AIRPORT CITY MASTER PLAN

in association with **College Park Business and Industrial Development Authority**

APPENDIX

sizemoregroup in association with **NOELL CONSULTING, VIRIDIAN STUDIOS, LONG ENGINEERING, CERM, K&L CONSULTING & MICHAEL BAKER INTERNATIONAL**

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JUNE 2019

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TABLE OF **CONTENTS**

APPENDIX

APPENDIX 126

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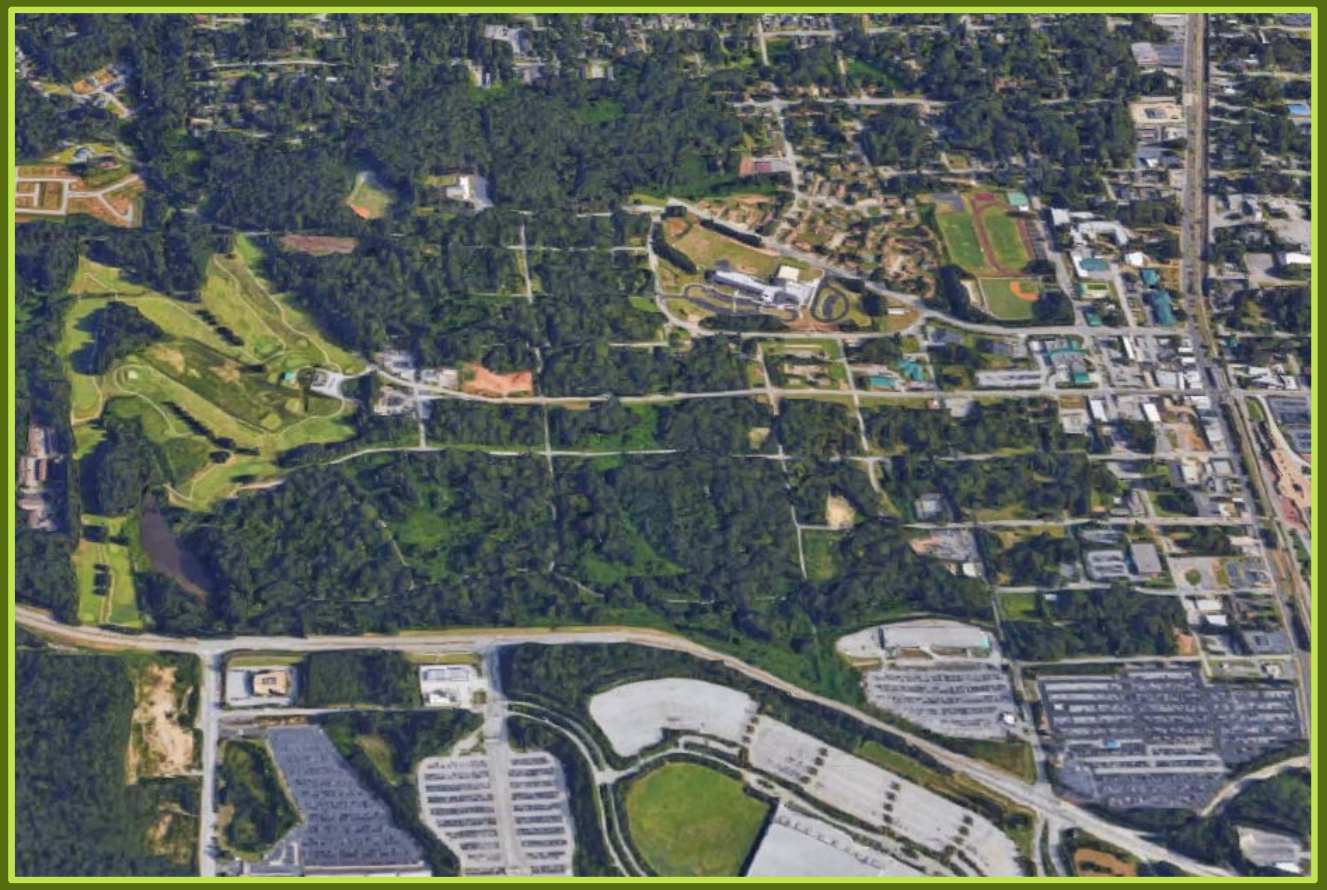


CITY OF COLLEGE PARK
AIRPORT CITY MARKET ANALYSIS

MAY 2019

www.NoellConsulting.com CONTACT | 404.681.0006

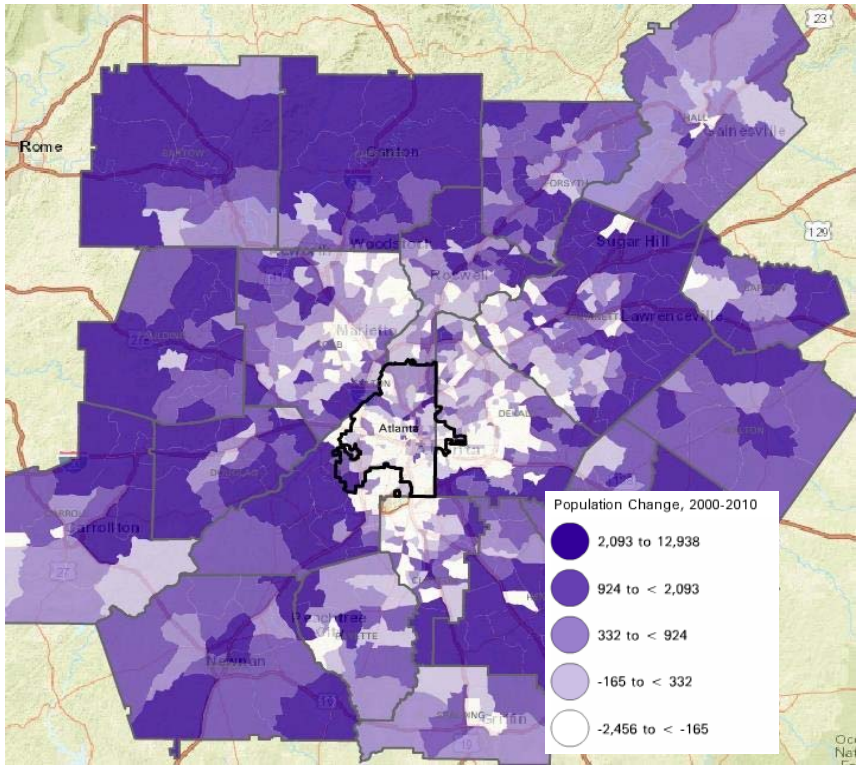
Noel Consulting Group

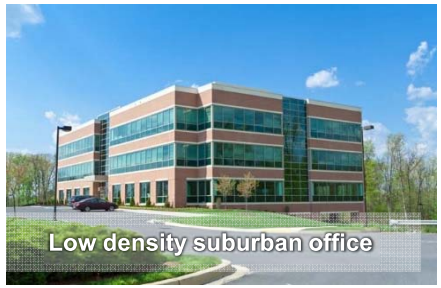
Market Trends

Exhibit 1
Real Estate Market Trends - **Traditional / Historic Growth Model Favored Suburbs**

Traditional Growth Summary - Market Trends from 1980s to Early 2000s

- Growth pattern dominated by suburban greenfield development.
- Executive housing in golf communities & master-planned communities on the suburban fringe.
- Offices largely "follow" the bosses into the suburbs & Downtowns lose market share.
- Middle-class buyers "drive for value" to afford new for-sale housing, with cheap gas and highway widenings offsetting long commutes.
- Intown cores generally underperform and lose market share to newer suburban cores.
- Transit largely an afterthought and not a significant factor.
- Investment favors greenfield, simpler development models.



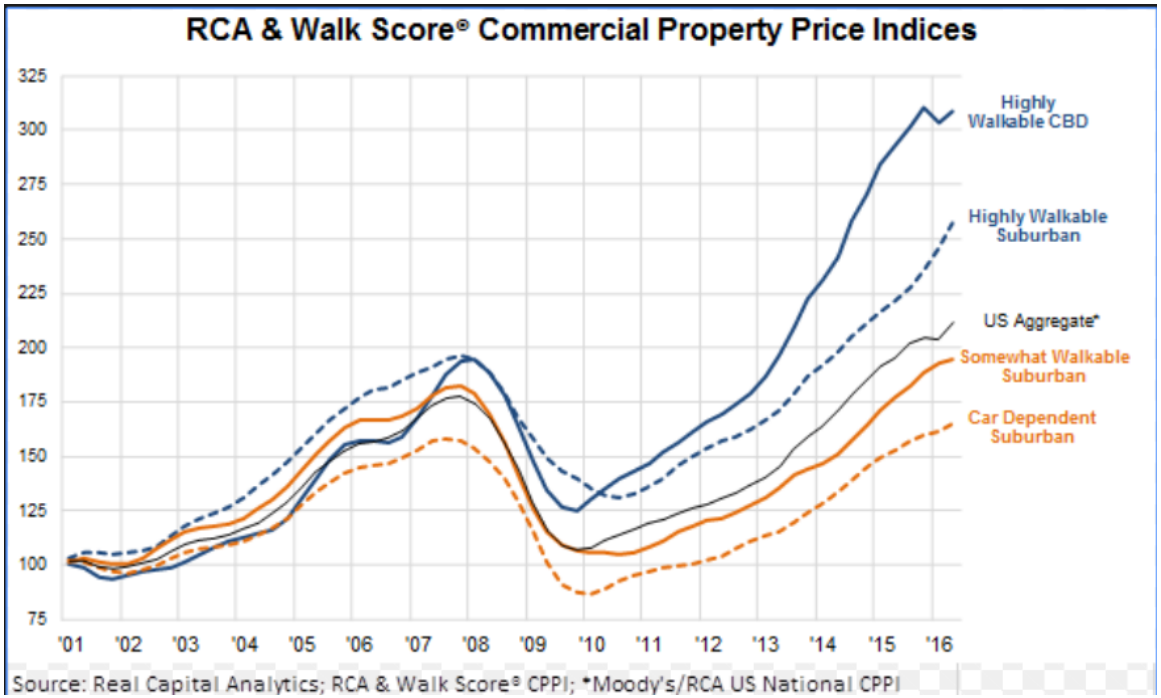


SOURCE: Noell Consulting Group, US Census

Exhibit 2
Real Estate Market Trends - **New Growth Model Favoring Walkable Urban Cores**

Current Growth Summary - 2000 to Present

- Walkable intown / inner suburban areas dominate growth patterns.
- Greater share of new executive homes intown and inner suburbs-suburban fringe, these areas quit losing share.
- Convenience and lifestyle drive office decisions – recruiting best talent wins.
- Higher gas prices, lack of state money, and worsening traffic take toll on suburbs, more people opt to rent intown / closer to work.
- Access to transit becoming a more significant factor and recruiting tool.
- Investment favors central, more walkable areas.



SOURCE: Noell Consulting Group, US Census

Exhibit 3
Real Estate Market Trends - New Growth Model Favoring Walkable Urban Cores

Walkable Environments

The Airport City site is on the fringe of Downtown College Park, which is fairly walkable today, scoring around a 66 on a scale of 1 (not at all walkable) to 100 (walkers paradise).

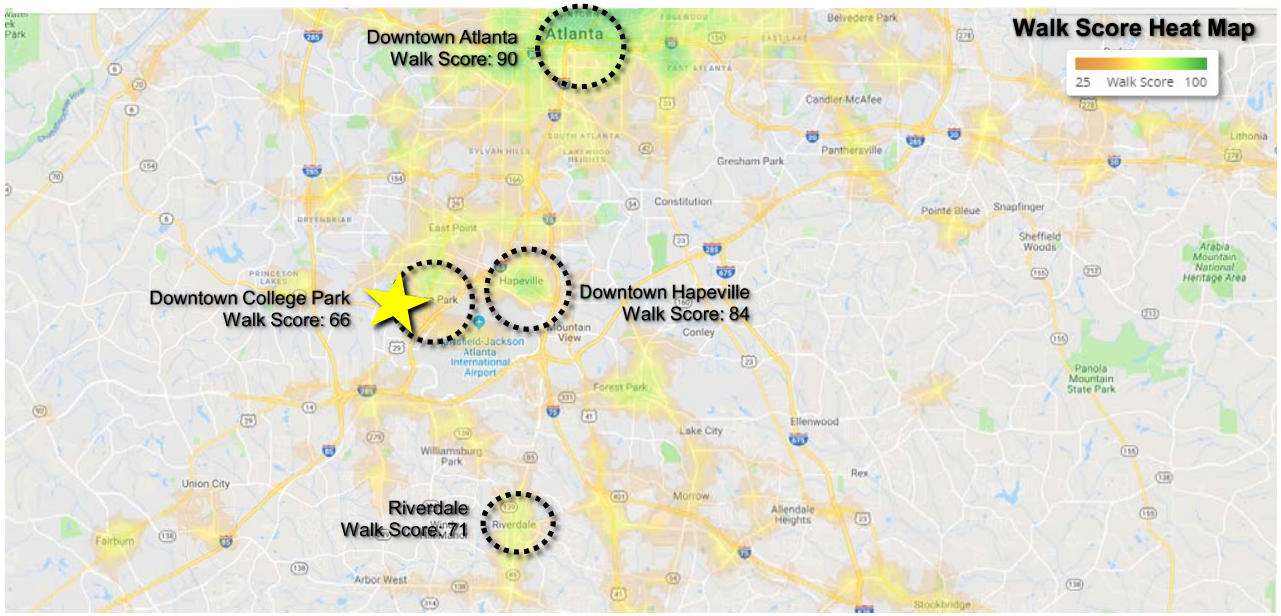
Walkability is becoming a critical factor not only for residential and retail development and investment, but also for office development as well, with Millennials in particular driving office to locations that are more walkable and served by transit.

Walkable environments are key to economic competitiveness and creating healthy communities, all while increasing property tax value per acre.

Increasingly, Millennials and seniors are looking for walkable environments, with studies showing 80% of 18- to 34-year old's want to live in walkable neighborhoods and per AARP surveys roughly 60% of those over 50 want to live within one mile of daily goods and services.

The table found within this exhibit shows the walkability premium found within 14 cities, sorted by the premium percentage found in home prices for one-point increase in Walk Score. These premiums not only show the demand for walkable environments within the Atlanta metro, but show that counties and cities can increase taxable land value of new and existing communities by encouraging developments composed of a mix of uses that create walkability.

Furthermore, Christopher Leinberger of George Washington University, completed a study of WalkUPs (Walkable Urban Places) throughout the nation, including Atlanta, and discovered that office, retail, and rental housing achieved 30%, 144%, and 12% premiums respectively over their drivable suburban counterparts.



The Walkability Premium in 14 Cities: Home Price Increase For One-Point Increase in Walk Score

Metro Area	Median Sale Price	Premium ($)	Premium (%)	Luxury Market (Top 5%)	Premium ($)	Premium (%)
Atlanta	$168,000	$2,838	1.69%	$580,000	$5,424	0.94%
Washington DC	$360,000	$4,386	1.22%	$930,000	$7,245	0.78%
Boston	$325,000	$3,927	1.21%	$985,000	$7,385	0.75%
Chicago	$222,000	$2,437	1.11%	$680,000	$5,581	0.82%
Seattle	$375,000	$3,603	0.96%	$1,000,000	$5,119	0.51%
Denver	$285,000	$2,410	0.85%	$685,000	$5,230	0.76%
Los Angeles	$475,000	$3,948	0.83%	$1,800,000	$8,225	0.46%
San Diego	$449,000	$2,205	0.49%	$1,299,000	$6,511	0.50%
Portland	$275,000	$1,210	0.44%	$630,000	$1,944	0.31%
San Francisco	$950,000	$3,943	0.42%	$3,000,000	$8,077	0.27%
Oakland	$523,000	$1,735	0.33%	$1,365,000	$4,384	0.32%
Baltimore	$229,900	$652	0.28%	$631,690	$1,757	0.28%
Phoenix	$204,900	$217	0.11%	$585,000	$277	0.05%
Orange County	$580,000	$114	0.02%	$1,728,000	($451)	-0.03%

SOURCE: Noell Consulting Group, The WalkUP Wake-Up Call: Atlanta by Christopher B. Leinberger, Walk Score, The Wall Street Journal

Exhibit 4
Market Opportunity Analysis for Airport City

Land Use	Description	Market Trends	Opportunities	Challenges	Demand
Residential: For-Sale Detached	Single-family detached homes primarily located in subdivisions and infill locations	Market has been recovering, demand high in dynamic locations, although construction costs have limited supply.	Given flight noise contours, opportunities for for-sale attached are limited to the fringes of the study area, Solid placemaking and green space (golf course) can offset noise issues.	Airport noise is the biggest challenge. New infill is already occurring in the area today, so historic market perceptions have largely disappeared.	Approximately 63 units through 2033 (land availability being a key constraint).
Residential: For-Sale Attached	Single-family attached homes, primarily townhomes w/ shared walls	Market in suburban locations has been slow as it operates as a price alternative. Strong intown & locations w/ sense of place / walkability	While much of the study area cannot be developed for residential uses (flight contour issues), we believe there are solid opportunities for infill townhouses to the north and around the golf course.	Again, airport noise is the biggest challenge. Placemaking and lifestyle creation should be a focus.	Roughly 131 units through 2033 (land availability being a key constraint).
Residential: Multifamily Rental	Surface parked rentals w/ a few deck-wrapped product in town center locations	Market remains strong although supply increasingly outpacing demand in certain locations	Like for-sale residential, new rental apartments cannot be developed in the majority of the study area, with opportunities existing to the far north.	Airport noise limits opportunities in the majority of the study area.	Demand exists for around 880 units, with land constraints tempering additional demand.
Retail	Mix of historic neighborhood serving retail, highway oriented strip-centers, and airport serving destinations	Trending toward more experiential retail w/ strong emphasis on dining / entertainment and walkability	Create more destination type uses that leverage site's regional access and airport adjacency.	Requires creating a destination to draw regional support. Placemaking and walkability are major points of improvement.	Support exists for up to 390,000 SF of outlet retail with 40,000 SF of dining, local retail as well. Add'l 90,000 SF of n'hood-serving offsite.
Office	Primarily professional service companies & airport related suburban office buildings	More companies opting to go to lifestyle-driven and walkable locations. Transit becoming more important.	Create more walkable, amenitized location. Creating dining, service, and other amenities for office tenants critical.	Lack of executive housing and current walkability temper demand, but can be overcome.	400,000 SF of multi-tenant space with additional opportunities for headquarter-type offices.
Lodging	Mix of select service and full-service catering primarily airport	Lodging driven by airport and corporate travel with some leisure. Occupancy and ADR growth strong.	Strong market w/ connectivity and airport access. Focus on lifestyle creation.	Few real challenges exist today. Creating stronger mixed-use environments with walkable dining important.	680 rooms over next decade, more likely select-service in near-term.

SOURCE: Noell Consulting Group

Exhibit 5
Airport City Economic Opportunities

In creating Airport City, College Park has a goal of creating a vibrant mixed-use community with a sizable office component. While this is challenging given the modest historic performance of the Airport office market, the creation of a more vibrant mixed-use community is something that has yet to be offered in the Airport area. In understanding the way forward on this effort, we believe it is key to take advantage of both other, larger economic development efforts in the region as well as to invest in the needed infrastructure and improvements needed to maximize these potential opportunities.

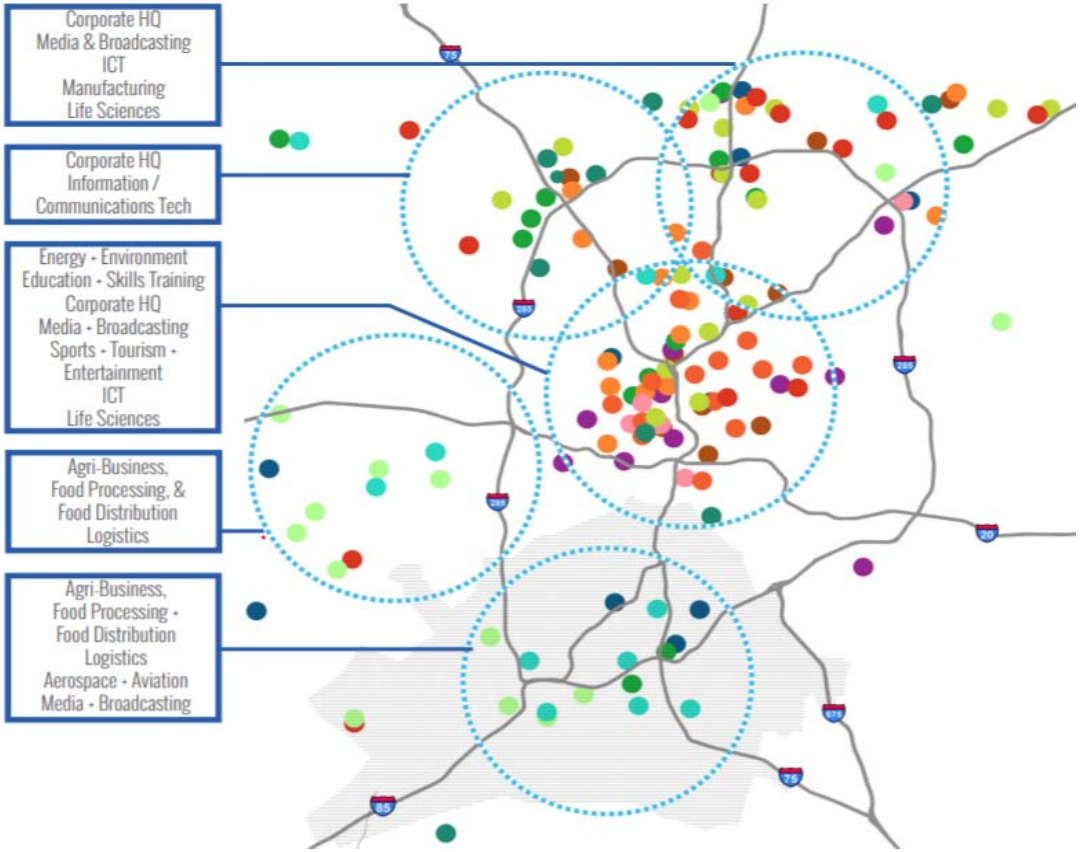
In order to complete this process we must place the subject site into local and regional context. Of critical importance is how the site is situated within Aerotropolis Atlanta, which functions as the blueprint for economic development around Hartsfield Jackson Atlanta International Airport and other complimentary southside neighborhoods. The goal is to transform the airport vicinity into a world-class multi-modal sub-region by stimulating investment and strengthening public coordination.

The Aerotropolis Atlanta Blueprint identified the Airport City project as a key catalyst for development in the area around Hartsfield. Specific recommendations in this study focused on the enhancement of Camp Creek Parkway as a part of College Park and creating greater orientations and connections to the GICC just to the south. Included in this orientation are increased retail and dining opportunities, a significant hotel/lodging component, business incubator and medical facilities.

This study identified these potential uses as targets for the Airport City area:

- ❑ Transit Oriented Development - TOD (primarily office)
- ❑ Federal Offices
- ❑ Data Hub
- ❑ Business Incubator
- ❑ Media Production Creative Cluster
- ❑ Hotel

Economic Clustering



Source: NCG, The Aerotropolis Atlanta Blueprint

Exhibit 6
List of Targeted Industries by Atlanta Metro Agencies

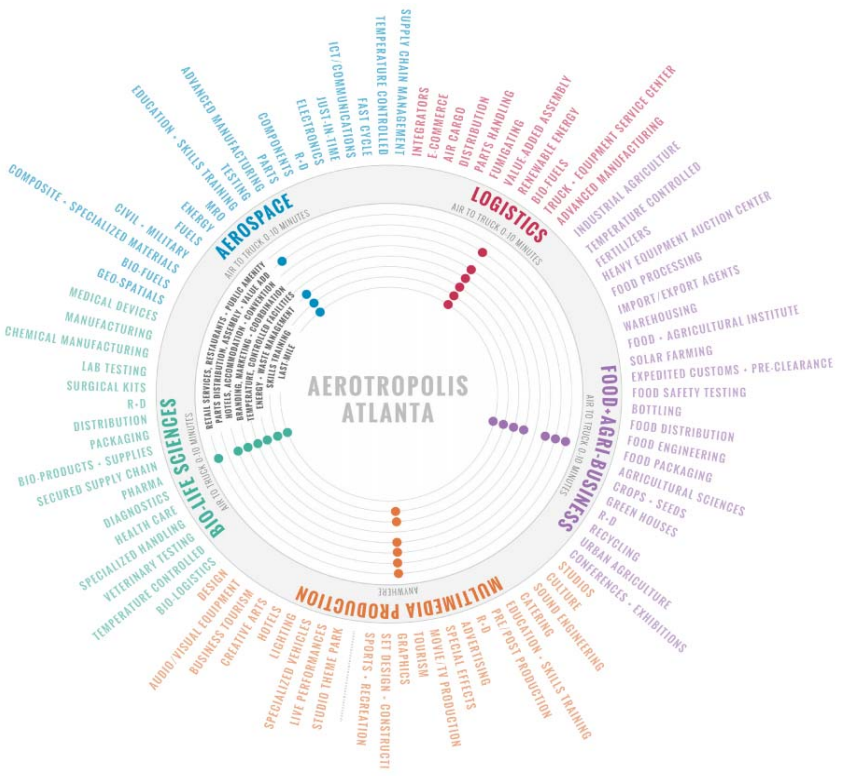
As mentioned in the previous exhibit, it is important to keep in mind that the site doesn't exist in a vacuum. There are local and regional contexts to consider and larger economic development efforts at the Metro and State level that will have significant influence on opportunities for industry around the airport. Identifying opportunities to align with the goals of local and regional economic development agencies. Below are the key targeted industries at various levels of economic development in the area, with those in purple representing more significant opportunities for College Park.

ATLANTA PLANNING & ECONOMIC DEV. AGENCIES	TARGETED INDUSTIRES					
GEORGIA DEPARTMENT OF ECONOMIC DEVELOPMENT	AEROSPACE	AGRI-BUSINESS	ARTS	AUTOMOTIVE	CONTACT CENTERS	DATA CENTERS
	ENERGY & ENVIRONMENT	ENTERTAINMENT	FINANCIAL SERVICES	FOOD PROCESSING	INFORMATION TECHNOLOGY	DEFENSE
	LOGISTICS & TRANSPORTATION	MANUFACTURING	TOURISM	LIFE SCIENCES	HEADQUARTERS	
GEORGIA RESEARCH ALLIANCE	AGRICULTURE & ECONOMICS	BIOMECHANICAL ENGINEERING & REGENERATIVE MEDICINE	CANCER + HUMAN GENOMICS	ENERGY AND ENVIRONMENTAL ENGINEERING	IMMUNOLOGY & VACCINES	INFORMATICS AND SYSTEMS BIOLOGY
	ELECTRONICS & OPTICS	COMPUTING & NETWORKS				
ATLANTA METROPOLITAN CHAMBER OF COMMERCE	BIOSCIENCE & HEALTH IT	SUPPLY CHAIN + ADVANCED MANUFACTURING	GLOBAL COMMERCE	INNOVATION + ENTREPRENEURS	TECHNOLOGY	CLEAN TECH
	WORK FORCE DEVELOPMENT	MOBILITY	SPORTS			
CITY OF ATLANTA	TECHNOLOGY + INNOVATION	SPORTS	MEDIAN & ENTERTAINMENT	INTERNATIONAL TRADE		
ATLANTA REGIONAL COMMISSION	ECONOMIC DEVELOPMENT	ARTS & CULTURE	RESEARCH			
ATLANTA CONVENTION + VISITORS BUREAU & ATLANTA WORKFORCE DEVELOPMENT AUTHORITY	FESTIVALS	CONCERTS	CONVENTIONS	SPORTING EVENTS	ARTS + CULTURE	RETAIL
	SEASONAL EVENTS	HOSPITALITY	TRADE SHOWS	ENTERTAINMENT		
FEDERAL RESERVE BANK OF ATLANTA	FINANCIAL	ECONOMIC DEVELOPMENT	RESEARCH			
GEORGIA WORLD CONGRESS CENTER	CONVENTIONS	EVENTS	TRADESHOWS	HOSPITALITY	SPORTING EVENTS	ENTERTAINMENT

Source: NCG, The Aerotropolis Atlanta Blueprint

Exhibit 7
Industry Clusters

In the Aerotropolis Atlanta Blueprint study target economic clusters were highlighted that were located in or would be attracted to the Aerotropolis Atlanta area. These economic clusters were aerospace, logistics, food-agri-business, multimedia production, and bio-life sciences. Additionally, catalytic projects were identified with emphasis placed on the desirability of these uses to be near the airport. When pursuing potential office/HQ locations, College Park should seek opportunities to team with Aerotropolis adjacency to the airport to attract these identified industries and catalytic projects.



	CATALYTIC PROJECTS
	AIR CARGO HUB
	AEROSPACE HUB
	AEROSPACE PARTS DISTRIBUTION
	FAST CYCLE LOGISTICS/E-COMMERCE/VALUE ADD
	AUTOMOTIVE + EQUIPMENT PARTS DISTRIBUTION
	TRADE MART + EXHIBITION CENTER
	DESTINATION RETAIL OUTLET CENTER
	RESTAURANT CLUSTER
	BIO-LOGISTICS HUB + DISCOVERY PARK INCUBATOR
	MEDICAL TOURISM HUB
	DATA CENTER
	INCUBATOR HUB
	MEDIA PRODUCTION CREATIVE CLUSTER
	STUDIO CITY THEME PARK TOURIST ATTRACTION
	WATER PARK HOTEL
	SPORTS CITY TOURNAMENT + TRAINING CENTER
	AUTO MALL SHOWROOMS + BRAND GALLERIES
	ENERGY CITY - SOLAR POWER
	ENERGY CITY - WASTE TO ENERGY + BIO FUELS
	MARTA TOD INTENSIFICATION - COLLEGE PARK
	MARTA TOD INTENSIFICATION - EAST POINT
	MARTA TOD INTENSIFICATION - FORT MCPHERSON

TABLE 4: CATALYTIC PROJECTS AND THEIR TIME-DISTANCE RELATIONSHIP WITHIN THE AEROTROPOLIS ATLANTA

STRONG
MODERATE
0-5 MIN
5-10 MIN
10-15 MIN
15+ MIN

Source: NCG, The Aerotropolis Atlanta Blueprint

Exhibit 8
Attracting Office Users

Market	Occupancy	Rent Range (FS)
Study Area	5%	$18-$19
5-Mile Market	13.3%	$9 - $35

Overall, office location decisions in Atlanta and throughout the United States over the last four to five decades has been driven first and foremost by the growth of executive housing, with office developments following luxury housing into the suburbs.

While the airport itself is a unique exception to this, many firms needing an airport-proximate location are already in the area, such as Delta and other logistics-related companies. Porsche represented that unique tenant with a brand and product demanded worldwide from whom prospective buyers will travel globally to pursue. With the exception of Porsche, the airport office market has underperformed in the past decade or more, particularly when compared to its peers in other cities with highly active airports.

- As referenced previously in this analysis, the office market around Hartsfield-Jackson Atlanta International Airport is relatively small, given the size of the larger Atlanta market and of the airport itself;
- This is largely due to the lack of executive housing near the airport (the area around the Atlanta airport lagging behind key peers such as LAX, Chicago O'Hare, Phoenix SkyHarbor, Miami Int'l, and Charlotte-Douglas Int'l;
- Impacting the level of executive housing around the airport and the Mountain View site is a long-term goal and one that could take decades to alter. Nearer-term opportunities for office at Mountain View and around the airport may relate more to the second major factor driving office location decisions: Pursuit of other quality of life factors that are more attractive to Millennials and younger talent.

The pursuit of young talent--Millennials--has driven some of Atlanta's biggest corporate moves in the past decade, as companies seek more dynamic, walkable locations and locations with transit; to factors critical to Millennials. NCRs move to Midtown, Honeywell, Pandora and Starbucks relocations all to Midtown all demonstrate this trend. The emergence of Ponce City Market and Old 4th Ward as office locations is further evidence.

To this, we recommend College Park focus on creating that more intown/urban environment that could attract tenants that are more lifestyle-related, and perhaps also valuing the airport location and convenience of the area. Below are the key aspects impacting office locations that College Park should focus on at Airport City.

- Walkability--install more sidewalks and create uses and locations to walk to.
- Better connect to College Park MARTA Station and identify means to extend transit to Airport City.
- Parks / trails--create amenitized locations via new parks and extensive trail systems for exercise--these parks could also attract more lodging and retail development as well.
- Retail--Creation of shopping opportunities, driven largely by demand from beyond College Park (i.e. outlet retail and/or entertainment venues) that can enhance office location decisions.
- Food & beverage--related to this, the need for significantly more dining options will be important to attracting office users, with the aforementioned outlet retail and entertainment venues helping to drive this demand potential.

Source: NCG

Exhibit 9
Airport City Economic Development Recommendations

- There are several key items the City of College Park needs to focus on in creating the Airport City project.
  - Office is indeed the most significant land use within the project and is critical to project's future.

    As noted, the airport area in general should be a more significant office core relative to its peers elsewhere in the US. Yet it has underperformed significantly due to several key factors:
    - A lack of executive housing;
    - Limited walkability and mixed transit service;
    - Poor quality of office space in the area currently; and
    - Negative perceptions regarding disinvestment, crime, etc.
  - To combat this College Park should undertake several initiatives:
    - Issue bonds for basic infrastructure for the project, including streets, sidewalks, water & sewer lines, etc., with those bonds being repaid via the TAD set up in the area;
    - Proactively leverage the Federal and State Opportunity Zones through various means, including local and regional Chambers of Commerce, State ED offices, Aerotropolis Atlanta, etc.
    - Utilize State of Georgia Opportunity Zone funds to gain tax credits for companies locating into Airport City
    - Tap into State Enterprise Zone funds to offer prospective employers tax abatements for state and local taxes
    - Consider the development of centralized parking structures for office that could lessen development costs and potential lease rates for tenants and be repaid through some level of low monthly rates. At nights and on weekends some of this parking could be used for events at the GICC and arena or other uses.
    - Seek partnering opportunities with Georgia Tech, Emory, Georgia State, UGA or even outside institutions for technology centers onsite
- As noted, quality of life is increasingly important to where companies opt to locate their offices. To this, College Park should:
  - Pursue funding options to create significant park and green space on the site, including running trails, water features, etc.--something other locations around the airport fail to offer
    - This could be accomplished through either TAD funds, City funds targeted for parks, CDBG Block Grants, or other sources
  - Identify funding grants and other sources who can help design and build or maintain park space, trails, etc. in Airport City
- Seek opportunities for short-term land sales that can help fund on-site improvements (roads, parks, sidewalks, etc.), including sales for lodging and or retail.
- Pursue the development of a regional-serving upscale outlet center that can cater to Atlanta's large intown residential base.
  - Such a destination center could fuel growth and demand for restaurants and other services--services that are critical to office tenants.
- Finally, work with Aerotropolis Atlanta to aid in providing services for area policing/security, litter pick-up, etc. to maximize the image of Airport City


Porsche North American Headquarters


Trail system & parks at Ballantyne Corp. Ctr.


Clemson University's ICAR Innovation Center


Midtown Blue

Source: Noell Consulting Group

Noell Consulting Group

Locational Analysis

Exhibit 10
Overview of Atlanta Metro Area Population Trends

The Mountain View and Old Dixie study areas are located southeast of the City of Atlanta, within the Atlanta-Sandy Springs-Roswell Combined Statistical Area (CBSA). The Atlanta CSBA includes 29 counties, with ten central counties belonging to the Atlanta Regional Commission (ARC) and forming the core of the MSA. Roughly 78% of the population of the CBSA lives within this ten county core.

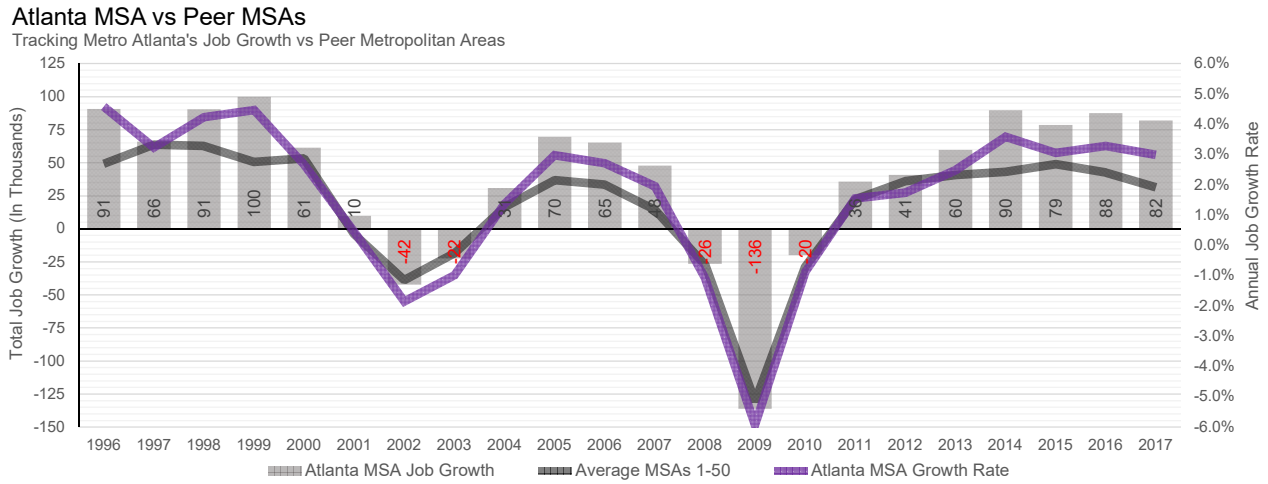
From 2000 to 2010 only 66% of all growth occurred in this ten county core, however, since 2010 roughly 78% of all growth has occurred in this ten county core as younger and older generations both increasingly seek walkable neighborhoods, both in urban and suburban areas, as well as nearby access to jobs and lifestyle amenities.

Fulton County has benefited significantly from the return migration to intown Atlanta, seeing it's capture of regionally growth double during the current growth cycle. College Park's location inside of the Perimeter positions it well to continue to see upside in the coming years, as these growth patterns continue to reaffirm themselves. The area's strong access to regional job cores and Hartsfield-Jackson Atlanta International Airport, combined with its heightened walkability and intown vibe, position it well to compete for new residents, jobs, and patrons.

	LAND AREA		POPULATION		ANNUAL GROWTH		ANNUAL % GROWTH		CAPTURE OF REGION		
GEOGRAPHY	SQ MILES	% of MSA	2017	% of MSA	2000-10	2010-17	2000-10	2010-17	2000-10	2010-17	LAND CAPTURE RATIO (2010-17)
Cherokee County	422	4.9%	247,573	4.2%	7,244	4,747	4.2%	2.1%	7.1%	5.6%	1.14
Clayton County	142	1.6%	285,153	4.8%	2,291	3,676	0.9%	1.4%	2.2%	4.3%	2.64
Cobb County	340	3.9%	755,754	12.8%	8,033	9,668	1.2%	1.3%	7.8%	11.3%	2.89
DeKalb County	268	3.1%	753,253	12.8%	2,603	8,766	0.4%	1.2%	2.5%	10.3%	3.33
Douglas County	200	2.3%	143,882	2.4%	4,023	1,640	3.7%	1.2%	3.9%	1.9%	0.83
Fayette County	194	2.2%	112,549	1.9%	1,530	855	1.6%	0.8%	1.5%	1.0%	0.45
Fulton County	527	6.1%	1,041,423	17.7%	10,458	17,263	1.2%	1.8%	10.2%	20.2%	3.33
Gwinnett County	430	5.0%	920,260	15.6%	21,687	16,420	3.2%	1.9%	21.2%	19.2%	3.88
Henry County	322	3.7%	225,813	3.8%	8,458	3,127	5.5%	1.5%	8.3%	3.7%	0.99
Rockdale County	130	1.5%	90,312	1.5%	1,510	728	2.0%	0.8%	1.5%	0.9%	0.57
10-County Arc Core	**2,974**	**34.2%**	**4,575,972**	**77.8%**	**67,837**	**66,889**	**1.8%**	**1.8%**	**66.3%**	**78.3%**	**2.29**
Exurban Counties	**5,712**	**65.8%**	**1,308,764**	**22.2%**	**34,492**	**18,541**	**3.5%**	**1.8%**	**33.7%**	**21.7%**	**0.33**
MSA Total	**8,686**	**100.0%**	**5,884,736**	**100.0%**	**102,329**	**85,430**	**2.2%**	**1.8%**	**100.0%**	**100.0%**	**1.00**

SOURCE: Noell Consulting Group, United States Census Bureau

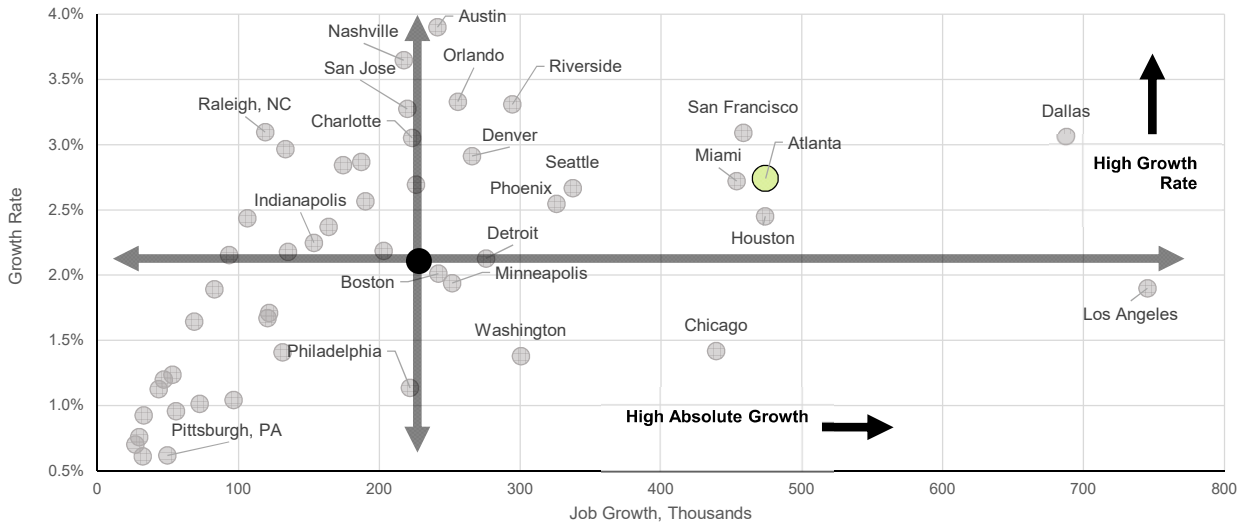
Exhibit 11
Atlanta, GA MSA Historical Job Growth vs Peer MSAs



Since the recession the Atlanta metro has seen 7 years of consistently strong job growth and has outperformed the average of the top 50 metropolitan statistical areas (MSAs) in terms of growth rate since 2013, despite a large job pool making high growth rates difficult.

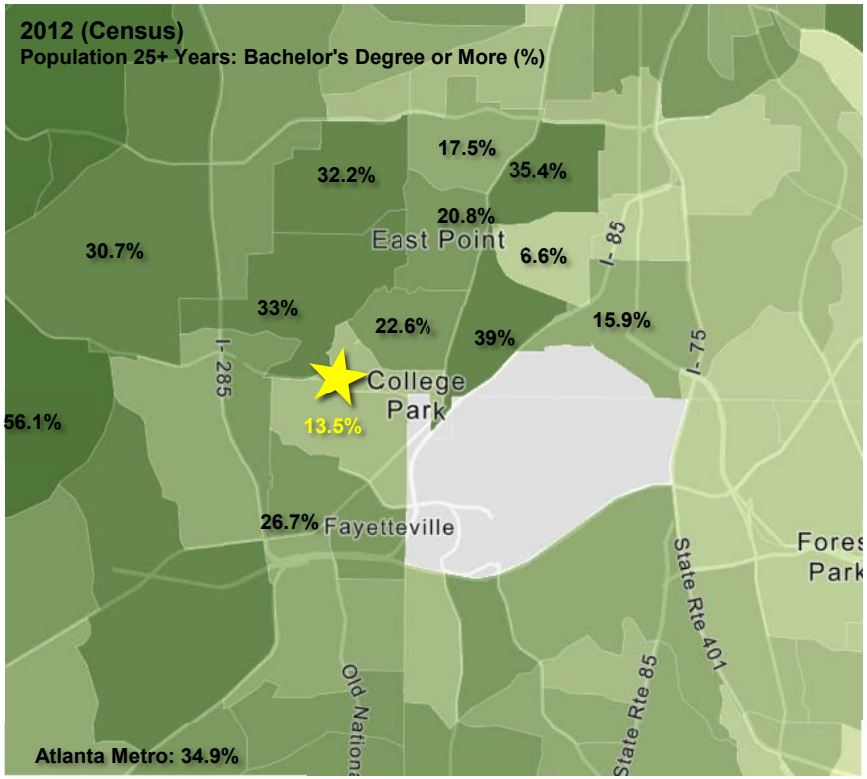
This strong absolute growth coupled with a strong growth rate puts the metro in a unique classification, on par with metros such as San Francisco, Miami, Houston, and only outperformed by Dallas, Los Angeles, and New York City (not shown on the graph - over 1 million jobs gained since 2010).

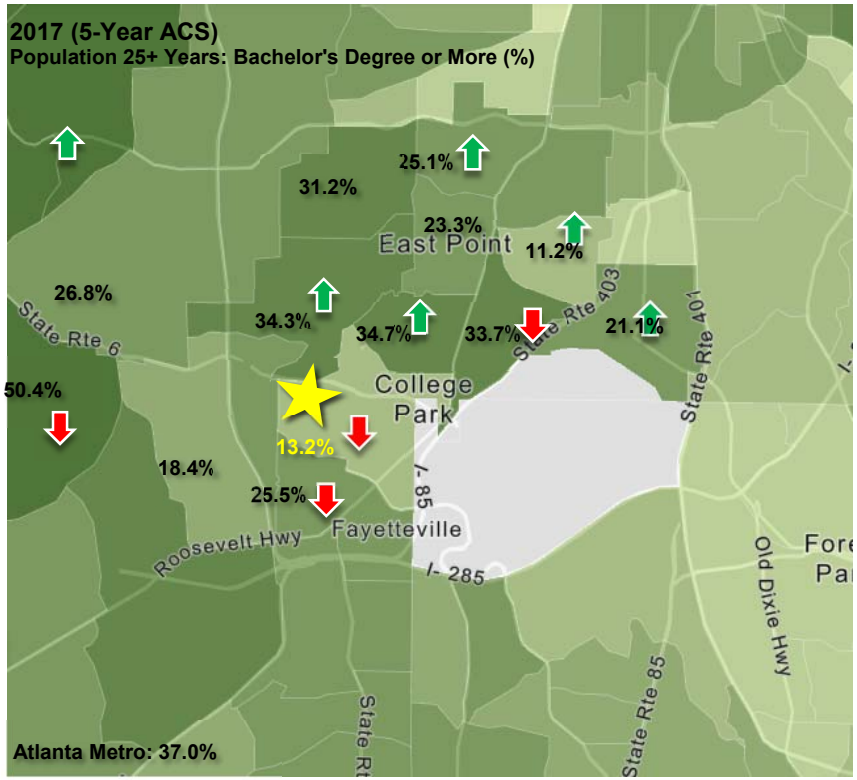
As referenced, College Park is well positioned within a large, fast growing market with an opportunity to capture a share of this growth with the right development types.



SOURCE: Noell Consulting Group, US Census

Exhibit 12
Educational Attainment Trends





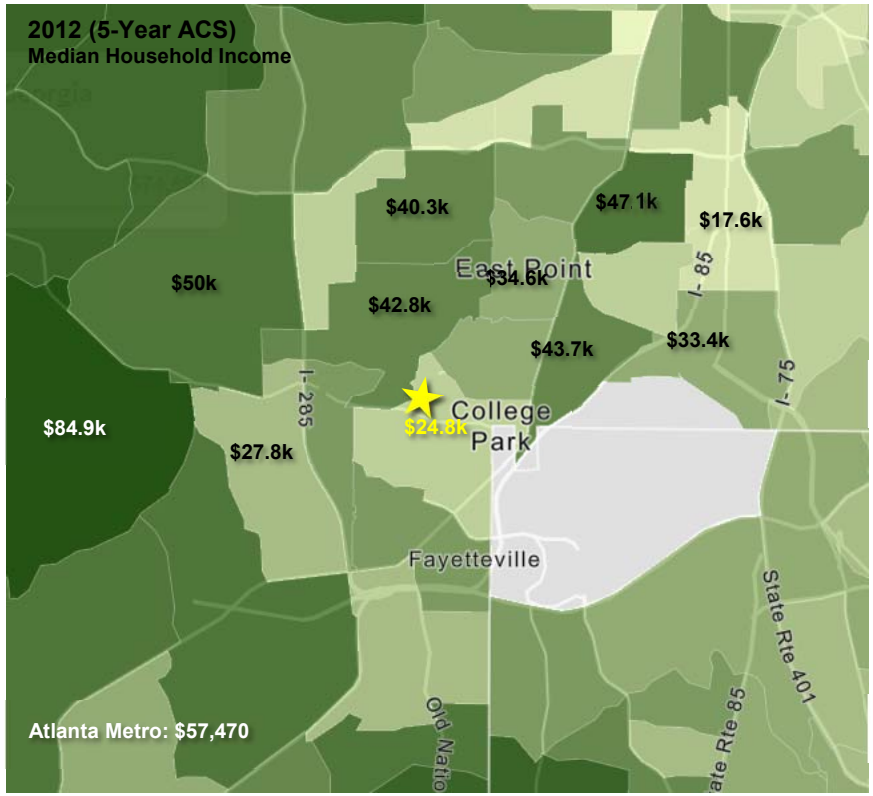
This exhibit shows the percentage of the population, per census tract, around the study areas who have Bachelor's degrees or more. We've included data from 2012 and 2017, which is the most up to data, to show how the area has changed over time. Tracking education levels are important as those with high educational attainment have high income potential and also are indicators of neighborhood stability.

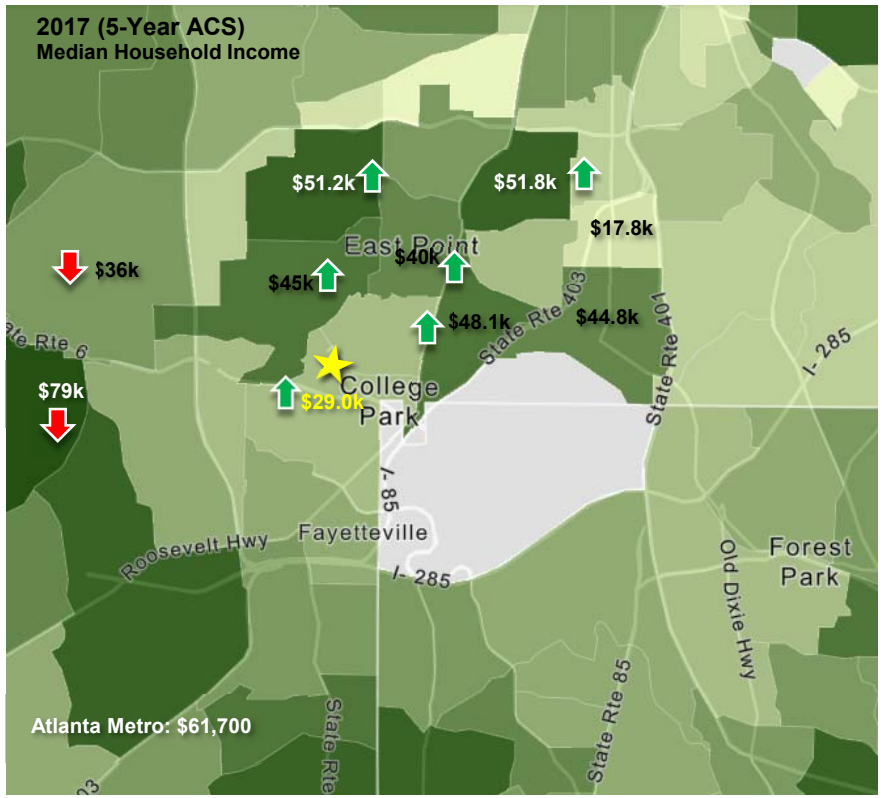
The area around College Park have seen mixed changes, with areas around Hapeville and East Point seeing positive changes, and areas around College Park and west seeing slight decreases. Part of this may be due to the damage done to the area housing market following the Great Recession. Regardless, pretty much all of these areas are below average for the Atlanta Metro.

Improving on these incomes will be important to the area's ability to attract office users and other higher-paying jobs as well as some entertainment & retail brands.

SOURCE: Noell Consulting Group, US Census Bureau, Social Explorer

Exhibit 13
Median Household Income

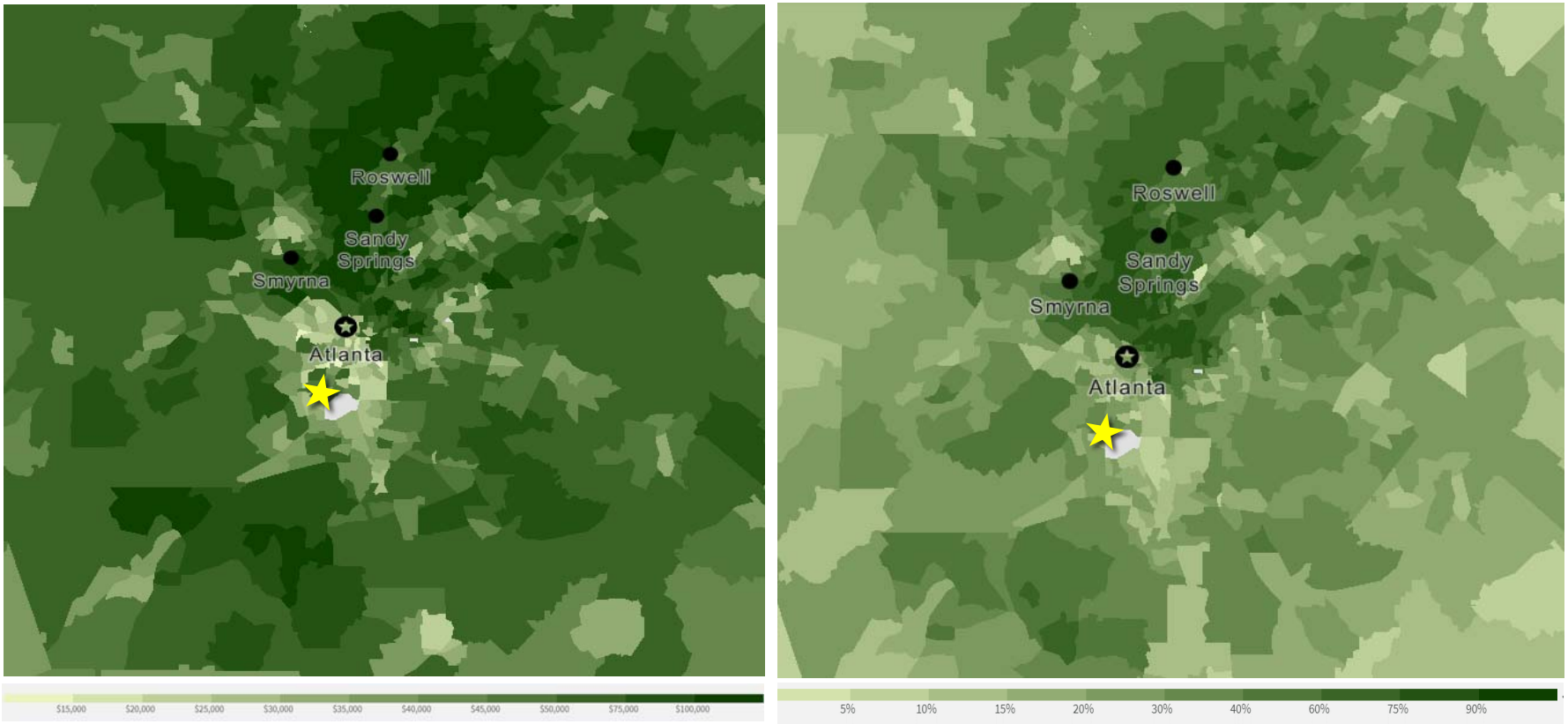




Median household incomes in College Park and its two adjacent cities have increased steadily since 2012, with many tracts climbing from around the $30s to solidly in the $40s. The increased walkability, transit access, and job access have all been key factors in facilitating this increase. Going forward, we believe rents will continue to increase relative to the Metro area.

SOURCE: Noell Consulting Group, US Census Bureau, Social Explorer

Exhibit 14
Demographic Disadvantages



This exhibit places College Park and south metro Atlanta into context when it comes to the difficulty to recruiting large corporate employers to the region. Historically, employers sought locations convenient to executive housing, which is primarily concentrated in the north metro Atlanta suburbs, and highlighted by the high median incomes in the north Metro. This led to strong office growth in edge cities such as Perimeter Center and suburban office parks along the Georgia 400 corridor in North Fulton. Increasingly, however, employers are putting more weight in where employees live and want to work, seeking dynamic intown locations or mixed use destinations. With intown Atlanta's high concentration of educated employees and schools such as Georgia Tech and Georgia State graduating future workers, this has led companies seeking intown (or near intown) locations.

In the coming years as intown intensification continues, College Park and the airport area will become attractive for office users and other employers seeking

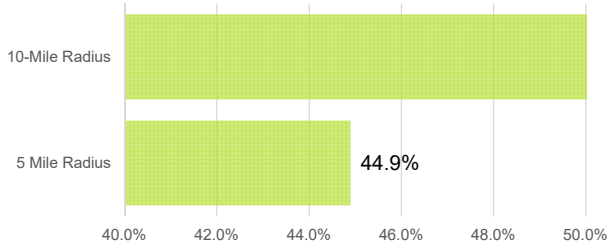
SOURCE: Noell Consulting Group, US Census Bureau, Social Explorer

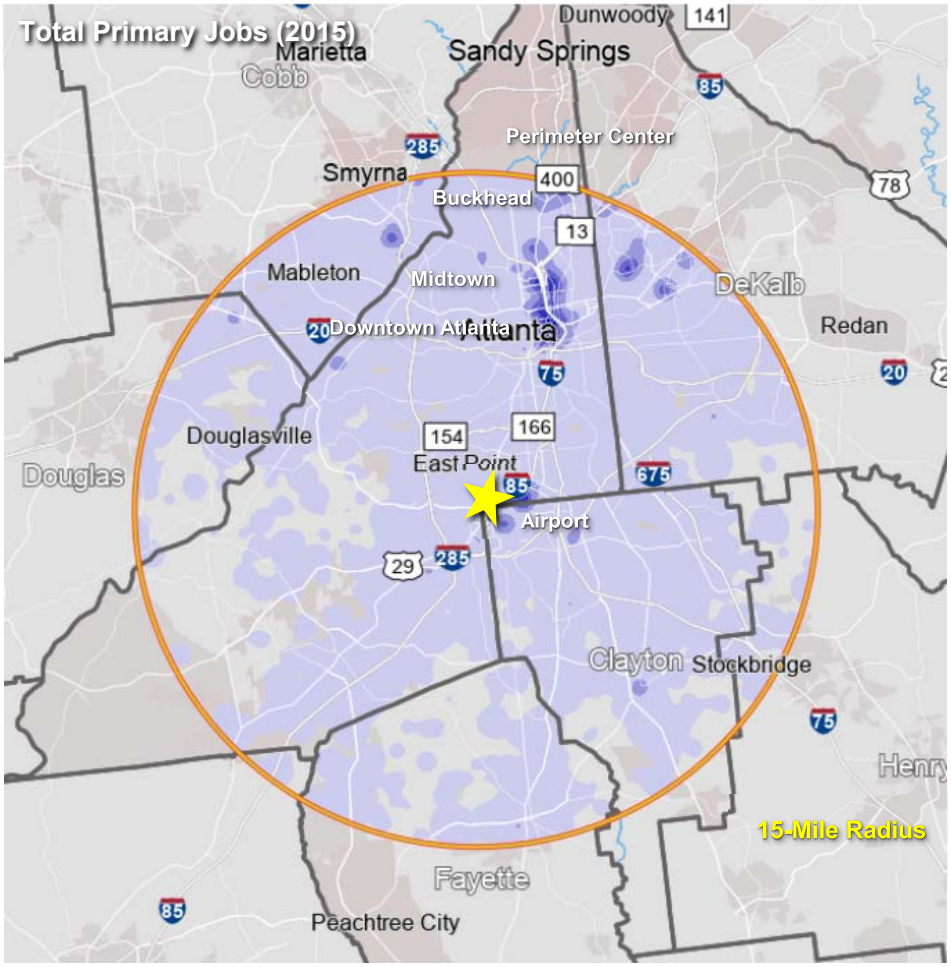
Exhibit 15
Proximity and Connection of the Subject Site to Jobs

Total Jobs By Distance--$40k+ Salary	
Distance	**Employment**
25 Miles	725,851
20 Miles	574,954
15 Miles	383,019
10 Miles	200,824
5 Miles	51,198

Top 10 Industry Sectors Within 25 Miles	
Industry Sector	
Health Care and Social Assistance	11%
Retail Trade	10%
Professional, Scientific, and Technical Services	9%
Accommodation and Food Services	9%
Administration & Support	8%
Educational Services	8%
Transportation and Warehousing	7%
Wholesale Trade	6%
Manufacturing	5%
Public Administration	5%

Earnings Comparison
Percentage of Workers Earning $40,000+ Annually

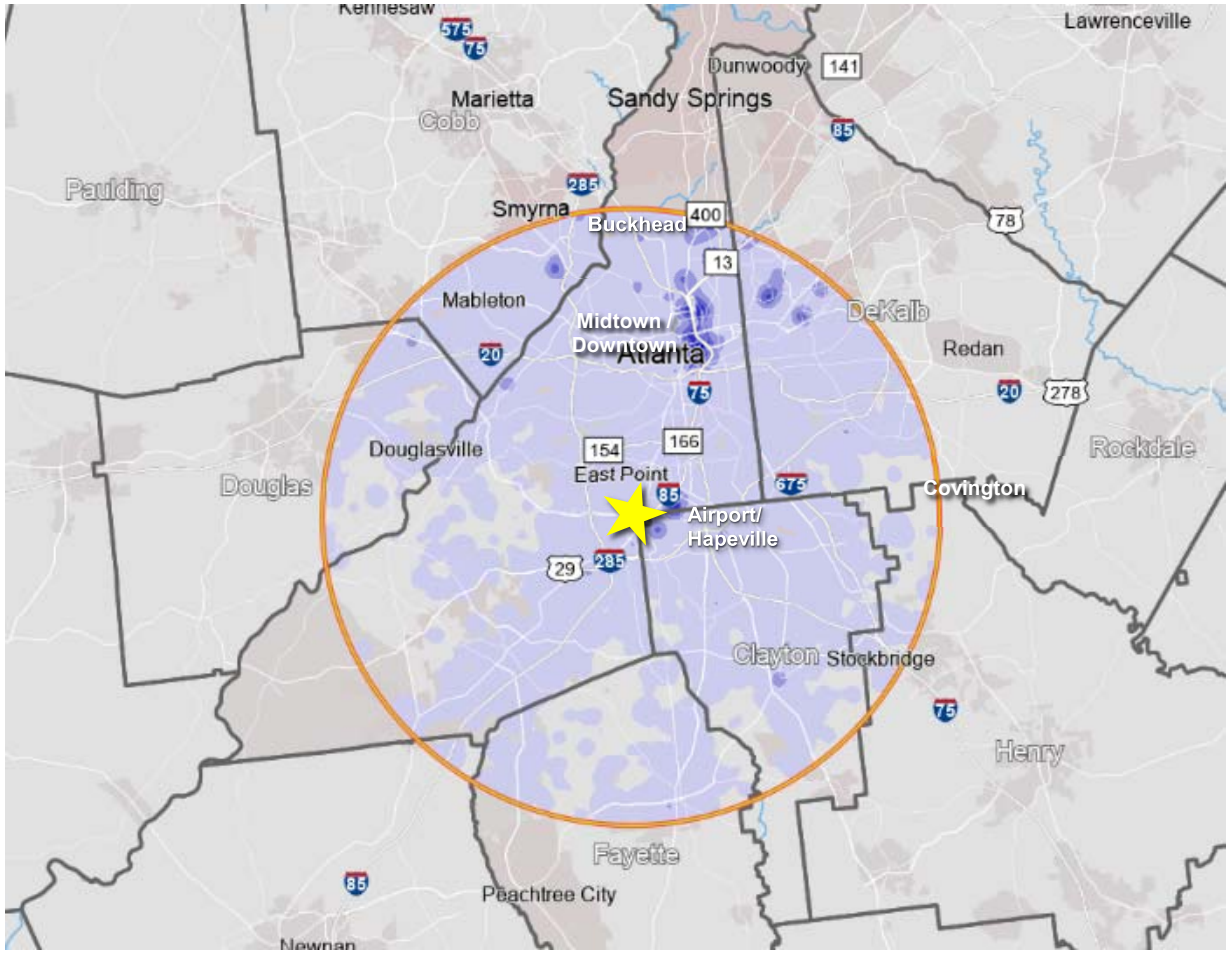


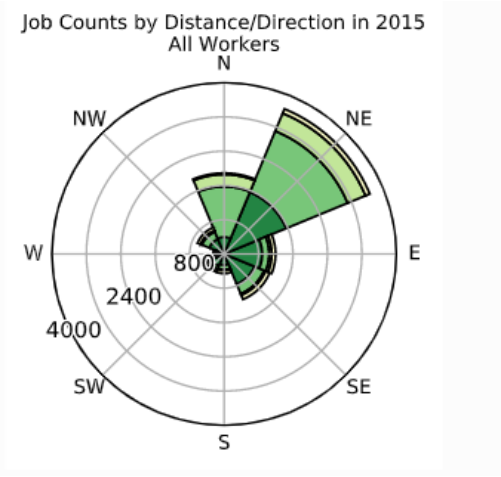


The map in this exhibit shows all jobs within a 10-mile radius of the subject areas. Most jobs are concentrated to the north, the most proximate being the airport-area, then Downtown & Midtown Atlanta, and then edge-city job cores of Buckhead and Perimeter Center. The subject areas both offer proximity to the airport and Midtown & Downtown Atlanta and will make the areas attractive to any households seeking proximity to those demand generators, although distance and traffic will limit those who work north of those areas. Of the jobs within 10-miles, 45% pay over $40,000+.

