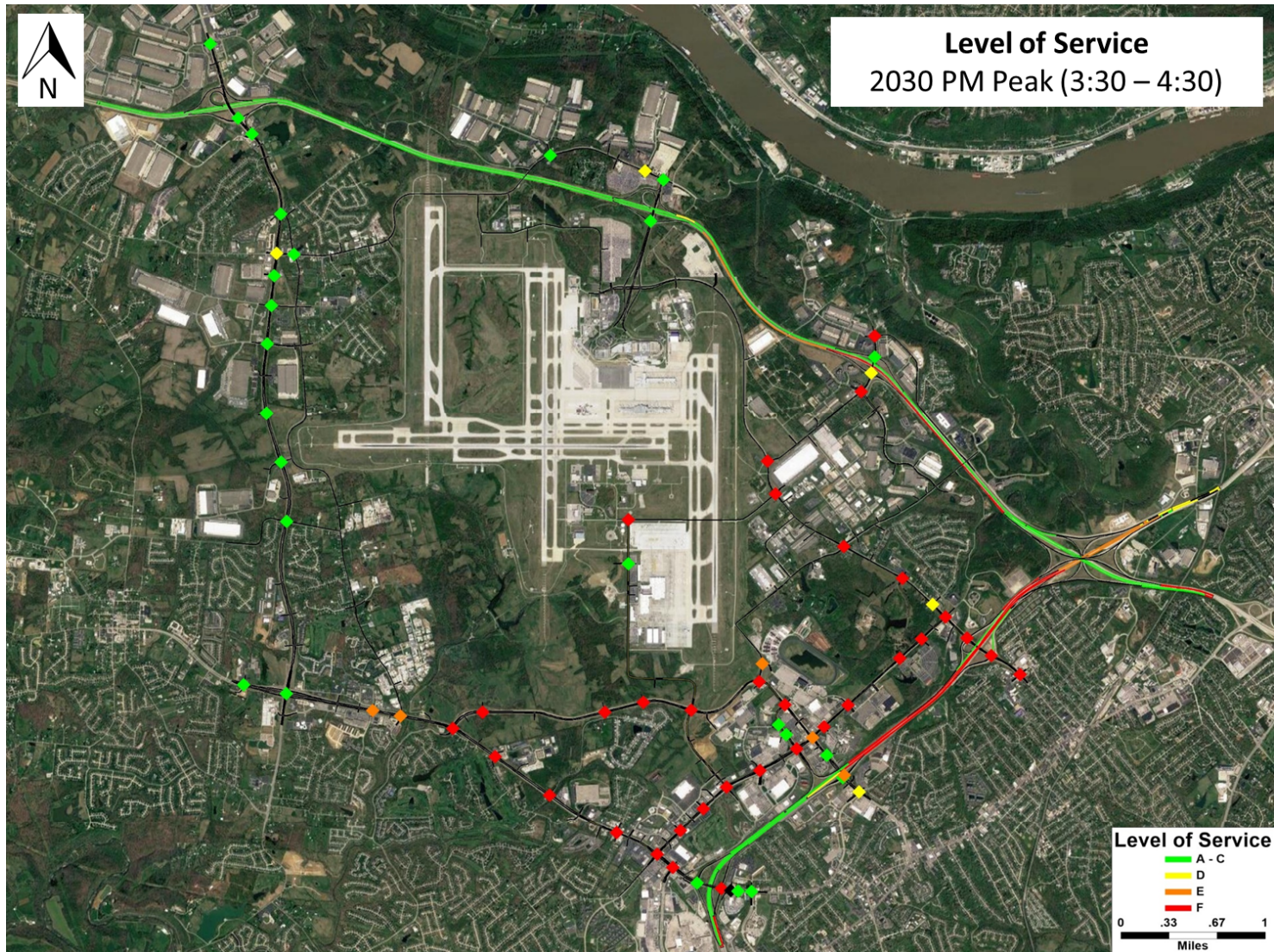


Figure 18: No-Build - 2030 PM Simulation Model Traffic Operations (3:30 – 4:30)

