City of Fairfax, Virginia
City Council Work Session

Agenda Item # 9a

City Council Meeting 3/9/2021

TO: Honorable Mayor and Members of City Council

FROM: Robert A. Stalzer, City Manager

SUBJECT: Request of Pulte Homes for a City Council pre-hearing work session to discuss the proposed redevelopment of the Breezeway Motel, Fairfax Gardens Apartments and four adjacent residential lots into a mixed-use planned development through a Rezoning from CR, RMF and RH to PD-M, approval of a Master Development Plan with modifications and a request to vacate a portion of City owned right-of-way.

ISSUE(S): Pre-hearing work session of City Council to discuss a proposed mixed-use planned development on 4.63 +/- acres.

SUMMARY: The applicant proposes to replace an existing 50-room motel, 38 multifamily units and four single-family homes with 42 townhouse units, 20 two-over-two condominium units, and a commercial building between 8,000 sf to 10,010 sf on 4.63 +/- acres. The applicant has submitted a rezoning with modifications, including approval of a Master Development Plan and a request to vacate a portion of City owned right-of-way.

FISCAL IMPACT: A fiscal impact analysis has been submitted and the estimates are included in the attached report.

RECOMMENDATION: Discussion and recommendation on proposed Rezoning with modifications, Master Development Plan, and a right-of-way vacation for Cedar Avenue.

ALTERNATIVE COURSE OF ACTION: City Council may choose not to conduct the discussion or defer discussion to a future date.

RESPONSIBLE STAFF/ POC: Albert Frederick, Senior Planner
Jason Sutphin, Community Development Division Chief
Brooke Hardin, Director, Community Development & Planning

COORDINATION: Community Development & Planning, Code Administration/Fire, City Schools, Human Services, Parks and Recreation, Police Department, Public Works/Transportation, Fairfax Water

ATTACHMENTS: Staff Report, Narrative, Master Development Plan, Commitments, Open Space Exhibit, Landscape Plan, Right-of-Way Vacation Exhibit, Walnut Street Roundabout Exhibit, Oak Street Exhibit, Fiscal Impact Estimate, Traffic Impact Study

CITY OF FAIRFAX

Department of Community Development & Planning

Zoning Map Amendment (Z-18-00539)

WORK SESSION DATE

March 9, 2021

APPLICANT

Pulte Home Company, LLC

AGENT

Robert D. Brant, Attorney

PARCEL DATA

Tax Map ID

- ◊ 57-1-14-043
- ◊ 57-1-14-055A
- ◊ 57-1-14-083
- ◊ 57-1-14-077A
- ◊ 57-1-14-076A
- ◊ 57-1-14-075A

Street Address

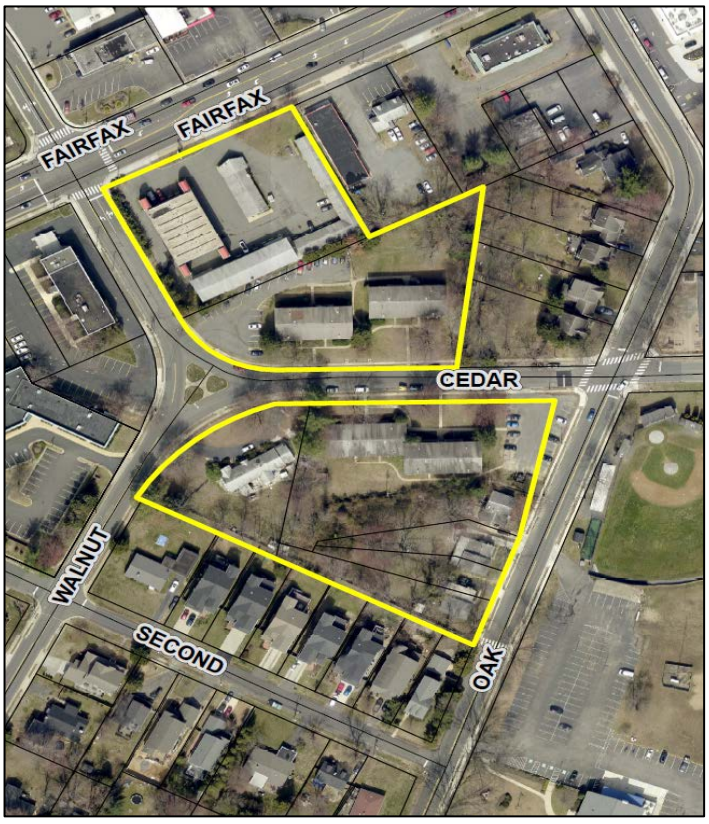
- ◊ 10829 Fairfax Boulevard
- ◊ 10807-10812 Cedar Avenue
- ◊ 3937 Walnut Street
- ◊ 3930 Oak Street
- ◊ 3932 Oak Street
- ◊ 3934 Oak Street

Zoning District

- ◊ CR, Commercial Retail
  RMF, Multifamily
  RH, Residential High
- ◊ Architectural Control Overlay District (ACOD)

APPLICATION SUMMARY

The intent of this pre-hearing work session request is to receive feedback from City Council on a proposed rezoning from CR, Commercial Retail and RH, Residential High and RMF, Multifamily to PD-M, Planned Development-Mixed Use in the Architectural Control Overlay District (ACOD), including a Master Development Plan with modifications, and a right-of-way vacation. The applicant proposes to replace an existing 50-room motel, 38 multifamily units and four (4) single-family homes with 42 townhouse units, 20 two-over-two condominium units and a commercial building (8,000 sf to 10,010 sf) on 4.63 +/- acres.



BACKGROUND INFORMATION

The site is currently developed with the Breezeway Motel consisting of 50 rooms constructed in 1951; Fairfax Garden Apartments consisting of 38 apartments constructed in 1959; three (3) single family homes on Oak Street built in 1957 and one (1) single family home on Walnut Street built in 1954. Cedar Avenue divides the apartment property. The subject property is located within the blocks bounded by Fairfax Boulevard, Oak Street, 2nd Street and Walnut Street. It consists of a consolidation of six (6) parcels for a total of 4.63 +/- acres as summarized in Table 1 (below):

Table 1: Property Information

Address	Description	Area	Current Zoning
10829 Fairfax Boulevard	Breezeway Motel	1.148 acres	CR, Commercial Retail/ACOD
10807-10818 Cedar Avenue	Fairfax Gardens Apartment	2.082 acres	RMF, Multifamily/ACOD
3930 Oak Street	Single-Family Home	0.251 acres	RH, Residential High
3932 Oak Street	Single-Family Home	0.253 acres	RH, Residential High
3934 Oak Street	Single-Family Home	0.342 acres	RH, Residential High
3937 Walnut Street	Single-Family Home	0.557 acres	RH, Residential High
Total Area		4.633 acres	

- The existing Breezeway Motel, 10829 Fairfax Boulevard, a motel constructed in three phases between 1950 and 1960, comprising four separate structures including the rental office, an L-shaped one-story building containing motel rooms, a two-story rectangular building containing motel rooms, and a two-story rectangular structure elevated above ground floor parking containing motel rooms.
- Fairfax Gardens Apartments, 10807-10818 Cedar Avenue, four two- and three-story garden-style apartment buildings straddling Cedar Avenue, constructed in 1959.
- 3937 Walnut Street, a single-family home constructed in 1954.
- 3930, 3932 and 3934 Oak Street, three (3) single-family homes constructed in 1957.

The site has access from Fairfax Boulevard, Walnut Street, Cedar Avenue and Oak Street. Further information on adjacent properties are provided in Table 2 (below):

Table 2: Surrounding Land Use and Zoning

	Existing Zoning	Existing Land Use	Future Land Use
Site	CR, Commercial Retail/ACOD RMF, Multifamily/ACOD RH, Residential High	Motel, Multifamily, and Residential – Single Detached	Commercial Corridor, Multifamily Neighborhood
North	CR, Commercial Retail/ACOD	Commercial/Retail	Commercial Corridor
South	RH, Residential High	Residential – Single Detached	Single-Family Detached Neighborhood
East	RH, Residential High CR, Commercial Retail/ACOD CO, Commercial Office/ACOD	Residential, Montessori School, Retail Open Space	Social and Civic Network Commercial Corridor Green Network
West	CR, Commercial Retail/ACOD	Commercial/Office	Commercial Corridor

The Future Land Use designation for the subject property is split by two place types, Commercial Corridor and Multifamily Neighborhood. The Commercial Corridor Place Type includes a mix of retail, restaurant, service, medical, office, and other commercial uses (Comprehensive Plan, Page 31). Commercial areas should accommodate access via a variety of transportation modes and be accessible to adjacent neighborhoods via

pedestrian and bicycling facilities (Comprehensive Plan, Page 31). The parcel size, depth and width of the Commercial Corridor is more than adequate to support commercial uses on Fairfax Boulevard. The parcel is approximately 1.14-acres with a depth of approximately 200-feet and width of approximately 250-feet. The physical characteristics of the Commercial Corridor Place Type can accommodate a variety of buildings from small retail buildings to multi-story office buildings. The Comprehensive Plan encourages sites located along Boulevards or other street types, buildings should be located near front property lines with parking to the side or rear. Parking is also encouraged in above-ground structures or underground, should be provided to the side or rear of buildings, and should be screened from view from the right-of-way by building mass or landscaping (Comprehensive Plan, Page 31).

Multifamily Neighborhood Place Type applies to neighborhoods that are primarily developed with multifamily apartment and multifamily condominium housing. Townhouse/Single-Family Attached Neighborhood uses, and Single-Family Detached Neighborhood uses may be considered in the Multifamily Neighborhood Place Type when developed in conjunction with Multifamily Neighborhood uses (Comprehensive Plan, Page 30). The design and layout of new Multifamily Neighborhood developments should reflect the location of the development within the City. Development that is adjacent to Single-Family Detached or Townhouse/Single-Family Attached neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached or single-family attached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for portions of the site that are adjacent to any such uses. Otherwise, a building height of up to four stories or 45 feet may be considered (Comprehensive Plan, Page 30). Multifamily Neighborhood Place Type supports up to 20 dwelling units per acre and a maximum height of 4 stories/45 feet.

The surrounding land use designations are a combination of Commercial Corridor, Single-Family Detached Neighborhood, Green Space, and Social and Civic Network. The subject property is split zoned with three zoning districts: CR Commercial Retail, RH Residential High and RMF Multifamily Family. The surrounding zoning districts are a combination of RH Residential High and CR Commercial Retail. The subject property is immediately surrounded by uses that range from single-family homes to duplexes, car equipment installation to offices, auto service repair to a restaurant, bank and private park and civic organization. On the north side of Fairfax Boulevard and directly across from the Breezeway Motel is an auto service repair shop and a restaurant, and on the northwest corner of Fairfax Boulevard and Fairchester Drive is a five-story hotel; to the east of the Breezeway Motel and on the south side of Fairfax Boulevard is a car equipment installation service and commercial printer business; to the west of the Breezeway Motel and separated by Walnut Street is a bank, fast food restaurant and office building; south of Fairfax Gardens Apartment with single-family detached homes fronting on 2nd Street; to the east of the Breezeway Motel and north of Cedar Avenue is four (4) duplexes and a single-family detached home fronting on Oak Street; and, to the east of the Fairfax Gardens Apartment and south of Cedar separated by Oak Street is Chilcott Field, a private park, that is owned by the American Legion Post 177. The American Legion Post 177 has submitted an application to redevelop the site with a mixture of uses that include affordable and market rate multifamily units, a civic use (i.e., American Legion), improvements to the existing Chilcott Baseball Field and the replacement of four (4) existing radio antennae to a monopole tower.

PRE-APPLICATION MEETINGS

On June 11, 2018, the Planning Commission held a work session to review the proposal. Some of the comments voiced by the commissioners included concerns about affordable housing, questions about providing a mixture of housing types instead of only townhouses and whether some could be converted to condominiums, reduction of units proposed to meet the open space requirements and concerns about how the City would be able to enforce the live-work units and what types of businesses would use those spaces.

On July 10, 2018 City Council held a work session to review the proposal. City Council expressed some concerns that were in line with comments from the Planning Commission, as well as, the estimated student generation and potential traffic impacts caused by the proposal. On September 16, 2020, the Board of Architectural Review held a pre-application work session with the applicant to discuss the proposal for 31 townhouses, 34 two-over-two stacked condominiums, and five (5) story multifamily building and site improvements.

POST-APPLICATION WORK SESSIONS

On August 6, 2018, the applicant applied to rezone six (6) parcels from CR Commercial Retail, RMF Multifamily and RH Residential High to PDM Planned Development – Mixed Use on 4.63 +/- acres. The application also included a Master Development Plan (MDP) to replace the existing uses on site with 74 townhomes, 8 of which were identified as live-work units facing Fairfax Boulevard. During the first review of the MDP submitted on August 6, 2018, staff informed the applicant and its representative that the proposed plan did not conform to the City's Comprehensive Plan with the proposed live/work units fronting on Fairfax Boulevard in the Business Commercial Future Land Use designation. The initial design did not meet Objective LU-3 of the previous Comprehensive Plan or the Fairfax Boulevard Master Development Plan. Also, staff informed the applicant that the application was incomplete due to issues related to the depicted right-of-way for Cedar Avenue and Walnut Street. Staff also provided comments on the two entrances from Cedar Avenue because the entrances are too close to the intersections with Walnut Street and Oak Street. A better alignment would be entrances at mid-block on Cedar Avenue. Likewise, the entrance/exit off Walnut Street was too close to Fairfax Boulevard creating conflicts for drivers accessing the site (particularly the commercial use) and drivers coming and going from Fairfax Boulevard.

On June 7, 2019, the applicant submitted a revised Master Development Plan that removed the live/work units from the plan and added a commercial building footprint in the range of 8,000 sf to 10,000 sf with a list of potential uses. On August 19, 2019, staff provided a courtesy review to address the revised MDP, while the applicant and Public Works discussed the right-of-way vacation and other transportation related issues. On September 27, 2019, the Development Review Team met with the applicant to discuss the proposed right-of-way vacation and transportation improvements on Cedar Avenue, and Public Works and City Attorney have subsequently outlined the vacation process.

Work Session #1

On December 10, 2019, City Council discussed the proposed plans for redeveloping the Breezeway Motel, Fairfax Garden Apartments and four single family homes with 42 townhomes, 20 two-over-two condominiums and 8,000 sf to 10,000 sf of commercial. After staff presented the current proposal, City Council discussed a few issues that ranged from building heights and density, traffic volumes to right-of-way vacation, and open space to the status of the Breezeway Motel. The applicant stated that the Breezeway would remain until the landowner found a new owner to acquire the property and redevelop the site. City Council expressed concerns about the Breezeway remaining while townhouses were being developed. City Council also expressed an interest in seeing how the four redevelopment projects (Breezeway, Paul VI, Mount Vineyard and American Legion) in the area would have an impact on traffic and other infrastructure.

On January 13, 2020, the Planning Commission held a work session to discuss a proposal to replace the existing motel, 38 multifamily units and four single-family homes with 42 townhomes, 20 two-over-two condominiums and 8,000 sf to 10,000 sf of commercial, on the 4.63 acres. The right-of-way vacation for Cedar Avenue requires City Council to authorize the City Manager to sign as a participant on the land use application. This proposal would require approval of a rezoning, Master Development Plan, and a request for right-of-way vacation.

Work Session #2

Application was revised and submitted on September 28, 2020 for proposed a Comprehensive Plan Amendment from Commercial Corridor to Multifamily, a rezoning from CR, Commercial Retail and RH, Residential High and RMF, Multifamily to PD-R, Planned Development Residential, approval of a Master Development Plan with modifications, and a right-of-way vacation. The applicant proposes to replace the existing Breezeway motel, 38 multifamily units and four single-family homes with 31 townhouse units, 34 two-over-two units, and a five-story age-restricted condominium building with 212 parking spaces on 4.63 +/- acres. A right-of-way vacation request for Cedar Avenue requires City Council to authorize the City Manager to sign as a participant on the land use application. If the right-of way vacation is approved, the total project area is increased from 4.63 +/- acres to 4.73 +/- acres.

The Planning Commission held a work session on September 28, 2020 on the revised proposal. Planning Commission comments and questions covered a few issues such as:

- How is the elimination of commercial land on Fairfax Boulevard consistent with the Comprehensive Plan?
- A residential building along Fairfax Boulevard may not be an appropriate response to meeting housing needs of the City's senior population.
- What are the cumulative transportation impacts from the proposed development and other developments on the surrounding roads (Oak Street, Walnut Street and Cedar Avenue)?
- The increase in density will change this neighborhood.
- What is the appropriate height for the age-restricted building when evaluating the adjacent properties along Fairfax Boulevard?
- How do you screen/transition from single-family homes on 2nd Street with four story townhomes looking down on the rear yards of the adjacent homes?
- Connectivity using pedestrian and bicycle facilities and other off-site improvements should be explored by the applicant and City staff.
- Developer should consider safety measures for open space areas. There was also some concern with HOA open space areas being open to the public.
- Discussion on parking for multifamily units, trash facilities, loading zones and sound.
- Documentation of the historic elements of the Breezeway should be considered and coordinated with City staff.
- Applicant was encouraged to begin outreach to the surrounding neighborhood and associations.

Overall, the Planning Commission indicated general support for the townhomes/two over two condos and open space, but members expressed reservations regarding replacing commercial property with residential along Fairfax Boulevard.

On October 6, 2020, City Council held a work session to discuss the revised concept. City Council had several comments and questions regarding the revised plans, such as:

- Fairfax Boulevard is an important commercial corridor in the City and should be developed consistent with the Comprehensive Plan.
- Has the applicant included affordable units in this proposal?
- Would the applicant have to follow the Affordable Dwelling Unit (ADU) ordinance if volunteering to be in the program?
- What is staff's position on the senior building (55+)?
- Condo building without amenities maybe a difficult to sell based on potential price point.

- Has there been a traffic analysis that considers other residential projects in the area, such as Paul VI, American Legion, Fairfax Gateway, and Mount Vineyard?
- This area may be too dense based on existing units and proposed redevelopment potential.
- Will there be enough space for right-of-way improvements, such as on-street parking and bike lanes.
- Reservations expressed over the potential density for this neighborhood and the potential traffic from the increase in density.
- Need to address the diversity in housing stock including units for lower income residents. The loss of thirty-eight (38) units is a concern.
- Parking for the condo building was a concern in that it may not be enough parking.

City Council expressed that they preferred a commercial use along Fairfax Boulevard to replace the existing Breezeway Motel. After receiving comments from Planning Commission and City Council, the applicant decided to stop the review of the third submission.

On November 2, 2020, the applicant resubmitted a rezoning application from CR Commercial Retail, RMF Multifamily and RH Residential High to PD-M Planned Development-Mixed Use and a master development plan that includes twenty (20) stacked condominium (two-over-two) multifamily units, forty-two (42) townhouses, and a commercial building consisting of between 8,000 and 10,010 square feet of floor area.

MASTER DEVELOPMENT PLAN

The subject property is composed of six (6) parcels that have been assembled for the redevelopment of a three (3) phased Master Development Plan:

- Phase One includes a combination of twenty (20) condominiums and forty-two (42) townhouses by Pulte Homes with a density of 17.7 units per acres. Townhouses are a mix of front entry units at 22-feet and 24-feet in width, and rear entry units at 20-feet in width. All rooftop terraces on the proposed townhouses will be located on the front of the units. Each townhome unit is required to have two (2) parking spaces per unit and the applicant has provided two garaged spaces for each unit. The applicant has provided 143 parking spaces (104 garage spaces, 20 driveway spaces and 19 private surface spaces). The townhouses are proposed at four (4) floors and approximately 38-feet in height. The condominiums are proposed at four (4) floors and at approximately 49-feet in height. The condominiums have two parking spaces per unit with a one-car garage and a tandem driveway space. Phase One also includes the required open space of twenty (20) percent.
- Phase Two includes the demolition of the Breezeway Motel and associated improvements on Tax Map Parcel 57-1-14-043. Demolition of the Breezeway shall be completed, and the parcel shall be cleared and graded prior to the issuance of a certificate of occupancy for the residential units in Phase One. The applicant has requested a modification to the Section 3.8.2IH of the Zoning Ordinance states that no zoning permit shall be issued for a mixed use development to authorize the occupancy of more than 66 percent of the approved residential dwelling units, prior to the issuance of a zoning permit to authorize the occupancy of 100 percent of the approved nonresidential floor area.
- Phase Three to be constructed by others consists of a future commercial building and associated infrastructure, utilities, and stormwater management facilities of the Master Development Plan. The owner of Tax Map Parcel 57-1-14-043 will be required to obtain approval of a Major Certificate of Appropriateness, site plan approval, building permits and other necessary approvals. Phase Three also excludes certain uses in Section 3.8.4 of the Zoning Ordinance. Parking standards for Phase Three are dependent upon the uses and parking requirements in Section 4.2.3.E of the Zoning Ordinance.

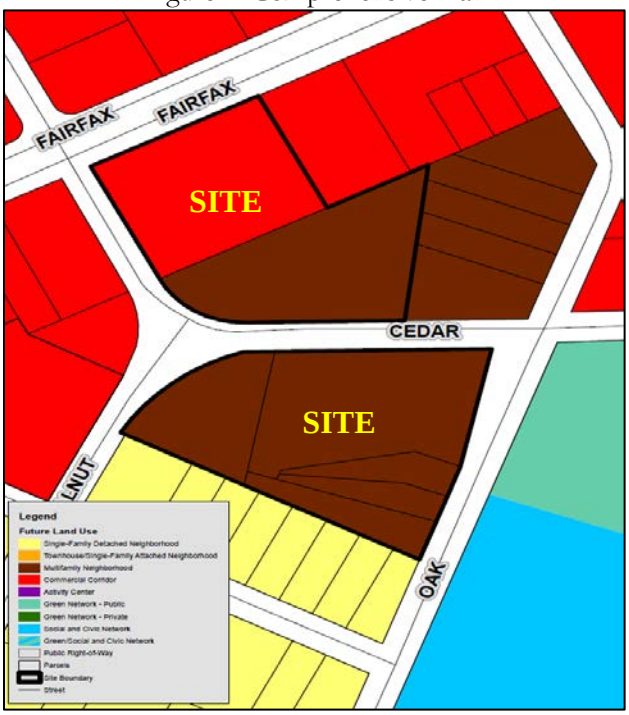
Redevelopment of the subject property requires a rezoning from RH Residential High, RMF Multifamily, and CR Commercial Retail to PD-M Planned Development Mixed Use in the Architectural Control Overlay

District (ACOD), approval of a master development plan with modifications and a Certificate of Appropriateness. The applicant also is requesting a vacation of portion of a public right-of-way in Cedar Avenue and Walnut Street. Consideration of the vacation would occur concurrently with the development application.

COMPREHENSIVE PLAN

Land Use: The Comprehensive Plan provides a general plan and communicates a vision for future land use and development in the City; while, the Zoning Ordinance provides the regulatory mechanism to ensure the new development and changes in land use are consistent with the vision. Figure 1 (below) illustrates the Future Land Use Map for the subject property and surrounding area:

Figure 1: Comprehensive Plan



The proposed development would be consistent with the Comprehensive Plan Place Type of Multifamily Neighborhood with a mixture of multifamily and townhouses and Commercial Corridor Place Type for the future development of a commercial building footprint between 8,000 sf to 10,010 sf. The Multifamily Neighborhood Place Type, identified in brown in the Future Land Use Map, applies to neighborhoods that are primarily developed with multifamily apartment or multifamily condominium housing. Townhouse/Single-Family Attached Neighborhood uses, and Single-Family Detached Neighborhood uses may be considered in the Multifamily Neighborhood Place Type when developed in conjunction with Multifamily Neighborhood uses (Comprehensive Plan, Page 30).

The design and layout of new Multifamily Neighborhood developments should reflect the location of the development within the City. Development that is adjacent to Single-Family Detached or Townhouse/Single-Family Attached neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached or single-family attached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for portions of the site that are adjacent to any such uses. Otherwise, a building height of up to four stories or 45 feet may be considered. To retain the relative affordability available in many existing multifamily structures, redevelopment of existing multifamily sites within Multifamily Neighborhood land use areas, where additional density is permitted by the Zoning Ordinance,

should consider accommodating existing multifamily structures. Predicated on the underlying zoning district, the Multifamily Neighborhood Place Type supports up to 20 dwelling units per acre and a maximum height of 4 stories/45 feet (Comprehensive Plan, Page 30). The height and type of units adjacent to single-family neighborhoods is consistent with the Comprehensive Plan.

The applicant is proposing 42 townhouse units and 20 two-over-two units in Phase One on 3.49 +/- acres with a density of 17.7 dwelling units per acre. Density is calculated as the number of dwelling units per gross acre located within the development site. However, if the development site is in more than one zoning district, the maximum number of dwelling units allowed must be determined separately for that portion of the site lying within each respective zoning district (Zoning Ordinance, Section 1.5.8, Page 1-6). The Multifamily Neighborhood Place Type has a maximum density of 20 dwelling units per acre. The townhouse buildings on the south side of Oak Street are proposed at approximately 38-feet to mid-point of roof with four (4) stories adjacent to the single-family neighborhood on 2nd Street. The multifamily units (two-over-two condominiums) on the north side of Cedar Avenue are proposed at a height of 49-feet to mid-point of roof with four (4) stories.

Commercial Corridor Place Type, identified in red on the Future Land Use Map, includes a mix of retail, restaurant, service, medical, office, and other commercial uses. Limited manufacturing and other light industrial uses may also be considered. Heavy industrial uses should not be added or expanded beyond areas where they currently exist (such as the tank farm on Pickett Road). Residential uses are not recommended in Commercial Corridors. Commercial areas should accommodate access via a variety of transportation modes and be accessible to adjacent neighborhoods via pedestrian and bicycling facilities (Comprehensive Plan, Page 31). Phase Two of the Master Development Plan is the demolition of the Breezeway Motel and site improvements in preparation of a commercial building footprint. Phase Three to be constructed by others consists of a future commercial building (8,000 sf to 10,010 sf) and associated infrastructure, utilities, stormwater management facilities and open space of the Master Development Plan. The owner of Tax Map Parcel 57-1-14-043 will be required to obtain approval of a Major Certificate of Appropriateness, site plan approval, building permit and other necessary approvals. Phase Three also excludes certain uses in Section 3.8.4 of the Zoning Ordinance. Parking standards for Phase Three are dependent upon the uses and parking requirements in Section 4.2.3.E of the Zoning Ordinance.

Housing: The Comprehensive Plan provides guidance to the types of housing choices that are necessary to meet the needs and demands of current and future residents. The 2035 Comprehensive Plan has identified a shortage of multifamily and condominiums. Although significant single-family development is not anticipated as the City is primarily built-out, potential redevelopment and infill housing that keep up with modern expectations and meet demand are encouraged, provided they comply with the Zoning Ordinance (Comprehensive Plan, Page 54). Therefore, the Comprehensive Plan encourages redevelopment and infill housing to meet the demand for underrepresented types of housing in the City's housing stock.

> Housing Goal 1
> Support a wide range of housing.
>
> Outcome H1.1: Continued development of housing types that are underrepresented in the City's existing stock of housing units.
>
> It is vital that a variety of high-quality, attractive housing choices continue to be available in the City to support differing needs and demands of residents. Housing needs and demands are reflective of the existing housing stock and fluctuating market trends, making them subject to change over time. Specific housing types are identified in the Land Use Strategies Section of the Comprehensive Plan. Current shortages could include multifamily rentals and condominiums, of which the majority of the

City's stock was built in the 1960s, and townhomes, of which the City currently has a lower ratio than many surrounding communities in Fairfax County (Comprehensive Plan, pg. 54).

Housing Goal 3
Provide housing options for older adults and persons with disabilities.

Outcome H3.1.1: A range of accessible housing types with appropriate levels of support and care is available for older adults and persons with disabilities that incorporate the concept of universal design.

Housing that is designed for older residents and persons with disabilities was another issue that rose to the forefront of the housing discussion during the Comprehensive Plan's public outreach sessions. Given the relatively high concentration of older adults in the City as compared to surrounding jurisdictions, demand for such units from existing City residents could be strong. Housing should be suitable for a range of choices, such as aging in place, accessory dwelling units, dedicated senior housing, and assisted living/nursing care (Comprehensive Plan, pg. 57).

The applicant is proposing 42 townhouse units and 20 two-over-two units on 4.63 +/- acres with a density of 17.7 dwelling units per acre. The Multifamily Neighborhood Place Type has a maximum density of 20 dwelling units per acre.

In addition to encouraging a wide range of housing types, the City seeks to ensure that housing is affordable. The Comprehensive Plan also addresses affordable housing for new developments and preserving existing naturally occurring affordable housing that is affordable to families earning below the region's median household income (Comprehensive Plan, Page 56). The initial application was received on August 6, 2018 prior to the adoption of the Affordable Dwelling Unit (ADU) ordinance. On September 29, 2015, City Council adopted Resolution No. R-15-42 to address the need for housing affordability for City of Fairfax residents through voluntary development contribution in lieu of providing affordable units. The resolution offers a monetary formula as a guide with rates adjusted annually in accordance with the Consumer Price Index for All Urban Customers (CPI-U). The formula includes both a by-right rate of $3,012 per unit and a development approval rate of $6,036 per unit. Adjusting these rates in accordance with the consumer price index to the current year from the 2015 figures, as provided for in the resolution, would yield rates of $3,297 and $6,608, respectively. In applying this to the proposed 62 units, the development yield is roughly 52 units at the by-right rate and 10 units at the development approval rate. This equates to a voluntary development contribution of $237,524. The City of Fairfax Affordable Dwelling Unit Ordinance was adopted on June 23, 2020 and since the application was submitted prior to the adoption of the ordinance and its provisions do not apply, the applicant has voluntarily committed to provide a monetary contribution.

Rezoning: The applicant is requesting to rezone the properties from CR Commercial Retail, RMF Multifamily and RH Residential High to PD-M Planned Development Mixed Use.

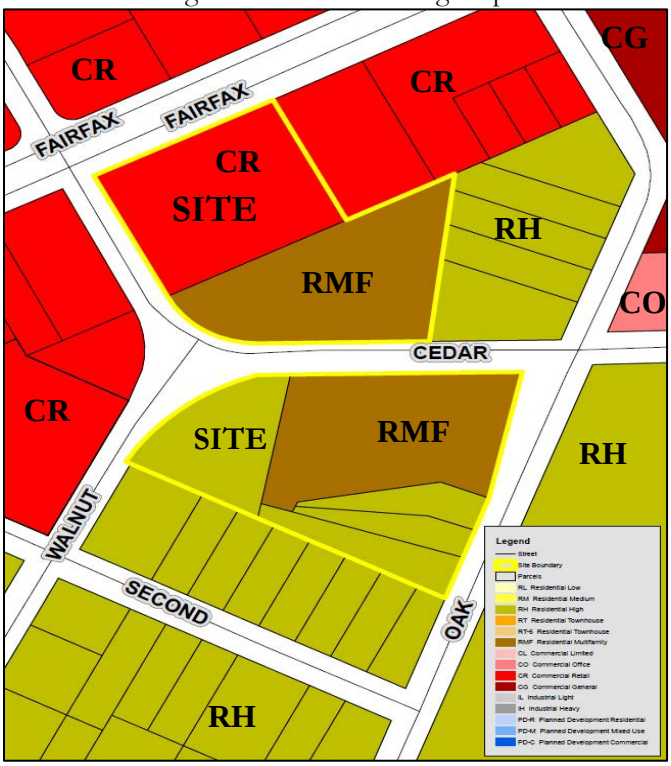
§3.2.3. Planned Development Districts B. The PD-M, Planned Development Mixed Use District, is intended to provide for coordinated mixed use developments which may include general residential and nonresidential uses within a planned development. The variety of land uses available in this district allows greater flexibility to respond to market demands and the needs of tenants, thereby providing for a variety of physically and functionally integrated land uses.