SOURCE: Noell Consulting Group, Google Maps, US Census, OntheMap

Exhibit 16
Work Destinations of Existing College Park Area Residents





Top Work Destinations--$40K+ Jobs

Location	Share
Airport	5.2%
Downtown Atlanta	4.9%
Hapeville	4.8%
East Point	3.9%
Midtown Atlanta	3.5%
South Fulton	3.1%
West Midtown	3.1%
South Midtown	2.4%
Fulton Industrial	2.3%
Cumberland-Galleria	2.3%

Commuting Distance

< 10 Miles	48.1%
10-24 Miles	36.5%
25-50 Miles	9.5%
> 50 Miles	5.9%

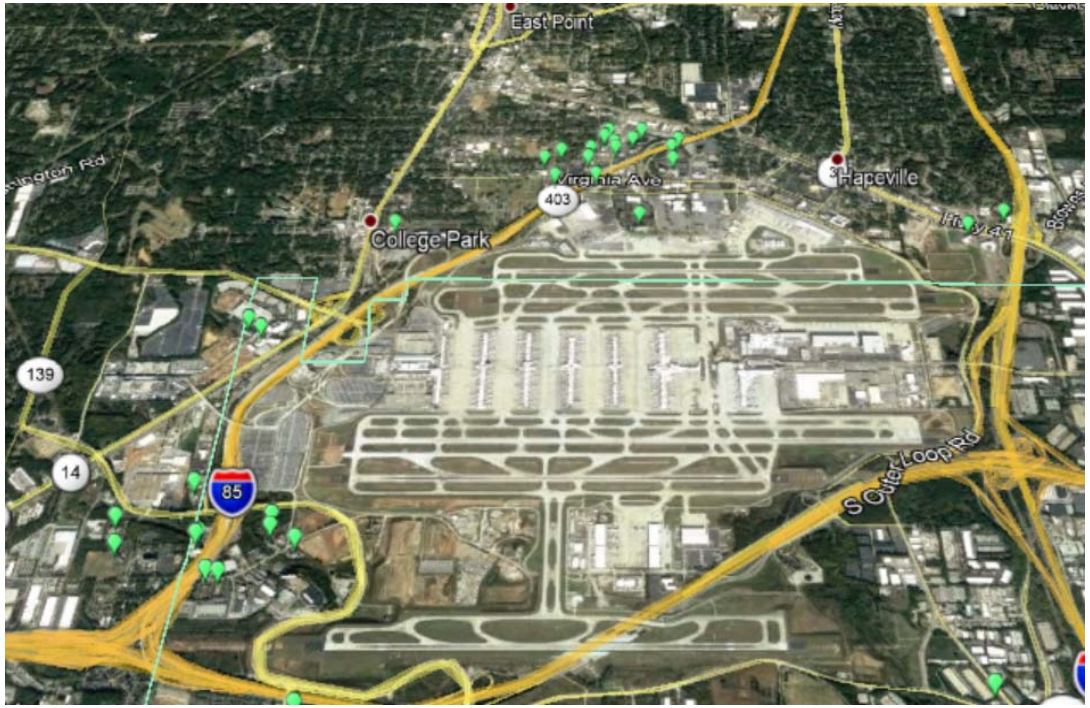
This exhibit shows the work destinations for residents living within 2 miles of Airport City and earning more than $40k annually. This gives NCG an idea of where existing residents who choose to live in the local neighborhood work. Not surprising, many of these residents work locally with four of the top six ZIP codes being the airport, Hapeville and East Point and South Fulton Parkway. Downtown, Midtown, and Midtown West, as well as Cumberland-Galleria also see solid commuting.

SOURCE: Noell Consulting Group, Google Maps, US Census

Noell Consulting Group

Lodging Analysis

Exhibit 17
Airport-Area Hotel Market

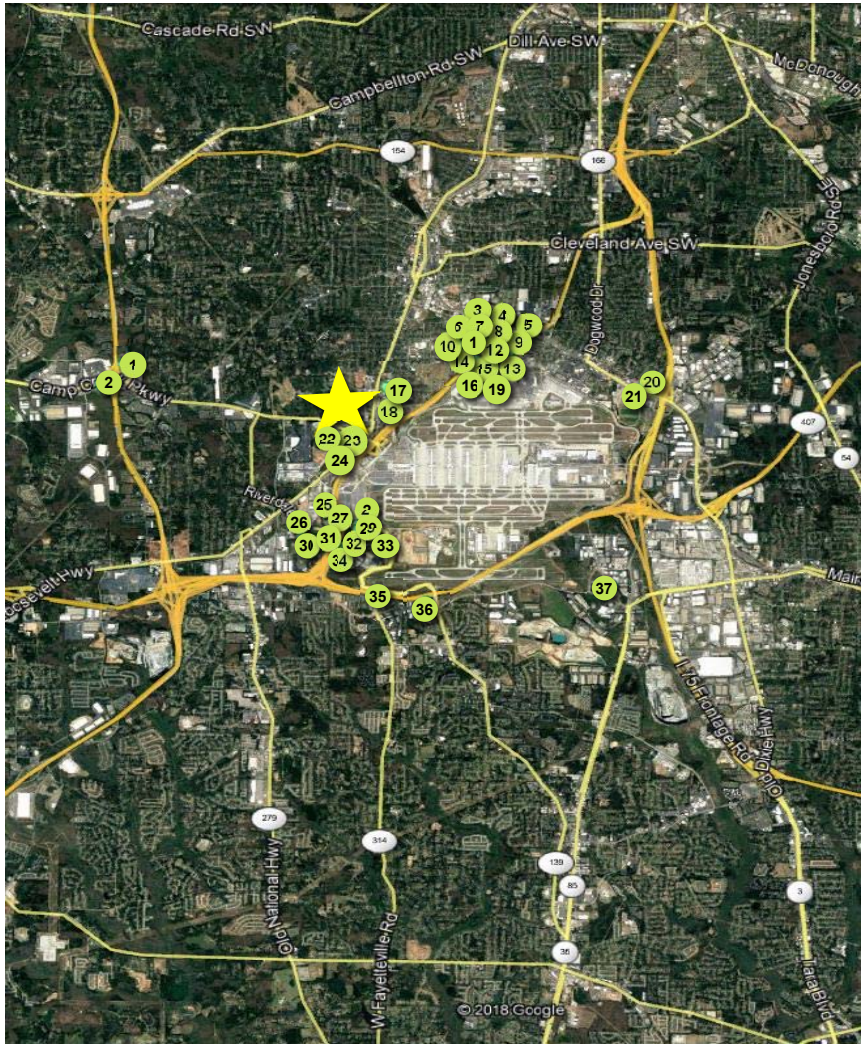


- Airport-area market largely positioned to serve regional commercial demand (business travelers) and leisure travelers seeking proximity to airport and Atlanta
- Many properties offer meeting and convention space for businesses and groups
- Since 2012 average supply growth has been 1.9% compared to average demand growth of 4.5%,
  - Has pushed occupancy numbers and revenue growth (RevPAR) well north
- Most lodging is north and west of the airport, with Solea being the first strong hotel offering to the east.
- Intercontinental, new Solis and Renaissance Gateway targeting luxury market.

Metrics (2017)	Local	Atlanta
Occupancy	80.8%	70.0%
RevPAR	$92.38	$75.05

Source: NCG, STR, Inc., Google Earth

Exhibit 18
Map of Selected Atlanta Airport Hotels



	Establishment	Class	Open Date	Rooms	Flag
1	Four Points by Sheraton Atlanta Airport West		Jun-1974	186	Marriott
2	Hampton Inn & Suites Atlanta Airport West Camp Creek Parkway		May-2008	119	Hilton
3	Fairfield Inn & Suites Atlanta Airport North		Sep-2001	85	Marriott
4	Doubletree Atlanta Airport		Aug-1998	220	Hilton
5	Homewood Suites Atlanta Airport North		Sep-2014	122	Hilton
6	Staybridge Suites Atlanta Airport		Nov-2013	149	IHG
7	Hyatt Place Atlanta Airport North		May-2002	150	Hyatt
8	Hampton Inn Suites Atlanta Airport North		Jul-2001	105	Hilton
9	Hilton Garden Inn Atlanta Airport North		Nov-2009	174	Hilton
10	Courtyard Atlanta Airport North Virginia Avenue		Aug-1990	152	Marriott
11	Residence Inn Atlanta Airport North Virginia Ave		Jun-1990	126	Marriott
12	Country Inn & Suites Atlanta Airport North		May-1998	71	Carlson Rezidor
13	Red Lion Hotel Atlanta Airport		Jun-1968	243	Red Lion
14	Crowne Plaza Atlanta Airport		Aug-1973	378	IHG
15	Hilton Atlanta Airport		Jan-1989	507	Hilton
16	Holiday Inn Atlanta Airport North		Sep-1967	330	IHG
17	Drury Inn & Suites Atlanta Airport		Feb-1998	151	Drury Hotels
18	Hotel Indigo Atlanta Airport College Park		Jul-2012	142	IHG
19	Renaissance Concourse Atlanta Airport Hotel		Nov-1992	387	Marriott
20	Best Western Plus Atlanta Airport East		Jun-1974	146	Best Western
21	Solis Two Porsche Drive		Nov-2017	214	
22	Marriott Atlanta Airport Gateway		Aug-2010	403	Marriott
23	Springhill Suites Atlanta Airport Gateway		Dec-2009	147	Marriott
24	Renaissance Atlanta Airport Gateway Hotel		May-2017	204	Marriott
25	Holiday Inn Express Atlanta Airport College Park		Jun-1983	160	IHG
26	Embassy Suites Atlanta Airport		Oct-1989	236	Hilton
27	Hilton Garden Inn Atlanta Airport Millennium Center		Apr-2004	200	Hilton
28	Holiday Inn Atlanta Airport South		Jan-2000	190	IHG
29	Hyatt Place Atlanta Airport South		Nov-1996	123	Hyatt
30	Westin Atlanta Airport		Oct-1982	500	Marriott
31	Marriott Atlanta Airport		Jan-1981	641	Marriott
32	Comfort Inn Atlanta Airport		Jun-1988	127	Choice
33	Courtyard Atlanta Airport South Sullivan Rd		Jun-1986	144	Marriott
34	Fairfield Inn & Suites Atlanta Airport South Sullivan Road		Nov-1997	127	Marriott
35	Country Inn & Suites Atlanta Airport South		Dec-1987	186	Carlson Rezidor
36	Best Western Plus Hotel & Suites Airport South		Dec-2001	87	Best Western
37	Comfort Suites Atlanta Airport		May-2009	79	Choice

SOURCE: Noell Consulting Group, Google Earth, & STR, Inc.

Exhibit 19
Performance of the Nationally-Branded Hotel Market for ATL Airport (2012-2018)

This exhibit presents the data gathered from the comps shown in the previous exhibit.

Overall, the average annual percentage change of all market indicators has been strong. Hotel demand in the market has grown, outpacing supply, and together with growth in occupancy and ADR (average daily rate) has pushed strong growth in RevPAR (revenue per available room, calculated as occupancy multiplied by ADR).

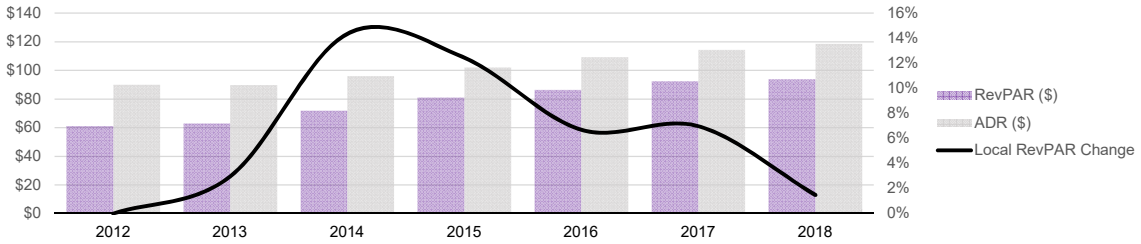
Overall, from 2012-2018, the local market's average annual demand growth of 4.5% has outpaced the national average annual change of 2.6% with local occupancy seeing an average annual change of 2.6% compared to the national average of 1.5%. This has led to the local market seeing an average annual change of 7.5% in RevPAR compared to the national average of 5.1%.

Year	Supply	% Change	Demand	% Change	Occupancy	% Change	ADR	% Change	RevPAR	% Change
2012	2,455,982		1,667,076		67.9%		$90.09		$61.15	
2013	2,529,829	3.0%	1,772,836	6.3%	70.1%	3.2%	$89.85	-0.3%	$62.96	3.0%
2014	2,559,169	1.2%	1,920,960	8.4%	75.1%	7.1%	$95.91	6.7%	$71.99	14.3%
2015	2,583,720	1.0%	2,048,507	6.6%	79.3%	5.6%	$102.09	6.4%	$80.94	12.4%
2016	2,588,025	0.2%	2,046,034	-0.1%	79.1%	-0.3%	$109.22	7.0%	$86.35	6.7%
2017	2,657,454	2.7%	2,147,060	4.9%	80.8%	2.2%	$114.33	4.7%	$92.37	7.0%
2018	2,746,929	3.4%	2,170,551	1.1%	79.0%	-2.2%	$118.63	3.8%	$93.74	1.5%
Avg Annual % Change ('12-'18)		**1.9%**		**4.5%**		**2.6%**		**4.7%**		**7.5%**
YTD Feb 2019	454,949	-	364,309	-	80.1%	-	$143.16	-	$114.63	-
Avg Annual % Change U.S. ('12-'18)		1.1%		2.6%		1.5%		3.6%		5.1%

SOURCE: Noell Consulting Group, STR, Inc.

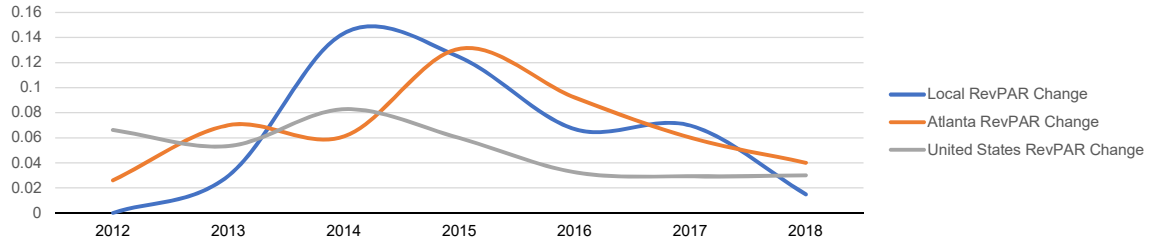
Exhibit 20
Visualization of Atlanta Airport Trends and Comparison to National Trends

ADR & RevPAR
Local Market Trends



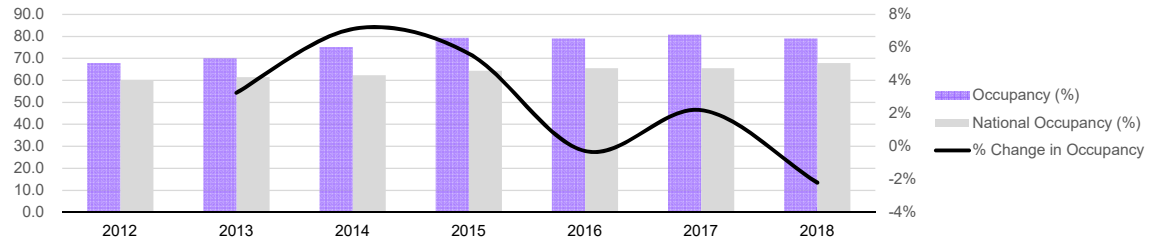
Average Daily Rates (ADRs) and Revenue Per Available Room (RevPAR) have both increased steadily around the airport in the past six years. Annual increases in RevPar have grown by 7.5% annually since 2012, indicating a strongly rebounding hotel market. While this growth rate has slowed recently, 2018 still ended up 1.5% over 2017, reflecting an airport-driven hotel market still performing very well.

RevPAR Growth
Local Market vs United States



While both the local and national market saw sharp declines in RevPAR during the recession, both have since recovered and the local market has outpaced the national and Atlanta markets in RevPAR growth since 2014 & 2017, respectively, slowing more in 2018.

Occupancy
Local Market vs United States Trends



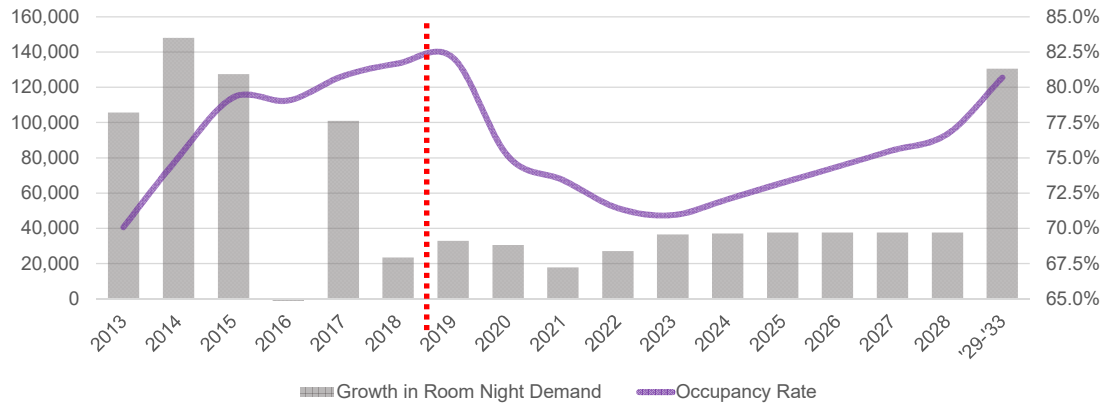
Local market occupancy has been higher than the national average since 2012 with slight up and down changes in local occupancy growth. While decreasing slightly to 79%, the airport market can be considered very healthy and will likely continue to see strong ADR and RevPAR growth in the next few years.

SOURCE: Noell Consulting Group, CoStar

Exhibit 21
Airport-Area Lodging Demand Analysis, 2012 - 2033

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	'29-'33
Hartsfield Enplanements (In Thousands)	47,147	47,526	47,319	49,056	51,807	52,098	52,562	53,764	54,992	55,979	56,984	58,007	59,048	60,108	61,187	62,285	63,403	66,899
Airport Area Room Nights Supported	1,667,076	1,772,836	1,920,960	2,048,507	2,046,034	2,147,060	2,170,551	2,203,425	2,234,046	2,251,918	2,278,941	2,315,405	2,352,451	2,390,090	2,427,729	2,465,369	2,503,008	2,633,497
Enplanements per Room Night Supported	28.3	26.8	24.6	23.9	25.3	24.3	24.2	24.4	24.6	24.9	25.0	25.1	25.1	25.1	25.2	25.3	25.3	25.4
Growth in Room Night Demand	-	105,760	148,124	127,547	(2,473)	101,026	23,491	32,874	30,621	17,872	27,023	36,463	37,046	37,639	37,639	37,639	37,639	130,489

Planned Additions to Competitive Supply			Additional Room Nights from Planned Deliveries															
Radisson	148	Rooms						27,010	54,020	54,020	54,020	54,020	54,020	54,020	54,020	54,020	54,020	54,020
aloft Hotel	136	Rooms							37,230	49,640	49,640	49,640	49,640	49,640	49,640	49,640	49,640	49,640
Intercontinental Hotel	440	Rooms							120,450	160,600	160,600	160,600	160,600	160,600	160,600	160,600	160,600	160,600
Tru by Hilton	179	Rooms							65,335	65,335	65,335	65,335	65,335	65,335	65,335	65,335	65,335	65,335
AC Marriott	220	Rooms							40,150	80,300	80,300	80,300	80,300	80,300	80,300	80,300	80,300	80,300
Potential O'Brien Site	140	Rooms									51,100	51,100	51,100	51,100	51,100	51,100	51,100	51,100
Jacoby Hotel Sites	600	Rooms									72,270	146,073	146,073	146,073	146,073	146,073	146,073	146,073
Room Night Supply	2,455,982	2,529,829	2,559,829	2,583,720	2,588,025	2,657,120	2,657,120	2,684,130	2,974,305	3,067,015	3,190,385	3,264,188	3,264,188	3,264,188	3,264,188	3,264,188	3,264,188	3,264,188
Occupancy Rate	**67.9%**	**70.1%**	**75.0%**	**79.3%**	**79.1%**	**80.8%**	**81.7%**	**82.1%**	**75.1%**	**73.4%**	**71.4%**	**70.9%**	**72.1%**	**73.2%**	**74.4%**	**75.5%**	**76.7%**	**80.7%**
Excess Room Night Supply Over 70% Occupancy								463,620	217,189	150,011	65,246	43,533	96,456	150,227	203,997	257,767	311,538	497,951
Supportable Rooms @ 70% Occupancy								1,270	595	411	179	119	264	412	559	706	854	1,364
Subject Site - 30% Capture											89	60	132	206	279	353	427	682



Based on growth projections from the FAA for Hartsfield Jackson Int'l Airport (measured in enplanements), and historic relationships between airport traffic and lodging demand, we estimate that, even when factoring in the ~1,860 lodging rooms already under construction or planned in the near-term, the market still has a capacity to absorb an additional 800 rooms over the next decade and still maintain a solid occupancy rate.

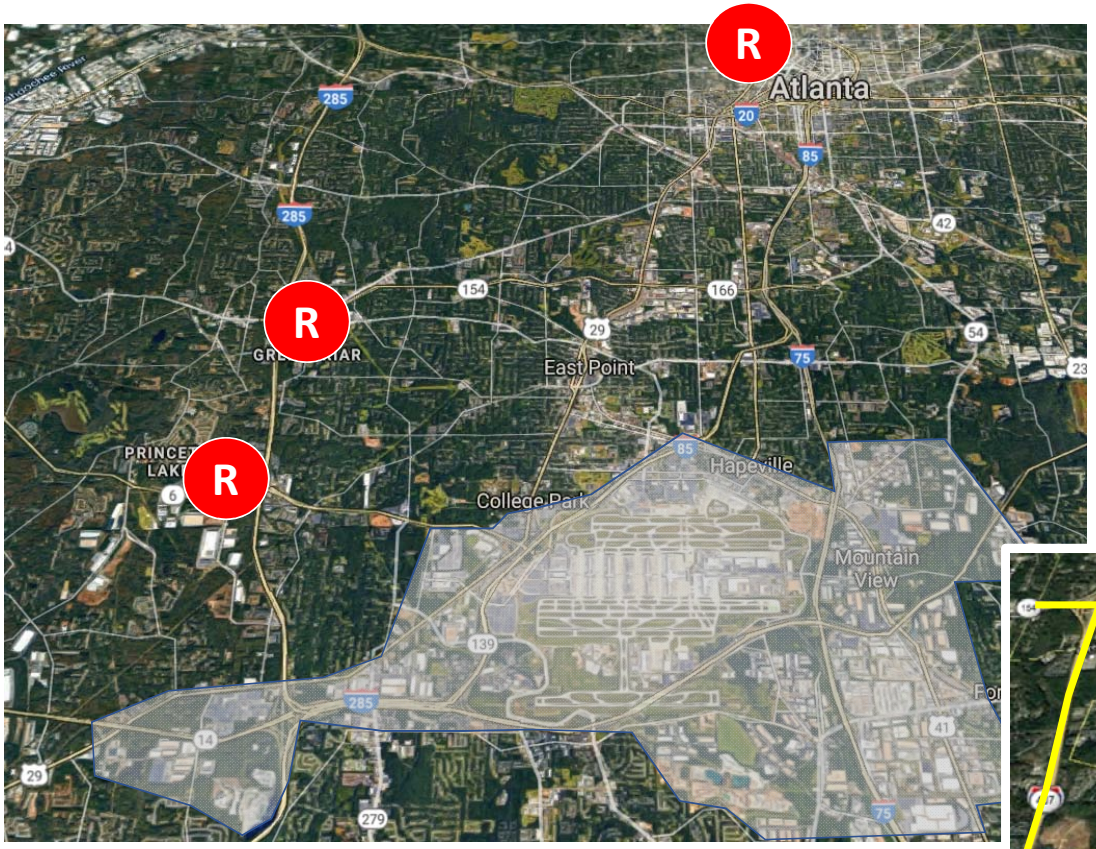
Given Airport City's superior airport access, rental car facility access, and adjacency to the GICC, as well as the potential to create a highly amenitized mixed-use project on-site, we believe a high capture of demand is supportable for the project, with hotel demand being as high as 680 rooms in the coming 14 - 15 years.

SOURCE: Noell Consulting Group based on data obtained from Smith Travel Research and Moody's.

Noell Consulting Group

Retail Analysis

Exhibit 22
College Park/Airport City Retail Assessment



- While more significant populations are found to the north and west, the airport and related uses block support from the east and south.
- Employment is low density or internally captured in the airport and drives little demand
- Road networks, airport, industrial and flight contours keep local market draw moderate
- Lack of significant north-south connection through property tempers local potential.
- **BUT…**
- Hotels and local residents do create dining potential.
- And retail & dining are critical to office and lodging growth and demand
- Identifying means to attract regional patronage becomes critical.

Source: NCG

Exhibit 23
Demographic Statistics by Radius from the Study Area

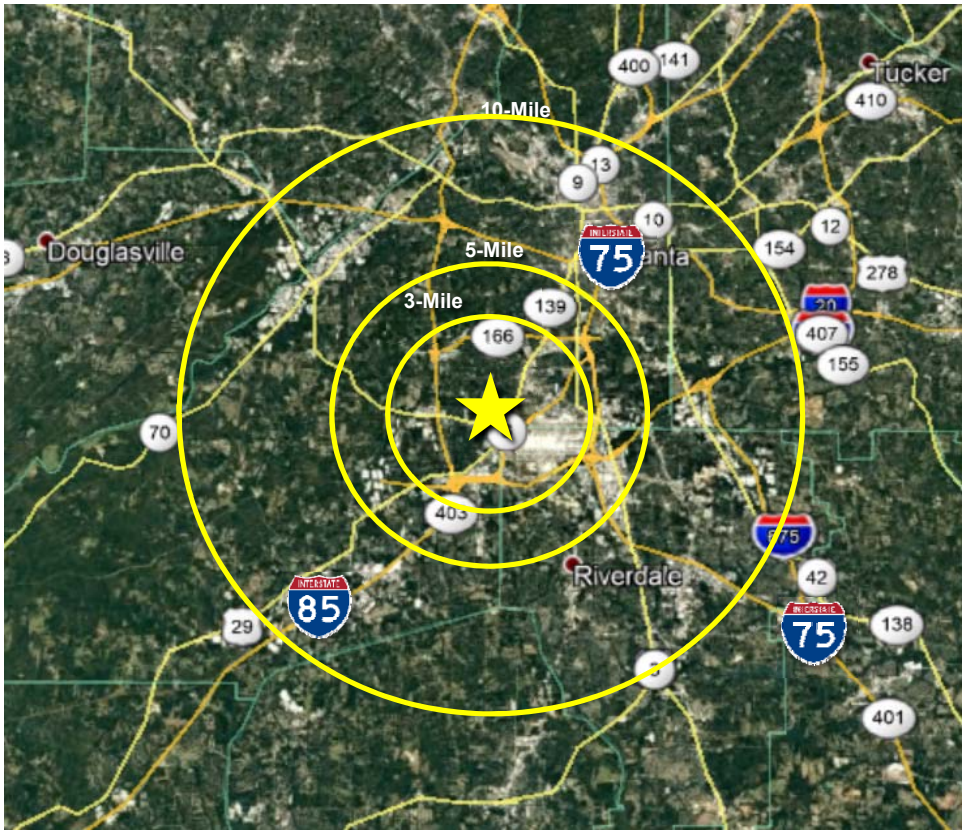
POPULATION	3-Mile	5-Mile	10-Mile
2024 Projection	60,542	172,989	732,764
2019 Estimate	57,171	163,089	684,509
2010 Census	52,909	152,382	604,862
Growth 2019 - 2024	5.90%	6.07%	7.05%
Growth 2010-2019	8.06%	7.03%	13.17%
Average Age	35	35.2	35

HOUSEHOLDS	3-Mile	5-Mile	10-Mile
2024 Projection	24,049	67,258	277,038
2019 Estimate	22,722	63,577	258,927
2010 Census	21,086	60,432	229,798
Growth 2019 - 2024	5.84%	5.79%	6.99%
Growth 2010-2019	7.76%	5.20%	12.68%
Owner Occupied	36%	41%	47%
Renter Occupied	64%	59%	53%
2019 Median Household Income	$35,815	$36,197	$41,804

HOUSING	3-Mile	5-Mile	10-Mile
Median Home Value	$124,616	$109,713	$132,394
Median Year Built	1971	1973	1978
Average Household Size	2.50	2.50	2.50

HOUSEHOLDS BY INCOME (2017)	3-Mile	5-Mile	10-Mile
<$25,000	7,935	23,149	83,869
$25,000 - $50,000	6,527	17,426	64,537
$50,000 - $75,000	3,923	10,818	46,115
$75,000 - $100,000	1,838	5,571	27,016
$100,000 - $125,000	1,108	2,962	15,965
$125,000 - $150,000	674	1,564	7,692
$150,000 - $200,000	348	982	6,802
$200,000+	369	1,104	6,930

SOURCE: Noell Consulting Group, CoStar, US Census



Due to the impacts of the airport and its noise contours, local population density around the subject site is modest, with density increasing further to the north. With area median incomes also being moderate (largely in the $30k's), retailers have opted to go to the strongest locations and capture populations further west and southwest. Such a scenario is why retailers around the Camp Creek/I-285 area do well; they appeal to suburban areas west and south, and intown areas to the east and north.

While population totals and incomes are moderate today, growth is quite strong in the area, averaging around 6% in total over the next five years.

Exhibit 24
Premium Outlet Case Study

Developer	Macerich, AWE Talisman
Owner:	Macerich
No. of Stores:	150+
Size:	530,000 SF
Floors:	2
Anchor Tenants:	Bloomingdale's, Forever 21, Neiman Marcus Last Call Nordstrom Rack, and Saks Fifth Avenue OFF 5th
Other Notable Tenants:	Gucci, Prada, Tory Burch, Michael Kors, Burberry, Banana Republic, J.Crew, Swarvoski, Nike, & Under Armour
Sales:	$810 / SF
Occupancy:	96%

The Fashion Outlets of Chicago were developed in 2013 with a focus on providing an indoor outlet experience with upscale and national retailers. The site is adjacent to O'Hare International Airport and 15 minutes from downtown Chicago, proving a perfect locational analog for retail opportunities at the Airport City site. The outlets cater to both local residents and tourists, with a strong focus on providing services to travelers such as providing accessibility to and from O'Hare International Airport with a concierge services, operated by a TSA-certified company, that allows travelers to print boarding passes and check luggage in addition to providing amenities such as luggage and shopping bag storage, translation services, and currency exchanges.

In addition to shopping, the area includes the Parkway Bank Park Entertainment Park which is a 200,000 SF entertainment & dining complex, offering music and comedy venues as well as a theatre and bowling alley.

In early 2018 the Fashion Outlets of Chicago were given the greenlight to expand the center by 225,000 SF, increasing the size of the center by 50%, showing the success of the concept. Since opening, sales tax in the municipality the outlets are located increased from $5m to $15.7m.

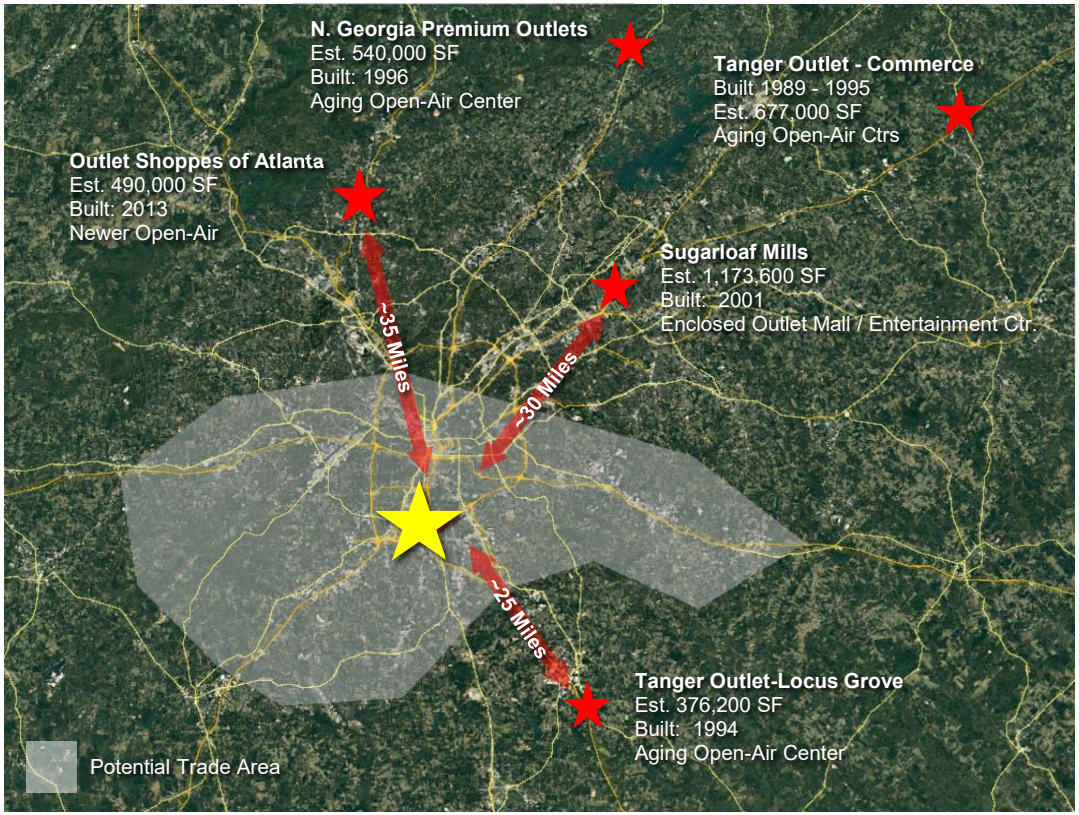
A similar opportunity exists around Hartsfield-Jackson and potentially at the Airport City site, which can leverage its location and a lack of premium outlet retail in the region to mitigate a lack of local household density and incomes to create a compelling retail and entertainment location that would help attract future office tenants.

Source: NCG, Macerich, Chicago Tribune

Exhibit 25
Estimated Potential Demand for Outlet Space in the Airport Area

Marking Sizing Information	
Total SF in US Outlet Centers	83,492,526
Average $/SF (National)	$546
Total US Outlet Center Sales	$44,246,037,578
Total US Population	325,700,000
Outlet Spending per Capita	$136
Population of Targeted Trade Area	1,985,644
Potential Outlet Expenditures (Trade Area)	$269,747,863
Supportable SF (@ 95% occ.)	519,732

Total Potential Supportable Outlet Retail SF at Various Capture Rates	
@ 33%	171,512
@ 50%	259,866
@ 75%	389,799



Much of the outlet retail space delivered in and around Metro Atlanta has been delivered well out from the core of the metro area, predominately in the northern suburbs. More recent outlet centers have delivered closer into cities, including areas around major airports.

The Airport City area is 25 or more miles from any significant outlet retail and, given its strong regional access via I-85 and I-285, it's airport proximity, and its ease of access to intown Atlanta, represents a very real target for outlet retail.

Utilizing national demonstrated performance data for outlet centers, and a defined potential trade area for the Airport City location, we estimate potential support exists for more than 520,000 SF of outlet retail space. Assuming reasonable captures of this demand, we believe support exists for up to around 260,000 to 390,000 SF of space, not including potential airport-related demand. This is consistent in size with the Charlotte Premier Outlets built just south of the airport (350,000 SF).

SOURCE: Noell Consulting Group

Exhibit 26
Local Trade Area's Ability to Attract Entertainment Retail Facility

Select Entertainment Retail Site Selection Summary	MAIN EVENT	DAVE & BUSTER'S	ANDRETTI	Brunswick	ROUND1	Indoor Skydiving	URBAN AIR
Description	Family entertainment center featuring dining, bowling, laser tag, gravity ropes course with zip lines, billiards, shuffleboard and games gallery featuring over 125 of the latest interactive, virtual, video games and more.	Full-service restaurant and entertainment business. Features full video arcade, sports experience viewing, billiards and bowling in select locations.	Offers realistic racing experiences, utilizing the latest in karting, timing, scoring and simulation technologies, built around the "thrill of racing". Mixed-used entertainment and event facility that features arcade, ropes course, racing simulators, interactive motion theater, laser tag and boutique bowling.	Bowling with traditional or specialized facilities available. May include a limited number of venues including game room, billiards, pro shop and bar. Beverages play a strong role and food is usually limited to snack bar options. Specialized facilities may include arcades, laser tag, go-carts, bumper cars, party rooms, full cafés, etc.	Multi-entertainment complex offering bowling, arcades, pool tables, private karaoke rooms, ping pong and food.	Indoor skydiving is an activity where participants fly within a column of wind created by a vertical wind tunnel. There are local and large national chains, such as iFLY who operate these facilities. They attract locals, tourists, and are popular for events and corporate team building.	Adventure Park offering safe, fun, clean and affordable attractions to a wide range of customers. Urban Air will design an Adventure Park specific to each building and the entertainment demands from the surrounding community. Attractions include trampolining, indoor skydiving, ropes course, indoor playground, Ninja Warrior course, laser tag, bowling, mini golf, bumper cars, rock climbing, arcade, indoor go-karts.
Typical Urban Footprint	45,000-60,000 SF	30,000-40,000 SF	80,000 SF	15,000-50,000 SF One acre of usable land is typically required for every 10 lanes	40,000-50,000 SF	-	25,000-50,000 SF
Ceiling Height	20" ceiling	28+ ft ceiling	28+ ft ceiling	14" ceiling	14" ceiling	60'+	17+ ft ceiling
Configuration	Includes Full-Service Restaurant	Includes Full-Service Restaurant/ Requires 1,000,000 SF nearby retail	Includes Full-Service Café - Prefer Co-Tenancy: leisure tenants/theaters/dining	May Include Full-Service Café / Location need not be prime frontage, but should be easily accessible by a major traffic artery	Needs to be in enclosed super regional malls with more than 800,000 sqft GLA. Movie theater and food court preferred	-	Includes Full-Service Café
Parking	Minimum parking: 350 spaces	350-400 Parking Spaces (specified can be shared)	Minimum parking: 350 spaces	Varies with building SF	400-500 Parking Spaces (specified an be shared)	-	Minimum parking: 70 spaces
Total Population	400,000 population w/in 5-Miles	500,000-1,000,000 w/in 10-Miles	-	3,000 per lane w/in (3) - 5 Miles if (urban) suburban.	150,000-600,000 w/in 5-20 Miles	1,000,000 per 14' (most common) tunnel.	50,000 kids 0-14 year old range within 15 minute drive time
Median HH Income	$60,000	$70,000+	$55,000+	$60,000	-	-	-
Household Types	77% families (50% have 3-4 kids) and 23% young entertainment seekers (ages 18-34).	NA, Est: 45% families, 55% young entertainment seekers (18-34).	Families with Teenage children 13-18 / Young Adults 18-35	NA, Est: all household demographics	NA, Est: 70% families, 30% young entertainment seekers (18-34).	-	NA, Est: Families with young kids and teenage children 13-18 (60%) / Young Adults 18-25 (40%)

Trade Area	3-Mile	5-Mile	10-Mile	20-Mile
Total Population	57,171	270,365	684,509	2,427,434
Median HH Income	$31,011	$37,982	$42,363	$55,236
Family Households	50%	55%	54%	60%
Home Ownership	40%	43%	45%	55%

This exhibit highlights site requirements for many entertainment retail concepts, notably Main Event, Dave & Buster's, and Brunswick Bowling. The Airport City site is somewhat challenged by moderate median incomes, lower immediate populations and a lack of family households nearby.

Given this, we believe Clayton would need to proactively approach these entertainment uses with some type of incentives to attract these users to the area and/or focus on more regional draws such as indoor skydiving that would pull from outside the immediate area.

SOURCE: Noell Consulting Group, CoStar

Noell Consulting Group

Exhibit 27
Estimated Retail Demand from the Local Trade Area Today

Store Type (Excl. General Merch. & Gas)	Demand Potential[1]	Per Capita	Local Sales in Non-Reg Ctrs	Typical Sales/SF	Supportable Square Feet	No. of Retail Emps	SF per Emp.	Est. Supply	Net Demand	Airport City Capture	Support-able SF	Mix By Store Categories
	2016 Population	*64,022*	*$39,052*									
Furniture and Home Furnishings	$14,400,479	$225	$14,400,479		80,109	5		2,250	77,859		15,572	11%
Furniture Stores	$8,690,192	$136	$8,690,192	$156	55,706	3	500	1,500	54,206	20%	10,841	
Home Furnishing Stores	$5,710,287	$89	$5,710,287	$234	24,403	2	500	750	23,653	20%	4,731	
Electronics & Appliance Stores	$13,073,978	$204	$13,073,978	$370	35,335	23	500	11,250	24,085	20%	4,817	
Bldg Mats., Garden Equip & Supply	$46,401,692	$725	$46,401,692			307		299,750	-169,200		0	0%
Bldg Materials & Supply Stores	$39,786,067	$621	$39,786,067	$156	102,278	293	1,000	293,000	-190,722			
Lawn & Garden Equipment	$6,615,625	$103	$6,615,625	$234	28,272	14	500	6,750	21,522		0	
Food & Beverage Stores	$119,040,997	$1,859	$119,040,997			210		105,000	170,948		28,907	21%
Grocery Stores	$106,713,554	$1,667	$106,713,554	$455	234,535	180	500	90,000	144,535	20%	28,907	
Specialty Food Stores	$3,871,339	$60	$3,871,339	$193	20,059	6	500	3,000	17,059	0%	0	
Beer, Wine & Liquor Stores	$8,456,104	$132	$8,456,104	$396	21,354	24	500	12,000	9,354	0%	0	
Health & Personal Care	$52,117,227	$814	$52,117,227	$458	113,793	106	500	52,750	61,043	20%	12,209	9%
Clothing & Clothing Accessories	$39,609,431	$619	$39,609,431			399		199,500	-61,153		1,691	
Clothing Stores	$28,646,872	$447	$28,646,872	$287	99,815	264	500	131,750	-31,935			
Shoe Stores	$5,346,324	$84	$5,346,324	$205	26,080	128	500	63,750	-37,670			
Jewelry, Luggage & Leather Goods	$5,616,235	$88	$5,616,235	$451	12,453	8	500	4,000	8,453	20%	1,691	
Sporting Gds, Hobby, Book & Music	$10,384,775	$162	$10,384,775			6		3,000	50,063		11,021	8%
Sporting Goods, Hobby, Musical Inst	$8,888,537	$139	$8,888,537	$195	45,582	3	500	1,500	44,082	25%	11,021	
Book & Music Stores	$1,496,238	$23	$1,496,238	$200	7,481	3	500	1,500	5,981			
General Merchandise Stores	$109,169,992	$1,705	$109,169,992	$235	464,553	513	500	341,145	123,408	25%	30,852	23%
Miscellaneous Store Retailers	$17,468,676	$273	$17,468,676		103,706	104		51,750	51,956		20,365	15%
Florists	$796,669	$12	$796,669	$226	3,525	2	500	750	2,775	25%	694	
Office Supplies, Stationery & Gifts	$3,433,416	$54	$3,433,416	$202	16,997	93	500	46,500	-29,503			
Used Merchandise Stores	$2,956,073	$46	$2,956,073	$202	14,634	0	500	0	14,634	25%	3,659	
Other Miscellaneous Store Retailers	$10,282,518	$161	$10,282,518	$150	68,550	9	500	4,500	64,050	25%	16,013	
Food Service & Drinking Places	$98,838,269	$1,544	$98,838,269		402,807	3,444		530,875	-128,068		10,877	8%
Full-Service Restaurants	$46,864,203	$732	$46,864,203	$308	152,157	1,204	150	180,600	-28,443			
Limited-Service Eating Places	$38,718,482	$605	$38,718,482	$199	194,565	1,303	125	162,875	31,690	33%	10,458	
Special Food Services	$9,178,470	$143	$9,178,470	$200	45,892	907	200	181,400	-135,508			
Drinking Places	$4,077,114	$64	$4,077,114	$400	10,193	30	200	6,000	4,193	10%	419	
TOTAL	**$520,505,516**	**$8,130**	**$411,335,524**			**2,414**		**785,600**	**77,534**		**136,310**	

NCG created a demand model for retail opportunities at Airport City (outside of outlet retail center demand, which draws more regionally). As can be seen above, some retail demand indeed exists in the area today, including sufficient demand for a grocery store, drug store general merchandise store, and some other dry goods. The challenge for retail at the site is capturing tenants, given the site's adjacency to the airport (not great for local-serving demand) and it's "midblock" location, with larger retail being found at Camp Creek and I-285. While our demand only shows potential for around 10,500 SF of restaurant space, we believe demand is actually more significant, with the overhang of some airport supply likely filtering into the numbers.

1 Based on data obtained from Claritas.
2 Estimates via NCG based on ICSC data. Excludes shopping at local establishments outside the area while on destination trips/vacations/near workplace.
SOURCE: Noell Consulting Group, Claritas, Inc.

Exhibit 28
Estimated Retail Demand from Additional Non-Local Sources

Demand from Nearby Hotel Guests

Store Type (Excl. General Merch. & Gas)	Demand Potential[1]	Per Capita Per Day	Dest. Sales in Non-Reg Ctrs	Est. Sales/ SF	Capture Rate of Core[2]	Local Capture
		357,992	Annual Room Night Guests			
Grocery Stores	$4,451,564	$12.43	$4,451,564	$455	33%	3,229
Specialty Food Stores	$224,449	$0.63	$224,449	$251	33%	295
Health & Personal Care	$3,419,551	$9.55	$3,419,551	$595	33%	1,895
Office Supplies, Stationery & Gifts	$230,134	$0.64	$230,134	$263	33%	289
Full-Service Restaurants	$12,386,435	$34.60	$12,386,435	$400	33%	10,209
Limited-Service Eating Places	$6,543,232	$18.28	$6,543,232	$259	33%	8,347
Drinking/Snack Places	$1,981,841	$5.54	$1,981,841	$480	33%	1,363
TOTAL	**$20,911,508**	**$81.67**				**25,626**

Local Employee Demand

Store Type (Excl. General Merch. & Gas)	Demand Potential[1]	Per Capita	% Sales To/From or While at Work[2]	Est. Sales Near Work	Est. Sales/ SF	Capture Rate of Core[4]	Subject Site Capture
		6,908	*Local Employees earning $40K+, working in within the local trade area. Retail exp. same as new growth.				
Grocery Stores	$15,339,233	$2,221	11%	$1,687,316	$455	33%	1,224
Specialty Food Stores	$541,387	$78	5%	$27,069	$251	33%	36
Beer, Wine & Liquor Stores	$1,539,561.49	$223	5%	$76,978	$515	33%	49
Health & Personal Care	$8,248,179	$1,194	13%	$1,072,263	$595	33%	594
Florists	$114,142	$17	5%	$5,707	$294	33%	6
Office Supplies, Stationery & Gifts	$555,099	$80	5%	$27,755	$263	33%	35
Full-Service Restaurants	$7,967,170	$1,153	13%	$1,035,732	$400	33%	854
Limited-Service Eating Places	$6,313,081	$914	15%	$946,962	$259	33%	1,208
Drinking/Snack Places	$1,912,132	$277	5%	$95,607	$260	33%	121
TOTAL							**4,127**

1. Based on data obtained from CSL International for convention goers at NKYCC.
2. Assumes capture of majority of hotel guests spending while in town.

SOURCE: Noell Consulting Group, ICSC, Claritas

Exhibit 29
Summary of Estimated Retail Demand (By Source) and Supply By Store Type

Store Type (Excl. General Merch. & Gas)	Existing Population in Local Trade Area	Local Employees	Hotel Guests	Combined Demand From All Sources	Typical Store SF	Market Depth For Adequate Store Size
Furniture and Home Furnishings	15,572	0	0	15,572		15,572
Furniture Stores	10,841	0	0	10,841	7,696	10,841
Home Furnishing Stores	4,731	0	0	4,731	4,214	4,731
Electronics & Appliance Stores	4,817	0	0	4,817	6,577	4,817
Bldg Mats., Garden Equip & Supply	0	0	0	0		
Bldg Materials & Supply Stores	0	0	0	0	6,561	
Lawn & Garden Equipment	0	0	0	0	4,200	
Food & Beverage Stores	28,907	1,309	3,524	33,740		31,323
Grocery Stores	28,907	1,224	3,229	33,359	40,000	31,133
Specialty Food Stores	0	36	295	331	1,988	
Beer, Wine & Liquor Stores	0	49		49	3,196	
Health & Personal Care	12,209	594	1,895	14,698	12,544	13,453
Clothing & Clothing Accessories	1,691	0	0	1,691		1,691
Clothing Stores	0	0	0	0	3,500	0
Shoe Stores	0	0	0	0	2,950	0
Jewelry, Luggage & Leather Goods	1,691	0	0	1,691	1,494	1,691
Sporting Gds, Hobby, Book & Music	11,021	0	0	11,021		11,021
Sporting Goods, Hobby, Musical Inst	11,021	0	0	11,021	2,713	11,021
Book & Music Stores	0	0	0	0	2,674	0
General Merch. Stores	30,852	0	0	30,852		0
Department Stores (Incl. Jr. and Disc.)	0	0	0	0	30,000	0
Warehouse Clubs and Superstores	0	0	0	0	80,000	0
Miscellaneous Store Retailers	20,365	41	289	20,695		16,710
Florists	694	6	0	700	1,424	697
Office Supplies, Stationery & Gifts	0	35	289	324	3,578	
Used Merchandise Stores	3,659	0	0	3,659	2,500	
Other Miscellaneous Store Retailers	16,013	0	0	16,013	2,000	16,013
Food Service & Drinking Places	10,877	6,310	19,918	37,105		23,930
Full-Service Restaurants	0	854	10,209	11,062	3,212	5,531
Limited-Service Eating Places	10,458	1,208	8,347	20,012	2,400	15,235
Special Food Services	0	121	0	121	2,000	
Drinking/Snack Places	419	4,127	1,363	5,909	1,800	3,164
TOTAL	**136,310**	**8,254**	**25,626**	**170,190**		**118,517**

SOURCE: Noell Consulting Group, Claritas, Inc.

In addition to local residents, NCG factored in demand from local employees earning more than $40,000 annually (e.g. those more likely to spend during lunch or after work) as well as hotel guests within close proximity to the Airport City site.

As can be seen at left, we believe demand potential exists for around 118,000 SF of retail space in total. This includes a mix of convenience-based retailers, with a grocery store and drug store representing potential target retailers.

Restaurant demand is estimated to be around 24,000 SF although, as noted, this likely is suppressed by influence from restaurants within Hartsfield-Jackson and thus we believe demand for dining is more in the 40,000 SF range.

The restaurant component would work well in conjunction with a destination outlet center and mixed-use environment. Grocery stores and other more local-serving stores may prefer a more "hard corner" with stronger north-south access (i.e. Herschel Road), so those opportunities may be better pursued outside the subject property.

Exhibit 30
Estimated Movie Theatre and Bowling Alley Demand in the Study Area

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of US Indoor Movie Screens	38,159	38,201	38,605	38,902	38,974	39,056	39,368	39,356	39,411	40,009	39,651	40,313
Total US Population (Thous)	301,621	304,060	307,007	309,350	311,592	313,914	316,129	318,857	321,419	323,128	325,719	328,231
Population Per Screen Ratio	7,904	7,959	7,953	7,952	7,995	8,038	8,030	8,102	8,156	8,076	8,215	8,142
Total US Box Office Gross Sales (In Mi., Inf. Adj.)	$12,937	$12,372	$12,923	$12,103	$11,687	$12,778	$12,201	$11,455	$12,055	$11,858	$11,165	$11,960
US Average Per Capita Movie Exp.	$42.89	$40.69	$42.09	$39.12	$37.51	$40.70	$38.59	$35.92	$37.51	$36.70	$34.28	$36.44
US Average Per Capita Retail Exp.	$13,263	$12,942	$11,777	$12,345	$13,160	$13,697	$14,092	$14,538	$14,721	$15,018	$15,522	$15,939
Avg. US Movie Ticket Cost	$6.88	$7.18	$7.50	$7.89	$7.93	$7.96	$8.13	$8.17	$8.43	$8.65	$8.97	$9.11
Total US Box Office Admissions (millions)	1,405	1,341	1,413	1,339	1,283	1,362	1,344	1,268	1,323	1,302	1,226	1,313
Total US Admissions Per Screen	36,809	35,112	36,594	34,422	32,919	34,860	34,129	32,224	33,576	32,534	30,908	32,566

Market Sizing - Theater Demand; 2014 - 2018	
Avg. Pop. Per Screen	8,138
Avg. Per Capita Movie Exp.	$36.17
Avg. Box Office Admissions (Bill.)	1,286
Avg. Admissions Per Screen	32,361
2019 3-Mile Trade Area Population	57,171
2018 Avg. Per Capita Expenditure	$11,954
Per Capita Exp. Decrease From US Avg.	-25%
2018 3-Mile Trade Area Est. Movie Exp/Capita	$27.33
Total Study Area 3-Mile Population Movie Exp.	$1,562,381
Est. Study Area Resident Supported Ticket Sales	171,502
Est. Screens Based on US Avg. Admis/Screen	5.3
Est. Movie Screens Demanded Pop/Screen	7.0
Average Screen Demand	6.2

Existing Theater Supply In Trade Area	
AMC Camp Creek	14
Total Screens in Trade Area	**14**
Total Unmet Screen Demand	**-7.8**

Future Screen Demand In Trade Area (2024)	
Estimated Population	60,542
Total Unmet Screen Demand	**-7.3**

Market Sizing - Bowling Alley Demand	
Population, 2018 (US) in Thousands	328,231
Bowling Alleys (# of Commercial Est.)	3,573
Est. Nat'l Persons per Bowling Alley	91,864
Population, 2018 (Local Trade Area)	57,171
Bowling Alleys (# of Commercial Est.)	0
Estimated Bowling Alleys Per Person	91,864
Net Supportable Commercial Est.	**0.6**

The trade area demand for movie theaters appears satisfied with the amount of current supply (AMC Camp Creek) and, given competitive clauses with movie companies, we believe a theater at the Airport City site is highly unlikely.

Bowling could be an opportunity. While the local population doesn't fully support a bowling alley (around 60% of support needed for bowling is satisfied by the local market), the addition of hotel guests and others in the area may justify development of a bowling concept on-site. Strategic marketing of the site would be needed to persuade a bowling concept to locate in Airport City.

SOURCE: Noell Consulting Group based on data obtained from the US Census Bureau County Business Patterns and Claritas, Nat. Assoc. of Theatre Owners, The-Numbers, Box Office Mojo, IbisWorld

Noell Consulting Group

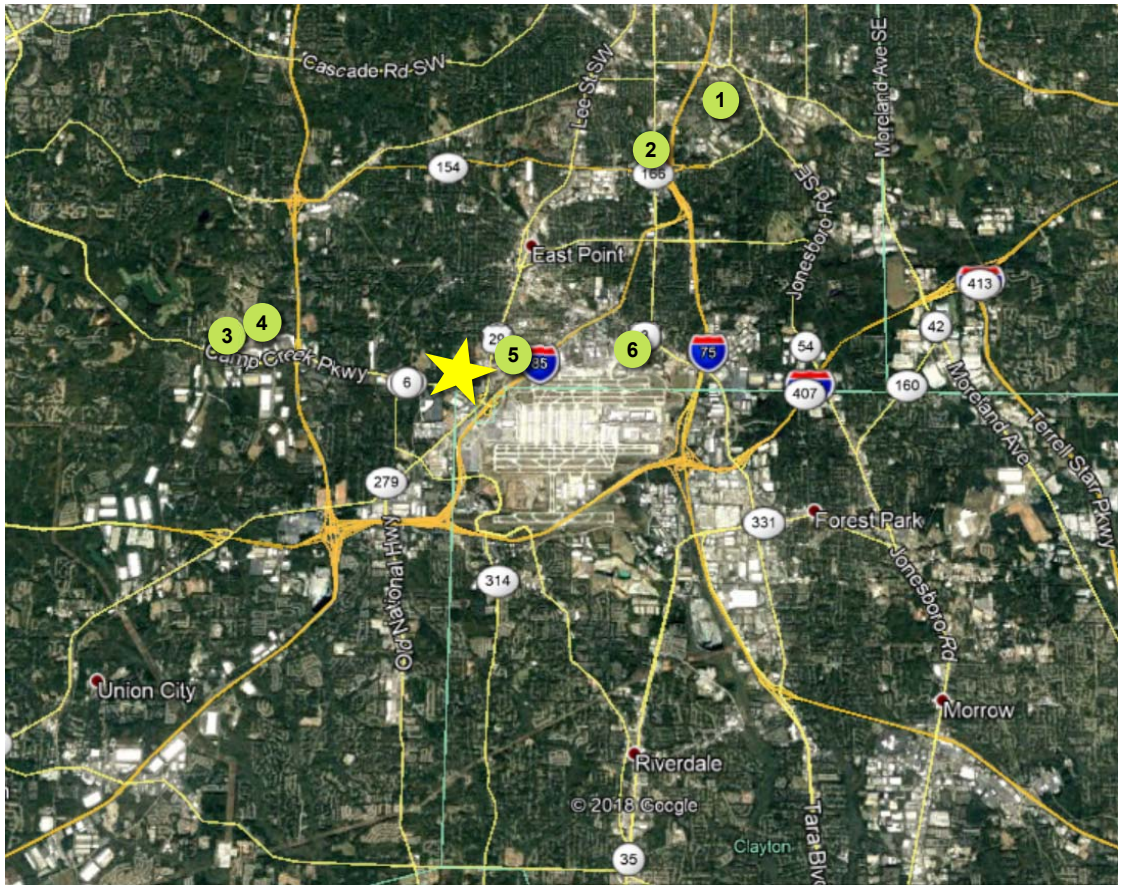
Multifamily Rental Analysis

Exhibit 31
Conventional Multifamily Product Matrix for the Southeast US

Product Type	Example	Description	Typical Units/Acre	Typical Acreage	PSF Rent Needed	Typical Unit Rent	Average Household Income	Average Value Per Unit	Typical Dev. Cost Per Unit	Typical Land Value Per Unit	Typical Land Value Per Acre
High Rise		>12 Stories, but realistically any Type I (Concrete or Steel Structure)	>150	1.5 to 3	$2.50+	$2,000	$100k+	$360,000	$290,000	$36,000	$5M+
Podium		6-12 Stories, but most are 6-7 to remain wood frame above 1-2 floors of parking podium	100-150	3 to 4	$2.20+	$1,850	$85k+	$310,000	$250,000	$31,000	$3-4M
Wrap		4-5 Stories, around or adjacent to structured parking	60-100	4 to 7	$2.00+	$1,700	$70k+	$285,000	$225,000	$28,500	$2-3M
Garden-Urban		3-4 Stories, surface parked, typically with elevators	40-60	4 to 13	$1.60+	$1,300	$50k+	$200,000	$165,000	$20,000	$1M
Garden With Elevators		3-4 Stories, surface parked	30-40	7 to 15	$1.40+	$1,200	$40k+	$180,000	$150,000	$18,000	$600k
Garden Without Elevators		2-3 Stories, surface parked	10-30	10 to 30	$1.35+	$1,100	$35k+	$155,000	$140,000	$15,500	$300k
Big House Concept		2 Stories, private garage and surface parked	10-15	10 to 30	$1.45+	$1,500	$55k+	$200,000	$170,000	$20,000	$250k

SOURCE: Noell Consulting Group

Exhibit 32
Competitive Apartment Community Map

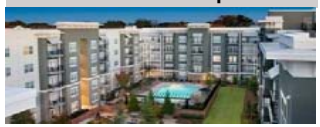


North of Airport		Units	$/SF
1	Villages at Carver	667	$1.48
2	Brookside Park	237	$1.18
3	Park at the Marketplace	350	$1.28
4	Meridian at Redwine	258	$1.35
5	Pad on Harvard	109	$1.61
6	Atlantic Aerotropolis	269	$1.43
North of Airport Average		**315**	**$1.39**

In order to assess the opportunity for multifamily rental product at both subject areas, NCG examined a broad range of multifamily product. These communities are primarily the newest communities in the area, with some older communities included due to their proximity to the subject site.