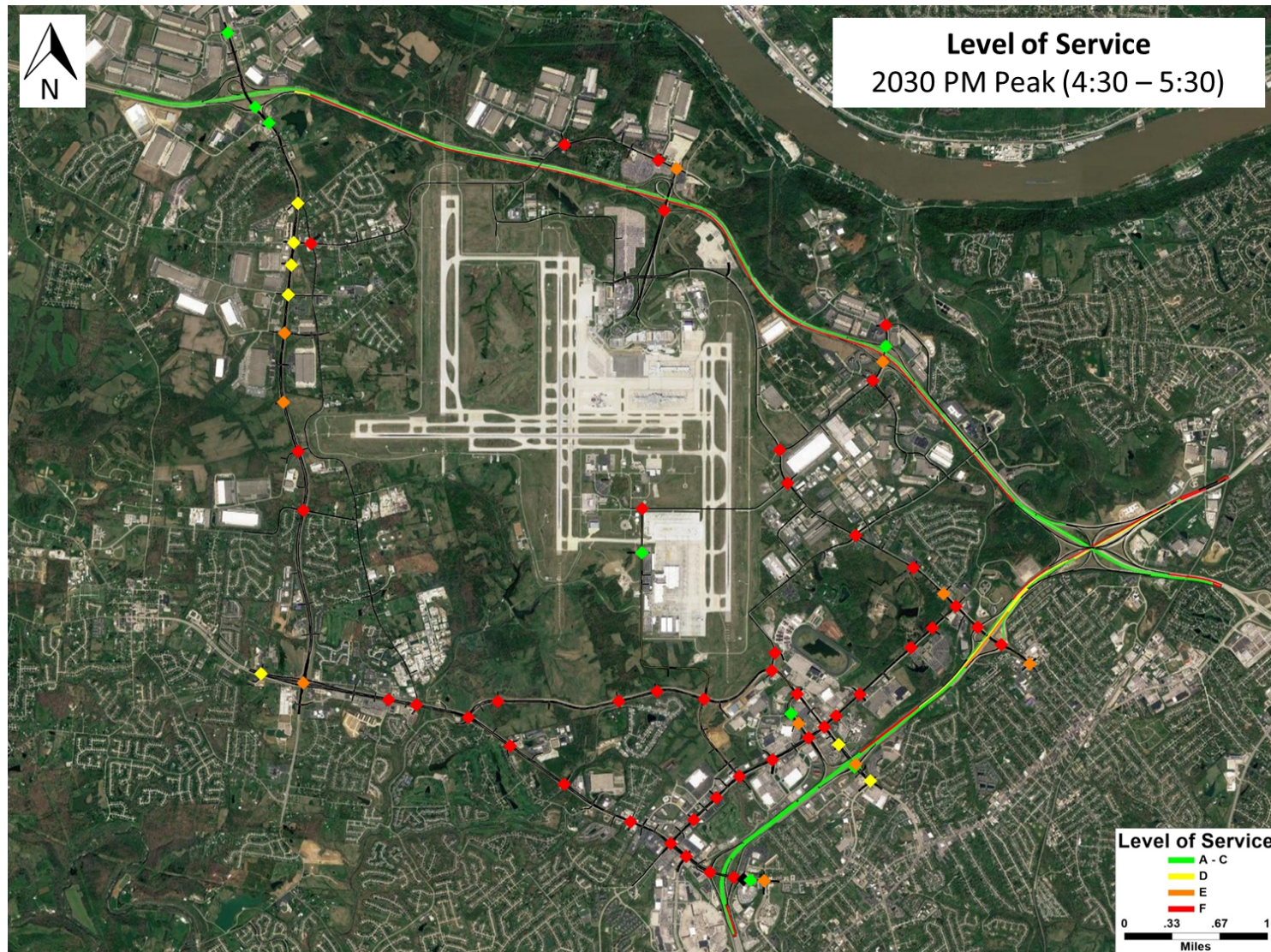


Figure 19: No-Build - 2030 PM Simulation Model Traffic Operations (4:30 – 5:30)

The following maps depict the 2030 PM peak LOS for the combination of Alternatives 1-3. Similar to the 2021 scenario, combining the alternatives alleviates much of the congestion along the major corridors in the study area. With improved traffic operations on the surface streets, more vehicles are able to access the interstates, causing major backups on I-75 past the Burlington Pike interchange. **Figures 20 – 22** present the PM peak period LOS by hour.

11. Cost estimates and prioritization for the three alternatives were discussed.

- Question: With the significant traffic operations improvements should Alternative 3 be a higher priority?
Answer: Alternative 3 is an important project but would be expensive and difficult to maintain traffic during construction. Alternatives 1 and 2 are easier and cheaper to build.
- The project team would like the cost estimates for Mineola Pike broken down from South Airfield Road to I-275 and for Donaldson Highway from South Airfield Road to I-75.
- For alternative 3, one option at the Houston Road and Mall Road intersections would be to keep KY 18 at grade and tunnel the frontage roads and intersections. This is an option to consider during the Design Phase.
- It was noted that the parcel costs could be low. District 6 will review these costs and determine utility costs.