§3.8.2.B.2. Planned development district rezoning may be approved only when the applicant demonstrates to the satisfaction of the city council that a proposed planned development project would result in a greater benefit to the city than would development under general zoning district regulations.

Based on current zoning districts, the site could be developed with approximately 44 residential units plus a commercial building. The current proposal illustrates 62 residential units and a future commercial building between 8,000 sf to 10,010 sf on 4.63 +/- acres.

The surrounding zoning districts are a combination of RH Residential High and CR Commercial Retail. The subject property is immediately surrounded by uses that range from single-family homes to duplexes, car equipment installation to offices, auto service repair to a restaurant, bank and private park and civic organization. On the north side of Fairfax Boulevard and directly across from the Breezeway Motel is an auto service repair shop and a restaurant, and on the northwest corner of Fairfax Boulevard and Fairchester Drive is a five-story hotel; to the east of the Breezeway Motel and on the south side of Fairfax Boulevard is a car equipment installation service and commercial printer business; to the west of the Breezeway Motel and separated by Walnut Street is a bank, fast food restaurant and office building; south of Fairfax Gardens Apartment with single-family detached homes fronting on 2nd Street; to the east of the Breezeway Motel and north of Cedar Avenue is four (4) duplexes and a single-family detached home fronting on Oak Street; and, to the east of the Fairfax Gardens Apartment and south of Cedar separated by Oak Street is a private park, Chilcott Field that is owned by the American Legion. Figure 2 (below) illustrates the zoning districts for the subject property and the surrounding properties.

Figure 2: Current Zoning Map



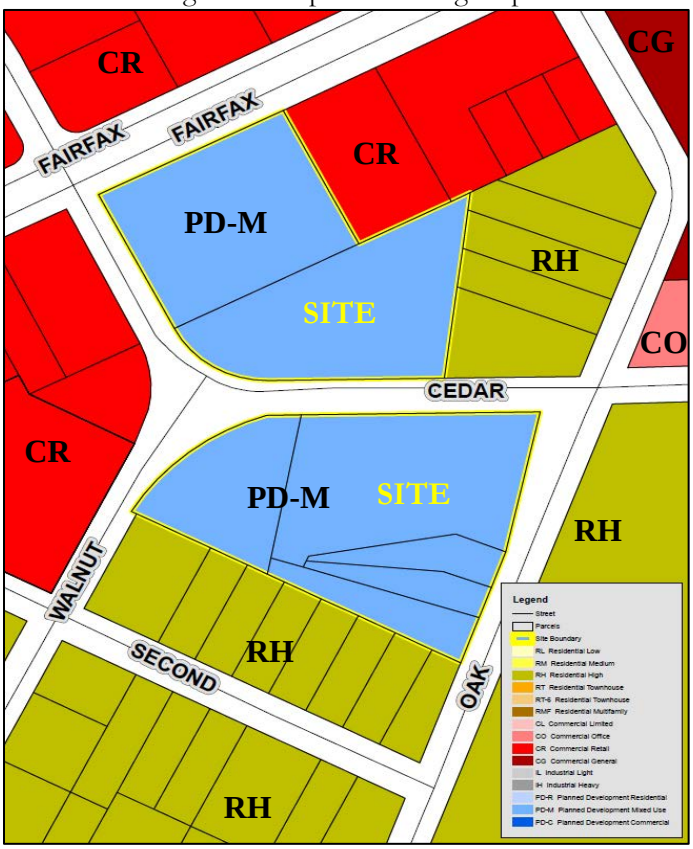
The subject property is split zoned with three zoning districts: CR Commercial Retail, RH Residential High and RMF Multifamily Family. If an existing lot is (currently) split into two or more zoning districts, each such portion of the split-zoned parcel may be used only for purposes allowed within the respective zoning district. No principal or accessory use of land, building or structure, and no use or building or structure authorized by special use permit or special exception is allowed unless the use, building or structure is expressly authorized or permitted within the subject district (Section 2.2.2. Split-zoned lots). Under the current configuration, the proposal could not be developed, and the site would remain largely as a residential site with limited

commercial opportunities. Therefore, the applicant is requesting to rezone the property from RMF Multifamily, RH Residential High and CR Commercial Retail to PD-M Planned Development-Mixed Use.

> §3.8.2.B.2. Planned development district rezoning may be approved only when the applicant demonstrates to the satisfaction of the city council that a proposed planned development project would result in a greater benefit to the city than would development under general zoning district regulations.

The PD-M, Planned Development-Mixed Use District, is intended to provide for coordinated mixed use developments which may include general residential and nonresidential uses within a planned development. The variety of land uses available in this district allows greater flexibility to respond to market demands and the needs of tenants, thereby providing for a variety of physically and functionally integrated land uses (Section 3.2.3.B, Page 3-3). Figure 3 (below) shows the proposed PD-M district and the zoning designations of the surrounding area.

Figure 3: Proposed Zoning Map



The proposed rezoning from RH Residential High, RMF Multifamily and CR Commercial Retail to PD-M Planned Development-Mixed Use would allow for the "applicant to create special and unique developments by mixing and clustering, where appropriate, land uses and/or dwelling types and providing more usable recreation and open space in a master development plan proposed by the applicant and approved by the city council. Planned developments should create a more livable, affordable, and sustainable community. Starting from the baseline, which is current zoning, applicants may be given increased development rights, such as increased density and height, as well as increased flexibility, in return for providing benefits that make the project "superior" and the community better in accordance with the goals and objectives of the city, including, but not limited to, those set forth in the comprehensive plan" (Zoning Ordinance, Page 3-59).

REQUESTS

In addition to the rezoning request from RH Residential High, RMF Multifamily and CR Commercial Retail to PD-M, Planned Development-Mixed Use while retaining the Architectural Control Overlay District (ACOD), and a Master Development Plan with modifications, the applicant proposes the following land use requests for City Council action:

- **Rezoning application**
- **Approval of Master Development Plan with modifications**
- **Major Certificate of Appropriateness** for architecture and landscaping; and,
- **Vacation of a portion of right-of-way** for Cedar Avenue and Walnut Street

Rezoning application
The proposed redevelopment is dependent on City Council approval of a Map Amendment (Rezoning) from RH Residential High, RMF Multifamily and CR Commercial Retail to PD-M, Planned Development-Mixed Use. The Breezeway Motel is in the CR Commercial Retail district, and the Fairfax Garden Apartments is in the RMF Multifamily district and the four (4) single family homes are in the RH Residential High district. All the properties are held under a single ownership with the applicant as a contract purchaser. The applicant will be developing the residential component of the project, while the property seeks a buyer for the Breezeway Motel site. In approving a rezoning for a planned development, the city council shall find the proposed district designation and master development plan comply with the general provisions for all planned development in §3.8.2 and the specific standards for the planned development listed in §3.8.3 through §3.8.6. Planned development district rezoning may be approved only when the applicant demonstrates to the satisfaction of the city council that a proposed planned development project would result in a greater benefit to the city than would a development under general zoning district regulations.

The Master Development Plan is proposed as three phases with a modification to the development schedule as stated in Section 3.8.2.I of the Zoning Ordinance, which states "No zoning permit shall be issued for a mixed use development to authorize the occupancy of more than 66 percent of the approved residential dwelling units as part of a PD-C or PD-M district development prior to the issuance of a zoning permit to authorize the occupancy of 100 percent of the approved nonresidential floor area for that development. The foregoing shall be binding on the applicant unless the applicant proposes a modification to this requirement in the master development plan and the city council approves such modification when it approves the master development plan" (Page 3-63). Phase One is proposed as two-over-two condominiums and townhouses. Phase Two is the demolition of the Breezeway Motel. Phase Three, to be constructed by others, is proposed with a specific list of commercial uses to occupy a building that is approximately 8,000 sf to 10,010 sf with 44 parking spaces. Strict application of the ordinance would prohibit occupancy of all the townhouse units prior to the completion of the commercial building fronting Fairfax Boulevard. Therefore, the applicant is seeking a modification to the development schedule requirement.

The applicant states the proposed development is in substantial conformance with the Comprehensive Plan. The proposal includes townhouses as a transitional use to existing single family detached homes. The Comprehensive Plan provides guidance suggesting that development that is adjacent to Single-Family Detached or Townhouse/Single-Family Attached neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached or single-family attached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for portions of the site that are adjacent to any such uses. Otherwise, a building height of up to four (4) stories or 45 feet may be considered. The proposal has fourteen (14) townhouses (Units 39-52) adjacent to the rear yards of single-family homes that front on 2nd Street with a transitional yard of fifteen (15) feet and a 6-foot privacy fence. All rooftop

terraces on the proposed townhouses will be located on the front of the units. Ten (10) rear-entry townhouses fronts on Oak Street and five (5) rear-entry townhouses fronts on Walnut Street. There are fourteen (14) rear-loaded townhouse units lining the open space area on the south side of Cedar Avenue. Each unit has two garage parking spaces with access from a private street that measures at 22-feet in width. No townhouse unit has direct access vehicle access from a public street (i.e., Cedar Avenue, Oak Street and Walnut Street). On the north side of Cedar Avenue, there are twenty (20) stacked, rear-loaded two-over-two condominiums that fronts on an open space area. These rear-loaded units have one garage space and one tandem driveway space that are accessed by a 22-foot private street with an emergency turnaround. The non-residential component of the proposal is located on Fairfax Boulevard and Walnut Street. The commercial phase to be developed by others will require separate approvals from City Council including a major certificate of appropriateness for the proposed building. The applicant has prescribed a limited number of specified uses for the proposed commercial development. The building footprint as proposed with a range of 8,000 sf to 10,010 sf and a maximum of 44 parking spaces.

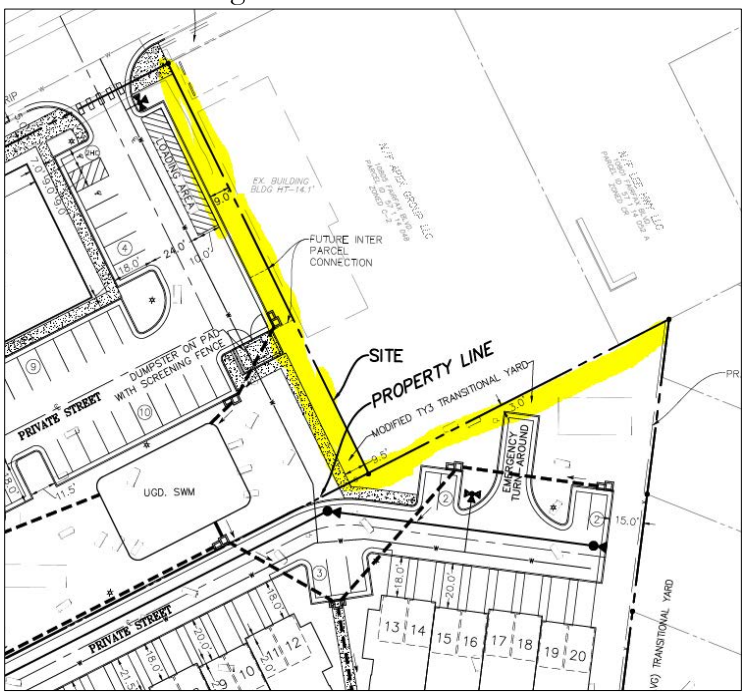
Open Space: The Planned Development Districts requires at least twenty (20) percent of the site to be designated as recreation and open space for use and enjoyment of the residents and occupants of the development. The Zoning Ordinance also requires at least 60% of the required open space be contiguous, however, it may be bisected by a residential street. The development currently proposes five (5) areas of open space for a total of 0.974 acres (42,427 sf) or 20.6% of the property. The first open space area (0.326 +/- acres) is located between the proposed commercial building on Fairfax Boulevard and the private driveway to the proposed condominiums on the north side of Cedar Avenue. The second and third open space areas (0.243 +/- acres and 0.294 +/- acres) are located immediately north and south of Cedar Avenue, accessible to both the residents in the development, as well as the surrounding neighborhood. The fourth area of 0.066 acres is located at the northeastern corner of Cedar Avenue and Walnut Street. The final area of 0.045 acres is located at the northeast corner of the site. These areas meet the zoning requirement that open spaces must be a minimum of fifty (50) feet in width as shown in Figure 4 (below).

Figure 4: Open Space

The overall site has 24.4% (50,300 sf) of open space, which includes areas that are less than the required 50 feet (Section 3.8.7.B.3 of the Zoning Ordinance). The applicant has also provided open space that is at least 60% contiguous, which includes any recreation and open space bisected by a local street. The applicant is proposing to install a mid-block pedestrian crosswalk on Cedar Avenue, a crosswalk on Cedar Avenue at Walnut Avenue and a crosswalk on Walnut Street at Cedar Avenue connecting to the open space areas on site.

The project boundary transitional yard requirements are established to mitigate the effect of planned developments on adjacent properties. A transitional yard buffer of fifteen (15) feet is required along all site area boundaries, which it appears this proposal is providing except for the northeast property lines adjacent to the existing commercial properties on Fairfax Boulevard. The applicant has requested a modification to this requirement. Figure 5 (below) illustrates the requested modification to the transitional yard requirement (highlighted in yellow).

Figure 5: Transitional Yard



The area along the eastern property line has been reduce from fifteen (15) feet to nine (9) feet and 9.5-feet. The property boundary near the emergency turn-around (shown above) has been reduced from fifteen (15) feet to three (3) feet to accommodate turning movements for emergency vehicles. A ten (10) foot landscape strip is shown along Cedar Avenue, Oak Street and Walnut Street. The applicant is requesting a modification of this requirement for internal private streets due to site constraints and the urban design of the proposed development. The applicant is also required to have a 10-year minimum tree canopy of ten (10) percent (20,648 sf). The applicant proposes to provide a 10-year minimum tree canopy of 18.6% (38,495 sf).

Scale: The design and layout of new Multifamily Neighborhood developments should reflect the location of the development within the City. Development that is adjacent to Single-Family Detached or Townhouse/Single-Family Attached neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached or single-family attached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for portions of the site that are adjacent to any such uses. Otherwise, a building height of up to four (4) stories or 45 feet may be considered. The proposed residential development varies in unit type and size. The townhome buildings on the south side of Oak Street are proposed at a height of 38-feet to mid-point of roof with four (4) stories adjacent to the single-family

neighborhood on 2nd Street. All rooftop terraces on the proposed townhouses will be located on the front of the units. The multifamily units (two-over-two condominiums) on the north side of Cedar Avenue are proposed at a height of 49-feet to mid-point of roof with four (4) stories and balconies to the rear of the units.

The density for the proposed project is 17.7 dwelling units per acre. Condominiums are located on the north side of Cedar Avenue with a single access point from Walnut Street; while, townhomes are planned to be developed on the south side of Cedar Avenue with a single access point from Oak Street. The townhouses are located to serve as a transition to the single-family neighborhood on 2nd Street. The proposed plan has townhouse units facing Cedar Avenue, Walnut Street and Oak Street. The overall residential densities and heights for other approved developments as compared to the subject application are provided in Table 4 (below):

Table 4: Residential Comparisons

Project	Site Area (Acres)	Number of Units	Density	Building Height
Pulte/Breezeway	3.49	62	17.7	38' to mid-point of roof (townhouses) 49' to mid-point of roof (multifamily)
Cameron Glenn	6.23	48	13.3	43'
Canfield Village	1.82	14	13.7	43'
Madison Mews	1.76	26	14.8	50'
Main Street Residences	4.32	40	9.3	45' 5"
Mayfair	0.93	25	28.5	43'
Metro Church/EYA	3.69	50	13.5	45'
Mount Vineyard	6.11	132	21.6	48' (townhomes); 55' (multifamily)
Paul VI	18.5	266	14.4	40-45' (townhomes); 45' (multifamily) 35' (single family detached)
Providence Square	2.2	96	43.4	65'

The townhouse unit dimensions proposed are generally like those in other townhouse developments in the City as shown in Table 5 (below):

Table 5: Townhouse Unit Width Comparison

Project	Total # of TH units	Townhouse Unit Width					
		16'	17'	20'	22'	24'	30'+
Pulte/Breezeway	42			®	®		
Cameron Glen	48					®	
Canfield Village	14					®	
Madison Mews	26					®	
Main Street Residences	40				®	®	®
Mayfair	25		®	®			
Metro Church/EYA	50	®		®		®	
Mount Vineyard	38				®		
Paul VI	115			®	®	®	

The applicant has proposed 42 front and rear loaded townhouses with widths of 20 feet and 22 feet. The applicant has also proposed 20 rear loaded two-over-two condominiums (multifamily) at 24 feet in width. The

total number of units in the proposed planned development is 62 units. The applicant is seeking a modification to Section 3.5.1.C.2 which states, "No more than two of any 10 or one of any three to five abutting dwelling units having the same front yard setback. Varied front yard setbacks shall not be less than two feet offset from adjoining units as measured at the principal foundation line of each unit and no setback distance shall be less than the required minimum" (Zoning Ordinance, Page 3-14). The applicant states that the desired articulation is achieved through the staggering of front building walls such that no two adjacent townhouses share the same front yard setback.

Circulation/Pedestrian Access: The applicant proposes access points into the proposed commercial portion of the site from Fairfax Boulevard and Walnut Street. The applicant has proposed only one access point from Walnut Street for the twenty (20) condominiums on the north side of Cedar Avenue. One access point is planned for Oak Street to forty-two (42) townhouses in the southern section of the development. The applicant also has proposed an emergency access point on the south side of Cedar Avenue in alignment with the private internal street between Units 21-25 and Units 52-62.

The applicant is proposing a sidewalk network throughout the site with five (5) foot wide sidewalks internal to the site and five (5) foot wide sidewalks on Cedar Avenue, Walnut Street and Oak Street. The applicant is proposing to install a mid-block pedestrian crosswalk on Cedar Avenue, a crosswalk on Cedar Avenue at Walnut Avenue and a crosswalk on Walnut Street at Cedar Avenue. The applicant is seeking a modification to the sidewalk requirement for both sides of all streets internal to the site. This modification applies to the private streets with access to Units 1-39 and Units 53-62. These units have five (5) foot sidewalks in front creating a continuous pedestrian connection throughout the site. The Master Development Plan depicts a pedestrian connection from the condominiums near the eastern property line and a pedestrian connection along Walnut Street to the commercial area. As recommended by the Multi-Modal Plan, a ten (10) foot wide sidewalk or multi-use trail along Fairfax Boulevard would be installed along with the commercial building and associated improvements as part of Phase Three. There is an existing crosswalk on Walnut Street and Fairfax Boulevard, and an existing crosswalk from the south side to the north side of Fairfax Boulevard.

Parking: Residential units are required two (2) parking spaces per unit. The applicant has proposed 187parking spaces on site through a combination of 104 garage spaces, 20 tandem spaces, 19 surface parking and 44 commercial spaces. There are twelve (12) surface spaces on the south side of the development and seven (7) surface parking spaces on the north side for the residential development. The commercial phase to be developed by others will require separate approvals from City Council including a Major Certificate of Appropriateness for the proposed building. The applicant has proposed to exclude certain uses for the proposed commercial development. The building footprint as proposed has a maximum of 10,010 square feet and a maximum of 44 parking spaces. In addition to the parking spaces on site, the applicant proposes thirty (30) parallel spaces on Cedar Avenue. However, on-street parking on a City road may not be included in parking calculations for the development. Table 6 (next page) summarizes the required parking requirements and proposed parking spaces provided by the applicant.

Table 6: Parking Requirements

Use	Units	Zoning Requirement	Required Spaces	Provided Spaces
Commercial Building*	8,000 sf - 10,010 sf	Varies by type of use	Varies by type of use	44
Townhomes	42	2 spaces/unit	84	84
Condominiums	20	2 spaces/unit	40	40
Surface Parking	N/A	N/A	N/A	19
Total				187

*Parking will be determined during Phase Three review process

The subject property is in a residential parking district with some restrictions. Parking is restricted to residents with permits from 7am to 4pm from Monday through Friday on Oak Street and 2nd Street. Otherwise, parking is available evenings and on weekends. On-street parking is prohibited along Walnut Street and Panther Place.

Bicycle Parking: Bicycle parking and storage facilities are required for all non-residential uses and multifamily uses. This proposal requires ten (10) bicycle parking spaces. The plan shows a proposed bicycle parking and storage facility on the south side of Cedar Avenue.

Inter-parcel connection: The applicant is proposing a future inter-parcel connection with the adjacent commercial property (Parcel ID # 57-1-14-048) to the east on Fairfax Boulevard.

Transportation: The site has direct access to Fairfax Boulevard, Oak Street, Cedar Avenue and Walnut Street. There are two driveway aprons on Fairfax Boulevard to the existing Breezeway Motel, one driveway apron on the curve of Walnut Street to the existing Fairfax Garden Apartments on the north side of Cedar Avenue, and one driveway apron on the south side of Cedar Avenue for the remaining units at Fairfax Garden Apartments. The single-family home at 3937 Walnut Street has a circular drive with two driveway aprons. The three (3) single-family homes fronting on Oak Street each have a driveway apron. The applicant has proposed to consolidate access points and redistribute vehicle movements by redeveloping the site. The proposed commercial pad will have one access point on Fairfax Boulevard and one access point on Walnut Street. The proposed twenty (20) condominiums has a single access point from Walnut Street. The proposed forty-two (42) townhouses on the south side of Cedar Avenue has a single access point from Oak Street. This proposed access point is offset from the proposed northern access point planned for the redevelopment of the American Legion site.

The applicant is proposing several traffic improvements for Walnut Street and Cedar Avenue. First, the applicant is also proposing a mid-block pedestrian crossing, bulb-outs and thirty (30) parallel parking spaces on Cedar Avenue. Second, a proposed right-of-way vacation request for the intersection of Walnut Street and Cedar Avenue to remove the triangular shape median. As a result of this request, a portion of the City owned right-of-way would become a part of the streetscape and open space area of the proposed development. The southern portion of the right-of-way vacation would become a part of the streetscape and the section of the townhouses. Finally, at the request of City staff, the applicant is proposing to construct a roundabout to eliminate the triangular shape median. The applicant may need to construct either the roundabout or other traffic calming of a similar scale on Walnut Street, such as curb bulb-outs or similar traffic calming devices, if the roundabout is determined not be a feasible option. A roundabout may impact properties on the west side of Walnut Street that could require coordination from the City. Table 7 (next page) provides a summary of existing trips and proposed trips:

Table 7: Trip Generation

Breezeway Traffic Impact Analysis										
				AM Peak Hour			PM Peak Hour			Daily
Land Use	ITE Code	Size	Units	In	Out	Total	In	Out	Total	Total
Existing Uses										
Motel	320	50	Rooms	8	13	21	11	10	21	152
2-Story Apartment Building (Low Rise Multifamily)	220	6	DU	1	2	3	1	1	2	44
3-Story Apartment Building (Mid-Rise Multifamily)	221	32	DU	3	8	11	2	2	4	174
Single-Family Detached	210	4	DU	1	2	3	3	1	4	38
Total				**13**	**25**	**38**	**17**	**14**	**31**	**407**
Proposed Uses										
Townhouse, Low Rise Multifamily	220	20	DU	2	8	10	9	5	14	110
Condos, Mid-Rise Multifamily	221	42	DU	5	16	21	17	10	27	277
Retail-Shopping Center	820	10,010	Sq. Ft.	6	3	9	48	51	99	1,257
Total				**13**	**27**	**40**	**74**	**66**	**140**	**1,644**
Difference				0	2	2	57	52	109	1,237

The City's Transportation Division held a scoping meeting with the applicant's engineer to discuss the methodology and ITE data for the Traffic Impact Study (TIS). The applicant has provided a Traffic Impact Study estimating 40 AM peak hour trips, 140 PM peak hour trips and 1,644 daily trips upon buildout of the development. Most of the projected trips are generated from the proposed commercial development in Phase Three. The TIS Report also includes an exhibit with projected trips from the proposed American Legion redevelopment proposal as background information.

Utilities: All on-site utilities shall be installed underground at the applicant's expense in accordance with city and applicable utility company standards; provided that temporary overhead facilities required for construction purposes shall be permitted (Section 4.11.B). When the proposed development will result in moving or relocating existing overhead utilities located in adjoining rights-of-way, the applicant shall be responsible for placing such utilities underground and dedicating any additional right-of-way or easement that is necessary. Equipment such as electric distribution transformers, switch gear, meter pedestals and telephone pedestals which is normally installed above ground in accordance with generally accepted utility practice for underground distribution may be so installed (Section 4.11.C). The existing overhead utilities that currently serve the Breezeway Motel, Fairfax Garden Apartments and four (4) single-family homes shall be removed. All existing overhead utilities on the subject property will be either removed or relocated underground with each phase of development. The applicant states that any existing overhead utilities shown on the Master Development Plan to remain are located off-site or within the right-of-way. Staff requests that the applicant provide a utility plan to show how the utilities will be handled on-site, and once those utilities are removed what will be the impacts to overhead utilities on Walnut Street and Oak Street.

Architecture and Landscaping: The existing Breezeway Motel is comprised of four separate structures, including the rental office, an L-shaped one-story building containing motel rooms, a two-story rectangular building containing motel rooms, and a two-story rectangular structure elevated above ground floor parking containing motel rooms. The exterior of the buildings is white painted cinder block with simple side gable and flat roof forms. The rental office has a unique north/front façade with a gabled form that is made up of windows. The stairwells at the corners of the elevated two-story building are capped with distinctive rounded

red open-face canopies. Most of the site is paved with asphalt making up parking and drive aisles. Landscaping is concentrated along Walnut Street on the west side of the property in the form of mature evergreen trees. A distinctive two-tier pylon sign is in the center of the property in a curbed landscape bed fronting on Fairfax Boulevard. This motel is discussed in the 2004 cultural resources inventory and report prepared by EHT Traceries, Inc., a preservation consultant based out of Washington DC. The report recommends that the Breezeway Motel be included on a Multiple Property Documentation Form as part of a series of roadside motels, diners, and service stations for their historical significance to post-World War II development of the City and the era in American history when cross country travel became a popular pastime. The report also recommends the Breezeway be considered for individual nomination to the National Register of Historic Places. No motion has been taken on either recommendation to date. The Virginia Department of Historic Resources identification number for the Breezeway Motel is 151-5252. Fairfax Gardens Apartments, comprised of four two- and three-story garden-style apartment buildings, have rectangular footprints, white-painted brick exteriors, front- and rear-facing balconies, and side gable asphalt shingle roofs. The property contains mature canopy trees. On September 16, 2020, the applicant had a pre-application work session with the Board of Architectural Review (BAR) for 31 townhouses, 34 two-over-two stacked condominium units, and a five (5) story age-restricted multifamily building with structured parking on the ground floor. The applicant has indicated that the Certificate of Appropriateness application for architecture and landscaping will be submitted with the forthcoming resubmission of the Master Development Plan.

City Schools: Providence ES (PES) has a capacity of 910 students. The school is at 100% capacity utilization. According to Fairfax County Public Schools FY21 Approved Capital Improvement Program, Providence's projected membership for the next four years is over 1,000 students, placing the school as much as 111% overcapacity. That's a moderate capacity deficit without further residential development or other membership or boundary adjustments. Providence ES currently has two trailers; both are used as resource rooms. Providence's Special Use Permit for the trailers was renewed in November 2019 for five years. It is projected that the Breezeway development student yield ratio will be .230. According to City staff's projections, the Breezeway project will generate 15 students. While that number appears manageable, the combined yields of other planned residential projects such as Northfax and the American Legion potentially equal up to 63 students (2-3 additional classrooms). This will contribute to Providence remaining overcapacity. Moreover, this exacerbates the need for trailers on the Providence grounds and/or reconfiguring interior space at the school. City Schools staff and Board remain concerned with the residential planning projects attribution to capacity deficit and overcrowding at Providence ES.

Human Services: Coordinate with the City of Fairfax's Human Services Office and the Fairfax County Office to Prevent and End Homelessness to assist residents that will be displaced by this proposed development to seek alternative housing options prior to the start of construction. The Mt. Vineyard development, constructed by the applicant, provided a relocation plan for the former residents of Oak Knoll Apartments.

Parks and Recreation: City requests a contribution for improvements to Pat Rodio Park to include field upgrades and an interior pedestrian network. In comparison to other projects, such as Mt. Vineyard and The Enclave, the developer provided a contribution of $378 per unit.

Fiscal Impact: Staff estimates an annual fiscal benefit to the City of between $134,000 and $303,000 with a midpoint of $218,500.

Commitments: The applicant has provided a list of commitments to enhance the Master Development Plan. The list covers a variety of areas that range from a phasing schedule to a list of excluded uses for the commercial pad in Phase Three, from right-of-way vacation for a portion of Walnut Street and Cedar Avenue

to emergency access, from utilities to landscaping and screening, and open space. The applicant also has provided a monetary contribution for affordable housing. However, the applicant has not provided a Transportation Demand Management (TDM) program.

ATTACHMENTS

1. Narrative
2. Master Development Plan
3. Open Space Plan
4. Landscape Plan
5. Right-of-Way Vacation Exhibit
6. Walnut Street Roundabout Exhibit
7. Oak Street Exhibit
8. Fiscal Impact Estimate
9. Summary of Commitments
10. Traffic Impact Study with Appendix

PREPARED BY:

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DATE

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3/3/21
DATE

PULTE HOME COMPANY, LLC

NARRATIVE

November 2, 2020

Please accept the following Narrative in support of the submitted planned development rezoning application and request for a Comprehensive Plan amendment to allow for the redevelopment of an assemblage of six parcels, including the Breezeway Motel, with a mixed-use development that includes twenty (20) stacked condominium (two-over-two) multifamily units, forty two (42) townhouses, and a commercial building consisting of between 8,000 and 10,010 square feet of floor area. This Narrative is included as part of the Master Development Plan prepared by ATCS (the "MDP"), and should be read in conjunction with the MDP as if fully set forth therein. The contents of this Statement of Justification address the requirements set forth in Section 3.8.2.C.1 of the City of Fairfax Zoning Ordinance.

LOCATION AND CONTEXT

The property consists of six (6) tax parcels identified as 57-1 ((14)) 43, 55A, 75A, 76A, 77A and 83, and a portion of Cedar Avenue and Walnut Street right-of-way to be vacated (collectively, the "Subject Property"). The Subject Property is currently split-zoned CR (Commercial Retail), RMF (Multifamily) and RH (Residential High). The CR zoned portion of the Subject Property is developed with the Breezeway Motel, an aging hotel constructed in the early 1950's that is located in the southeast quadrant of the intersection of Fairfax Boulevard and Walnut Street. The RMF portion of the Subject Property is developed with the Fairfax Gardens multifamily apartments, which are located on the north and south side of Cedar Avenue, a public street that bisects the Subject Property. The RH portion of the Subject Property is developed with single family homes located on Oak Street and Walnut Street. The existing development on the Subject Property includes a total of 50 motel units, 38 multifamily dwelling units and four (4) single family homes. Surrounding uses include single family detached and attached uses to the south and east, the American Legion property across Oak Street to the east, and commercial uses along Fairfax Boulevard to the east and west.

APPLICATION OVERVIEW

The proposal consists of an attractive mixed use development characterized by a variety of residential housing types, a commercial component on Fairfax Boulevard, publicly accessible open space, and transportation improvements. The Applicant has a proven record of developing quality residential communities in the City, as evidenced by its successful completion of the Mt. Vineyard community located to southeast of the Subject Property. A total of 62 residential units are proposed, including 20 stacked condominium units and 42 townhouses, as well as an 8,000 – 10,010 square foot commercial building. The proposed unit types will appeal to a range of potential homebuyers at different price points, and the commercial component will contribute to the commercial activity along Fairfax Boulevard, one of the City's main commercial corridors. The proposed development will contribute number of significant benefits to the City and the surrounding community. These benefits include the following:

- The redevelopment of the aging Breezeway Motel;
- A diversification of the City's housing stock;
- The provision of publicly-accessible open space;
- Streetscape, roadway and intersection improvements along the Subject Property's frontage, including the provision of traffic calming measures and additional parallel parking spaces along Cedar Avenue;
- The undergrounding of all above-grade utilities currently located along the frontage of the Subject Property;
- The installation of below-grade stormwater management and best management practices (BMP) facilities on-site where none exist today;
- A positive fiscal impact on the City, resulting in potential annual net revenues ranging from $134,000 to $295,000; and
- A two-hundred thousand dollar ($200,000.00) monetary contribution to the City's affordable housing fund.