SOURCE: Noell Consulting Group, CoStar

Exhibit 33
Competitive or Analogous Rental Communities

Community Name	Year Deliv.	Unit Type	Unit Count	Unit Mix	Percent Leased	Quoted Effective Rent Range	Avg. Rent	Unit Size Range	Avg. Size	Current Conc.	$/SF Range	Avg. $/SF
Villages at Carver	2001	1B/1b	137	21%	97%	$940 $1,290	$1,031	698 795	744		$1.35 $1.62	$1.39
		2B/1b	119	18%	98%	$1,215 $4,315	$2,830	900 1,303	957		$1.35 $3.31	$2.96
		2B/2b	220	33%	96%	$1,025 $1,908	$1,275	946 1,400	1,086	None	$1.08 $1.36	$1.17
		3B/2b	169	25%	99%	$1,290 $1,423	$1,298	1142 1,378	1,195		$1.03 $1.13	$1.09
		3B/3b	10	1%	100%	$1,321 $1,321	$1,321	1249 1,249	1,249		$1.06 $1.06	$1.06
		4B/2b	12	2%	100%	$2,400 $2,400	$2,400	1625 1,625	1,625		$1.48 $1.48	$1.48
		Total	**476**	**100%**	**98%**	**$940 $4,315**	**$1,529**	**698 1,625**	**1,032**		**$1.03 $3.31**	**$1.48**
Brookside Park	2005	1B/1b	56	24%	96%	$970 $1,030	$1,000	830 830	830		$1.17 $1.24	$1.20
		2B/2b	102	43%	96%	$1,290 $1,445	$1,368	1119 1,119	1,119	None	$1.15 $1.29	$1.22
		3B/2b	79	33%	94%	$1,395 $1,445	$1,430	1196 1,335	1,272		$1.08 $1.17	$1.12
		Total	**237**	**100%**	**95%**	**$970 $1,445**	**$1,302**	**830 1,335**	**1,102**		**$1.08 $1.29**	**$1.18**
Park at the Marketplace	2006	1B/1b	168	48%	85%	$1,139 $1,239	$1,177	741 912	831		$1.36 $1.54	$1.42
		2B/1b	14	4%	79%	$1,304 $1,304	$1,304	1043 1,043	1,043	None	$1.25 $1.25	$1.25
		2B/2b	140	40%	87%	$1,364 $1,484	$1,424	1176 1,232	1,204		$1.16 $1.20	$1.18
		3B/2b	28	8%	79%	$1,694 $1,694	$1,694	1399 1,399	1,399		$1.21 $1.21	$1.21
		Total	**350**	**100%**	**85%**	**$1,139 $1,694**	**$1,322**	**741 1,399**	**1,034**		**$1.16 $1.54**	**$1.28**
Meridian at Redwine	2015	1B/1b	104	40%	95%	$1,133 $1,329	$1,213	643 837	771		$1.59 $1.76	$1.57
		2B/2b	136	53%	96%	$1,460 $1,490	$1,476	1124 1,237	1,164	None	$1.20 $1.30	$1.27
		3B/2b	18	7%	100%	$1,710 $1,710	$1,710	1502 1,502	1,502		$1.14 $1.14	$1.14
		Total	**258**	**100%**	**96%**	**$1,133 $1,710**	**$1,386**	**643 1,502**	**1,029**		**$1.14 $1.76**	**$1.35**
Pad on Harvard	2017	Jr. 1B/1b	8	7%	100%	$887 $1,035	$1,017	535 581	541		$1.66 $1.78	$1.88
		1B/1b	30	28%	100%	$913 $1,280	$1,178	589 682	629	None	$1.55 $1.88	$1.87
		2B/1b	10	9%	100%	$1,274 $1,359	$1,317	823 915	869		$1.49 $1.55	$1.51
		2B/2b	61	56%	100%	$1,335 $1,730	$1,504	921 1,080	984		$1.45 $1.60	$1.53
		Total	**48**	**100%**	**100%**	**$887 $1,359**	**$1,361**	**535 1,080**	**843**		**$1.45 $1.88**	**$1.61**
Atlantic Aerotropolis	2008	1B/1b	105	39%	78%	$1,077 $1,386	$1,326	655 849	773		$1.63 $1.64	$1.71
		2B/2b	159	59%	91%	$1,446 $2,053	$1,487	1088 1,521	1,142	None	$1.33 $1.35	$1.30
		3B/2.5b	5	2%	60%	$2,188 $2,243	$2,216	1553 1,553	1,553		$1.41 $1.44	$1.43
		Total	**269**	**100%**	**86%**	**$1,077 $2,243**	**$1,437**	**655 1,553**	**1,006**		**$1.33 $1.64**	**$1.43**

SOURCE: Noell Consulting Group, CoStar

Exhibit 34
Summary of the Competitive Market by Area and Implication to the Subject Areas

ID	Community Name	Submarket	Year Built	% Leased	Total Units	Unit Size Range	Weighted Average Unit Size	Absolute Effective Rent Range	Weighted Average Rent	Weighted Average $/SF	Percent Less than 2B/2b
1	Villages at Carver	North of Airport	2001	98%	667	698 1,625	1,032	$940 $4,315	$1,529	$1.48	21%
2	Brookside Park	North of Airport	2005	95%	237	830 1,335	1,102	$970 $1,445	$1,302	$1.18	24%
3	Park at the Marketplace	North of Airport	2006	85%	350	741 1,399	1,034	$1,139 $1,694	$1,322	$1.28	48%
4	Meridian at Redwine	North of Airport	2015	96%	258	643 1,502	1,029	$1,133 $1,710	$1,386	$1.35	40%
5	Pad on Harvard	North of Airport	2017	100%	109	535 1,080	843	$887 $1,730	$1,361	$1.61	35%
6	Atlantic Aerotropolis	North of Airport	2008	86%	269	655 1,553	1,006	$1,077 $2,243	$1,437	$1.43	39%

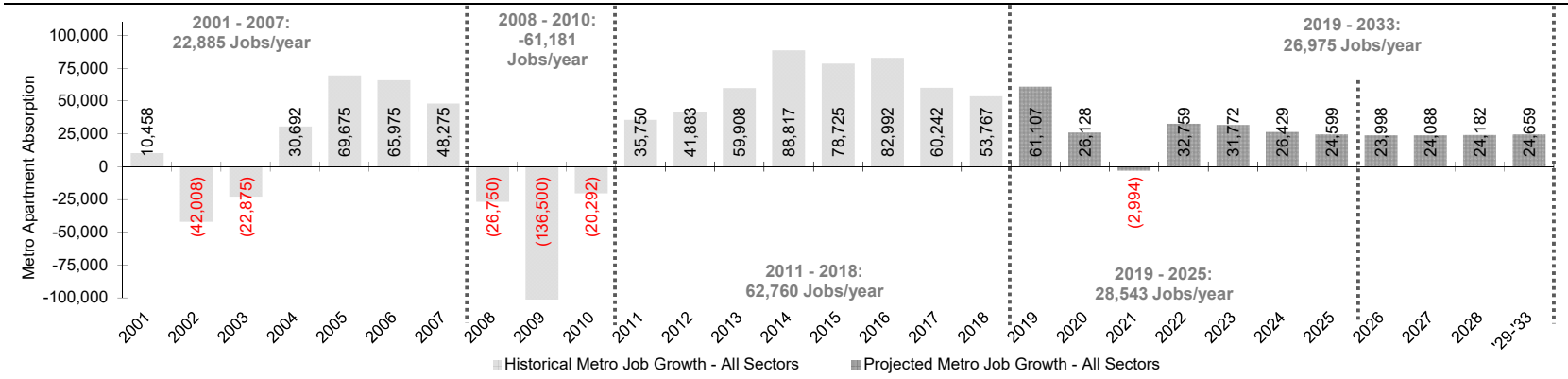
Market Average	2009	93%	315	684	1,416	1,008	1,024	2,190	1,390	$1.39	34%
2015 & Newer Product	2016	98%	184	589	1,291	936	1,010	1,720	1,374	$1.48	38%

This exhibit summarizes our findings. We've categorized data by the market average and product that was built in 2015 or later. These newer properties have a greater focus on units with less than 2 bedrooms, they're smaller in order to drive up the $ / SF number to increase project feasibility, and have weighted rents of $1.48, $0.09 more than the market average. The most modern and comparable product to that which could be built at Airport City is The Pad on Harvard, which is achieving rents of around $1.61/SF. With a well-executed master plan incorporating green space, trails, etc., rents at the subject site should be above to exceed those at The Pad.

SOURCE: Noell Consulting Group, CoStar

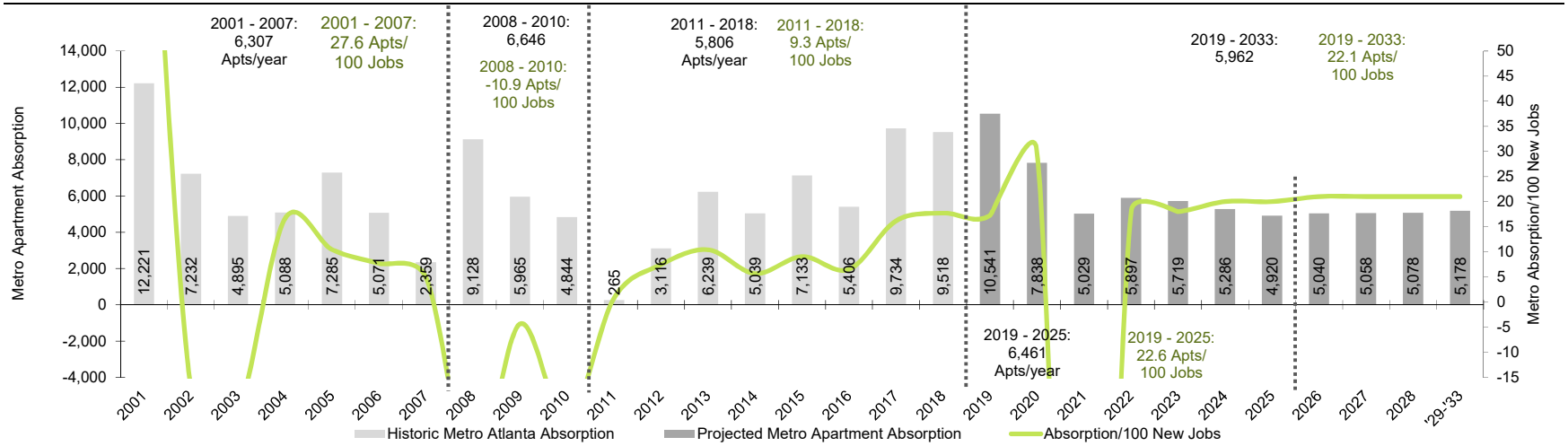
Exhibit 35
Historical and Projected Job Growth to Apartment Absorption Relationship in Metro Atlanta

METRO JOB GROWTH



Since the Great Recession the Atlanta jobs and apartment market have both been very strong. Since 2011 annual jobs growth in Metro Atlanta has averaged more than 64,000 with apartment absorption averaging close to 5,300 units annually, or 14.8 apartment units for every 100 net new jobs. Strong demographic headwinds will temper economic expansion in the coming years, with Metro Atlanta expected to average around 27,000 to 28,000 net new jobs annually in the coming five to ten years. The for-sale housing market will continue to perform modestly, allowing the rental market to maintain momentum. Overall we expect Metro Atlanta to average around 6,000 net new units through 2025, or about 22.1 per 100 net new jobs.

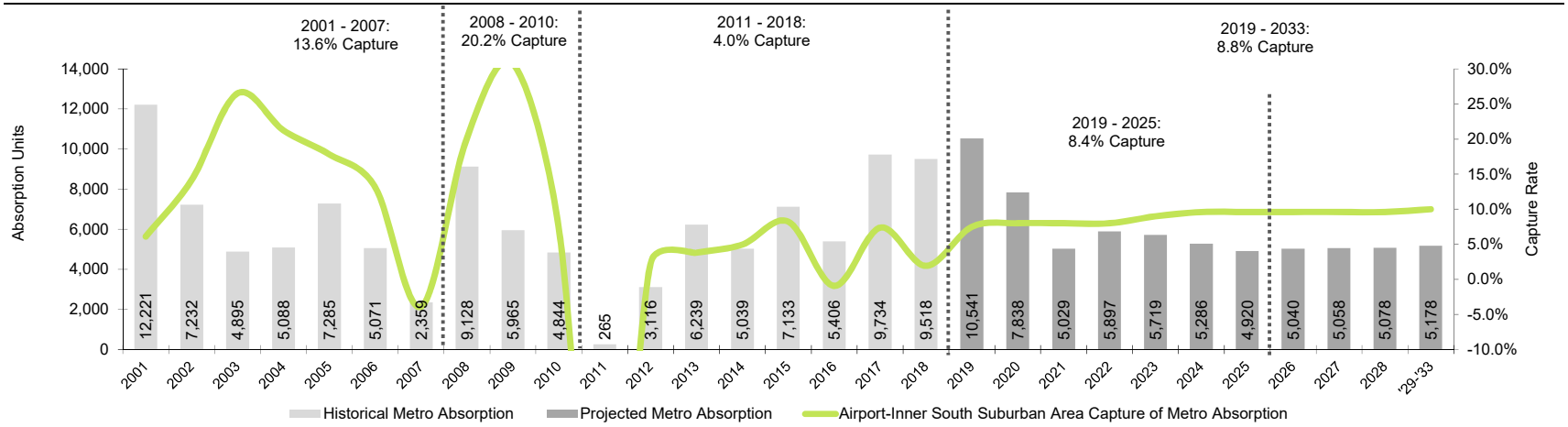
METRO CLASS A APARTMENT ABSORPTION



SOURCE: Noell Consulting Group, Costar and Moody's/Economy.com

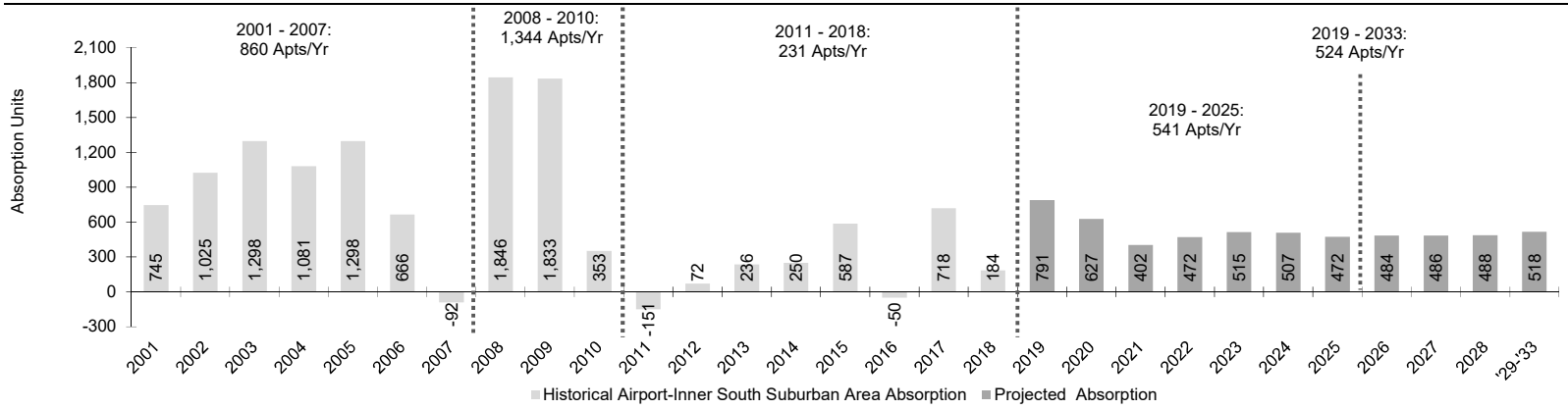
Exhibit 36
Airport Area Capture of Metro Class A Apartment Absorption

METRO CLASS A APARTMENT ABSORPTION AND AIRPORT-INNER SOUTH SUBURBAN AREA CAPTURE



The Airport Area, which includes the tri-cities and South Fulton to the west, has been a relatively quiet rental apartment market since the Great Recession, averaging just 231 average annual units absorbed since 2011. This rate equates to a 4.0% capture, a significant drop from the previous cycle average capture of 13.6%. We believe the redevelopment efforts being seen around the airport in areas such as College Park and Hapeville, will result in a moderate increase in capture to around 8.4% through 2033. This equates to an approximate 524 annual supportable units in this area, with the bulk of demand being north of the airport.

AIRPORT-INNER SOUTH SUBURBAN AREA CLASS A APARTMENT ABSORPTION

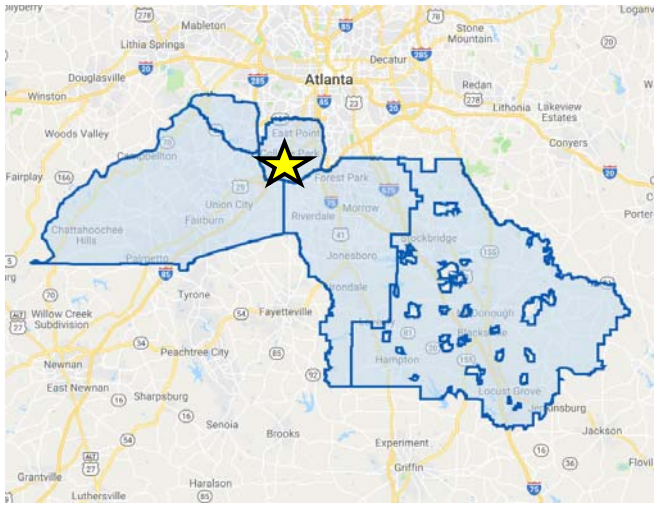


SOURCE: Noell Consulting Group and Costar

Exhibit 37
Airport Area Apartment Supply and Demand Analysis

	'01-'18 Average	'11-'18 Average	2018	FORECAST 2019	2020	2021	2022	2023	2019- 2023 Average	2024- 2033 Average
Employment Growth in the Metro	26,596	62,760	53,767	61,107	26,128	-2,994	32,759	31,772	29,754	25,675
Projected Jobs to New Apt. Absorption In Metro	23.1	9.3	17.7	17.3	30.0	-168.0	18.0	18.0	23.5	20.2
Est. Supportable New Apt Absorption in Metro	**6,141**	**5,806**	**9,518**	**10,541**	**7,838**	**5,029**	**5,897**	**5,719**	**7,005**	**5,183**
Airport-Inner South Suburban Area Capture of Metro	**10.8%**	**4.0%**	**1.9%**	**7.5%**	**8.0%**	**8.0%**	**8.0%**	**9.0%**	**8.0%**	**9.56%**
Est. Supportable New Apt Absorption Airport-Inner South Suburba	**661**	**231**	**184**	**791**	**627**	**402**	**472**	**515**	**561**	**496**

Airport/Inner South Suburban Atlanta Area



						Total Units	
Subject Area Capture	-	-	10%	10%	10%		15%
Potential Subject Area Absorption	-	-	40	47	51	139	743
GRAND TOTAL, 2019 - 2033							**882**

- While much of the Airport City area is within the flight contours and ineligible for residential development, areas on the north side of the site and to the west around the golf course represent solid targets for multifamily development.
- Assuming adequate land exists outside of the noise contours, we believe demand could be strong, approaching 880 units through 2033.
- This demand is predicated on the creation of a strong mixed-use project with green space and trail systems, and solid placemaking on-site.
- The subject site, in those conditions, could appeal to not only convenience-based renters seeking airport/ work proximity, but also to those valuing lifestyle and an intown location.

1/ Employment growth from Economy.com

2/ Noell Consulting Group analysis based on larger analysis and trends of the market.

3/ The Airport Area submarket is shown above

SOURCE: Noell Consulting Group, CoStar, and Moody's.

Noell Consulting Group

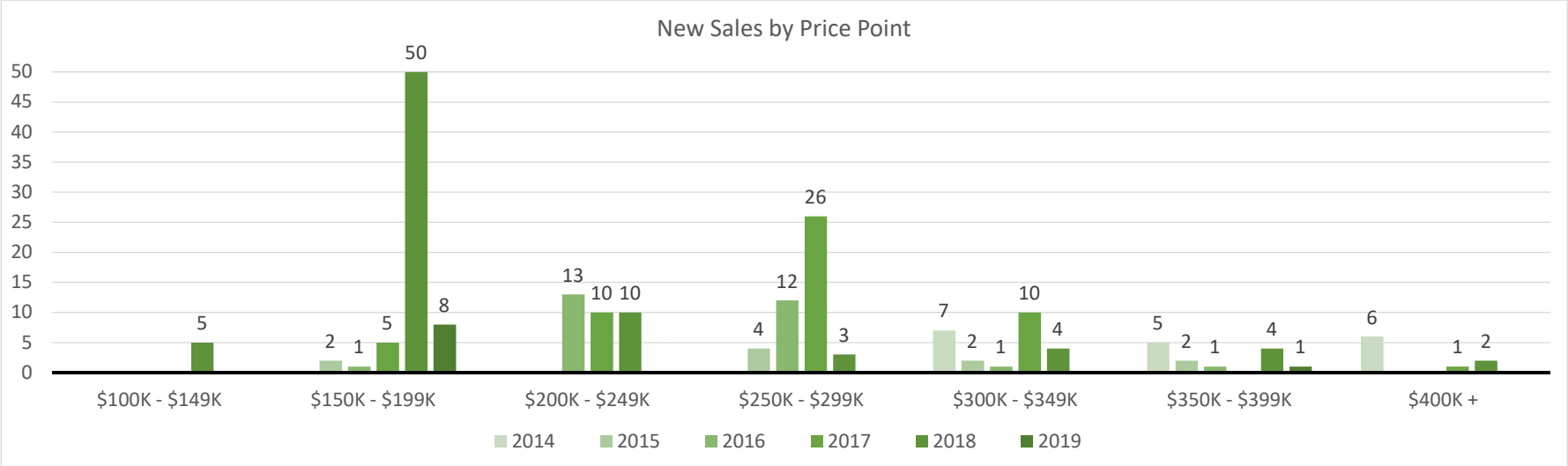
For-Sale Analysis

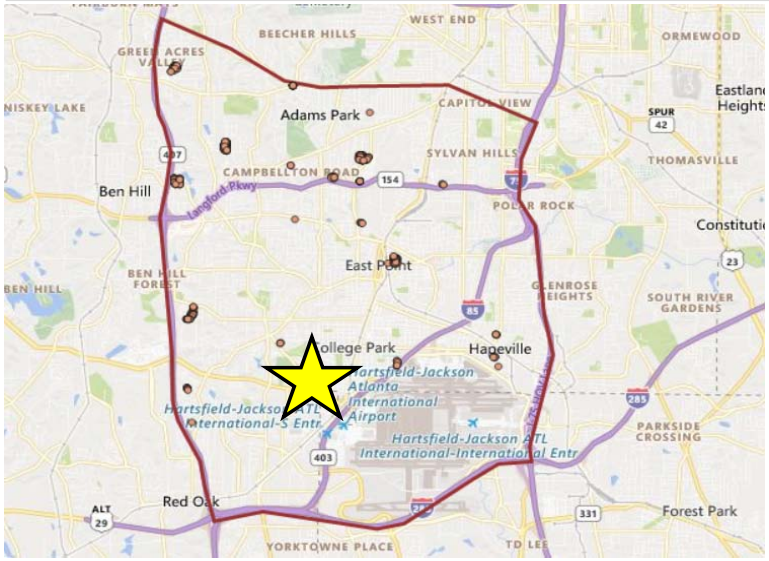
Exhibit 38
Conventional For-Sale Product Matrix for the Southeast US (Excludes Condominiums)

Product Type	Example	Description	Typical Units/Acre	Typical Acreage	PSF Value Needed	Minimum Sales Price	Average Household Income	Typical Dev. Cost Per Unit	Typical Raw Land Value Per Unit	Typical Raw Land Value Per Acre
Luxury Townhomes		3-4 Stories, typically 22'-28' widths, 2-car garage, rooftop	6-12	4-15	$275/SF+	$715,000	$175k+	$572,000	$143,000	$1.1M
Urban/Micro Townhomes		3-4 Stories, typically 12'-18' widths, surface or tandem garage	12-25	0.5 to 15	$200/SF+	$280,000	$70k+	$224,000	$42,000	$750k
Conventional Townhomes		3-4 Stories, typically 18'-24' widths, 2-car garage sometimes w/yard	6-12	10+	$175/SF+	$315,000	$80k+	$252,000	$63,000	$570k
Attached Patio Homes		1-2 Stories, often duplexes or quads, w/2-car garage	6-10	10 to 20	$135/SF+	$200,000	$50k+	$160,000	$40,000	$320k
Entry-Level Townhomes		2 Stories, typically 12'-16' widths, surface parking	8-12	10 to 20	$100/SF+	$150,000	$35-45k	$120,000	$15,000	$150k
Small Lot SFD		1-2 Stories, lot widths of 40' to 50', garage sometimes detached w/yard	4-6	10+	$150/SF+	$240,000	$60k+	$192,000	$43,200	$215k
Conventional SFD		2-3 Stories, lot widths of 60' to 80', attached garage typically front loaded	3-5	15+	$125/SF+	$275,000	$70k+	$220,000	$49,500	$200k

SOURCE: Noell Consulting Group

Exhibit 39
New Home Sales in the Southwest Perimeter Area





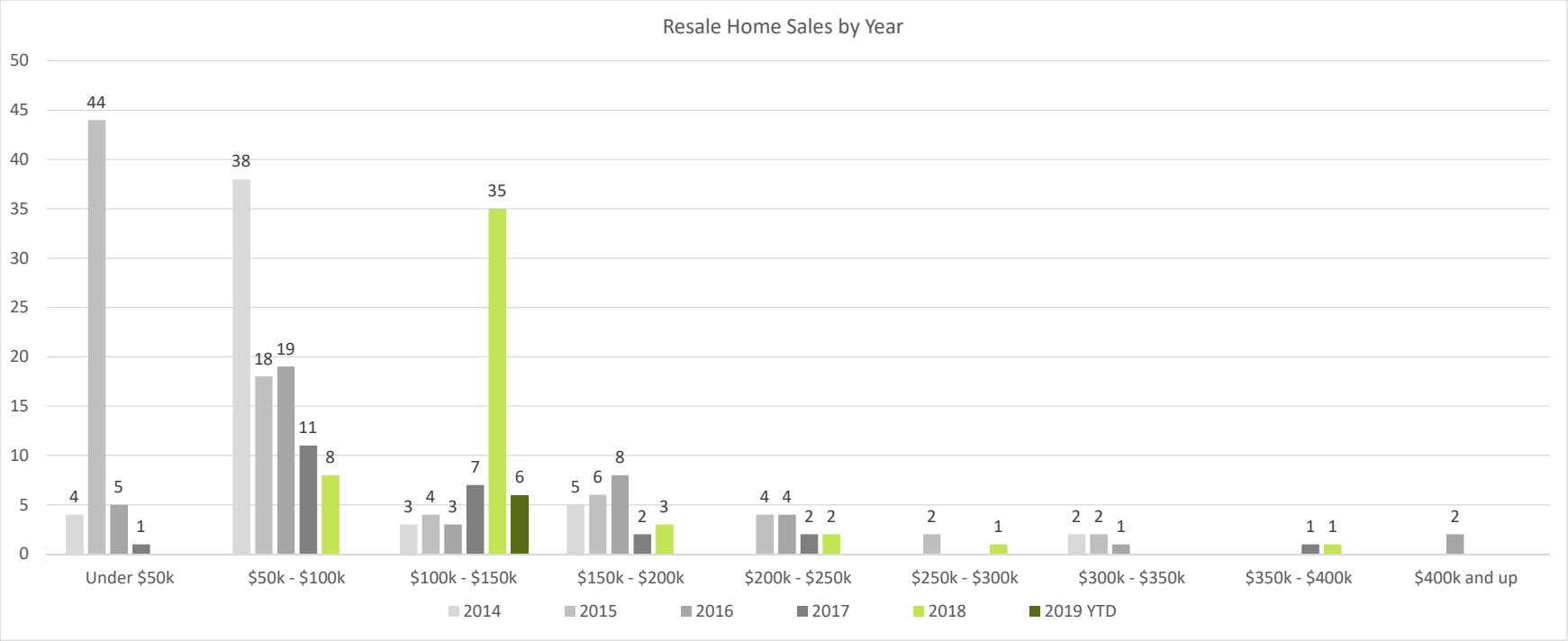
New home sales in the Southwestern ITP Area (which includes southwest Atlanta, College Park, East Point, and Hapeville) has been relatively light coming out of the Great Recession, but has gained significant momentum in the last few years, with nearly 80 new homes sold in this area in 2018 alone. That pace is nearly triple that seen in 2016 and eight times higher than the sales volume in 2015.

Home prices have been moderate, with around half being below $250,000 and only around 11% being priced above $350,000. Encouraging, though, is that more than one-third of these home sales are priced below $200,000, a relatively affordable price point for new homes inside the Perimeter.

Of note, only 9 new townhouse sales have been recorded in the area since 2014, most below $250,000. This said, pretty much all of these sales, attached or detached, have occurred in non-amenitized communities, a real opportunity for the subject property to exceed the quality and offerings of the competitive market.

Source: NCG, Metrostudy

Exhibit 40
Resale Home Sales in Southwestern ITP Area

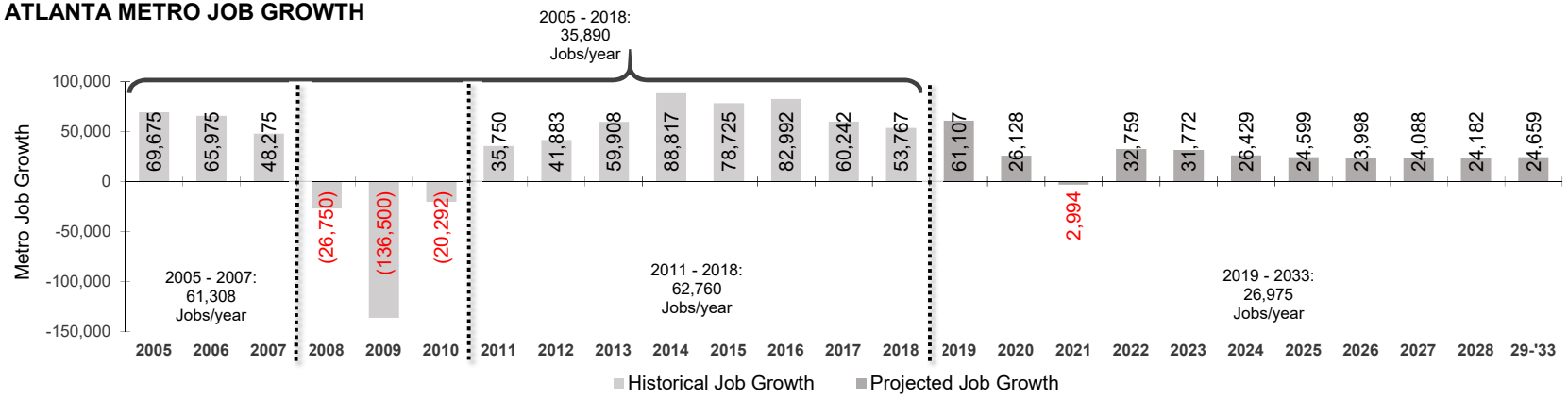


Resales in the Southwestern ITP Area have largely been on the affordable end, with more than half occurring below $100,000 and less than 10% occurring above $200,000. Encouraging, however, is the shift in home prices when examined by year, with roughly 80% of resale home sales in 2014 and 2015 occurring below $100,000, a number that has dropped to only 14% in 2018 and 2019 to date. This indicates a significant stabilization of the area housing market and, when combined with the increase of new home sales, indicates an economic revitalization occurring throughout the Southwest ITP area.

Source: NCG, Metrostudy

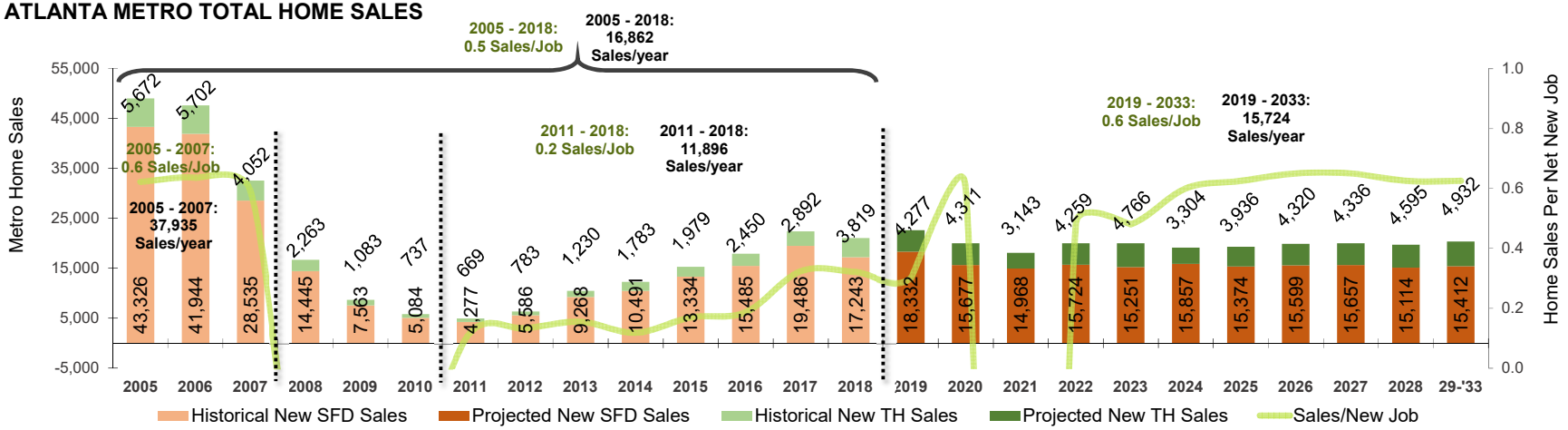
Exhibit 41
Historical and Projected Job Growth to Total Home Sales Relationship in the Atlanta Metro

ATLANTA METRO JOB GROWTH



This exhibit tracks the relationship between Metro Atlanta job growth and total home sales. Pre-recessionary Metro Atlanta saw roughly 43,000 new home sales annually (detached and townhouses combined), dipping to around 10,400 annually during the recession, with much of the sales driven by investor acquisitions of distressed property. While the economy has rebounded since 2011, home sales have yet to return to pre-recession norms, averaging only 19,200 annually since 2011. This has been due both supply and demand side issues, with many younger buyers foregoing home ownership and construction costs and high land values in desirable areas limiting new construction activity.

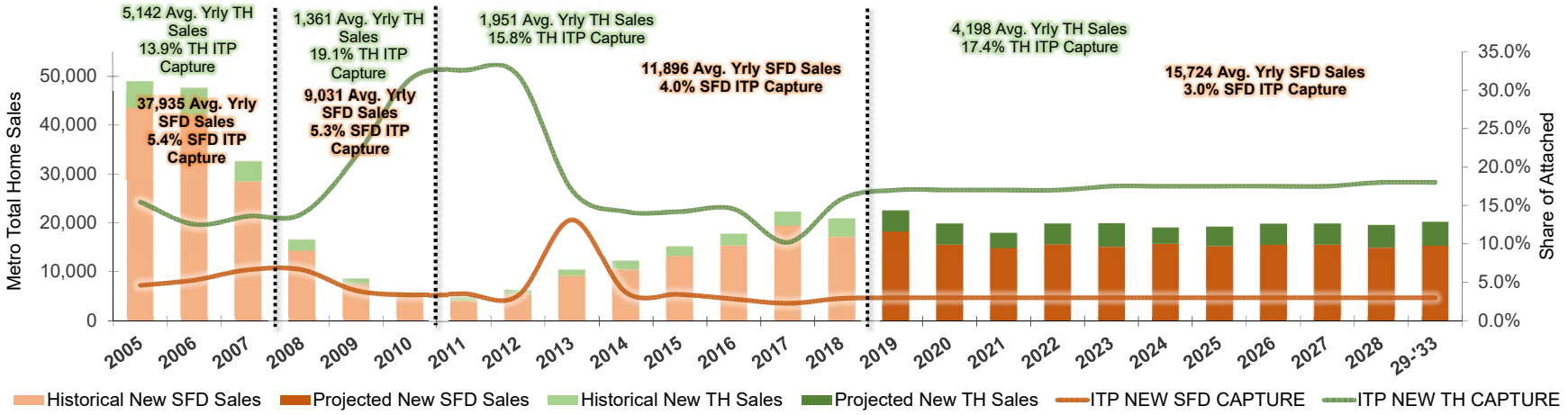
ATLANTA METRO TOTAL HOME SALES



SOURCE: Noell Consulting Group, Metrostudy and Economy.com | Moody's Analytics

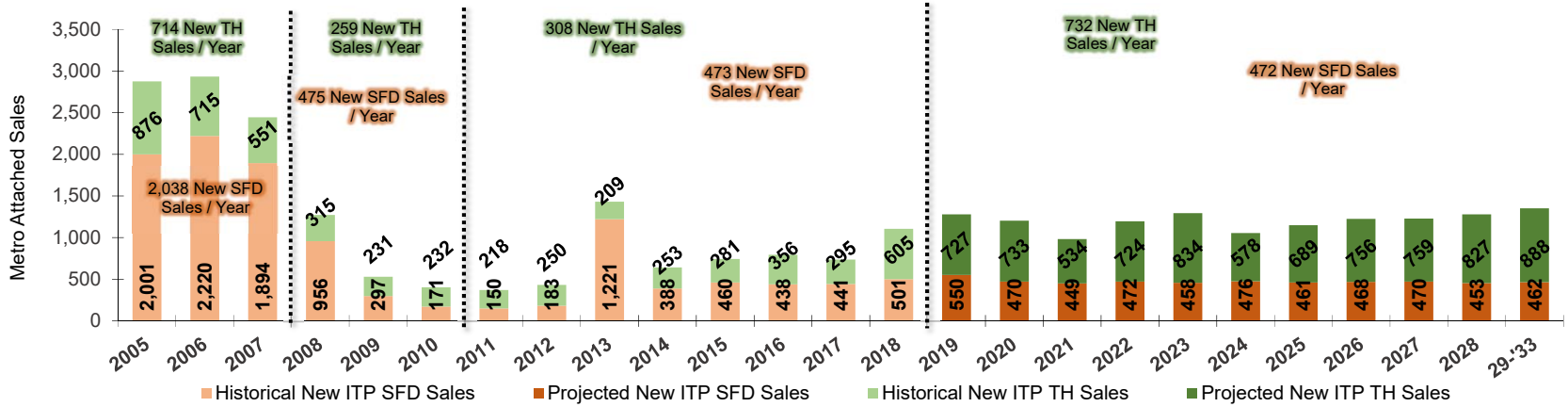
Exhibit 42
Atlanta Metro Total Home Sales Inside the Perimeter (ITP) Capture

ITP CAPTURE OF ATLANTA; NEW TOWNHOUSE AND SINGLE FAMILY DETACHED SALES



As noted previously, shifting demographic patterns and preferences for intown living left the ITP area much better prepared to weather the housing downturn of the late 2000s and early 2010s. While weathering the downturn, home prices inside the Perimeter have increased significantly, tempering demand and sales since then and resulting in modest decreases in captures. Going forward, we believe the ITP area will see increasing capture rates while detached single-family construction will remain moderate given the high costs of infill housing and limited areas in which to infill.

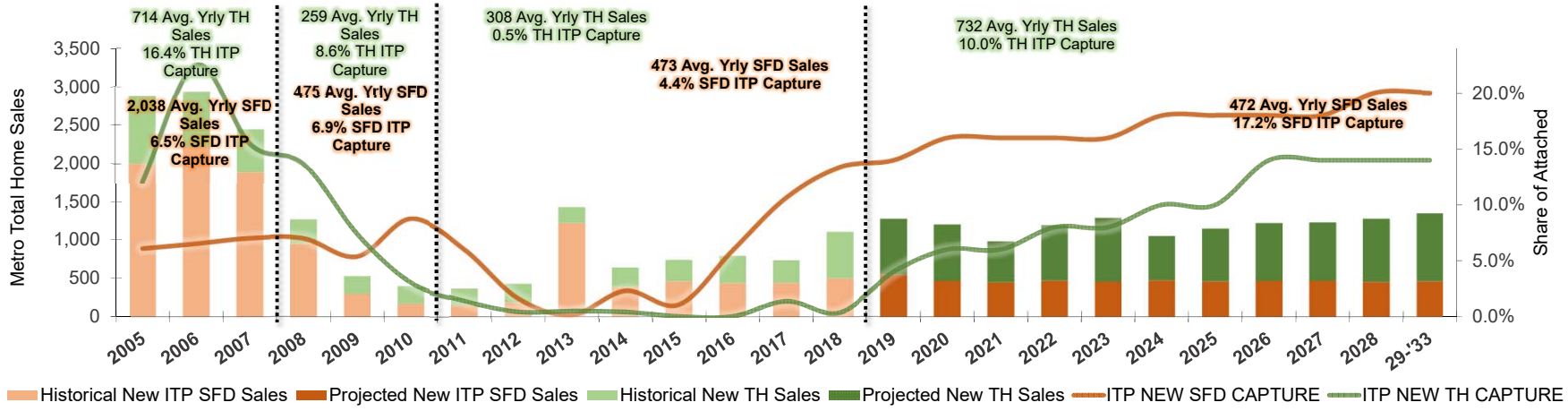
ITP NEW TOWNHOUSE AND SINGLE FAMILY DETACHED SALES



SOURCE: Metrostudy

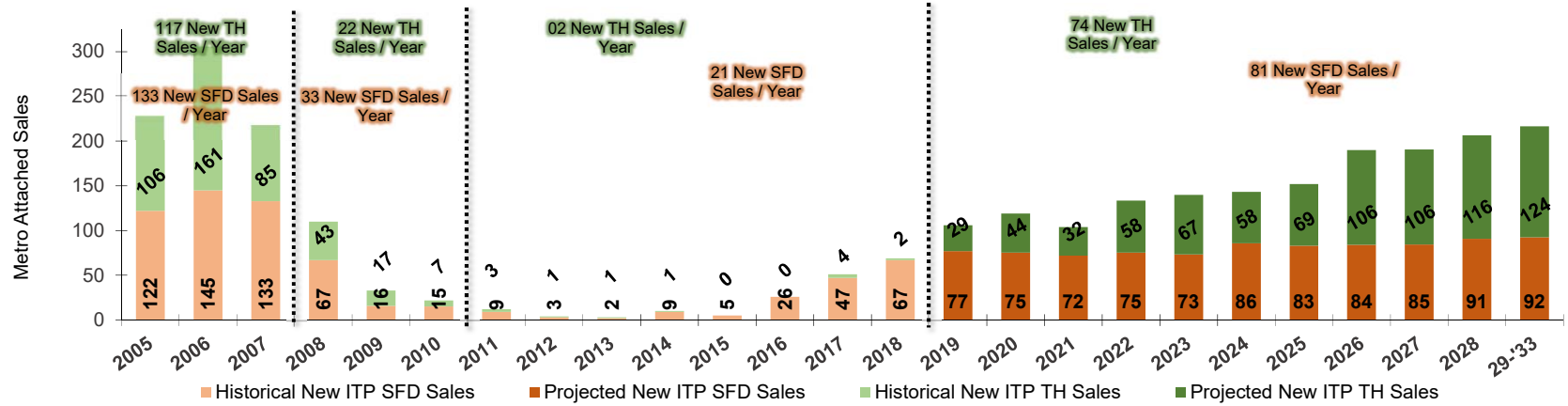
Exhibit 43
Southwest ITP New Home Sales Capture

SW ITP PMA CAPTURE OF ITP; NEW TOWNHOUSE AND SINGLE FAMILY DETACHED SALES



NCG defined a Primary Market Area for the Airport City that focuses in on the Southwest portion of the larger ITP market (see map on the following page). We believe this area is well positioned to gain market share, particularly for single-family housing, given its relative value to areas north within the Perimeter, it's lower to moderate crime rates and small town charm and walkability. Based on our analyses we believe the area can sell around 74 new townhouses annually and around 81 single-family homes annually through 2033.

SW ITP PMA NEW TOWNHOUSE AND SINGLE FAMILY DETACHED SALES

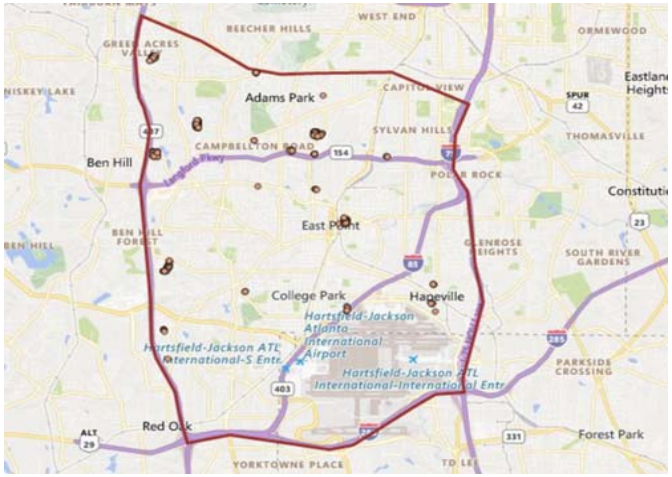


SOURCE: Metrostudy

Exhibit 44
Airport City For-Sale Residential Demand Capture

	2005-2018 Average	2011-2018 Average	2019	2020	2021	2022	2023	2024-2033 Average
Employment Growth in the Metro[1]	35,890	62,760	18,332	15,677	14,968	15,724	15,251	24,659
Jobs / Home Sales in Metro Per New Job	0.47	0.19	0.30	0.60	-5.00	0.48	0.48	0.63
Detached Home Sales in Metro	16,862	11,896	18,332	15,677	14,968	15,724	15,251	15,466
Attached Home Sales in Metro	2,508	1,951	4,277	4,311	3,143	4,259	4,766	4,515
Detached Home Sales ITP	809	473	550	470	449	472	458	464
Detached Home Sales ITP Capture of Metro	5%	4%	3%	3%	3%	3%	3%	3%
Attached Home Sales ITP	385	308	727	733	534	724	834	805
Attached ITP Capture of Metro	15.3%	15.8%	17.0%	17.0%	17.0%	17.0%	17.5%	17.8%
Detached Home Sales PMA	**48**	**21**	**77**	**75**	**72**	**75**	**73**	**89**
Detached Home Sales PMA Capture of ITP	5.9%	4.4%	14.0%	16.0%	16.0%	16.0%	16.0%	19.2%
Attached Home Sales PMA	**31**	**2**	**29**	**44**	**32**	**58**	**67**	**108**
Attached Home Sales PMA Capture of PMA	8.0%	0.5%	4.0%	6.0%	6.0%	8.0%	8.0%	13.4%

Airport City Capture of PMA								
Detached			5%	5%	5%	5%	5%	5%
			4	**4**	**4**	**4**	**4**	**4**
Attached			10%	10%	10%	10%	10%	10%
			3	**4**	**3**	**6**	**7**	**11**



SOURCE: Noell Consulting Group, Metrostudy

Total Supportable Units	
Detached	**63**
Attached	**131**

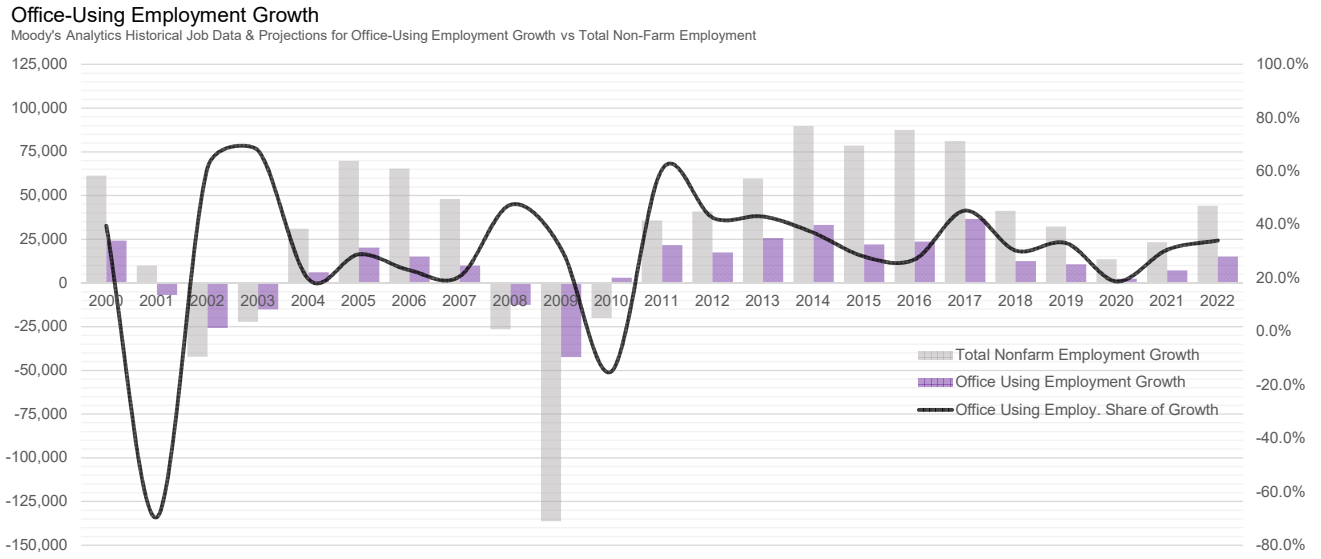
We believe areas around Hartsfield airport, including College Park, Hapeville and East Point are primed for signifcant upside in housing development. These areas enjoy a heightened sense of walkability relative to other southern suburbs, and enjoy superior access to employment, including airport-area employment, and opportunities in Midtown and Downtown Atlanta.

While airport noise contours do limit residential development in much of the study area, we believe there is more than adequate demand for new for-sale detached and attached housing, with demand for each exceeding 140 units in the coming 15 years. As noted, placemaking, walkability, green space and parks all will play a role in meeting this demand potential.

Noell Consulting Group

Office Analysis

Exhibit 45
Overview of Atlanta MSA Growth by Industry Type



Industry Sectors	Total Growth '11-'17	Capture of Growth	Percent Change '11-'17	Total Projected Growth '18-'22	Capture of Growth	Percent Change '18-'22
Natural Resources & Mining	433	0.1%	31.7%	75	0.0%	4.2%
Construction	29,521	6.2%	32.0%	16,253	10.5%	13.3%
Manufacturing	19,357	4.1%	13.5%	-4,310	-2.8%	-2.7%
Wholesale Trade	20,242	4.3%	14.0%	7,413	4.8%	4.5%
Retail Trade	35,936	7.6%	14.3%	7,073	4.6%	2.5%
Transportation, Warehousing, & Utilities	25,502	5.4%	20.6%	5,106	3.3%	3.4%
Information	**23,666**	**5.0%**	**31.3%**	**1,512**	**1.0%**	**1.5%**
Financial Activities	**24,087**	**5.1%**	**16.2%**	**5,651**	**3.7%**	**3.3%**
Professional & Business Services	**132,548**	**28.0%**	**34.4%**	**40,756**	**26.3%**	**7.9%**
Education & Health Services	81,750	17.3%	31.1%	32,527	21.0%	9.4%
Leisure & Hospitality	74,766	15.8%	33.8%	29,282	18.9%	9.9%
Other Services (except Public Administration)	5,912	1.2%	6.3%	1,430	0.9%	1.4%
Government	-237	0.0%	-0.1%	11,998	7.8%	3.6%
Total	**473,483**	**100%**	**20.8%**	**154,766**	**100%**	**5.6%**
Office Using Industries	180,301	38.1%	29.6%	47,918	31.0%	6.1%

SOURCE: Noell Consulting Group, Moody's Analytics

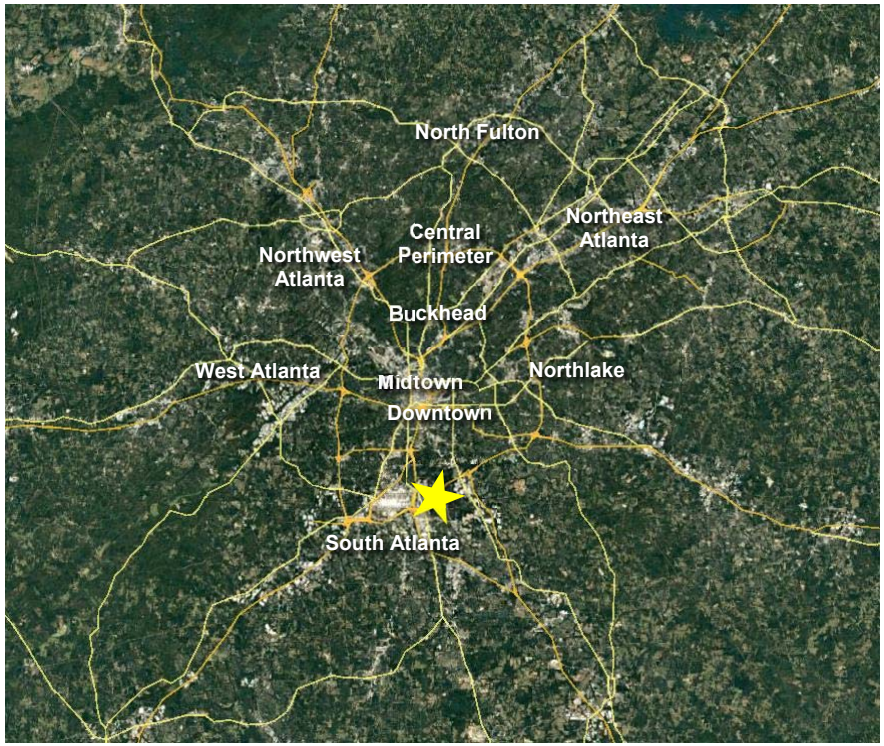
This exhibit highlights the growth of office-using employment in the Atlanta metro area. Office-using employment includes three major sectors as defined by NAICS: Information, Financial Activities, and Professional & Business Services. While not all jobs in these sectors are employed at offices and some office-using jobs are found in other sectors (notably the health services sector which includes ambulatory / outpatient care services) these three sectors account for a significant portion of office users.

TAMI, which stands for technology, advertising, media, and information, is the sector driving much of the local, and national office development. These companies often seek "creative office" located in dynamic locations with access to multiple transportation options in order to attract and retain talent in an increasingly competitive labor market.

Of projects delivered since 2014 and currently under construction, almost all were driven by this sector - Ponce City Market is largely driven by technology and media firms, NCR recently built their headquarters in Midtown, Anthem Technology, a health services company, has a build-to-suit office delivering in 2020.

Airport City's more walkable mixed-use environment and MARTA proximity should appeal to future tenants seeking proximity to dynamic intown Atlanta locations, a young workforce, and access to nearby large universities.

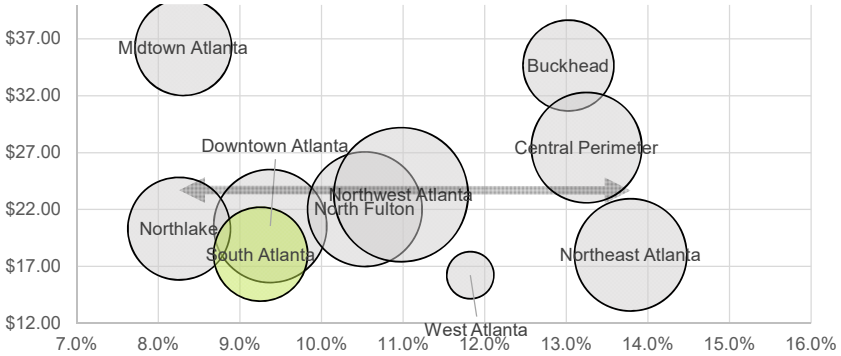
Exhibit 46
Atlanta Metro Office Market Summary



The Atlanta office market ended 2018 with a very healthy vacancy rate of 10.9% and total net absorption totaling a positive 2.5 million square feet. Over 3.0 million square feet of office space was delivered, with Midtown, Central Perimeter, and North Fulton accounting for 72% of all deliveries.

As with many cities, much of the construction activity and future pipeline is located in dynamic, urban markets w/ transit access and strong lifestyle amenities that allow tenants to attract and retain talent. The Midtown Atlanta market, which offers all these attributes, currently has the highest quoted rates at $36.27 / SF, lowest vacancy, and accounts for 24% of all absorption in the Metro market. By contrast, South Atlanta has had limited activity and has one of the lowest average quoted rates.

Atlanta Total Office Market Snapshot
Vacancy vs Average Quoted Rents w/ Trend Line



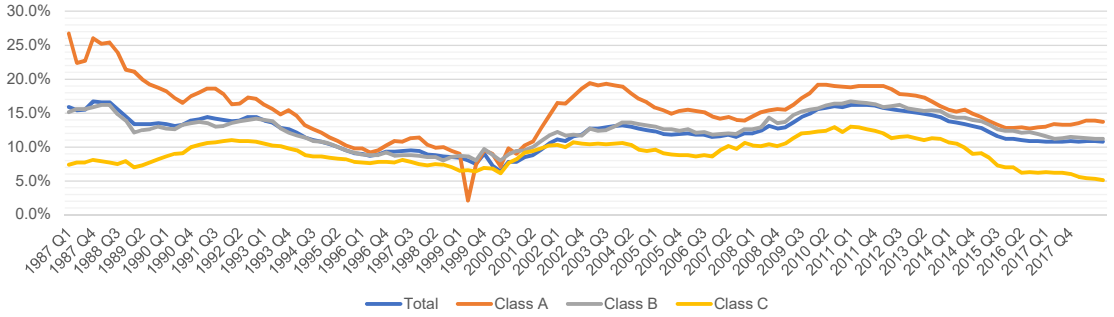
Atlanta Total Office Market Statistics - Year End 2018

Office Market	# of Buildings	Total Existing SF	Share of Office Market	Total Vacant SF	Current Vacancy Rate	Avg. Quoted Rates	Net Abs. (2018)	Share of Net Abs.	Fair Share Index of Absorption	Under Construction	2018 Deliveries
Buckhead	423	23,965,171	7.7%	3,121,744	13.0%	$34.66	20,239	0.8%	0.10	49,200	131,049
Central Perimeter	694	35,140,926	11.3%	4,655,757	13.2%	$27.44	446,187	17.8%	1.58	1,434,200	580,250
Downtown Atlanta	399	36,787,459	11.8%	3,447,313	9.4%	$20.54	451,536	18.0%	1.52	76,618	146,000
Midtown Atlanta	436	27,050,445	8.7%	2,246,978	8.3%	$36.27	602,629	24.0%	2.77	2,445,884	965,575
North Fulton	1,932	37,749,897	12.1%	3,975,226	10.5%	$22.02	329,784	13.2%	1.09	809,270	624,698
Northeast Atlanta	2,908	36,323,271	11.7%	5,008,435	13.8%	$18.01	(276,258)	-11.0%	-0.94	95,070	54,218
Northlake	2,356	30,399,397	9.8%	2,509,597	8.3%	$20.32	238,677	9.5%	0.98	308,000	104,000
Northwest Atlanta	3,284	51,634,083	16.6%	5,666,830	11.0%	$23.30	330,385	13.2%	0.79	97,296	260,841
South Atlanta	2,679	25,622,032	8.2%	2,370,904	9.3%	$18.07	245,265	9.8%	1.19	94,446	149,282
West Atlanta	930	6,668,116	2.1%	788,435	11.8%	$16.22	118,298	4.7%	2.20	37,610	19,433
Total	**16,041**	**311,340,797**	**100.0%**	**33,791,219**	**10.9%**	**$23.79**	**2,506,742**	**100.0%**		**5,447,594**	**3,035,346**

SOURCE: Noell Consulting Group, CoStar

Exhibit 47
Tracking Historic Vacancy and Rental Rates

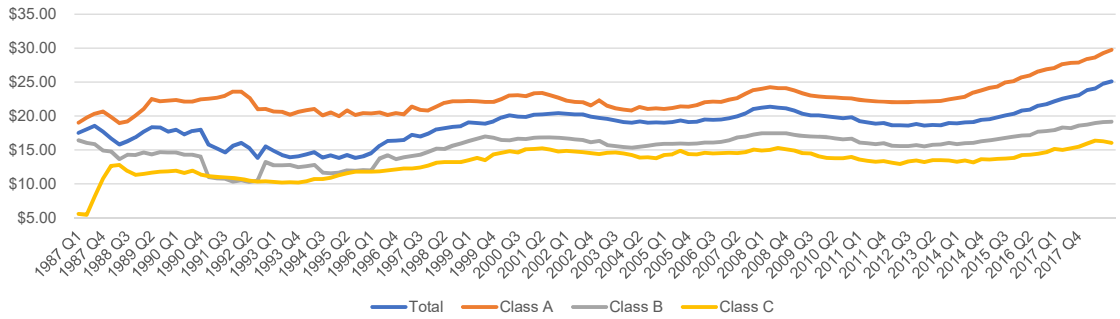
Vacancy Rates by Class
Tracking Quarterly Vacancy Rates Among All Class Types



Total office vacancy in the Atlanta market as of year-end 2018 was 10.8% tied for its lowest level since 2001. Strong absorption and tempered development activity has kept vacancy rates in check and rents on the upswing.

Class-A vacancies are currently at 13.7%, below the historic average of 15.6%, with the market having recovered significantly since the recession where vacancies were over 19%.

Rental Rates by Class
Tracking Quarterly Rental Rates Among all Class Types



The average quoted asking rental rate for available office space among all classes was $25.11 / SF at year end 2018. This was a 6.6% increase from year-end 2017.

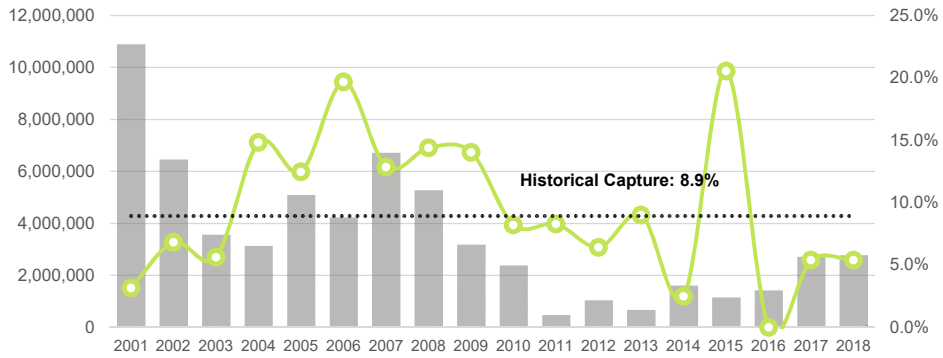
Class-A projects have seen 25 consecutive quarters of rent growth, with rents increasing over 35% over that time. This sustained growth in rents has been driven by job growth, relatively muted spec office development, and a lack of deliveries compared to historical averages. Average quoted rates within the Class-A sector were at $29.76 / SF at year-end 2017.