Priority	Alternative	Description	Construction Cost	Design (15%)
#1	1a	Widen existing KY 236 (Donaldson Hwy.)	\$7,510,000	\$1,126,500
	1b	Widen existing KY 3076 (Mineola Pk.)	\$6,440,000	\$966,000
	1c	Realign Turfway/Donaldson and construct a SPUI at S Airfield Rd.	\$29,470,000	\$4,420,500
#2	2a	Extend auxiliary lanes / C-D on I-75	\$31,410,000	\$4,711,500
	2b	Convert Turfway and Thoroughbred from two-way to one-way and construct new I-75	\$12,650,000	\$1,897,500
#3	3a	Convert KY 18 (Burlington Pike) to a Superstreet	\$12,840,000	\$1,926,000
	3b	Construct SPUI at KY 18 at I-75	\$15,000,000	\$2,250,000
	3c	Grade separate KY 18 at Houston and Mall Rd.	\$23,890,000	\$3,583,500

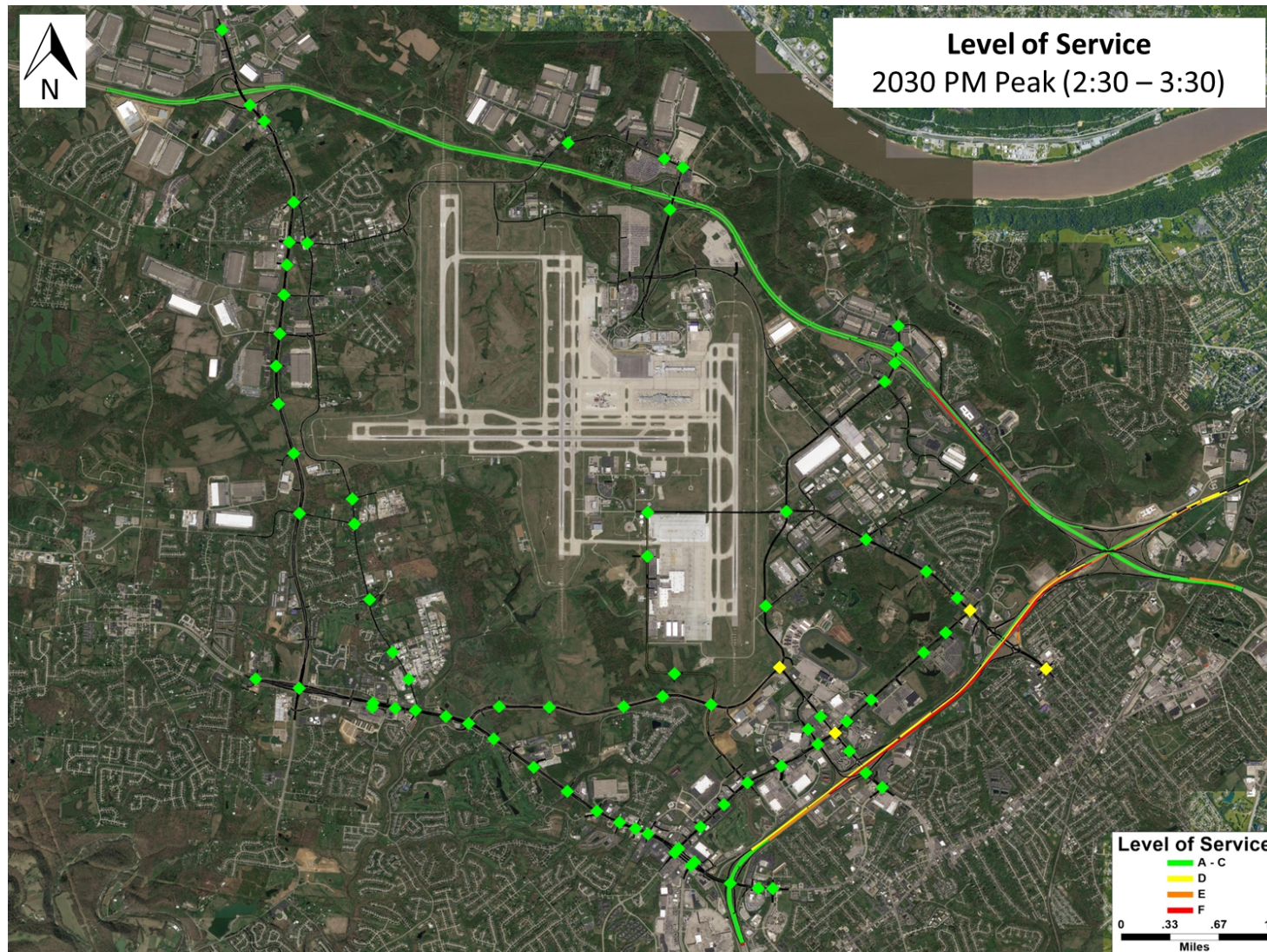


Figure 20: Combined Alternatives - 2030 PM Simulation Model Traffic Operations (2:30 - 3:30)