In order to allow the proposed development, the Applicant proposes to rezone the Subject Property from the CR, RMF and RH Districts to the Planned Development Mixed Use (PD-M) District. In conjunction with the rezoning, the Applicant also proposes to vacate approximately 4,569 square feet of the Cedar Avenue and Walnut Street right-of-way proximate to its intersection with Walnut Street to allow the reconfiguration of this intersection and provision of traffic calming measures.

PROPOSED DEVELOPMENT

The proposed development is consistent with the recommendations of the Comprehensive Plan, and is compatible with the mix of uses in the surrounding area. As illustrated on the MDP, the layout of the proposed development will result in a transition in height and intensity from the existing single family detached homes to the south of the Subject Property to the commercial corridor along Fairfax Boulevard. The portion of the Subject Property south of Cedar Avenue will include 42 townhouses. Access to the southern portion of the development is provided on Oak Street, where three curb cuts currently exist. The townhouses, which consist of three stories with habitable attic space that includes a private roof terrace on the front of each house, are characterized by traditional architecture, pitched roofs, and are limited in height to approximately 38 feet. A 15 foot wide landscaped transitional yard is provided along the southern property line, consistent with Zoning Ordinance requirements, to serve as a buffer to the single family homes. The southern portion of the property also includes an open space element that will include a lawn with seating areas, pedestrian walkways, and a play area to serve families in the proposed

development and the surrounding area. This space will be privately owned and maintained, but subject to a public access easement to allow use by other residents of nearby neighborhoods.

Although the Subject Property is bisected by Cedar Avenue, the Applicant's proposed traffic calming improvements to this street will facilitate pedestrian connectivity between the northern and southern portions of the proposed development. These improvements include the reconfiguration of the Cedar Avenue and Walnut Street intersection, the provision of curb bump outs at both ends of Cedar Avenue intended to slow traffic and shorten the walking distance between curbs, and the installation of a tabled mid-block pedestrian connection that will also slow traffic and allow pedestrian access between the two central open space areas.

The northern portion of the Subject Property will be developed with 20 stacked condominium units oriented to Cedar Avenue, and an 8,000 – 10,010 square foot commercial building oriented to Fairfax Boulevard that will be constructed by others. Vehicular access to the northern portion of the development is provided via two access points on Walnut Street and one access point on Fairfax Boulevard. The single Fairfax Boulevard access represents a consolidation of the two existing access points and an improvement over the existing conditions. The proposed access has been shifted as far east as possible to maximize spacing. The two access points on Walnut Street will provide access to the signalized intersection with Fairfax Boulevard for the commercial building and the stacked condominium units.

The commercial building on Fairfax Boulevard will be oriented to the intersection of Fairfax Boulevard and Walnut Street. While the commercial building and associated open space will be constructed by others, the Applicant will facilitate its development by removing the existing Breezeway Motel and associated improvements, and grading the site to allow the commercial development to occur. Upon completion of demolition and grading activities, the Applicant will list the commercial component with a commercial broker and work with the City's Economic Development Office to identify a tenant(s) for the building. The commercial building will include between 8,000 and 10,010 square feet, and while a specific use(s) has not yet been identified, the building will accommodate a commercial use or mix of uses consistent with those permitted in the PD-M District. The commercial component will have access to Fairfax Boulevard and Walnut Street, and will be served by up to 44 surface parking spaces. To the rear of the building, an open space area is provided to serve as a buffer and provide a transition to the residential portion of the development to the south. While development of the commercial building will be in substantial conformance with the layout shown on the MDP, the architectural design and landscaping will be determined in the future in conjunction with a separate Major Certificate of Appropriateness application.

Ample parking is provided throughout the community in accordance with Zoning Ordinance requirements. For the commercial component, a maximum of 44 surface parking spaces are provided to the side and rear of the building. While the specific use(s) of this building will be determined in the future, the use or mix of uses will comply with the parking requirements of the Zoning Ordinance. For the residential component, each townhouse and stacked condominium unit will include two dedicated parking spaces. Each townhouse garage will accommodate two cars. Each stacked condominium unit will include a one-car garage and one tandem driveway space. Twenty (20) additional on-site surface parking spaces are provided throughout the residential

component of the development to provide parking for visitors and guests. While not included in the parking tabulations on the MDP, thirty (30) additional on-street parallel parking spaces are provided along both sides of Cedar Avenue. Overall, the number of parking spaces on site exceeds Zoning Ordinance requirements.

The existing uses on the Subject Property were developed prior to the adoption of current stormwater regulations, and therefore no stormwater management facilities are located on site today. With the proposed development, the Applicant will install underground facilities to meet stormwater detention and quality requirements in accordance with state and City requirements. The locations of these facilities are identified on the MDP, and have been configured with the landscape design and site design.

Finally, the proposed development meets or exceeds the City's transitional yard and canopy coverage requirements. A 15' wide landscaped transitional yard is provided around the perimeter of the development. Additionally, through a combination of tree preservation and new plantings, the proposal exceeds the 10% 10-year tree canopy requirements of the PD-M District. The Applicant has worked to maximize landscaping and tree coverage wherever possible to enhance the appearance of this development.

COMPREHENSIVE PLAN

In addition to providing the City with the benefits enumerated in the Overview section above, the Applicant's proposal is consistent with the recommendations of the City's Comprehensive Plan (the "Plan"), and advances a number of the Plan's stated goals and objectives.

Land Use

The Plan's Future Land Use Map includes two different Place Type designations for the Subject Property. The portion along Fairfax Boulevard that is currently developed with the Breezeway Motel parcel is designated as a Commercial Corridor Place Type, and the portion currently developed with the multifamily and single family dwellings is designated as a Multifamily Neighborhood Place Type.

According to the Plan, the Commercial Corridor Place Type includes a mix of retail, restaurant, service, medical, office and other commercial uses, consistent with the proposed permitted uses for the future commercial building. Residential uses are not recommended in the Commercial Corridor Place Type, and no residential uses are proposed on the Breezeway Motel parcel. The Plan indicates that the Commercial Corridor Place Type can accommodate a variety of buildings, including small footprint buildings. The proposed 8,000 to 10,010 square foot building is consistent with this recommendation. For sites located along Boulevards, the Plan states that buildings should be located near the front property line with parking provided to the rear or side of the building and direct pedestrian access provided from the sidewalk. The proposed layout of the commercial building and associated parking and pedestrian facilities is consistent with these recommendations. Accordingly, the commercial component of the proposed development is consistent with the Plan's recommendations.

The proposed development of the remaining portion of the Subject Property is consistent with its Multifamily Neighborhood Place Type Designation. The Plan states that townhouse uses are appropriate in Multifamily Neighborhood Place Types when developed in conjunction with Mutifamily Neighborhood uses. The Applicant proposes to develop a combination of townhouses as well as stacked condominium multifamily dwellings, consistent with this Place Type description, as well as with the Applicant's nearby Mt. Vineyard community which shares the Multifamily Neighborhood Place Type designation. The proposed 62 dwelling units results in a density of approximately 17.8 dwelling units per acre, which is consistent with the maximum density of 20 dwelling units per acre recommended by the Plan, and a modest increase over the 42 existing multifamily and single family dwellings on the Subject Property today. The layout shown on the MDP includes the tallest structures – the two-over-two stacked condominiums – located away from the proximate single family homes, which is also consistent with the Plan's recommendations.

For the above reasons, the mixed-use development proposed by the Applicant is consistent with the Place Type designations for the Subject Property as set forth in the Plan. The development preserves the commercial character of Fairfax Boulevard, while also providing a transition to the single family residential communities to the south.

Multimodal Transportation

The first Goal stated in the Multimodal Transportation Chapter of the Plan is to connect with the region. The Applicant's proposal is consistent with a number of Outcomes and Actions associated with this goal. Outcome MM1.2 identifies the improvement of safety and operations in the regional network as an objective. Within this Outcome, Actions 1.2.2 and 1.2.3 speak to the simplification of multi-leg and offset intersections and the addressing of safety and operational deficiencies at major intersections. As discussed above and illustrated on the MDP, the Applicant's proposal advances these actions through street improvements on Cedar Avenue, the reconfiguration of the unconventional intersection at Cedar Avenue and Walnut Street, and through the consolidation of access points on Fairfax Boulevard proximate to the signalized intersection. These improvements are consistent with the Plan's goals for transportation.

In addition, Outcome MM2.1 identifies the improvement of pedestrian safety as an objective. The actions within this Outcome speak to improvements to the pedestrian network, crosswalks, and expansion of the sidewalk network. Once again, the Applicant's proposal advances these actions through the traffic calming and crosswalk improvements along Cedar Avenue, the provision of a 10' wide sidewalk with associated landscaping along Fairfax Boulevard, and the streetscape improvements along the frontages of the Subject Property. The redevelopment will result in significant improvements to the existing pedestrian network in this area of the City.

Outcome MM2.3 speaks to the City's desire for improved bicycle facilities, and Action 2.3.3 encourages the expansion of bicycle racks for short-term bicycle parking. The proposed open space areas throughout the proposed development will include bicycle racks to advance this objective.

Finally, Outcome MM3.2 of the Transportation Chapter addresses the need for enhanced walkability between neighborhoods. As discussed above in conjunction with Outcome 2.1, the proposed pedestrian and streetscape improvements on the Subject Property will achieve this outcome. Sidewalks are provided along all frontages of the Subject Property, including a 10 foot wide sidewalk along Fairfax Boulevard that is consistent with the Plan's proposed treatment of 'Boulevards.' Accordingly, the Applicant's proposal advances a number of the transportation elements of the Plan.

Parks and Recreation

The Community Services chapter of the Plan underscores the importance of recreation and open space to the City and its residents. Parks and Recreation Goal 1 identifies the need to develop a high-quality park infrastructure, and to ensure that all neighborhoods are provided with access to parks and recreation amenities. Outcome PR1.1 identifies the need for a well-connected system of parks that provides citizens with healthy choices for recreation, and Action PR1.1.2 seeks to identify opportunities for future open space in neighborhoods that are undersupplied in public recreation and open space opportunities.

Through the provision of publicly accessible open space along Cedar Avenue, the Applicant's proposal advances the Plan's objectives. This open space will be programmed with open lawns, seating areas and play area facilities to serve future residents and the surrounding community. The open space will contribute to the network of parks and open spaces throughout the City.

For the above reasons, the proposed development is consistent with the recommendations of the Plan. The development will advance a number of the City's objectives by diversifying housing options in the City, adding publicly accessible open space, and contributing to the City's affordable housing goals.

REZONING APPLICATION

In support of the Applicant's request to rezone the Subject Property from the CR, RMF and RH Districts to the PD-M District, the following information is provided to address each of the approval considerations set forth in Section 6.6.8 of the Zoning Ordinance:

A. Substantial Conformance with the Comprehensive Plan;

As discussed above, the development is in conformance with the Plan's recommendations for the Subject Property and advances a number of the City's goals set forth in the Plan related to land use, transportation, and parks and recreation. The proposed development on the southern portion of the property consists of a mix of multifamily and townhouse unit types, which are appropriate in a Multifamily Neighborhood. In addition, the commercial building shown on the MDP is consistent with the Commercial Corridor place type designation for the Breezeway parcel. The townhouses on the southern portion of the Subject Property adjacent to the existing single family detached homes are limited to 38 feet in

height. This limited height, combined with the 15' landscaped transitional yard provided along the perimeter of the property, will ensure compatibility with the adjacent residential neighborhood. While the proposed stacked condominium buildings technically exceed the 4 stories/45 foot height guidance recommended by the Plan for Multifamily Neighborhoods, these buildings will be limited to 49 feet in height and buffered from the adjacent homes on Oak Street by a 15' landscaped transitional yard, which will mitigate the additional building height. In addition, the adjacent parcels on Oak Street are designated as a Multifamily Neighborhood place type under the Plan. In the event these parcels are redeveloped with Multifamily Neighborhood uses in the future, the height of those uses is likely to be compatible with the proposed heights of the stacked condominium buildings.

For these reasons, the proposed development is in substantial conformance with the Comprehensive Plan.

B. Any greater benefits the proposed planned development provides to the City than would a development carried out in accordance with the general district regulations;

The proposed PD-M District will allow the Applicant to develop the Subject Property with a mixed-use community consisting of commercial uses and variety of housing types to accommodate a range of potential home buyers. The PD-M District also requires the provision of a minimum 20% open space, which the underlying general zoning districts do not. The Applicant's proposal meets the 20% minimum open space requirement. In addition, the Applicant is committed to making the open space areas along Cedar Avenue publicly accessible so that they will be available not only to future residents of this community, but to other residents of the surrounding area. Consistent with the Plan's stated objectives, these open space areas will contribute to an expansion of the City's open space network. Finally, as demonstrated in the submitted fiscal impact analysis, the mixed-use development will result in a positive fiscal impact to the City.

C. Suitability of the subject property for the development and uses permitted by the general zoning district regulations versus the proposed district;

Having developed similar residential developments in the City at the nearby Mt. Vineyard community, as well as throughout the region, the Applicant is confident that the Subject Property is a highly suitable location for the proposed development. A majority of the Subject Property is already zoned either RMF or RH, which allow for residential uses. The Breezeway Motel parcel, which is currently zoned CR, allows a variety of commercial uses. The Subject Property is therefore well-suited for the proposed development and the mix of uses identified on the MDP.

D. Adequacy of existing or proposed public facilities such as public transportation facilities, public safety facilities, public school facilities, and public parks;

These public facilities in the vicinity of the Subject Property are adequate to serve the proposed development. While the Applicant anticipates that the townhouses and stacked condominium units will likely attract some families with school aged children, the commercial building will not. Based on student generation formulas provided and implemented by the City, the 62 proposed residential dwellings will generate approximately 14 new students. The proposed development supplements the City's existing public parks and recreation facilities through the provision of on-site publicly accessible open space. Finally, the proposed improvements to Cedar Avenue and Walnut Street represent an improvement to the functionality and safety of the existing transportation facilities.

E. Adequacy of existing or proposed public utility infrastructure;

Existing public utility infrastructure is sufficient to accommodate the proposed development. In conjunction with the development, the Applicant will underground any existing overhead utilities on-site.

F. Consistency with the applicable requirements of this chapter, including the general provisions of Section 3.8.2;

Except for the modifications requested herein and on the MDP, the proposal is consistent with the provisions of Section 3.8.2 and elsewhere in the Zoning Ordinance.

G. Compatibility of the proposed planned development with the adjacent community;

As discussed above, compatibility with the adjacent community is provided through the use of quality architecture and materials, the provision of height transitions, generous setbacks to the adjacent residential uses, landscape and buffering, and improvements to streetscape, roadways and pedestrian connectivity. From a land use standpoint, the proposed residential and commercial uses are compatible with the mixed-use character of the surrounding area, and will establish a gradual transition in height and density from Fairfax Boulevard to the residential community to the south. Finally, the publicly accessible open spaces will serve as gathering spaces for future residents to congregate with their neighbors in the surrounding area, further integrating the development into the existing community.

H. Consistency with the general purpose of the planned development districts in Section 3.8.1 and the stated purposes of Section 3.2.3;

The proposed planned development is consistent with the stated purposes in these sections. The applicant has utilized the flexibility afforded by the Planned Development District regulations to create a mixed-use community with a mix of

housing types oriented around active open spaces. The variety of design achieved by the various uses and building types will create a unique development in the City.

I. Compatibility of each component of the overall development with all other components of the proposed planned development;

The Applicant has worked diligently to integrate the various components of the development to form a cohesive whole. The northern and southern portions of the development are oriented to a centralized open space feature that is bisected by Cedar Avenue, yet connected through the mid-block crossing. Pedestrian paths and sidewalks throughout the community are provided to enhance connectivity throughout the development. The commercial component of the development is located adjacent to existing commercial uses on Fairfax Boulevard, and an open space area located to the rear of the commercial component will establish a transition to the residential component to the south.

J. The quality of design intended for each component of the project and the ability of the overall MDP to ensure a unified cohesive environment at full build-out;

With this development, the Applicant intends to build upon its record of developing quality residential communities as it recently did at Mt. Vineyard. While this development will be distinct from Mt. Vineyard in architecture and appearance, the quality of the two developments will be consistent.

K. Self-sufficiency requirements for each phase of the overall project of Section 3.8.2.H;

The Applicant anticipates that the proposed development will be constructed in phases based on market conditions as described in the Summary of Commitments. With each phase of development, all necessary utilities, infrastructure, stormwater management and open space associated with that phase will be constructed to ensure that each phase is self-sufficient. Prior to the commencement of construction for the first phase of development, the existing improvements on the Breezeway Motel parcel will be demolished and removed, and the parcel will be graded to allow for future development of the commercial component by others.

L. The effectiveness with which the proposed planned development protects and preserves the ecologically sensitive areas within the development; and

The Subject Property is currently developed, with no significant ecologically sensitive areas. The applicant has maximized tree preservation to the extent feasible, and the preservation of some significant large trees in the open space area south of Cedar Avenue is proposed.

M. The extent to which the residential component of the planned development promotes the creation and preservation of affordable housing suitable for supporting the current and future needs of the City.

While this application is not subject to the City's affordable dwelling unit ordinance adopted in June 2020 as it was submitted prior to the effective date of the ordinance, in furtherance of the Housing Goals set forth in the Plan, the Applicant is committed to providing a $200,000 monetary contribution to the City's housing fund.

MODIFICATIONS AND ASSOCIATED REQUESTS

In conjunction with the proposed rezoning, the Applicant requests approval of the following modifications:

1. A modification of the landscape strip and street tree requirements set forth in Section 4.5.6.B of the Zoning Ordinance along the internal private streets.

   Section 4.5.6.B requires that a 10 foot landscape strip with street trees be provided along every street. The Applicant is requesting a modification of this requirement for the internal private streets identified on the MDP. Due to site constraints, and given the urban character of the proposed development, it is not feasible to provide the required landscape strip and street trees along the internal streets. However, the Applicant is meeting these requirements along all public street frontages surrounding the Subject Property. In addition, the Applicant is exceeding the 10% canopy coverage requirement of the PD-M District. A modification of this requirement is therefore appropriate.

2. A modification of the sidewalk requirements set forth in Section 4.4.4.A.1 of the Zoning Ordinance along the internal private streets.

   Section 4.4.4.A.1 requires the provision of sidewalks along both sides of all streets. For the reasons stated above, it is not feasible to provide sidewalks along both sides of the internal public streets. As shown on the MDP, each residential unit will have access to a sidewalk either in front of or to the rear of each unit. On the southern portion of the property, the rear loaded townhouse units will have access to the sidewalk located along Walnut Street or the sidewalk in the central open space area. The front loaded townhouse units along the southern property line have access to a sidewalk that runs along the length of the internal private street. The stacked condominium units will have access to a sidewalk along Oak Street. Given the urban character of the proposed development, and the fact that the Applicant is meeting the sidewalk requirements along all public street frontages, a modification of this requirement for the private streets only is appropriate.

3. A modification of the townhouse setback requirement set forth in Section 3.5.1.C.2 of the Zoning Ordinance.

   Section 3.5.1.C.2 of the Zoning Ordinance states that no more than two of any ten or one of any three to five abutting dwelling units shall have the same front yard setback. While all of the townhouses throughout the proposed development are staggered such that no two adjacent townhouses share the same setback, each group

of townhouses includes multiple townhouses with the same front yard setback. However, the desired articulation is achieved through the staggering of front building walls such that no two adjacent townhouses share the same front yard setback. Accordingly, the requested modification of the requirement is appropriate.

4. A of PFM Detail 401-01 for a typical curb and gutter street to allow private access ways that are less than 30 feet from face of curb to face of curb or edge of pavement.

   The proposed width of private streets throughout the proposed development ranges from 22' to 24' from face of curb to face of curb. While less than the 30' required by the PFM, the streets have sufficient width to allow two-way vehicular traffic, and are wide enough to accommodate fire trucks and emergency vehicles. The proposed waiver will therefore not impact the safety or functionality of these streets. Given the urban character of the proposed development, the requested PFM waiver is appropriate.

5. A waiver of the requirements of Section 2.4.1 of the PFM for private access ways to have a minimum horizontal radius of 175.

   The proposed waiver of the required horizontal radius applies to a section of the internal private street in the northern portion of the proposed development between Units 12 and 13 as identified on the MDP. The proposed waiver will not impact the ability of vehicles to navigate the internal street.

6. A waiver of the development schedule requirements of Section 3.8.2.I of the Zoning Ordinance.

   Section 3.8.2.I of the Zoning Ordinance states that no zoning permit shall be issued for a mixed use development to authorize the occupancy of more than 66 percent of the approved residential dwelling units, prior to the issuance of a zoning permit to authorize the occupancy of 100 percent of the approved nonresidential floor area. The Applicant is requesting a waiver of this requirement to allow the Applicant to proceed with the entire residential component of the proposed development in advance of the commercial component. As noted above, the commercial component of the development will be constructed by others. While the Applicant has initiated conversations with the City's economic development office and will continue to diligently pursue the marketing of the commercial component, given uncertainties and volatility in the current retail and commercial real estate markets, the Applicant is unable to commit to a timeframe for the construction of this building. However, the Applicant has committed to the demolition of the Breezeway Motel and the grading of the commercial parcel prior to the issuance of the first certificate of occupancy for the residential component. As stated previously, the Applicant will list the commercial component of the development with a commercial real estate broker, and will coordinate with the City's Economic Development Office to identify a user(s) for the building. Given these

commitments, which will deliver a pad ready site and enhance the marketing efforts for the commercial building, the requested modification is appropriate.

7. The vacation of approximately 4,569 square feet of the Cedar Avenue and Walnut Street right-of-way.

   As shown on the submitted vacation plat, the proposed vacation consists of two slivers of roadway on the north and south side of Cedar Avenue at its intersection with Walnut Street. This existing intersection has an unconventional design that includes a triangular shaped median and an unusual traffic pattern. As shown on the MDP, the Applicant will reconfigure this condition to a conventional stop-controlled intersection, with traffic calming curb bump outs on Cedar Avenue. This will result in a safer condition for both pedestrians and motorists. The northern portion of the vacated area will become part of the streetscape and open space area north of Cedar Avenue. The southern portion will become part of the streetscape, and a portion of it will be included in the townhouse development.

The Applicant's proposal presents an opportunity to redevelop a number of aging structures with a mixed-use development that advances the stated objectives of the Comprehensive Plan. The proposed development will offer a significant amount of usable and publicly accessible open space, enhanced pedestrian connectivity, a variety of housing options and high quality architecture that is compatible with recent development in the surrounding area.

MASTER DEVELOPMENT PLAN
RT. 50 BREEZEWAY
FAIRFAX CITY, VIRGINIA

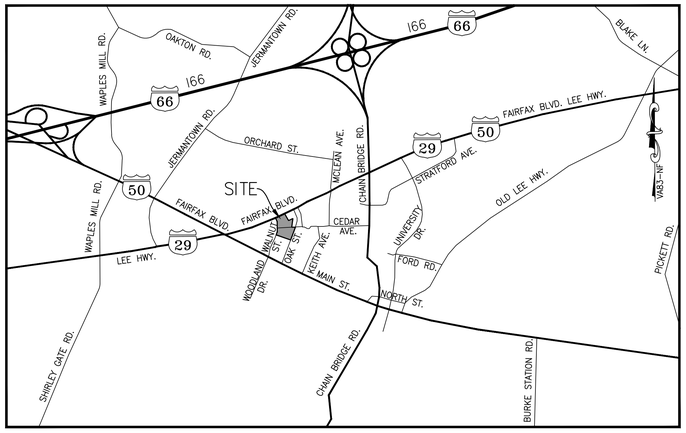
GENERAL NOTES

1. THE SUBJECT PROPERTY SHOWN HEREON IS COMPRISED OF 6 PARCELS OF APPROXIMATELY ±4.633 ACRES AND RECORDED IN THE LAND RECORDS OF FAIRFAX CITY VIRGINIA AS FOLLOWS (SITE ACREAGE IS PROVIDED AS PER THE ZONING PLAT)AND RIGHT-OF-WAY VACATION:
2.

PARCEL ID	OWNER	DESCRIPTION	ADDRESS	ACREAGE	EXISTING ZONING
57-1-14-055A	ROBERT PIERCE	FAIRFAX GARDENS APTS	10807-10818 CEDAR AVE	2.082 AC	RMF MULTIFAMILY
57-1-14-043	ROBERT PIERCE	BREEZEWAY MOTEL	10829 FAIRFAX BLVD	1.148 AC	CR COMMERCIAL RETAIL
57-1-14-083	ROBERT PIERCE	SINGLE FAMILY	3937 WALNUT STREET	0.557 AC	RH RESIDENTIAL HIGH
57-1-14-77A	ROBERT PIERCE	SINGLE FAMILY	3930 OAK STREET	0.251 AC	RH RESIDENTIAL HIGH
57-1-14-76A	ROBERT PIERCE	SINGLE FAMILY	3932 OAK STREET	0.253 AC	RH RESIDENTIAL HIGH
57-1-14-075A	ROBERT PIERCE	SINGLE FAMILY	3934 OAK STREET	0.342 AC	RH RESIDENTIAL HIGH
				TOTAL = 4.633 AC	

AREA OF CEDAR AVENUE AND WALNUT STREET RIGHT-OF-WAY TO BE VACATED = 0.105 AC
TOTAL AREA = 4.738 AC

3. THE MASTER DEVELOPMENT PLAN ACCOMPANIES AN APPLICATION TO REZONE THE SUBJECT PROPERTY FROM THE RMF, CR AND RH DISTRICTS TO THE PD-M (PLANNED DEVELOPMENT MIXED USE) DISTRICT TO ALLOW A MIXED-USE DEVELOPMENT CONSISTING OF 42 TOWNHOUSES, 20 MULTIFAMILY STACKED CONDOMINIUM DWELLINGS, AND A COMMERCIAL BUILDING CONSISTING OF A MINIMUM OF 8,000 SQUARE FEET AND A MAXIMUM OF 10,000 SQUARE FEET TO BE CONSTRUCTED BY OTHERS. REFER TO THE SUBMITTED NARRATIVE FOR A DETAILED DESCRIPTION OF THE PROPOSAL.
4. THE BOUNDARY AND PHYSICAL IMPROVEMENTS HEREON ARE BASED UPON A FIELD SURVEY DONE BY THIS FIRM (ATCS, PLC.) BETWEEN THE DATES OF JANUARY 25TH AND FEBRUARY 2ND, 2018.
5. COORDINATE SYSTEM INFORMATION:
   A.) HORIZONTAL DATUM SHOWN HERON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM (NAD) 1983 – NORTH AS ESTABLISHED FROM A CURRENT CORS GPS SURVEY.
   B.) THE VERTICAL DATUM SHOWN HEREON IS REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NAVD 88) AS IS ESTABLISHED FROM A CURRENT GPS SURVEY.
6. THE AREA SHOWN HEREON IS LOCATED ON THE FLOOD INSURANCE RATE MAPS (FIRM), COMMUNITY PANEL NO. 5155240001 D WITH AN EFFECTIVE DATE OF JUNE 2ND, 2006. BY GRAPHICAL DEPICTION ONLY, THE PROPERTY HEREON IS SHOWN IN:
   - FLOOD ZONE "X" (OTHER AREAS), AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN.
7. A TITLE REPORT HAS FURNISHED AND HAS BEEN INCORPORATED AND SHOWN ON A BOUNDARY SURVEY DONE BY THIS FIRM AND ENTITLED "ALTA/NSPS LAND TITLE SURVEY OF FAIRFAX HEIGHTS SECTION 2 LOTS 43-47, 55-A, 56-A, 57-A, 58-A, 75-A, 76-A, 77-A, 78-A, 79-A, 80-A, 81-A, 83 & 84", DATED SEPTEMBER 6TH, 2017.
8. THE SUBJECT PROPERTY IS CURRENTLY SERVED BY PUBLIC WATER AND PUBLIC SEWER PROVIDED BY FAIRFAX CITY.
9. TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT, THERE ARE NO EXISTING GRAVES OR BURIAL SITES LOCATED ON THE PROPERTY THE SUBJECT PROPERTY IS NOT LISTED UNDER THE NATIONAL REGISTER OF HISTORIC PLACES.
10. TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT, NO HAZARDOUS OR TOXIC SUBSTANCES ARE KNOWN TO BE PRESENT ONSITE.
11. THIS DEVELOPMENT PROPOSAL IS COMPATIBLE WITH THE EXISTING DEVELOPMENT IN THE VICINITY OF THIS SITE IN TERMS OF USE, TYPE AND INTENSITY. NO ADVERSE EFFECTS TO NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS PROJECT.
12. TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT, THIS DEVELOPMENT PLAN CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, UNLESS OTHERWISE SPECIFICALLY NOTED.
13. NOTWITHSTANDING THE IMPROVEMENTS AND TABULATIONS SHOWN ON THIS PLAN, THE APPLICANT RESERVES THE RIGHT TO MAKE MODIFICATIONS TO THE FINAL DESIGN TO COMPLY WITH FINAL ENGINEERING AND NEW CRITERIA AND REGULATION WHICH MAY BE ADOPTED BY FAIRFAX CITY SUBSEQUENT TO THE SUBMISSION OF THIS APPLICATION, PROVIDED THAT SUCH MODIFICATIONS ARE SUBSTANTIALLY CONSISTENT WITH THE APPROVED DEVELOPMENT PLAN.
14. THE PROPOSED LAYOUT INCLUDING BUILDING FOOTPRINTS AND SITE IMPROVEMENTS SHOWN HEREIN ARE PRELIMINARY. THE PROPOSED LAYOUT MAY BE SUBJECT TO REVISIONS AT THE TIME OF SITE PLAN PREPARATION, SUBJECT TO MARKET CONDITIONS, BUT SUBSTANTIALLY CONSISTENT WITH THE APPROVED DEVELOPMENT PLAN.
15. ALL EXISTING UTILITY EASEMENTS HAVING A WIDTH GREATER THAN 25 FEET ARE SHOWN ON THE EXISTING CONDITIONS PLAN.
16. SITE LIGHTING WITHIN THE PROJECT SITE AREA (I.E. ALONG SIDEWALKS AND PATHWAYS) WILL BE DETERMINED DURING FINAL SITE PLAN REVIEW AND SHALL BE IN GENERAL CONFORMANCE WITH SECTION 4.8 OF THE ZONING ORDINANCE.
17. ONSITE STORM WATER MANAGEMENT AND BEST MANAGEMENT PRACTICES (BMPS) SHALL BE PROVIDED AS REQUIRED BY CITY ENGINEER AT THE TIME OF FINAL SITE PLAN. DETENTION TO PROVIDE THE REQUIRED STORM WATER QUANTITY CONTROLS AND ONSITE BMPS TO MEET THE STORM WATER QUALITY REQUIREMENTS ARE SHOWN ON SHEET 4.
18. ALL SIGNAGE WILL BE IN CONFORMANCE WITH SECTION 4.6 OF THE ZONING ORDINANCE.
19. MODIFICATIONS AND WAIVERS FOR THIS MATER DEVELOPMENT PLAN INCLUDE THE FOLLOWING:
    1. A MODIFICATION OF SECTION 4.5.6.B OF THE ZONING ORDINANCE FOR 10FT LANDSCAPE STRIP AND STREET TREES ALONG ALL PRIVATE ALLEYWAYS.
    2. WAIVER OF SECTION 2.1 OF THE FAIRFAX PFM FOR FRONTAGE/UTILITY IMPROVEMENTS ALONG FAIRFAX BLVD, OAK STREET, WALNUT STREET AND CEDAR AVENUE.
    3. WAIVER OF SECTION 401-01 OF THE FAIRFAX PFM FOR TYPICAL CURB AND GUTTER STREET ON PRIVATE ACCESSWAYS THAT ARE LESS THAN 30 FEET FROM FACE OF CURB TO FACE OF CURB OR EDGE OF PAVEMENT.
    4. A MODIFICATION OF SECTION 4.4.4.A.I OF THE ZONING ORDINANCE FOR SIDEWALKS REQUIRED ON BOTH SIDES ALONG ALL STREETS AND PRIVATE ALLEYWAYS. THE APPLICANT PROPOSES SIDEWALKS AS SHOWN.
    5. A MODIFICATION OF SECTION 3.5.1.C.2 OF THE ZONING ORDINANCE THAT REQUIRES THAT NO MORE THAN ONE OF ANY THREE TO FIVE, ABUTTING DWELLING UNITS HAVE THE SAME FRONT YARD SETBACK.
    6. WAIVER OF SECTION 2.4.1 OF THE FAIRFAX PFM TO ALLOW FOR PRIVATE ACCESS WAYS TO HAVE A HORIZONTAL RADII OF LESS THAN 175 FEET.
    7. A MODIFICATION OF THE TY3 15' TRANSITIONAL YARD BUFFER ON NORTH EAST SIDE ABUTTING PARCEL ID: 57114048-57114051.
    8. A WAIVER OF THE DEVELOPMENT SCHEDULE REQUIREMENT OF SECTION 3.8.2.I OF THE ZONING ORDINANCE TO ALLOW OCCUPANCY OF THE ENTIRE RESIDENTIAL COMPONENT OF THE DEVELOPMENT PRIOR TO OCCUPANCY OF THE NONRESIDENTIAL COMPONENT.