Source: NCG, CoStar

Exhibit 48
Office Deliveries by Submarket Cluster, 2000 - 2018

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Buckhead	1,540,543	975,635	0	163,137	31,000	278,276	655,000	880,918	1,087,871	917,555	0	0	47,500	125,000	0	141,517	755,605	-131,049	7,802,220
Buckhead Capture	14.1%	15.1%	0.0%	5.2%	0.6%	6.6%	9.7%	16.7%	34.2%	38.5%	0.0%	0.0%	7.1%	7.8%	0.0%	10.0%	27.9%	-4.7%	11.0%
Central Perimeter	112,938	987,913	915,411	44,588	204,969	0	59,150	529,455	0	0	0	620,000	0	0	578,000	613,926	36,118	580,250	6,852,421
Cent. Perimeter Capture	1.0%	15.3%	25.7%	1.4%	4.0%	0.0%	0.9%	10.0%	0.0%	0.0%	0.0%	59.8%	0.0%	0.0%	50.4%	43.3%	1.3%	20.9%	9.6%
Downtown Atlanta	0	365,240	22,546	179,845	327,689	41,141	578,507	27,060	3,700	4,687	0	0	0	20,431	4,733	0	0	146,000	2,378,538
Downtown Capture	0.0%	5.7%	0.6%	5.7%	6.4%	1.0%	8.6%	0.5%	0.1%	0.2%	0.0%	0.0%	0.0%	1.3%	0.4%	0.0%	0.0%	5.3%	3.3%
Midtown	2,254,422	874,509	486,993	548,259	735,669	129,464	1,065,103	296,000	541,789	762,804	0	31,500	0	618,859	81,629	125,186	144,000	965,575	9,229,321
Midtown Capture	20.7%	13.5%	13.7%	17.5%	14.4%	3.1%	15.8%	5.6%	17.0%	32.0%	0.0%	3.0%	0.0%	38.6%	7.1%	8.8%	5.3%	34.8%	13.0%
North Fulton	4,092,970	615,415	720,122	506,625	505,751	773,182	890,181	1,383,438	322,509	90,508	42,550	69,000	14,452	230,554	74,670	82,366	408,940	624,698	13,922,308
N. Fulton Capture	37.6%	9.5%	20.2%	16.2%	9.9%	18.3%	13.2%	26.2%	10.1%	3.8%	9.1%	6.6%	2.2%	14.4%	6.5%	5.8%	15.1%	22.5%	19.6%
Northeast Atlanta	1,144,186	768,565	513,558	508,081	1,214,479	1,085,255	959,229	670,373	258,683	178,804	57,009	12,200	404,476	12,000	45,014	46,040	57,944	54,218	9,512,674
NE Atlanta Capture	10.5%	11.9%	14.4%	16.2%	23.8%	25.6%	14.3%	12.7%	8.1%	7.5%	12.1%	1.2%	60.7%	0.7%	3.9%	3.2%	2.1%	2.0%	13.4%
Northlake	200,112	160,352	103,348	109,192	694,420	253,350	409,874	145,586	101,510	40,894	311,000	26,408	31,616	296,985	103,989	37,962	231,255	104,000	4,065,022
Northlake Capture	1.8%	2.5%	2.9%	3.5%	13.6%	6.0%	6.1%	2.8%	3.2%	1.7%	66.2%	2.5%	4.7%	18.5%	9.1%	2.7%	8.5%	3.8%	5.7%
Northwest Atlanta	1,045,002	1,231,824	572,291	519,776	684,245	660,844	949,418	525,422	388,618	154,004	14,508	131,888	108,397	170,000	22,726	357,610	912,485	260,841	9,670,459
NW Atlanta Capture	9.6%	19.1%	16.1%	16.6%	13.4%	15.6%	14.1%	9.9%	12.2%	6.5%	3.1%	12.7%	16.3%	10.6%	2.0%	25.2%	33.7%	9.4%	13.6%
South Atlanta	345,250	440,229	200,719	464,709	635,504	833,305	863,121	759,887	446,892	195,840	38,946	66,622	60,000	40,000	235,546	0	145,721	149,282	6,343,935
South Atlanta Capture	3.2%	6.8%	5.6%	14.8%	12.5%	19.7%	12.8%	14.4%	14.0%	8.2%	8.3%	6.4%	9.0%	2.5%	20.5%	0.0%	5.4%	5.4%	8.9%
West Atlanta	160,970	36,420	29,938	87,615	60,308	180,425	290,410	63,068	33,039	40,000	5,890	80,000	0	91,132	0	12,722	17,890	19,433	1,285,581
West Atlanta Capture	1.5%	0.6%	0.8%	2.8%	1.2%	4.3%	4.3%	1.2%	1.0%	1.7%	1.3%	7.7%	0.0%	5.7%	0.0%	0.9%	0.7%	0.7%	1.8%
Atlanta Office Market	10,896,393	6,456,102	3,564,926	3,131,827	5,094,034	4,235,242	6,719,993	5,281,207	3,184,611	2,385,096	469,903	1,037,618	666,441	1,604,961	1,146,307	1,417,329	2,709,958	2,773,248	71,062,479

Total Deliveries & South Atlanta Submarket Cluster Capture



The South Atlanta Submarket Cluster, which includes the Airport/North Clayton area, accounted for 8.9% of all Class A & B office deliveries since 2000 according to data from CoStar. Since coming out of the recession in 2011 the market has delivered roughly 736k SF of Class A & B office space, primarily driven by Porsche's move into the market.

The Airport/N. Clayton area has been relatively quiet through this period, seeing around 375k SF of deliveries since 2011, with Porsche being more than half of that space (225k SF). Net absorption during that 8+ year period has totaled around 460,000 SF, or around 51,000 SF annually.

SOURCE: Noell Consulting Group, CoStar

Noel Consulting Group

Exhibit 49
Office Comparables

ID	Property Name / Address	Year Built	Floors	Size	Rent Type	Rent Per SF	Vacancy Rate
1	**Buggy Works Bldg. 100** 1513 E. Cleveland Ave.	2003	3	48,936	Mod. Gross	$22.50	13.4%
2	**Buggy Works - J. Station** 1526 E. Forrest Ave.	2003	4	70,000	Mod. Gross	$22.50	33.3%
3	**One Hartsfield Centre** 100 Hartsfield Centre Pky.	1990	8	150,085	Full Service	$25.50	10.7%
4	**Gate Center I** 4310 SkyTrain Way	2009	4	128,396	Full Service	$27.50	0.0%
5	**Gateway Center II** 4310 SkyTrain Way	2019	2	51,272	NNN	$27.50	47.0%
6	**Waterstone** 4751 Best Rd.	1987	4	92,673	Full Service	$28.00	6.8%
7	**Two Crown Center** 1745 Phoenix Blvd.	1982	5	87,384	Full Service	$17.50	8.7%
8	**South Pointe** 1691 Phoenix Blvd.	1988	3	66,120	Full Service	$18.00	6.8%
9	**1075 Inner Loop Rd.** 1075 Inner Loop Rd.	1976	4	120,000	Full Service	$20.50	24.5%
10	**Highwoods Center** 4220 International Pky.	1999	1	46,181	Full Service	$20.00	16.2%
11	**Southern Crescent Center II** 83 Upper Riverdale Rd.	2000	3	53,680	Mod. Gross	$15.75	58.1%
12	**Riverdale Medical Office Building** 34 Upper Riverdale Rd	2005	2	39,301	Mod. Gross	$19.50	58.6%
13	**Southlake Corporate Center** 3000 Corporate Center Dr.	1989	3	57,600	Full Service	$15.75	36.0%
14	**Spivey Station Physicians Center** 7823 Spivey Station Blvd.	2007	3	55,375	NNN	$21.50	7.3%

Source: NCG, CoStar

This exhibit highlights top of market office properties actively leasing within and near the study areas in order to assess the current local office market. The average quoted rents are strongest around Hartsfield-Jackson International Airport where airport proximity, MARTA connectivity, and nearby food and beverage exists in some combination to provide a compelling office proposition. Rents are primarily full service, although Gateway Center II and some others offer NNN leases, which places additional expenses onto the tenant. These expenses range from $5-$10 in the local market.

The average quoted rent of existing properties offering full service lease rates is $22.43 / SF, which are well below the $35-$40 / SF full service range that many developers indicate are needed to justify the new construction of Class A office properties. Gateway Center II, however, which recently delivered, was able to achieve these rents when you include pass thru expenses and this indicates in ability to attract new office construction if built within the right environment. Additional projects are actively trying to find tenants, with limited success, indicating office development around the airport is currently challenging, as the costs of new construction limit the discount the area can offer compared to highly amenitized urban locations in the nearby city of Atlanta market.

Exhibit 50
Summary of Economic and Demographic Trends and Conditions Around Major Airports in the US

	Los Angeles International	Miami International	Chicago O'Hare International	Phoenix Sky Harbor International	Charlotte Douglas International	Average, Other Markets	Atlanta Hartsfield Jackson International
Airport-Area Jobs > $40,000 Annually (3-Mile Radius)							
Total Jobs Within 3-Miles	90,210	41,276	65,288	92,622	17,692	61,418	42,635
Total Office Jobs	20,448	9,025	9,408	16,942	2,799	11,724	2,776
Share of Total Jobs in Airport Area	22.7%	21.9%	14.4%	18.3%	15.8%	18.6%	6.5%
Airport Area Capture of All Jobs	3.5%	4.4%	3.1%	11.8%	3.7%	5.3%	3.8%
Airport Area Capture of Jobs in Office-Using Sectors	4.0%	5.0%	1.9%	10.8%	2.2%	4.8%	1.1%
Airport Area Office Statistics (3-Mile Radius)							
Total Office SF	20,711,957	7,102,051	10,813,800	12,697,257	3,839,736	11,032,960	4,630,628
Total Metro Office Space	391,196,389	149,977,665	368,484,502	132,243,125	79,629,355	224,306,207	215,980,933
Airport Area Capture	5.3%	4.7%	2.9%	9.6%	4.8%	4.9%	2.1%
5-Mile Demographics							
Median HH Income	$70,791	$32,902	$70,459	$43,004	$45,540	$52,539	$36,963
% of HHs > $150,000	**21.1%**	**5.7%**	**15.3%**	**7.2%**	**7.3%**	**11.3%**	**3.3%**
2016 Enplanements	39,636,042	20,875,813	37,589,899	20,896,265	21,511,880	28,101,980	50,501,858

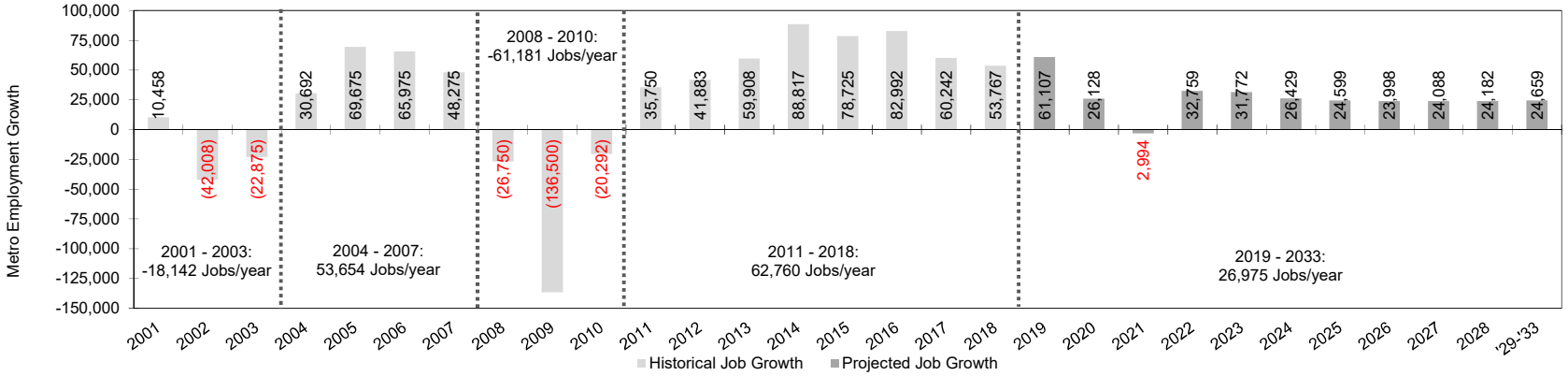
To understand the current status of the Airport area office market in Atlanta, NCG compared the area to five other larger airports in the US, focusing on those that have been in place (not relocated) in the last few decades. NCG examined factors from higher-paying jobs (those over $40,000 annually) to office market statistics to incomes of residents in the airport areas. Throughout these metrics NCG has found the area around Hartsfield has underperformed as an office market relative to its competitive peers, accounting for only around 2.1% of all metro space (vs. 5.5% average among this competitive set) and 1.1% of key office-using sectors in the region (vs. 4.8%). The most likely related factor is the lack of higher-end households around the airport, with only around 3.3% of all households within five miles having incomes above $150k. This is by far the lowest share of the five markets examined and accounts for a significant share of the lack of office space in the area.

SOURCE: Noell Consulting Group based on data obtained from Costar, Environics, and the US Census/Dept of Commerce

Exhibit 51

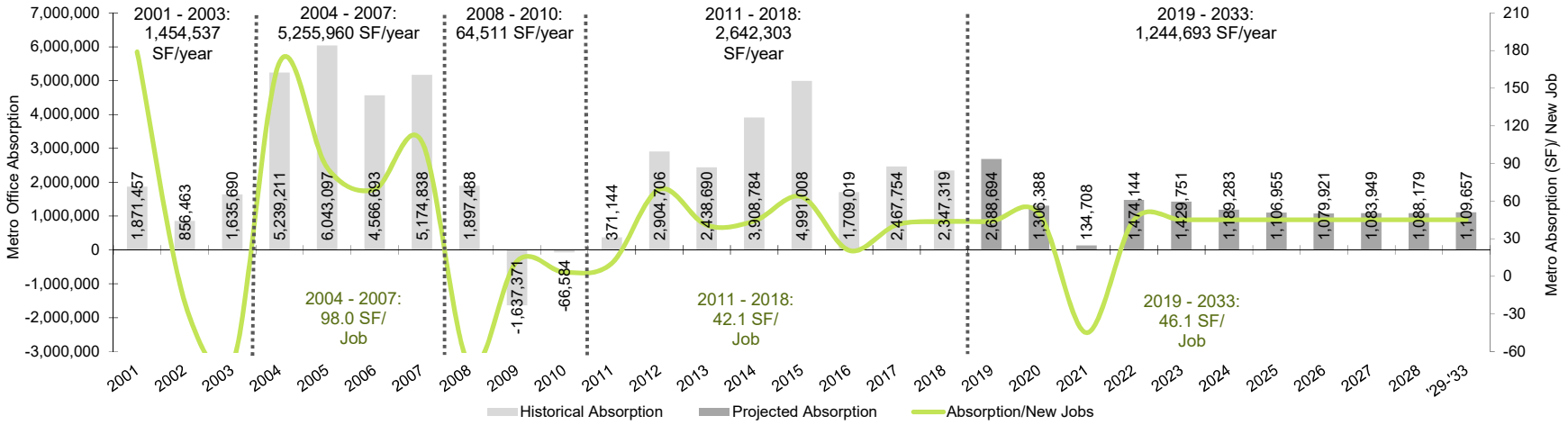
Metro Atlanta Employment Growth and Relationship to Metro Office Absorption

METRO JOB GROWTH



Atlanta's office market has been quite active since 2000, fueled by strong employment growth; growth increasingly shifting back into interior portions of the Metro. Since 2011, employment growth has been very strong, averaging around 64,000 jobs annually. This pace has been the strongest since the 1990s. Over the next five years, moderating employment growth nationally and regionally (due significantly to demographic factors) will lead to moderating office demand in the metro area. This, in addition to gradual declines in space utilization per employee, will slow office absorption relative to paces seen in previous cycles. Overall, we estimate the metro will absorb around 1.25MM SF annually through 2033.

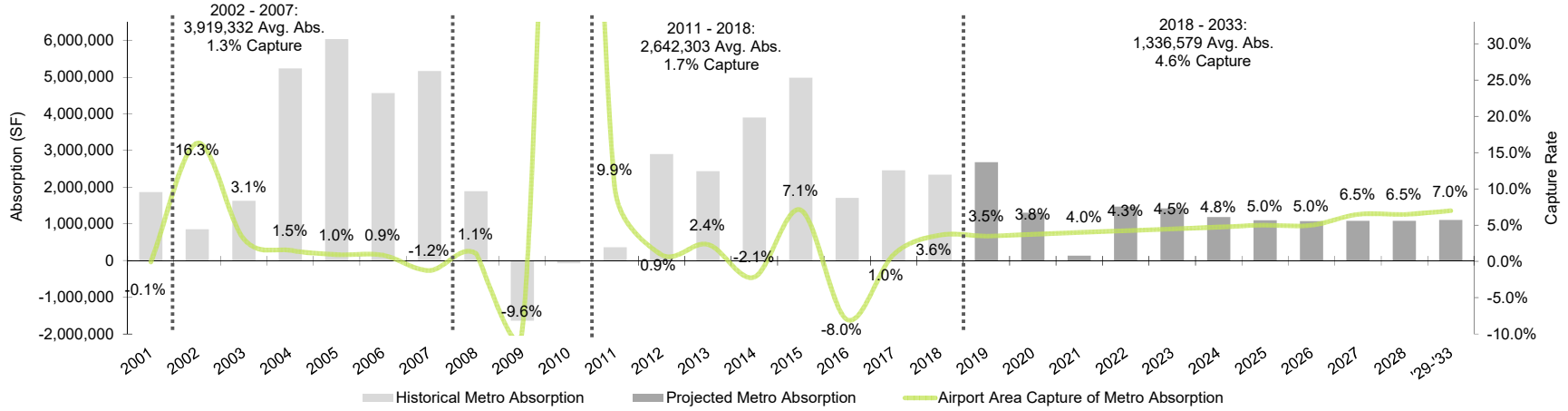
METRO CLASS A AND B OFFICE ABSORPTION



SOURCE: Noell Consulting Group, Costar and Economy.com | Moody's Analytics

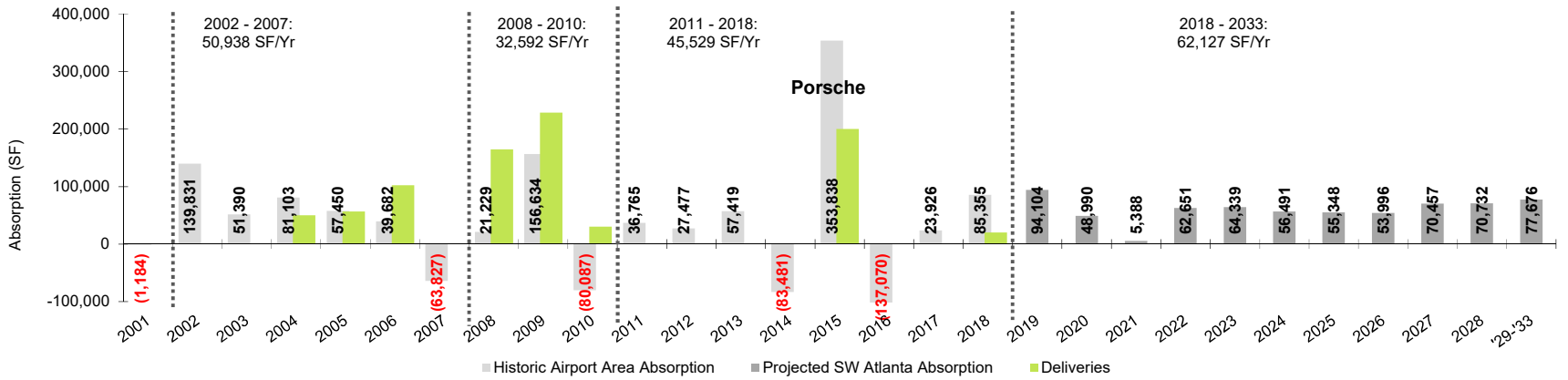
Exhibit 52
Airport Area Capture of Metro Atlanta Office Absorption

METRO OFFICE ABSORPTION AND AIRPORT AREA CAPTURE



Historically, the office market surrounding Hartsfield International Airport has performed quite modestly, accounting for 1.8% of the metro area's absorption since 2000. More recent investment, including the Porsche North American Headquarters, new hotels and planned on-site office space at Hartsfield, create the potential for the airport area to gain market share. To this, NCG looked at five major US airports to examine the performance of their airport-related office markets to their larger metro areas and found that, on average, these office markets capture around 5.5% of metro demand. Assuming a more aggressive capture in line with those areas, we estimate demand in the next eight years will average around 62,000 square feet annually.

AIRPORT AREA CLASS A&B OFFICE ABSORPTION



SOURCE: Noell Consulting Group and Costar

Exhibit 53
Estimated Demand for New Regional-Serving Office Space

	Average '01 - '18	2012	2013	2014	2015	2016	2017	2018	Average '11 - '18	2019	2020	2021	2022	2023	Average '19 - '23	Average '24 - '33
Metro Atlanta Employment Growth	26,596	41,883	59,908	88,817	78,725	82,992	60,242	53,767	66,619	61,107	26,128	-2,994	32,759	31,772	29,754	24,659
Metro Atlanta Office Absorption	2,595,523	2,904,706	2,438,690	3,908,784	4,991,008	1,709,019	2,467,754	2,347,319	2,966,754	2,688,694	1,306,388	134,708	1,474,144	1,429,751	1,406,737	1,109,657
Absorption per Net New Job	97.6	69.4	40.7	44.0	63.4	20.6	41.0	43.7	44.5	43.7	44.0	50.0	-45.0	45.0	47.3	45.0
Annual Airport Area Absorption	42,581	27,477	57,419	-83,481	353,838	-137,070	23,926	85,355	46,781	94,104	48,990	5,388	62,651	64,339	55,094	69,540
Capture of MSA	1.6%	0.9%	2.4%	-2.1%	7.1%	-8.0%	1.0%	3.6%	1.6%	3.5%	3.8%	4.0%	4.3%	4.5%	3.9%	6.3%
Airport City Capture @ 33%												**40%**	**40%**	**40%**	**40%**	**50%**
Airport City Absorption Potential												**2,155**	**25,060**	**25,736**	**17,650**	**34,770**
Airport City Supportable Five-Year Space Absorption															**88,252**	**173,851**
Market Conditions																
Occupied Space		4,486,858	4,486,640	4,413,019	4,772,744	4,653,365	4,677,291	4,762,292		4,856,396	4,905,386	4,910,774	4,973,425	5,037,764		
Vacant A/B Space		499,066	499,284	572,905	413,180	532,559	508,633	443,632		400,800	351,810	591,422	528,771	464,432		
Total Space		4,985,924	4,985,924	4,985,924	5,185,924	5,185,924	5,185,924	5,205,924		5,257,196	5,257,196	5,502,196	5,502,196	5,502,196		
Vacancy Rate		10.0%	10.0%	11.5%	8.0%	10.3%	9.8%	8.5%		7.6%	6.7%	10.7%	9.6%	8.4%		
Planned New Space										51,272	0	245,000	0	0		
Airport Mixed-Use												60,000				
Potential Hapeville MXD-Use Office												185,000				
Gateway Center II										51,272						
Airport Area Gross Absorption		244,988	191,110	116,185	425,897	103,586	203,741	147,791	204,757							
Less Net Absorption		217,511	133,691	199,666	72,059	240,656	179,815	62,436	157,976							
Potential Capture									12.5%			19,747	19,747	19,747	59,241	98,735
TOTAL DEMAND POTENTIAL																**420,079**

In the coming five years we believe the Airport Area will gain increased office momentum, as new lodging and Hartsfield investment further enhance the attractiveness of the area. Initially, this momentum is likely to be modest (average around 3.9% capture, or around 55,000 SF annually through 2023), but will gain momentum as new space is added at the airport and other potential opportunities emerge in the area. Based on an examination of other airports, we believe a capture closer to 6% of Metro demand is possible in the area, resulting in average absorption rates of around 70,000 SF annually, or up to 900,000 SF through 2033. Of this, we believe Airport City offers the strongest market position and should be able to capture around 33% of demand in the area, resulting in a five year demand potential of around 88,000 SF with up to 173,000 additional square feet by 2033. Of note: this is largely multitenant space and does not take into account build-to-suits, headquarters relocations, etc. which could create significant upside.

SOURCE: Noell Consulting Group, Costar, Economy.com

Airport City Master Plan
Traffic Analysis

Prepared for:
Long Engineering, Inc.

Prepared by:
Michael Baker International, Inc.

May 13, 2019

Michael Baker
INTERNATIONAL

Michael Baker
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TABLE OF CONTENTS

Michael Baker
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LIST OF TABLES

LIST OF FIGURES

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1.0 INTRODUCTION

The City of College park is pursuing a plan to redevelop portions of its property to the west of downtown. This area is largely unoccupied at the moment, awaiting development opportunities that are better described by the master plan this traffic study is associated with.

This traffic study examines the potential vehicular traffic volumes that may be generated by the development, their distribution to the surrounding roadway network, and the impacts of the influx of those vehicles.

1.1 Project Concept and Background Information

In recent years, there have been several studies that looked at the project area that falls within the City of College Park. These studies include, *College Park Transit Oriented Development (TOD) Plan and Market Feasibility Study (May 2012), College Park Redevelopment Plan – Tax Allocation District #1 Downtown and Airport Gateways (June 2015), College Park Livable Centers Initiative Investment Policy Studies (August 2017),* and *AeroATL Greenway Plan (November 2018),*

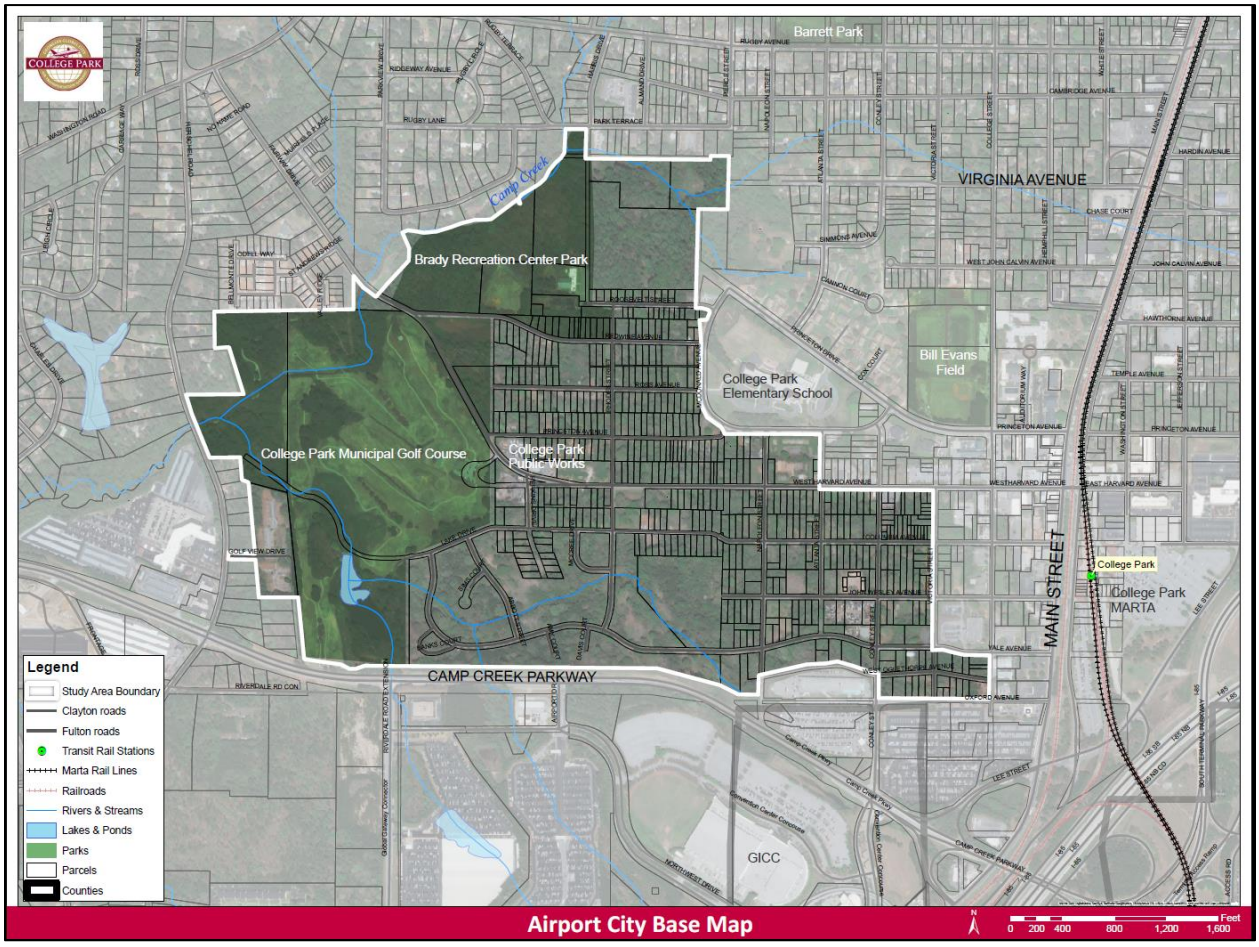
1.2 Study Area

The study area was established based on a preliminary assessment of potential project traffic impacts caused by the construction of the development and the nature and extent of the potential environmental impacts.

The boundaries of the traffic study area were based upon the limits of the potential redevelopment.

The study area is illustrated in Figure 1 and is a nonuniform shape and generally described as follows: Roughly bounded by Herschel Road to the west, Camp Creek to the north, College Park Elementary School and Victoria Street to the east, and SR-6/Camp Creek Parkway as the southern border. The study area encompasses approximately 0.6 square miles.

Figure 1: Study Area Map



Source: City of College Park

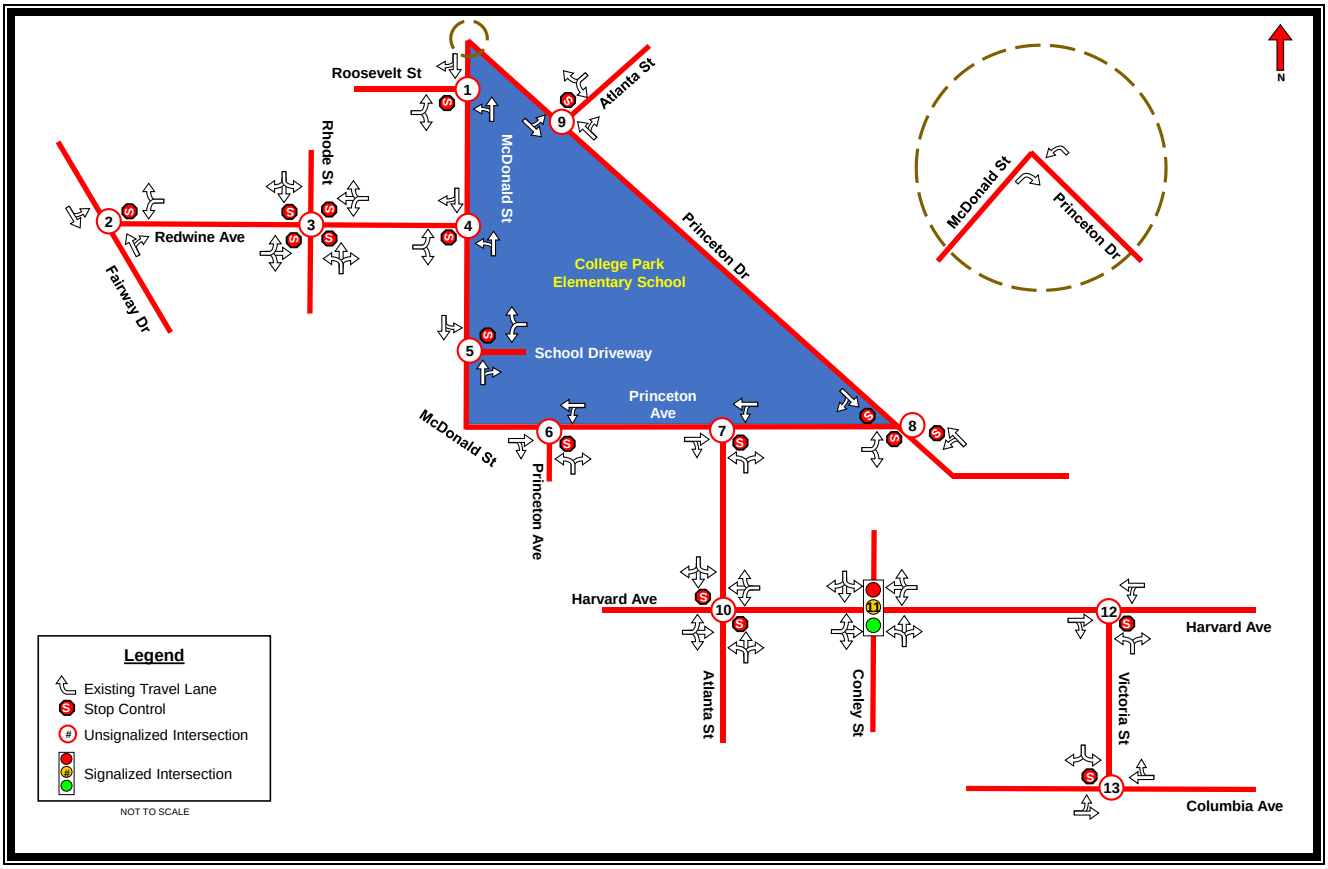
2.0 EXISTING CONDITIONS

This traffic study makes a careful analysis of existing conditions in order to compare the before and after construction results of vehicular impacts. This is a typical activity for all traffic studies, although it is noted that few vehicles currently traverse the study area along roadways other than Camp Creek Parkway.

2.1 Geometry and Traffic Control

A map of the study area intersections and existing geometry is shown in Figure 2 and Figure 3. Intersections were numbered for convenience rather than for ranking purposes.

Figure 2: Existing Geometry and Traffic Control (1 of 2)



Source: Michael Baker International

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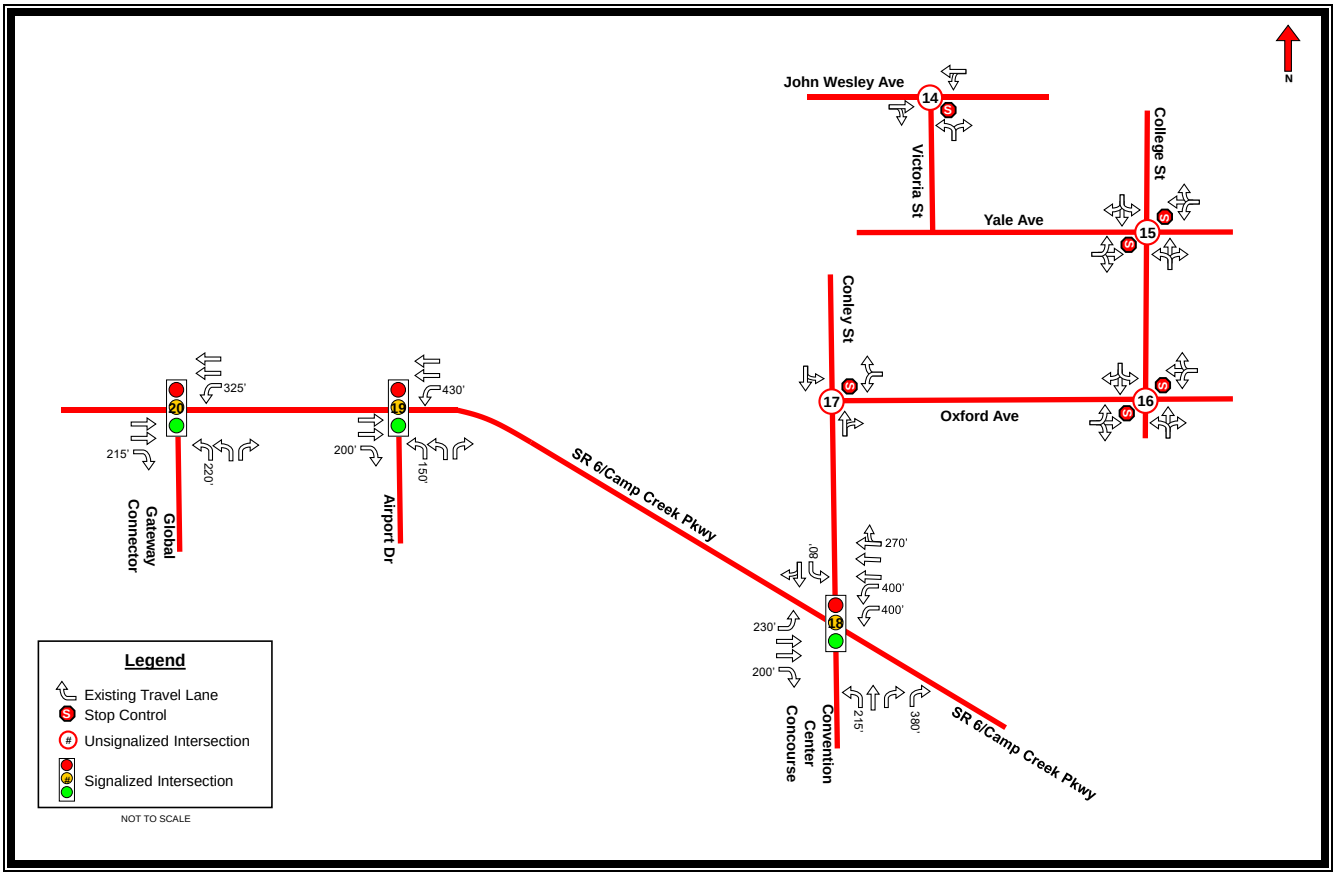
Figure 3: Existing Geometry and Traffic Control (2 of 2)



Source: Michael Baker International

Camp Creek Parkway is a four-lane road classified as a principal arterial west of the intersection of Conley Street & Convention Center Concourse and a four-lane road classified as a freeway east of that intersection. It has a posted speed limit of 45 miles per hour (MPH). The roadway has a raised curbed median and rural shoulders in the project area. At its intersections with Global Gateway Connector, Airport Drive, and Conley Street & Convention Center Concourse, the traffic control is a signalized operation.

The remaining roadways of: Fairway Drive Redwine Avenue, Rhode Street, Roosevelt Street, Ross Avenue, Atlanta Street, Conley Street, College Street, Victoria Street, McDonald Street, Virginia Avenue, Princeton Drive, Princeton Avenue, Harvard Avenue, Columbia Avenue, John Wesley Avenue, Yale Avenue, and Oxford Avenue are two-lane roads classified as local roads. Apart from Fairway Drive and Harvard Avenue having speed limits of 30 MPH, the remaining local roadways have a speed limit of 25 MPH. Bicycle facilities are found on both sides along Princeton Avenue from McDonald Street to Princeton Drive. The intersection of Harvard Avenue & Conley Street is the only signalized intersection of the intersection entirely comprised of the local roads for this study area.

There is a total of 20 intersections in the study area, where traffic data was collected. Below is the list of them all:

- McDonald St & Roosevelt Street
- Fairway Drive & Redwine Avenue
- Rhode Street & Redwine Avenue
- McDonald Street & Redwine Avenue
- McDonald Street & Ross Avenue/School Driveway
- McDonald Street & Princeton Avenue
- Princeton Drive & Princeton Avenue
- Princeton Drive & Atlanta Street
- Harvard Avenue & Atlanta Street
- Harvard Avenue & Conley Street
- Harvard Avenue & Victoria Street
- Columbia Avenue & Victoria Street
- John Wesley Avenue & Victoria Street
- Yale Avenue & College Street
- Oxford Avenue & College Street
- Oxford Avenue & Conley Street
- SR6/Camp Creek Parkway & Conley Street/Convention Center Concourse
- SR6/Camp Creek Parkway & Airport Drive
- Sr 6/Camp Creek Parkway & Global Gateway Connector

3.0 TRAFFIC FORECASTING

Traffic forecasting of future traffic is critical to estimating the impacts of future traffic flows on the current roadway network.

3.1 Traffic Counts

Traffic counts, including peak period turning movement counts, 24-hour counts, and 24-hour classification counts were collected in the study area on 3/19/19. The raw traffic count volumes are included in the Appendix.

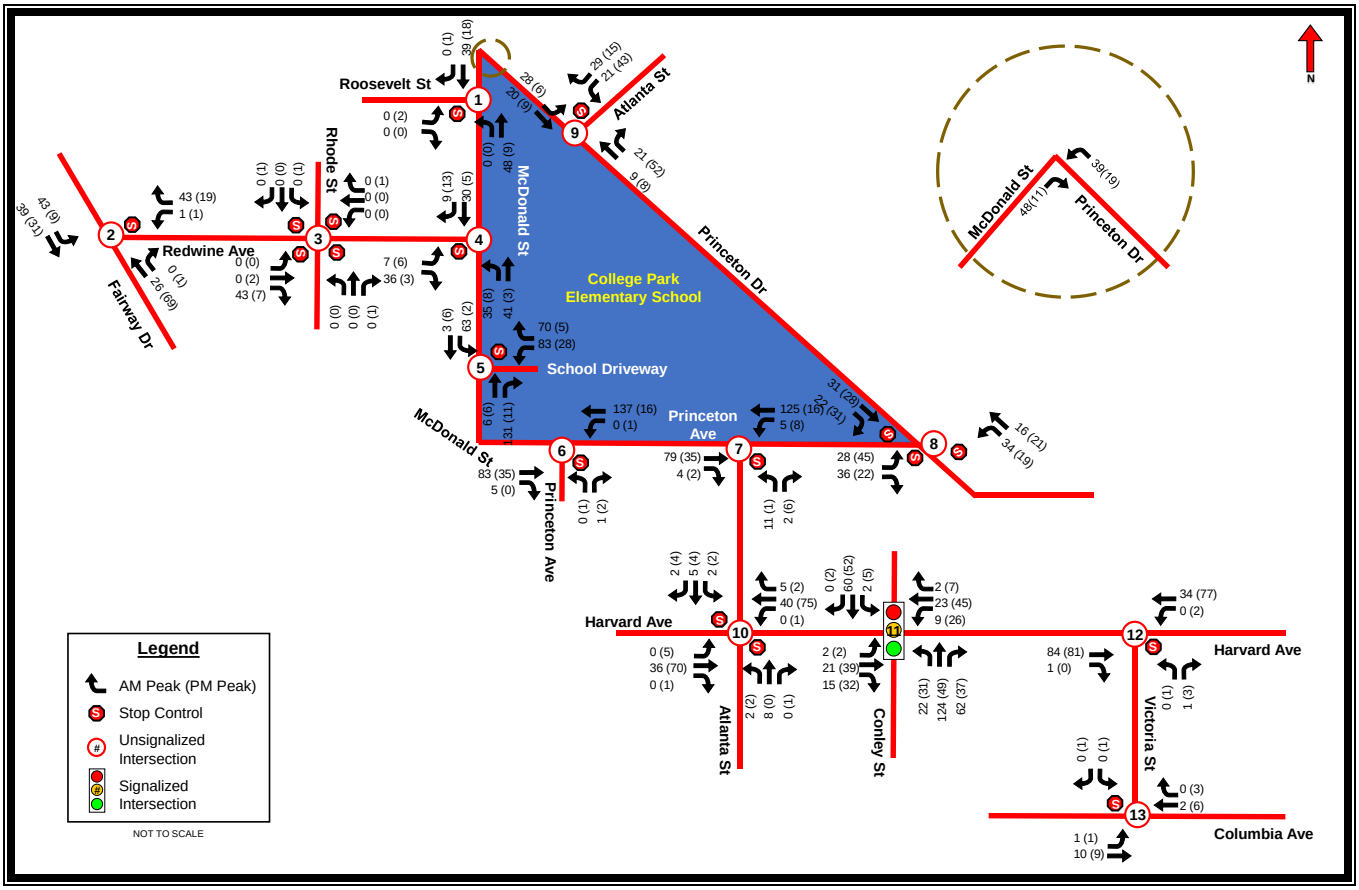
3.2 Trucks Percentages

The peak hour turning movement counts included heavy vehicles. The volume of heavy vehicles during the peak times was low, in almost cases ranging from 0% to 2%.

3.3 Traffic Volumes

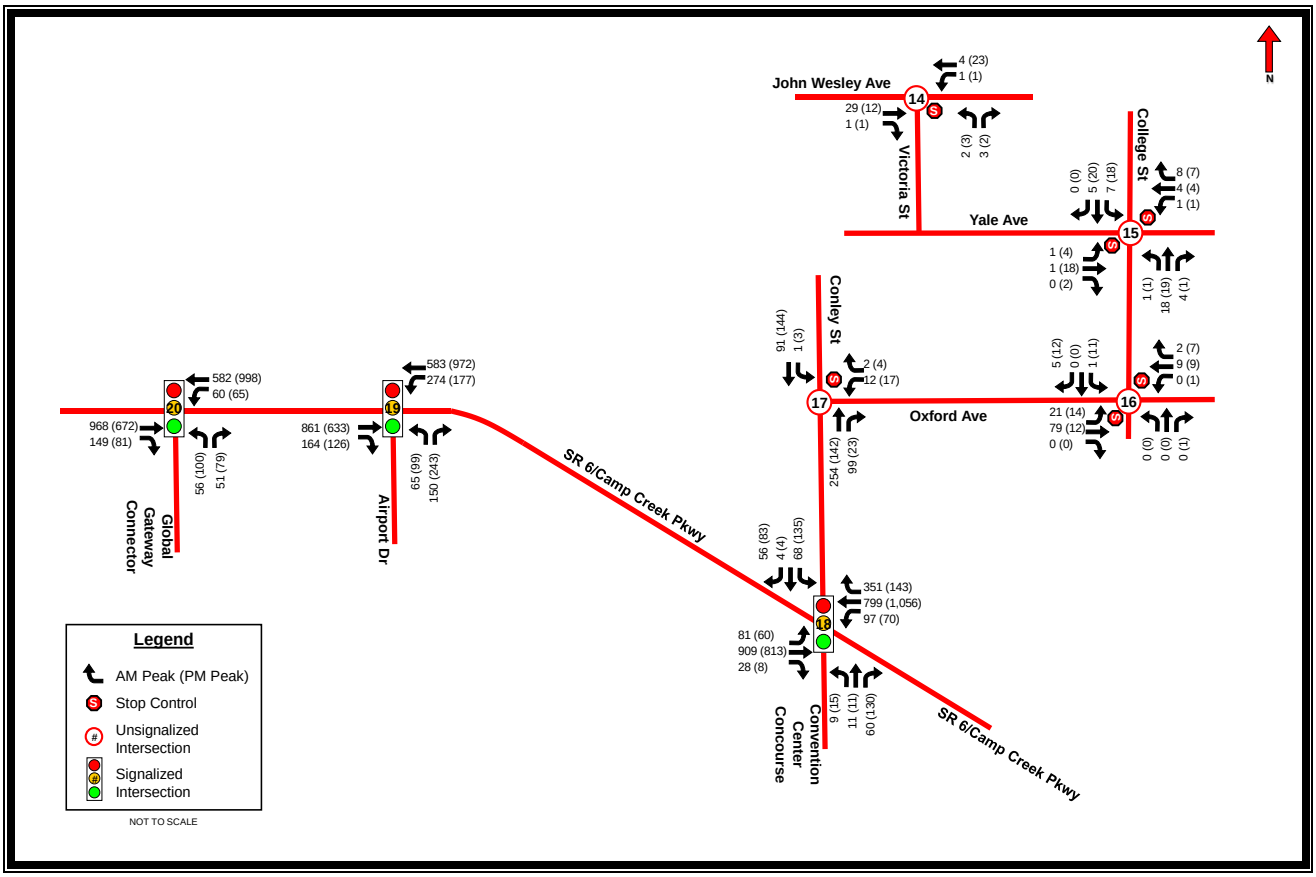
The peak hours of the intersections on the project were determined on a network basis, within the study area. The AM peak hour is 7:00 AM to 8:00 AM and the PM peak hour is 4:30 PM to 5:30 PM. The capacity analysis reflects the network peak times. Traffic volumes were low for most of the project area, except SR-6/Camp Creek Parkway. This is because the project area mostly contains undeveloped land which doesn't attract outside traffic. **Figure 4** and **Figure 5** shows the existing condition traffic volumes of the study area.

Figure 4: Existing Turning Movements (1 of 2)



Source: Michael Baker International

Figure 5: Existing Turning Movements (2 of 2)



Source: Michael Baker International

3.4 Trip Generation

The proposed developments for the project area include a mixed-use district consisting of residential, office, retail, dining, and lodging developments. The residential development consists of 65 single family homes, 177 townhomes, and 260 multifamily homes, in the northern part of the project area. The office development consists of 4,800,000 square feet (sf) of multi-tenant offices, in the central part of the project area, just east of the golf course. The retail and dining development consist of 220,000 sf of destination outlets and 90,000 sf of dining and local shops, in the eastern part of the project area. The lodging development consists of 680 hotel rooms found throughout the project area.

Following development in the build condition, Airport Drive will be extended north of SR-6/Camp Creek Parkway into the project area connecting to the local roadway network. The newly constructed southbound leg will have a left turn lane, a thru lane, and a right turn lane for its lane geometry. An eastbound left turn lane and a westbound right turn lane will be added to the intersection, in addition to the northbound right turn lane being converted to a thru-right lane. The existing T-intersection of SR-6/Camp Creek Parkway & Airport Drive

will be a four-legged intersection following development. Virginia Avenue, north of the project area, will also be extended and curved to connect with the meeting point of McDonald Street and Princeton Drive, at the northeastern tip of College Park Elementary's property. The access between Columbia Avenue and John Wesley Avenue via Victoria Street will be reestablished improving network connectivity. Figure 6 and Figure 7 shows the build condition lane geometry and traffic control.

Figure 6: Build Condition Lane Geometry and Traffic Control (1 of 2)

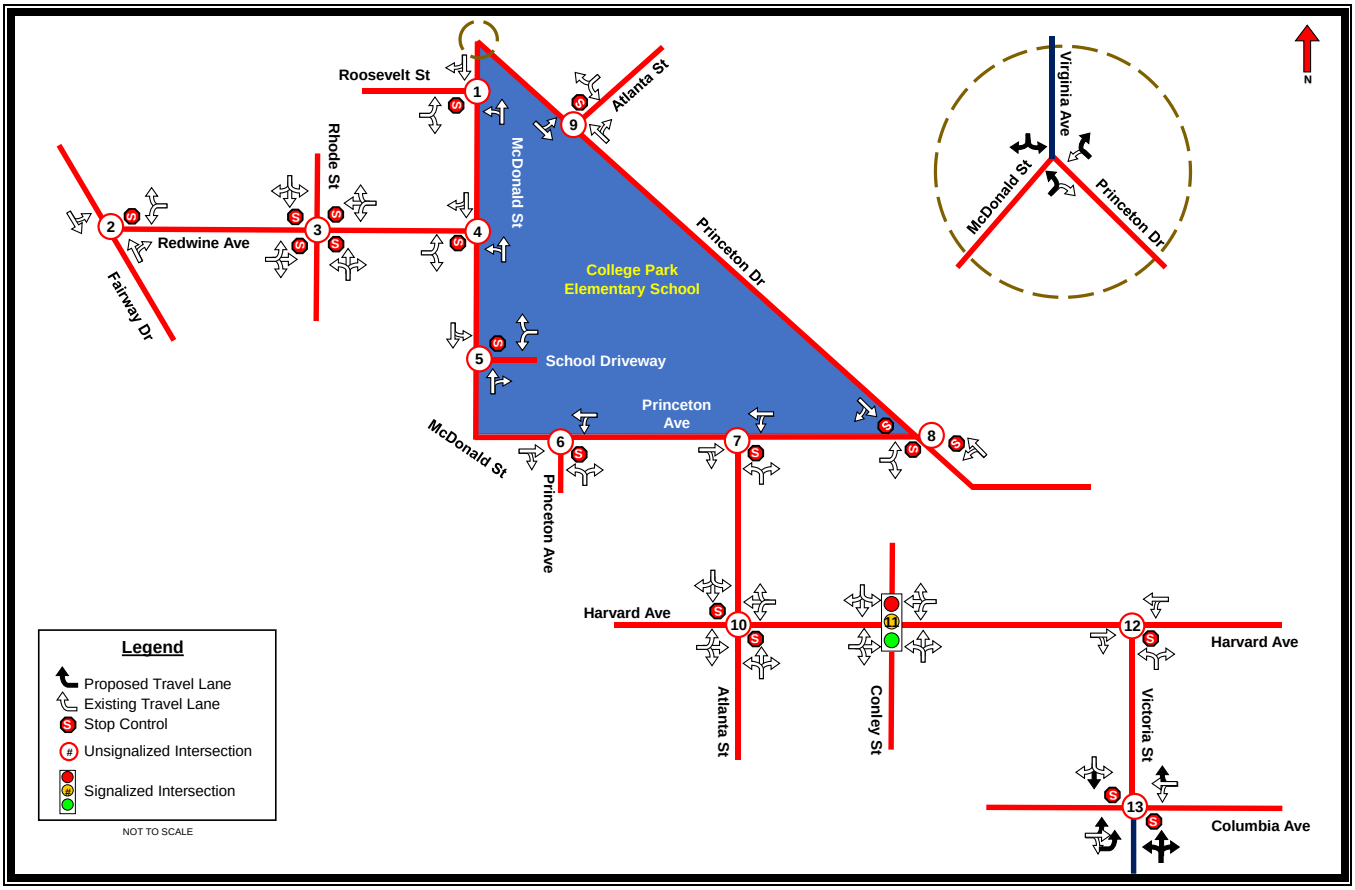
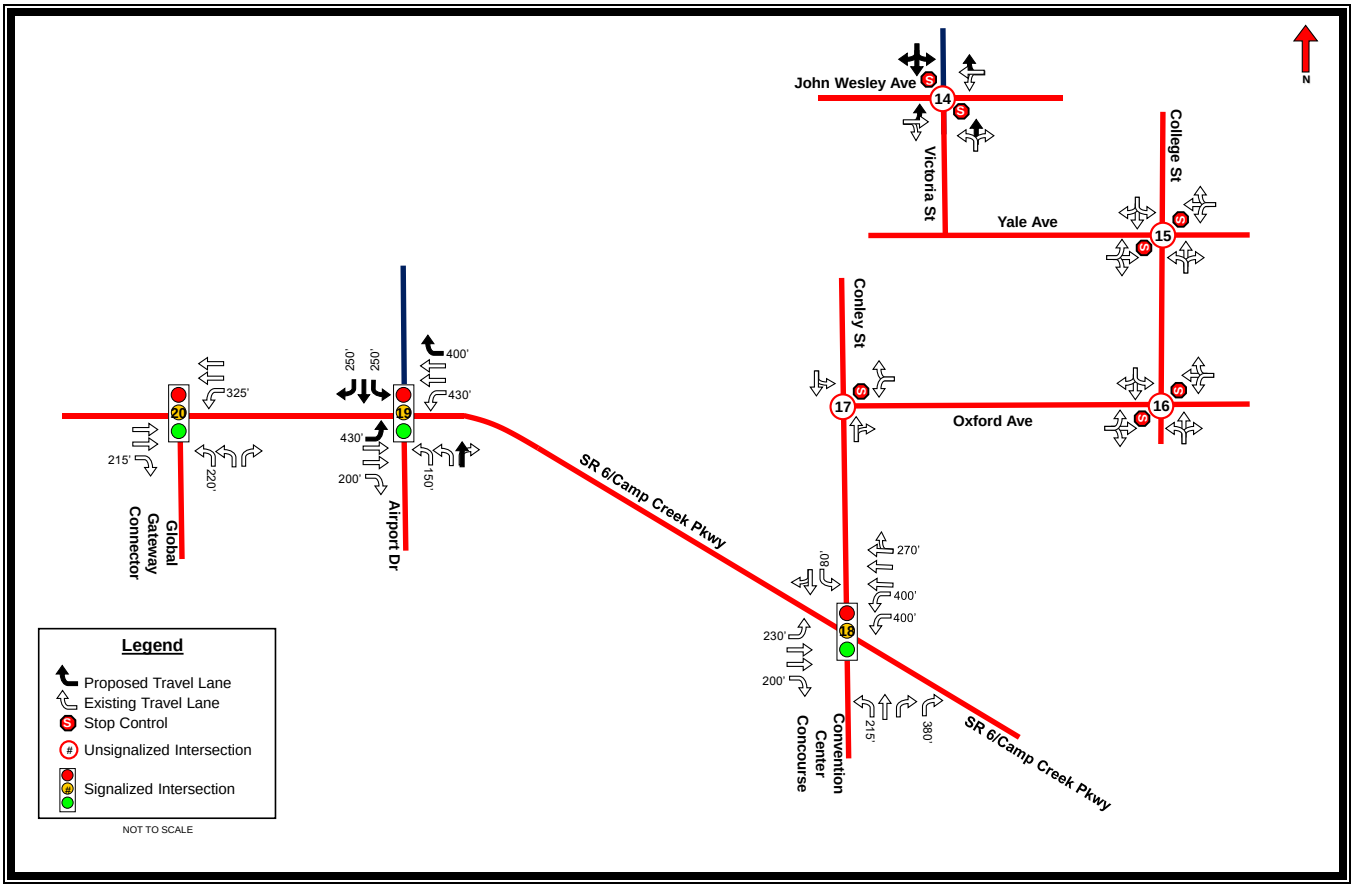


Figure 7: Build Condition Lane Geometry and Traffic Control (2 of 2)



When conducting the trip generation, square footage was used for office, retail, and restaurant developments. The number of dwelling units and number of rooms were used for residential and lodging developments, respectively. Based on the given information, ITE Codes 710, General Office Building, 823 Factory Outlet Center, 820 Shopping Center, 310 Hotel, 210 Single-Family Detached Housing, 220 Multifamily Housing (Lowrise), 221 Multifamily Housing (Midrise), were chosen for the office, retail, dining, lodging, and residential developments, respectively. These rates of trip generation were reduced by 30% due to internal capture and the presence of MARTA facility.

Table 1 shows the rates and trip generation volumes for both facilities. The full graphical outputs from ITE Trip Generation can be found in the Appendix.

Table 1: ITE Trip Generation Outputs

ITE Description	ITE Code	Unit	No. of Units	Daily Trip Generation		AM Peak Hour Trip Generation				PM Peak Hour Trip Generation			
				Rate	Trips	Rate	Trips			Rate	Trips		
							Total	Enter	Exit		Total	Enter	Exit
General Office Building	710	1000 SF	4800	9.74	46752	1.16	5568	4788	780	1.15	5520	2650	2870.40
Factory Outlet Center	823	1000 SF	90	26.59	2393	0.67	60	44	16	2.29	206	97	109.23
Shopping Center	820	1000 SF	220	37.75	8305	0.94	207	128	79	3.81	838	402	435.86
Hotel	310	Rooms	680	8.36	5685	0.47	320	189	131	0.60	408	208	199.92
Single-Family Detached Housing	210	welling Uni	65	9.44	614	0.74	48	12	36	0.99	64	41	23.81
Multifamily Housing (Lowrise)	220	Dwelling Units	177	7.32	1296	0.46	81	0	19	0.00	1	99	1
Multifamily Housing (Midrise)	221	Dwelling Units	260	5.44	1414	0.36	94	0	24	0.00	0	114	1

3.5 Trip Distribution

Following trip generation, the projected future vehicles must be distributed to the roadway network. For this traffic study, one build condition with all generated trips was examined for the project area:

1. **Future Build with generated trips**

For the build condition, intersections considered entry and exit points along the perimeter of the study area were used to capture the additional trips that were generated by the proposed developments. The additional trips generated were distributed among 10 intersections that were considered entry and exit points. The distribution of the trip generation between the 11 intersections considered existing land use outside the project area, average daily traffic (ADT) on the surrounding roadway network, and the location of future developments in the study area. The percentage of additional trips generated added to each intersection can be found in Table 2.

Table 2: Entering/Exiting Traffic Trip Distribution Among Intersections

Intersection	Percentage of Trips Entering/Exiting the Study Area
SR-6/Camp Creek Parkway & Airport Drive	30%
SR-6/Camp Creek Parkway & Conley Street/Convention Center Concourse	20%
Harvard Avenue & Victoria Street	10%
Princeton Drive & Princeton Avenue	10%
Redwine Avenue & Fairway Drive	10%
Princeton Drive & Virginia Avenue/McDonald Street*	5%
Columbia Avenue & Victoria Street	5%
John Wesley Avenue & Victoria Street	5%
Oxford Avenue & College Street	3%
Yale Avenue & College Street	2%

* New Intersection

The addition of generated traffic at the above intersections, combined with the existing traffic volumes from the project area is shown in Figure 8 and Figure 9. The volume at each approach was distributed in accordance to existing turning movement percentage splits.