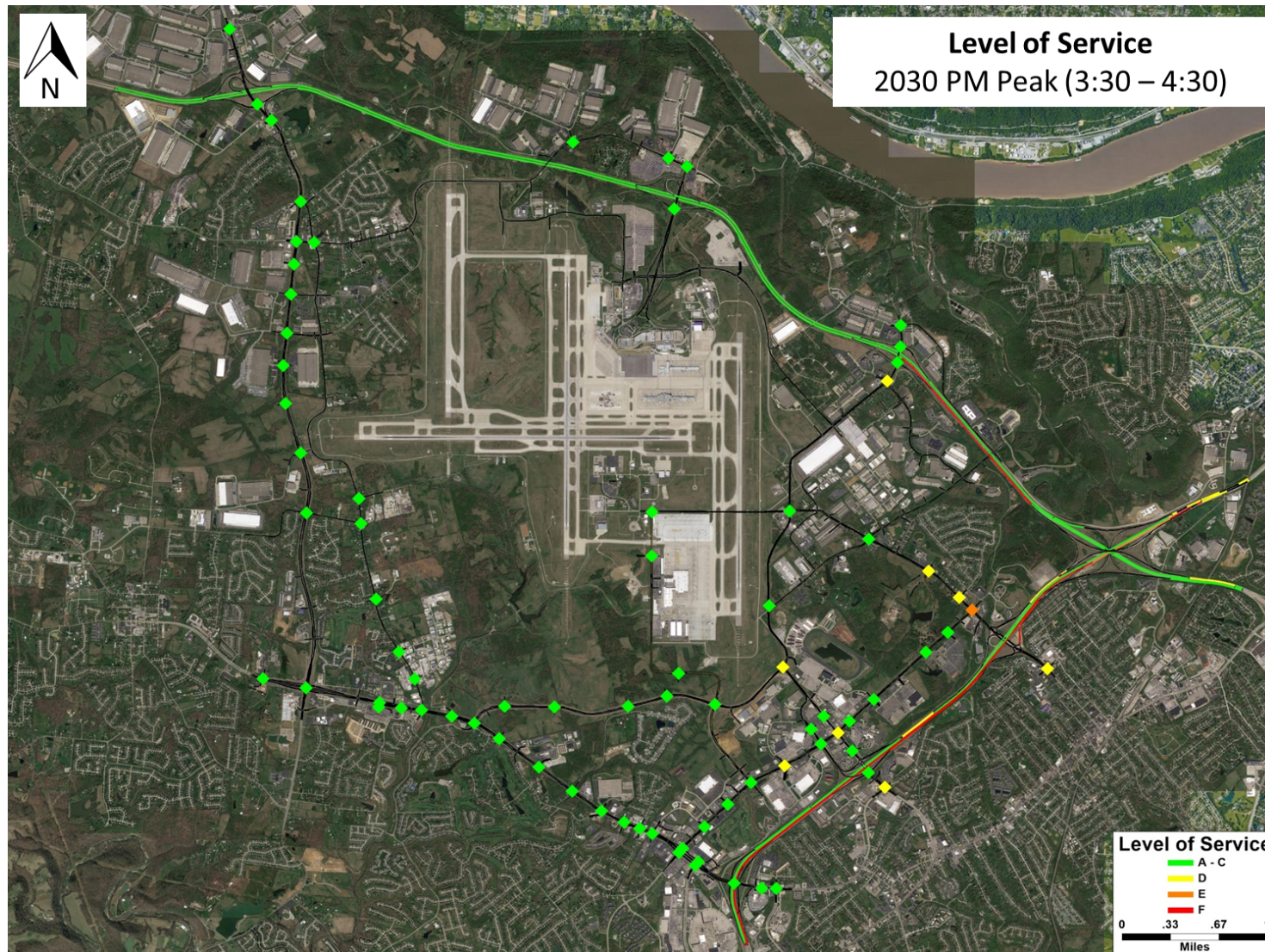


Figure 21: Combined Alternatives - 2030 PM Simulation Model Traffic Operations (3:30 - 4:30)