VICINITY MAP
SCALE: 1"=2,000'

SHEET INDEX

PROPERTY OWNER

ROBERT PIERCE
3613 PROSPERITY AVE
FAIRFAX, VA 22031

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TRAFFIC ENGINEER

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CHRIS TURNBULL

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WALSH, COLUCCI, LUBELEY & WALSH, P.C.
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ARLINGTON, VIRGINIA 22201-3359
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CONTACT: ROBERT D. BRANT

REVISION

NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
2	9/18/2019	ADDRESS CITY COMMENTS
–	–/–/––	–
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1	8/6/2018
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COMMONWEALTH OF VIRGINIA
JASON TURNER KACAMBURAS
Lic. No. 0402042416
10/29/2020
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COVER SHEET

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ.#: 001271
DATE: 10/30/2020
SCALE: AS SHOWN

SHEET: 1 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 1 - Cover.dwg PLOT DATE:10/30/2020 10:14:32 AM BY: RAVI SHRESTHA

EXISTING UTILITY AS-BUILT INFORMATION

STORM SEWER ASBUILTS

1 TOP=390.31
FULL OF DEBRIS
15" RCP OUT APPROX - 388.3

2 TOP=388.55
18"RCP OUT 385.20

3 TOP=388.01
15"RCP OUT=384.89

4 TOP=388.23
18"RCP IN(2)=384.24
15"RCP IN(3)=384.42
21"RCP OUT=384.12

5 TOP=388.52
33"RCP IN(3)=380.17
33"RCP OUT=378.89

6 TOP=389.92
18"CMP IN(SW)=386.38
18"CMP OUT=386.30

7 TOP=390.58
18"RCP IN(8)=386.26
18"RCP OUT=386.43

8 TOP=396.26
15"RCP IN(SE)=392.04
15"RCP IN(SW)=392.04
18"RCP OUT=392.02

9 TOP=389.42
18"RCP IN(7)=384.48
15"RCP IN(10)=384.56
18"RCP OUT=384.45

10 TOP=389.32
15"RCP OUT=384.55

11 TOP=388.29
18"RCP IN(9)=383.79
18"RCP OUT=382.95

12 TOP=389.05
18"CMP IN(6)=384.83
18"CMP OUT=383.73

13 TOP=385.42
15"RCP OUT=379.94

14 TOP=384.39
15"RCP IN(13)=379.71
15"RCP OUT=379.62

15 TOP=384.06
15"RCP IN(14)=379.59
18"RCP IN(9)=379.39
18"RCP OUT=376.52

16 TOP=381.29
21"RCP IN=378.20
21"FIBERGLASS OUT=377.71

17 TOP=378.39
24"RCP IN(30)=374.49
24"RCP OUT=374.44

18 TOP=378.36
15"RCP OUT=376.14

19 TOP=378.27
24"RCP IN(17)=374.34
24"RCP IN(25)=374.32
15"RCP IN(20)=374.25
48"RCP OUT=368.18

20 TOP=378.50
15"RCP OUT=374.50

21 TOP=378.47
42"RCP IN(28)=368.51
42"RCP OUT(29)=368.45

22 TOP=378.12
17"X25"CMP IN(18)=374.32
24"RCP OUT=372.83

23 TOP=377.84
24"RCP IN(22)=372.84
15"RCP IN(24)=373.75
24"RCP OUT=372.88

24 TOP=378.06
15"RCP OUT=373.78

25 TOP=379.24
21"FIBERGLASS IN(16)=375.43
15"RCP IN=375.95
24"RCP OUT=375.30

26 TOP=385.74
17"X24"CMP IN(12)=382.42
33"RCP IN=376.40
36"RCP OUT=376.12

27 TOP=385.33
21"RCP IN=380.22
21"RCP OUT=380.25

28 TOP=384.09
36"RCP IN=375.58
18"RCP IN=375.64
42"RCP OUT=373.08

29 TOP=378.26
48"RCP IN(19)=377.90
48"RCP OUT=367.75

30 TOP=378.67
24"RCP OUT=374.91

SANITARY SEWER ASBUILTS

1 TOP=388.51
4"DIP IN(2)=381.79
8"DIP IN(7)=380.71
8"DIP OUT=380.66

2 TOP=391.02
4"DIP IN(NORTH)=387.01
4"DIP OUT=387.01

3 TOP=381.98
8"DIP IN(1)=376.78
8"DIP IN(4)=376.96
8"DIP OUT=376.68

4 TOP=382.09
8"DIP IN(10)=378.12
8"DIP OUT=377.09 (MAY BE BELLY IN PIPE LEADING TO 3)

5 TOP=381.54
8"DIP IN=374.85
8"DIP OUT=374.59

6 TOP=378.88
8"DIP IN(5)=372.63
8"DIP IN(7)=374.85
8"DIP OUT=374.59

7 TOP=379.45
8"DIP IN(3)=374.85
8"DIP IN(8)=374.85
8"DIP OUT=374.59

8 TOP=380.64
8"DIP IN(9)=373.69
8"DIP OUT=373.67

9 TOP=388.64
8"DIP IN(SOUTH)=382.21
8"DIP IN(WEST)=382.14
8"DIP OUT=381.99

10 TOP=384.38
8"DIP IN(SW)=380.05
8"DIP IN(NE)=380.08
8"DIP OUT=379.94

11 TOP=390.75
6"DIP? IN(NW)=380.05
8"DIP IN(NE)=380.08
8"DIP OUT=379.94

LEGEND

- ELECTRIC GUY POLE
- WATER METER
- OH OVERHANG
- CH CHIMNEY
- WDF WOOD FENCE
- CLF CHAIN LINK FENCE
- RW RETAINING WALL
- EP EDGE OF PAVEMENT
- LIGHT POLE
- HVAC UNIT
- TELEPHONE PEDESTAL
- SATELLITE DISH
- SANITARY MANHOLE
- DRAINAGE MANHOLE
- SIGN
- FIRE HYDRANT
- TRAFFIC SIGNAL POLE
- TRAFFIC CONTROL HANDHOLE
- IPF IRON PIPE FOUND
- IPS IRON PIPE SET
- POWER POLE
- PARKING BLOCK
- GAS VALVE
- CLEAN OUT
- WM WATER METER
- HANDICAPPED RAMP
- GUY WIRE
- G UNDG. GAS
- CATV CABLE TELEVISION
- EOH OVERHEAD ELEC.
- x FENCE
- SIDEWALK
- BUILDING LINE BUILDING LINE DB E-12 PG 398
- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 EX. MINOR CONTOUR
- 380 EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W EX. WATER LINE
- TO BE DEMOLISHED

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EXISTING CONDITIONS PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 2 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 2 - Existing Conditions.dwg PLOT DATE:10/30/2020 10:25:26 AM BY: RAVI SHRESTHA

NOTES

1. SEE SHEET 4 FOR TREE INVENTORY/PRESERVATION SCHEDULE.

LEGEND

○	EXISTING DECIDUOUS TREE
✳	EXISTING CONIFEROUS TREE

SUBMISSION NO.	DATE
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JASON TURNER KACAMBURAS
Lic. No. 0402042416
10/28/2020

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TREE PRESERVATION PLAN

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ.#: 001271
DATE: 10/30/2020
SCALE: 1"=30'

SHEET: 3 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 3-4 - Tree Preservation.dwg PLOT DATE:10/30/2020 10:27:20 AM BY: RAVI SHRESTHA

TREE INVENTORY/PRESERVATION SCHEDULE

TAG #	SPECIES	SIZE	**TRZ	***CONDITION	REMOVE -OR- REMAIN	COMMENTS
		*DBH (IN.)	D (FT.)	%		
1	JAPANESE MAPLE	14	28	40	REMOVE	
2	KOREAN DOGWOOD	2	4	70	REMOVE	
3	RED MAPLE	14	28	75	REMOVE	
4	RED MAPLE	14	28	75	REMOVE	
5	RED MAPLE	14	28	75	REMOVE	
6	JAPANESE MAPLE	6	12	35	REMOVE	
7	JAPANESE MAPLE	6	12	35	REMOVE	
8	KOREAN DOGWOOD	4	8	55	REMOVE	
9	LEYLAND CYPRESS	6	12	60	REMOVE	
10	LEYLAND CYPRESS	6	12	60	REMOVE	
11	LEYLAND CYPRESS	6	12	60	REMOVE	
12	LEYLAND CYPRESS	6	12	60	REMOVE	
13	LEYLAND CYPRESS	6	12	60	REMOVE	
14	LEYLAND CYPRESS	6	12	60	REMOVE	
15	LEYLAND CYPRESS	6	12	60	REMOVE	
16	LEYLAND CYPRESS	6	12	60	REMOVE	
17	LEYLAND CYPRESS	6	12	60	REMOVE	
18	LEYLAND CYPRESS	6	12	60	REMOVE	
19	LEYLAND CYPRESS	6	12	60	REMOVE	
20	LEYLAND CYPRESS	6	12	60	REMOVE	
21	LEYLAND CYPRESS	6	12	60	REMOVE	
22	LEYLAND CYPRESS	6	12	60	REMOVE	
23	LEYLAND CYPRESS	6	12	60	REMOVE	
24	LEYLAND CYPRESS	6	12	60	REMOVE	
25	LEYLAND CYPRESS	6	12	60	REMOVE	
26	EASTERN RED CEDAR	8,6	16	60	REMOVE	
27	EASTERN RED CEDAR	8	16	60	REMOVE	
28	EASTERN RED CEDAR	8	16	60	REMOVE	
29	EASTERN RED CEDAR	6,4	12	60	REMOVE	
30	EASTERN RED CEDAR	6	12	60	REMOVE	
31	BLACK LOCUST	8	16	60	REMOVE	
32	EASTERN RED CEDAR	6,4	12	45	REMOVE	
33	EASTERN RED CEDAR	14	28	65	REMOVE	
34	EASTERN RED CEDAR	4	8	65	REMOVE	
35	EASTERN RED CEDAR	14	28	65	REMOVE	
36	EASTERN RED CEDAR	8,6	16	65	REMOVE	
37	WHITE MULBERRY	12	24	65	REMOVE	
38	LEYLAND CYPRESS	8	16	45	REMOVE	
39	LEYLAND CYPRESS	8	16	45	REMOVE	
40	LEYLAND CYPRESS	8	16	45	REMOVE	
41	LEYLAND CYPRESS	8	16	45	REMOVE	
42	RED MAPLE	4,4	8	65	REMOVE	
43	LEYLAND CYPRESS	12	24	45	REMOVE	
44	LEYLAND CYPRESS	12	24	45	REMOVE	
45	LEYLAND CYPRESS	12	24	45	REMOVE	
46	LEYLAND CYPRESS	12	24	45	REMOVE	
47	LEYLAND CYPRESS	12	24	45	REMOVE	
48	LEYLAND CYPRESS	12	24	45	REMOVE	
49	LEYLAND CYPRESS	12	24	45	REMOVE	
50	LEYLAND CYPRESS	12	24	45	REMOVE	
51	LEYLAND CYPRESS	12	24	45	REMOVE	
52	LEYLAND CYPRESS	12	24	45	REMOVE	
53	LEYLAND CYPRESS	12	24	45	REMOVE	
54	WHITE ASH	38	76	25	**REMAIN**	OFF SITE
55	SASSAFRAS	5,5	10	25	**REMAIN**	OFF SITE
56	WHITE MULBERRY	8	16	75	REMOVE	
57	WHITE MULBERRY	5,4,5	10	75	**REMAIN**	OFF SITE
58	WHITE MULBERRY	5,4,5	10	75	**REMAIN**	OFF SITE
59	RED MAPLE	32	64	65	REMOVE	
60	SILVER MAPLE	23	46	25	**REMAIN**	
61	EASTERN RED CEDAR	15	30	40	REMOVE	
62	CHERRY SPECIES	10	20	75	**REMAIN**	OFF SITE
63	PIN OAK	32	64	75	**REMAIN**	OFF SITE
64	CHERRY SPECIES	10	20	75	**REMAIN**	OFF SITE
65	LEYLAND CYPRESS	16	32	75	**REMAIN**	
66	SILVER MAPLE	42	84	75	REMOVE	
67	NORWAY SPRUCE	20	40	70	REMOVE	
68	WHITE ASH	20	40	25	**REMAIN**	OFF SITE
69	RED MAPLE	12	24	65	**REMAIN**	OFF SITE
70	TULIP TREE	38	76	65	**REMAIN**	OFF SITE
71	BLACK CHERRY	18	36	65	**REMAIN**	OFF SITE
72	RED MAPLE	24	48	65	**REMAIN**	OFF SITE
73	TULIP TREE	26	52	65	**REMAIN**	OFF SITE
74	RED MAPLE	40	80	65	**REMAIN**	
75	WHITE MULBERRY	24	48	65	REMOVE	
76	AMERICAN HOLLY	14	28	65	REMOVE	
77	AMERICAN HOLLY	16	32	65	REMOVE	
78	TULIP TREE	16	32	65	**REMAIN**	OFF SITE
79	TULIP TREE	14	28	65	REMOVE	
80	WHITE MULBERRY	8	16	65	REMOVE	
81	RED MAPLE	24	48	65	REMOVE	
82	EASTERN COTTONWOOD	26	52	65	REMOVE	
83	WHITE MULBERRY	8	16	40	**REMAIN**	
84	RED MAPLE	24	48	80	REMOVE	
85	NORWAY SPRUCE	22	44	65	REMOVE	
86	RED MAPLE	22	44	80	**REMAIN**	
87	HOLLY SPECIES	8,6	16	80	REMOVE	
88	HOLLY SPECIES	8,6	16	80	REMOVE	
89	RED MAPLE	26	52	80	**REMAIN**	
90	BLACK WALNUT	6,6	12	60	REMOVE	
91	RED MAPLE	26	52	60	**REMAIN**	
92	RED MAPLE	26	52	40	**REMAIN**	
93	WHITE MULBERRY	8,6,4	16	40	REMOVE	
94	WHITE ASH	5	10	40	REMOVE	
95	EASTERN WHITE PINE	15	30	50	REMOVE	
96	EASTERN WHITE PINE	10	20	50	REMOVE	
97	EASTERN WHITE PINE	14	28	50	REMOVE	
98	EASTERN WHITE PINE	8	16	25	REMOVE	
99	EASTERN RED CEDAR	4	8	25	REMOVE	
100	RED MAPLE	46	92	75	REMOVE	
601	RED MAPLE	5	10	55	REMOVE	
602	CALLERY PEAR	16	32	30	REMOVE	
603	RED MAPLE	8	16	75	REMOVE	
604	CHERRY SPECIES	5	10	40	REMOVE	
605	AMERICAN HOLLY	5	10	40	REMOVE	
606	BOXELDER	5	10	40	REMOVE	
607	BOXELDER	5	10	40	REMOVE	
608	SILVER MAPLE	48	96	40	REMOVE	
609	SILVER MAPLE	5	10	25	REMOVE	
610	RED MAPLE	30	60	40	REMOVE	
611	FLOWERING DOGWOOD	6	12	50	REMOVE	
612	SILVER MAPLE	44	88	40	REMOVE	
613	SILVER MAPLE	54	108	40	**REMAIN**	
614	SILVER MAPLE	36	72	40	**REMAIN**	OFF SITE
615	SILVER MAPLE	36	72	40	**REMAIN**	OFF SITE
616	SILVER MAPLE	42	84	40	**REMAIN**	
617	SILVER MAPLE	34	68	40	**REMAIN**	OFF SITE
618	RED MAPLE	26,20	52	60	**REMAIN**	OFF SITE
619	RIVER BIRCH	5,4	10	60	**REMAIN**	OFF SITE
620	BOXELDER	6	12	60	**REMAIN**	OFF SITE
621	BOXELDER	6	12	60	**REMAIN**	OFF SITE
622	BOXELDER	6	12	60	**REMAIN**	OFF SITE
623	BLACK CHERRY	8	16	60	**REMAIN**	OFF SITE
624	RED MAPLE	23	46	80	**REMAIN**	OFF SITE
625	COMMON PEAR	8	16	30	REMOVE	
626	NORWAY MAPLE	5	10	30	REMOVE	OFF SITE
627	NORWAY MAPLE	5	10	30	REMOVE	
628	RED MAPLE	38	76	40	REMOVE	
629	WHITE MULBERRY	14	28	40	**REMAIN**	OFF SITE
630	PITCH PINE	24	48	55	**REMAIN**	
631	PIN OAK	30	60	25	REMOVE	
632	EASTERN RED CEDAR	14	28	70	**REMAIN**	OFF SITE
633	EASTERN RED CEDAR	14	28	70	**REMAIN**	OFF SITE
634	BOXELDER	8	16	70	**REMAIN**	OFF SITE
635	RED MAPLE	8	16	70	**REMAIN**	OFF SITE
636	RED MAPLE	18,18	36	70	**REMAIN**	OFF SITE
637	RED MAPLE	8	16	70	**REMAIN**	OFF SITE
638	RED MAPLE	10,4,4	20	70	**REMAIN**	OFF SITE
639	SILVER MAPLE	16,16,16,10,12	32	50	**REMAIN**	OFF SITE
640	BOXELDER	14	28	30	REMOVE	
641	BOXELDER	8	16	30	REMOVE	
642	BLACK WALNUT	18	36	75	REMOVE	
643	RED MAPLE	22,8	44	75	REMOVE	
644	WHITE MULBERRY	6,6	12	50	REMOVE	
645	RED MAPLE	18	36	70	REMOVE	
646	WHITE MULBERRY	10,10	20	70	REMOVE	
647	WHITE MULBERRY	10,10	20	70	REMOVE	
648	EASTERN WHITE PINE	20	40	25	REMOVE	
649	EASTERN WHITE PINE	20	40	25	REMOVE	
650	EASTERN WHITE PINE	22	44	60	REMOVE	
651	EASTERN WHITE PINE	22	44	60	**REMAIN**	
652	EASTERN WHITE PINE	22	44	60	REMOVE	
653	WHITE MULBERRY	6	12	60	REMOVE	
654	RED MAPLE	30	60	60	REMOVE	
655	RED MAPLE	38	76	60	REMOVE	
656	RED MAPLE	22	44	60	REMOVE	
657	BLACK CHERRY	6	12	40	REMOVE	
658	BOXELDER	6	12	40	REMOVE	
659	COMMON PERSIMMON	12	24	40	REMOVE	
660	COMMON PERSIMMON	5	10	70	REMOVE	

INVENTORY DATA COLLECTECTED BY DONALD E. ZIMAR: CERTIFIED ARBORIST MA-0039, RCA #446
**DBH – DIAMETER AT BREAST HEIGHT (MEASURED 4.5 FEET ABOVE GROUND)
**TRZ – TYPICAL ROOT ZONE (1 FOOT OF RADIUS PER INCH OF TREE DIAMETER)
***CONDITION RATINGS PROVIDED AS PERCENTAGES BASED ON METHODS OUTLINED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL, PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE
TRZ FOR TREES WITH MULTIPLE STEMS WERE CALCULATED BASED ON THE DIAMETER OF A TREE WITH THE BASAL AREA EQUIVALENT TO SUM OF THE BASAL AREAS FOR ALL STEMS MEASURED
CABLE – # IS NUMBER OF RECOMMENDED CABLES. FINAL DETERMINATION TO ARBORIST DOING WORK
H– HAND REMOVAL
C – CROWN CLEANING BY PRUNING DEAD, DISEASED, DETACHED, AND BROKEN BRANCHES 2 INCHES IN DIAMETER AND LARGER AS CLOSE TO THE POINT OF ORIGIN POSSIBLE WITHOUT CUTTING INTO BRANCH COLLAR TISSUE

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COMMONWEALTH OF VIRGINIA
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Lic. No. 0402042416
10/29/2020
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TREE PRESERVATION PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
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AUTHOR: ZME
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PROJ.#: 001271
DATE: 10/30/2020
SCALE: NOT TO SCALE

SHEET: 4 OF 26

NOTE: IMPROVEMENTS SHOWN ON PARCEL ID 57-1-14-043 ARE TO BE CONSTRUCTED IN THE FUTURE BY OTHERS.

0 15' 30' 60'
SCALE: 1"=30'

SITE ZONING REQUIREMENTS & TABULATIONS

REQUIREMENTS OF PD-M DISTRICT

AREA: 2 ACRES MINIMUM

RECREATION & OPEN SPACE: 20% REQUIRED

PERIMETER BUFFER: 15' WIDE TRANSITIONAL YARD (TY3)

STREET TREES: MINIMUM 10' WIDE LANDSCAPE STRIP ALONG ALL STREETS

TREE CANOPY: 10% MINIMUM

BUILDING HEIGHT: NONE

PROPOSED TABULATIONS FOR DEVELOPMENT PLAN

SITE AREA:

- COMMERCIAL AREA: 1.148 AC
- RESIDENTIAL AREA W/ R.O.W. VACATION (0.105 AC): 3.590 AC
  - NORTH OF CEDAR: 1.185 AC
  - SOUTH OF CEDAR: 2.405 AC
- TOTAL AREA W/ R.O.W. VACATION: 4.738 AC
- COMMERCIAL FAR: 0.20 = 10,010 SF/(1.148 X 43,560)
- RESIDENTIAL DENSITY: 17.27 DU/AC = 62 DU/3.59 AC
- TOTAL OPEN SPACE PROVIDED: 20.6% (SEE SHEET 9 FOR OPEN SPACE PLAN)

  0.326 AC + 0.066 AC + 0.243 AC + 0.294 AC + 0.045 AC = 0.974 AC
  (0.974 AC/ 4.738 AC) X 100 = 20.6%
- TREE CANOPY: 18.6% – APPROX. 38,495 SQ. FT. (SEE SHEET 7 FOR CANOPY TABULATIONS)
- PERIMETER BUFFER: 15' WIDE TRANSITIONAL YARD (TY3) PROVIDED ALONG BOUNDARIES OF ALL RESIDENTIALLY AND RESIDENTIALLY ZONED PROPERTIES.
- STREET TREES: 10' WIDE LANDSCAPE STRIP PROVIDED WITH 1 CANOPY TREE PER 40 LINEAR FEET ALONG ALL STREET FRONTAGES.
- BUILDING HEIGHTS: (SEE SHEETS 16-24 FOR ARCHITECTURAL BUILDING ELEVATION VIEWS)
  TOWNHOMES: FF ELEV. TO ROOF MIDPOINT= ~38'
  MULTI-FAMILY: FF ELEV. TO ROOF MIDPOINT= ~49'

PARKING TABULATIONS:

PARKING TABULATIONS (PER FAIRFAX CITY ZONING ORDINANCE)				
PARKING TYPE	QUANTITY	REQUIREMENT	REQUIRED	PROVIDED
RESIDENTIAL	62 UNITS (20 MULTI-FAMILY) (42 SINGLE ATTACHED)	2 SPACES/UNIT	124	TOTAL 143 19 SURFACE 104 GARAGE 20 TANDEM
COMMERCIAL	10,010 S.F.	1 SPACE/200 S.F. 1 SPACE/300 S.F.	VARIES BY USE+	TOTAL 44 44 SURFACE SPACES MAXIMUM
		TOTAL	124 +	187
30 ADDITIONAL PARALLEL PARKING SPACES ALONG CEDAR AVENUE				

+ REQUIRED PARKING FOR THE COMMERCIAL COMPONENT TO BE DETERMINED BASED ON THE USE OR MIX OF USES.

PRODUCT TYPES:

RESIDENTIAL PRODUCT TYPES	QUANTITY
TOWN HOME – REAR LOAD 20' WIDE	15
TOWN HOME – REAR LOAD 22' WIDE	14
TOWN HOME – FRONT LOAD 22' WIDE	13
STACKED CONDO – REAR LOAD 24' WIDE (2 DU / BLDG. x 10 BLDG.)	20
TOTAL	62

NOTES

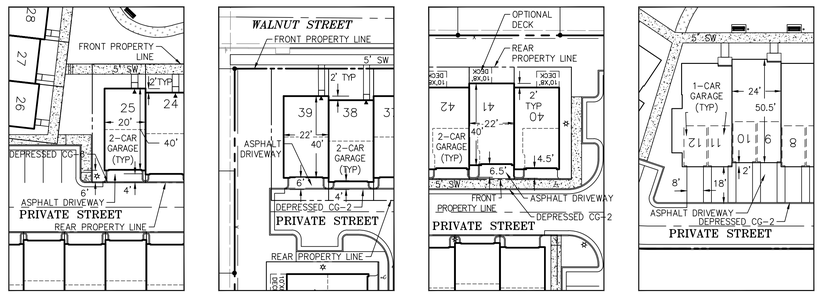
1. BICYCLE PARKING TO BE IN CONFORMANCE WITH SECTION 4.2.8 OF THE ZONING ORDINANCE. (SEE SHEET 10 FOR DETAIL)
2. HANDICAP PARKING TO BE IN CONFORMANCE WITH ADA REGULATIONS AND WILL BE FINALIZED AT THE TIME OF SITE PLAN.
3. SEE KID PLAY AREA DETAIL ON SHEET 10 FOR INFORMATION OF PROPOSED FEATURES.
4. PROPOSED UTILITIES SHOWN ARE PRELIMINARY AND ARE SUBJECT TO REVISIONS DURING THE TIME OF FINAL SITE PLAN.
5. SEE BUILDING SECTION EXHIBIT ON SHEET 26 FOR TRANSITION IN BUILDING HEIGHTS FROM PROPOSED TOWNHOMES (UNITS 40-52) TO THE EXISTING SINGLE-FAMILY HOMES ALONG 2ND STREET.
6. ALL PRIVATE STREETS AND ADJACENT SIDEWALKS SHOWN ON THIS STREET SHALL BE SUBJECT TO A PUBIC ACCESS EASEMENT.
7. ALL PRIVATE STREETS, ACCESSWAYS, TRAILS AND SIDEWALKS SHOWN ON THIS SHEET SHALL BE SUBJECT TO AN EMERGENCY VEHICLE ACCESS EASEMENT.

LEGEND

- EX. SIDEWALK
- PR. SIDEWALK
- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EOH — EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 — EX. MINOR CONTOUR
- 380 — EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W — EX. WATER LINE
- PR. SANITARY SEWER LINE
- PR. STORM SEWER LINE
- W — PR. STORM SEWER LINE
- PR. PLAZA
- PR. TRASH RECEPTACLE
- PR. PEDESTRIAN LIGHT
- PR. STREET LIGHT
- PR. METAL BENCH
- PR. BIKE RACK
- PR. FIRE HYDRANT
- UGD. SWM — PR. UNDERGROUND SWM FACILITY WITH ISOLATOR ROW

TYPICAL DWELLING UNIT CONFIGURATIONS

SCALE: 1" = 30'



NOTE: IN ADDITION TO THE FEATURES SHOWN ON THESE LOT TYPICALS, ARCHITECTURAL AND ORNAMENTAL FEATURES MAY BE PROVIDED PURSUANT TO SECTION 1.5.12.E OF THE ZONING ORDINANCE.

REVISION		
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NO.	DATE	
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COMMONWEALTH OF VIRGINIA
JASON TURNER KACAMBURAS
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10/28/2020

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MASTER DEVELOPMENT PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 5 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 5 - Master Development.dwg PLOT DATE:10/30/2020 10:26:43 AM BY: RAVI SHRESTHA

NOTES

1. THIS IS A PRELIMINARY GRADING & LIMITS OF CLEARING SHOWN ON THIS PLAN IS SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.
2. LOCATIONS AND SIZING OF SWM/BMP FACILITIES SHOWN ARE BASED ON A PRELIMINARY STUDY TO ENSURE COMPLIANCE WITH STATE AND CITY REQUIREMENTS. THE TYPE AND LOCATIONS OF FACILITIES SHOWN IS SUBJECT TO CHANGE WITH FINAL DESIGN.

LEGEND

- EX. SIDEWALK
- PR. SIDEWALK
- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EOH — EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
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- 380 — EX. MAJOR CONTOUR
- 386 — PR. MINOR CONTOUR
- 380 — PR. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W — EX. WATER LINE
- PR. SANITARY SEWER LINE
- PR. STORM SEWER LINE
- W — PR. STORM SEWER LINE
- LOC — LIMITS OF CLEARING

UGD. SWM — PR. UNDERGROUND SWM FACILITY WITH ISOLATOR ROW

STORMWATER MANAGEMENT (SWM) & BEST MANAGEMENT PRACTICE (BMP) NARRATIVE

SWM

WATER QUANTITY FOR THIS PROJECT WILL BE PROVIDED IN ACCORDANCE WITH STATE CODE 9VAC25-870-66-66 QUANTITY AND THE CITY OF FAIRFAX STORMWATER ORDINANCE. THIS BEING A REDEVELOPMENT, THE IMPROVEMENT FACTOR WILL BE UTILIZED TO MEET CHANNEL PROTECTIONS FOR THE 1-YEAR 24 HOUR STORM AND THE POST DEVELOPMENT 10-YEAR 24-HOUR STORM EVENT WILL BE CONFINED TO RELEASE AT A RATE LESS THAN PRE-DEVELOPED CONDITIONS TO MEET FLOOD PROTECTION.

TO MEET THESE WATER QUANTITY REQUIREMENTS, 3 UNDERGROUND DETENTION FACILITIES WILL BE UTILIZED. PRELIMINARY LOCATIONS ARE SHOWN ON THE DEVELOPMENT PLAN.

ADEQUATE OUTFALL

THE EXISTING SITE DISCHARGES CONCENTRATED RUNOFF TO 2 OUTFALL LOCATION:

A. EXISTING OUTFALL A INCLUDES MOSTLY ON-SITE SHEET FLOW FROM PROPERTIES NORTH OF CEDAR AVENUE THAT DRAINS SOUTH WEST FROM FAIRFAX BLV/WALNUT WHERE IT LEAVES THE SITE AND DRAINS SOUTH INTO THE CEDAR DRIVE STORM PIPE DRAINAGE SYSTEM THAT CONVEYS DRAINAGE WEST ALONG PANTHER PLACE THAT ULTIMATELY DISCHARGES IN A 100-YEAR FLOODPLAIN SOUTHWEST OF THE PROJECT SITE.