Figure 8: Build Peak Hour Traffic (1 of 2)

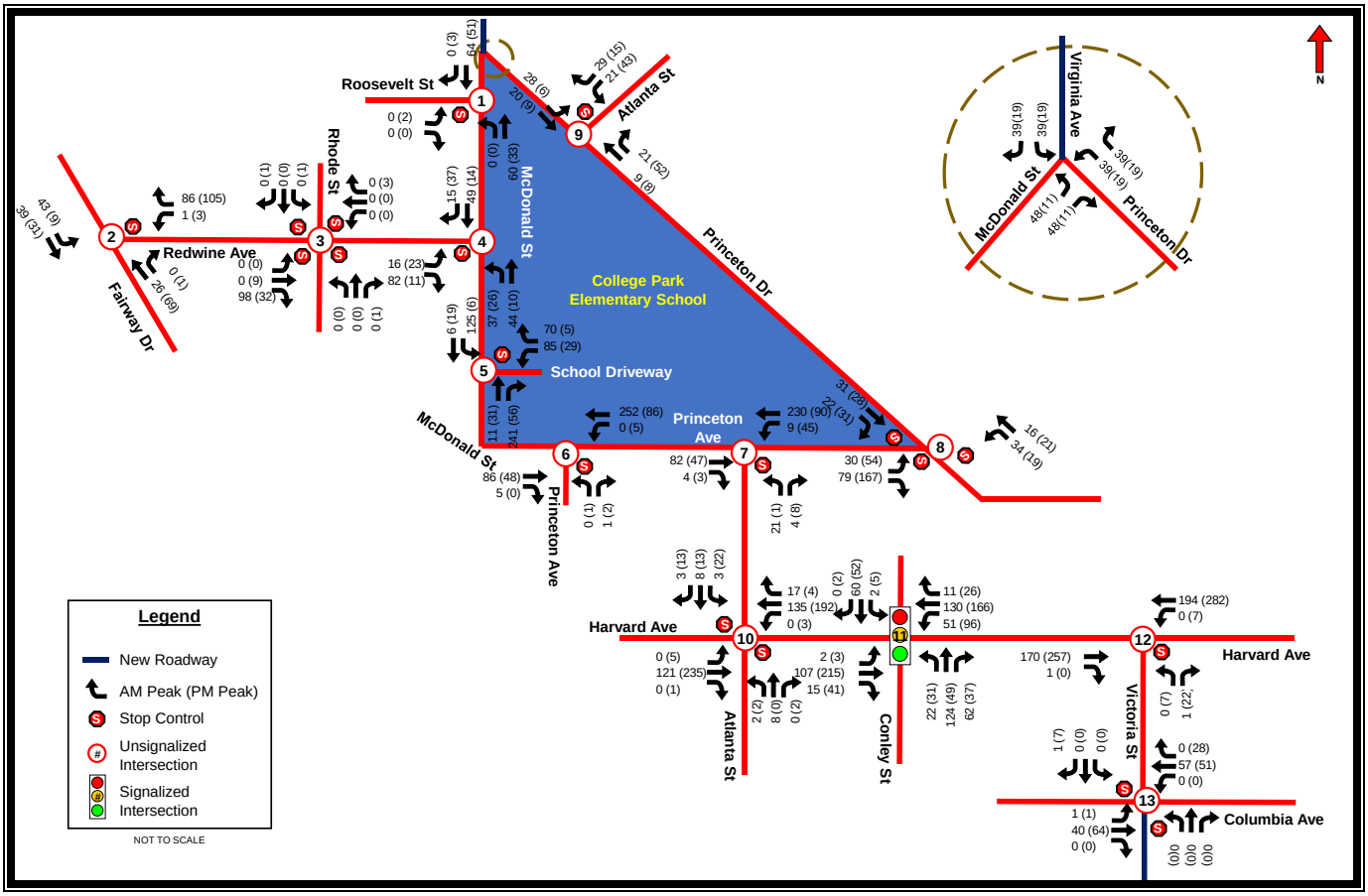


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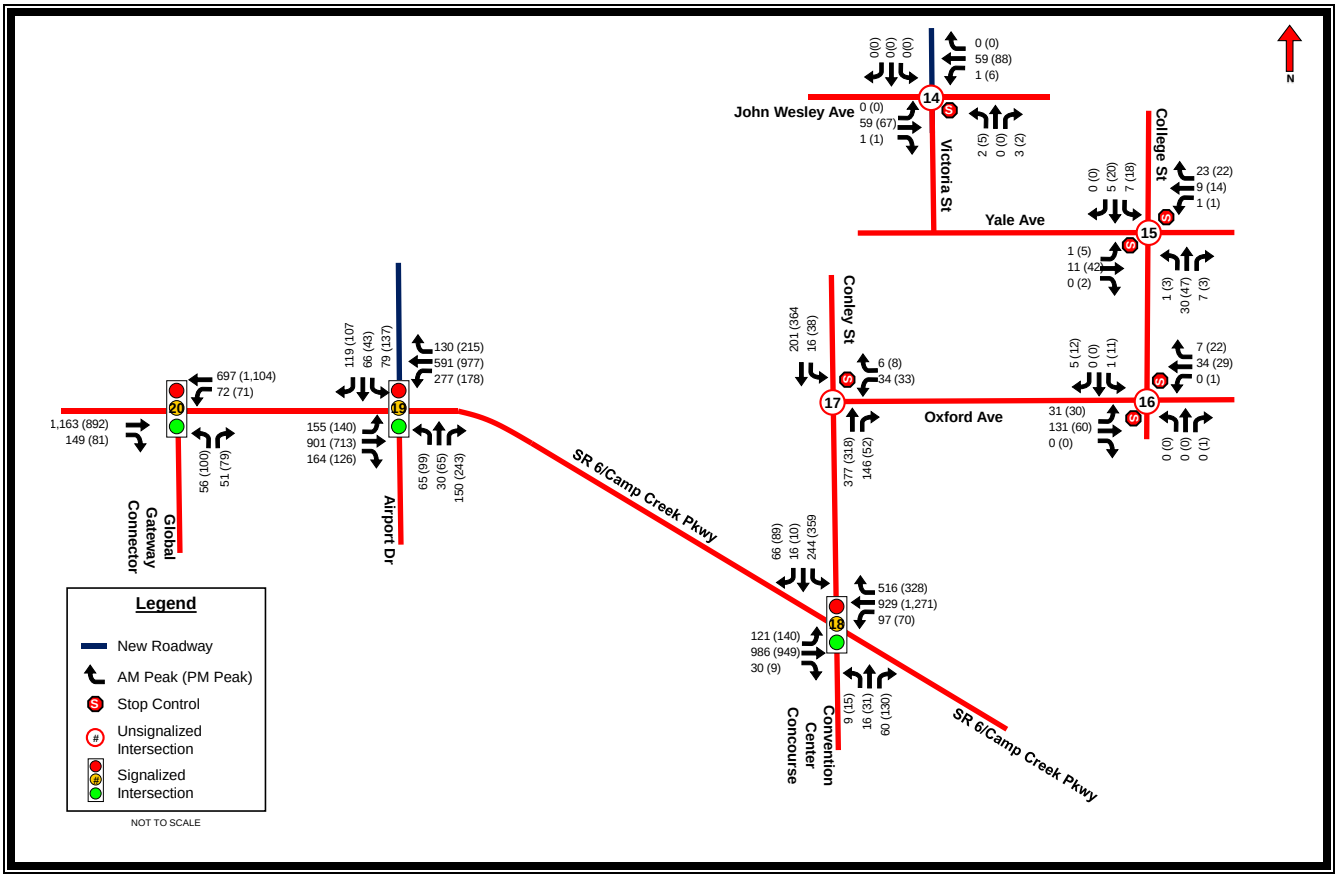
Figure 9: Build Peak Hour Traffic (2 of 2)



4.0 OPERATIONS ANALYSIS

Using the methods described in the Highway Capacity Manual (HCM), Synchro evaluate the performance of an intersection. They determine the average delay experienced by each vehicle as a result of traffic control devices, which then provides a Level of Service (LOS). Definitions of LOS for Signalized and Stop Controlled/Roundabout Controlled intersections are shown in Table 3.

Table 3: Level of Service Definitions

Level of Service	Control Delay Per Vehicle (sec)	
	Stop Controlled Intersection	Signalized Intersection
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤50	> 55 and ≤ 80
F	>50	> 80

4.1 Capacity Analysis

Operational analyses of the study area were only performed at the 10 intersections that were determined to be entry and exit points for the study area, plus SR-6/Camp Creek Parkway & the Global Gateway Connector. The intersection of SR-6/Camp Creek Parkway & the Global Gateway Connector was included in the analysis because additional traffic will pass through the intersection caused by the additional trips generated, due to development. Operational analyses were completed for the 2018 existing condition and 2023 build condition, in both the AM and PM peak hours. The analyses used the existing lane configurations and future lane configurations for the existing and build condition, respectively. The resulting LOS results are shown in Table 4 and the capacity analysis reports are provided in the Appendix.

The LOS results in Table 4 show LOS A and LOS B for the AM and PM peak hours in the existing condition for the intersection of SR-6/Camp Creek Parkway & Airport Drive and the intersection of SR-6/Camp Creek Parkway & Conley Street/Convention Center Concourse, respectively. In the build condition for the AM and PM peak hours, the intersection of SR-6/Camp Creek Parkway & Airport Drive and the intersection of SR-6/Camp Creek Parkway & Conley Street/Convention Center Concourse both show LOS C. All other intersections analyzed remain at the same LOS grade, LOS A, in the existing condition as they do in the build condition.

Table 4: Existing and Build Capacity Analysis Results

Intersection				2019 Existing LOS (Delay† in sec/veh)		2023 Build LOS (Delay† in sec/veh)	
Number	Name	Control	Approach	AM Peak	PM Peak	AM Peak	PM Peak
1	SR-6/Camp Creek Parkway & Global Gateway Connector	Signal	EB	A (7.0)	A (7.1)	A (7.1)	A (7.4)
		Signal	WB	A (2.7)	A (3.8)	A (2.5)	A (3.8)
		Signal	NB	C (22.2)	B (19.2)	C (23.3)	C (21.4)
		Signal	Total	A (6.3)	A (6.4)	A (6.3)	A (6.7)
2	SR-6/Camp Creek Parkway & Airport Drive	Signal	EB	B (12.2)	A (9.2)	C (34.5)	C (34.9)
		Signal	WB	A (4.6)	A (4.7)	C (28.7)	C (33.5)
		Signal	NB	B (18.7)	B (17.2)	C (30.9)	C (28.8)
		Signal	SB	-	-	C (27.7)	C (25.1)
		Signal	Total	A (9.7)	A (8.1)	C (31.4)	C (32.5)
3	SR-6/Camp Creek Parkway & Conley Street/Convention Center Concourse	Signal	EB	B (11.2)	B (13.8)	C (24.4)	C (21.7)
		Signal	WB	B (10.1)	B (13.3)	B (18.5)	C (25.5)
		Signal	NB	B (17.1)	B (17.2)	B (14.2)	B (15.2)
		Signal	SB	B (18.2)	C (20.3)	C (21.3)	D (43.0)
		Signal	Total	B (11.2)	B (14.3)	C (20.9)	C (26.1)
4	Oxford Avenue & College Street	Stop	EB	A (9.5)	A (9.1)	A (10.0)	A (9.7)
		Stop	WB	A (9.0)	A (8.9)	A (9.1)	A (9.1)
		Free	NB	A (0.0)	A (0.0)	A (0.0)	A (0.0)
		Free	SB	A (1.2)	A (3.5)	A (1.2)	A (3.5)
		Stop	Total	A (9.1)	A (7.0)	A (9.6)	A (8.6)
5	Yale Avenue & College Street	Stop	EB	A (9.1)	A (9.5)	A (9.4)	A (10.0)
		Stop	WB	A (8.7)	A (8.9)	A (8.9)	A (9.2)
		Free	NB	A (0.3)	A (0.3)	A (0.2)	A (0.4)
		Free	SB	A (4.5)	A (3.5)	A (4.5)	A (3.6)
		Stop	Total	A (3.8)	A (5.0)	A (4.9)	A (5.6)
6	John Wesley Avenue & Victoria Street	Free	EB	A (0.0)	A (0.0)	A (0.0)	A (0.0)
		Free	WB	A (1.5)	A (0.3)	A (0.1)	A (0.5)
		Stop	NB	A (8.6)	A (8.6)	A (8.9)	A (9.4)
		Stop	SB	-	-	A (0.0)	A (0.0)
		Stop	Total	A (1.2)	A (1.1)	A (0.4)	A (0.7)
7	Columbia Avenue & Victoria Street	Free	EB	A (0.6)	A (0.7)	A (0.2)	A (0.1)
		Free	WB	A (0.0)	A (0.0)	A (0.0)	A (0.0)
		Stop	NB	-	-	A (0.0)	A (0.0)
		Stop	SB	A (0.0)	A (8.5)	A (8.6)	A (8.7)
		Stop	Total	A (0.5)	A (1.1)	A (0.2)	A (0.5)
8	Harvard Avenue & Victoria Street	Free	EB	A (0.0)	A (0.0)	A (0.0)	A (0.0)
		Free	WB	A (0.0)	A (0.2)	A (0.0)	A (0.3)
		Stop	NB	A (8.7)	A (8.9)	A (9.2)	B (10.7)
		Stop	Total	A (0.1)	A (0.3)	A (0.0)	A (0.7)
9	Princeton Drive & Princeton Avenue	Stop	EB	A (7.2)	A (7.5)	A (8.0)	A (9.7)
		Stop	NB	A (7.6)	A (7.5)	A (9.2)	B (10.7)
		Stop	SB	A (7.1)	A (7.1)	A (8.0)	A (9.3)
		Stop	Total	A (7.3)	A (7.3)	A (8.6)	A (10.0)
10	Redwine Avenue & Fairway Drive	Stop	WB	A (8.6)	A (8.8)	A (8.9)	A (9.6)
		Free	NB	A (0.0)	A (0.0)	A (0.0)	A (0.0)
		Free	SB	A (4.0)	A (1.7)	A (4.2)	A (2.1)
		Stop	Total	A (4.7)	A (1.9)	A (4.9)	A (3.4)
11	Princeton Drive & Virginia Avenue/McDonald Street*	Stop	WB	-	-	A (9.1)	A (9.0)
		Free	NB	-	-	A (0.0)	A (0.0)
		Free	SB	-	-	A (3.8)	A (3.8)
		Stop	Total	-	-	A (4.2)	A (4.5)

5.0 CONCLUSIONS

From a capacity analysis perspective, these results show mitigatable impact to the intersections along the perimeter of the study area due to the proposed developments. The change in LOS, due to the additional traffic created by development, at the intersection of SR-6/Camp Creek Parkway & Airport Drive and the intersection of SR-6/Camp Creek Parkway & Conley Street/Convention Center Concourse is expected and still within the minimum operating standards. Minimal lane additions, due to the extension of Airport Drive north, will be required at the intersection of SR-6/Camp Creek Parkway & Airport Drive.

APPENDIX A - TRAFFIC COUNTS

Prepared by NDS/ATD

VOLUME

Fairway Dr N/O Redwine Ave

Day: Tuesday
Date: 3/19/2019

City: Atlanta
Project #: GA19_9166_001

DAILY TOTALS	NB	SB	EB	WB	Total
	775	699	0	0	1,474

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	2		1						3		12:00	16		6						22	
00:15	0		1						1		12:15	8		13						21	
00:30	0		0						0		12:30	10		7						17	
00:45	0	2	0	2					0	4	12:45	7	41	13	39					20	80
01:00	1		1						2		13:00	15		7						22	
01:15	0		1						1		13:15	14		5						19	
01:30	1		2						3		13:30	8		12						20	
01:45	1	3	1	5					2	8	13:45	10	47	10	34					20	81
02:00	0		1						1		14:00	14		9						23	
02:15	0		0						0		14:15	15		9						24	
02:30	0		0						0		14:30	15		12						27	
02:45	2	2	0	1					2	3	14:45	21	65	18	48					39	113
03:00	0		0						0		15:00	19		11						30	
03:15	0		0						0		15:15	15		10						25	
03:30	0		2						2		15:30	19		11						30	
03:45	1	1	0	2					1	3	15:45	14	67	13	45					27	112
04:00	0		1						1		16:00	21		15						36	
04:15	0		1						1		16:15	10		16						26	
04:30	1		1						2		16:30	16		12						28	
04:45	0	1	0	3					0	4	16:45	19	66	12	55					31	121
05:00	1		1						2		17:00	32		7						39	
05:15	2		2						4		17:15	21		10						31	
05:30	3		4						7		17:30	15		12						27	
05:45	4	10	4	11					8	21	17:45	10	78	13	42					23	120
06:00	4		2						6		18:00	8		10						18	
06:15	2		5						7		18:15	15		15						30	
06:30	0		5						5		18:30	12		11						23	
06:45	3	9	10	22					13	31	18:45	14	49	8	44					22	93
07:00	9		17						26		19:00	14		11						25	
07:15	17		16						33		19:15	19		11						30	
07:30	25		27						52		19:30	16		8						24	
07:45	19	70	25	85					44	155	19:45	10	59	8	38					18	97
08:00	13		22						35		20:00	20		2						22	
08:15	10		17						27		20:15	2		4						6	
08:30	6		16						22		20:30	3		5						8	
08:45	7	36	9	64					16	100	20:45	4	29	4	15					8	44
09:00	7		9						16		21:00	12		6						18	
09:15	10		10						20		21:15	4		2						6	
09:30	11		6						17		21:30	5		7						12	
09:45	2	30	10	35					12	65	21:45	8	29	7	22					15	51
10:00	2		3						5		22:00	4		1						5	
10:15	3		9						12		22:15	3		3						6	
10:30	10		11						21		22:30	1		0						1	
10:45	4	19	11	34					15	53	22:45	7	15	2	6					9	21
11:00	8		6						14		23:00	2		3						5	
11:15	9		10						19		23:15	1		3						4	
11:30	10		12						22		23:30	1		2						3	
11:45	13	40	9	37					22	77	23:45	3	7	2	10					5	17
TOTALS		223		301						524	TOTALS		552		398						950
SPLIT %		42.6%		57.4%						35.5%	SPLIT %		58.1%		41.9%						64.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	775	699	0	0	1,474

AM Peak Hour	07:15	07:30			07:15	PM Peak Hour	16:30	15:45			16:30
AM Pk Volume	74	91			164	PM Pk Volume	88	56			129
Pk Hr Factor	0.740	0.843			0.788	Pk Hr Factor	0.688	0.875			0.827
7 - 9 Volume	106	149	0	0	255	4 - 6 Volume	144	97	0	0	241
7 - 9 Peak Hour	07:15	07:30			07:15	4 - 6 Peak Hour	16:30	16:00			16:30
7 - 9 Pk Volume	74	91	0	0	164	4 - 6 Pk Volume	88	55	0	0	129
Pk Hr Factor	0.740	0.843	0.000	0.000	0.788	Pk Hr Factor	0.688	0.859	0.000	0.000	0.827

Prepared by NDS/ATD

VOLUME

Herschel Rd N/O Camp Creek Pkwy

Day: Tuesday
Date: 3/19/2019

City: Atlanta
Project #: GA19_9166_002

DAILY TOTALS	NB	SB	EB	WB	Total
	3,616	3,623	0	0	7,239

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	20		13				33		12:00	33		35				68	
00:15	11		9				20		12:15	49		32				81	
00:30	14		12				26		12:30	57		44				101	
00:45	13	58	10	44			23	102	12:45	35	174	46	157			81	331
01:00	11		7				18		13:00	40		50				90	
01:15	9		9				18		13:15	46		40				86	
01:30	7		7				14		13:30	32		41				73	
01:45	3	30	5	28			8	58	13:45	56	174	62	193			118	367
02:00	7		4				11		14:00	48		47				95	
02:15	5		2				7		14:15	52		49				101	
02:30	5		8				13		14:30	67		54				121	
02:45	7	24	3	17			10	41	14:45	46	213	53	203			99	416
03:00	6		5				11		15:00	66		66				132	
03:15	7		5				12		15:15	66		65				131	
03:30	6		4				10		15:30	66		76				142	
03:45	5	24	6	20			11	44	15:45	74	272	78	285			152	557
04:00	8		12				20		16:00	77		81				158	
04:15	8		4				12		16:15	72		79				151	
04:30	9		17				26		16:30	71		71				142	
04:45	9	34	7	40			16	74	16:45	71	291	97	328			168	619
05:00	10		8				18		17:00	92		94				186	
05:15	9		14				23		17:15	59		73				132	
05:30	13		20				33		17:30	69		87				156	
05:45	20	52	29	71			49	123	17:45	65	285	50	304			115	589
06:00	26		24				50		18:00	88		78				166	
06:15	25		26				51		18:15	74		64				138	
06:30	39		37				76		18:30	54		66				120	
06:45	46	136	41	128			87	264	18:45	48	264	53	261			101	525
07:00	80		36				116		19:00	56		53				109	
07:15	67		71				138		19:15	42		52				94	
07:30	65		95				160		19:30	39		33				72	
07:45	89	301	86	288			175	589	19:45	37	174	48	186			85	360
08:00	60		64				124		20:00	29		39				68	
08:15	65		59				124		20:15	36		39				75	
08:30	50		61				111		20:30	30		34				64	
08:45	37	212	49	233			86	445	20:45	39	134	46	158			85	292
09:00	44		35				79		21:00	28		26				54	
09:15	24		32				56		21:15	45		40				85	
09:30	27		33				60		21:30	33		21				54	
09:45	42	137	42	142			84	279	21:45	18	124	23	110			41	234
10:00	31		41				72		22:00	28		20				48	
10:15	37		33				70		22:15	31		30				61	
10:30	31		33				64		22:30	33		23				56	
10:45	30	129	35	142			65	271	22:45	28	120	26	99			54	219
11:00	42		25				67		23:00	26		13				39	
11:15	44		27				71		23:15	29		10				39	
11:30	26		43				69		23:30	29		15				44	
11:45	36	148	42	137			78	285	23:45	22	106	11	49			33	155
TOTALS		1285		1290				2575	TOTALS		2331		2333				4664
SPLIT %		49.9%		50.1%				35.6%	SPLIT %		50.0%		50.0%				64.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	3,616	3,623	0	0	7,239

AM Peak Hour	07:00	07:15						07:15	PM Peak Hour	16:15	16:45							16:15
AM Pk Volume	301	316						597	PM Pk Volume	306	351							647
Pk Hr Factor	0.846	0.832						0.853	Pk Hr Factor	0.832	0.905							0.870
7 - 9 Volume	513	521	0	0				1034	4 - 6 Volume	576	632	0	0					1208
7 - 9 Peak Hour	07:00	07:15						07:15	4 - 6 Peak Hour	16:15	16:45							16:15
7 - 9 Pk Volume	301	316	0	0				597	4 - 6 Pk Volume	306	351	0	0					647
Pk Hr Factor	0.846	0.832	0.000	0.000				0.853	Pk Hr Factor	0.832	0.905	0.000	0.000					0.870

Prepared by NDS/ATD

VOLUME

Princeton Dr W/O College St

Day: Tuesday
Date: 3/19/2019

City: Atlanta
Project #: GA19_9166_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	725	596	1,321

AM Period	NB		SB		EB		WB		TOTAL	
00:00					3		1		4	
00:15					2		3		5	
00:30					0		2		2	
00:45					1	6	0	6	1	12
01:00					1		1		2	
01:15					0		1		1	
01:30					1		2		3	
01:45					0	2	0	4	0	6
02:00					0		1		1	
02:15					1		1		2	
02:30					0		0		0	
02:45					3	4	0	2	3	6
03:00					1		0		1	
03:15					0		0		0	
03:30					0		0		0	
03:45					0	1	0		0	1
04:00					0		0		0	
04:15					0		0		0	
04:30					1		0		1	
04:45					1	2	0		1	2
05:00					1		2		3	
05:15					1		0		1	
05:30					2		1		3	
05:45					1	5	2	5	3	10
06:00					1		0		1	
06:15					3		4		7	
06:30					4		4		8	
06:45					7	15	3	11	10	26
07:00					8		16		24	
07:15					21		10		31	
07:30					24		16		40	
07:45					12	65	10	52	22	117
08:00					10		4		14	
08:15					12		1		13	
08:30					12		9		21	
08:45					7	41	11	25	18	66
09:00					7		5		12	
09:15					10		4		14	
09:30					13		11		24	
09:45					8	38	7	27	15	65
10:00					5		6		11	
10:15					4		3		7	
10:30					12		4		16	
10:45					6	27	6	19	12	46
11:00					8		6		14	
11:15					8		4		12	
11:30					8		14		22	
11:45					12	36	7	31	19	67
TOTALS						242		182		**424**
SPLIT %						57.1%		42.9%		**32.1%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00					15		7		22	
12:15					19		6		25	
12:30					13		12		25	
12:45					10	57	6	31	16	88
13:00					9		9		18	
13:15					10		11		21	
13:30					10		7		17	
13:45					17	46	13	40	30	86
14:00					12		12		24	
14:15					10		17		27	
14:30					12		14		26	
14:45					22	56	16	59	38	115
15:00					20		16		36	
15:15					17		9		26	
15:30					11		11		22	
15:45					8	56	13	49	21	105
16:00					9		13		22	
16:15					12		6		18	
16:30					10		15		25	
16:45					20	51	5	39	25	90
17:00					7		11		18	
17:15					14		13		27	
17:30					11		11		22	
17:45					18	50	17	52	35	102
18:00					14		8		22	
18:15					14		9		23	
18:30					15		16		31	
18:45					9	52	8	41	17	93
19:00					13		5		18	
19:15					6		11		17	
19:30					14		13		27	
19:45					5	38	8	37	13	75
20:00					10		6		16	
20:15					7		6		13	
20:30					8		10		18	
20:45					6	31	4	26	10	57
21:00					9		6		15	
21:15					2		2		4	
21:30					2		4		6	
21:45					4	17	6	18	10	35
22:00					4		3		7	
22:15					6		3		9	
22:30					3		2		5	
22:45					6	19	1	9	7	28
23:00					2		3		5	
23:15					2		4		6	
23:30					6		3		9	
23:45					0	10	3	13	3	23
TOTALS						483		414		**897**
SPLIT %						53.8%		46.2%		**67.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	725	596	1,321

AM Peak Hour		07:15	07:00	**07:00**
AM Pk Volume		67	52	**117**
Pk Hr Factor		0.698	0.813	**0.731**
7 - 9 Volume	0 0	106	77	**183**
7 - 9 Peak Hour		07:15	07:00	**07:00**
7 - 9 Pk Volume	0 0	67	52	**117**
Pk Hr Factor	0.000 0.000	0.698	0.813	**0.731**

PM Peak Hour		14:30	14:15	**14:15**
PM Pk Volume		71	63	**127**
Pk Hr Factor		0.807	0.926	**0.836**
4 - 6 Volume	0 0	101	91	**192**
4 - 6 Peak Hour		16:45	17:00	**17:00**
4 - 6 Pk Volume	0 0	52	52	**102**
Pk Hr Factor	0.000 0.000	0.650	0.765	**0.729**

Prepared by NDS/ATD

VOLUME

Camp Creek Pkwy E/O Airport Dr

Day: Tuesday
Date: 3/19/2019

City: Atlanta
Project #: GA19_9166_004

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	17,173	17,389	34,562

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			152		95		247		12:00			208		204		412	
00:15			75		77		152		12:15			170		260		430	
00:30			69		52		121		12:30			248		219		467	
00:45			58	354	63	287	121	641	12:45			228	854	247	930	475	1784
01:00			48		54		102		13:00			231		271		502	
01:15			43		45		88		13:15			235		280		515	
01:30			35		35		70		13:30			258		258		516	
01:45			23	149	30	164	53	313	13:45			276	1000	312	1121	588	2121
02:00			22		28		50		14:00			229		262		491	
02:15			12		25		37		14:15			252		292		544	
02:30			24		19		43		14:30			278		296		574	
02:45			30	88	39	111	69	199	14:45			303	1062	259	1109	562	2171
03:00			28		40		68		15:00			299		271		570	
03:15			28		35		63		15:15			268		296		564	
03:30			35		46		81		15:30			250		226		476	
03:45			48	139	58	179	106	318	15:45			309	1126	252	1045	561	2171
04:00			57		91		148		16:00			232		267		499	
04:15			63		94		157		16:15			244		298		542	
04:30			81		115		196		16:30			245		280		525	
04:45			97	298	128	428	225	726	16:45			223	944	260	1105	483	2049
05:00			98		191		289		17:00			201		295		496	
05:15			123		199		322		17:15			227		306		533	
05:30			159		233		392		17:30			219		282		501	
05:45			172	552	197	820	369	1372	17:45			186	833	258	1141	444	1974
06:00			183		225		408		18:00			208		283		491	
06:15			209		207		416		18:15			217		214		431	
06:30			211		230		441		18:30			215		254		469	
06:45			209	812	228	890	437	1702	18:45			191	831	204	955	395	1786
07:00			245		198		443		19:00			219		212		431	
07:15			234		221		455		19:15			217		203		420	
07:30			265		223		488		19:30			186		217		403	
07:45			277	1021	215	857	492	1878	19:45			195	817	192	824	387	1641
08:00			256		193		449		20:00			187		194		381	
08:15			284		212		496		20:15			157		170		327	
08:30			257		180		437		20:30			185		198		383	
08:45			233	1030	193	778	426	1808	20:45			186	715	183	745	369	1460
09:00			208		211		419		21:00			155		155		310	
09:15			205		155		360		21:15			184		160		344	
09:30			190		157		347		21:30			149		137		286	
09:45			202	805	191	714	393	1519	21:45			166	654	154	606	320	1260
10:00			183		181		364		22:00			170		138		308	
10:15			184		198		382		22:15			202		131		333	
10:30			189		182		371		22:30			194		155		349	
10:45			175	731	195	756	370	1487	22:45			228	794	118	542	346	1336
11:00			171		212		383		23:00			189		139		328	
11:15			206		210		416		23:15			237		116		353	
11:30			178		190		368		23:30			184		95		279	
11:45			207	762	225	837	432	1599	23:45			192	802	95	445	287	1247
TOTALS				6741		6821		13562	TOTALS				10432		10568		21000
SPLIT %				49.7%		50.3%		39.2%	SPLIT %				49.7%		50.3%		60.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	17,173	17,389	34,562

AM Peak Hour			07:30	11:45	07:30	PM Peak Hour			14:30	13:45	14:30
AM Pk Volume			1082	908	1925	PM Pk Volume			1148	1162	2270
Pk Hr Factor			0.952	0.873	0.970	Pk Hr Factor			0.947	0.931	0.989
7 - 9 Volume	0	0	2051	1635	3686	4 - 6 Volume	0	0	1777	2246	4023
7 - 9 Peak Hour			07:30	07:00	07:30	4 - 6 Peak Hour			16:00	16:45	16:00
7 - 9 Pk Volume	0	0	1082	857	1925	4 - 6 Pk Volume	0	0	944	1143	2049
Pk Hr Factor	0.000	0.000	0.952	0.961	0.970	Pk Hr Factor	0.000	0.000	0.963	0.934	0.945

Prepared by National Data & Surveying Services

Global Gateway Connector & Camp Creek Pkwy

Peak Hour Turning Movement Count

ID: 19-09165-001
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Global Gateway Connector — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Camp Creek Pkwy — EASTBOUND

AM	NOON	PM	
627	0	1109	⇦
0	0	1	↶ 0
0	0	0	↱ 0
1029	0	666	→ 2
138	0	81	↴ 1

CONTROL

Signalized

TEV	1905	0	2008
	AM	NOON	PM
PHF	0.94		0.93

Camp Creek Pkwy — WESTBOUND

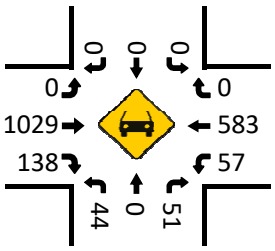
PM	NOON	AM	
0	0	0	↰ 0
1008	0	583	← 2
65	0	57	↰ 1
8	0	3	↰ 0
752	0	1083	⇨

Global Gateway Connector — NORTHBOUND

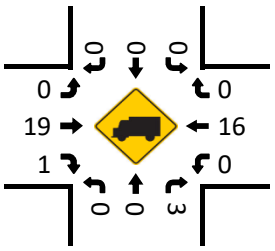
PM	147	1	100	0	78	PM
NOON	0	0	0	0	0	NOON
AM	195	0	44	0	51	AM

0 0 0 0 | 0 | 0 1.5 0 1.5

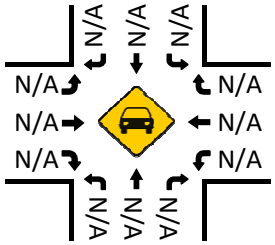
Total Vehicles (AM)



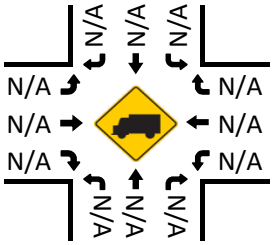
HT (AM)



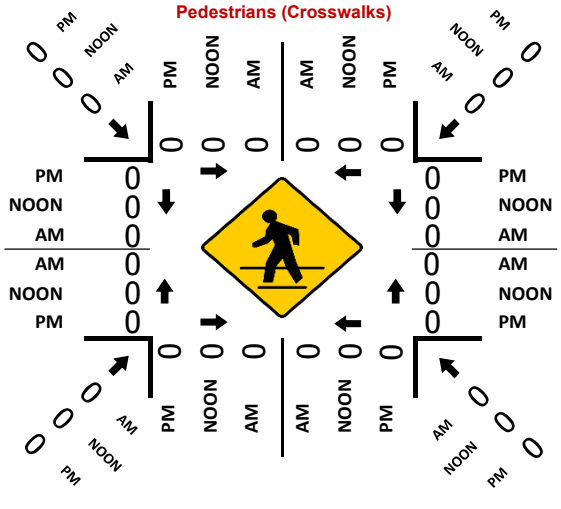
Total Vehicles (Noon)



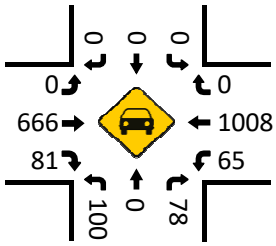
HT (NOON)



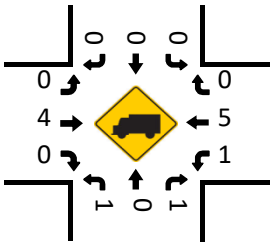
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Airport Dr & Camp Creek Pkwy

Peak Hour Turning Movement Count

ID: 19-09165-002
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Airport Dr

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — Camp Creek Pkwy

AM	NOON	PM	
628	0	1060	⇦
0	0	0	0 ↶
0	0	0	0 ↱
917	0	581	2 →
169	0	149	1 ↳

WESTBOUND — Camp Creek Pkwy

PM	NOON	AM	
0	0	0	0 ↶
942	0	558	2 ←
195	0	264	1 ↰
8	0	6	0 ↰
846	0	1085	⇨

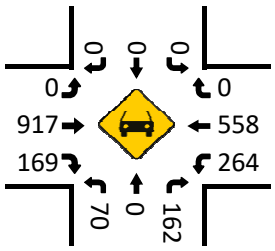
NORTHBOUND — Airport Dr

PM	344	0	118	0	257	PM
NOON	0	0	0	0	0	NOON
AM	433	0	70	0	162	AM

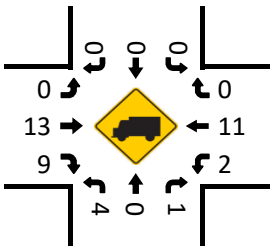
0	2	0	1	

CONTROL			
Signalized			
TEV	2146 AM	0 NOON	2250 PM
PHF	0.97		0.97

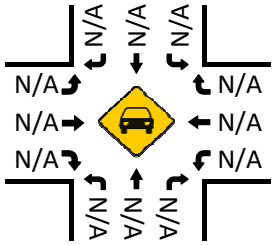
Total Vehicles (AM)



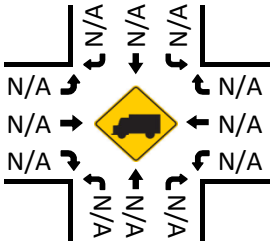
HT (AM)



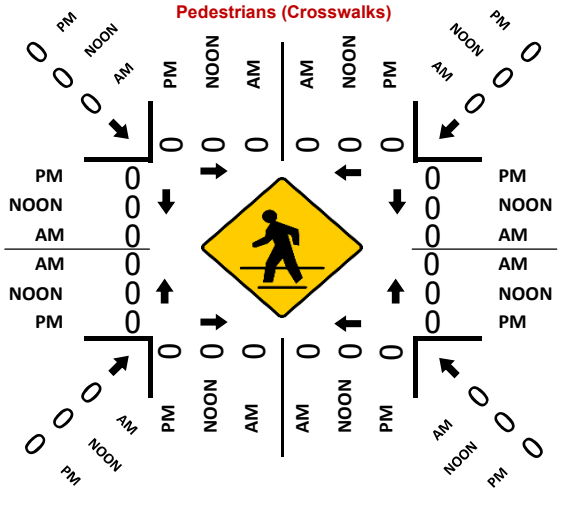
Total Vehicles (Noon)



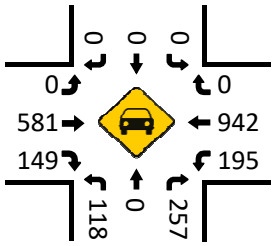
HT (NOON)



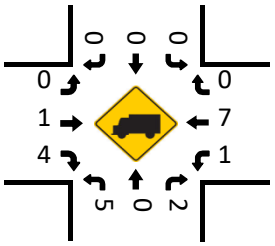
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Conley St/Convention Center Concourse & Camp Creek Pkwy

Peak Hour Turning Movement Count

ID: 19-09165-003
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS		COUNT PERIODS
07:15 AM - 08:15 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:15 PM - 05:15 PM	PM	04:00 PM - 06:00 PM

Conley St/Convention Center Concourse — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	63	5	71	0	426
NOON	0	0	0	0	0
PM	76	3	146	0	214
Lanes	0	1	1	0	

Camp Creek Pkwy — EASTBOUND

	AM	NOON	PM	Lanes
Departing	856	0	1153	
U-Turn	1	0	4	0
Left	89	0	58	1
Thru	931	0	835	2
Right	32	0	12	1

Camp Creek Pkwy — WESTBOUND

	PM	NOON	AM	Lanes
Right	144	0	327	1
Thru	1055	0	782	2
Left	64	0	94	2
U-Turn	5	0	3	0
Departing	1106	0	1068	

Conley St/Convention Center Concourse — NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
Lanes		0	1	1	2
PM	79	0	18	12	120
NOON	0	0	0	0	0
AM	131	0	10	10	63

CONTROL

Signalized

	AM	NOON	PM
TEV	2481	0	2552
PHF	0.94		0.97

Total Vehicles (AM)

SB: 63 (R), 5 (T), 71 (L); EB: 89 (L), 931 (T), 32 (R); WB: 327 (R), 782 (T), 94 (L); NB: 10 (L), 10 (T), 63 (R)

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

SB: 76 (R), 3 (T), 146 (L); EB: 58 (L), 835 (T), 12 (R); WB: 144 (R), 1055 (T), 64 (L); NB: 18 (L), 12 (T), 120 (R)

HT (AM)

SB: 4 (R), 1 (T), 3 (L); EB: 6 (L), 11 (T), 1 (R); WB: 1 (R), 9 (T), 0 (L); NB: 0 (L), 1 (T), 5 (R)

HT (NOON)

All movements: N/A

HT (PM)

SB: 1 (R), 0 (T), 0 (L); EB: 1 (L), 6 (T), 0 (R); WB: 2 (R), 5 (T), 1 (L); NB: 0 (L), 0 (T), 3 (R)

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (westside)	0	0	0
North leg (eastside)	0	0	0
West leg (north)	0	0	1
West leg (south)	0	0	0
East leg (north)	0	0	0
East leg (south)	0	0	0
South leg (westside)	0	0	0
South leg (eastside)	0	0	0
NW corner diagonal	0	0	0
NE corner diagonal	0	0	0
SW corner diagonal	0	0	0
SE corner diagonal	0	0	0

Prepared by National Data & Surveying Services

Conley St & Oxford Ave

Peak Hour Turning Movement Count

ID: 19-09165-004
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Conley St)

	L	T	R	U	Total	
AM	0	91	1	0	256	AM
NOON	0	0	0	0	0	NOON
PM	0	144	3	0	146	PM

EASTBOUND (Oxford Ave)

	L	T	R	U	
AM	0	0	0	0	
NOON	0	0	0	0	
PM	0	0	0	0	

WESTBOUND (Oxford Ave)

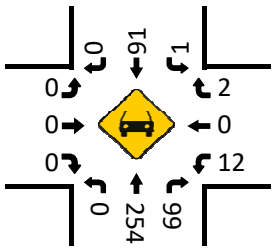
	L	T	R	U	
PM	4	0	2	0	PM
NOON	0	0	0	1	NOON
AM	17	0	12	0	AM
	0	0	0	0	
	26	0	100		

NORTHBOUND (Conley St)

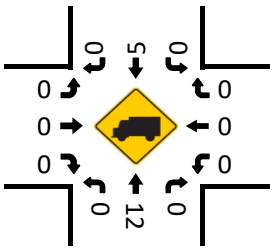
	L	T	R	U	Total	
PM	161	0	0	142	23	PM
NOON	0	0	0	0	0	NOON
AM	103	0	0	254	99	AM

CONTROL			
1-Way Stop (WB)			
TEV	459	0	333
PHF	AM 0.85	NOON	PM 0.87

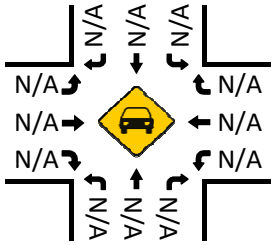
Total Vehicles (AM)



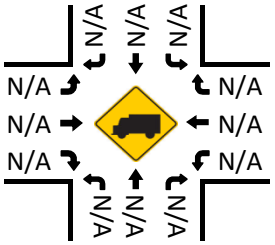
HT (AM)



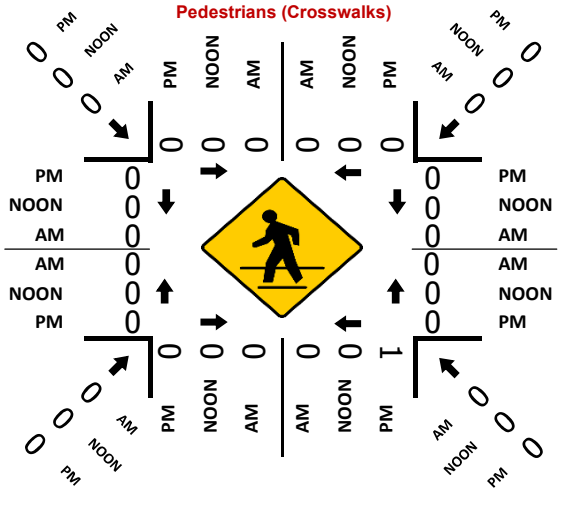
Total Vehicles (Noon)



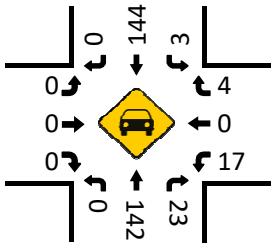
HT (NOON)



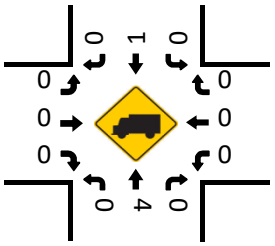
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

College St & Oxford Ave

Peak Hour Turning Movement Count

ID: 19-09165-005
City: College park

Day: Tuesday
Date: 03/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

College St — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing (NB)
AM	5	0	1	0	30
NOON	0	0	0	0	0
PM	11	0	11	0	21
HT	0	1	0	0	

Oxford Ave — EASTBOUND

	AM	NOON	PM	HT
Departing (WB)	18	0	20	
U-Turn	0	0	0	0
Left	27	0	14	0
Thru	62	0	11	1
Right	0	0	0	0

Oxford Ave — WESTBOUND

	PM	NOON	AM	HT
Right	7	0	3	0
Thru	9	0	13	1
Left	1	0	0	0
U-Turn	0	0	0	0
Departing (EB)	23	0	63	

College St — NORTHBOUND

	Departing (SB)	U-Turn	Left	Thru	Right
PM	1	0	0	0	1
NOON	0	0	0	0	0
AM	0	0	0	0	0
HT		0	0	1	0

CONTROL

2-Way Stop (EB/WB)

	AM	NOON	PM
TEV	111	0	65
PHF	0.79		0.74

Total Vehicles (AM)

Approach	Left	Thru	Right
Southbound	1	0	5
Eastbound	27	62	0
Westbound	0	13	3
Northbound	0	0	0

HT (AM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Total Vehicles (Noon)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

HT (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	11	0	11
Eastbound	14	11	0
Westbound	1	9	7
Northbound	0	0	1

HT (PM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	1
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
NW corner (diagonal)	0	0	0
NE corner (diagonal)	0	0	0
SW corner (diagonal)	0	0	0
SE corner (diagonal)	0	0	0

Prepared by National Data & Surveying Services

College St & Yale Ave

Peak Hour Turning Movement Count

ID: 19-09165-006
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

College St — SOUTHBOUND

AM	4	16	9	0	31	AM
NOON	0	0	0	0	0	NOON
PM	0	21	18	0	30	PM

Yale Ave — EASTBOUND

AM	NOON	PM	
19	0	5	
0	0	0	0
0	0	4	0
6	0	20	1
1	0	1	0
AM	NOON	PM	

WESTBOUND — Yale Ave

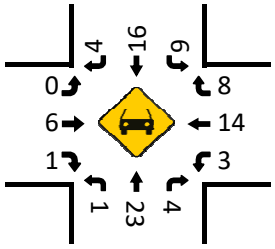
PM	NOON	AM	
9	0	8	0
4	0	14	1
1	0	3	0
0	0	0	0
39	0	19	
PM	NOON	AM	

College St — NORTHBOUND

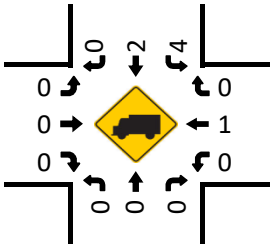
PM	23	0	1	17	1	PM
NOON	0	0	0	0	0	NOON
AM	21	1	1	23	4	AM

CONTROL			
2-Way Stop (EB/WB)			
TEV	90 AM	0 NOON	97 PM
PHF	0.83		0.69

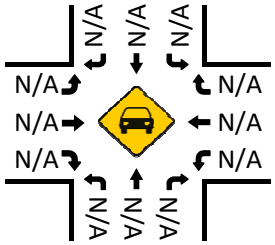
Total Vehicles (AM)



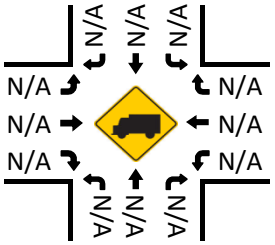
HT (AM)



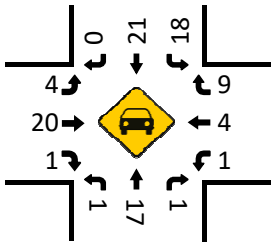
Total Vehicles (Noon)



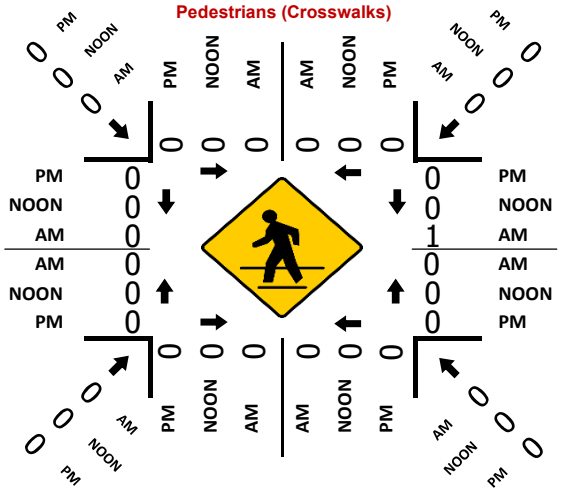
HT (NOON)



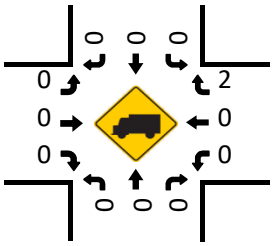
Total Vehicles (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

Victoria St & John Wesley Ave

Peak Hour Turning Movement Count

ID: 19-09165-007
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Victoria St — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

John Wesley Ave — EASTBOUND

AM	NOON	PM	
3	0	24	
0	0	0	0
0	0	0	0
55	0	12	1
1	0	1	0
AM	NOON	PM	

John Wesley Ave — WESTBOUND

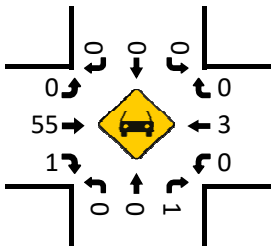
PM	NOON	AM	
0	0	0	0
22	0	3	1
2	0	0	0
0	0	0	0
12	0	56	
PM	NOON	AM	

Victoria St — NORTHBOUND

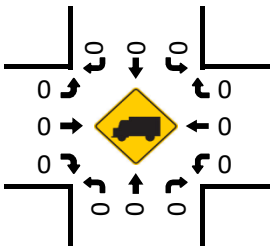
PM	3	0	2	0	0	PM
NOON	0	0	0	0	0	NOON
AM	1	0	0	0	1	AM

CONTROL			
2-Way Stop (NB/SB)			
TEV	60 AM	0 NOON	39 PM
PHF	0.79		0.98

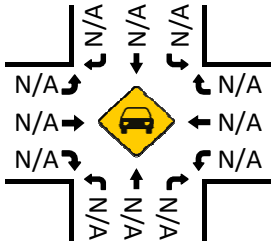
Total Vehicles (AM)



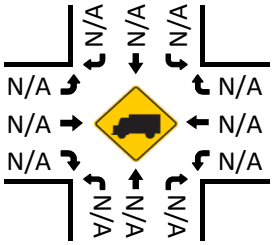
HT (AM)



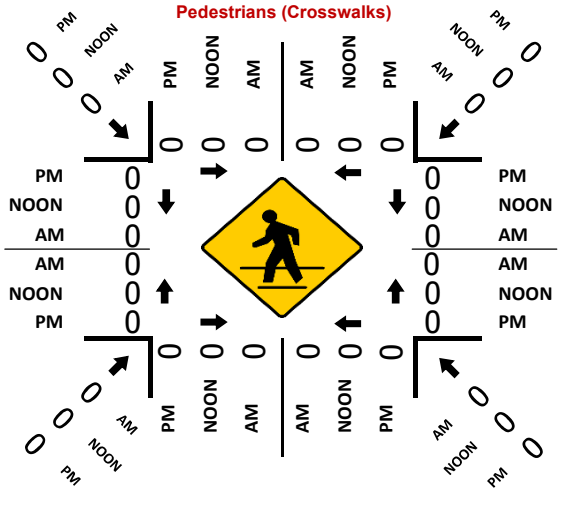
Total Vehicles (Noon)



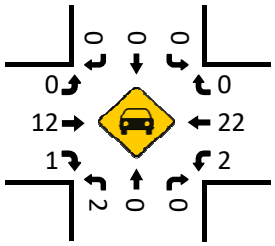
HT (NOON)



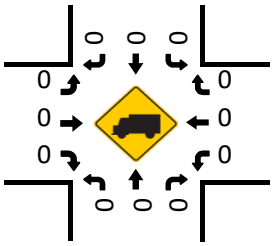
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Victoria St & Columbia Ave

Peak Hour Turning Movement Count

ID: 19-09165-008
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	
AM	07:45 AM - 08:45 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Victoria St — SOUTHBOUND

AM	1	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	2	0	1	0	3	PM

Columbia Ave — EASTBOUND

AM	NOON	PM	
1	0	7	
0	0	0	0
0	0	2	0
16	0	11	1
0	0	0	0
AM	NOON	PM	

Columbia Ave — WESTBOUND

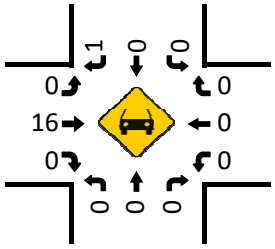
PM	NOON	AM	
1	0	0	0
5	0	0	1
0	0	0	0
0	0	0	0
12	0	16	
PM	NOON	AM	

Victoria St — NORTHBOUND

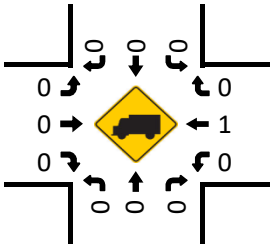
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

CONTROL			
2-Way Stop (NB/SB)			
TEV	17 AM	0 NOON	22 PM
PHF	0.71		0.69

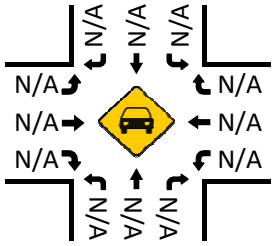
Total Vehicles (AM)



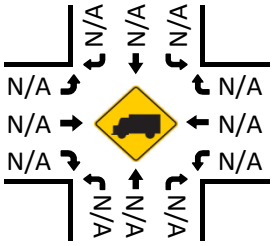
HT (AM)



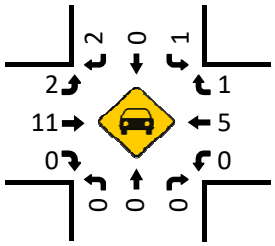
Total Vehicles (Noon)



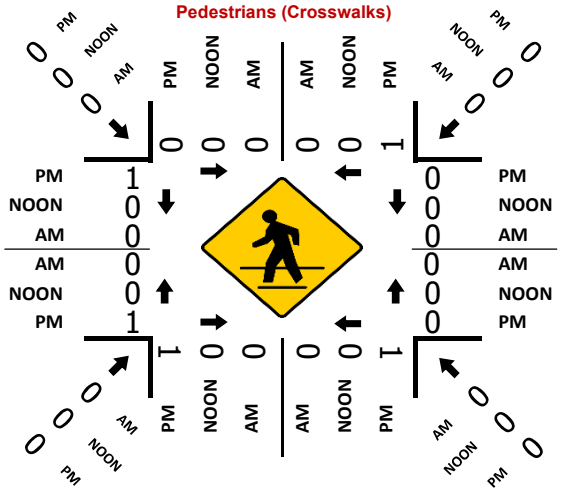
HT (NOON)



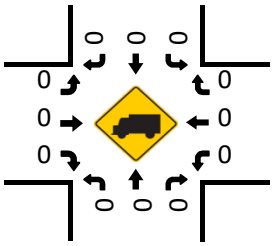
Total Vehicles (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

Victoria St & Harvard Ave

Peak Hour Turning Movement Count

ID: 19-09165-009
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND (Victoria St)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Harvard Ave)

AM	NOON	PM	
40	0	77	⇦
0	0	0	↰ 0
0	0	0	↱ 0
92	0	84	→ 1
0	0	0	↴ 0
AM	NOON	PM	

WESTBOUND (Harvard Ave)

PM	NOON	AM	
0	0	0	↰ 0
77	0	40	← 1
3	0	1	↰ 0
0	0	0	↰ 0
87	0	93	⇨
PM	NOON	AM	

NORTHBOUND (Victoria St)

PM	3	0	0	0	3	PM
NOON	0	0	0	0	0	NOON
AM	1	0	0	0	1	AM

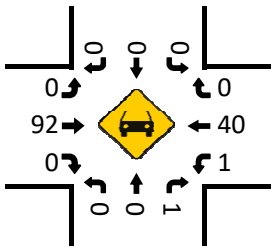
	0	0	1	0
	↰	↰	↑	↱

CONTROL

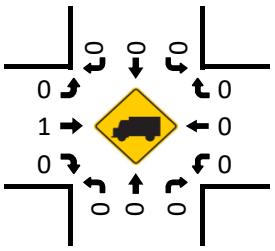
1-Way Stop (NB)

TEV	134	0	167
	AM	NOON	PM
PHF	0.74		0.80

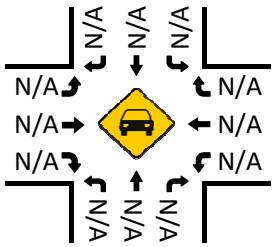
Total Vehicles (AM)



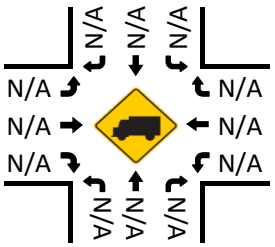
HT (AM)



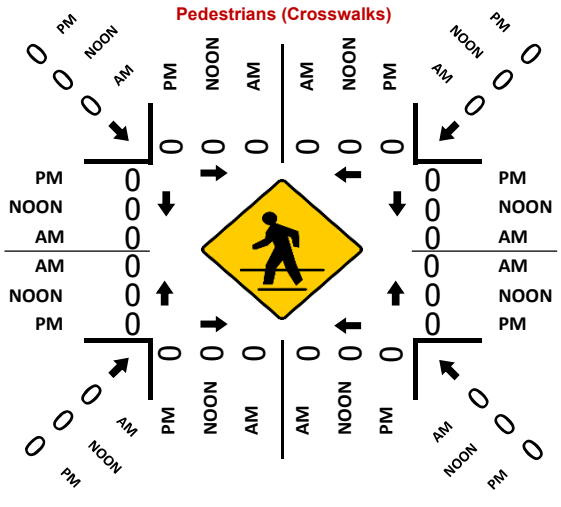
Total Vehicles (Noon)



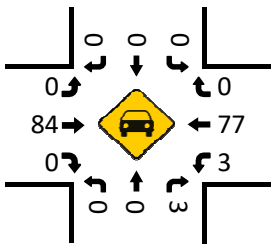
HT (NOON)



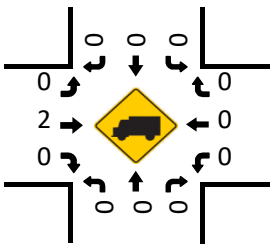
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Conley St & Harvard Ave

Peak Hour Turning Movement Count

ID: 19-09165-010
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Conley St)

AM	0	63	2	0	110	AM
NOON	0	0	0	0	0	NOON
PM	2	52	5	0	58	PM

EASTBOUND (Harvard Ave)

AM	NOON	PM	
52	0	78	
0	0	0	0
2	0	2	0
25	0	38	1
17	0	32	0
AM	NOON	PM	

WESTBOUND (Harvard Ave)

PM	NOON	AM	
7	0	2	0
45	0	24	1
26	0	9	0
0	0	0	0
79	0	90	
PM	NOON	AM	

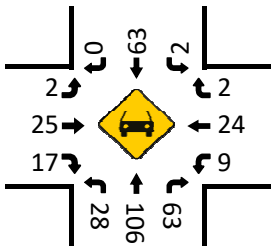
NORTHBOUND (Conley St)

PM	110	0	31	49	36	PM
NOON	0	0	0	0	0	NOON
AM	89	0	28	106	63	AM

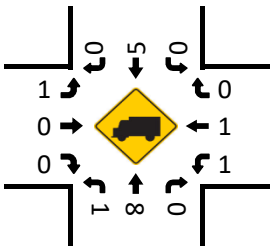
CONTROL: Signalized

TEV	341 AM	0 NOON	325 PM
PHF	0.84		0.83

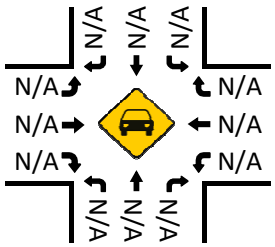
Total Vehicles (AM)



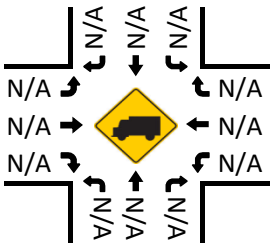
HT (AM)



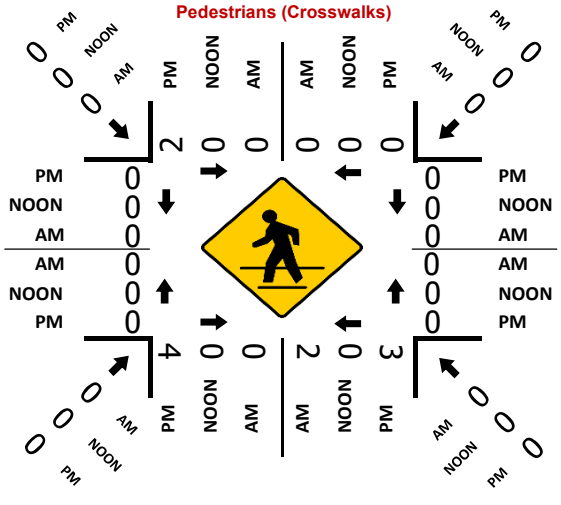
Total Vehicles (Noon)



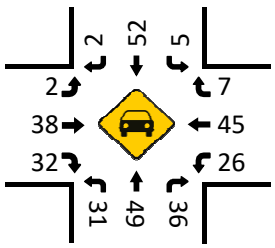
HT (NOON)



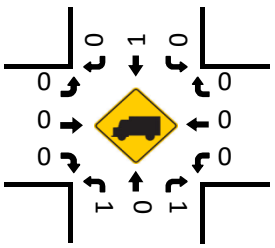
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Atlanta St & Harvard Ave

Peak Hour Turning Movement Count

ID: 19-09165-011
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Atlanta St — SOUTHBOUND

AM	1	3	2	0	11	AM
NOON	0	0	0	0	0	NOON
PM	1	1	2	0	4	PM

Harvard Ave — EASTBOUND

AM	NOON	PM	
47	0	78	⇦
0	0	0	↶ 0
0	0	3	↱ 0
42	0	66	→ 1
1	0	1	↴ 0
AM	NOON	PM	

WESTBOUND — Harvard Ave

PM	NOON	AM	
1	0	5	0 ↰
75	0	44	1 ←
1	0	0	0 ↙
0	0	0	0 ↶
69	0	44	⇨
PM	NOON	AM	

NORTHBOUND — Atlanta St

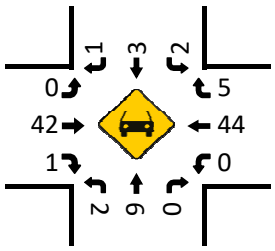
PM	3	0	2	0	1	PM
NOON	0	0	0	0	0	NOON
AM	4	0	2	6	0	AM

CONTROL

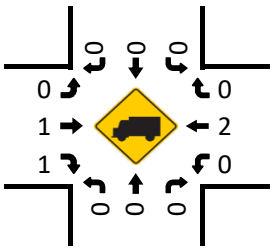
2-Way Stop (NB/SB)

TEV	106 AM	0 NOON	154 PM
PHF	0.72		0.71

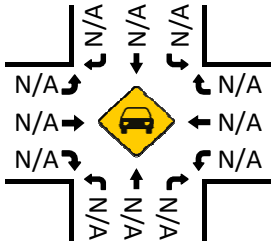
Total Vehicles (AM)



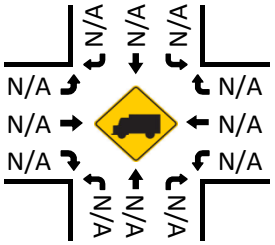
HT (AM)



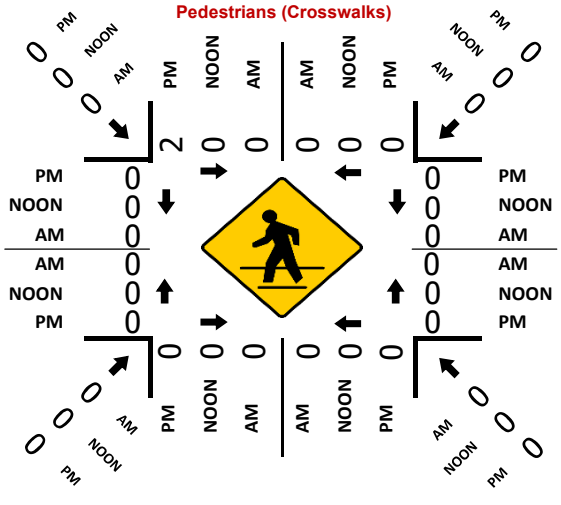
Total Vehicles (Noon)



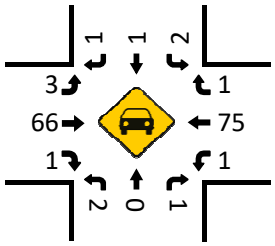
HT (NOON)



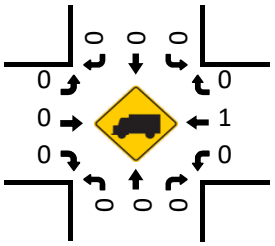
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Princeton Ave & Princeton Dr

Peak Hour Turning Movement Count

ID: 19-09165-012
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Princeton Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Princeton Dr — EASTBOUND

AM	NOON	PM	
49	0	69	⇦
0	0	0	↶ 0
0	0	0	↱ 0
31	0	25	→ 1
24	0	27	↴ 0
AM	NOON	PM	

WESTBOUND — Princeton Dr

PM	NOON	AM	
0	0	0	0 ↰
26	0	15	1 ←
22	0	25	0 ↙
0	0	0	0 ↲
49	0	71	⇨
PM	NOON	AM	

	0	0	0	0
	↰	←	↑	↱
	0	0	1	0

CONTROL

3-Way Stop (NB/EB/WB)

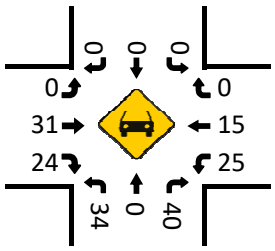
TEV	169	0	167
	AM	NOON	PM
PHF	0.73		0.87

Princeton Ave — NORTHBOUND

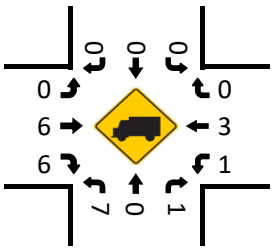
PM	49	0	43	0	24	PM
NOON	0	0	0	0	0	NOON
AM	49	0	34	0	40	AM

Princeton Ave

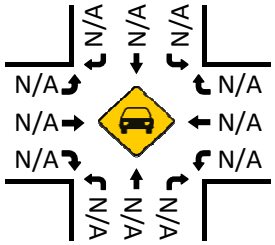
Total Vehicles (AM)



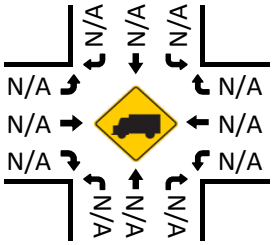
HT (AM)



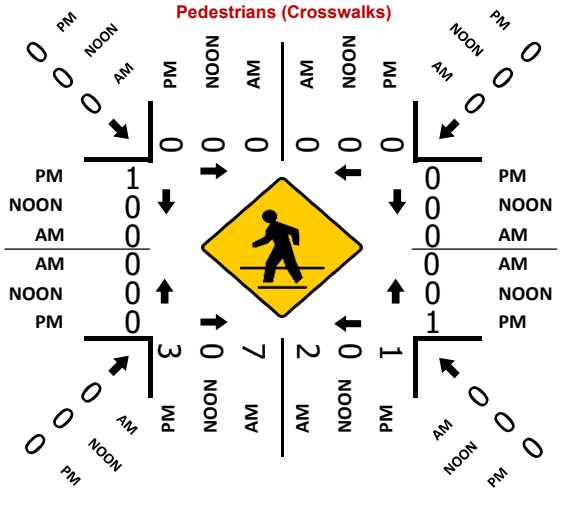
Total Vehicles (Noon)



