

## 2.6 Level-of-Service Overview

Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels-of-service, LOS A through LOS F, with A being the best and F being the worst. LOS analyses were conducted at all intersections within the study network using *Synchro 11*. Existing traffic signal phasing and timing data were retrieved for available intersections.

LOS for signalized intersections and all-way stop controlled intersections are reported for the intersection as a whole. One or more movements at an intersection may experience a low LOS, while the intersection as a whole may operate acceptably.

LOS for unsignalized intersections, with stop control on the minor street only, is reported for the side street approaches and the major street left-turn movements. Low LOS for side street approaches is not uncommon, as vehicles may experience delays in turning onto a major roadway.

## 2.7 Level-of-Service Standards

For the purposes of this traffic analysis, a LOS standard of E was assumed for the following study intersections, due to their location within a *Regional Center* area per the ARC Unified Growth Policy Map, per section 3.2.2.1 of the GRTA *Development of Regional Impact Review Procedures*:

- McGinnis Ferry Road at Hospital Parkway (Intersection 4)
- Medlock Bridge Road (SR 141) at McGinnis Ferry Road (Intersection 5)
- McGinnis Ferry Road at Johns Creek Parkway (Intersection 6)
- McGinnis Ferry Road at Lakefield Drive (Intersection 7)
- Medlock Bridge Road (SR 141) at Johns Creek Parkway (Intersection 8)
- Medlock Bridge Road (SR 141) at Hospital Parkway (Intersection 10)
- Medlock Bridge Road (SR 141) at Findley Road (Intersection 11)
- Medlock Bridge Road (SR 141) at Johns Creek Parkway (Intersection 12)
- Hospital Parkway at Site Driveway A (Intersection 15)
- Hospital Parkway at Site Driveway B (Intersection 16)
- Findley Road at Site Driveway C (Intersection 17)

A LOS standard of D was assumed for other remaining study intersections.

## 3.0 TRIP GENERATION

Gross trips associated with the proposed development were estimated using the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11<sup>th</sup> Edition, 2021*, using equations where available. Reductions to gross trips are also considered in the analysis, including mixed-use reductions and alternative transportation mode reductions.

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**Mixed-use reductions** occur when a site has a combination of different land uses that interact with one another. For example, people living in a residential development may walk to the restaurants and retail instead of driving off-site or to the site. This reduces the number of vehicle trips that will be made on the roadway, thus reducing traffic congestion. No mixed-use reductions were applied based on the proposed land-uses.

**Alternative modes reductions** are taken when a site can be accessed by modes other than vehicles (walking, bicycling, transit, etc.). No alternative modes reductions were taken in this analysis per the LOU.

**Pass-by reductions** are taken for a site when traffic normally traveling along a roadway may choose to visit a retail or restaurant establishment that is along the vehicle’s path. These trips were already on the road and would therefore only be new trips on the driveways. Pass-by trips were not applied based on the proposed land uses.

**Table 8** summarizes the gross trip generation, reductions, net trip generation, and driveway volumes for the proposed *Emory Johns Creek Hospital Expansion*.

Table 8: Trip Generation								
Land Use	Density	Daily Traffic			AM Peak Hour		PM Peak Hour	
		Total	Enter	Exit	Enter	Exit	Enter	Exit
<b>Phase 1</b>								
610 – Hospital	369,173 S.F.	5,422	2,711	2,711	289	142	149	276
720 – Medical/Dental Office Building	210,000 S.F.	7,346	3,673	3,673	462	108	158	475
720 – Medical/Dental Office Building (To be Removed)	-241,251 S.F.	-8,458	-4,229	-4,229	-531	-124	-182	-546
<b>Gross Project Trips</b>		<b>4,310</b>	<b>2,155</b>	<b>2,155</b>	<b>220</b>	<b>126</b>	<b>125</b>	<b>205</b>
<i>Mixed-Use Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<i>Alternative Mode Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<i>Pass-By Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<b>Net New Trips</b>		<b>4,310</b>	<b>2,155</b>	<b>2,155</b>	<b>220</b>	<b>126</b>	<b>125</b>	<b>205</b>
<b>Phase 2: Full Build-Out (Includes Phase 1)</b>								
610 – Hospital	621,553 S.F.	6,758	3,379	3,379	395	195	208	386
720 – Medical/Dental Office Building	210,000 S.F.	24,786	12,393	12,393	1,541	361	532	1,596
720 – Medical/Dental Office Building (To be Removed)	-241,251 S.F.	-8,458	-4,229	-4,229	-531	-124	-182	-546
<b>Gross Project Trips</b>		<b>23,086</b>	<b>11,543</b>	<b>11,543</b>	<b>1,405</b>	<b>432</b>	<b>558</b>	<b>1,436</b>
<i>Mixed-Use Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<i>Alternative Mode Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<i>Pass-By Reductions</i>		-0	-0	-0	-0	-0	-0	-0
<b>Net New Trips</b>		<b>23,086</b>	<b>11,543</b>	<b>11,543</b>	<b>1,405</b>	<b>432</b>	<b>558</b>	<b>1,436</b>

A more detailed trip generation analysis summary table is provided in **Appendix B**.