B. EXISTING OUTFALL B INCLUDES MOSTLY ON-SITE SHEET FLOW FROM THE SUBJECT PROPERTIES SOUTH OF CEDAR AVENUE THAT DRAINS NORTH EAST FROM WALNUT WHERE IT DRAINS INTO THE CEDAR DRIVE STORM PIPE DRAINAGE SYSTEM @ OAK STREET THAT CONVEYS DRAINAGE WEST ALONG PANTHER PLACE THAT ULTIMATELY DISCHARGES IN A 100-YEAR FLOODPLAIN SOUTHWEST OF THE PROJECT SITE.

BMP

THIS PROJECT WILL USE THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) REDEVELOPMENT TO MEET STATE, PART 11B CRITERIA (9VAC25-870-65) AND CITY WATER QUALITY DESIGN CRITERIA. THE PROJECT SITE AREA INCLUDES ALL AREA WITHIN THE PROPOSED LIMITS OF CLEARING AND GRADING. TO MEET WATER QUALITY DESIGN CRITERIA AND PHOSPHORUS REMOVAL REQUIREMENTS, A COMBINATION OF BOTH PROPRIETARY AND NON-PROPRIETARY BMP FACILITIES MAY BE USED. THESE FACILITIES MAY INCLUDE: ISOLATOR ROWS, HYDRODYNAMIC SEPARATORS, FILTERRAS, PERMEABLE PAVEMENT, & BIORETENTIONS. PRELIMINARY LOCATIONS ARE SHOWN ON THE DEVELOPMENT PLAN.

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3	6/7/2019	--
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5	10/30/2020	--

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PRELIMINARY GRADING PLAN AND STORMWATER MANAGEMENT PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 6 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 6 - Preliminary Grading.dwg PLOT DATE:10/30/2020 10:27:53 AM BY: RAVI SHRESTHA

LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – STREET TREES
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – INTERIOR PARKING
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – TRANSITIONAL YARD
- PROPOSED SHRUB – TRANSITIONAL YARD
- PROPOSED UNDERSTORY TREE – ALONG FAIRFAX BOULEVARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – OPEN SPACE PARK
- PROPOSED SHRUB – OPEN SPACE PARK
- EXISTING TREE TO BE PRESERVED

LANDSCAPE TABULATIONS

STREET TREES

REQUIRED: MINIMUM 10 FOOT WIDE LANDSCAPE STRIP ALONG ALL STREETS WITH 1 CANOPY TREE PER 40 LINEAR FEET.

PROPOSED 10 FOOT WIDE LANDSCAPE STRIP AND 1 CANOPY TREE PER 40 LINEAR FEET (LF) ALONG ALL STREETS (FAIRFAX BOULEVARD, WALNUT STREET, CEDAR AVENUE AND OAK STREET), 1,750 LF/40 LF = 44 CANOPY TREES

PROVIDED: 44 TOTAL = 39 PROPOSED CANOPY TREES & 5* EXISTING CANOPY TREES

* 5 OF THE 11 EXISTING TREES TO BE PRESERVED TO BE COUNTED TOWARDS STREET TREE REQUIREMENTS.

PARKING LOT LANDSCAPING – PERIMETER

REQUIRED: PARKING LOTS WITH FRONTAGE ON PUBLIC RIGHT-OF-WAY SHALL BE SCREENED BY A LANDSCAPED HEDGE, A WALL OR FENCE. PARKING LOTS ADJACENT TO RESIDENTIALLY ZONED PROPERTY SHALL PROVIDE A TRANSITIONAL YARD TY3.

PROPOSED PARKING LOTS DO NOT HAVE FRONTAGE ON PUBLIC RIGHT-OF-WAY. A PROJECT BOUNDARY TRANSITIONAL YARD TY3 IS PROVIDED ADJACENT TO ALL RESIDENTIAL ZONED PROPERTIES PER Z.O. SECT. 4.5.5.C.2(b)(2).

PROVIDED: NO LANDSCAPING SHALL BE REQUIRED PER Z.O. SECT. 4.5.7.C.

PARKING LOT LANDSCAPING – INTERIOR

REQUIRED: ON-SITE SURFACE PARKING LOTS WITH MORE THAN 10 SPACES REQUIRES A LANDSCAPED ISLAND WITH 1 CANOPY TREE PER EVERY 10 SPACES.

PROPOSED 63 SURFACE PARKING LOT SPACES = 63/10 = 6 CANOPY TREES

PROVIDED: 10 CANOPY TREES

TRANSITIONAL YARD

REQUIRED: PROJECT BOUNDARY TRANSITIONAL YARD TY3.
WIDTH = 15 FEET
FENCE (LOCATED ON LOT LINE) = 6 FOOT HEIGHT
PLANTINGS (PER 100 LINEAR FEET) = 4 CANOPY TREES/4 UNDERSTORY TREES/4 SHRUBS

LINEAR FEET (LF) ALONG THE EAST AND SOUTH PROPERTY BOUNDARIES ADJACENT TO RESIDENTIALLY AND COMMERCIALLY ZONED PARCELS = 1,033 LF/100 LF = 10.33 X 4 = 42 CANOPY TREES/ 43 UNDERSTORY TREES/ 42 SHRUBS TOTAL.

PROVIDED: PROJECT BOUNDARY TRANSITIONAL YARD TY3.
WIDTH = 15 FEET
FENCE (LOCATED ON LOT LINE) = 6 FOOT HEIGHT
PLANTINGS (TOTAL) = 42 CANOPY TREES/ 43 UNDERSTORY TREES/ 42 SHRUBS

10-YEAR TREE COVER CALCULATIONS

TREE COVER REQUIRED

SITE AREA:	206,475 SF (4.74 AC)
PERCENT OF TREE COVER REQUIRED:	10%
TOTAL AREA OF TREE COVER REQUIRED:	20,648 SF

TREE COVER PROVIDED

TRANSITIONAL YARD:	
42 – 3.5" CALIPER DECIDUOUS CATEGORY IV (250 SF – CANOPY)	10,500 SF
20 – 3.5" CALIPER DECIDUOUS CATEGORY III (150 SF – UNDERSTORY)	3,000 SF
23 – 3.5" CALIPER DECIDUOUS CATEGORY II (100 SF – UNDERSTORY)	2,300 SF
STREET TREES:	
39 – 3.5" CALIPER DECIDUOUS CATEGORY IV (250 SF – CANOPY)	11,000 SF
INTERIOR PARKING:	
10 – 3.5" CALIPER DECIDUOUS CATEGORY II (100 SF – CANOPY)	1,000 SF
EXISTING TREES:	
11 – DECIDUOUS (645 SF – CANOPY)	7,095 SF
OPEN SPACE PARK:	
24 – 3.5" CALIPER DECIDUOUS CATEGORY III (150 SF – UNDERSTORY)	3,600 SF
TOTAL PROPOSED TREE CANOPY:	38,495 SF (18.6%)

NOTES

1. DETAILED LANDSCAPE PLANTINGS, HARDSCAPE DESIGN, & LIGHTING FOR THE PROPOSED OPEN SPACE AREAS SHOW WILL BE PROVIDED AT THE TIME OF THE FINAL SITE PLAN.
2. IN THE EVENT THE EXISTING TREES DO NOT MEET THE CITY TREE COVER REQUIREMENTS ADDITIONAL TREE PLANTINGS WILL BE PROVIDED TO MEET 10-YEAR TREE COVER REQUIREMENTS.
3. PRELIMINARY UTILITIES SHOWN ARE SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.

LEGEND

- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 EX. MINOR CONTOUR
- 380 EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W EX. WATER LINE
- PR. SANITARY SEWER LINE
- PR. STORM SEWER LINE
- W PR. STORM SEWER LINE

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SUBMISSION	
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1	8/6/2018
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5	10/30/2020
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JASON TURNER KACAMBURAS
Lic. No. 0402042416
10/29/2020
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LANDSCAPE PLAN

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 7 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 =Breezeway = 7 = Landscape.dwg PLOT DATE: 10/30/2020 10:29:04 AM BY: RAM SHRESTHA

NOTES

1. PRELIMINARY DRY UTILITIES SHOWN ARE SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.
2. THE UTILITIES FOR THE COMMERCIAL BUILDING ARE SUBJECT TO CHANGE AT THE TIME OF SITE PLAN FOR THE COMMERCIAL COMPONENT.

LEGEND

- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 EX. MINOR CONTOUR
- 380 EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W EX. WATER LINE
- PR. PEDESTAL
- PR. SWITCH
- PR. ELECTRIC TRANSFORMER
- PR. UTILITY HAND HOLE
- PR. ELECTRIC HAND HOLE
- FO PR. FIBER OPTIC
- GAS PR. GAS LINE
- E PR. ELECTRICAL LINE
- PR. SANITARY SEWER LINE
- PR. STORM SEWER LINE
- W PR. STORM SEWER LINE

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DRY UTILITY PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 8 OF 26

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LEGEND

OPEN SPACE GREATER THAN OR EQUAL TO 50 FEET WIDE

OPEN SPACE REQUIREMENT & TABULATIONS

	REQUIRED	PROVIDED
TOTAL SITE AREA (W/ R.O.W. DEDICATION)	–	4.738 AC OR 206,387 SF
TOTAL OPEN SPACE AREA	–	0.974 AC OR 42,427 SF
OPEN SPACE >= 50 FEET WIDE	20%	20.6%

NOTES

1. OPEN SPACE IS REQUIRED PER 3.8.2.G. AS 20 PERCENT OF THE PLANNED DEVELOPMENT. THE QUALIFIED OPEN SPACE SHALL CONFORM TO THE REQUIREMENTS OF 3.8.7.
2. SEE SHEET 15 FOR ILLUSTRATIVE POCKET PARK OPEN SPACE EXHIBIT.
3. THE DESIGN AND LAYOUT OF PEDESTRIAN WALKWAYS WITHIN THE OPEN SPACE ARE PRELIMINARY IN NATURE AND SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.
4. * DENOTES OPEN SPACE AREAS THAT WILL BE SUBJECT TO PUBLIC ACCESS EASEMENTS

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OPEN SPACE PLAN

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 9 OF 26

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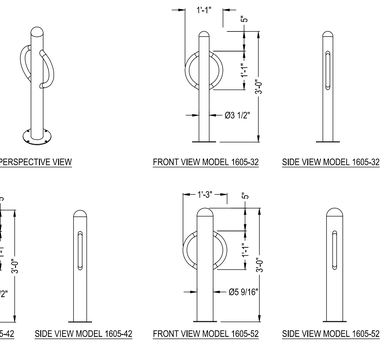
☑ SELECT DESIRED MODEL:

- ☐ MODEL 1605-32
- ☐ MODEL 1605-42
- ☐ MODEL 1605-52



PERSPECTIVE VIEW | FRONT VIEW MODEL 1605-32 | SIDE VIEW MODEL 1605-32
FRONT VIEW MODEL 1605-42 | SIDE VIEW MODEL 1605-42 | FRONT VIEW MODEL 1605-52 | SIDE VIEW MODEL 1605-52

SPECIFICATIONS:
STEEL:
A. STEEL PLATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
B. STEEL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500.
C. STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53.
D. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY'S SPECIFICATIONS FOR THE MATERIALS BEING WELDED.
E. WELDING ELECTRODES SHALL BE E70XX.
FINISH: COMPONENTS SHALL BE COATED WITH POLYESTER TGIC POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATION.

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 01271 -Breezeway - 10 - General Details

BIKE RACKS

BIKE RACKS: MODEL 1605

AURORALIGHT INC.
2742 LOKER AVE. WEST
CARLSBAD, CA 92010
TOLL FREE: 1-877-942-1179
PHONE: (760) 931-2910
FAX: (760) 931-2916
www.auroralight.com

☑ SELECT DESIRED VOLTAGE:
- ☐ [12] 12V
- ☐ [120] 120V

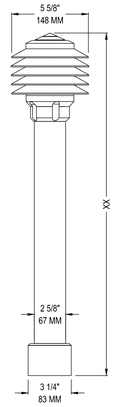
☑ SELECT DESIRED WATTAGE:
- ☐ [12] 12W
- ☐ [15] 15W

☑ SELECT DESIRED LED:
- ☐ [27D] 2700K
- ☐ [30D] 3000K
- ☐ [45D] 4500K
  [D] DIMMABLE

☑ SELECT DESIRED HEIGHT:
- ☐ [26] 26"
- ☐ [32] 32"
- ☐ [XX] SPECIFY (MIN.: 12" MAX.: 48")

☑ SELECT DESIRED AMS MOUNT:
- ☐ [1/2] 1/2" MALE THREAD
- ☐ [G/S] GROUND STAKE
- ☐ [T/R] 12" TRIDENT SPIKE
- ☐ [S/M] SURFACE MOUNT
- ☐ [L/P] LEVELING PEDESTAL
- ☐ [P/M] PEDESTAL MOUNT

☑ SELECT DESIRED FINISH:
- ☐ [NAT] NATURAL
- ☐ [BLP] BRONZE LIVING PATINA
- ☐ [BLP-XD] BLP EXTRA DARK
- ☐ [NI] NICKEL PVD

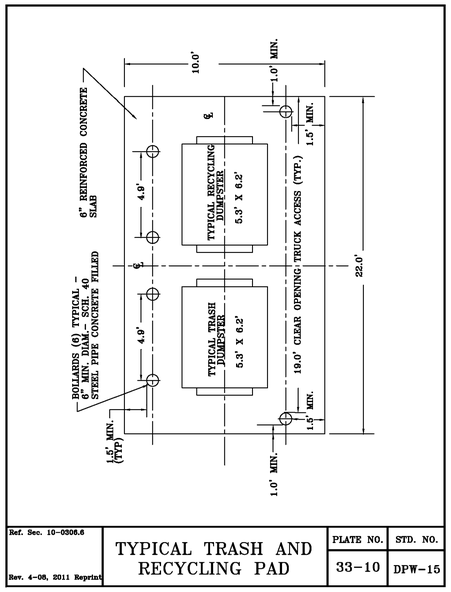


ELEVATION

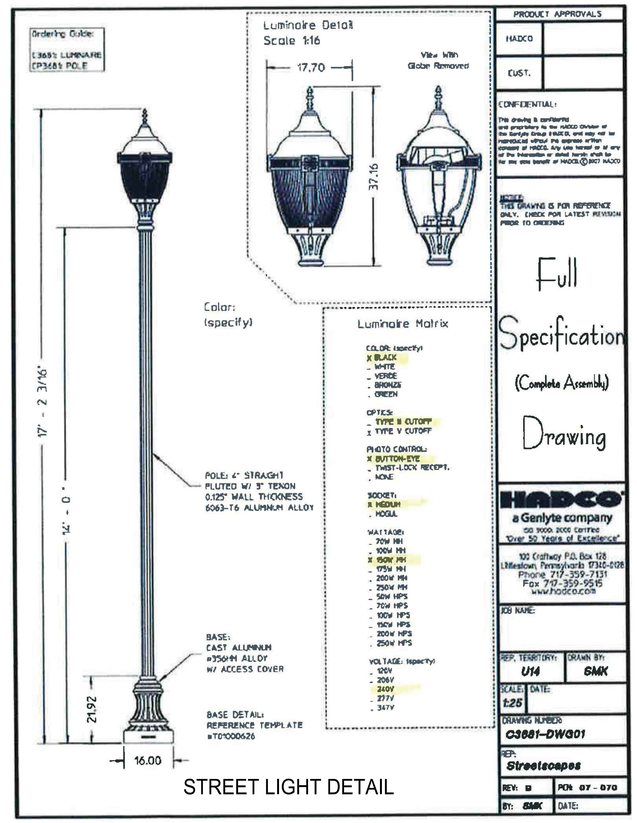
NOTES:
1. SEE MANUFACTURER'S DETAILS FOR MOUNTING OPTIONS.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
6. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4159-055.

PEDESTRIAN LIGHT/BOLLARD

LBD350-C6 BOLLARD



Ref. Sec. 10-0306.6 Rev. 4-08, 2011 Reprint	TYPICAL TRASH AND RECYCLING PAD	PLATE NO. 33-10	STD. NO. DPW-15



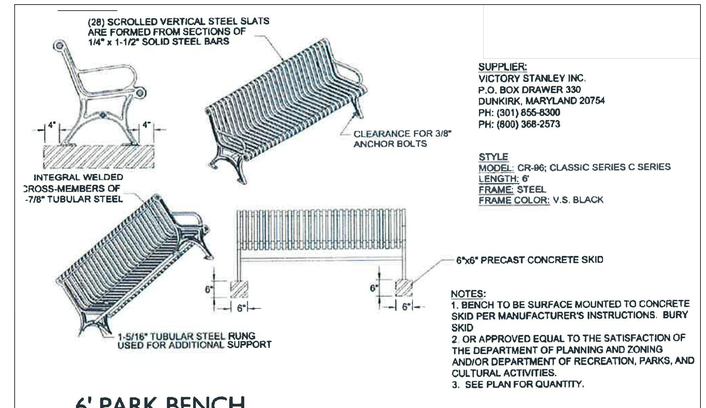
STREET LIGHT DETAIL

LEGEND
A - TIMBER STEPPER 8"
B - TIMBER STEPPER 10"
C - TIMBER STEPPER 16"
D - TIMBER STEPPER 20"
E - TIMBER STEPPER 24"
F - TIMBER STEPPER 30"

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. THIS PLAY AREA & EQUIPMENT IS DESIGNED FOR AGES 5 TO 12 YEARS.
4. IT IS THE MANUFACTURER'S OPINION THAT THIS PLAY AREA DOES CONFORM TO THE A.D.A. ACCESSIBILITY GUIDELINES.
5. THIS CONCEPTUAL PLAN WAS BASED ON INFORMATION AVAILABLE TO US, PRIOR TO CONSTRUCTION. DETAILED SITE INFORMATION, INCLUDING SITE DIMENSIONS, TOPOGRAPHY, EXISTING UTILITIES, SOIL CONDITIONS, AND DRAINAGE SOLUTIONS SHOULD BE OBTAINED, EVALUATED & UTILIZED IN THE FINAL DESIGN.
6. CHOOSE A PROTECTIVE SURFACING MATERIAL THAT HAS A CRITICAL HEIGHT VALUE OF AT LEAST THE HEIGHT OF THE HIGHEST ACCESSIBLE PART/FALL HEIGHT OF THE ADJACENT EQUIPMENT (REFER TO LOCAL SAFETY CODES).

KID PLAY AREA

TIMBER STEPPERS



SUPPLIER:
VICTORY STANLEY INC.
P.O. BOX DRAWER 330
DUNKIRK, MARYLAND 20754
PH: (301) 855-8300
PH: (800) 368-2573

STYLE
MODEL: CR-96; CLASSIC SERIES C SERIES
LENGTH: 6'
FRAME: STEEL
FRAME COLOR: V.S. BLACK

NOTES:
1. BENCH TO BE SURFACE MOUNTED TO CONCRETE SKID PER MANUFACTURER'S INSTRUCTIONS. BURY SKID
2. OR APPROVED EQUAL TO THE SATISFACTION OF THE DEPARTMENT OF PLANNING AND ZONING AND/OR DEPARTMENT OF RECREATION, PARKS, AND CULTURAL ACTIVITIES.
3. SEE PLAN FOR QUANTITY.

6' PARK BENCH

PICTORIAL

SUPPLIER:
VICTORY STANLEY INC.
P.O. BOX DRAWER 330
DUNKIRK, MARYLAND 20754
PH: (301) 855-8300
PH: (800) 368-2573

MODEL:
IRONSITES MODEL NUMBER SD-42 (36 GAL.)
LID: STANDARD TAPERED FORMED LID
FRAME COLOR: BLACK

NOTES:
1. OR APPROVED EQUAL TO THE SATISFACTION OF THE DEPARTMENT OF PLANNING AND ZONING AND/OR DEPARTMENT OF RECREATION, PARKS, AND CULTURAL ACTIVITIES.
2. RECEPTACLE TO BE MOUNTED IN GROUND PER MANUFACTURERS INSTRUCTIONS.
3. SEE PLAN FOR QUANTITY AND LOCATIONS.
4. CUT PAVERS TO FIT AROUND MOUNTING LEG WHEN APPLICABLE.
5. USE TAMPER RESISTANT HARDWARE.
6. RECEPTACLE SHALL INCLUDE DOMED LID.

WASTE RECEPTACLE

PICTORIAL

REVISION

NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
2	9/18/2019	ADDRESS CITY COMMENTS
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SUBMISSION

NO.	DATE
1	8/6/2018
2	4/1/2019
3	6/7/2019
4	9/14/2020
5	10/30/2020
–	–/–/––
–	–/–/––

COMMONWEALTH OF VIRGINIA
JASON TURNER KACAMBURAS
Lic. No. 0402042416
10/29/2020
PROFESSIONAL ENGINEER

CLIENT
PULTE HOME COMPANY, LLC.
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FAIRFAX, VA 22031

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GENERAL DETAILS

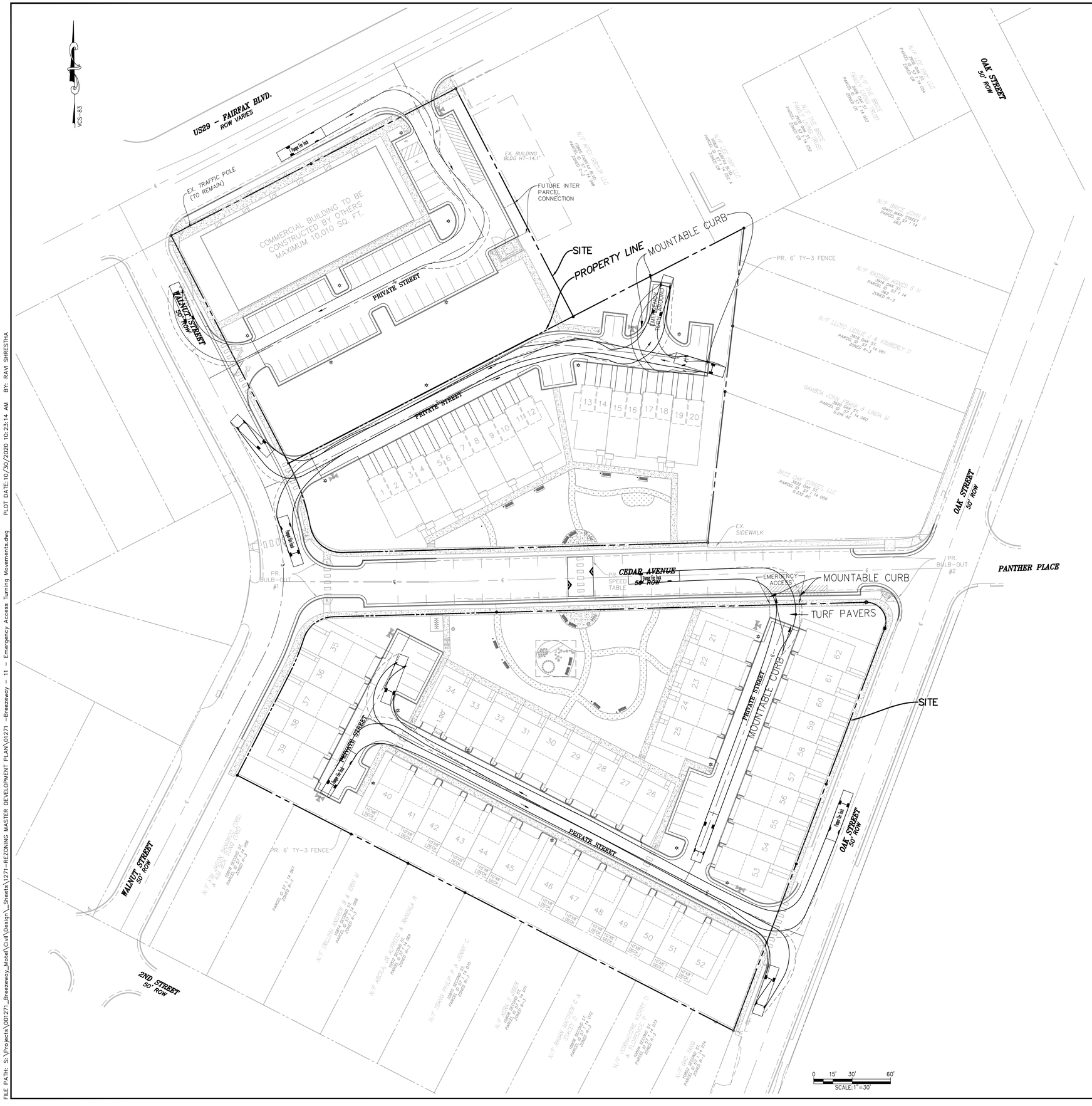
RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ. #: 001271
DATE: 10/30/2020
SCALE: AS SHOWN

SHEET: 10 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 10 - General Details.dwg PLOT DATE:10/30/2020 10:22:57 AM BY: RAVI SHRESTHA



NOTES

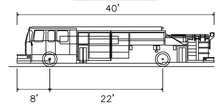
1. THE VEHICLE USED TO PRODUCE THE TURNING MOVEMENTS SHOWN ON THIS SHEET IS THE AASHTO EQUIVALENT DESIGN VEHICLE "INTERCITY BUS (BUS-45)" FOR THE TYPICAL FAIRFAX CITY AERIAL PLATFORM FIRE APPARATUS.

TURNING ANALYSIS - PUMPER FIRE TRUCK

PUMPER FIRE TRUCK INFORMATION

NOT TO SCALE

ELEVATION VIEW



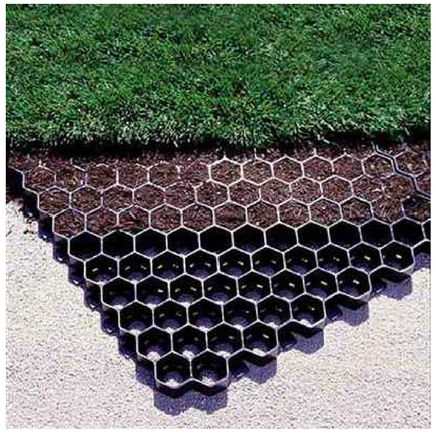
PLAN VIEW

PUMPER FIRE TRUCK	
OVERALL LENGTH	40.000 FEET
OVERALL WIDTH	8.167 FEET
OVERALL BODY HEIGHT	7.745 FEET
MIN BODY GROUND CLEARANCE	0.656 FEET
TRACK WIDTH	8.167 FEET
LOCK-TO-LOCK TIME	5.00 SECONDS
MAX WHEEL ANGLE	45.00°

LEGEND

- EX. SIDEWALK
- PR. SIDEWALK
- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EOH — EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 — EX. MINOR CONTOUR
- 380 — EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W — EX. WATER LINE

TURF PAVER SAMPLE IMAGE:



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5	10/30/2020	

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EMERGENCY ACCESS TURNING MOVEMENTS

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 11 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 11 - Emergency Access Turning Movements.dwg PLOT DATE:10/30/2020 10:23:14 AM BY: RAVI SHRESTHA

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 12 - Pedestrian Movement.dwg PLOT DATE:10/30/2020 10:23:32 AM BY: RAVI SHRESTHA

LEGEND

PATH OF PEDESTRIAN MOVEMENTS

PEDESTRIAN MOVEMENT PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

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10/28/2020

SUBMISSION		REVISION		
NO.	DATE	NO.	DATE	DESCRIPTION
1	8/6/2018	1	6/5/2019	ADDRESS CITY COMMENTS
2	4/1/2019	2	9/18/2019	ADDRESS CITY COMMENTS
3	6/7/2019	-	---/---/----	-
4	9/14/2020	-	---/---/----	-
5	10/30/2020	-	---/---/----	-
-	---/---/----	-	---/---/----	-

AUTHOR: ZNE
CHECK: JTK
PROJ.#: 001271
DATE: 10/30/2020
SCALE: 1"=30'

LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – STREET TREES
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – INTERIOR PARKING
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – TRANSITIONAL YARD
- PROPOSED SHRUB – TRANSITIONAL YARD
- PROPOSED UNDERSTORY TREE – ALONG FAIRFAX BOULEVARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – OPEN SPACE PARK
- PROPOSED SHRUB – OPEN SPACE PARK
- EXISTING TREE TO BE PRESERVED

LEGEND

- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W EX. WATER LINE

REVISION		
NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
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SIGHT DISTANCE PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	1" = 40'

SHEET: 13 OF 26

NOTES

1. LIGHTING LOCATIONS SHOWN ARE SUBJECT TO CHANGE AT TIME OF FINAL SITE PLAN.
2. PHOTOMETRIC PLAN PREPARED BY HADCO LIGHTING.
3. SEE STREET LIGHT DETAIL ON SHEET 2 FOR MORE INFORMATION.