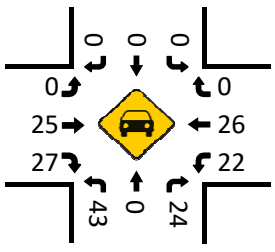
HT (NOON)



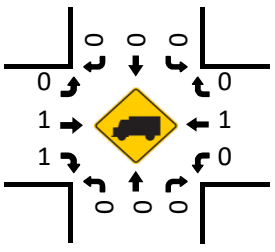
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Atlanta St & Princeton Dr

Peak Hour Turning Movement Count

ID: 19-09165-013
City: College park

Day: Tuesday
Date: 03/19/2019

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Atlanta St — SOUTHBOUND

AM	28	0	23	0	62
NOON	0	0	0	0	0
PM	16	0	36	0	66
Lanes	0	1	0	0	

Princeton Dr — EASTBOUND

	AM	NOON	PM	Lanes
	37	0	24	
	0	0	0	0
	28	0	12	0
	18	0	12	1
	0	0	0	0

Princeton Dr — WESTBOUND

Lanes	PM	NOON	AM
0	54	0	34
1	8	0	9
0	0	0	0
0	1	0	0
	49	0	41

Atlanta St — NORTHBOUND

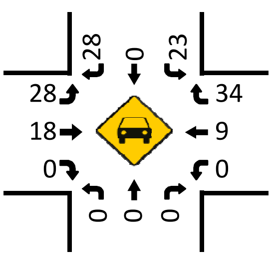
Lanes		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

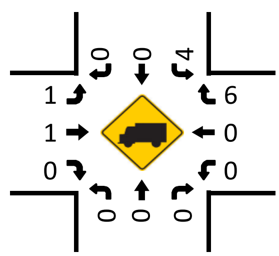
1-Way Stop (SB)

	AM	NOON	PM
TEV	140	0	139
PHF	0.76		0.87

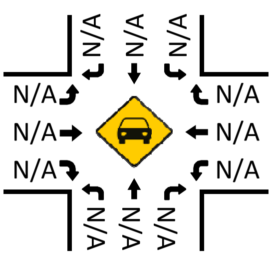
Total Vehicles (AM)



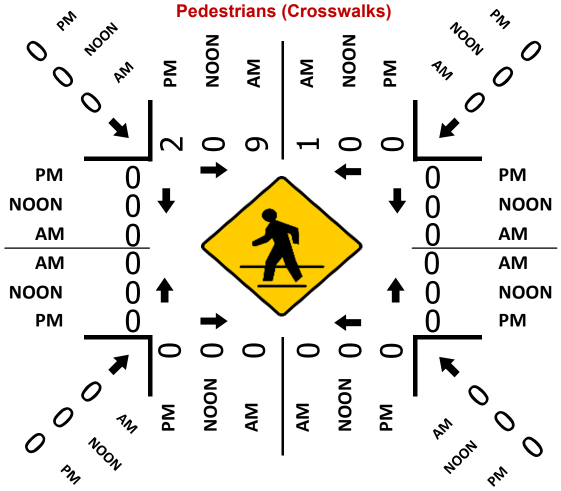
HT (AM)



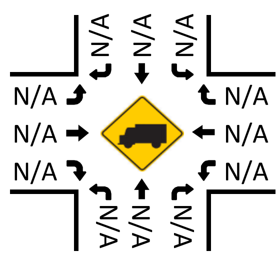
Total Vehicles (Noon)



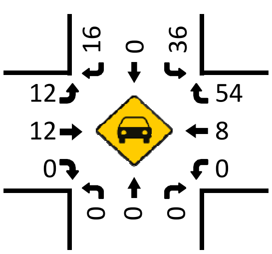
Pedestrians (Crosswalks)



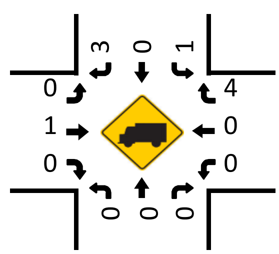
HT (NOON)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

McDonald St & Ross Ave

Peak Hour Turning Movement Count

ID: 19-09165-014
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — McDonald St

	L	T	R	U	Total	
AM	0	3	63	0	76	AM
NOON	0	0	0	0	0	NOON
PM	0	6	2	0	11	PM

EASTBOUND — Ross Ave

	L	T	R	U	Total	
AM	0	0	1	0	1	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

WESTBOUND — Ross Ave

	L	T	R	U	Total	
AM	0	13	0	194	207	AM
NOON	0	0	0	0	0	NOON
PM	0	5	0	70	75	PM

NORTHBOUND — McDonald St

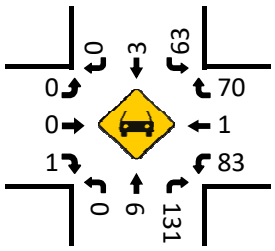
	L	T	R	U	Total	
AM	87	0	0	6	131	AM
NOON	0	0	0	0	0	NOON
PM	34	0	0	6	11	PM

CONTROL

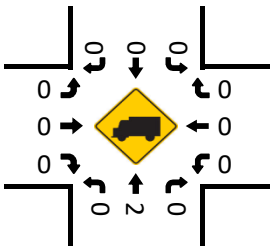
2-Way Stop (EB/WB)

	AM	NOON	PM
TEV	358	0	58
PHF	0.73		0.85

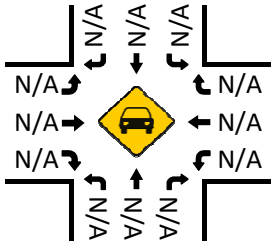
Total Vehicles (AM)



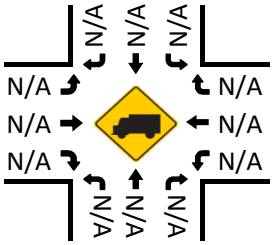
HT (AM)



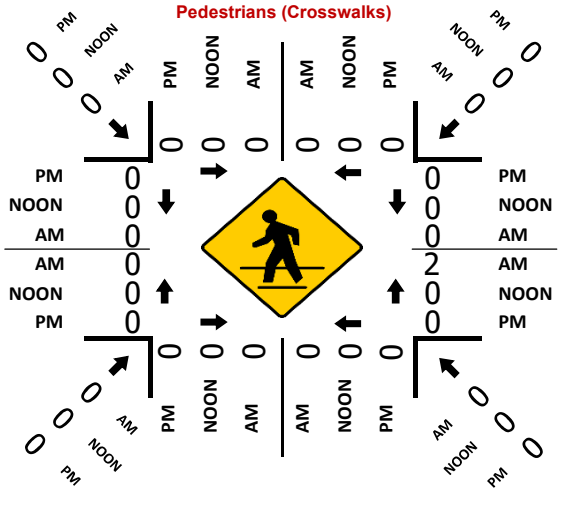
Total Vehicles (Noon)



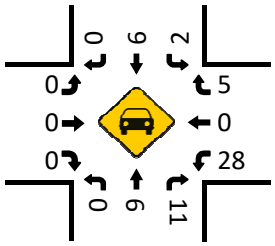
HT (NOON)



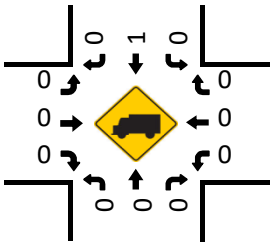
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Princeton Ave & McDonald St/Princeton Ave

Peak Hour Turning Movement Count

ID: 19-09165-015
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Princeton Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

McDonald St/Princeton Ave — EASTBOUND

AM	NOON	PM	
137	0	17	⇦
0	0	0	↰ 0
0	0	0	↱ 0
82	0	34	→ 1
5	0	0	↳ 0
AM	NOON	PM	

McDonald St/Princeton Ave — WESTBOUND

PM	NOON	AM	
0	0	0	0 ↰
16	0	137	1 ←
1	0	0	0 ↰
0	0	0	0 ↰
36	0	83	⇨
PM	NOON	AM	

Princeton Ave — NORTHBOUND

PM	1	0	1	0	2	PM
NOON	0	0	0	0	0	NOON
AM	5	0	0	0	1	AM

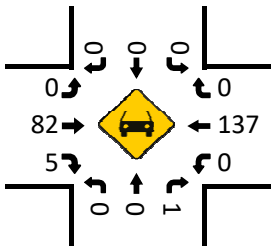
	0 ↰	0 ←	1 ↑	0 ↱

CONTROL

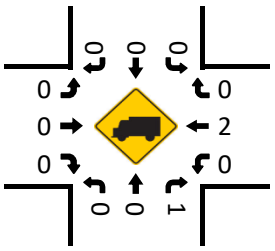
1-Way Stop (NB)

TEV	225	0	54
	AM	NOON	PM
PHF	0.80		0.96

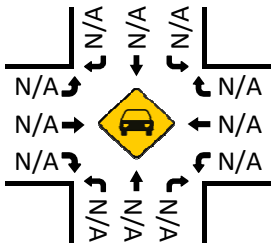
Total Vehicles (AM)



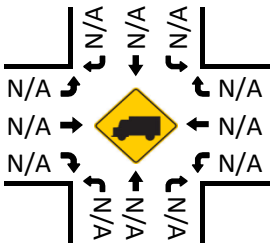
HT (AM)



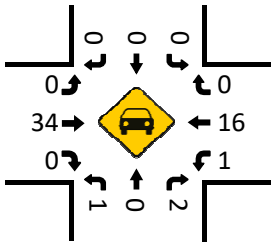
Total Vehicles (Noon)



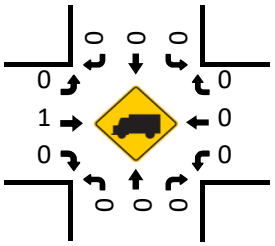
HT (NOON)



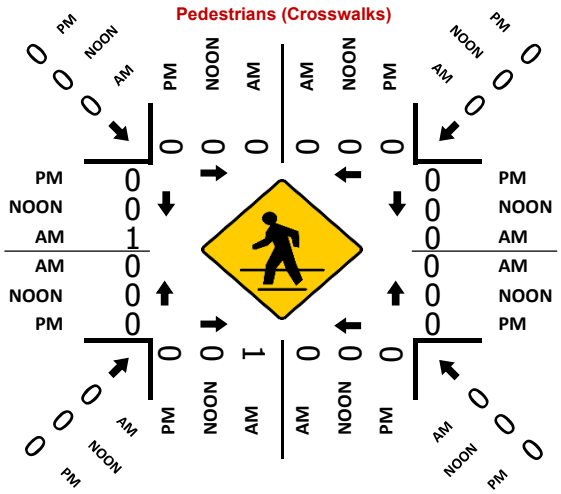
Total Vehicles (PM)



HT (PM)



Pedestrians (Crosswalks)



Princeton Ave — NORTHBOUND

Prepared by National Data & Surveying Services

Atlanta St & Princeton Ave

Peak Hour Turning Movement Count

ID: 19-09165-016
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Atlanta St

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — Princeton Ave

AM	NOON	PM	
138	0	17	⇦
1	0	0	↰ 0
0	0	0	↱ 0
79	0	35	→ 1
4	0	2	↳ 0
AM	NOON	PM	

WESTBOUND — Princeton Ave

PM	NOON	AM	
0	0	0	0 ↰
16	0	126	1 ←
8	0	5	0 ↰
0	0	0	0 ↰
41	0	81	⇨
PM	NOON	AM	

NORTHBOUND — Atlanta St

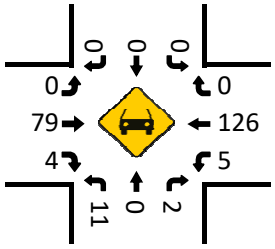
PM	10	0	1	0	6	PM
NOON	0	0	0	0	0	NOON
AM	9	0	11	0	2	AM

CONTROL

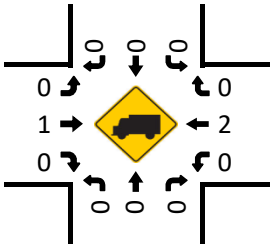
1-Way Stop (NB)

	AM	NOON	PM
TEV	228	0	68
PHF	0.77		0.85

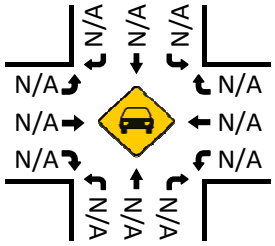
Total Vehicles (AM)



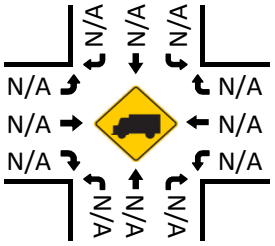
HT (AM)



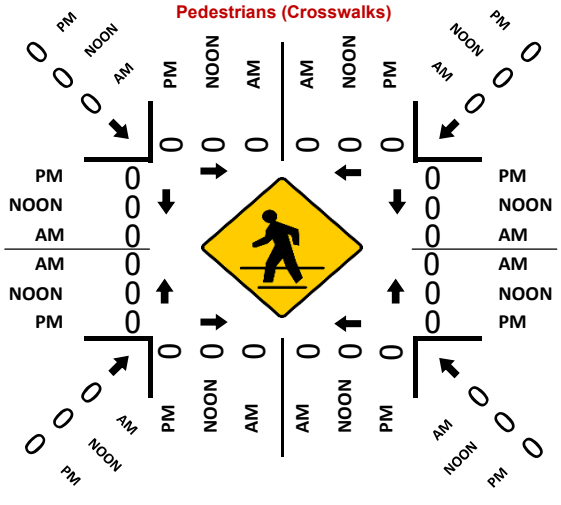
Total Vehicles (Noon)



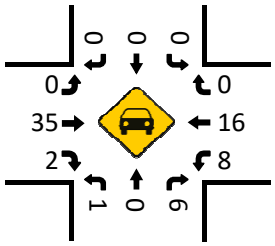
HT (NOON)



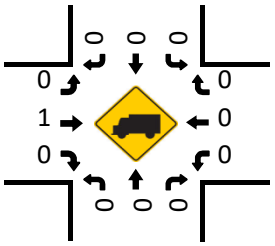
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

McDonald St & Redwine Ave

Peak Hour Turning Movement Count

ID: 19-09165-017
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

SOUTHBOUND — McDonald St

AM	9	30	0	0	46	AM
NOON	0	0	0	0	0	NOON
PM	13	5	0	0	17	PM

EASTBOUND — Redwine Ave

AM	NOON	PM	
44	0	22	
0	0	0	0
7	0	12	0
0	0	0	1
36	0	3	0
AM	NOON	PM	

WESTBOUND — Redwine Ave

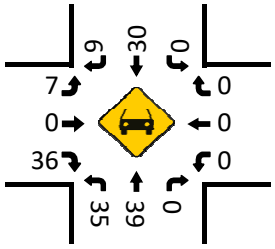
PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

NORTHBOUND — McDonald St

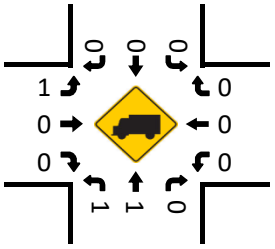
PM	8	0	9	5	0	PM
NOON	0	0	0	0	0	NOON
AM	66	0	35	39	0	AM

CONTROL			
1-Way Stop (EB)			
TEV	156	0	47
	AM	NOON	PM
PHF	0.67		0.73

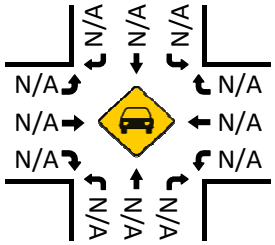
Total Vehicles (AM)



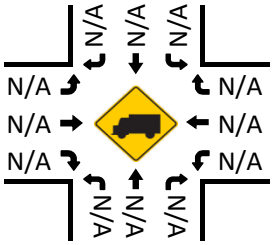
HT (AM)



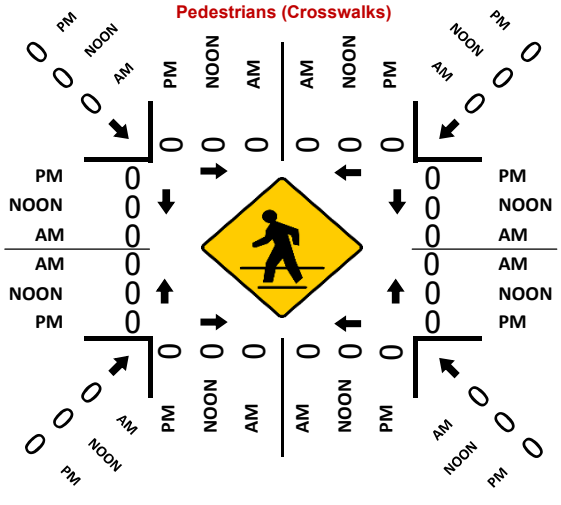
Total Vehicles (Noon)



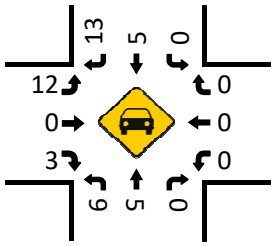
HT (NOON)



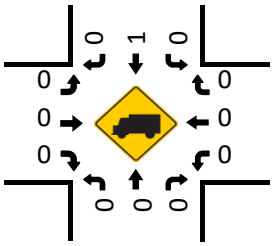
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

McDonald St & Roosevelt St

Peak Hour Turning Movement Count

ID: 19-09165-018
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

McDonald St — SOUTHBOUND

AM	0	39	0	0	48	AM
NOON	0	0	0	0	0	NOON
PM	4	18	0	0	19	PM

Roosevelt St — EASTBOUND

AM	NOON	PM		
0	0	6		
0	0	0	0	
0	0	2	0	
0	0	0	1	
0	0	2	0	
AM	NOON	PM		

CONTROL

1-Way Stop (EB)

TEV	87	0	45
	AM	NOON	PM
PHF	0.66		0.70

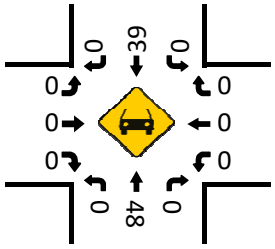
Roosevelt St — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

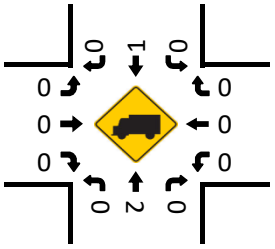
McDonald St — NORTHBOUND

PM	20	0	2	17	0	PM
NOON	0	0	0	0	0	NOON
AM	39	0	0	48	0	AM

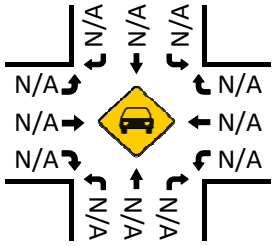
Total Vehicles (AM)



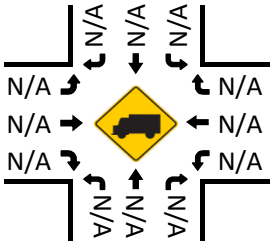
HT (AM)



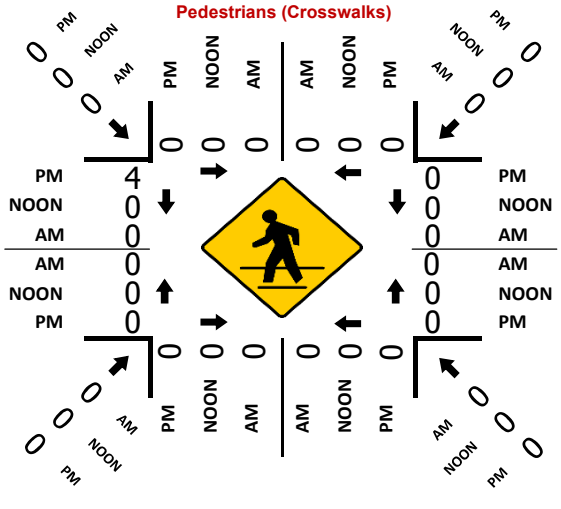
Total Vehicles (Noon)



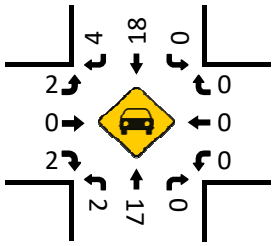
HT (NOON)



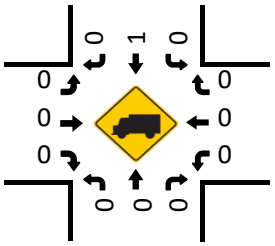
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Rhodes St & Redwine Ave

Peak Hour Turning Movement Count

ID: 19-09165-019
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Rhodes St — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	2	1	0	3	PM

Redwine Ave — EASTBOUND

AM	NOON	PM		
44	0	20	⇦	
0	0	0	↶	0
0	0	2	↱	0
43	0	13	→	1
0	0	1	↷	0
AM	NOON	PM		

WESTBOUND — Redwine Ave

PM	NOON	AM		
1	0	0	↶	0
20	0	44	←	1
1	0	0	↰	0
0	0	0	↷	0
15	0	43	⇨	
PM	NOON	AM		

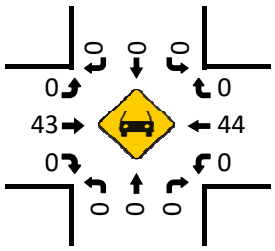
Rhodes St — NORTHBOUND

PM	4	0	0	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

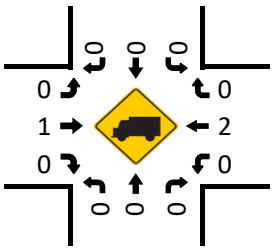
↶	↰	↑	↱	
0	0	1	0	

CONTROL			
4-Way Stop			
TEV	87	0	42
	AM	NOON	PM
PHF	0.64		0.70

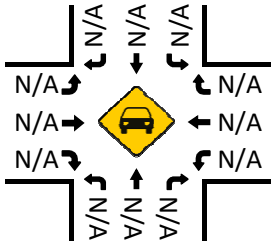
Total Vehicles (AM)



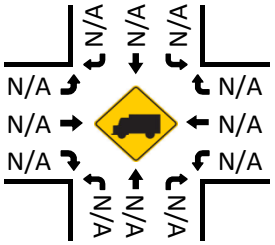
HT (AM)



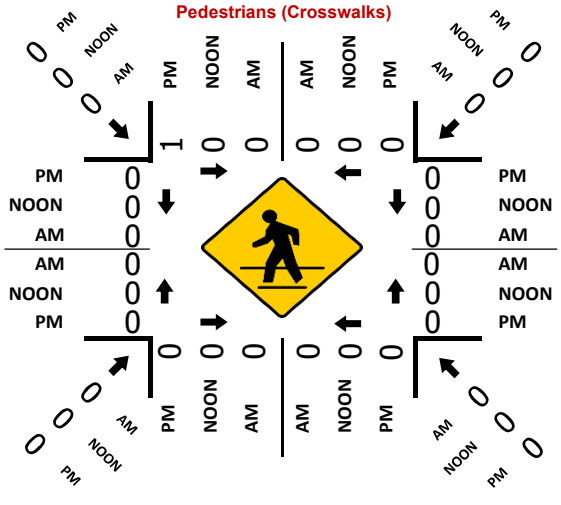
Total Vehicles (Noon)



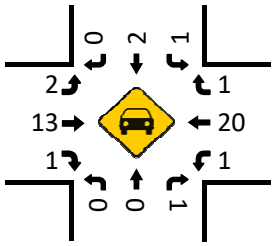
HT (NOON)



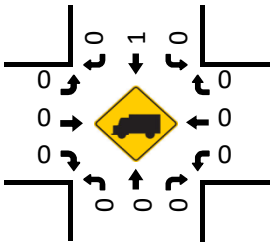
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fairway Dr & Redwine Ave

Peak Hour Turning Movement Count

ID: 19-09165-020
City: College park

Day: Tuesday
Date: 03/19/2019

PEAK HOURS		COUNT PERIODS
07:15 AM - 08:15 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

SOUTHBOUND (Fairway Dr)

AM	0	47	42	0	74	AM
NOON	0	0	0	0	0	NOON
PM	0	31	10	0	88	PM

EASTBOUND (Redwine Ave)

AM	NOON	PM	
0	0	0	⇦
0	0	0	↶ 0
0	0	0	→ 0
0	0	0	↷ 0
0	0	0	⇩
AM	NOON	PM	

WESTBOUND (Redwine Ave)

PM	NOON	AM	
19	0	44	0 ↷
0	0	0	1 ←
1	0	1	0 ↶
0	0	0	0 ↶
11	0	42	⇨
PM	NOON	AM	

NORTHBOUND (Fairway Dr)

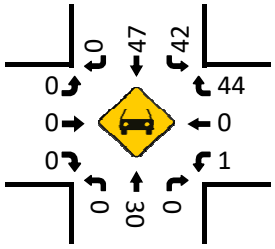
PM	32	0	0	69	1	PM
NOON	0	0	0	0	0	NOON
AM	48	0	0	30	0	AM

CONTROL

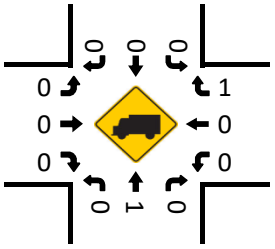
1-Way Stop (WB)

TEV	164	0	131
	AM	NOON	PM
PHF	0.79		0.78

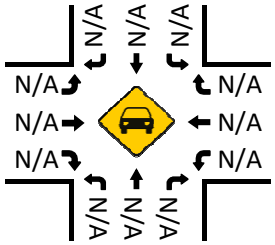
Total Vehicles (AM)



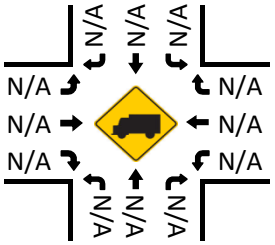
HT (AM)



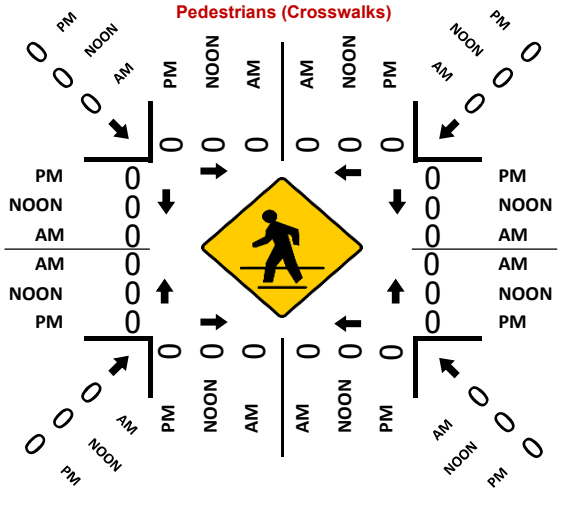
Total Vehicles (Noon)



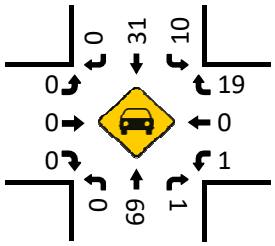
HT (NOON)



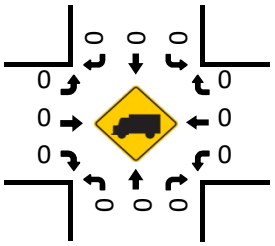
Pedestrians (Crosswalks)



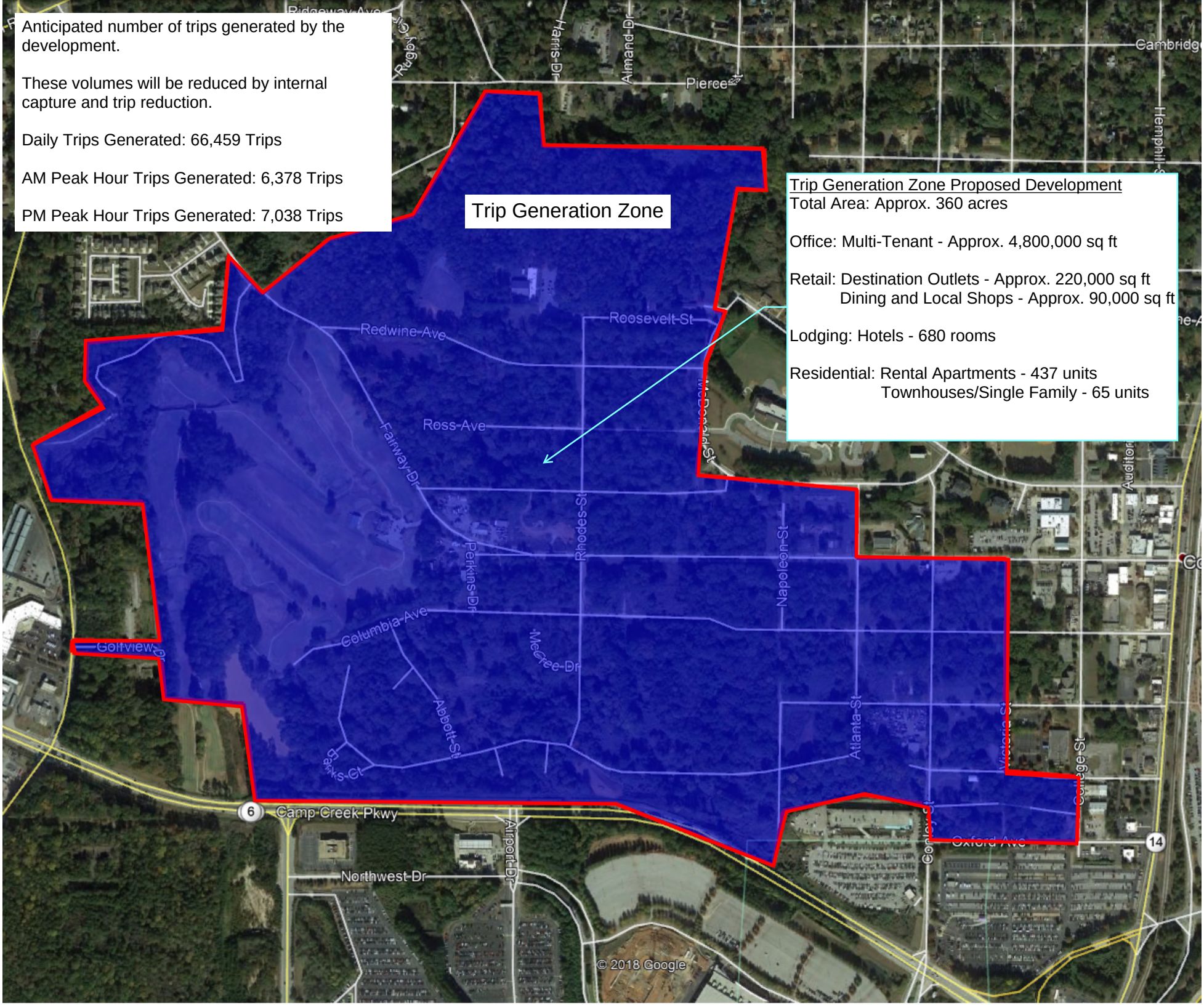
Total Vehicles (PM)



HT (PM)



APPENDIX B - TRIP GENERATION


Anticipated number of trips generated by the development.
These volumes will be reduced by internal capture and trip reduction.
Daily Trips Generated: 66,459 Trips
AM Peak Hour Trips Generated: 6,378 Trips
PM Peak Hour Trips Generated: 7,038 Trips
Trip Generation Zone
Trip Generation Zone Proposed Development
Total Area: Approx. 360 acres
Office: Multi-Tenant - Approx. 4,800,000 sq ft
Retail: Destination Outlets - Approx. 220,000 sq ft
Dining and Local Shops - Approx. 90,000 sq ft
Lodging: Hotels - 680 rooms
Residential: Rental Apartments - 437 units
Townhouses/Single Family - 65 units
Pierce
Redwine Ave
Roosevelt St
Ross Ave
Fairway Dr
Perkins Dr
Rhodes St
Napoleon St
Columbia Ave
Golfview Dr
McCree Dr
Abbott St
Banks Ct
Atlanta St
College St
Auditor
Camp Creek Pkwy
Northwest Dr
Airport Dr
Oxford Ave
14
6
© 2018 Google

ITE Description	ITE Code	Unit	No. of Units	Daily Trip Generation		AM Peak Hour Trip Generation				PM Peak Hour Trip Generation			
				Rate	Trips	Rate	Trips			Rate	Trips		
							Total	Enter	Exit		Total	Enter	Exit
General Office Building	710	1000 SF	4800	9.74	46752	1.16	5568	4788	780	1.15	5520	2650	2870.40
Factory Outlet Center	823	1000 SF	90	26.59	2393	0.67	60	44	16	2.29	206	97	109.23
Shopping Center	820	1000 SF	220	37.75	8305	0.94	207	128	79	3.81	838	402	435.86
Hotel	310	Rooms	680	8.36	5685	0.47	320	189	131	0.60	408	208	199.92
Single-Family Detached Housing	210	welling Uni	65	9.44	614	0.74	48	12	36	0.99	64	41	23.81
Multifamily Housing (Lowrise)	220	Dwelling Units	177	7.32	1296	0.46	81	0	19	0.00	1	99	1
Multifamily Housing (Midrise)	221	Dwelling Units	260	5.44	1414	0.36	94	0	24	0.00	0	114	1
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	
					0		0		0			0	

^ Footnotes if Any, Here

					66459		**6378**	**5162**	**1085**		**7038**	**3611**	**3640**

Factory Outlet Center
(823)

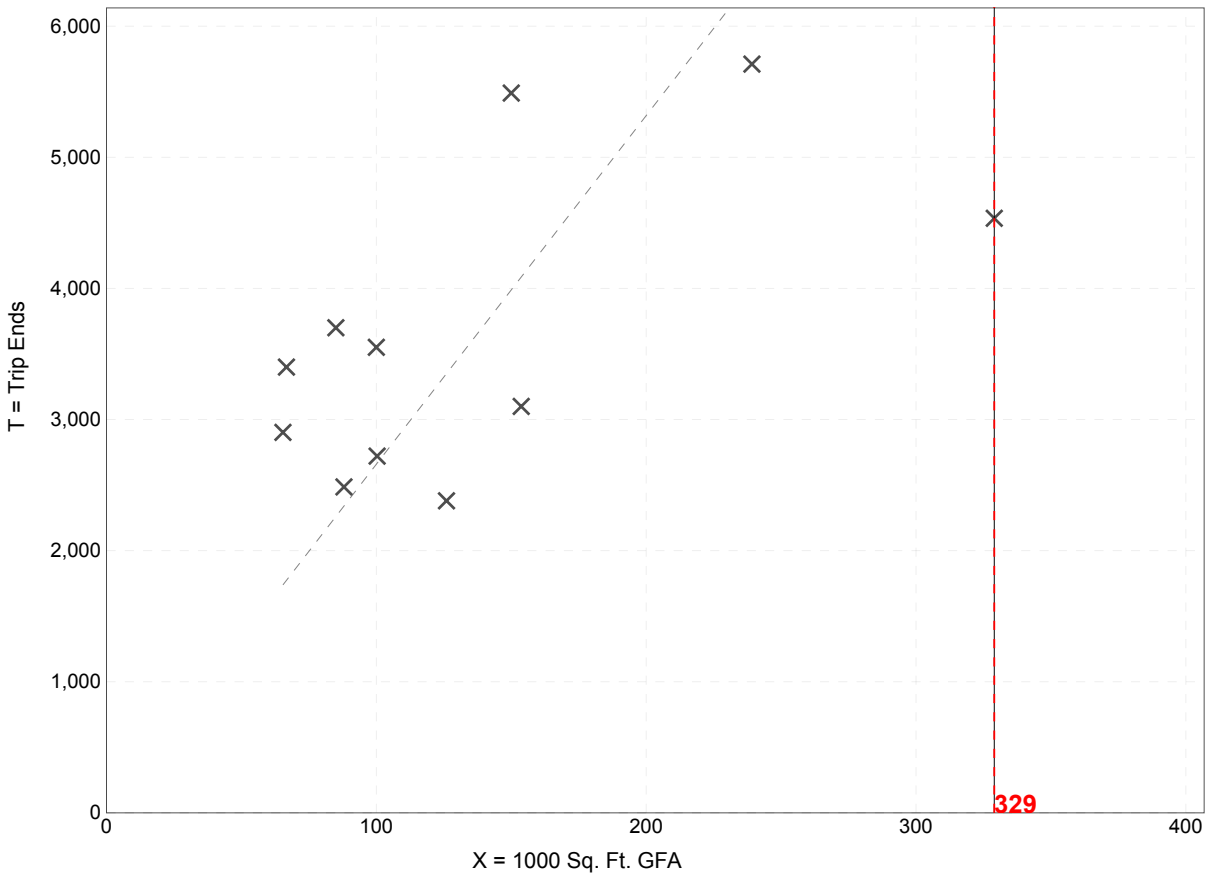
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 11
Avg. 1000 Sq. Ft. GFA: 137
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
26.59	13.78 - 50.98	11.40

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

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Factory Outlet Center
(823)

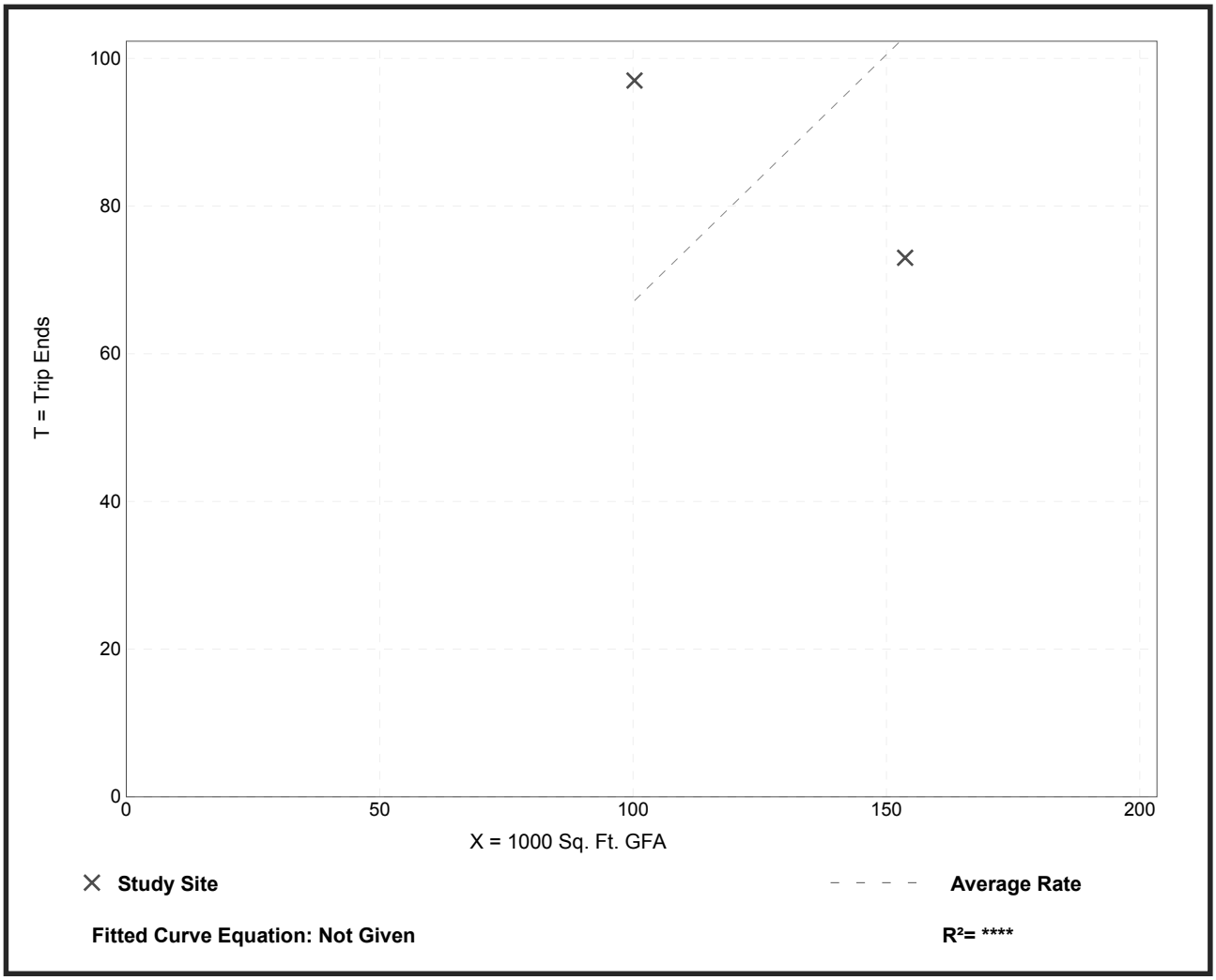
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. 1000 Sq. Ft. GFA: 127
Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.67	0.47 - 0.97	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

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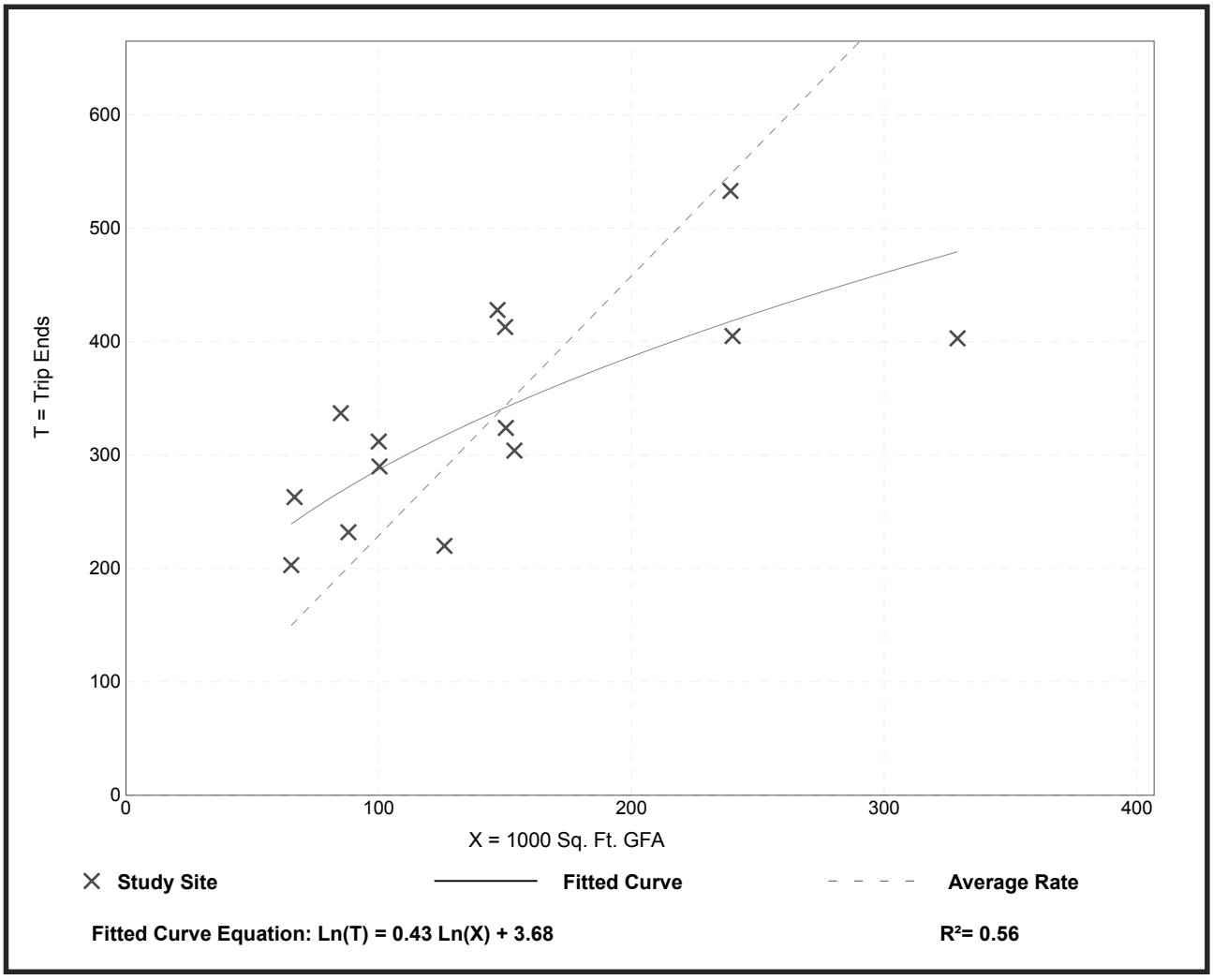
Factory Outlet Center
(823)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 14
Avg. 1000 Sq. Ft. GFA: 146
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.29	1.22 - 3.96	0.79

Data Plot and Equation



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High-Turnover (Sit-Down) Restaurant
(932)

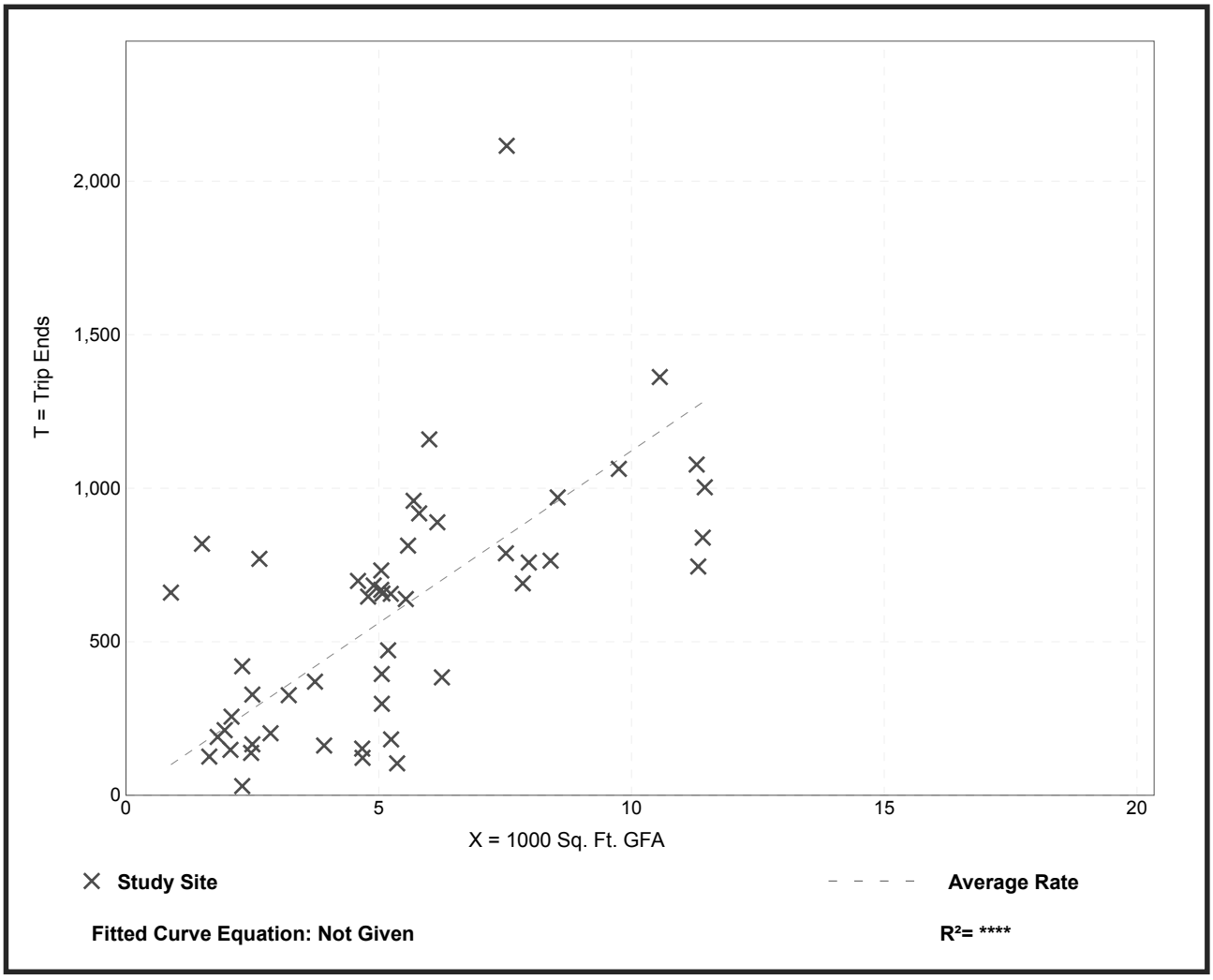
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
112.18	13.04 - 742.41	72.51

Data Plot and Equation



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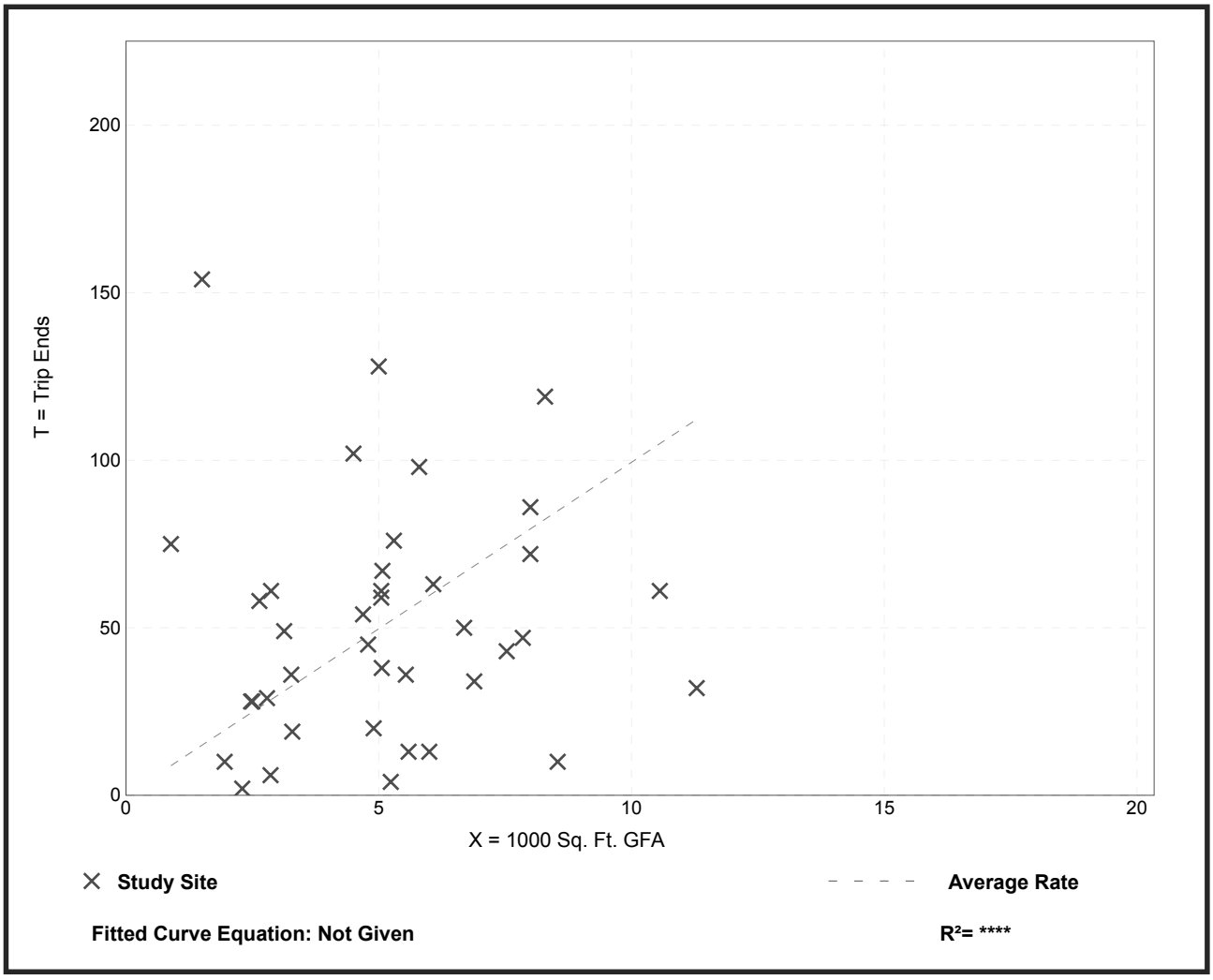
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 39
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.94	0.76 - 102.39	11.33

Data Plot and Equation



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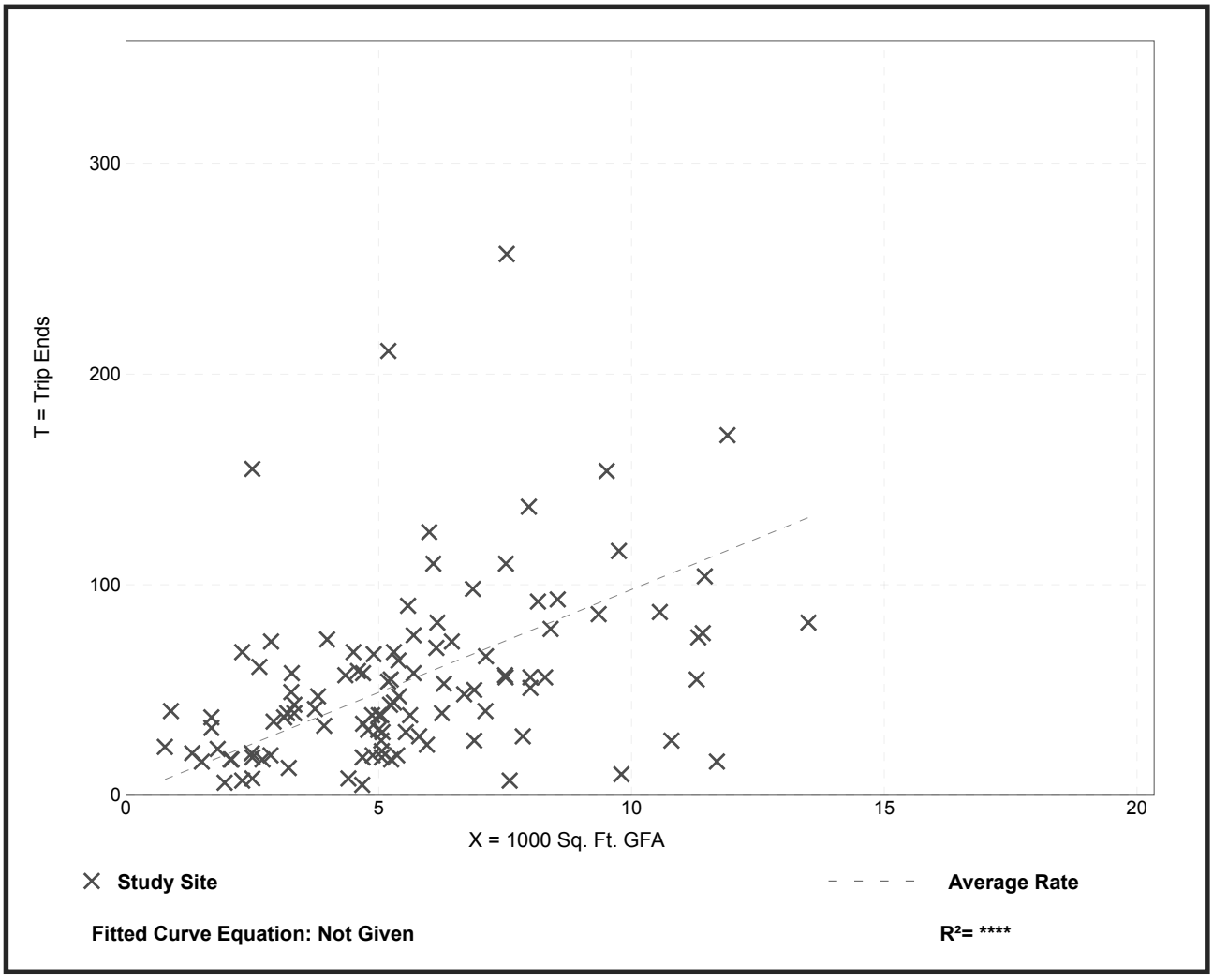
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 107
Avg. 1000 Sq. Ft. GFA: 6
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.77	0.92 - 62.00	7.37

Data Plot and Equation



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Hotel
(310)

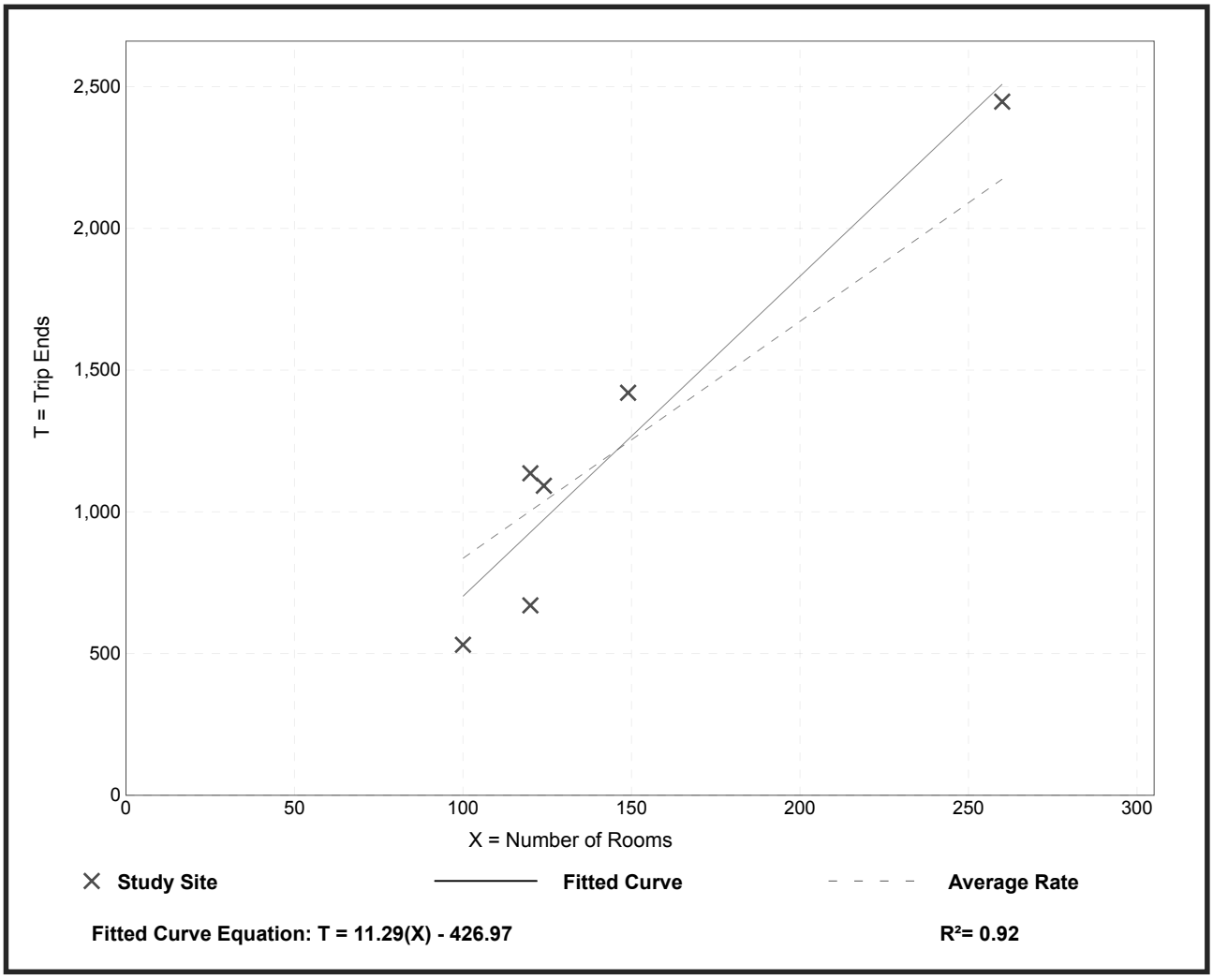
Vehicle Trip Ends vs: **Rooms**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Rooms: 146
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.36	5.31 - 9.53	1.86

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

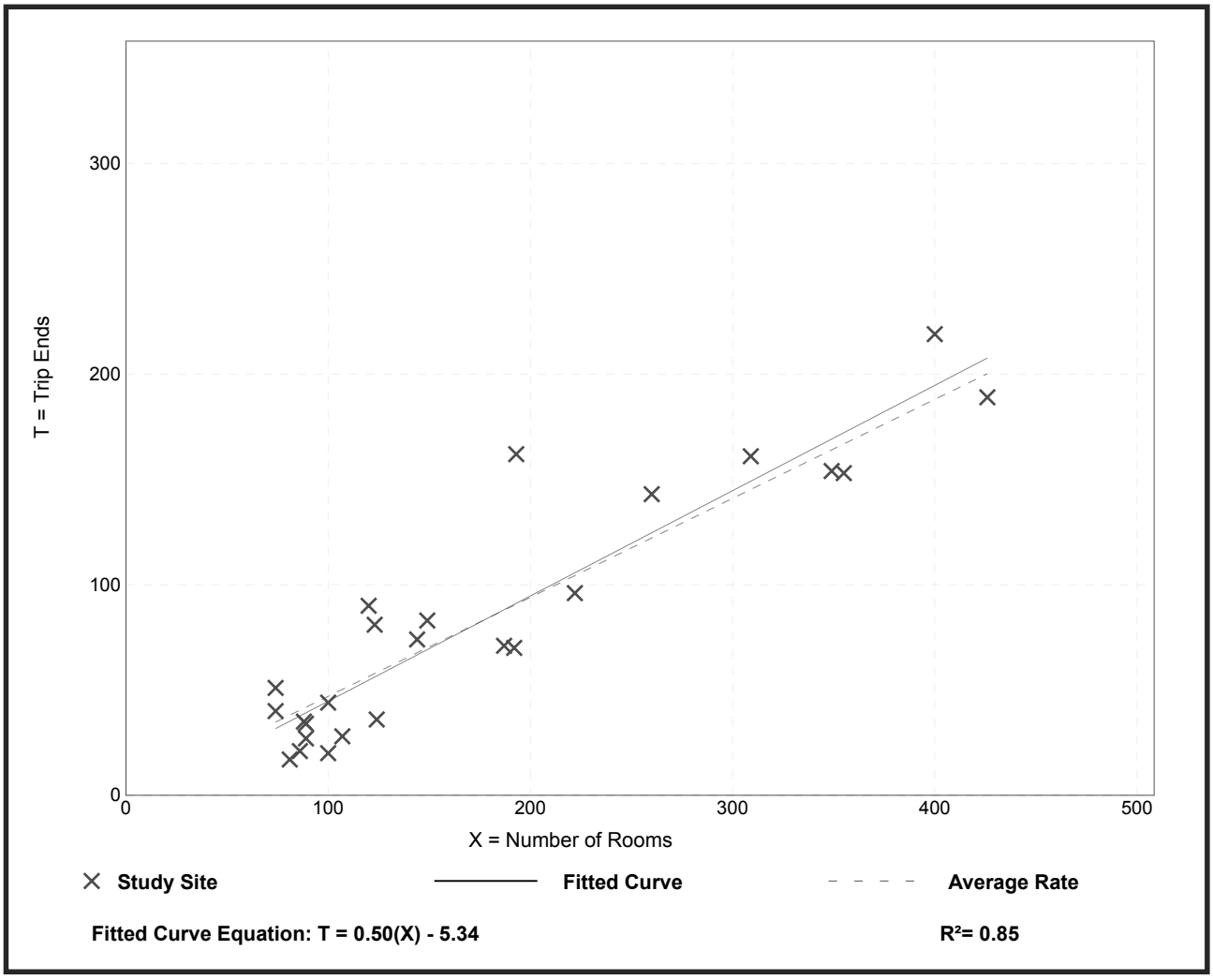
Hotel
(310)