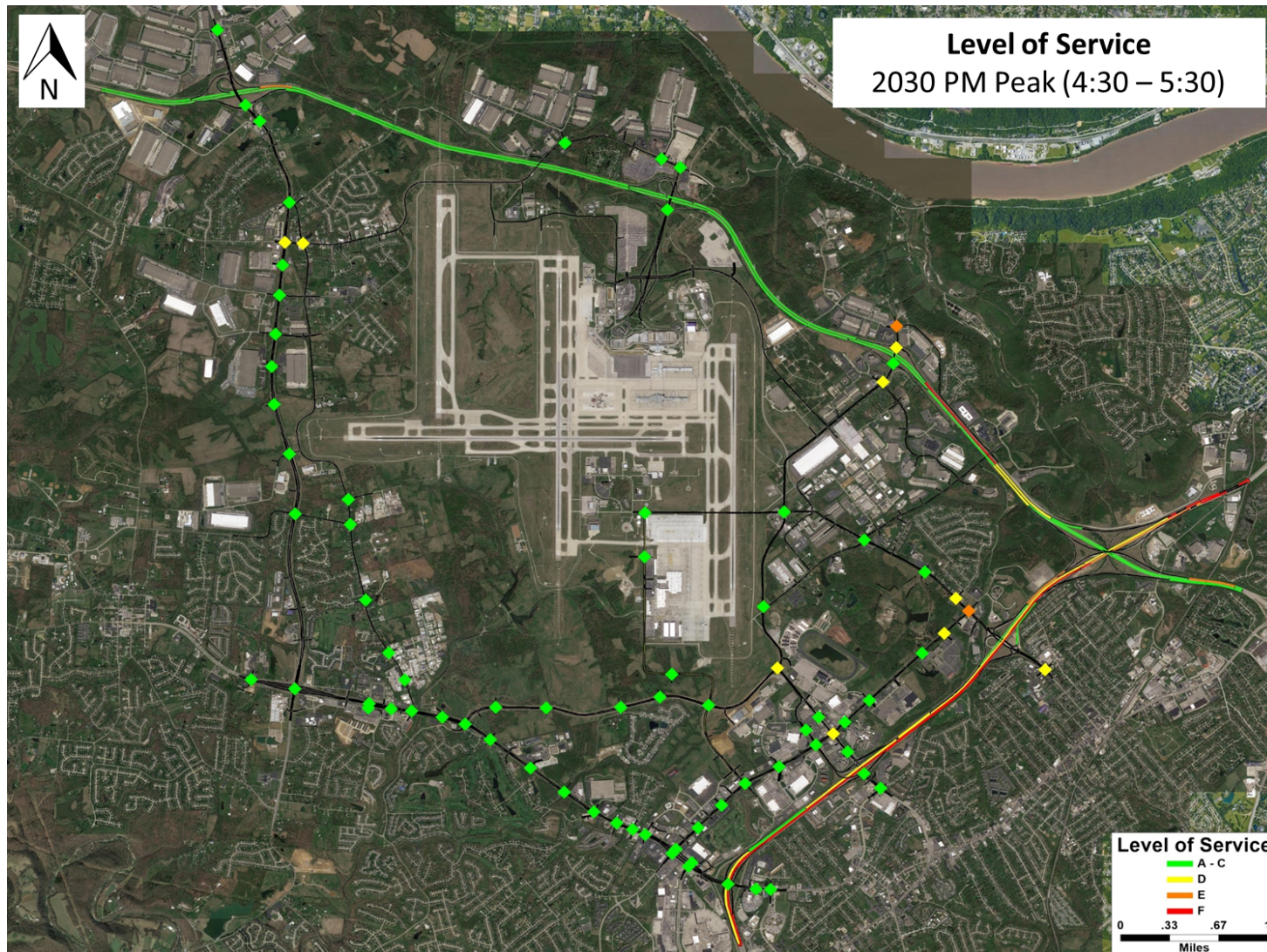


Figure 22: Combined Alternatives - 2030 PM Simulation Model Traffic Operations (4:30 – 5:30)

12. There were several discussion points at the end of the meeting:

- This meeting will serve as the final project team meeting
- Stantec will send the TransModeler files to Scott Thomson
- Question: Does the growth rate used for the future year simulation model scenarios consider new developments?

Answer: The growth rate from the OKI model considers the possibility of smaller developments, however it does not assume any major developments.

- There are several expected developments near the Turfway Road intersection with Donaldson Highway. What access management decisions can be made now to avoid having to buy property in the future?

Answer: Since this is a planning study, no decisions can be made right now.

13. Brian ended the meeting with a discussion of the project schedule and next steps.
The next step will be for Stantec to develop a draft report.

The meeting ended at approximately 2:30 p.m. EDT.