LEGEND

☼ PR. LIGHT POST

REVISION			
NO.	DATE	DESCRIPTION	
1	6/5/2019	ADDRESS CITY COMMENTS	
2	9/18/2019	ADDRESS CITY COMMENTS	
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10/29/2020

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PHOTOMETRIC PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 14 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 14 - Photometric.dwg PLOT DATE:10/30/2020 10:24:09 AM BY: RAVI SHRESTHA

LPDA
LANDSCAPE ARCHITECTURE
LAND PLANNING

BREEZEWAY - PARK AT CEDAR AVENUE

FAIRFAX, VIRGINIA

PARK CONCEPT

OCTOBER 2020

SCALE: 1" = 15'
0 15' 30'
N

REVISION

NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
2	9/18/2019	ADDRESS CITY COMMENTS
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ILLUSTRATIVE CONCEPT FOR POCKET PARK OPEN SPACE AREA

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ. #: 001271
DATE: 10/30/2020
SCALE: AS SHOWN

SHEET: 15 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 15 - Illustrative Open Space Area.dwg PLOT DATE:10/30/2020 10:24:52 AM BY: RAVI SHRESTHA

6-UNIT (2o2) BUILDING STREETSCAPE

PULTE-NORTHEAST (BREEZEWAY)

PulteGroup® DESIGN

DATE: 10/28/2020

REVISION

NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
2	9/18/2019	ADDRESS CITY COMMENTS
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10/28/2020
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ.#: 001271
DATE: 10/30/2020
SCALE:

SHEET: 16 OF 26

RIGHT ELEVATION

LEFT ELEVATION

REAR ELEVATION

6-UNIT (2o2) BUILDING STREETSCAPE

PULTE-NORTHEAST (BREEZEWAY)

PulteGroup® DESIGN

DATE: 10/28/2020

REVISION		
NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
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10/28/2020
PROFESSIONAL ENGINEER

CLIENT
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BLACKSBURG – NEWPORT NEWS
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 17 OF 26

4-UNIT (2o2) BUILDING STREETSCAPE

PULTE-NORTHEAST (BREEZEWAY)

PulteGroup DESIGN

DATE: 10/28/2020

REVISION

NO.	DATE	DESCRIPTION
1	6/5/2019	ADDRESS CITY COMMENTS
2	9/18/2019	ADDRESS CITY COMMENTS
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COMMONWEALTH OF VIRGINIA
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10/28/2020
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 18 OF 26

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design_Sheets\1271-REZONING MASTER DEVELOPMENT PLAN\01271 -Breezeway - 16-25 - Exterior Elevations.dwg PLOT DATE:10/30/2020 10:33:47 AM BY: RAVI SHRESTHA

RIGHT ELEVATION

LEFT ELEVATION

REAR ELEVATION

4-UNIT (2o2) BUILDING STREETSCAPE

PULTE-NORTHEAST (BREEZEWAY)

PulteGroup® DESIGN

DATE: 10/28/2020

REVISION

NO.	DATE	DESCRIPTION
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SUBMISSION NO.	DATE
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4	9/14/2020
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COMMONWEALTH OF VIRGINIA
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 19 OF 26

20'(5-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2463 - FRANKTON)

lot 21 (END CONDITION)
"High Vis"

PulteGroup® DESIGN

DATE: 10/27/2020

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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
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AUTHOR: ZME
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PROJ. #: 001271
DATE: 10/30/2020
SCALE:

22'(9-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2466 - HALSTON)

lot 34 (END CAP OPTION)
"High Vis"

PulteGroup® DESIGN

DATE: 10/27/2020

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LOCATION
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AUTHOR:	ZME
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DATE:	10/30/2020
SCALE:	

SHEET: 21 OF 26

22'(5-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2466 - HALSTON)

Lot 35 (END CONDITION)

"High Vis"

PulteGroup DESIGN

DATE: 10/27/2020

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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
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PROJ.#:	001271
DATE:	10/30/2020
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SHEET: 22 OF 26

22'(6-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2405-GRANTON)

PulteGroup®
DESIGN

DATE: 10/27/2020

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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
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PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 23 OF 26

22'(1-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2465 - GRANTON)

lot 52 (END CONDITION)
"High Vis"

PulteGroup DESIGN

DATE: 10/27/2020

REVISION		
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 24 OF 26

20'(10-UNIT) BUILDING STREETSCAPE

PULTE - NORTHEAST (BREEZEWAY)
(2463 - FRANKTON)

lot 62 (END CONDITION)
"High Vis"

PulteGroup® DESIGN

DATE: 10/27/2020

REVISION

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2	9/18/2019	ADDRESS CITY COMMENTS
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EXTERIOR ELEVATIONS

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR: ZME
CHECK: JTK
PROJ. #: 001271
DATE: 10/30/2020
SCALE:

SHEET: 25 OF 26

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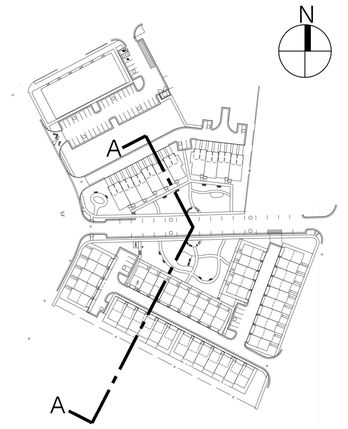
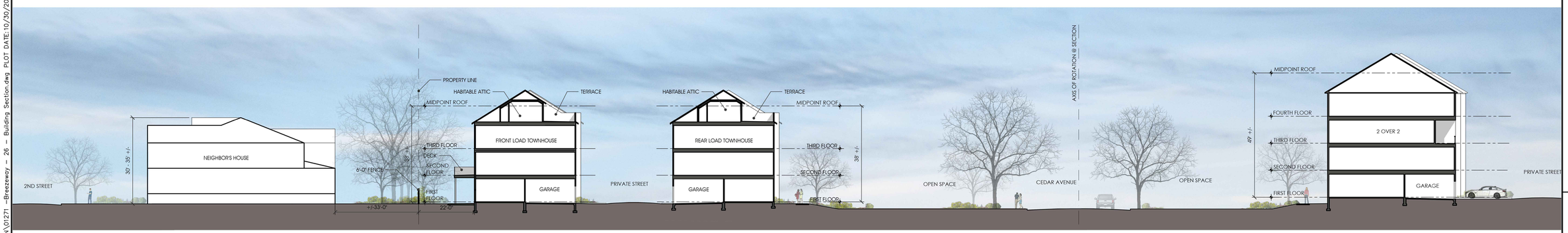
KEY PLAN





8' 0 16' 32'
1/16" = 1'-0"

A

SECTION A-A
1/16"=1'-0"

REVISION		
NO.	DATE	DESCRIPTION
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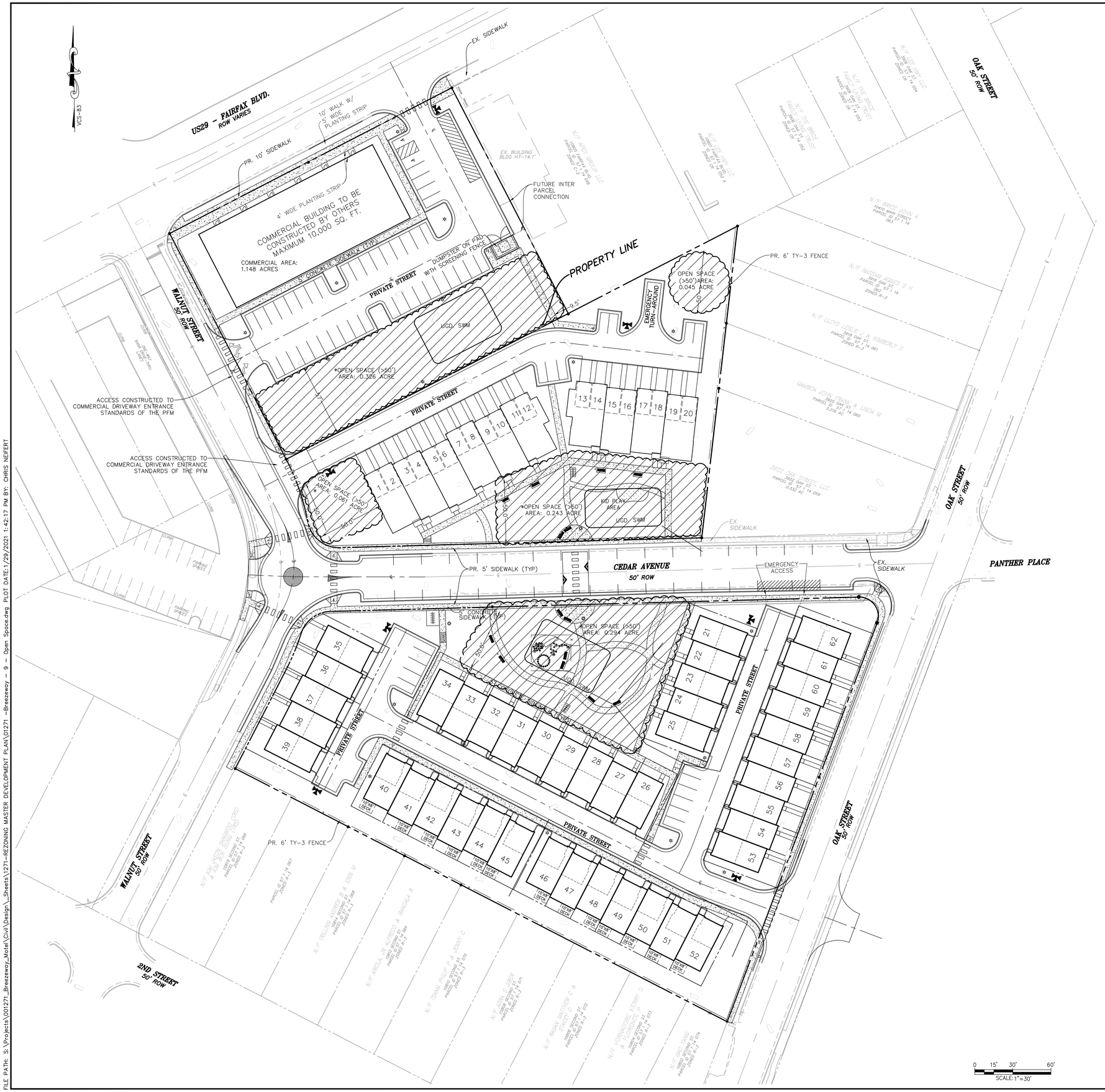
BUILDING SECTION

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ. #:	001271
DATE:	10/30/2020
SCALE:	AS SHOWN

SHEET: 26 OF 26



LEGEND

OPEN SPACE GREATER THAN OR EQUAL TO 50 FEET WIDE

PR. BIKE RACK

OPEN SPACE REQUIREMENT & TABULATIONS

	REQUIRED	PROVIDED
TOTAL SITE AREA (W/ R.O.W. DEDICATION)	–	4.738 AC OR 206,387 SF
TOTAL OPEN SPACE AREA	–	0.974 AC OR 42,427 SF
OPEN SPACE >= 50 FEET WIDE	20%	20.6%

NOTES

1. OPEN SPACE IS REQUIRED PER 3.8.2.G. AS 20 PERCENT OF THE PLANNED DEVELOPMENT. THE QUALIFIED OPEN SPACE SHALL CONFORM TO THE REQUIREMENTS OF 3.8.7.
2. SEE SHEET 15 FOR ILLUSTRATIVE POCKET PARK OPEN SPACE EXHIBIT.
3. THE DESIGN AND LAYOUT OF PEDESTRIAN WALKWAYS WITHIN THE OPEN SPACE ARE PRELIMINARY IN NATURE AND SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.
4. * DENOTES OPEN SPACE AREAS THAT WILL BE SUBJECT TO PUBLIC ACCESS EASEMENTS

REVISION NO.	DATE	DESCRIPTION
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OPEN SPACE PLAN

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	1"=30'

SHEET: 9 OF 27

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LANDSCAPE LEGEND

- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – TRANSITIONAL YARD
- PROPOSED DECIDUOUS TREE CATEGORY IV (250 SF) – STREET TREES
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – INTERIOR PARKING
- PROPOSED DECIDUOUS TREE CATEGORY II (100 SF) – TRANSITIONAL YARD
- PROPOSED SHRUB – TRANSITIONAL YARD
- PROPOSED UNDERSTORY TREE – ALONG FAIRFAX BOULEVARD
- PROPOSED DECIDUOUS TREE CATEGORY III (150 SF) – OPEN SPACE PARK
- PROPOSED SHRUB – OPEN SPACE PARK
- EXISTING TREE TO BE PRESERVED

LANDSCAPE TABULATIONS

STREET TREES

REQUIRED: MINIMUM 10 FOOT WIDE LANDSCAPE STRIP ALONG ALL STREETS WITH 1 CANOPY TREE PER 40 LINEAR FEET.

PROPOSED 10 FOOT WIDE LANDSCAPE STRIP AND 1 CANOPY TREE PER 40 LINEAR FEET (LF) ALONG ALL STREETS (FAIRFAX BOULEVARD, WALNUT STREET, CEDAR AVENUE AND OAK STREET), 1,750 LF/40 LF = 44 CANOPY TREES

PROVIDED: 44 TOTAL = 39 PROPOSED CANOPY TREES & 5* EXISTING CANOPY TREES

* 5 OF THE 11 EXISTING TREES TO BE PRESERVED TO BE COUNTED TOWARDS STREET TREE REQUIREMENTS.

PARKING LOT LANDSCAPING – PERIMETER

REQUIRED: PARKING LOTS WITH FRONTAGE ON PUBLIC RIGHT-OF-WAY SHALL BE SCREENED BY A LANDSCAPED HEDGE, A WALL OR FENCE. PARKING LOTS ADJACENT TO RESIDENTIALLY ZONED PROPERTY SHALL PROVIDE A TRANSITIONAL YARD TY3.

PROPOSED PARKING LOTS DO NOT HAVE FRONTAGE ON PUBLIC RIGHT-OF-WAY. A PROJECT BOUNDARY TRANSITIONAL YARD TY3 IS PROVIDED ADJACENT TO ALL RESIDENTIAL ZONED PROPERTIES PER Z.O. SECT. 4.5.5.C.2(b)(2).

PROVIDED: NO LANDSCAPING SHALL BE REQUIRED PER Z.O. SECT. 4.5.7.C.

PARKING LOT LANDSCAPING – INTERIOR

REQUIRED: ON-SITE SURFACE PARKING LOTS WITH MORE THAN 10 SPACES REQUIRES A LANDSCAPED ISLAND WITH 1 CANOPY TREE PER EVERY 10 SPACES.

PROPOSED 63 SURFACE PARKING LOT SPACES = 63/10 = 6 CANOPY TREES

PROVIDED: 11 CANOPY TREES

TRANSITIONAL YARD

REQUIRED: PROJECT BOUNDARY TRANSITIONAL YARD TY3.
WIDTH = 15 FEET
FENCE (LOCATED ON LOT LINE) = 6 FOOT HEIGHT
PLANTINGS (PER 100 LINEAR FEET) = 4 CANOPY TREES/4 UNDERSTORY TREES/4 SHRUBS

LINEAR FEET (LF) ALONG THE EAST AND SOUTH PROPERTY BOUNDARIES ADJACENT TO RESIDENTIALLY AND COMMERCIALLY ZONED PARCELS = 1,033 LF/100 LF = 10.33 X 4 = 42 CANOPY TREES/ 43 UNDERSTORY TREES/ 42 SHRUBS TOTAL.

PROVIDED: PROJECT BOUNDARY TRANSITIONAL YARD TY3.
WIDTH = 15 FEET
FENCE (LOCATED ON LOT LINE) = 6 FOOT HEIGHT
PLANTINGS (TOTAL) = 42 CANOPY TREES/ 43 UNDERSTORY TREES/ 42 SHRUBS

10-YEAR TREE COVER CALCULATIONS

TREE COVER REQUIRED

SITE AREA:	206,475 SF (4.74 AC)
PERCENT OF TREE COVER REQUIRED:	10%
TOTAL AREA OF TREE COVER REQUIRED:	20,648 SF

TREE COVER PROVIDED

TRANSITIONAL YARD:	
42 – 3.5" CALIPER DECIDUOUS CATEGORY IV (250 SF – CANOPY)	10,500 SF
20 – 3.5" CALIPER DECIDUOUS CATEGORY III (150 SF – UNDERSTORY)	3,000 SF
23 – 3.5" CALIPER DECIDUOUS CATEGORY II (100 SF – UNDERSTORY)	2,300 SF
STREET TREES:	
39 – 3.5" CALIPER DECIDUOUS CATEGORY IV (250 SF – CANOPY)	11,000 SF
INTERIOR PARKING:	
10 – 3.5" CALIPER DECIDUOUS CATEGORY II (100 SF – CANOPY)	1,000 SF
EXISTING TREES:	
11 – DECIDUOUS (645 SF – CANOPY)	7,095 SF
OPEN SPACE PARK:	
24 – 3.5" CALIPER DECIDUOUS CATEGORY III (150 SF – UNDERSTORY)	3,600 SF
TOTAL PROPOSED TREE CANOPY:	38,495 SF (18.6%)

NOTES

1. DETAILED LANDSCAPE PLANTINGS, HARDSCAPE DESIGN, & LIGHTING FOR THE PROPOSED OPEN SPACE AREAS SHOW WILL BE PROVIDED AT THE TIME OF THE FINAL SITE PLAN.
2. IN THE EVENT THE EXISTING TREES DO NOT MEET THE CITY TREE COVER REQUIREMENTS ADDITIONAL TREE PLANTINGS WILL BE PROVIDED TO MEET 10-YEAR TREE COVER REQUIREMENTS.
3. PRELIMINARY UTILITIES SHOWN ARE SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN.

LEGEND

- ROAD CENTERLINE
- ADJACENT PROPERTY LINE
- EX. OVERHEAD ELECTRIC
- EX. CURB
- EX. EDGE OF PAVEMENT
- 386 EX. MINOR CONTOUR
- 380 EX. MAJOR CONTOUR
- PROPERTY BOUNDARY
- EX. SANITARY SEWER LINE
- EX. STORM SEWER LINE
- W EX. WATER LINE
- PR. SANITARY SEWER LINE
- PR. STORM SEWER LINE
- W PR. STORM SEWER LINE

REVISION		
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COMMONWEALTH OF VIRGINIA
JASON TURNER KACAMBURAS
Lic. No. 0402042416
10/29/2021
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LANDSCAPE PLAN

RT. 50 BREEZEWAY
MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:	ZME
CHECK:	JTK
PROJ.#:	001271
DATE:	10/30/2020
SCALE:	

SHEET: 7 OF 27

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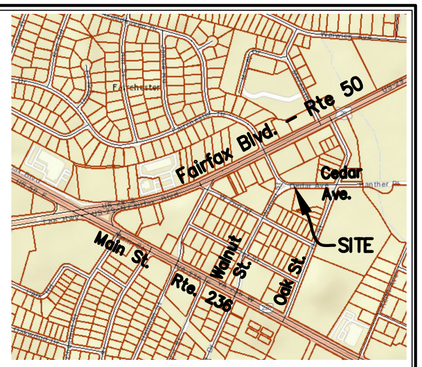
NOTES

1– THE PROPERTY SHOWN HERON IS LOCATED ON TM 057–1.

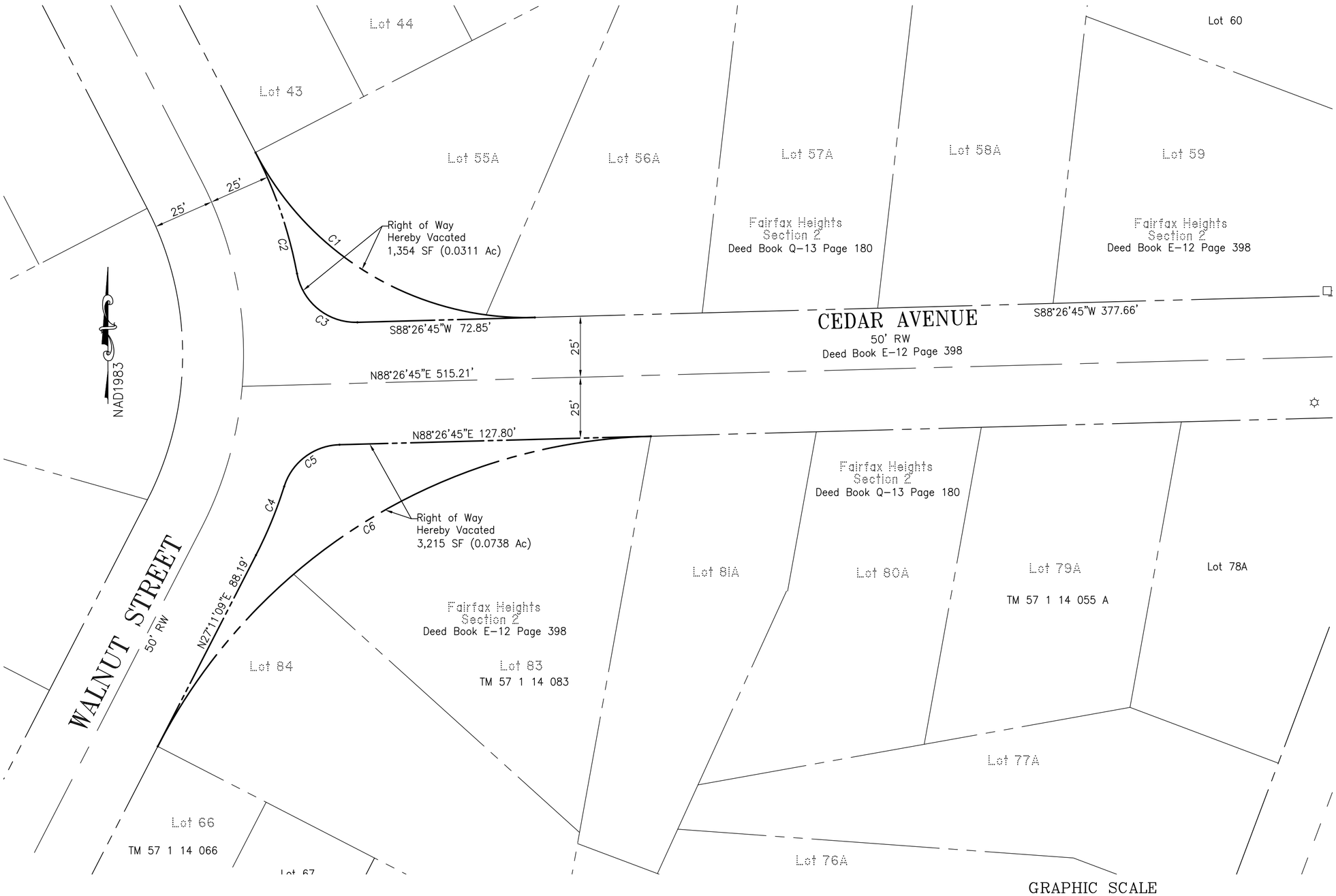
2– THE BOUNDARY INFORMATION SHOWN HEREON IS TAKEN FROM AN ALTA SURVEY PERFORMED BY ATCS, PLC DATED JULY, 2015

CURVE TABLE

CURVE	LENGTH	RADIUS	CHORD BEARING	CHORD	DELTA
C1	140.31'	125.20'	S59°26'09.24"E'	133.13'	064°14'12"
C2	52.66'	180.35'	N18°56'49.82"W'	52.48'	016°43'50"
C3	34.62'	24.50'	S51°04'04.82"E'	31.81'	080°58'20"
C4	30.51'	180.35'	N22°20'22.79"E'	30.47'	009°41'33"
C5	30.34'	24.50'	S52°58'10.66"W'	28.44'	070°57'09"
C6	250.76'	234.69'	S57°50'19.24"W'	239.00'	061°13'08"



VICINITY MAP
SCALE 1"=2000'



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

PLAT SHOWING THE VACATION OF
A PORTION OF
WALNUT STREET & CEDAR AVENUE
Deed Book E–12 Page 398
FAIRFAX CITY

Scale: 1" = 30' OCTOBER 2018

ATCS, P.L.C.
ENGINEERING • PLANNING • SURVEYING
2553 Dulles View Drive, Suite 300
Herndon VA 20171
(703) 430–7500 FAX (703) 430–0889
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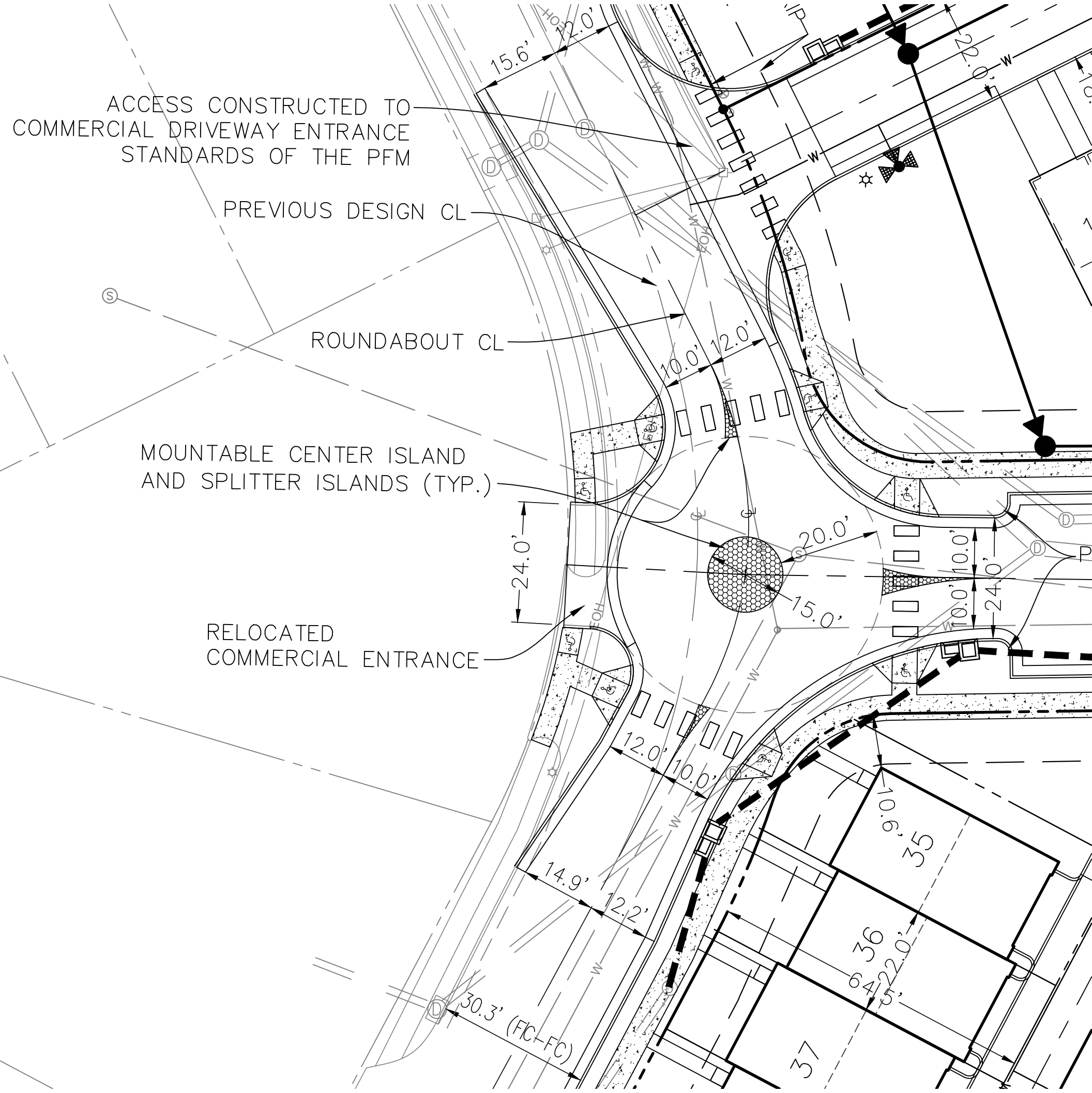
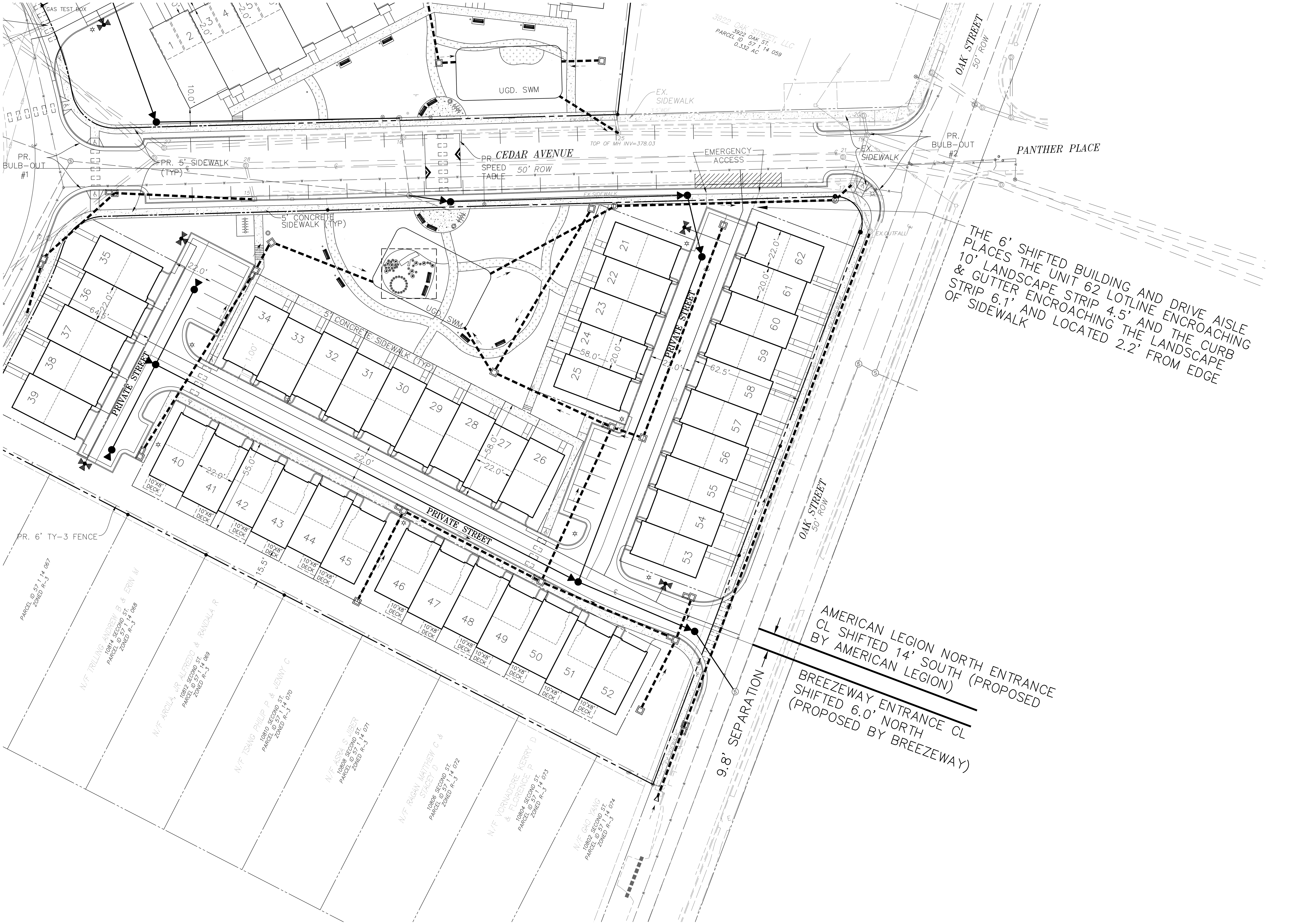

ACCESS CONSTRUCTED TO COMMERCIAL DRIVEWAY ENTRANCE STANDARDS OF THE PFM
PREVIOUS DESIGN CL
ROUNDABOUT CL
MOUNTABLE CENTER ISLAND AND SPLITTER ISLANDS (TYP.)
RELOCATED COMMERCIAL ENTRANCE
15.6'
12.0'
22.0'
10.0'
24.0'
20.0'
15.0'
14.9'
12.2'
30.3' (FC-FC)
10.6'
35
36
64.5'
37
EOH
W
S
D
P



THE 6' SHIFTED BUILDING AND DRIVE AISLE PLACES THE UNIT 62 LOTLINE ENCROACHING 10' LANDSCAPE STRIP 4.5' AND THE CURB & GUTTER ENCROACHING THE LANDSCAPE STRIP 6.1' AND LOCATED 2.2' FROM EDGE OF SIDEWALK
AMERICAN LEGION NORTH ENTRANCE CL SHIFTED 14' SOUTH (PROPOSED BY AMERICAN LEGION)
BREEZEWAY ENTRANCE CL SHIFTED 6.0' NORTH (PROPOSED BY BREEZEWAY)
9.8' SEPARATION
CEDAR AVENUE
50' ROW
OAK STREET
50' ROW
PANTHER PLACE
PR. BULB-OUT #1
PR. BULB-OUT #2
PR. 5' SIDEWALK (TYP)
PR. SPEED TABLE
EMERGENCY ACCESS
EX. SIDEWALK
5' CONCRETE SIDEWALK (TYP)
UGD. SWM
PRIVATE STREET
PR. 6' TY-3 FENCE
GAS TEST BOX
TOP OF MH INV=378.03
3922 OAK ST.
PARCEL ID 57 1 14 059
0.332 AC

FILE PATH: S:\Projects\001271_Breezeway_Motel\Civil\Design\Exhibits\Oak St Entrance Align with Am Legion 2020-12-17\001271-p-base_v5_rev2.6.1_Am_Legion_Entr_Align_2020-12-16.dwg PLOT DATE:12/17/2020 8:20:38 PM BY: CHRIS NEIFERT

SUBMISSION			REVISION		
NO.	DATE		NO.	DATE	DESCRIPTION

CLIENT
PULTE HOME COMPANY LLC
9302 LEE HIGHWAY, SUITE 1000
FAIRFAX, VA 22031

ATCS®
13861 SUNRISE VALLEY DRIVE, SUITE 200
HERNDON, VIRGINIA 20171
(703) 430-7500 FAX (703) 430-0889
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BLACKSBURG - NEWPORT NEWS
RALEIGH - RICHMOND
WWW.ATCSPLC.COM

OAK STREET ENTRANCE ALIGNMENT EXHIBIT

RT. 50 BREEZEWAY MASTER DEVELOPMENT PLAN

LOCATION
FAIRFAX CITY, VIRGINIA

AUTHOR:
CHECK:
PROJ.#: 001271
DATE: 12/17/2020
SCALE: 1"=20'

SHEET: 1 OF 1

Fiscal Impact Estimate - Pulte Breezeway Fairfax Gardens SUMMARY

	Potential Redevelopment LOW	Potential Redevelopment HIGH
RESIDENTIAL REVENUES		
Real Estate Tax	$442,000	$488,000
BPOL (Rental Tax)	$0	$0
Personal Property Tax	$45,000	$55,000
Retail Sales Tax (1%)	$5,000	$7,000
Restaurant Tax (1% + 4%)	$6,000	$8,000
TOTAL	**$498,000**	**$558,000**
RESIDENTIAL EXPENSES		
Education	$209,000	$256,000
Police/Fire	$62,000	$76,000
Misc. Gov't	$96,000	$117,000
TOTAL	**$367,000**	**$449,000**
COMMERCIAL REVENUES		
Real Estate Tax	$49,000	$59,000
BPOL (Rental Tax)	$0	$1,000
Retail Sales Tax (1%)	$20,000	$25,000
Restaurant Tax (4%)	$26,000	$32,000
(Less ⅛ resident spending)	($1,000)	($2,000)
Retail/Restaurant BPOL/BPP	$5,000	$7,000
Office BPOL/BPP	$3,000	$4,000
TOTAL	**$102,000**	**$126,000**
COMMERCIAL EXPENSES		
Police/Fire	$7,000	$8,000
Misc. Gov't	$7,000	$9,000
TOTAL	**$14,000**	**$17,000**
BALANCE	**$134,000**	**$303,000**

Note: All figures rounded.