Vehicle Trip Ends vs: **Rooms**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 25
Avg. Num. of Rooms: 178
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.47	0.20 - 0.84	0.14

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

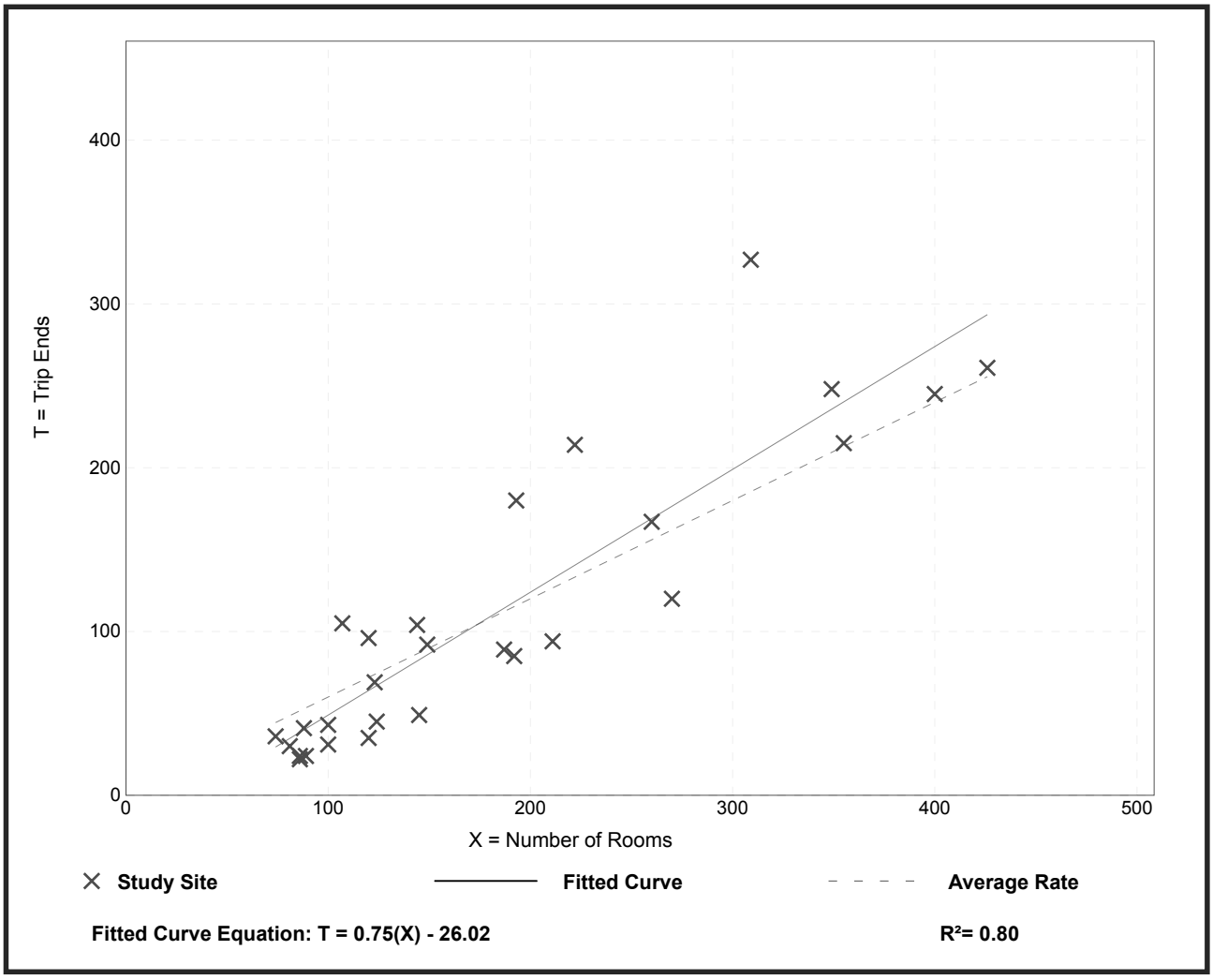
Hotel
(310)

Vehicle Trip Ends vs: **Rooms**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 28
Avg. Num. of Rooms: 183
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.60	0.26 - 1.06	0.22

Data Plot and Equation



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Multifamily Housing (Low-Rise)
(220)

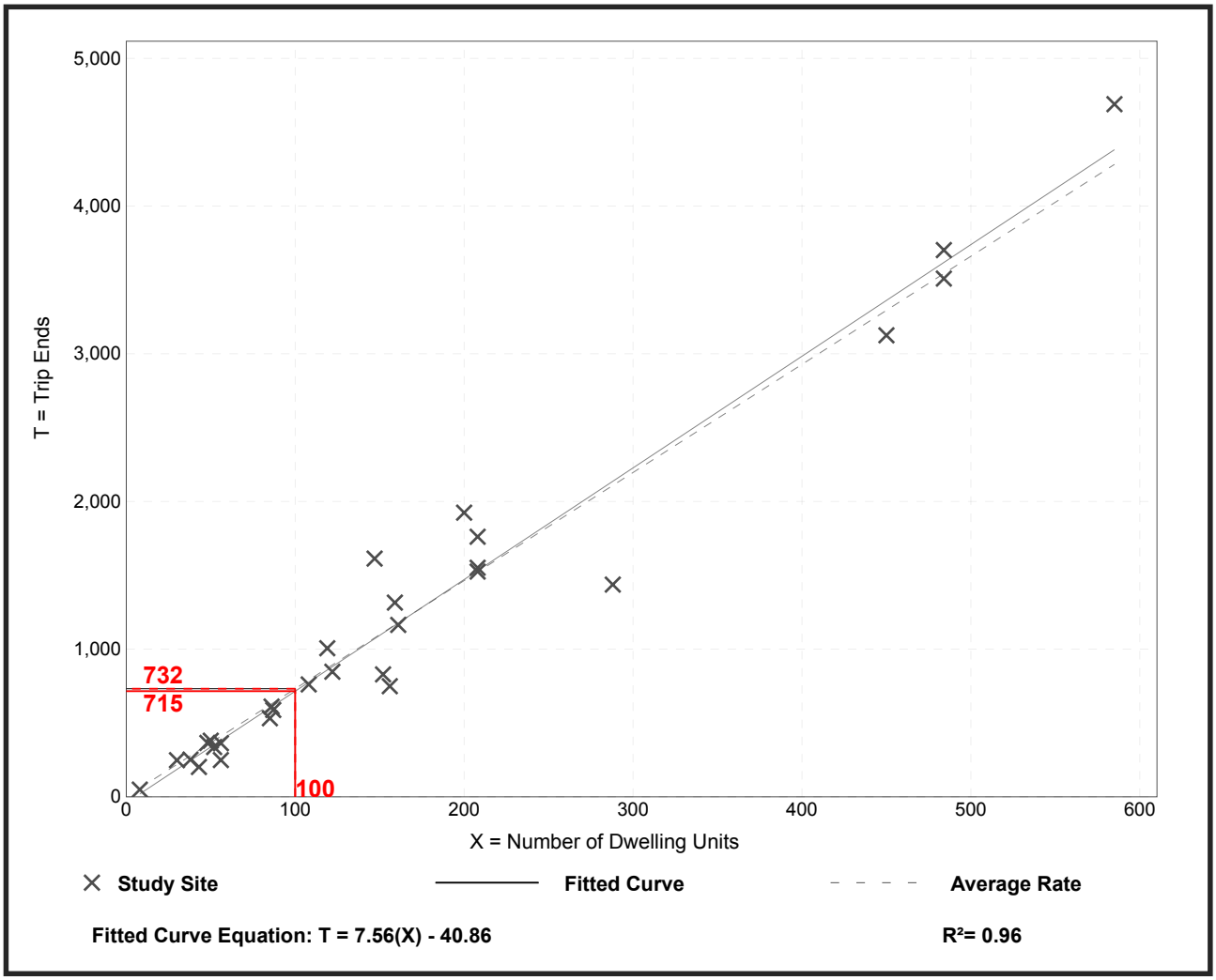
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



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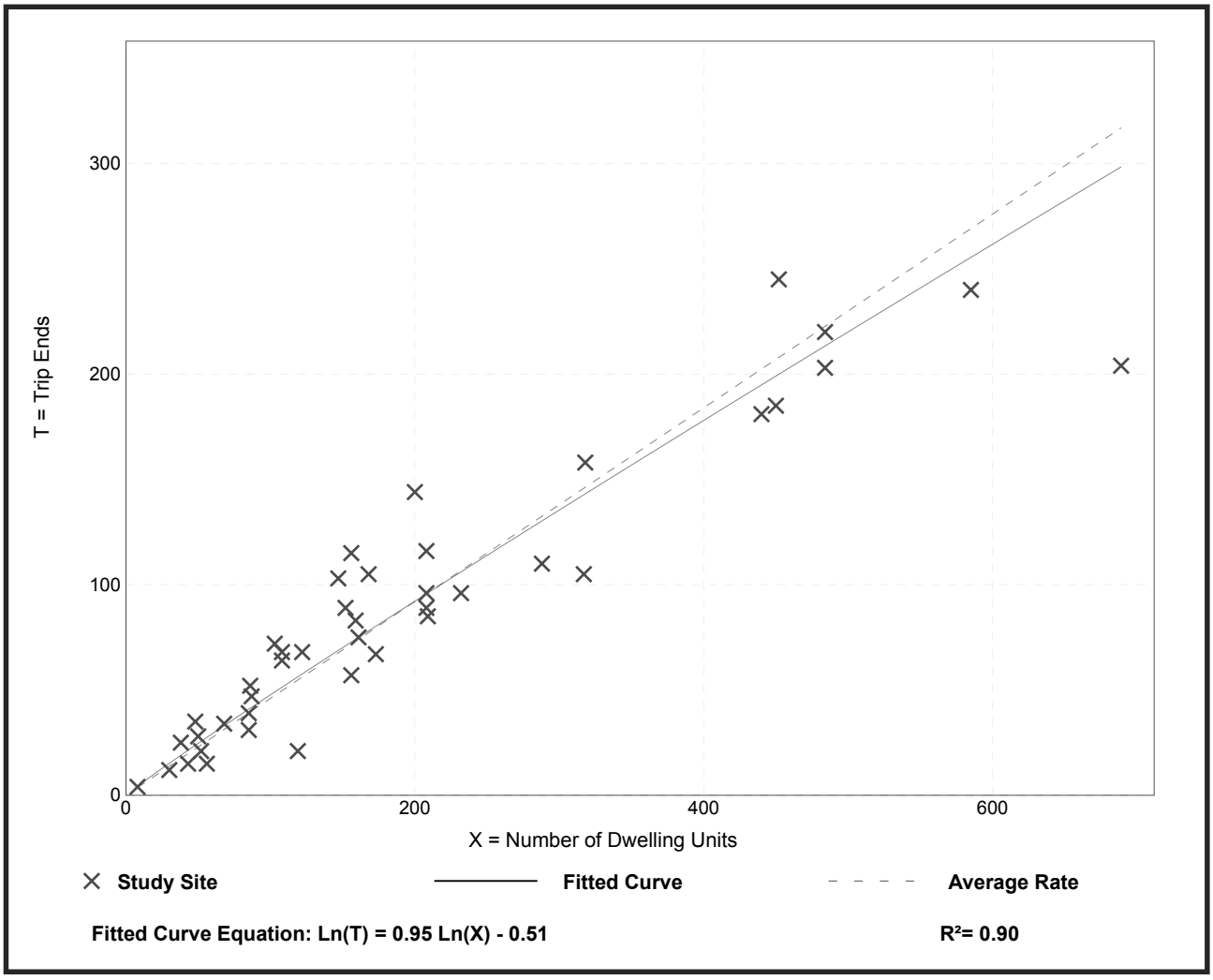
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 42
Avg. Num. of Dwelling Units: 199
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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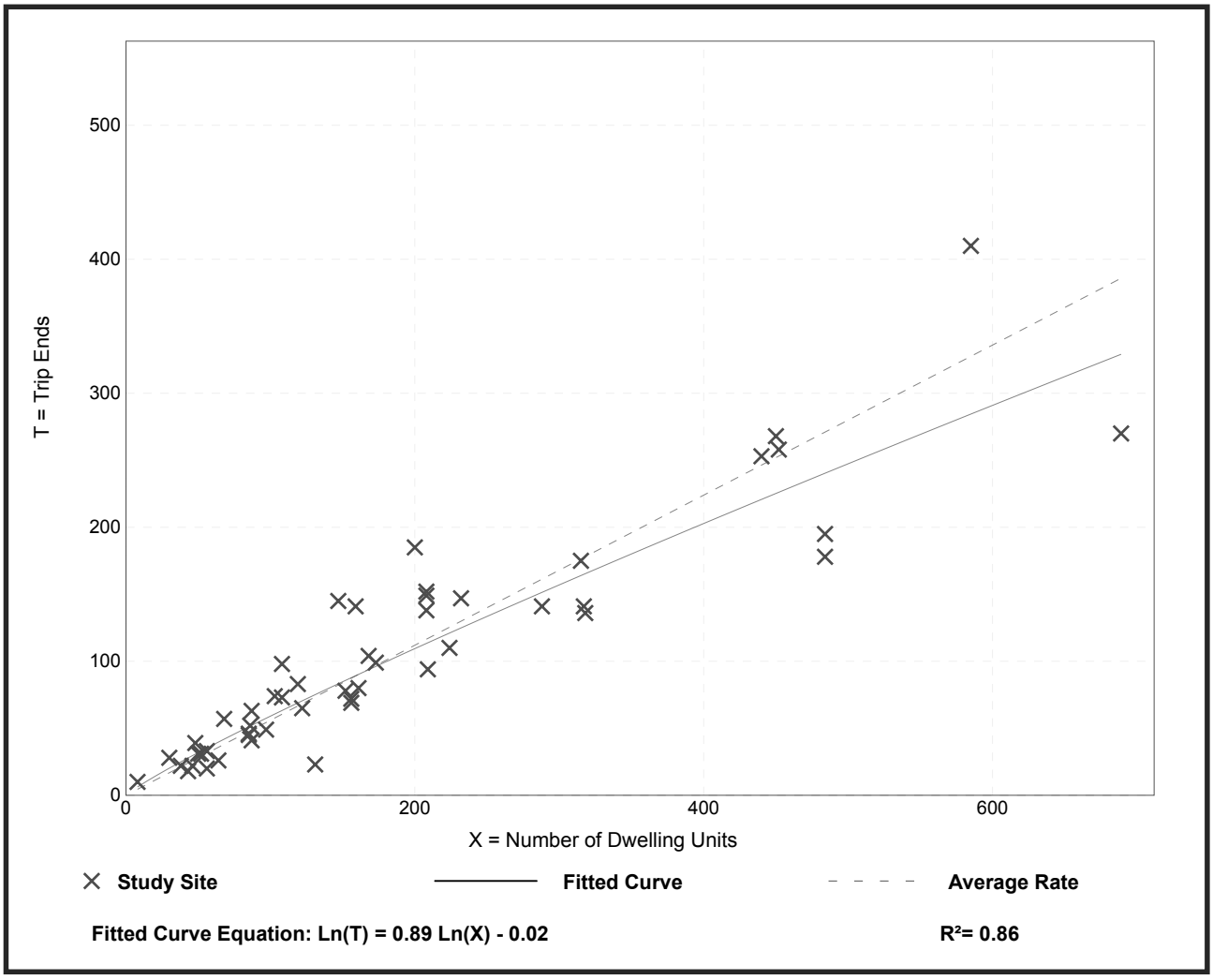
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. Num. of Dwelling Units: 187
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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Multifamily Housing (Mid-Rise)
(221)

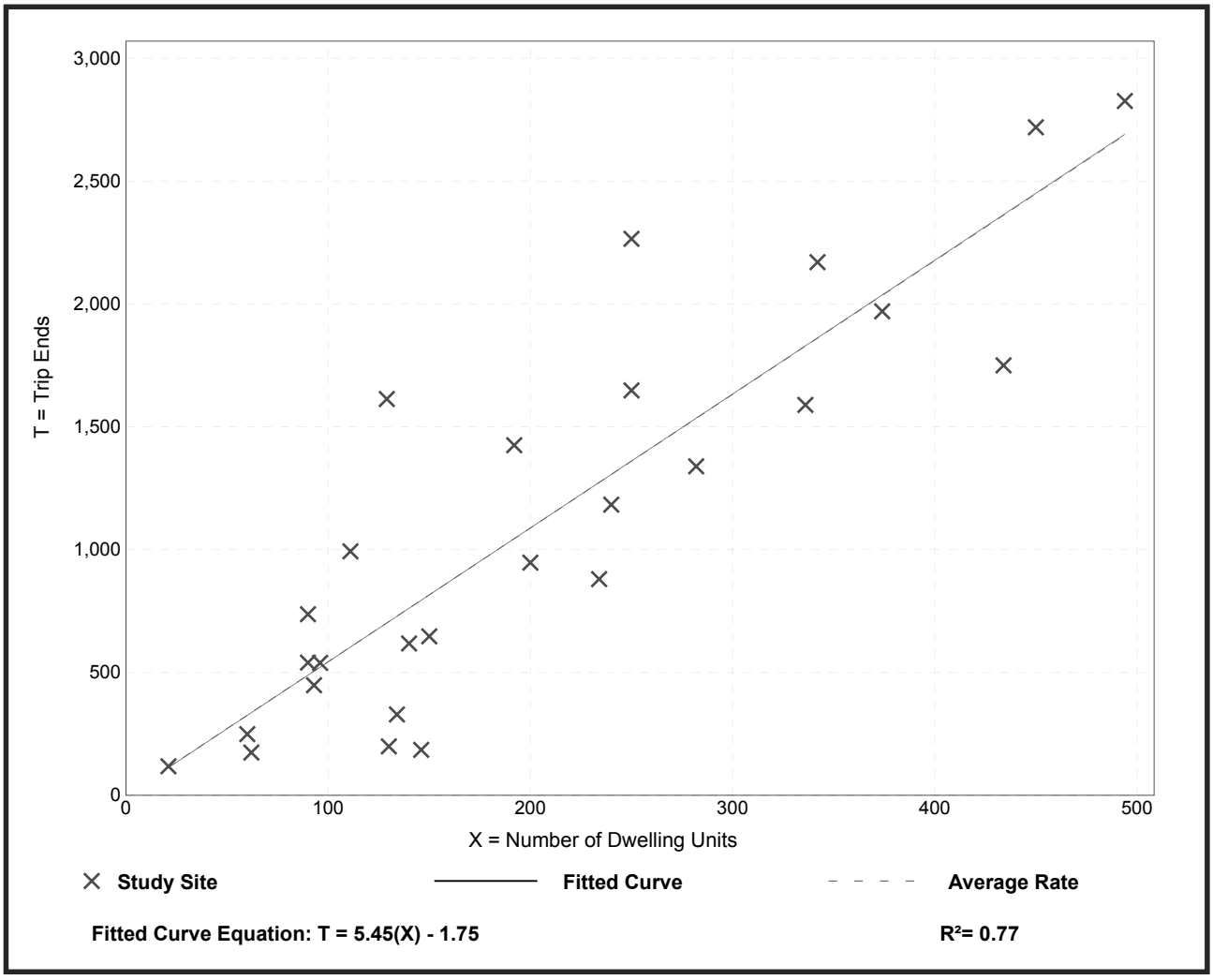
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



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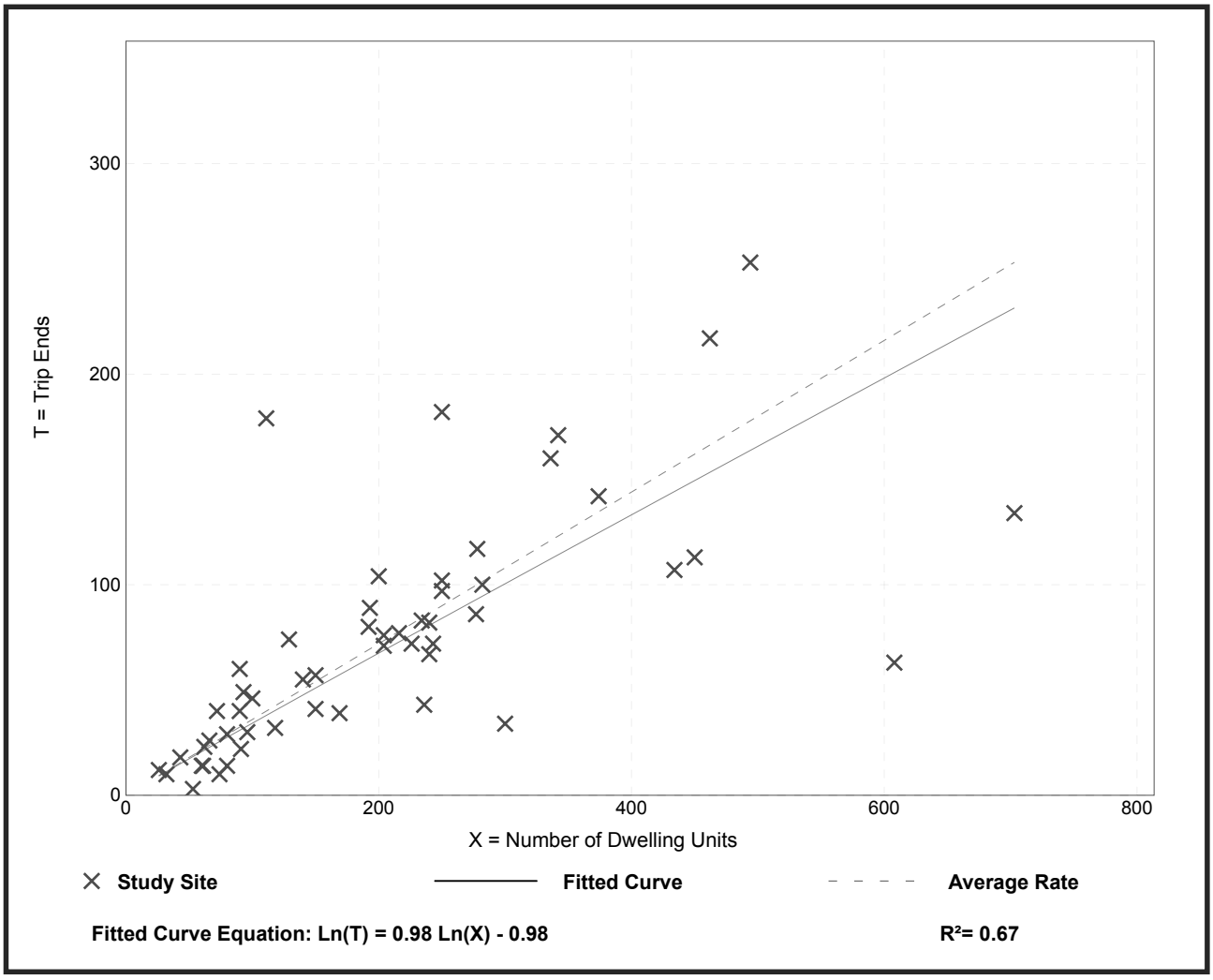
Multifamily Housing (Mid-Rise)
(221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. Num. of Dwelling Units: 207
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



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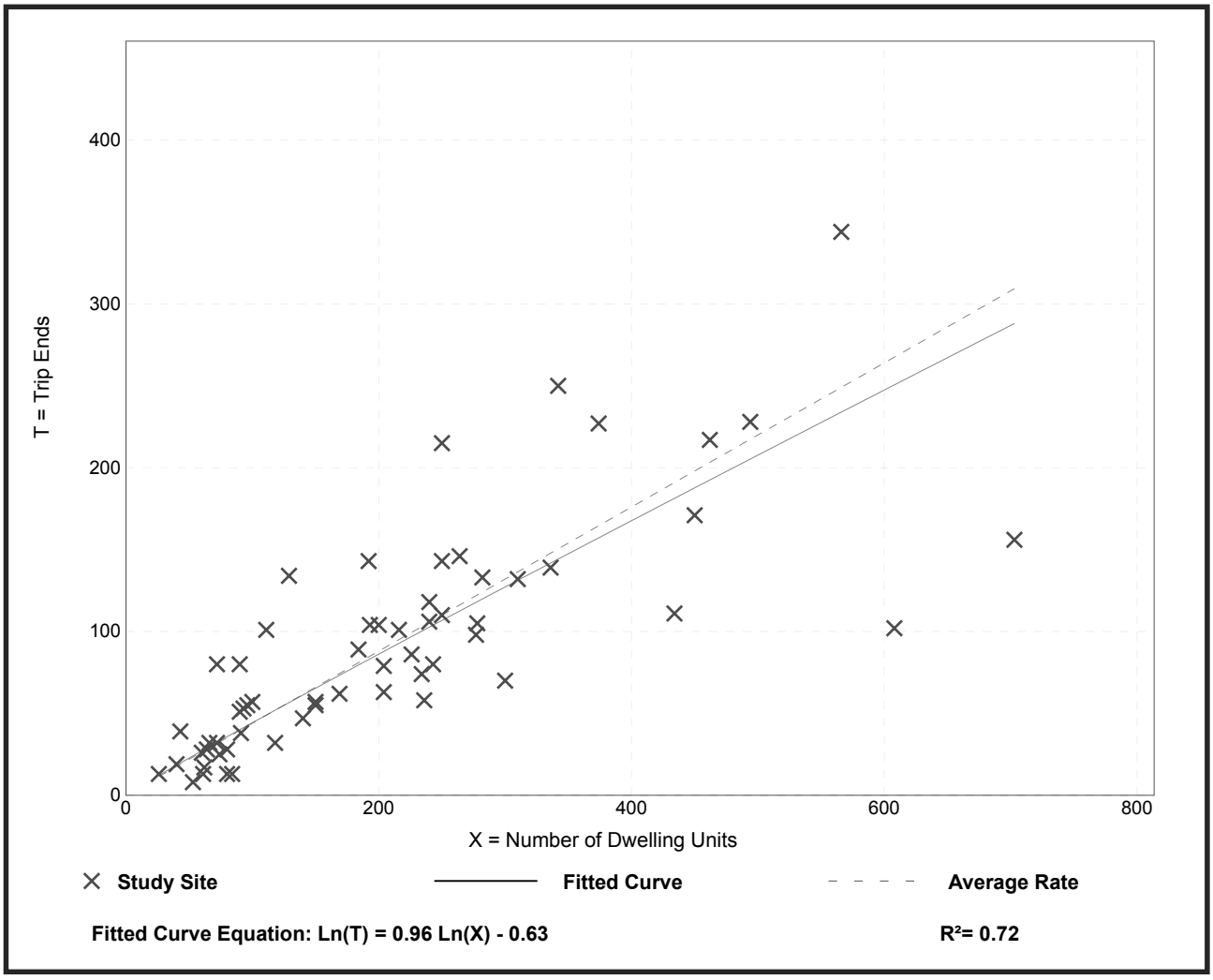
Multifamily Housing (Mid-Rise)
(221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 60
Avg. Num. of Dwelling Units: 208
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



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General Office Building
(710)

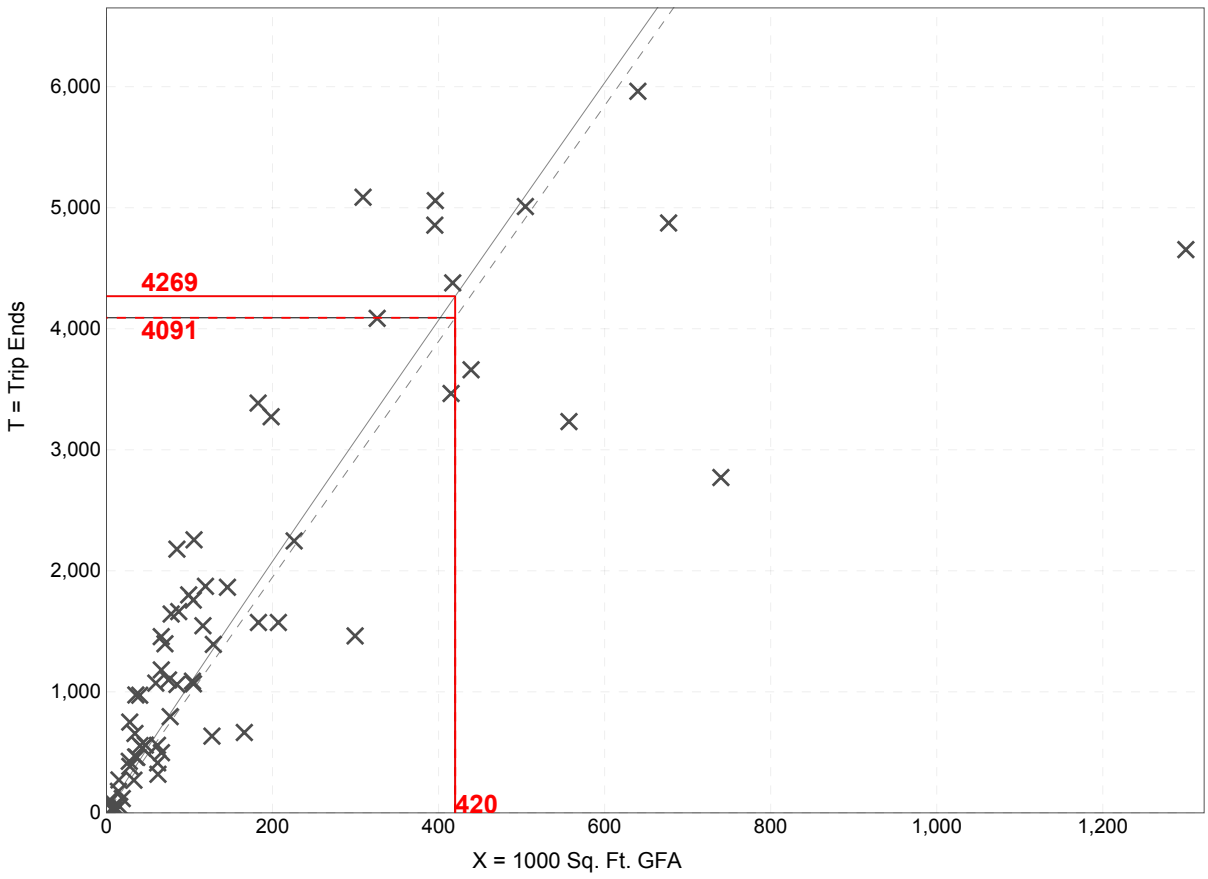
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 66
Avg. 1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.97 Ln(X) + 2.50 **R^2= 0.83**

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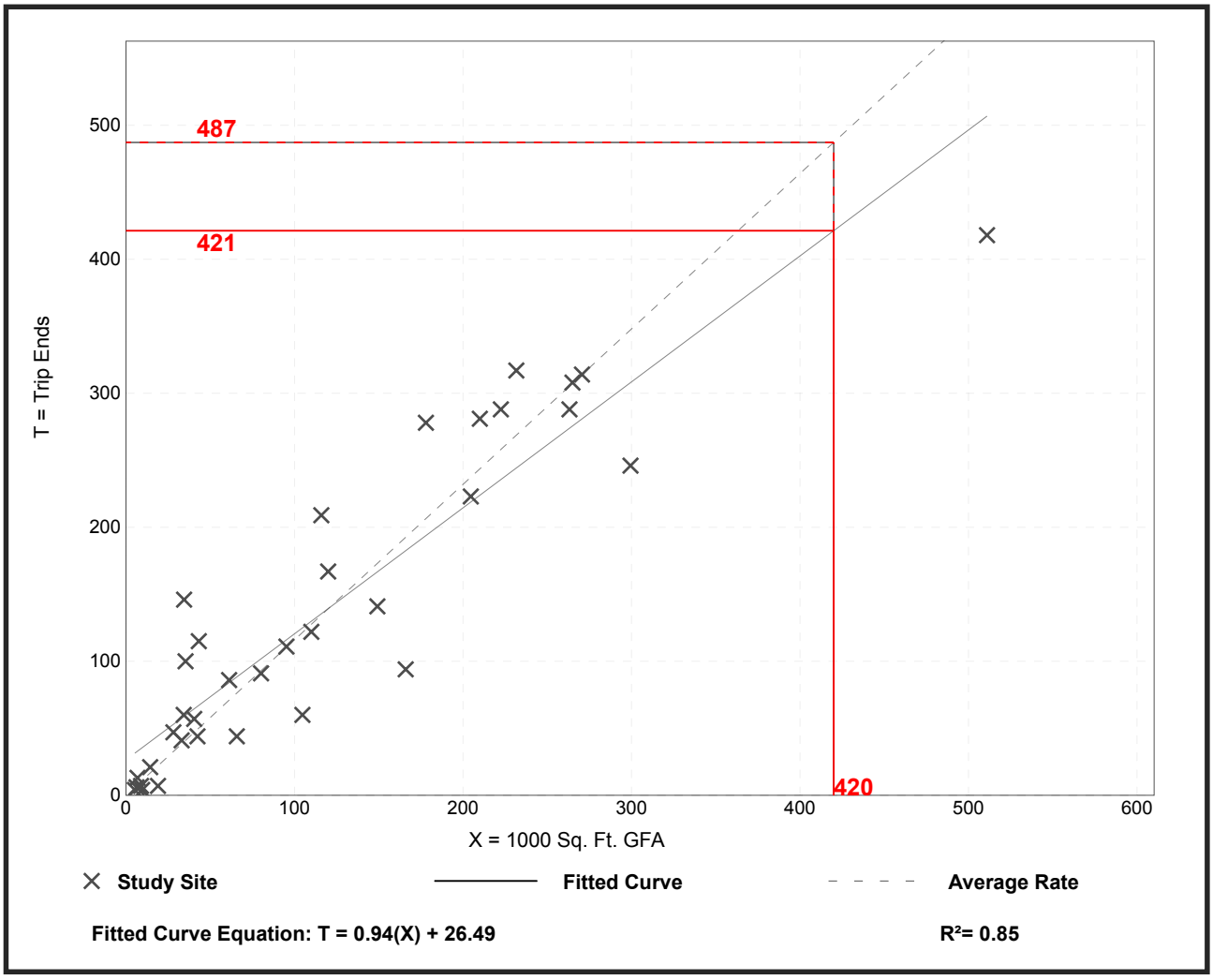
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 35
Avg. 1000 Sq. Ft. GFA: 117
Directional Distribution: 86% entering, 14% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.37 - 4.23	0.47

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

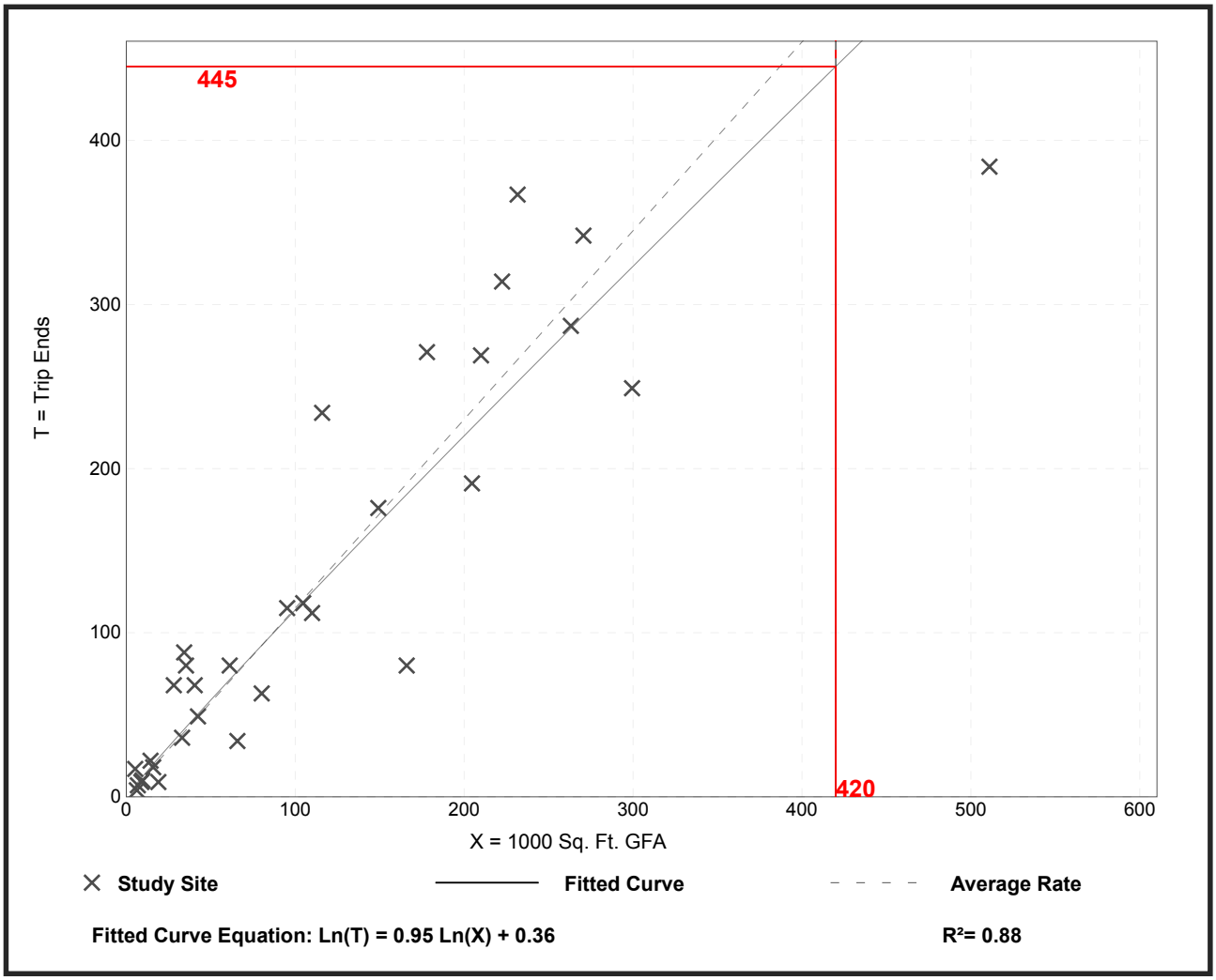
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 32
Avg. 1000 Sq. Ft. GFA: 114
Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

Data Plot and Equation



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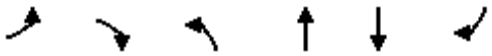
APPENDIX C - SYNCHRO ANALYSIS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	48	39	0
Future Volume (Veh/h)	0	0	0	48	39	0
Sign Control	Stop			Free	Free	
Grade	-4%			-4%	4%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	52	42	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	94	42	42			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	94	42	42			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	906	1029	1567			

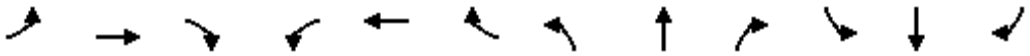
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	52	42
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1567	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	43	26	0	43	39
Future Volume (Veh/h)	1	43	26	0	43	39
Sign Control	Stop		Free			Free
Grade	-1%		0%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	47	28	0	47	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	164	28			28	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164	28			28	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			97	
cM capacity (veh/h)	802	1047			1585	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	28	89
Volume Left	1	0	47
Volume Right	47	0	0
cSH	1041	1700	1585
Volume to Capacity	0.05	0.02	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	8.6	0.0	4.0
Lane LOS	A		A
Approach Delay (s)	8.6	0.0	4.0
Approach LOS	A		

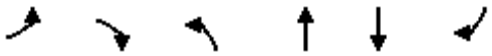
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	43	0	0	44	0	0	0	0	0	0	0
Future Volume (vph)	0	43	0	0	44	0	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	47	0	0	48	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	47	48	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	4.0	4.1	4.1
Degree Utilization, x	0.05	0.05	0.00	0.00
Capacity (veh/h)	896	898	869	869
Control Delay (s)	7.2	7.2	7.1	7.1
Approach Delay (s)	7.2	7.2	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	36	35	41	30	9
Future Volume (Veh/h)	7	36	35	41	30	9
Sign Control	Stop			Free	Free	
Grade	0%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	39	38	45	33	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	159	38	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	159	38	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	98			
cM capacity (veh/h)	812	1034	1566			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	47	83	43
Volume Left	8	38	0
Volume Right	39	0	10
cSH	988	1566	1700
Volume to Capacity	0.05	0.02	0.03
Queue Length 95th (ft)	4	2	0
Control Delay (s)	8.8	3.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	3.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	83	70	6	131	63	3
Future Volume (Veh/h)	83	70	6	131	63	3
Sign Control	Stop		Free			Free
Grade	0%		0%			-1%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	76	7	142	68	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	78			149	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217	78			149	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	92			95	
cM capacity (veh/h)	735	983			1432	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	166	149	71
Volume Left	90	0	68
Volume Right	76	142	0
cSH	831	1700	1432
Volume to Capacity	0.20	0.09	0.05
Queue Length 95th (ft)	19	0	4
Control Delay (s)	10.4	0.0	7.3
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	7.3
Approach LOS	B		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	83	5	0	137	0	1
Future Volume (Veh/h)	83	5	0	137	0	1
Sign Control	Free			Free	Stop	
Grade	3%			-2%	5%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	5	0	149	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			95		242	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			95		242	92
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1499		746	965

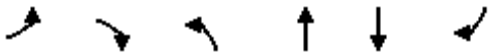
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	95	149	1
Volume Left	0	0	0
Volume Right	5	0	1
cSH	1700	1499	965
Volume to Capacity	0.06	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1	79	4	5	125	11	2
Future Volume (Veh/h)	1	79	4	5	125	11	2
Sign Control		Free			Free	Stop	
Grade		0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	86	4	5	136	12	2
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None			None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0			90		234	88
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0			90		234	88
tC, single (s)	0.0			4.1		6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0			2.2		3.5	3.3
p0 queue free %	0			100		98	100
cM capacity (veh/h)	0			1505		752	970

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	90	141	14
Volume Left	0	5	12
Volume Right	4	0	2
cSH	1700	1505	777
Volume to Capacity	0.05	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.3	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		19.6%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	28	36	34	16	31	22
Future Volume (vph)	28	36	34	16	31	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	39	37	17	34	24

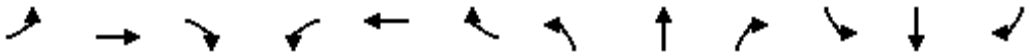
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	69	54	58
Volume Left (vph)	30	37	0
Volume Right (vph)	39	0	24
Hadj (s)	-0.22	0.17	-0.21
Departure Headway (s)	3.9	4.3	3.9
Degree Utilization, x	0.08	0.06	0.06
Capacity (veh/h)	889	817	904
Control Delay (s)	7.2	7.6	7.1
Approach Delay (s)	7.2	7.6	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	29	9	21	28	20
Future Volume (Veh/h)	21	29	9	21	28	20
Sign Control	Stop		Free			Free
Grade	0%		-4%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	32	10	23	30	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	104	22			33	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	104	22			33	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	97			98	
cM capacity (veh/h)	878	1056			1579	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	55	33	52
Volume Left	23	0	30
Volume Right	32	23	0
cSH	973	1700	1579
Volume to Capacity	0.06	0.02	0.02
Queue Length 95th (ft)	4	0	1
Control Delay (s)	8.9	0.0	4.3
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	4.3
Approach LOS	A		

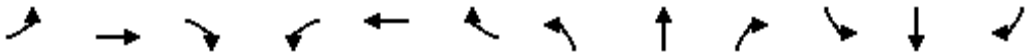
Intersection Summary			
Average Delay		5.1	
Intersection Capacity Utilization		19.3%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	36	0	0	40	5	2	8	0	2	5	2
Future Volume (Veh/h)	0	36	0	0	40	5	2	8	0	2	5	2
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	39	0	0	43	5	2	9	0	2	5	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					434							
pX, platoon unblocked												
vC, conflicting volume	48			39			89	87	39	89	84	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			39			89	87	39	89	84	46
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	99	100	100	99	100
cM capacity (veh/h)	1559			1571			890	803	1033	888	806	1024

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	48	11	9
Volume Left	0	0	2	2
Volume Right	0	5	0	2
cSH	1559	1571	818	865
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.0	0.0	9.5	9.2
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.5	9.2
Approach LOS			A	A

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	21	15	9	23	2	22	124	61	2	60	0
Future Volume (vph)	2	21	15	9	23	2	22	124	61	2	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-3%			5%			3%	
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.95			0.99			0.96			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1760			1852			1735			1832	
Flt Permitted		0.99			0.95			0.97			0.99	
Satd. Flow (perm)		1753			1786			1695			1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	23	16	10	25	2	24	135	66	2	65	0
RTOR Reduction (vph)	0	10	0	0	1	0	0	33	0	0	0	0
Lane Group Flow (vph)	0	31	0	0	36	0	0	192	0	0	67	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			18.0			18.0	
Effective Green, g (s)		18.0			18.0			18.0			18.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		701			714			678			728	
v/s Ratio Prot												
v/s Ratio Perm		0.02			c0.02			c0.11			0.04	
v/c Ratio		0.04			0.05			0.28			0.09	
Uniform Delay, d1		8.2			8.3			9.1			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.1			0.1			1.0			0.3	
Delay (s)		8.4			8.4			10.2			8.7	
Level of Service		A			A			B			A	
Approach Delay (s)		8.4			8.4			10.2			8.7	
Approach LOS		A			A			B			A	

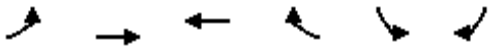
Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	84	0	0	34	0	1
Future Volume (Veh/h)	84	0	0	34	0	1
Sign Control	Free			Free	Stop	
Grade	1%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	0	0	37	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	434					
pX, platoon unblocked						
vC, conflicting volume			91		128	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		128	91
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1504		866	966

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	91	37	1
Volume Left	0	0	0
Volume Right	0	0	1
cSH	1700	1504	966
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	10	2	0	0	0
Future Volume (Veh/h)	1	10	2	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	11	2	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2				15	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2				15	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1620				1003	1082

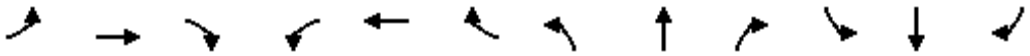
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	12	2	0
Volume Left	1	0	0
Volume Right	0	0	0
cSH	1620	1700	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.6	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	0.6	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	29	1	1	4	2	3
Future Volume (Veh/h)	29	1	1	4	2	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	1	1	4	2	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			33		38	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		38	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1579		973	1041

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	33	5	5
Volume Left	0	1	2
Volume Right	1	0	3
cSH	1700	1579	1013
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	1.5	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	1.5	8.6
Approach LOS			A

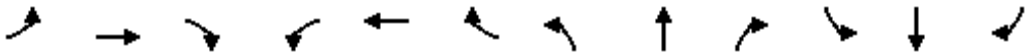
Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	1	4	8	1	18	4	7	5	0
Future Volume (Veh/h)	1	1	0	1	4	8	1	18	4	7	5	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			1%			-3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	0	1	4	9	1	20	4	8	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	56	47	5	46	45	22	5			24		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	56	47	5	46	45	22	5			24		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			99		
cM capacity (veh/h)	926	840	1078	951	842	1055	1616			1591		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	14	25	13
Volume Left	1	1	1	8
Volume Right	0	9	4	0
cSH	881	977	1616	1591
Volume to Capacity	0.00	0.01	0.00	0.01
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	9.1	8.7	0.3	4.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.1	8.7	0.3	4.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	13.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	79	0	0	9	2	0	0	0	1	0	5
Future Volume (Veh/h)	21	79	0	0	9	2	0	0	0	1	0	5
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			-1%			1%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	86	0	0	10	2	0	0	0	1	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	12	4	2	48	7	0	5			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12	4	2	48	7	0	5			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	90	100	100	99	100	100			100		
cM capacity (veh/h)	995	890	1082	882	888	1085	1616			1623		

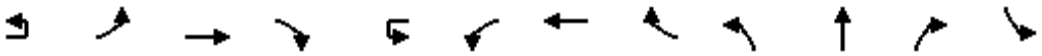
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	12	0	6
Volume Left	23	0	0	1
Volume Right	0	2	0	5
cSH	911	915	1700	1623
Volume to Capacity	0.12	0.01	0.00	0.00
Queue Length 95th (ft)	10	1	0	0
Control Delay (s)	9.5	9.0	0.0	1.2
Lane LOS	A	A		A
Approach Delay (s)	9.5	9.0	0.0	1.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	22.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	2	254	99	1	91
Future Volume (Veh/h)	12	2	254	99	1	91
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	2	276	108	1	99
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			728			
pX, platoon unblocked						
vC, conflicting volume	431	330			384	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	431	330			384	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	581	712			1174	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	15	384	100
Volume Left	13	0	1
Volume Right	2	108	0
cSH	595	1700	1174
Volume to Capacity	0.03	0.23	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	11.2	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.2	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	909	28	5	97	799	351	9	11	60	68
Future Volume (vph)	1	81	909	28	5	97	799	351	9	11	60	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			2%				-1%			0%		
Total Lost time (s)		4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		0.97	0.91		1.00	1.00	0.88	1.00
Frt		1.00	1.00	0.85		1.00	0.95		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1752	3504	1567		3450	4876		1770	1863	2787	1778
Flt Permitted		0.93	1.00	1.00		1.00	1.00		0.71	1.00	1.00	0.75
Satd. Flow (perm)		1715	3504	1567		3632	4876		1331	1863	2787	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	88	988	30	5	105	868	382	10	12	65	74
RTOR Reduction (vph)	0	0	0	16	0	0	114	0	0	0	56	0
Lane Group Flow (vph)	0	89	988	14	0	110	1136	0	10	12	9	74
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA		Perm	NA	Perm	Perm
Protected Phases		7	4			3	8			2		
Permitted Phases	7			4	3				2		2	6
Actuated Green, G (s)		4.3	22.1	22.1		3.9	21.7		6.5	6.5	6.5	6.5
Effective Green, g (s)		4.3	22.1	22.1		3.9	21.7		6.5	6.5	6.5	6.5
Actuated g/C Ratio		0.09	0.48	0.48		0.08	0.47		0.14	0.14	0.14	0.14
Clearance Time (s)		4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		160	1683	752		307	2300		188	263	393	198
v/s Ratio Prot			c0.28				0.23			0.01		
v/s Ratio Perm		c0.05		0.01		0.03			0.01		0.00	c0.05
v/c Ratio		0.56	0.59	0.02		0.36	0.49		0.05	0.05	0.02	0.37
Uniform Delay, d1		19.9	8.6	6.3		19.9	8.4		17.1	17.1	17.0	17.9
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		4.1	1.5	0.0		0.7	0.8		0.1	0.1	0.0	1.2
Delay (s)		24.1	10.2	6.3		20.6	9.1		17.2	17.1	17.0	19.1
Level of Service		C	B	A		C	A		B	B	B	B
Approach Delay (s)			11.2				10.1			17.1		
Approach LOS			B				B			B		

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	4	56
Future Volume (vph)	4	56
Ideal Flow (vphpl)	1900	1900
Grade (%)	-1%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frt	0.86	
Flt Protected	1.00	
Satd. Flow (prot)	1609	
Flt Permitted	1.00	
Satd. Flow (perm)	1609	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	4	61
RTOR Reduction (vph)	52	0
Lane Group Flow (vph)	13	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Actuated Green, G (s)	6.5	
Effective Green, g (s)	6.5	
Actuated g/C Ratio	0.14	
Clearance Time (s)	4.5	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	227	
v/s Ratio Prot	0.01	
v/s Ratio Perm		
v/c Ratio	0.06	
Uniform Delay, d1	17.1	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	17.2	
Level of Service	B	
Approach Delay (s)	18.2	
Approach LOS	B	

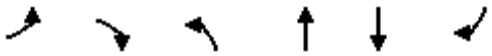
Intersection Summary

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	861	164	8	274	583	65	150
Future Volume (vph)	861	164	8	274	583	65	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Grade (%)	3%				-3%	-2%	
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		1.00	0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3486	1560		1796	3592	3467	1599
Flt Permitted	1.00	1.00		0.18	1.00	0.95	1.00
Satd. Flow (perm)	3486	1560		333	3592	3467	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	936	178	9	298	634	71	163
RTOR Reduction (vph)	0	103	0	0	0	0	144
Lane Group Flow (vph)	936	75	0	307	634	71	19
Turn Type	NA	Perm	pm+pt	pm+pt	NA	Prot	Perm
Protected Phases	4		3	3	8	2	
Permitted Phases		4	8	8			2
Actuated Green, G (s)	19.6	19.6		32.2	32.2	5.5	5.5
Effective Green, g (s)	19.6	19.6		32.2	32.2	5.5	5.5
Actuated g/C Ratio	0.42	0.42		0.69	0.69	0.12	0.12
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1463	654		483	2476	408	188
v/s Ratio Prot	0.27			c0.11	0.18	c0.02	
v/s Ratio Perm		0.05		c0.33			0.01
v/c Ratio	0.64	0.11		0.64	0.26	0.17	0.10
Uniform Delay, d1	10.7	8.3		5.1	2.7	18.6	18.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.4		2.7	0.3	0.2	0.2
Delay (s)	12.9	8.6		7.8	3.0	18.8	18.6
Level of Service	B	A		A	A	B	B
Approach Delay (s)	12.2				4.6	18.7	
Approach LOS	B				A	B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	968	149	6	60	582	56	51
Future Volume (vph)	968	149	6	60	582	56	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Grade (%)	-2%				0%	-1%	
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00		1.00	0.95	0.97	1.00
Frt	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3575	1599		1770	3539	3450	1591
Flt Permitted	1.00	1.00		0.20	1.00	0.95	1.00
Satd. Flow (perm)	3575	1599		369	3539	3450	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1052	162	7	65	633	61	55
RTOR Reduction (vph)	0	67	0	0	0	0	49
Lane Group Flow (vph)	1052	95	0	72	633	61	6
Turn Type	NA	Perm	pm+pt	pm+pt	NA	Prot	Perm
Protected Phases	4		3	3	8	2	
Permitted Phases		4	8	8			2
Actuated Green, G (s)	31.7	31.7		39.4	39.4	5.4	5.4
Effective Green, g (s)	31.7	31.7		39.4	39.4	5.4	5.4
Actuated g/C Ratio	0.59	0.59		0.73	0.73	0.10	0.10
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2106	942		353	2591	346	159
v/s Ratio Prot	c0.29			0.01	c0.18	c0.02	
v/s Ratio Perm		0.06		0.14			0.00
v/c Ratio	0.50	0.10		0.20	0.24	0.18	0.03
Uniform Delay, d1	6.4	4.8		3.1	2.3	22.2	21.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2		0.3	0.2	0.2	0.1
Delay (s)	7.3	5.0		3.3	2.6	22.4	21.9
Level of Service	A	A		A	A	C	C
Approach Delay (s)	7.0				2.7	22.2	
Approach LOS	A				A	C	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	0	9	18	1
Future Volume (Veh/h)	2	0	0	9	18	1
Sign Control	Stop			Free	Free	
Grade	-4%			-4%	4%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	10	20	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	30	20	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	30	20	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	984	1057	1595			

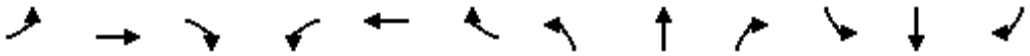
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	10	21
Volume Left	2	0	0
Volume Right	0	0	1
cSH	984	1595	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	19	69	1	9	31
Future Volume (Veh/h)	1	19	69	1	9	31
Sign Control	Stop		Free			Free
Grade	-1%		0%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	21	75	1	10	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	130	76			76	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130	76			76	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			99	
cM capacity (veh/h)	859	986			1523	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	76	44
Volume Left	1	0	10
Volume Right	21	1	0
cSH	979	1700	1523
Volume to Capacity	0.02	0.04	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	1.7
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	1.7
Approach LOS	A		

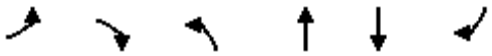
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	7	1	1	19	1	0	0	1	1	0	1
Future Volume (vph)	2	7	1	1	19	1	0	0	1	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	8	1	1	21	1	0	0	1	1	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	11	23	1	2
Volume Left (vph)	2	1	0	1
Volume Right (vph)	1	1	1	1
Hadj (s)	0.02	0.02	-0.57	-0.17
Departure Headway (s)	3.9	3.9	3.4	3.8
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	905	909	1042	932
Control Delay (s)	7.0	7.0	6.4	6.8
Approach Delay (s)	7.0	7.0	6.4	6.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.0		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	3	8	3	5	13
Future Volume (Veh/h)	6	3	8	3	5	13
Sign Control	Stop			Free	Free	
Grade	0%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	3	9	3	5	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	33	12	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	33	12	19			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	975	1069	1597			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	12	19
Volume Left	7	9	0
Volume Right	3	0	14
cSH	1001	1597	1700
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	5.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	5.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	5	6	11	2	6
Future Volume (Veh/h)	28	5	6	11	2	6
Sign Control	Stop		Free			Free
Grade	0%		0%			-1%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	5	7	12	2	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	24	13			19	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	24	13			19	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	991	1067			1597	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	35	19	9
Volume Left	30	0	2
Volume Right	5	12	0
cSH	1001	1700	1597
Volume to Capacity	0.03	0.01	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	8.7	0.0	1.6
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	1.6
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	0	1	16	1	2
Future Volume (Veh/h)	35	0	1	16	1	2
Sign Control	Free			Free	Stop	
Grade	3%			-2%	5%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	1	17	1	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			38		57	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		57	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1572		950	1034

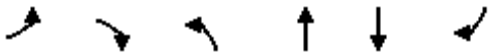
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	18	3
Volume Left	0	1	1
Volume Right	0	0	2
cSH	1700	1572	1004
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.4	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	8.6
Approach LOS			A

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	35	2	8	16	1	6
Future Volume (Veh/h)	35	2	8	16	1	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	2	9	17	1	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			40		74	39
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		74	39
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			1570		924	1033

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	40	26	8
Volume Left	0	9	1
Volume Right	2	0	7
cSH	1700	1570	1018
Volume to Capacity	0.02	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	2.6	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	2.6	8.6
Approach LOS			A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	45	22	19	21	28	31
Future Volume (vph)	45	22	19	21	28	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	24	21	23	30	34

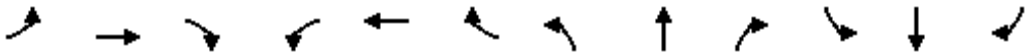
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	73	44	64
Volume Left (vph)	49	21	0
Volume Right (vph)	24	0	34
Hadj (s)	-0.03	0.13	-0.28
Departure Headway (s)	4.1	4.2	3.8
Degree Utilization, x	0.08	0.05	0.07
Capacity (veh/h)	853	820	919
Control Delay (s)	7.5	7.5	7.1
Approach Delay (s)	7.5	7.5	7.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	15	8	52	6	9
Future Volume (Veh/h)	43	15	8	52	6	9
Sign Control	Stop		Free			Free
Grade	0%		-4%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	16	9	57	7	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	62	38			66	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	62	38			66	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			100	
cM capacity (veh/h)	941	1035			1536	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	66	17
Volume Left	47	0	7
Volume Right	16	57	0
cSH	963	1700	1536
Volume to Capacity	0.07	0.04	0.00
Queue Length 95th (ft)	5	0	0
Control Delay (s)	9.0	0.0	3.0
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	3.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	70	1	1	75	2	2	0	1	2	4	4
Future Volume (Veh/h)	5	70	1	1	75	2	2	0	1	2	4	4
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	76	1	1	82	2	2	0	1	2	4	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					434							
pX, platoon unblocked												
vC, conflicting volume	84			77			178	172	76	172	172	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	84			77			178	172	76	172	172	83
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	99	100
cM capacity (veh/h)	1513			1522			776	718	985	787	718	976

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	82	85	3	10
Volume Left	5	1	2	2
Volume Right	1	2	1	4
cSH	1513	1522	835	819
Volume to Capacity	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.5	0.1	9.3	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	0.5	0.1	9.3	9.4
Approach LOS			A	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	39	32	26	45	7	31	49	37	5	52	2
Future Volume (vph)	2	39	32	26	45	7	31	49	37	5	52	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-3%			5%			3%	
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			0.99			0.96			1.00	
Flt Protected		1.00			0.98			0.99			1.00	
Satd. Flow (prot)		1749			1836			1716			1820	
Flt Permitted		1.00			0.91			0.93			0.98	
Satd. Flow (perm)		1744			1707			1613			1797	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	42	35	28	49	8	34	53	40	5	57	2
RTOR Reduction (vph)	0	21	0	0	5	0	0	24	0	0	1	0
Lane Group Flow (vph)	0	58	0	0	80	0	0	103	0	0	63	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			18.0			18.0	
Effective Green, g (s)		18.0			18.0			18.0			18.0	
Actuated g/C Ratio		0.40			0.40			0.40			0.40	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		697			682			645			718	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.05			c0.06			0.03	
v/c Ratio		0.08			0.12			0.16			0.09	
Uniform Delay, d1		8.4			8.5			8.7			8.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.4			0.5			0.2	
Delay (s)		8.6			8.9			9.2			8.6	
Level of Service		A			A			A			A	
Approach Delay (s)		8.6			8.9			9.2			8.6	
Approach LOS		A			A			A			A	

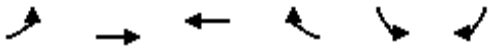
Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	81	0	2	77	1	3
Future Volume (Veh/h)	81	0	2	77	1	3
Sign Control	Free			Free	Stop	
Grade	1%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	88	0	2	84	1	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	434					
pX, platoon unblocked						
vC, conflicting volume			88		176	88
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			88		176	88
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1508		812	970

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	88	86	4
Volume Left	0	2	1
Volume Right	0	0	3
cSH	1700	1508	925
Volume to Capacity	0.05	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.2	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	8.9
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	9	6	3	1	1
Future Volume (Veh/h)	1	9	6	3	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	10	7	3	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	10				20	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	10				20	8
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1610				996	1073

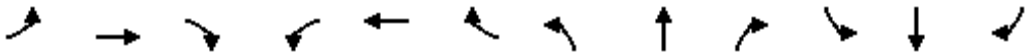
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	10	2
Volume Left	1	0	1
Volume Right	0	3	1
cSH	1610	1700	1033
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.7	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	0.7	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	12	1	1	23	3	2
Future Volume (Veh/h)	12	1	1	23	3	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	1	1	25	3	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			14		40	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			14		40	14
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1604		970	1067

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	14	26	5
Volume Left	0	1	3
Volume Right	1	0	2
cSH	1700	1604	1007
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.3	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.3	8.6
Approach LOS			A