SUMMARY OF COMMITMENTS

PULTE HOME COMPANY, LLC

ZONING MAP AMENDMENT
Z-18-00539

November 2, 2020

Pursuant to Section 15.2-2303(a) of the *Code of Virginia*, 1950, as amended, and Section 6.4.10 of the Zoning Ordinance of the City of Fairfax, Virginia (the "Zoning Ordinance"), Pulte Home Company, LLC, for itself, the owners, and successors and/or assigns (collectively, "the Applicant") in Z-18-00539 filed on property identified on the City of Fairfax tax map as 57-1-14-055A, 57-1-14-043, 57-1-14-083, 57-1-14-75A, 57-1-14-76A and 57-1-14-77A, and portions of right-of-way to be vacated and/or abandoned (hereinafter collectively referred to as the "Subject Property") hereby commits to the following, provided that the City Council approves a rezoning of the Subject Property from the CR, RMF and RH Districts to the PD-M District in conjunction with a Master Development Plan for the development of up to twenty (20) stacked condominium multifamily dwelling units, and forty-two (42) townhouses. The Master Development Plan also includes a commercial component consisting of a building up to 10,010 square feet, to be constructed by others, that will be occupied by a commercial use(s) to be determined as set forth in these Commitments. In the event this rezoning is denied by the City Council, these commitments shall immediately become null and void.

1. MASTER DEVELOPMENT PLAN. Development of the Subject Property shall be in substantial conformance with the Master Development Plan, prepared by ATCS, PLC consisting of twenty six (26) sheets, dated August 6, 2018, as amended through October 28, 2020 (the "MDP"). Minor modifications to site design and improvements shown on the MDP based on final engineering and design may be permitted, subject to the approval of the Zoning Administrator.

2. PHASING. The Applicant anticipates that the Subject Property will be developed in phases, subject to market conditions, as follows:

   A. Phase One – Construction of 42 townhouses and 20 stacked condominium multifamily dwelling units and associated infrastructure, utilities, stormwater management facilities and open space as identified on the MDP.

   B. Phase Two – Demolition of the Breezeway Motel and associated existing improvements on tax map Parcel 57-1-14-043. The demolition shall be complete and the parcel shall be cleared and graded prior to the issuance of a certificate of occupancy for Phase One.

C. Phase Three – Construction of the future commercial building on tax map Parcel 57-1-14-043 and associated infrastructure, utilities, stormwater management facilities and open space. The commercial component of the proposed development shall be in substantial conformance with the MDP, and will require the processing and approval of a separate Major Certificate of Appropriateness, site plan, building permit and any other necessary applications and/or permits. The submission and processing of these applications and the construction of the commercial component shall be completed by and at the sole cost and expense of others. Notwithstanding the foregoing, the Applicant reserves for itself the rights to review and approve the architectural design of the building and open space associated with Phase Three and the use(s) of the commercial building prior to the submission of any application for the Phase Three improvements.

3. COMMERCIAL USES.

A. The future use(s) of the commercial component in Phase Three will be determined in the future by others. Uses permitted in the commercial component of the development shall include all non-residential uses permitted in the PD-M District as defined in Section 3.8.4 of the Zoning Ordinance, except for the following uses which are specifically excluded:

(1) Auditoriums or Arenas

(2) Cemeteries

(3) Detention Facilities or Jails

(4) Drive-Through Facilities

(5) Adult Uses

(6) Building Supplies and Lumber Sales

(7) Fuel Stations

(8) Funeral Homes

(9) Pawn Shops

(10) Tattoo Parlors

(11) Vehicle Repairs

(12) Vehicle Sales and Leasing

(13) Vehicle Service

(14) Parking, commercial or municipal

4. RIGHT OF WAY VACATION. At time of final site plan approval for Phase One, the Applicant, with the consent of the City of Fairfax, shall vacate and/or abandon approximately 4,569 square feet of existing Cedar Avenue right-of-way as depicted on the "Plat Showing the Vacation of a Portion of Walnut Street & Cedar Avenue" prepared by ATCS, PLC, subject to review and approval of the Director of the City of Fairfax Department of Public Works (the "DPW"). Future improvements of the right-of-way to be vacated and/or abandoned shall be limited to those identified on the MDP, except as may be modified at the time of site plan.

5. INTERSECTION AND CEDAR AVENUE TRAFFIC CALMING IMPROVEMENTS. In coordination with DPW at the time of site plan, the Applicant shall design and reconfigure the intersection of Walnut Street and Cedar Avenue, and shall design and construct traffic calming improvements on Cedar Avenue as shown on the MDP and in accordance with the following:

A. The Applicant shall remove the existing median in the intersection of Cedar Avenue and Walnut Street and shall reconfigure this intersection into a three-legged stop-controlled intersection. The street design on the northeast and southeast quadrants of this intersection shall include a 5-foot wide sidewalk, variable width planting strips, curb and gutter, ADA curb ramps, and curb bump-outs as depicted on the MDP. The Applicant will install a painted crosswalk across Cedar Avenue to align with the curb ramps.

B. The Applicant will construct one (1) tabled mid-block pedestrian crossing on Cedar Avenue as generally shown on the MDP. The design of this mid-block crossing shall be ADA accessible. At the time of site plan the Applicant shall coordinate with DPW on the final design of this crosswalk and any required painting, striping or pavement markings.

C. The street design on the northwest and southwest quadrants of the intersection of Cedar Avenue and Oak Street shall include variable width planting strips, curb and gutter, ADA curb ramps, and curb bump-outs as identified on the MDP. The existing sidewalk in the northwest quadrant of the intersection shall remain, and the Applicant shall install a new 5-foot wide sidewalk in the southwest quadrant as shown on the MDP.

6. FAIRFAX BOULEVARD FRONTAGE IMPROVEMENTS. Prior to the issuance of the occupancy permit for the commercial building, the streetscape improvements along Fairfax Boulevard shall be constructed as shown on the MDP. The streetscape improvements will be installed by others in conjunction with the Phase Three improvements. The Fairfax Boulevard streetscape improvements shall include a five (5) foot wide landscape strip, and a ten (10) foot wide sidewalk or multi-use trail. These

streetscape improvements shall coordinate with and tie into the existing streetscape on the adjacent parcel to the east to the extent feasible.

7. UTILITIES. All new on-site utilities constructed with each phase of development will be located underground. All existing overhead utilities on the Subject Property will be either removed or relocated underground with each phase of development.

8. UMBRELLA OWNERS ASSOCIATION. The Applicant shall form an umbrella owners association (UOA) for the residential component of the Subject Property constructed in Phase One. The Applicant may also, at its discretion, establish individual homeowners association(s) or condominium association(s) (collectively, the "HOA") for the stacked condominium units and/or the townhouses on the Subject Property. The UOA shall be organized and governed in accordance with Virginia law. The members of the UOA shall be the HOAs established for the stacked condominiums and/or the townhouses. Maintenance obligations shall be assigned and/or allocated between the UOA and/or the HOAs in accordance with applicable shared maintenance/cross easement agreements. Maintenance obligations include, but are not limited to, private streets, sidewalks, fencing, open space, landscaping, snow removal, and on-site stormwater management facilities. The Applicant shall notify all prospective purchasers of the units, in writing, and prior to entry into a contract of sale, of the maintenance responsibilities and restrictions of the UOA and the HOA.

9. PRIVATE STREETS. The Applicant shall record among the land records a public ingress/egress easement, in a form as approved by the City attorney, over all private streets and adjacent sidewalks. The UOA and/or the HOAs established for the development shall be responsible for the maintenance of the private streets, sidewalks, and associated streetscape elements.

10. EMERGENCY ACCESS. Concurrent with each record plat approval for each phase of development, the Applicant and the developer of the commercial component in Phase Three, as applicable, shall record among the land records an emergency vehicle access easement to the benefit of the City in a form acceptable to the City attorney over all private streets, parking areas, trails, sidewalks and open space areas located in each phase as shown on the MDP.

11. LANDSCAPING AND SCREENING. The following commitments apply only to the landscaping and screening associated with the residential component in Phase One, unless otherwise specified. The landscaping associated with the commercial component in Phase Three will be determined and constructed by and at the sole cost and expense of others in conjunction with the future Certificate of Appropriateness and site plan for Phase Three.

   A. Landscaping on the Subject Property shall be in general conformance with the landscaping shown on the MDP, and consistent with the Certificate of Appropriateness. Notwithstanding what is shown on the MDP or the Certificate of

Appropriateness, final selection of landscape materials and may be modified at the time of site plan as approved by the Director of Community Development and Planning.

B. The Applicant and the developer of the commercial component in Phase Three shall screen any mechanical equipment at grade or located on a roof that is visible from the public right-of-way. Any mechanical equipment that is not visible from the public right-of-way shall not require screening.

C. The UOA and or the HOAs will be responsible for the maintenance of all proposed landscaping and all existing vegetation to be preserved as shown on the MDP.

D. Prior to issuance of a certificate of occupancy, the Applicant shall record among the land records sight distance easements in a form approved by the City attorney providing the City with the right to enter the Subject Property and trim, prune or otherwise maintain landscaping located within sight distance triangles at intersections shown on the MDP to maintain sight distance.

E. The open space areas shown on the MDP will include a combination of landscaping and hardscape, as generally shown on the MDP, and as further described in the Certificate of Appropriateness. Final selection of materials and design shall be made at the time of site plan.

F. The Applicant shall use native species and native cultivars to the greatest extent feasible and non-invasive species for landscaping on the Subject Property. Plant lists identifying selected species will be submitted at the time of site plan and be consistent with the Certificate of Appropriateness.

12. TREE PRESERVATION. Tree preservation measures will be utilized for the trees that are identified on the MDP as being preserved. These measures may include, but are not limited to, the following: root pruning, crown pruning, mulching, and watering. In addition, the Applicant shall install the appropriate tree protection devices, such as tree protection fencing, based on site conditions and proposed construction activities.

13. OPEN SPACE. Prior to or concurrent with record plat approval, the Applicant will convey to the UOA and/or the HOA the open space areas as identified on the MDP. The conveyance shall ensure permanent protection of the open space and the deed shall be in a form as approved by the City Attorney and recorded among the land records. The open space areas identified on the MDP shall be subject to a public access easement, however, the Applicant, the UOA and/or the HOAs reserve the right to subject the open space areas to reasonable rules and regulations. All open space in Phase One identified on the MDP shall be maintained by the Applicant until such time as conveyed to the UOA and/or the HOA. All open space in Phase Three identified on the MDP shall be maintained by the Applicant until such time as conveyed to the developer of the commercial component. Future residents of the residential component in Phase One

shall have access to the Phase Three open space in both its interim and ultimate conditions both prior to and subsequent to development of the commercial component.

14. AFFORDABLE HOUSING. The Applicant shall make a monetary contribution to the City's Affordable Housing Trust Fund in the amount of two hundred thousand dollars ($200,000.00) prior to the issuance of the first occupancy permit in the development.

15. UNIVERSAL DESIGN. All units on the Subject Property shall be designed and constructed with a selection of universal design features and options as determined by the Applicant and at the sole cost of the purchaser. Said universal design features and options may include, but are not be limited to, seat in master bath shower where possible, emphasis on lighting in stairs and entrances, lever door handles, slip resistant flooring, and front loading washers and dryers.

16. TRASH COLLECTION.

A. Commercial Building. Trash and recycling receptacles for the commercial use(s) shall be located either within the building or in the enclosed dumpster area identified on the MDP and will not be visible from the public right-of-way.

B. Townhouses and Stacked Condominiums. Trash and recycling receptacles shall be located within the individual parking garages for the townhouses and stacked condominium units and will not be visible from the public right of way. Such receptacles will be moved outdoors for collection on scheduled trash or recycling days.

17. STORMWATER MANAGEMENT. Design and construction of stormwater management facilities shall comply with Virginia Stormwater Management Program (VSMP) Permit Regulations, as may be amended, or other relevant standard in place at the time of the applicable site plan submission.

18. CONSTRUCTION MANAGEMENT PLAN.

A. Prior to site plan approval for each phase of development, the Applicant for Phases One and Two and the future developer of the commercial component for Phase Three, as applicable, will submit a construction management plan for approval by the Director of the Department of Public Works (DPW) or designee for phasing and construction which will include the following information:

(1) Hours of operation;

(2) Truck routes to and from entrances;

(3) Location of parking areas for construction employees;

(4) Truck staging and cleaning areas;

(5) Storage areas;

(6) Temporary fencing as needed to screen on-site staging areas;

(7) Trailer and sanitary facility locations;

(8) Traffic control measures; and

(9) Maintenance of entrances.

B. Prior to commencement of construction, the Applicant for Phases One and Two and the future developer of the commercial component for Phase Three, shall provide the Department of Community Development and Planning with the name and telephone number of a community liaison who will be available throughout the duration of construction on the Subject Property.

C. Prior to site plan approval, the Applicant for Phases One and Two and the future developer of the commercial component for Phase Three, shall provide a plan to DPW for temporary pedestrian and vehicular circulation during construction. This plan shall identify temporary sidewalks and any other features necessary to ensure safe pedestrian and vehicular travel around the Subject Property during construction.

D. Outdoor construction activity shall be limited to the hours of 7:00 A.M. to 6:00 P.M., weekdays and 8:30 A.M. to 5:00 P.M., Saturdays. No construction activity shall take place on Sundays.

19. PARKING.

A. As shown on the MDP, the Applicant shall provide parking spaces on the Subject Property as follows.

(1) Each townhouse shall include a two-car garage. Contract purchasers of townhouses shall be notified in writing prior to, or as a part of, entering a contract of sale of the restrictions in Commitment 20.

(2) Each stacked condominium unit shall include a one (1) car garage and one (1) tandem driveway space. Contract purchasers of stacked condominium units shall be notified in writing prior to, or as part of, entering a contract of sale of the restrictions in Commitment 20.

(3) A maximum of forty-four (44) surface parking spaces shall be provided for the commercial component of the development in Phase Three. The use(s) of the commercial building is subject to compliance with the parking

requirements of the Zoning Ordinance, in addition to the use limitations set forth in Commitment 3.

(4) In addition to the above parking spaces, a minimum of nineteen (19) surface parking spaces shall be constructed throughout the residential component of development. These spaces are exclusive of any on-street parking spaces to be constructed on Cedar Avenue. Notwithstanding the number of on-street Cedar Avenue parking spaces shown on the MDP, the number of parking spaces to be constructed on Cedar Avenue is subject to change at the time of site plan in coordination with the DPW on the final design of Cedar Avenue and associated improvements.

20. BICYCLE RACKS. The Applicant shall install bicycle racks on the Subject Property, as generally depicted on the MDP, to provide storage for a minimum of ten (10) bicycles in accordance with Zoning Ordinance requirements. Notwithstanding the locations indicated on the MDP, the final locations of the bicycle racks may be adjusted at the time of site plan.

21. RESTRICTIVE COVENANTS. Restrictive covenants for the Subject Property shall be included in the UOA and/or HOA documents, as applicable, and shall include, but not be limited to, the following:

A. Conversion of townhouse or stacked condominium garages that will preclude the parking of vehicles and the storage of trash and recycling containers within the garage will be prohibited. This shall not preclude the use of said garages as sales offices in model homes during marketing of the development, with the understanding the sales offices will be converted back to garages upon sale of the models.

B. Prohibition of the outside storage or parking of recreational vehicles on the Subject Property.

22. SUCCESSORS AND ASSIGNS. These commitments shall bind and inure to the benefit of the Applicant and its successors and assigns.

WELLS + ASSOCIATES

BREEZEWAY PROPERTY TRAFFIC IMPACT STUDY

CITY OF FAIRFAX, VIRGINIA

1st Submission: **August 8, 2019**

2nd Submission: **August 25, 2020**

Revised: ***October 26, 2020***

BREEZEWAY PROPERTY

Transportation Impact Study

1st Submission: August 8, 2019

2nd Submission: August 25, 2020

Revised: October 26, 2020

Prepared by:

Wells + Associates

William Zeid

703/917-6620

www.WellsAndAssociates.com

BREEZEWAY PROPERTY
TRAFFIC IMPACT STUDY
CITY OF FAIRFAX, VIRGINIA

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CITY OF FAIRFAX, VIRGINIA

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APPENDIX TITLE

SECTION 1
INTRODUCTION

This report presents the results of a revised traffic impact study conducted in support of the proposed redevelopment of a site in the City of Fairfax currently developed with the 50-room Breezeway Motel, the 38-unit Fairfax Garden Apartments, and four (4) single family homes and presents an evaluation of the existing and future transportation network.

This study was conducted in accordance with a scoping agreement developed with City of Fairfax staff. The study scope was determined with City staff based on a review of key study intersections and roadways that would potentially be affected by the implementation of the proposed redevelopment and the number of new trips expected to be generated. **This study revision includes updating the proposed development plan to include up to 10,010 SF of commercial space and 62 residential dwelling units. Also included in this update is an additional analysis of future conditions that include the redevelopment of the adjacent American Legion (Toll Brothers) property on the east side of Oak Street (current redevelopment application not yet approved).**

The subject site is located south of Fairfax Boulevard, east of Walnut Street and west of Oak Street, in the City of Fairfax, Virginia, as shown on Figure 1-1.

The site consists of six (6) land parcels within the City of Fairfax. These parcels include:

Property ID	Address	Acreage
57-1-14-043	10829 Fairfax Blvd.	1.15 acres
57-1-14-055A	10807 - 10818 Cedar Ave	2.08 acres
57-1-14-083	3937 Walnut Street	0.56 acres
57-1-14-075A	3934 Oak Street	0.34 acres
57-1-14-076A	3932 Oak Street	0.25 acres
57-1-14-077A	3930 Oak Street	0.25 acres
	Total	4.63 acres

The applicant, Pulte Home Company, LLC. plans to develop 62 residential townhomes and up to 10,010 SF of commercial space. The site plan is shown on Figure 1-2.

According to the 24VAC30-155 (“Chapter 870”) regulations, all development proposals which meet certain specific trip generation thresholds are subject to the regulations as outlined in the Virginia Department of Transportation’s (VDOT) Traffic Impact Analysis Regulations Administrative Guidelines (“Administrative Guidelines”). In January 2012, an amendment to the Administrative Guidelines took effect, which determined a development proposal is considered to substantially impact the transportation network if it generates 5,000 or more net new daily vehicle trips located on, or within 3,000 feet of, a VDOT maintained roadway. Based on the trips anticipated to be generated by the subject development, the development would not require a VDOT Chapter 870 compliant traffic study.

Although a traffic impact analysis is not required per 24VAC30-155, the City of Fairfax has requested the submission of a traffic study in conjunction with this development application.

This traffic study was completed in accordance with the City of Fairfax policies and guidelines and is intended to address the following issues:

1. Estimation of the net new vehicle trip ends generated by the planned land uses during the AM and PM commuter peak hours and during the PM school peak hour.
2. Determination of the effects of the proposed development on the surrounding local roadway network.
3. Identification of potential road and/or operational improvements necessary to accommodate the project.

Based on the traffic study scoping form provided in Appendix A, tasks undertaken to prepare this study included the following:

1. A review of the applicant's conceptual plans for the subject site.
2. A field review of the subject site in order to determine existing roadway and intersection geometrics and traffic controls, access opportunities and/or constraints, and general traffic conditions.
3. Peak hour turning movement counts obtained at the following study intersections:
   - Fairfax Boulevard/Fairchester Drive, Walnut Street
   - Fairfax Boulevard/Meredith Drive/Oak Street
   - Walnut Street/Cedar Avenue
   - Oak Street/Cedar Avenue
   - Walnut Street/2nd Street
   - Oak Street/2nd Street
4. Calculation of existing AM and PM commuter peak hour intersection levels of service at the study intersections.
5. Identification of the number of net new peak hour trips that would be generated by the proposed mixed-use development less trips currently generated by the existing land uses based on standard Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition equations and weighted average rates.
6. Determination of future background traffic forecasts based on regional traffic growth and estimates of traffic that would be generated by other approved/planned developments in the site vicinity.
7. Calculation of future levels of service with and without the proposed development at the key study intersections for a proposed build-out year of 2024.

Sources of data for this analysis include traffic counts conducted by Wells + Associates Inc., information obtained from the City of Fairfax, the Institute of Transportation Engineers (ITE), VDOT, the Highway Capacity Manual 2000 (Synchro software, version 10), Pulte Home Company, LLC., and the files and library of Wells + Associates.

Conclusions

Based on the results of this traffic impact study, the following may be concluded:

1. The Fairfax Boulevard/Oak Street – Meredith Drive and Fairfax Boulevard/Walnut Street – Fairchester Drive signalized intersections currently operate at an overall LOS "C" or better during the AM and PM commuter peak periods based on Highway Capacity Manual calculations using the Synchro 10 traffic analysis software. Side street approaches at these intersections currently operate at LOS "E" or "F" during the peak periods due to long cycle lengths and the assignment of most of the green time to the Fairfax Boulevard Approaches.

2. Historic VDOT traffic data indicates that average daily traffic counts along Fairfax Boulevard have increased by approximately 0.55% per year between 2013 and 2018.

3. The Novus Fairfax Gateway and Paul VI Redevelopment approved pipeline developments are anticipated to generate 543 AM commuter peak hour trips, 912 PM commuter peak hour trips at full buildout.

4. Under future 2024 traffic conditions minimal increases in delay at the study intersections are expected due to the trips generated by approved pipeline developments in the vicinity of the site and overall levels of service would remain generally consistent with existing conditions.

5. The site is currently developed with the 50-room Breezeway Motel, the 38-unit Fairfax Garden Apartments, and four (4) single family homes.

6. The Applicant proposes to redevelop the site with 62 residential townhouse units and up to 10,010 SF of commercial uses.

7. The project is estimated to generate 40 AM peak commuter hour trips and 140 PM peak commuter hour trips upon buildout.

8. Under future 2024 traffic conditions, with the development of the subject site, intersection levels of service would remain generally consistent with existing and background conditions. The analyses show that the Fairfax Boulevard signalized intersections will continue to operate at LOS "C" or better during the AM and PM commuter peak periods.

9. All unsignalized intersection and access drive approaches will operate at LOS "B" or better during each of the studied peak periods.

10. Access to the commercial portion of the site will be via one full access driveway along Fairfax Boulevard and one right-in/right-out/left-out driveway on Walnut Street. Access to the northern residential portion of the site will be provided via one full access driveway along Walnut Street. Access to the southern residential portion of the site will be provided via one full access driveway along Oak Street.

11. The Applicant intends to improve the roadway geometrics at the Walnut Street/Cedar Avenue intersection by reconstructing the intersection to provide a typical four-legged stop sign controlled intersection in order to enhance vehicular, pedestrian and bicycle safety by reducing crossing widths and providing conventional design features recognized by the average motorist.

12. The Applicant intends to consolidate these access drives along Fairfax Boulevard from two locations currently serving the Breezeway Motel to a single location providing enhanced access management along this arterial roadway.

13. An alternative analysis has been added in this revision of the study to include the added impact of the potential redevelopment of the American Legion (Toll Brothers) site on the east side of Oak Street per the current development proposal for that site. Since the application for that redevelopment is not currently approved, this additional assessment is provided for informational purposes. The results indicate that both background and total future conditions would be generally consistent with those presented in this study that do not include the American Legion (Toll Brothers) redevelopment. This is primarily due to the relatively low increase in site traffic that would result from that redevelopment and the excess capacity along Oak Street that can adequately accommodate the additional traffic. Additional details regarding this additional alternative analysis are presented in Appendix F.

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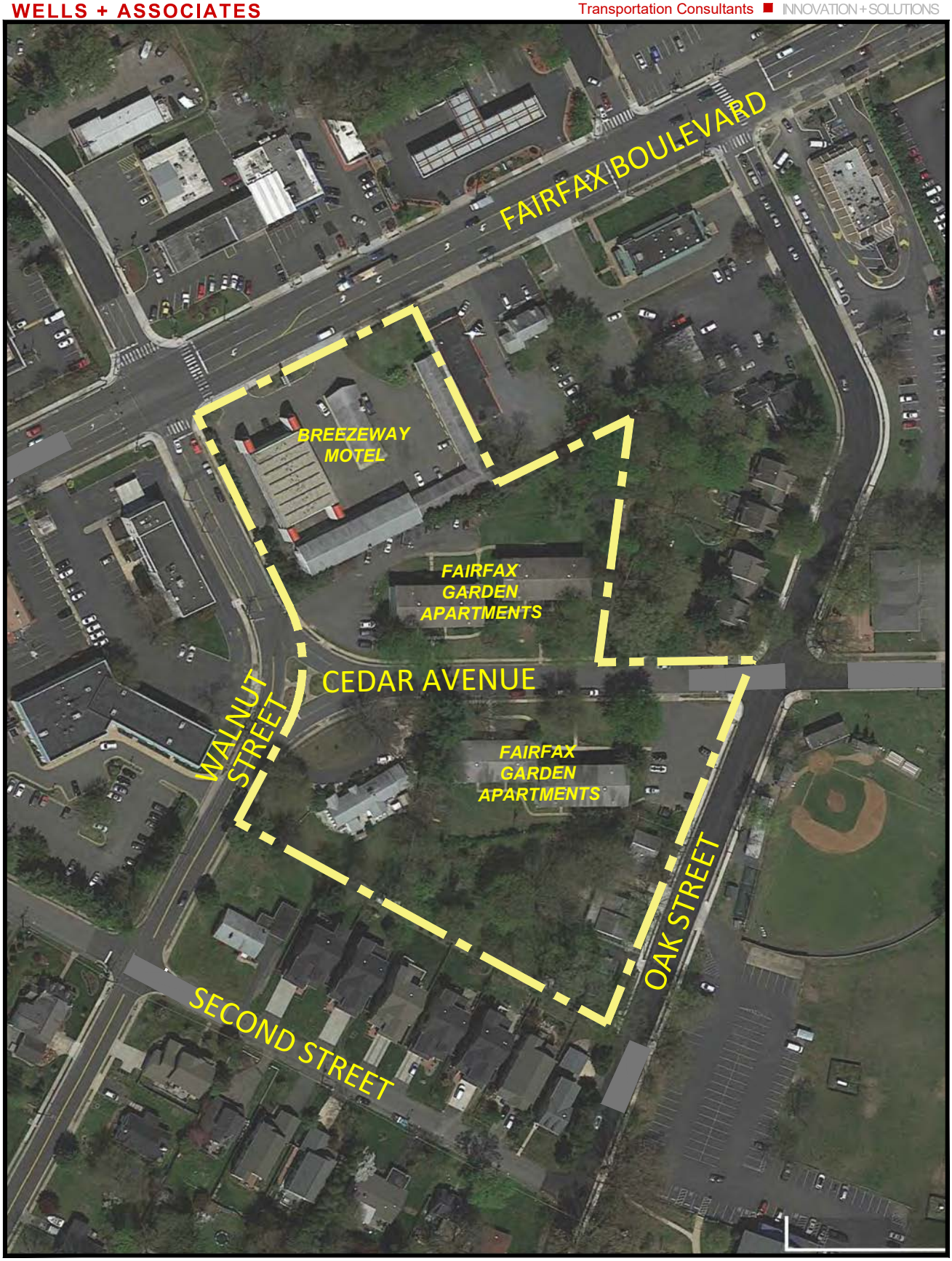

Figure 1-1
Site Location
PulteGroup, Inc.
Breezeway Property
City of Fairfax, Virginia

(X) - Study Intersection

NORTH

JJA

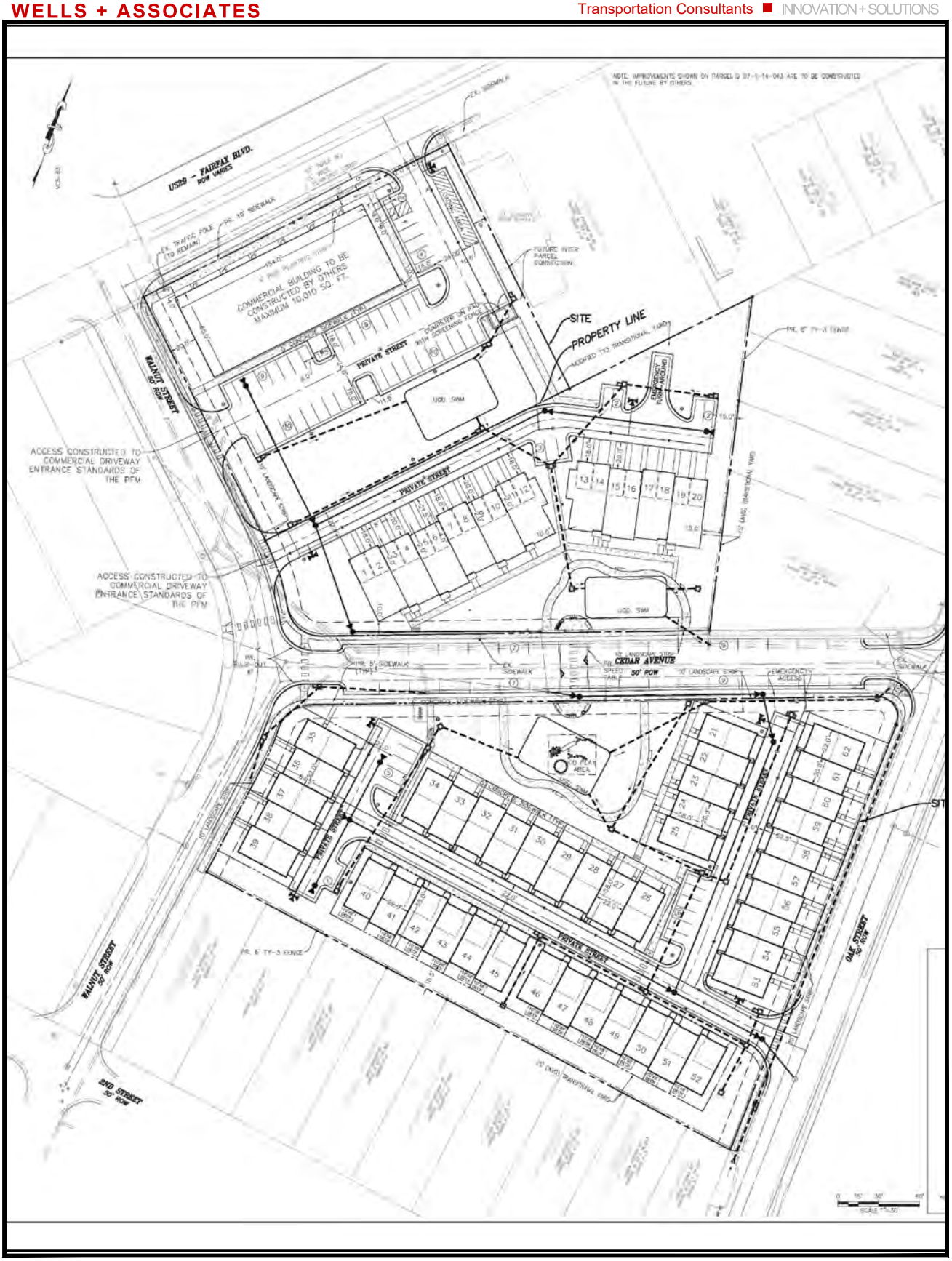

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Figure 1-2
Concept Plan
PulteGroup, Inc.
Breezeway Property
City of Fairfax, Virginia

Illustrative Layout by:
ATCS, P.L.C.
10.19.20

NORTH

SECTION 2
BACKGROUND INFORMATION

Location and Surrounding Uses

As shown in Figure 1-1, the site is regionally located approximately 1/3 mile east of Main Street on Fairfax Boulevard in the City of Fairfax. Regional Access is provided by I-66 via Lee Jackson Memorial Highway/Main Street and Chain Bridge Road. Fairfax Boulevard/Arlington Boulevard provides access to/from I-495 (the Capital Beltway).