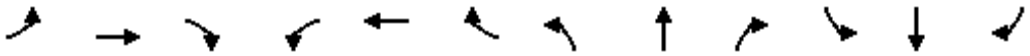
Intersection Summary			
Average Delay		1.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	18	2	1	4	7	1	19	1	18	20	0
Future Volume (Veh/h)	4	18	2	1	4	7	1	19	1	18	20	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			1%			-3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	20	2	1	4	8	1	21	1	20	22	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	96	86	22	98	86	22	22			22		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	96	86	22	98	86	22	22			22		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	97	100	100	99	99	100			99		
cM capacity (veh/h)	868	794	1055	857	794	1056	1593			1593		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	13	23	42
Volume Left	4	1	1	20
Volume Right	2	8	1	0
cSH	820	943	1593	1593
Volume to Capacity	0.03	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	9.5	8.9	0.3	3.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	8.9	0.3	3.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	18.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	12	0	1	9	7	0	0	1	11	0	12
Future Volume (Veh/h)	14	12	0	1	9	7	0	0	1	11	0	12
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			-1%			1%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	13	0	1	10	8	0	0	1	12	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	44	32	6	38	38	0	13			1		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	44	32	6	38	38	0	13			1		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	98	100	100	99	99	100			99		
cM capacity (veh/h)	937	855	1076	951	848	1084	1606			1622		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	19	1	25
Volume Left	15	1	0	12
Volume Right	0	8	1	13
cSH	897	940	1606	1622
Volume to Capacity	0.03	0.02	0.00	0.01
Queue Length 95th (ft)	2	2	0	1
Control Delay (s)	9.1	8.9	0.0	3.5
Lane LOS	A	A		A
Approach Delay (s)	9.1	8.9	0.0	3.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	21.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	4	142	23	3	144
Future Volume (Veh/h)	17	4	142	23	3	144
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	4	154	25	3	157
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			728			
pX, platoon unblocked						
vC, conflicting volume	330	166			179	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330	166			179	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	664	878			1397	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	179	160
Volume Left	18	0	3
Volume Right	4	25	0
cSH	694	1700	1397
Volume to Capacity	0.03	0.11	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.4	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		20.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	813	8	143	70	1056	0	15	11	130	135	4
Future Volume (vph)	60	813	8	143	70	1056	0	15	11	130	135	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%				-1%			0%			-1%
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00		0.97	0.91		1.00	1.00	0.88	1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00	0.86
Flt Protected	0.95	1.00	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3504	1567		3450	5111		1770	1863	2787	1778	1603
Flt Permitted	0.95	1.00	1.00		0.73	1.00		0.70	1.00	1.00	0.75	1.00
Satd. Flow (perm)	1752	3504	1567		2641	5111		1297	1863	2787	1404	1603
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	884	9	155	76	1148	0	16	12	141	147	4
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	0	98	0	74
Lane Group Flow (vph)	65	884	4	0	231	1148	0	16	12	43	147	20
Turn Type	Prot	NA	Perm	custom	Prot	NA		Perm	NA	Perm	Perm	NA
Protected Phases	7	4			3	8			2			6
Permitted Phases			4	3				2		2	6	
Actuated Green, G (s)	2.8	22.0	22.0		5.5	24.7		8.9	8.9	8.9	8.9	8.9
Effective Green, g (s)	2.8	22.0	22.0		5.5	24.7		8.9	8.9	8.9	8.9	8.9
Actuated g/C Ratio	0.06	0.44	0.44		0.11	0.49		0.18	0.18	0.18	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	98	1544	690		291	2529		231	332	497	250	285
v/s Ratio Prot	0.04	c0.25				c0.22			0.01			0.01
v/s Ratio Perm			0.00		c0.09			0.01		0.02	c0.10	
v/c Ratio	0.66	0.57	0.01		0.97dl	0.45		0.07	0.04	0.09	0.59	0.07
Uniform Delay, d1	23.1	10.4	7.8		21.6	8.2		17.1	17.0	17.1	18.8	17.1
Progression Factor	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	1.5	0.0		13.8	0.6		0.1	0.0	0.1	3.5	0.1
Delay (s)	38.7	12.0	7.8		35.5	8.8		17.2	17.0	17.2	22.3	17.2
Level of Service	D	B	A		D	A		B	B	B	C	B
Approach Delay (s)		13.8				13.3			17.2			20.3
Approach LOS		B				B			B			C

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	83
Future Volume (vph)	83
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	90
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

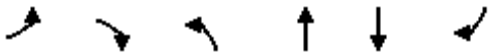
Movement	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations								
Traffic Volume (vph)	633	126	8	177	972	1	99	243
Future Volume (vph)	633	126	8	177	972	1	99	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	3%				-3%		-2%	
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5
Lane Util. Factor	0.95	1.00		1.00	0.95		0.97	1.00
Frt	1.00	0.85		1.00	1.00		1.00	0.85
Flt Protected	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	3486	1560		1796	3592		3467	1599
Flt Permitted	1.00	1.00		0.29	1.00		0.95	1.00
Satd. Flow (perm)	3486	1560		553	3592		3467	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	688	137	9	192	1057	1	108	264
RTOR Reduction (vph)	0	75	0	0	0	0	0	222
Lane Group Flow (vph)	688	62	0	201	1057	0	109	42
Turn Type	NA	Perm	pm+pt	pm+pt	NA	Perm	Prot	Perm
Protected Phases	4		3	3	8		2	
Permitted Phases		4	8	8		2		2
Actuated Green, G (s)	21.1	21.1		30.1	30.1		7.4	7.4
Effective Green, g (s)	21.1	21.1		30.1	30.1		7.4	7.4
Actuated g/C Ratio	0.45	0.45		0.65	0.65		0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	1581	707		478	2325		551	254
v/s Ratio Prot	0.20			0.04	c0.29			
v/s Ratio Perm		0.04		0.23			0.03	0.03
v/c Ratio	0.44	0.09		0.42	0.45		0.20	0.17
Uniform Delay, d1	8.6	7.2		3.9	4.1		17.0	16.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.2		0.6	0.6		0.2	0.3
Delay (s)	9.5	7.5		4.5	4.7		17.2	17.2
Level of Service	A	A		A	A		B	B
Approach Delay (s)	9.2				4.7		17.2	
Approach LOS	A				A		B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	1	672	81	8	65	998	1	100	79
Future Volume (vph)	1	672	81	8	65	998	1	100	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%				0%		-1%	
Total Lost time (s)		4.5	4.5		4.5	4.5		4.5	4.5
Lane Util. Factor		0.95	1.00		1.00	0.95		0.97	1.00
Frt		1.00	0.85		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)		3574	1599		1770	3539		3450	1591
Flt Permitted		0.95	1.00		0.30	1.00		0.95	1.00
Satd. Flow (perm)		3410	1599		556	3539		3450	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	730	88	9	71	1085	1	109	86
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	76
Lane Group Flow (vph)	0	731	47	0	80	1085	0	110	10
Turn Type	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	Prot	Perm
Protected Phases		4		3	3	8		2	
Permitted Phases	4		4	8	8		2		2
Actuated Green, G (s)		25.7	25.7		33.3	33.3		5.8	5.8
Effective Green, g (s)		25.7	25.7		33.3	33.3		5.8	5.8
Actuated g/C Ratio		0.53	0.53		0.69	0.69		0.12	0.12
Clearance Time (s)		4.5	4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1821	854		463	2450		416	191
v/s Ratio Prot					0.01	c0.31			
v/s Ratio Perm		0.21	0.03		0.11			0.03	0.01
v/c Ratio		0.40	0.06		0.17	0.44		0.26	0.05
Uniform Delay, d1		6.6	5.4		2.8	3.3		19.2	18.7
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.1		0.2	0.6		0.3	0.1
Delay (s)		7.3	5.5		3.0	3.9		19.6	18.8
Level of Service		A	A		A	A		B	B
Approach Delay (s)		7.1				3.8		19.2	
Approach LOS		A				A		B	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	89	129	0
Future Volume (Veh/h)	0	0	0	89	129	0
Sign Control	Stop			Free	Free	
Grade	-4%			-4%	4%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	97	140	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	237	140	140			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	140	140			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	752	908	1443			

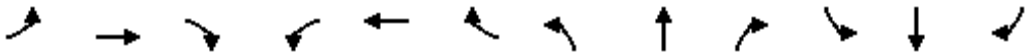
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	97	140
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1443	1700
Volume to Capacity	0.00	0.00	0.08
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	10.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	122	51	0	238	209
Future Volume (Veh/h)	2	122	51	0	238	209
Sign Control	Stop		Free			Free
Grade	-1%		0%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	133	55	0	259	227
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	800	55			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	800	55			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	87			83	
cM capacity (veh/h)	295	1012			1550	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	135	55	486
Volume Left	2	0	259
Volume Right	133	0	0
cSH	977	1700	1550
Volume to Capacity	0.14	0.03	0.17
Queue Length 95th (ft)	12	0	15
Control Delay (s)	9.3	0.0	4.9
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	4.9
Approach LOS	A		

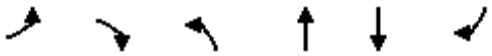
Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	238	0	0	74	0	0	0	0	0	0	0
Future Volume (vph)	0	238	0	0	74	0	0	0	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	259	0	0	80	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	259	80	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	4.2	4.6	4.6
Degree Utilization, x	0.29	0.09	0.00	0.00
Capacity (veh/h)	890	850	737	737
Control Delay (s)	8.6	7.6	7.6	7.6
Approach Delay (s)	8.6	7.6	0.0	0.0
Approach LOS	A	A	A	A

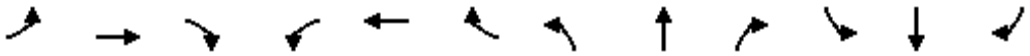
Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	199	44	50	99	30
Future Volume (Veh/h)	39	199	44	50	99	30
Sign Control	Stop			Free	Free	
Grade	0%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	216	48	54	108	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274	124	141			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274	124	141			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	77	97			
cM capacity (veh/h)	691	926	1442			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	258	102	141
Volume Left	42	48	0
Volume Right	216	0	33
cSH	878	1442	1700
Volume to Capacity	0.29	0.03	0.08
Queue Length 95th (ft)	31	3	0
Control Delay (s)	10.8	3.7	0.0
Lane LOS	B	A	
Approach Delay (s)	10.8	3.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	0	85	1	70	0	24	520	285	13	0
Future Volume (Veh/h)	0	1	0	85	1	70	0	24	520	285	13	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	92	1	76	0	26	565	310	14	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1019	1225	14	943	942	308	14			591		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1019	1225	14	943	942	308	14			591		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	50	99	90	100			69		
cM capacity (veh/h)	145	122	1066	182	180	732	1604			985		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	169	591	324
Volume Left	0	92	0	310
Volume Right	0	76	565	0
cSH	122	275	1604	985
Volume to Capacity	0.01	0.61	0.00	0.31
Queue Length 95th (ft)	1	93	0	34
Control Delay (s)	34.6	36.9	0.0	10.0
Lane LOS	D	E		B
Approach Delay (s)	34.6	36.9	0.0	10.0
Approach LOS	D	E		

Intersection Summary				
Average Delay	8.8			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	92	6	0	544	0	1
Future Volume (Veh/h)	92	6	0	544	0	1
Sign Control	Free			Free	Stop	
Grade	3%			-2%	5%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	7	0	591	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			107		694	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			107		694	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1484		408	951

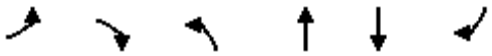
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	107	591	1
Volume Left	0	0	0
Volume Right	7	0	1
cSH	1700	1484	951
Volume to Capacity	0.06	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		38.6%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	1	87	4	20	496	47	9
Future Volume (Veh/h)	1	87	4	20	496	47	9
Sign Control		Free			Free	Stop	
Grade		0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	95	4	22	539	51	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None			None		
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0			99		680	97
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0			99		680	97
tC, single (s)	0.0			4.1		6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0			2.2		3.5	3.3
p0 queue free %	0			99		88	99
cM capacity (veh/h)	0			1494		410	959

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	99	561	61
Volume Left	0	22	51
Volume Right	4	0	10
cSH	1700	1494	453
Volume to Capacity	0.06	0.01	0.13
Queue Length 95th (ft)	0	1	12
Control Delay (s)	0.0	0.4	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	14.2
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	37	103	404	191	108	38
Future Volume (vph)	37	103	404	191	108	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	112	439	208	117	41

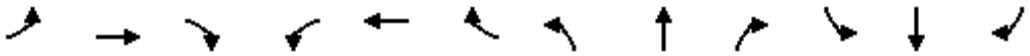
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	152	647	158
Volume Left (vph)	40	439	0
Volume Right (vph)	112	0	41
Hadj (s)	-0.36	0.17	-0.12
Departure Headway (s)	5.4	4.7	5.0
Degree Utilization, x	0.23	0.85	0.22
Capacity (veh/h)	612	752	678
Control Delay (s)	10.1	28.0	9.4
Approach Delay (s)	10.1	28.0	9.4
Approach LOS	B	D	A

Intersection Summary			
Delay	22.0		
Level of Service	C		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	29	65	149	81	58
Future Volume (Veh/h)	21	29	65	149	81	58
Sign Control	Stop		Free			Free
Grade	0%		-4%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	32	71	162	88	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391	152			233	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391	152			233	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			93	
cM capacity (veh/h)	573	894			1335	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	55	233	151
Volume Left	23	0	88
Volume Right	32	162	0
cSH	724	1700	1335
Volume to Capacity	0.08	0.14	0.07
Queue Length 95th (ft)	6	0	5
Control Delay (s)	10.4	0.0	4.8
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	4.8
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	121	0	0	365	48	2	8	0	5	15	5
Future Volume (Veh/h)	0	121	0	0	365	48	2	8	0	5	15	5
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	132	0	0	397	52	2	9	0	5	16	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					434							
pX, platoon unblocked	0.83						0.83	0.83		0.83	0.83	0.83
vC, conflicting volume	449			132			568	581	132	560	555	423
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	226			132			371	386	132	360	355	195
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	99	97	99
cM capacity (veh/h)	1107			1453			467	452	917	484	471	699

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	132	449	11	26
Volume Left	0	0	2	5
Volume Right	0	52	0	5
cSH	1107	1453	455	505
Volume to Capacity	0.00	0.00	0.02	0.05
Queue Length 95th (ft)	0	0	2	4
Control Delay (s)	0.0	0.0	13.1	12.5
Lane LOS			B	B
Approach Delay (s)	0.0	0.0	13.1	12.5
Approach LOS			B	B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	108	16	153	391	34	22	124	62	2	60	0
Future Volume (vph)	2	108	16	153	391	34	22	124	62	2	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-3%			5%			3%	
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.96			1.00	
Flt Protected		1.00			0.99			0.99			1.00	
Satd. Flow (prot)		1830			1851			1734			1832	
Flt Permitted		0.99			0.87			0.97			0.99	
Satd. Flow (perm)		1821			1636			1692			1822	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	117	17	166	425	37	24	135	67	2	65	0
RTOR Reduction (vph)	0	8	0	0	4	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	128	0	0	624	0	0	201	0	0	67	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.5			31.5			19.5			19.5	
Effective Green, g (s)		31.5			31.5			19.5			19.5	
Actuated g/C Ratio		0.52			0.52			0.32			0.32	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		956			858			549			592	
v/s Ratio Prot												
v/s Ratio Perm		0.07			c0.38			c0.12			0.04	
v/c Ratio		0.13			0.73			0.37			0.11	
Uniform Delay, d1		7.3			11.0			15.5			14.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			5.4			1.9			0.4	
Delay (s)		7.6			16.3			17.4			14.6	
Level of Service		A			B			B			B	
Approach Delay (s)		7.6			16.3			17.4			14.6	
Approach LOS		A			B			B			B	

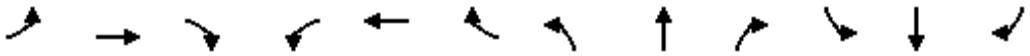
Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	201	1	0	579	0	1
Future Volume (Veh/h)	201	1	0	579	0	1
Sign Control	Free			Free	Stop	
Grade	1%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	218	1	0	629	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	434					
pX, platoon unblocked						
vC, conflicting volume			219		848	218
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			219		848	218
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1350		332	821

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	219	629	1
Volume Left	0	0	0
Volume Right	1	0	1
cSH	1700	1350	821
Volume to Capacity	0.13	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

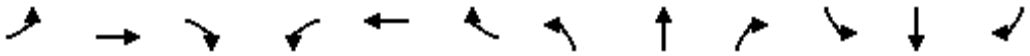
Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		40.5%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	50	0	0	182	0	0	0	0	0	0	1
Future Volume (Veh/h)	1	50	0	0	182	0	0	0	0	0	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	54	0	0	198	0	0	0	0	0	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	198			54			255	254	54	254	254	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	198			54			255	254	54	254	254	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1375			1551			697	649	1013	699	649	843

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	198	0	1
Volume Left	1	0	0	0
Volume Right	0	0	0	1
cSH	1375	1551	1700	843
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	9.3
Lane LOS	A		A	A
Approach Delay (s)	0.1	0.0	0.0	9.3
Approach LOS			A	A

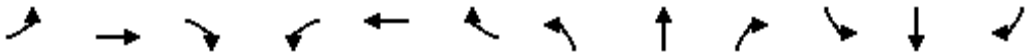
Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	19.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	69	1	1	184	0	2	0	6	0	0	0
Future Volume (Veh/h)	0	69	1	1	184	0	2	0	6	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	75	1	1	200	0	2	0	7	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	200			76			278	278	76	284	278	200
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	200			76			278	278	76	284	278	200
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1372			1523			674	630	986	663	629	841

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	201	9	0
Volume Left	0	1	2	0
Volume Right	1	0	7	0
cSH	1372	1523	894	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.0	0.0	9.1	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	0.0	9.1	0.0
Approach LOS			A	A

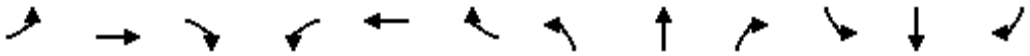
Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	20.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	16	0	6	24	53	4	61	13	7	5	0
Future Volume (Veh/h)	1	16	0	6	24	53	4	61	13	7	5	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			1%			-3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	0	7	26	58	4	66	14	8	5	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	173	109	5	110	102	73	5			80		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	173	109	5	110	102	73	5			80		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	100	99	97	94	100			99		
cM capacity (veh/h)	721	775	1078	848	782	989	1616			1518		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	91	84	13
Volume Left	1	7	4	8
Volume Right	0	58	14	0
cSH	772	909	1616	1518
Volume to Capacity	0.02	0.10	0.00	0.01
Queue Length 95th (ft)	2	8	0	0
Control Delay (s)	9.8	9.4	0.4	4.6
Lane LOS	A	A	A	A
Approach Delay (s)	9.8	9.4	0.4	4.6
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	17.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	234	0	0	94	22	0	0	0	2	0	9
Future Volume (Veh/h)	56	234	0	0	94	22	0	0	0	2	0	9
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			-1%			1%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	254	0	0	102	24	0	0	0	2	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	84	9	5	136	14	0	10			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	84	9	5	136	14	0	10			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	71	100	100	88	98	100			100		
cM capacity (veh/h)	804	885	1078	649	879	1085	1610			1623		

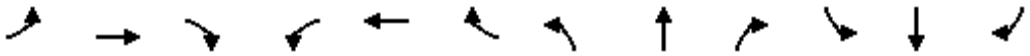
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	315	126	0	12
Volume Left	61	0	0	2
Volume Right	0	24	0	10
cSH	868	912	1700	1623
Volume to Capacity	0.36	0.14	0.00	0.00
Queue Length 95th (ft)	42	12	0	0
Control Delay (s)	11.5	9.6	0.0	1.2
Lane LOS	B	A		A
Approach Delay (s)	11.5	9.6	0.0	1.2
Approach LOS	B	A		

Intersection Summary				
Average Delay	10.7			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	89	14	679	264	26	246
Future Volume (Veh/h)	89	14	679	264	26	246
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	97	15	738	287	28	267
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			728			
pX, platoon unblocked						
vC, conflicting volume	1204	882			1025	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1204	882			1025	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	50	96			96	
cM capacity (veh/h)	195	346			677	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	112	1025	295
Volume Left	97	0	28
Volume Right	15	287	0
cSH	207	1700	677
Volume to Capacity	0.54	0.60	0.04
Queue Length 95th (ft)	71	0	3
Control Delay (s)	41.2	0.0	1.5
Lane LOS	E		A
Approach Delay (s)	41.2	0.0	1.5
Approach LOS	E		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

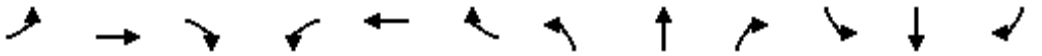


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	1129	35	102	1249	926	9	26	60	340	20	90
Future Volume (vph)	217	1129	35	102	1249	926	9	26	60	340	20	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			0%			-1%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.91		1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3504	1567	3450	4784		1770	1863	2787	3450	1643	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1752	3504	1567	3450	4784		1770	1863	2787	2684	1643	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	1227	38	111	1358	1007	10	28	65	370	22	98
RTOR Reduction (vph)	0	0	16	0	126	0	0	0	50	0	81	0
Lane Group Flow (vph)	236	1227	22	111	2239	0	10	28	15	370	39	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Prot	Perm	NA	
Protected Phases	7	4		3	8		5	2	2		6	
Permitted Phases			4							6		
Actuated Green, G (s)	14.5	54.3	54.3	5.6	45.4		0.9	21.9	21.9	16.5	16.5	
Effective Green, g (s)	14.5	54.3	54.3	5.6	45.4		0.9	21.9	21.9	16.5	16.5	
Actuated g/C Ratio	0.15	0.57	0.57	0.06	0.48		0.01	0.23	0.23	0.17	0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	266	1996	892	202	2279		16	428	640	464	284	
v/s Ratio Prot	c0.13	0.35		0.03	c0.47		c0.01	0.02	0.01		0.02	
v/s Ratio Perm			0.01							c0.14		
v/c Ratio	0.89	0.61	0.02	0.55	1.12dr		0.62	0.07	0.02	0.80	0.14	
Uniform Delay, d1	39.6	13.6	8.9	43.6	24.6		47.0	28.7	28.4	37.8	33.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.8	1.4	0.1	3.0	15.2		57.6	0.1	0.0	9.2	0.2	
Delay (s)	67.4	15.0	9.0	46.7	39.7		104.6	28.8	28.4	47.0	33.6	
Level of Service	E	B	A	D	D		F	C	C	D	C	
Approach Delay (s)		23.1			40.0			35.9			43.7	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	535	996	164	293	607	450	65	110	150	227	113	312
Future Volume (vph)	535	996	164	293	607	450	65	110	150	227	113	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-3%			-2%			0%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1743	3486	1560	1796	3592	1607	3467	1719		1770	1863	1583
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.22	1.00	1.00
Satd. Flow (perm)	303	3486	1560	1796	3592	1607	3467	1719		408	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	582	1083	178	318	660	489	71	120	163	247	123	339
RTOR Reduction (vph)	0	0	113	0	0	386	0	52	0	0	0	255
Lane Group Flow (vph)	582	1083	65	318	660	103	71	231	0	247	123	84
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8				6		6
Actuated Green, G (s)	50.6	29.1	29.1	17.0	19.7	19.7	6.1	18.0		33.9	23.3	23.3
Effective Green, g (s)	50.6	29.1	29.1	17.0	19.7	19.7	6.1	18.0		33.9	23.3	23.3
Actuated g/C Ratio	0.54	0.31	0.31	0.18	0.21	0.21	0.07	0.19		0.36	0.25	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	570	1084	485	326	756	338	226	330		313	464	394
v/s Ratio Prot	c0.29	0.31		0.18	0.18		0.02	0.13		c0.10	0.07	
v/s Ratio Perm	c0.26		0.04			0.06				c0.19		0.05
v/c Ratio	1.02	1.00	0.13	0.98	0.87	0.30	0.31	0.70		0.79	0.27	0.21
Uniform Delay, d1	25.4	32.2	23.1	38.0	35.7	31.1	41.7	35.2		23.4	28.2	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	43.1	27.1	0.6	42.8	13.3	2.3	0.8	6.3		12.4	1.4	1.2
Delay (s)	68.5	59.3	23.7	80.9	49.0	33.4	42.5	41.5		35.9	29.6	29.1
Level of Service	E	E	C	F	D	C	D	D		D	C	C
Approach Delay (s)		58.8			50.7			41.7			31.5	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

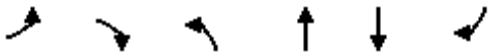
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1638	149	97	886	56	51
Future Volume (vph)	1638	149	97	886	56	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3575	1599	1770	3539	3450	1591
Flt Permitted	1.00	1.00	0.08	1.00	0.95	1.00
Satd. Flow (perm)	3575	1599	140	3539	3450	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1780	162	105	963	61	55
RTOR Reduction (vph)	0	52	0	0	0	51
Lane Group Flow (vph)	1780	110	105	963	61	4
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	48.8	48.8	57.3	57.3	5.7	5.7
Effective Green, g (s)	48.8	48.8	57.3	57.3	5.7	5.7
Actuated g/C Ratio	0.68	0.68	0.80	0.80	0.08	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2423	1083	201	2816	273	125
v/s Ratio Prot	c0.50		c0.03	0.27	c0.02	
v/s Ratio Perm		0.07	0.39			0.00
v/c Ratio	0.73	0.10	0.52	0.34	0.22	0.03
Uniform Delay, d1	7.4	4.0	8.9	2.1	31.1	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.2	2.4	0.3	0.4	0.1
Delay (s)	9.5	4.2	11.3	2.4	31.5	30.7
Level of Service	A	A	B	A	C	C
Approach Delay (s)	9.0			3.3	31.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	91	87	22	90	90
Future Volume (Veh/h)	24	91	87	22	90	90
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	99	95	24	98	98
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	401	107			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	401	107			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	90			93	
cM capacity (veh/h)	565	947			1469	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	125	119	196
Volume Left	26	0	98
Volume Right	99	24	0
cSH	830	1700	1469
Volume to Capacity	0.15	0.07	0.07
Queue Length 95th (ft)	13	0	5
Control Delay (s)	10.1	0.0	4.1
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	4.1
Approach LOS	B		

Intersection Summary			
Average Delay		4.7	
Intersection Capacity Utilization		30.0%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	0	49	80	4
Future Volume (Veh/h)	2	0	0	49	80	4
Sign Control	Stop			Free	Free	
Grade	-4%			-4%	4%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	53	87	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	142	89	91			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	142	89	91			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	851	969	1504			

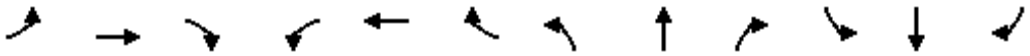
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	53	91
Volume Left	2	0	0
Volume Right	0	0	4
cSH	851	1504	1700
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	201	209	1	69	226
Future Volume (Veh/h)	5	201	209	1	69	226
Sign Control	Stop		Free			Free
Grade	-1%		0%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	218	227	1	75	246
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	624	228			228	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	624	228			228	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	73			94	
cM capacity (veh/h)	424	812			1340	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	223	228	321
Volume Left	5	0	75
Volume Right	218	1	0
cSH	796	1700	1340
Volume to Capacity	0.28	0.13	0.06
Queue Length 95th (ft)	29	0	4
Control Delay (s)	11.3	0.0	2.2
Lane LOS	B		A
Approach Delay (s)	11.3	0.0	2.2
Approach LOS	B		

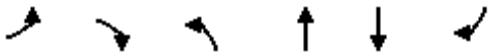
Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	14	49	7	6	89	5	0	0	1	1	0	1
Future Volume (vph)	14	49	7	6	89	5	0	0	1	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	53	8	7	97	5	0	0	1	1	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	76	109	1	2
Volume Left (vph)	15	7	0	1
Volume Right (vph)	8	5	1	1
Hadj (s)	0.01	0.02	-0.57	-0.17
Departure Headway (s)	4.0	4.0	3.7	4.1
Degree Utilization, x	0.08	0.12	0.00	0.00
Capacity (veh/h)	885	893	910	831
Control Delay (s)	7.4	7.5	6.7	7.1
Approach Delay (s)	7.4	7.5	6.7	7.1
Approach LOS	A	A	A	A

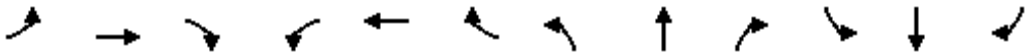
Intersection Summary			
Delay	7.5		
Level of Service	A		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	17	40	15	22	58
Future Volume (Veh/h)	34	17	40	15	22	58
Sign Control	Stop			Free	Free	
Grade	0%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	18	43	16	24	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158	56	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158	56	87			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	97			
cM capacity (veh/h)	810	1011	1509			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	55	59	87
Volume Left	37	43	0
Volume Right	18	0	63
cSH	866	1509	1700
Volume to Capacity	0.06	0.03	0.05
Queue Length 95th (ft)	5	2	0
Control Delay (s)	9.4	5.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	5.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	29	0	5	0	50	92	10	30	0
Future Volume (Veh/h)	0	0	0	29	0	5	0	50	92	10	30	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	32	0	5	0	54	100	11	33	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	164	209	33	159	159	104	33			154		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	164	209	33	159	159	104	33			154		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	96	100	99	100			99		
cM capacity (veh/h)	792	683	1041	802	728	951	1579			1426		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	37	154	44
Volume Left	0	32	0	11
Volume Right	0	5	100	0
cSH	1700	819	1579	1426
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (ft)	0	4	0	1
Control Delay (s)	0.0	9.6	0.0	1.9
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.6	0.0	1.9
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	20.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	59	0	9	141	1	2
Future Volume (Veh/h)	59	0	9	141	1	2
Sign Control	Free			Free	Stop	
Grade	3%			-2%	5%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	0	10	153	1	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		237	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		237	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1538		746	1000

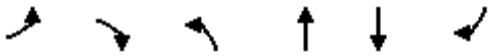
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	163	3
Volume Left	0	10	1
Volume Right	0	0	2
cSH	1700	1538	898
Volume to Capacity	0.04	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.5	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.0
Approach LOS			A

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		24.6%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	58	3	75	149	1	9
Future Volume (Veh/h)	58	3	75	149	1	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	3	82	162	1	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			66		390	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			66		390	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	99
cM capacity (veh/h)			1536		581	1000

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	66	244	11
Volume Left	0	82	1
Volume Right	3	0	10
cSH	1700	1536	938
Volume to Capacity	0.04	0.05	0.01
Queue Length 95th (ft)	0	4	1
Control Delay (s)	0.0	2.8	8.9
Lane LOS		A	A
Approach Delay (s)	0.0	2.8	8.9
Approach LOS			A

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		28.7%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	62	351	199	221	272	51
Future Volume (vph)	62	351	199	221	272	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	382	216	240	296	55

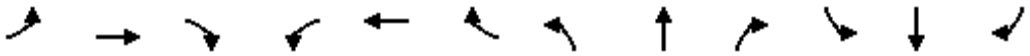
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	449	456	351
Volume Left (vph)	67	216	0
Volume Right (vph)	382	0	55
Hadj (s)	-0.45	0.13	-0.06
Departure Headway (s)	5.8	6.1	6.1
Degree Utilization, x	0.72	0.78	0.60
Capacity (veh/h)	590	571	552
Control Delay (s)	22.3	27.1	17.8
Approach Delay (s)	22.3	27.1	17.8
Approach LOS	C	D	C

Intersection Summary			
Delay	22.8		
Level of Service	C		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	15	36	236	32	48
Future Volume (Veh/h)	43	15	36	236	32	48
Sign Control	Stop		Free			Free
Grade	0%		-4%			2%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	16	39	257	35	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	290	168			296	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	290	168			296	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			97	
cM capacity (veh/h)	682	877			1265	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	296	87
Volume Left	47	0	35
Volume Right	16	257	0
cSH	723	1700	1265
Volume to Capacity	0.09	0.17	0.03
Queue Length 95th (ft)	7	0	2
Control Delay (s)	10.5	0.0	3.3
Lane LOS	B		A
Approach Delay (s)	10.5	0.0	3.3
Approach LOS	B		

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		34.1%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	235	1	4	290	5	2	0	2	37	21	21
Future Volume (Veh/h)	5	235	1	4	290	5	2	0	2	37	21	21
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	255	1	4	315	5	2	0	2	40	23	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					434							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	320			256			626	594	256	593	592	318
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	302			256			612	580	256	579	578	299
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	90	94	97
cM capacity (veh/h)	1240			1309			368	416	783	417	418	729

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	261	324	4	86
Volume Left	5	4	2	40
Volume Right	1	5	2	23
cSH	1240	1309	501	471
Volume to Capacity	0.00	0.00	0.01	0.18
Queue Length 95th (ft)	0	0	1	17
Control Delay (s)	0.2	0.1	12.2	14.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.1	12.2	14.3
Approach LOS			B	B

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	222	48	155	267	42	31	49	37	5	52	2
Future Volume (vph)	3	222	48	155	267	42	31	49	37	5	52	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			-3%			5%			3%	
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.99			0.96			1.00	
Flt Protected		1.00			0.98			0.99			1.00	
Satd. Flow (prot)		1818			1837			1716			1820	
Flt Permitted		1.00			0.80			0.93			0.98	
Satd. Flow (perm)		1812			1494			1609			1797	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	241	52	168	290	46	34	53	40	5	57	2
RTOR Reduction (vph)	0	14	0	0	7	0	0	26	0	0	1	0
Lane Group Flow (vph)	0	282	0	0	497	0	0	101	0	0	63	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.5			26.5			19.5			19.5	
Effective Green, g (s)		26.5			26.5			19.5			19.5	
Actuated g/C Ratio		0.48			0.48			0.35			0.35	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		873			719			570			637	
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.33			c0.06			0.03	
v/c Ratio		0.32			0.69			0.18			0.10	
Uniform Delay, d1		8.7			11.1			12.2			11.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			5.4			0.7			0.3	
Delay (s)		9.7			16.5			12.9			12.2	
Level of Service		A			B			B			B	
Approach Delay (s)		9.7			16.5			12.9			12.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	484	0	12	452	12	37
Future Volume (Veh/h)	484	0	12	452	12	37
Sign Control	Free			Free	Stop	
Grade	1%			-1%	3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	526	0	13	491	13	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	434					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			526		1043	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			478		1020	478
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	93
cM capacity (veh/h)			1033		246	560

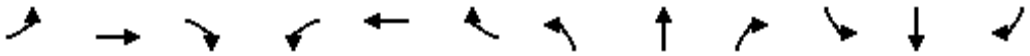
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	526	504	53
Volume Left	0	13	13
Volume Right	0	0	40
cSH	1700	1033	426
Volume to Capacity	0.31	0.01	0.12
Queue Length 95th (ft)	0	1	11
Control Delay (s)	0.0	0.4	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	14.6
Approach LOS			B

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		43.4%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	139	0	0	91	48	0	0	0	0	0	12
Future Volume (Veh/h)	1	139	0	0	91	48	0	0	0	0	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	151	0	0	99	52	0	0	0	0	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	151			151			291	304	151	278	278	125
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	151			151			291	304	151	278	278	125
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	1430			1430			652	609	895	674	629	926

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	152	151	0	13
Volume Left	1	0	0	0
Volume Right	0	52	0	13
cSH	1430	1430	1700	926
Volume to Capacity	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.1	0.0	0.0	8.9
Lane LOS	A		A	A
Approach Delay (s)	0.1	0.0	0.0	8.9
Approach LOS			A	A

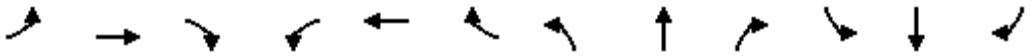
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	18.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	142	1	6	143	0	5	0	2	0	0	0
Future Volume (Veh/h)	0	142	1	6	143	0	5	0	2	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			3%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	154	1	7	155	0	5	0	2	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	155			155			324	324	154	326	324	155
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			155			324	324	154	326	324	155
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1425			1425			627	591	891	624	591	891

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	155	162	7	0
Volume Left	0	7	5	0
Volume Right	1	0	2	0
cSH	1425	1425	685	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.0	0.4	10.3	0.0
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.4	10.3	0.0
Approach LOS			B	A

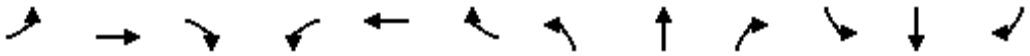
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	22.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	72	2	6	19	37	3	72	3	18	20	0
Future Volume (Veh/h)	5	72	2	6	19	37	3	72	3	18	20	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			1%			-3%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	78	2	7	21	40	3	78	3	20	22	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	198	149	22	188	148	80	22			81		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	198	149	22	188	148	80	22			81		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	89	100	99	97	96	100			99		
cM capacity (veh/h)	706	731	1055	699	733	981	1593			1517		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	85	68	84	42
Volume Left	5	7	3	20
Volume Right	2	40	3	0
cSH	735	856	1593	1517
Volume to Capacity	0.12	0.08	0.00	0.01
Queue Length 95th (ft)	10	6	0	1
Control Delay (s)	10.5	9.6	0.3	3.6
Lane LOS	B	A	A	A
Approach Delay (s)	10.5	9.6	0.3	3.6
Approach LOS	B	A		

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	20.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	110	0	6	49	37	0	0	1	14	0	15
Future Volume (Veh/h)	43	110	0	6	49	37	0	0	1	14	0	15
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			-1%			1%			-1%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	120	0	7	53	40	0	0	1	15	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	105	39	8	98	46	0	16			1		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	105	39	8	98	46	0	16			1		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	86	100	99	94	96	100			99		
cM capacity (veh/h)	796	845	1074	782	837	1084	1602			1622		

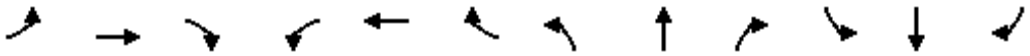
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	167	100	1	31
Volume Left	47	7	0	15
Volume Right	0	40	1	16
cSH	831	916	1602	1622
Volume to Capacity	0.20	0.11	0.00	0.01
Queue Length 95th (ft)	19	9	0	1
Control Delay (s)	10.4	9.4	0.0	3.5
Lane LOS	B	A		A
Approach Delay (s)	10.4	9.4	0.0	3.5
Approach LOS	B	A		

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	29.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	13	465	75	78	654
Future Volume (Veh/h)	51	13	465	75	78	654
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	14	505	82	85	711
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			728			
pX, platoon unblocked						
vC, conflicting volume	1427	546			587	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1427	546			587	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	97			91	
cM capacity (veh/h)	136	538			988	

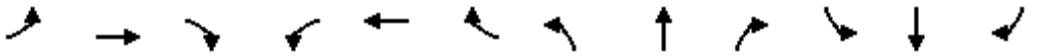
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	587	796
Volume Left	55	0	85
Volume Right	14	82	0
cSH	160	1700	988
Volume to Capacity	0.43	0.35	0.09
Queue Length 95th (ft)	48	0	7
Control Delay (s)	43.4	0.0	2.1
Lane LOS	E		A
Approach Delay (s)	43.4	0.0	2.1
Approach LOS	E		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1144	11	73	1446	483	15	46	130	651	20	96
Future Volume (vph)	205	1144	11	73	1446	483	15	46	130	651	20	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			0%			-1%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.91		1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	3504	1567	3450	4919		1770	1863	2787	3450	1640	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	3504	1567	3450	4919		1770	1863	2787	3450	1640	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	1243	12	79	1572	525	16	50	141	708	22	104
RTOR Reduction (vph)	0	0	6	0	41	0	0	0	129	0	74	0
Lane Group Flow (vph)	223	1243	6	79	2056	0	16	50	12	708	52	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Prot	Prot	NA	
Protected Phases	7	4		3	8		5	2	2	1	6	
Permitted Phases			4									
Actuated Green, G (s)	18.5	67.3	67.3	6.8	55.6		2.2	11.6	11.6	28.9	38.3	
Effective Green, g (s)	18.5	67.3	67.3	6.8	55.6		2.2	11.6	11.6	28.9	38.3	
Actuated g/C Ratio	0.14	0.51	0.51	0.05	0.42		0.02	0.09	0.09	0.22	0.29	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	244	1778	795	176	2062		29	162	243	751	473	
v/s Ratio Prot	c0.13	0.35		0.02	c0.42		0.01	c0.03	0.00	c0.21	0.03	
v/s Ratio Perm			0.00									
v/c Ratio	0.91	0.70	0.01	0.45	1.00		0.55	0.31	0.05	0.94	0.11	
Uniform Delay, d1	56.3	24.9	16.1	61.1	38.4		64.7	56.7	55.5	51.0	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	35.2	2.3	0.0	1.8	19.1		20.8	1.1	0.1	20.1	0.1	
Delay (s)	91.4	27.2	16.2	62.9	57.5		85.5	57.8	55.5	71.1	34.7	
Level of Service	F	C	B	E	E		F	E	E	E	C	
Approach Delay (s)		36.8			57.7			58.4			65.6	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	132.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	778	126	187	983	390	100	115	243	334	86	259
Future Volume (vph)	260	778	126	187	983	390	100	115	243	334	86	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			-3%			-2%			0%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1743	3486	1560	1796	3592	1607	3467	1690		1770	1863	1583
Flt Permitted	0.16	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.16	1.00	1.00
Satd. Flow (perm)	302	3486	1560	1796	3592	1607	3467	1690		307	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	846	137	203	1068	424	109	125	264	363	93	282
RTOR Reduction (vph)	0	0	99	0	0	300	0	87	0	0	0	194
Lane Group Flow (vph)	283	846	38	203	1068	124	109	302	0	363	93	88
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8				6		6
Actuated Green, G (s)	34.2	24.3	24.3	11.2	25.6	25.6	6.8	19.8		38.7	27.4	27.4
Effective Green, g (s)	34.2	24.3	24.3	11.2	25.6	25.6	6.8	19.8		38.7	27.4	27.4
Actuated g/C Ratio	0.39	0.28	0.28	0.13	0.29	0.29	0.08	0.23		0.44	0.31	0.31
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	280	965	432	229	1048	469	268	381		375	582	494
v/s Ratio Prot	c0.11	0.24		0.11	c0.30		0.03	0.18		c0.16	0.05	
v/s Ratio Perm	0.28		0.02			0.08				c0.27		0.06
v/c Ratio	1.01	0.88	0.09	0.89	1.02	0.26	0.41	0.79		0.97	0.16	0.18
Uniform Delay, d1	22.7	30.3	23.5	37.6	31.1	23.8	38.5	32.0		22.6	21.8	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	56.5	11.1	0.4	30.9	32.7	1.4	1.0	10.8		37.6	0.6	0.8
Delay (s)	79.2	41.3	23.9	68.5	63.7	25.2	39.5	42.8		60.2	22.4	22.7
Level of Service	E	D	C	E	E	C	D	D		E	C	C
Approach Delay (s)		47.9			54.7			42.1			41.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1077	81	90	1251	101	79
Future Volume (vph)	1077	81	90	1251	101	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3575	1599	1770	3539	3450	1591
Flt Permitted	1.00	1.00	0.16	1.00	0.95	1.00
Satd. Flow (perm)	3575	1599	296	3539	3450	1591
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1171	88	98	1360	110	86
RTOR Reduction (vph)	0	38	0	0	0	76
Lane Group Flow (vph)	1171	50	98	1360	110	10
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	29.8	29.8	37.4	37.4	5.9	5.9
Effective Green, g (s)	29.8	29.8	37.4	37.4	5.9	5.9
Actuated g/C Ratio	0.57	0.57	0.72	0.72	0.11	0.11
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2036	911	299	2530	389	179
v/s Ratio Prot	0.33		0.02	c0.38	c0.03	
v/s Ratio Perm		0.03	0.21			0.01
v/c Ratio	0.58	0.06	0.33	0.54	0.28	0.05
Uniform Delay, d1	7.2	5.0	3.9	3.4	21.3	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.6	0.8	0.4	0.1
Delay (s)	8.4	5.1	4.6	4.3	21.7	20.8
Level of Service	A	A	A	A	C	C
Approach Delay (s)	8.2			4.3	21.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	103	103	13	65	65
Future Volume (Veh/h)	13	103	103	13	65	65
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	112	112	14	71	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	332	119			126	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	119			126	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	88			95	
cM capacity (veh/h)	631	933			1460	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	126	126	142
Volume Left	14	0	71
Volume Right	112	14	0
cSH	886	1700	1460
Volume to Capacity	0.14	0.07	0.05
Queue Length 95th (ft)	12	0	4
Control Delay (s)	9.7	0.0	4.0
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	4.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

College Park – Airport City MP

Civil / Site Development Narrative

Date: May 24, 2019

Existing Conditions Analysis Map

Clear and accurate existing condition information is paramount in setting the stage for a successful Airport City master planning effort. The existing information indicated on the Existing Conditions Study Area Map was provided by College Park GIS representing the existing parcel boundaries, sanitary sewer and domestic/fire water services.

Topography Map

The project study area includes significant grade change across the site when traversing from east to west. A series of local highpoints are present within the Airport City boundary; however, the highest point of the site is located near the intersection of Harvard Avenue and Napoleon Street at an elevation of 1050'. Grades within the area of the high point slope to the southwest to drain into a stream that runs along Camp Creek Parkway, west, discharging into the golf course pond. Intermediate highpoints located along the northern portion of the project study area are located in the 990 – 1000' elevation range. Each of these highpoint locations slope down to Camp Creek, traversing east to west, along an elevation of 900 at the northern point of the Airport City study area, to a low elevation of 860' at the western most point of the golf course. Stormwater collection and conveyance information is included in the Stormwater Management Analysis narrative.

Land Use Analysis

As part of any proposed development, adding areas of buildings and hardscapes to a project area result in an increase of stormwater flows from the project site. These increases of stormwater flows are quantified by comparing the proposed conditions of the study area to the existing land use conditions within a hydraulic model. Utilizing aerial images and site photos, a baseline map and model of the existing conditions is generated to document the total area of pervious (landscape, woods, vegetated) areas and impervious (roadways, buildings, hardscape) areas. Using these areas, an existing conditions model is generated to act as the minimum performance criteria of the proposed stormwater management system. The Land Use Analysis Map indicates the total project boundary of 349 acres, composed of 3.3 acres of buildings, 25.7 acres of hardscape, and 320 acres of pervious areas. During the master planning phase of the Airport City study, a proposed land use map will be generated taking into account the proposed improvements to the site allowing a conceptual, regional stormwater management system to be designed meeting the intent of the Georgia Stormwater Management Manual and local requirements.

Stormwater detention facilities (designed by others) would need to be installed in these basins during Phase 1 to provide storage volumes similar to the numbers shown in the "Stormwater Management Analysis Data" table.

See the "Stormwater Basins Map – After Re-Development" plan and the "Stormwater Management Analysis Data" table for a summary of the results.

Aquatic Resource Delineation Analysis

The purpose of the Airport City Aquatic Delineation was to identify onsite aquatic resources, which may be subject to federal permitting authority under Section 404 of the Clean Water Act as well as the Erosion & Sedimentation Control Act of 1975, and Local Issuing Authority (LIA) ordinances that may apply.

The central coordinates for the site are latitude 34.121259 north and longitude -83.831711 west. The nearest named waterbody is Camp Creek, located along a portion of the northern property boundary. All onsite aquatic resources drain in a westerly direction on site and eventually into Camp Creek, which is a tributary of the Chattahoochee River (confluence is 11.98 miles west of the site). On-site aquatic resources are a component of the Middle Chattahoochee River Watershed, within Hydrologic Unit Code (HUC) 03130002.

Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Perennial 1 (P1) / Perennial 2 (P2) / Wetland 1 (W1): P1 consists of the bed and bank of an unnamed, north westerly trending perennial stream channel located in the northern portion of the property. P1 flows into W1 and loses bed and bank for a short time as it becomes inundate by W1. P1 regains bed and bank characteristics and forms a confluence with P3 (described below) in the northern portion of the site. P1 is approximately 3 to 6 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within P1 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P1 is listed by NWI as Riverine and classified as R3UB (*Riverine*, *Upper Perennial*, *and Unconsolidated Bottom*). *P1 totals 1,420.9 linear feet (lf).* P2 consists of the bed and bank of an unnamed northwesterly trending perennial stream channel located in the northern portion of the property. P2 forms a confluence with P1 in the northern portion of the property. P2 is approximately 4 to 6 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within P2 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and

depositions. P2 is listed by NWI as Riverine and classified as R3UB (*Riverine, Upper Perennial, and Unconsolidated Bottom*). *P2 totals 776.22 lf.* W1 consists of a forested wetland located within the northern portion of the property. Hydrophytic vegetation and low Chroma/hydric soils were present throughout W1. This wetland contains saturated soils and appears to be influenced by seasonal groundwater fluctuation. W1 drains into P1 (previously described) and shows significant signs of beaver activity. W1 is classified as PFO6Hb (*Palustrine, Forested, Deciduous, Permanently Flooded, Beaver). W1 totals 0.265 acre.*

Perennial 3 (P3) - Camp Creek**:** P3 consists of the bed and bank of a named southwesterly, trending perennial stream located along the northwestern property boundary and western portion of the property. P3 flows off the site property for a short time before flowing back on site in the northwestern portion of the property. P3 continues to flow in a southwesterly direction and eventually offsite to the west. P3 is approximately 6 to 12 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within P3 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P3 is listed by NWI as Riverine and classified as R3UB (*Riverine, Upper Perennial, and Unconsolidated Bottom*). *P2 totals 3,892.39 feet lf.*

Intermittent 1 (I1) / Wetland 2 and Wetland 3 (W2 and W3): I1 consists of the bed and bank of a west/northwesterly trending seasonal/intermittent stream located in the central and western portions of the property. I1 is piped and flows underneath Fairway Drive as well as a section of the existing golf course before flowing out of a concrete culvert. I1 continues in a northwesterly direction until it forms a confluence with P3 (previously described). I1 ranges from 1 to 3 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within I1 include, bed and bank, water staining, destruction of terrestrial vegetation, vegetation absent, leaf litter that is disturbed/washed away, and depositions. I1 is classified as R4SB (*Riverine, Intermittent, and Streambed*). ***I1 totals 906.53 lf. W2 and W3*** consists of two (2) forested wetlands within the riparian of I1 in the central portion of the property. Hydrophytic vegetation and low Chroma/hydric soils were present throughout these wetlands. These wetlands contain saturated soils and appears to be influenced by seasonal groundwater fluctuation. These wetlands are classified as PFO6B (*Palustrine, Forested, Deciduous, and Saturated*). *W2 totals 0.009 acre. W3 totals 0.087 acre.*

Intermittent 2 (I2): Consists of the bed and bank of a northwesterly-trending seasonal/intermittent stream located in the western portion of the property. I2 flows onsite via a metal culvert from the existing golf course and is approximately 1 to 3 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within I2 include, bed and bank, water staining, destruction of terrestrial vegetation, vegetation absent, leaf litter that is disturbed/washed away, and depositions. I2 forms a confluence with P3 (previously described) and is classified as R4SB (*Riverine, Intermittent, and Streambed*). ***I2 totals 543.90 lf****.*

Intermittent 3 (I3) / Intermittent 4 (I4): I3 consists of the bed and bank of a northwesterly-trending seasonal/intermittent stream located in the southeastern portion of the property. I3 flows onsite via a concreate culvert from underneath Camp Creek Parkway. I3 is approximately 2 to 3 feet in width. Using the

guidelines within *RGL 05-05*, physical characteristics that occur within I3 include, bed and bank, water staining, destruction of terrestrial vegetation, vegetation absent, leaf litter that is disturbed/washed away, and depositions. I3 transitions into P4 (described below) and is classified as R4SB (*Riverine*, *Intermittent*, *and Streambed*). *I3 totals 599.37 lf.* I4 consists of the bed and bank of northwesterly-trending seasonal/intermittent stream located in the southeastern portion of the property. I4 flows onsite via a concreate culvert from underneath Connley Street. I4 is approximately 1 to 3 feet in width. Using the guidelines within RGL 05-05, physical characteristics that occur within I4 include, bed and bank, water staining, destruction of terrestrial vegetation, vegetation absent, leaf litter that is disturbed/washed away, and depositions. I4 forms a confluence with I3 and is classified as R4SB (Riverine, Intermittent, and Streambed). **I4 totals 35.80 linear feet (lf)**.

Perennial 4 (P4) / Wetland 4 (W4): P4 consists of the bed and bank of an unnamed westerly trending perennial stream located in the southeastern portion of the property. P4 forms a confluence with P5 (described below) in the southern portion of the site. P4 is approximately 3 to 5 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within P4 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P4 is classified as R3UB (*Riverine*, *Upper Perennial*, *and Unconsolidated Bottom*). *P4 totals 1122.94 lf.* W4 consist of a forested wetland located within the riparian of P4. Hydrophytic vegetation and low Chroma/hydric soils were present throughout this wetland. This wetland contains saturated soils and appears to be influenced by seasonal groundwater fluctuation. This wetland is classified as PFO6B (*Palustrine, Forested, Deciduous, and Saturated*). ***W4 totals 0.005 acre.***

Perennial 5 (P5) / Wetland 5 (W5) / Wetland 6 (W6): P5 consists of the bed and bank of an unnamed west/northwesterly trending perennial stream located in the southern and western portions of the property. P5 flows on site via a concrete culvert from underneath Camp Creek Parkway. P5 loses bed and bank as it flows into OW1 (described below) in the southwestern portion of the property. P5 regains bed and bank continuing to flow in a northwesterly direction and eventually off site in the western portion of the property. P5 is approximately 4 to 6 feet in width. Using the guidelines within *RGL 05-05*, physical characteristics that occur within P5 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P5 is listed by NWI as Riverine and classified as R3UB (*Riverine*, *Upper Perennial*, *and Unconsolidated Bottom*). *P5 totals 5,390.96 lf.* W5 consist of a forested wetland located within the riparian of P5. Hydrophytic vegetation and low Chroma/hydric soils were present throughout this wetland. This wetland contains saturated soils and appears to be influenced by seasonal groundwater fluctuation. This wetland is classified as PFO6B (*Palustrine*, *Forested*, *Deciduous*, *and Saturated*). *W5 totals 0.028 acre.* W6 consists of a forested wetland located within the riparian of P5. Hydrophytic vegetation and low Chroma/hydric soils were present throughout W6. This wetland contains saturated soils and appears to be influenced by seasonal groundwater fluctuation. W6 shows significant signs of beaver activity. W6 is classified as PFO6Hb (*Palustrine*, *Forested*, *Deciduous*, *Permanently Flooded*, *Beaver) W6 totals 0.051 acre.*

Perennial 6 (P6): Consists of the bed and bank of an unnamed northerly trending perennial stream located in the southwestern portion of the property. P6 flows on site via a concrete culvert from underneath Camp Creek Parkway, then into another culvert that flows underneath existing paved roads on the property. P6 flows out through another concrete culvert and forms a confluence with P5 (previously described) in the southern portion of the property. P6 is approximately 3 to 4 feet in width. Using the guidelines within *RGL 05-05,* physical characteristics that occur within P6 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P6 is listed by NWI as Riverine and classified as R3UB (*Riverine*, *Upper Perennial*, *and Unconsolidated Bottom*). *P6 totals 79.03 lf.*

Perennial 7 (P7) / Wetland 7 (W7) / Open Water 1 (OW1): P7 consists of the bed and bank of an unnamed northerly trending perennial stream located in the southwestern portion of the property. P7 flows on site via a concrete culvert from underneath Camp Creek Parkway. P7 is approximately 3 to 5 feet in width. Using the guidelines within *RGL 05- 05,* physical characteristics that occur within P7 include, bed and bank, water staining, changes in character of the soil, destruction of terrestrial vegetation, wracking, vegetation absent, sediment sorting, leaf litter that is disturbed or washed away, scour, and depositions. P7 loses bed and bank and it flows into OW1. P7 is listed by NWI as Riverine and classified as R3UB (*Riverine*, *Upper Perennial*, *and Unconsolidated Bottom*). *P7 totals 216.26 lf.* W7 consist of a forested wetland located within the southwestern portion of the property. Hydrophytic vegetation and low Chroma/hydric soils were present throughout this wetland. This wetland contains saturated soils and appears to be influenced by seasonal groundwater fluctuation. W7 is listed by the NWI as Freshwater Forested/Shrub Wetland and drains into OW1. W7 is classified as PFO6B (*Palustrine*, *Forested*, *Deciduous*, *and Saturated*). *W7 totals 0.069 acre.* OW1 **c**onsists of a large open water pond located in the southwestern portion of the property. OW1 is formed by damming of P7 and P5 (previously described). OW1 is listed by the NWI as Fresh Water Pond/Freshwater Forested/Shrub Wetland. OW1 flows out into P5. OW1 is classified as PUBh *(Palustrine*, *Unconsolidated Bottom*, *Diked/Impounded). OW1 totals 2.94 acre.*

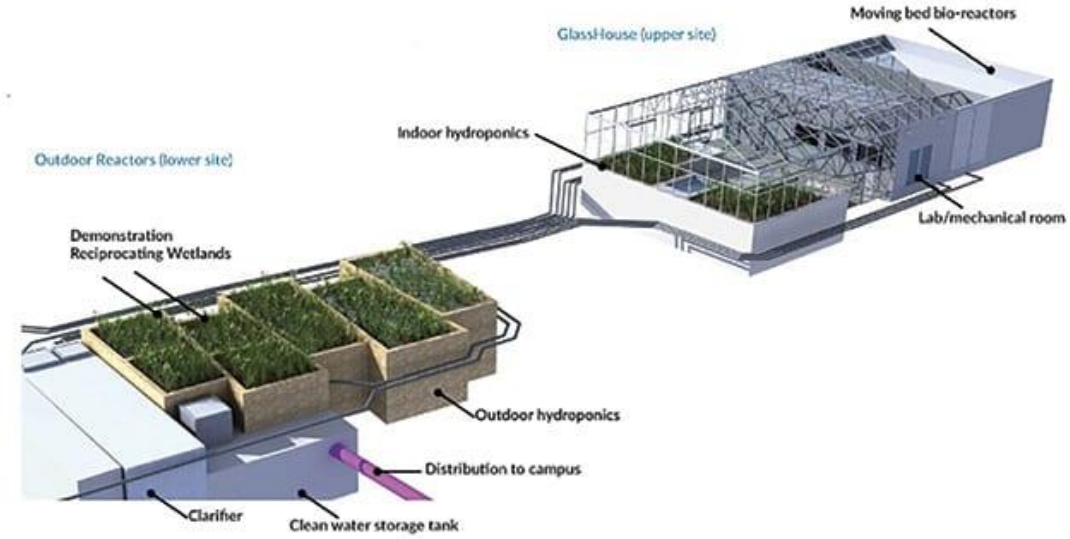
Storm Water Park Informational
Atlanta Airport City

Many cities across the globe give careful consideration for large initiatives that take into consideration the current and future environmental impact. Future generations should not have to shoulder the responsibility of problems created today. With that philosophy in mind, City of College Park and the Atlanta Airport City Team have been carefully reviewing and considering many ideas that include many technological advances in the area of sustainability. One key development that would tie into sustainability of this new development is the "Storm Water Park".

Storm Water (or Waste Water Repurposing) Parks have been popping up all over the world and throughout Atlanta with the latest park construction occurring in the Old Fourth Ward, Ponce City Market Development. Due to its unique educational advantages, the system that the Atlanta Airport City Team is currently looking into is similar to the one at Emory University.

What is WaterHub?

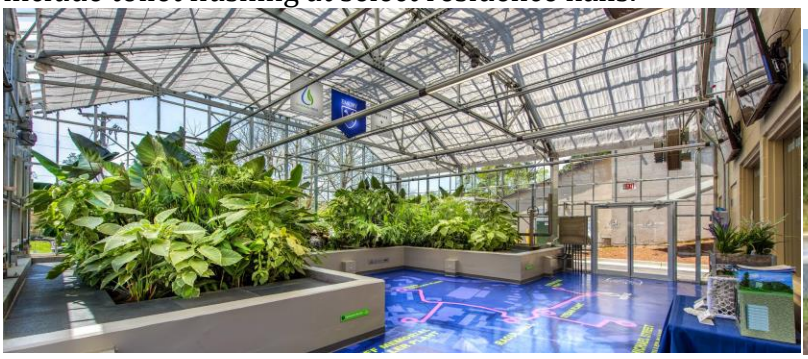
WaterHub is an on-site water recycling that uses various engineering processes to clean wastewater (any water that has been used in a home or business) and storm water for future uses. It is the first system of its kind to be installed in the United States. Specifically, Emory's WaterHub has been designed to supply nearly 40% of Emory's total campus water needs. The WaterHub creates lower cost water at a long-term stable rate and is expected to save millions of dollars in water utility costs to Emory over a 20-year period. The WaterHub aligns with the University's vision for a sustainable campus and reduces the overall water demand on one of the smallest municipal watersheds in the United States.



How Does Waterhub Clean Water?

The WaterHub treats wastewater (stormwater) through technology that mimics thee way nature cleans water. To do this, WaterHub grows beneficial bacteria, microorganisms, and uses outdoor plants including: Mexican Petunia, Common Rush, Arrow Arum, Lords and Ladies, Duck Potato, Pickerel Weed, Mallow, Water Willow, Golden Club, Acanthus and Iris. The ecosystems then treat large quantities of water in small spaces within short periods of time. The microorganisms consume the nutrients in the

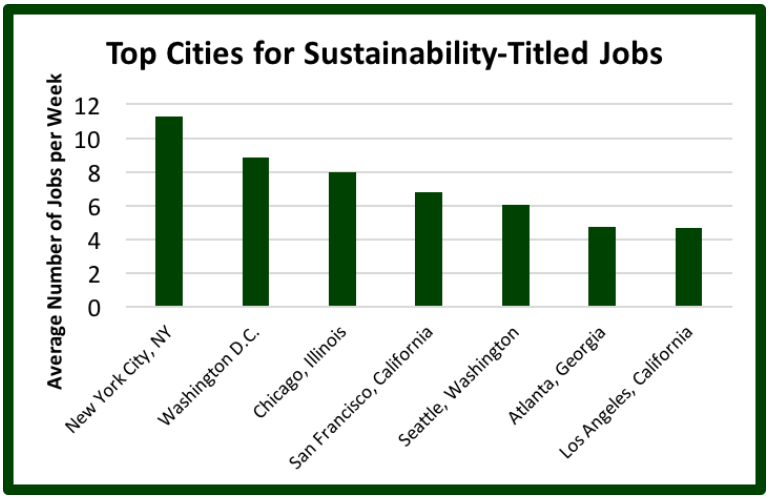
wastewater and ultimately convert the nutrients to high-quality reclaimed water. The water meets the State of Georgia as well as Emory's specific quality standards and is used as process make-up water in Emory's three central chiller plants and in the campus steam plant. Future use for reclaimed water will include toilet flushing at select residence halls.



How Can this Benefit College Park?

Education: Sustainability is a large growing field and will only gain momentum going forward into the future. The employment outlook for professionals seeking new and emerging sustainability careers is bright as a result of sustainability becoming a large focus for business strategy and operations. Major brands such as Apple, Walmart, Nike, and almost every other Fortune 500 company have made serious commitments to sustainability efforts, including:

- Energy-use reduction
- Resource conservation
- Recycling
- Pollution prevention
- Waste elimination
- Transportation efficiency
- Building design
- Human rights and community development



Moreover this past year, Atlanta ranked 6th in the top cities for sustainability-titled jobs.

Gaining a storm water-recycling park in our community would be a wonderful opportunity to introduce our children to the concept of sustainable living early in their education. Introducing a sustainability education early can spark and develop a passion for sustainability that will impact generations to come.

Overall there are many benefits to the development of sustainable options in Atlanta Airport City as we look to bring community-focused initiatives to College Park. Once we finalize due diligence, there will be an addendum to this blog post!

Have any suggestions, questions, comments, or concerns? Please email AtlantaAirportCity@collegeparkga.gov. We use your emails to develop these blog posts and take your questions to the core Atlanta Airport City Team for answers.

To find out more about the Waterhub at Emory University:
http://www.campserv.emory.edu/fm/images/water-hub/FAQ-WaterHub%20at%20Emory%20University-SUPER%20FINAL.pdf

To find out more about the future of sustainability careers:
http://sustainabilityleads.com/10-sustainability-job-trends

AIRPORT CITY MASTER PLAN

in association with

College Park Business
& Industrial Development Authority

APPENDIX

JUNE 2019

SIZEMORE GROUP

in association with

NOELL CONSULTING, VIRIDIAN STUDIOS, LONG ENGINEERING,
CERM, K&L CONSULTING & MICHAEL BAKER INTERNATIONAL