Properties immediately south of the site are generally residential in nature while commercial uses are predominant along Fairfax Boulevard.

Comprehensive Plan Land Use Recommendations

The City's Comprehensive Plan shows the subject parcels as Commercial Corridor and Multifamily Neighborhood on the Future Land Use Map.

Existing Transportation Network

Existing Road Network. The following are descriptions of the roadways in the vicinity of the proposed development.

Fairfax Boulevard is classified as an arterial roadway according to the City of Fairfax Comprehensive Plan. Within the vicinity of the subject site, Fairfax Boulevard is constructed as a five-lane, undivided roadway with a center two-way left turn lane and a posted speed limit of 35 miles per hour. Traffic signals are provided at major cross-streets including Main Street, Fairchester Drive/Walnut Street, and Meredith Drive/Oak Street. Based on 2018 VDOT average annual daily traffic (AADT) data, Fairfax Boulevard east of Main Street carries approximately 37,000 vehicles per day (vpd). This roadway currently provides access to the Breezeway Motel via two driveways.

Main Street is also classified by the Comprehensive Plan as an arterial roadway and is constructed as a four-lane, median-divided roadway with a posted speed limit of 35 miles per hour. Based on 2018 VDOT AADT data, Main Street east of the Kamp Washington intersection carries approximately 38,000 vpd.

Walnut Street is a two-lane north-south undivided roadway with a width of approximately 33 feet. Walnut Street currently provides access to residential and commercial properties south of Fairfax Boulevard and will provide access to the proposed development.

Cedar Avenue is a two-lane east-west discontinuous roadway. The section of Cedar Avenue west of Oak Street is approximately 30 feet in width. Cedar Avenue currently provides access to

the Fairfax Garden Apartments but will not provide direct access to general site traffic for the proposed development.

Oak Street is a two-lane north-south undivided roadway with a width of approximately 33 feet. Oak Street provides access to residential and commercial properties south of Fairfax Boulevard and to Paul VI Catholic High School via Cedar Avenue. Oak Street will provide access to the proposed development.

Second Street is a two-lane east-west undivided roadway with a width of between 24 and 36 feet. Second Street is approximately two (2) blocks in length and connects Fairfax Boulevard to the west with Oak Street to the east.

Existing lane use and traffic control at each of the study intersections is shown on Figure 2-1.

Public Transit Service. The site is served by the City of Fairfax's City-University Energysaver (CUE) Bus "Gold Route" along Main Street and Warwick Avenue This service provides access between the George Mason University (GMU) campus and the Vienna/Fairfax-GMU metrorail station, via University Drive, Chain Bridge Road, West Street, Main Street, Lee Highway, Jermantown Road, Orchard Street, Bevan Drive, Warwick Avenue and Fairfax Boulevard. Additionally, the site is served by the "Green Route" which provides service between the GMU campus, Old Town Fairfax, and the Vienna/Fairfax-GMU metrorail station via University Drive, Chain Bridge Road, Eaton Place, Fairfax Boulevard, Fairfax Circle, Arlington Boulevard, Nutley Street, Virginia Center Boulevard, Old Pickett Road, Pickett Road, Main Street, North Street, and George Mason Boulevard.

Pedestrian Facilities. Concrete sidewalks are provided along both sides of Fairfax Boulevard Walnut Street, Oak Street, and Cedar Avenue site frontages. Marked crosswalks are provided across the north, south, and east legs of the Fairfax Boulevard/Meredith Drive/Oak Street and the Fairfax Boulevard/Walnut Street/Fairchester Drive signalized intersections; and across all legs of the Cedar Avenue/Oak Street/Panther Place unsignalized intersection. A mid-block crosswalk is provided along Oak Street between Cedar Avenue and Second Street.

Future Transportation Network

The City of Fairfax's Comprehensive Plan provides recommended strategies for the improvement of the City's transportation network. In general, the Plan recommends that the City should strive to achieve a balance between allowing for the efficient movement of traffic and providing safe and convenient access to City businesses and residences for vehicles, pedestrians, bicycles, and other modes of transport. In terms of roadway operational improvements, the Plan recommends that through traffic should be encouraged to utilize the City's arterial system (cf. Comprehensive Plan, Strategy T-7.4.1). Therefore, no specific capacity improvements (i.e., roadway widening) are recommended for the collector streets that

immediately surround the subject site. Any improvements to these streets should focus on enhancing safety and the mobility of pedestrians, bicycles, and public transit.

The design of the existing Walnut Street/Cedar Avenue intersection is not conventional. The Walnut Street and Cedar Avenue approaches are separated by a triangular median island. Two-way traffic is permitted along each side of the median island that results in multiple conflict points and is potentially confusing to drivers as to who has right-of-way when traversing the intersection. The Applicant intends to improve this situation by reconstructing the intersection to provide a typical four-legged stop sign controlled intersection with Walnut Street operating and the major (uncontrolled) approach. Cedar Avenue (the east approach) and the existing commercial driveway (the west approach) will be stop sign controlled. This redesign will enhance vehicular, pedestrian and bicycle safety by reducing crossing widths and providing conventional design features recognized by the average motorist.

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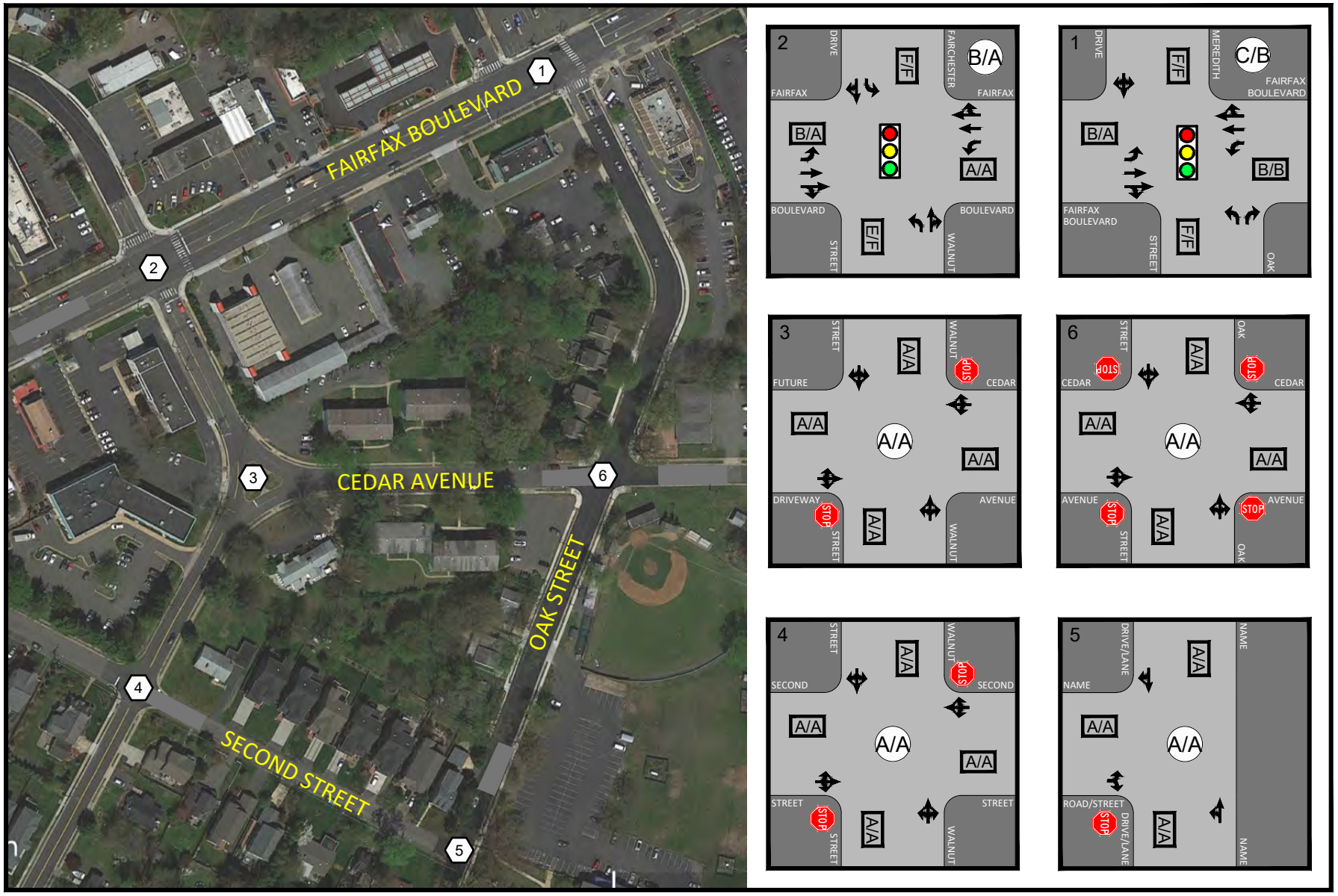

Figure 2-1
Existing Lane Use, Traffic Control and Levels of Service

B/B - Approach LOS - AM/PM
B/B - Intersection LOS - AM/PM
Represents One Travel Lane
Signalized Intersection
Stop Sign

Pulte Group, Inc.
City of Fairfax, Virginia

SECTION 3
STUDY SCOPE AND ANALYSIS PARAMETERS

Overview

The subject site is located south of Fairfax Boulevard, east of Walnut Street, and west of Oak Street in the City of Fairfax, Virginia. The subject property is comprised of five parcels totaling 4.63 acres north and south of Cedar Avenue. The parcel developed with the existing Breezeway Motel is zoned DR (Commercial Retail) and the parcels developed with existing residential uses are zoned RMF (Residential Multifamily) and RH (Residential High).

The primary objective of this study is to assess the impacts of the proposed development plan on the surrounding street system.

This traffic study was conducted in accordance with the scoping document and discussions with Wells + Associates, City staff, and the Applicant. A traffic study scoping meeting was held on June 25, 2019 and resulted in a scoping form dated July 3, 2019 that is provided in Appendix A. As previously noted, the revised development plan includes up to 10,010 SF of commercial space and 62 dwelling units. Additionally, site access has been updated per the current development plan.

Study Area

The study area was determined based on the intersections and roadways that potentially would be affected by implementation of the proposed development plan. The following intersections were selected for analysis and evaluation:

- Fairfax Boulevard/Meredith Drive/Oak Street
- Fairfax Boulevard/Fairchester Drive, Walnut Street
- Walnut Street/Cedar Avenue
- Walnut Street/Second Street
- Oak Street/Second Street
- Oak Street/Cedar Avenue-Panther Place
- All Site Access Drives

Site Development Program

The Applicant is proposing to redevelop the property with 62 residential units to include townhomes and stacked condos. A commercial building with up to 10,010 SF of space is proposed along Fairfax Boulevard.

Analysis Study Periods

The intersections within the study area were analyzed under AM and PM commuter peak hour conditions.

Existing Traffic Volumes

Existing AM and PM commuter peak hour turning movements and pedestrian counts were conducted on Thursday, July 11, 2019, at the study intersections from 6:00 AM to 9:00 AM and from 4:00 PM to 7:00 PM. These counts were compared to counts at the Fairfax Boulevard study intersection conducted when school was in session on Wednesday, February 3, 2016 and Thursday, March 1, 2018 after deducting traffic generated by the soon to be closed Paul VI Catholic High School. This comparison indicates that the current (July 11, 2019) counts were between 7% and 23% higher than counts collected during the school year (adjusted to reflect the closure of Paul VI) during the AM peak hour and between 3% amd 6% higher than counts collected during the school year (adjusted to reflect the closure of Paul VI) during the PM peak hour.

Based on this comparison, the higher current (July 11, 2019) counts were utilized in this traffic analysis. Additionally, counts along Fairfax Boulevard were balanced between the Walnut Street/Faichester Drive and Oak Street/Meredith Drive intersections in both directions by choosing the higher of the entering and exiting volumes at each intersection.

The existing vehicular traffic volumes balanced as described above are provided on Figure 3-1. All existing count data are included in Appendix B.

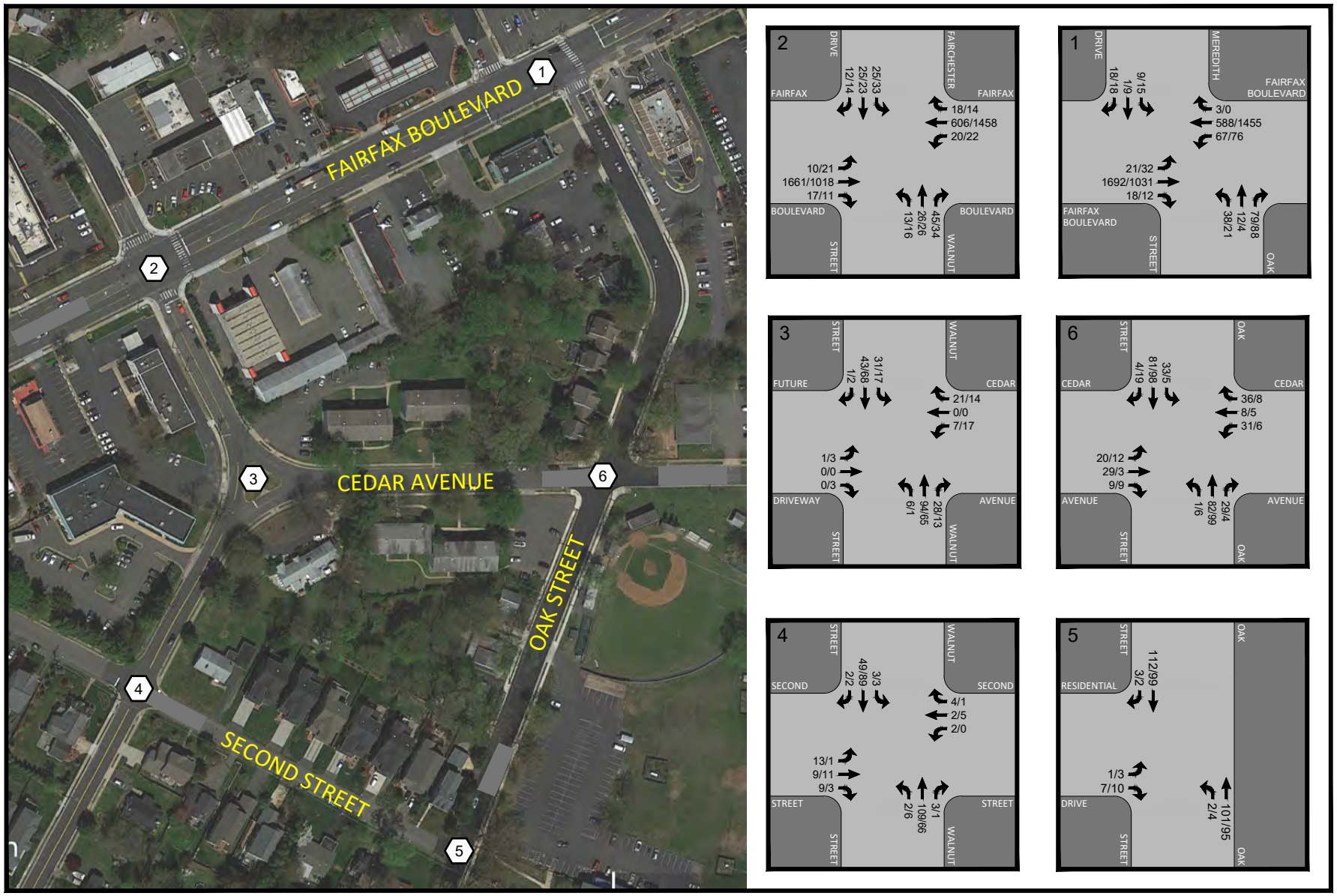

Figure 3-1
Existing Peak Hour Traffic Volumes

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

SECTION 4
EXISTING CONDITIONS ANALYSIS

Existing Intersection Levels of Service

Peak hour levels of service were calculated for the study intersections based on the existing lane use and traffic controls shown on Figure 2-1, the existing traffic volumes shown on Figure 3-1, and the 2000 Highway Capacity Manual (HCM) analysis procedures for signalized and unsignalized intersections. The results are presented in Appendix C and summarized on Table 4-1.

The analyses show that the signalized intersections along Fairfax Boulevard currently operate at level of service "C" (LOS "C") or better during the AM and PM peak commuter periods. The side street approaches to the signalized intersections operate at LOS "E" and "F" with average delays between 76.5 seconds and 105.7 seconds. However, the volume-to-capacity (v/c) ratios for the side street approaches at intersections along Fairfax Boulevard are well below 1.0, indicating that the lengthy delays are the result of long cycle lengths (190 seconds during the AM commuter peak hour and 220 seconds during the PM commuter peak hours) and the assignment of the predominance of the green time to the Fairfax Boulevard approaches, rather than insufficient capacity.

All approaches at the unsignalized intersections of Walnut Street/Cedar Avenue, Walnut Street/Second Street, Oak Street/Second Street, and Oak Street/Cedar Avenue – Panther Place operate at LOS "A" during each of the peak periods.

Table 4-1

Breezeway Property

Existing Intersection Capacity Analysis Summary

	Intersection	Intersection Control	Approach	Existing	
				AM Peak	PM Peak
1.	Fairfax Boulevard & Meredith Drive/Oak Street	Signal	EB Appr	B (17.8)	A (8.8)
			WB Appr	B (14.9)	B (17.3)
			NB Appr	F (87.1)	F (100.2)
			SB Appr	F (88.4)	F (102.4)
			Overall	**C (21.2)**	**B (18.7)**
2.	Fairfax Boulevard & Fairchester Drive/Walnut Street	Signal	EB Appr	B (13.0)	A (8.0)
			WB Appr	A (3.0)	A (1.7)
			NB Appr	E (76.5)	F (90.3)
			SB Appr	F (92.7)	F (105.7)
			Overall	**B (14.6)**	**A (9.4)**
3.	Walnut Street/Cedar Avenue	Stop	EB Appr	A (0.0)	A (9.4)
			WB Appr	A (9.4)	A (9.6)
			NB Appr	A (0.4)	A (0.1)
			SB Appr	A (3.2)	A (1.5)
			Overall	**A (2.4)**	**A (2.5)**
4.	Walnut Street/Second Street	Stop	EB Appr	A (7.5)	A (7.3)
			WB Appr	A (7.2)	A (7.3)
			NB Appr	A (7.8)	A (7.5)
			SB Appr	A (7.5)	A (7.7)
			Overall	**A (7.7)**	**A (7.6)**
5.	Oak Street/Second Street	Stop	EB Appr	A (7.0)	A (7.1)
			NB Appr	A (7.7)	A (7.7)
			SB Appr	A (7.8)	A (7.7)
			Overall	**A (7.7)**	**A (7.7)**
6.	Oak Street/Cedar Avenue/Panther Place	Stop	EB Appr	A (8.1)	A (7.6)
			WB Appr	A (8.0)	A (7.5)
			NB Appr	A (8.1)	A (7.9)
			SB Appr	A (8.4)	A (7.9)
			Overall	**A (8.2)**	**A (7.8)**

SECTION 5
ANALYSIS OF FUTURE CONDITIONS WITHOUT SITE DEVELOPMENT

Overview

Forecasts for traffic conditions without the redevelopment of the Breezeway Property were estimated at the study intersections based on a composite of existing traffic regional traffic growth, and pipeline development trips as described below. Future levels of service under these forecasted conditions were evaluated at the study intersections.

Regional Traffic Growth

A review of VDOT AADT volumes along Fairfax Boulevard and Main Street in the vicinity of the site indicates modest growth in traffic volumes over the past five (5) years. AADT volumes along Fairfax Boulevard east of Main Street rose from 36,000 vehicles in 2013 to 37,000 vehicles in 2018, an average annual increase of approximately 0.55% per year.

Based on these findings, existing traffic volumes were increased by 0.55% per year to the anticipated build-out of the site in 2024.

Traffic from Other Approved/Pending Developments

At the request of City staff, the following approved/pending developments were included as approved (i.e., "pipeline") developments:

- Novus Fairfax Gateway
  - 4,000 SF Office
  - 5,000 SF Quality Restaurant
  - 7,400 SF High Turn-Over Sit-Down Restaurant
  - 12,600 SF Shopping Center
  - 395 Residential Apartments

- Paul VI Redevelopment
  - 259 Residential Condominiums/Townhouses
  - 7 Single Family Dwelling Units
  - 24,000 SF of Community Space
  - 20,000 SF of Retail Space

As shown in Table 5-1, these pipeline developments are anticipated to generate 543 AM peak commuter hour trips, and 912 PM commuter peak hour trips at full buildout. It is noted that not all of these trips will utilize the study intersections along Fairfax Boulevard, Walnut Street and Oak Street.

An additional alternative background conditions analysis in included in Appendix F that includes the potential redevelopment of the American Legion (Toll Brothers) site located on the east side of Oak Street. Since that development application is not currently approved, this additional analysis is provided for informational purposes only.

Table 5-1
Breezeway Property - City of Fairfax
Background Development Trip Generation

Use	ITE Land Use Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
Novus Fairfax Gateway										
Office	710	4,000	SF	5	1	6	1	5	6	44
Quality Restaurant	931	5,000	SF	2	2	4	25	12	37	450
High Turnover Restaurant	932	7,400	SF	44	36	80	44	29	73	941
Shopping Center	820	12,600	SF	27	17	44	72	78	150	1,767
Apartments	220	395	DU	39	158	197	153	82	235	2,517
Total Novus Fairfax Gateway Trips	--			**117**	**214**	**331**	**295**	**206**	**501**	**5,719**
Paul VI - Redevelopment										
Condominiums	232	144	DU	13	58	71	40	24	64	767
Single Family Homes	210	7	DU	4	11	15	6	4	10	91
Townhomes	230	115	DU	10	48	58	45	22	67	726
Subtotal Residential		266	DU	27	117	144	91	50	141	1,584
Community Space	495	24,000	SF	32	17	49	32	34	66	812
Local Serving Retail	820	20,000	SF	12	7	19	98	106	204	2,386
Subtotal Commercial		44,000	SF	44	24	68	130	140	270	3,198
Total Paul VI Redevelopment				**71**	**141**	**212**	**221**	**190**	**411**	**4,782**
TOTAL BACKGROUND DEVELOPMENT TRIP GENERATION				**188**	**355**	**543**	**516**	**396**	**912**	**10,501**

Notes: (1) Based on Trip Generation from Development Traffic Impact Studies

Background Traffic Forecasts

The existing traffic volumes depicted on Figure 3-1, regional traffic growth, and the pipeline trip assignments shown on Figure 5-1 were added together to yield the background future traffic forecasts at the study intersections, shown on Figure 5-2.

Background Future Levels of Service

Peak hour levels of service were calculated for the study intersections based on the existing lane use and traffic controls, background future traffic forecasts, and the 2000 Highway Capacity Manual (HCM) analysis procedures for signalized and unsignalized intersections. The results are provided in Appendix D, shown on Figure 5-3, and summarized in Table 5-2.

The analyses show that the signalized intersections along Fairfax Boulevard will continue to operate at level of service "C" (LOS "C") or better during the AM and PM peak commuter periods. The side street approaches to the signalized intersections will continue to operate at LOS "E" and "F" with average delays between 76.6 seconds and 103.9 seconds. However, the volume-to-capacity (v/c) ratios for the side street approaches at intersections along Fairfax Boulevard will be well below 1.0, indicating that the lengthy delays will be the result of long cycle lengths (190 seconds during the AM commuter peak hour and 220 seconds during the PM commuter peak hours) and the assignment of the predominance of the green time to the Fairfax Boulevard approaches, rather than insufficient capacity.

All approaches at the unsignalized intersections of Walnut Street/Cedar Avenue, Walnut Street/Second Street, Oak Street/Second Street, and Oak Street/Cedar Avenue – Panther Place will operate at LOS "B" or better during each of the peak periods.

As previously noted, an additional alternative analysis is included in Appendix F that also includes the potential redevelopment of the (not currently approved) American Legion (Toll Brothers) redevelopment on the east side of Oak Street. The results of this additional anlaysis is generally consistent with the results summarized in Table 5-2 below with additional delays of less than 2 seconds/vehicle for any intersection approach included in the study.

Table 5-2

Breezeway Property

Background Future Intersection Capacity Analysis Summary

	Intersection	Intersection Control	Approach	Existing		Background Future	
				AM Peak	PM Peak	AM Peak	PM Peak
1.	Fairfax Boulevard & Meredith Drive/Oak Street	Signal	EB Appr	B (17.8)	A (8.8)	B (17.2)	A (8.1)
			WB Appr	B (14.9)	B (17.3)	B (13.8)	B (17.2)
			NB Appr	F (87.1)	F (100.2)	F (84.4)	F (100.3)
			SB Appr	F (88.4)	F (102.4)	F (88.3)	F (104.7)
			Overall	**C (21.2)**	**B (18.7)**	**C (20.3)**	**B (17.9)**
2.	Fairfax Boulevard & Fairchester Drive/Walnut Street	Signal	EB Appr	B (13.0)	A (8.0)	B (12.8)	A (8.3)
			WB Appr	A (3.0)	A (1.7)	A (2.8)	A (1.7)
			NB Appr	E (76.5)	F (90.3)	E (76.6)	F (90.4)
			SB Appr	F (92.7)	F (105.7)	F (91.7)	F (103.9)
			Overall	**B (14.6)**	**A (9.4)**	**B (14.0)**	**A (8.9)**
3.	Walnut Street/Cedar Avenue	Stop	EB Appr	A (0.0)	A (9.4)	B (10.7)	A (9.4)
			WB Appr	A (9.4)	A (9.6)	A (9.4)	A (9.5)
			NB Appr	A (0.4)	A (0.1)	A (0.4)	A (0.1)
			SB Appr	A (3.2)	A (1.5)	A (3.3)	A (1.7)
			Overall	**A (2.4)**	**A (2.5)**	**A (2.6)**	**A (2.5)**
4.	Walnut Street/Second Street	Stop	EB Appr	A (7.5)	A (7.3)	A (7.4)	A (7.3)
			WB Appr	A (7.2)	A (7.3)	A (7.2)	A (7.3)
			NB Appr	A (7.8)	A (7.5)	A (7.8)	A (7.5)
			SB Appr	A (7.5)	A (7.7)	A (7.4)	A (7.6)
			Overall	**A (7.7)**	**A (7.6)**	**A (7.6)**	**A (7.5)**
5.	Oak Street/Second Street	Stop	EB Appr	A (7.0)	A (7.1)	A (7.0)	A (7.1)
			NB Appr	A (7.7)	A (7.7)	A (7.8)	A (7.8)
			SB Appr	A (7.8)	A (7.7)	A (7.9)	A (7.8)
			Overall	**A (7.7)**	**A (7.7)**	**A (7.8)**	**A (7.8)**
6.	Oak Street/Cedar Avenue/Panther Place	Stop	EB Appr	A (8.1)	A (7.6)	A (8.1)	A (7.6)
			WB Appr	A (8.0)	A (7.5)	A (8.3)	A (7.8)
			NB Appr	A (8.1)	A (7.9)	A (8.2)	A (8.0)
			SB Appr	A (8.4)	A (7.9)	A (8.5)	A (8.0)
			Overall	**A (8.2)**	**A (7.8)**	**A (8.3)**	**A (7.9)**

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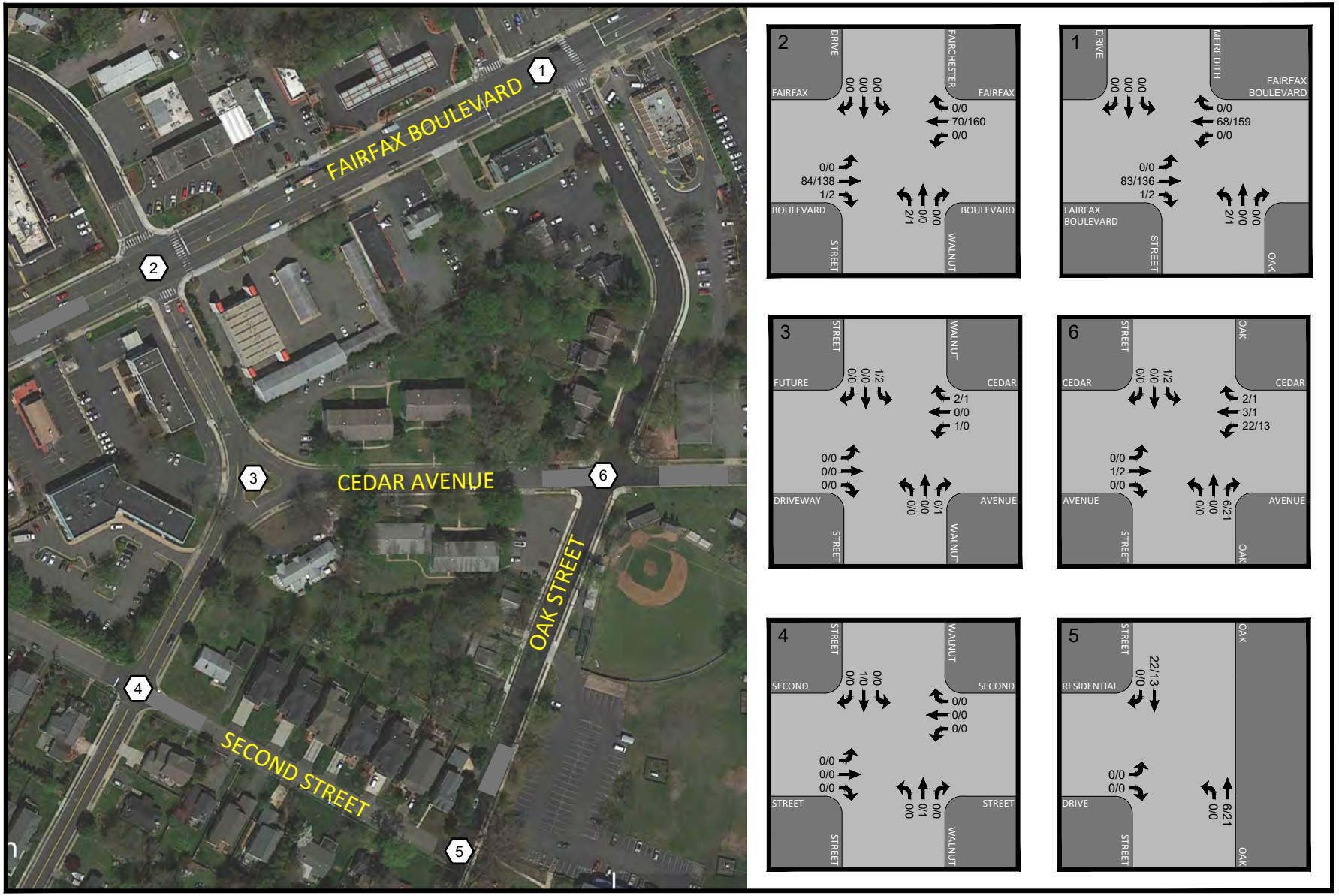

Figure 5-1
Pipeline Development Traffic Assignments
Includes Novus Fairfax Gateway and Paul VI Redevelopment

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

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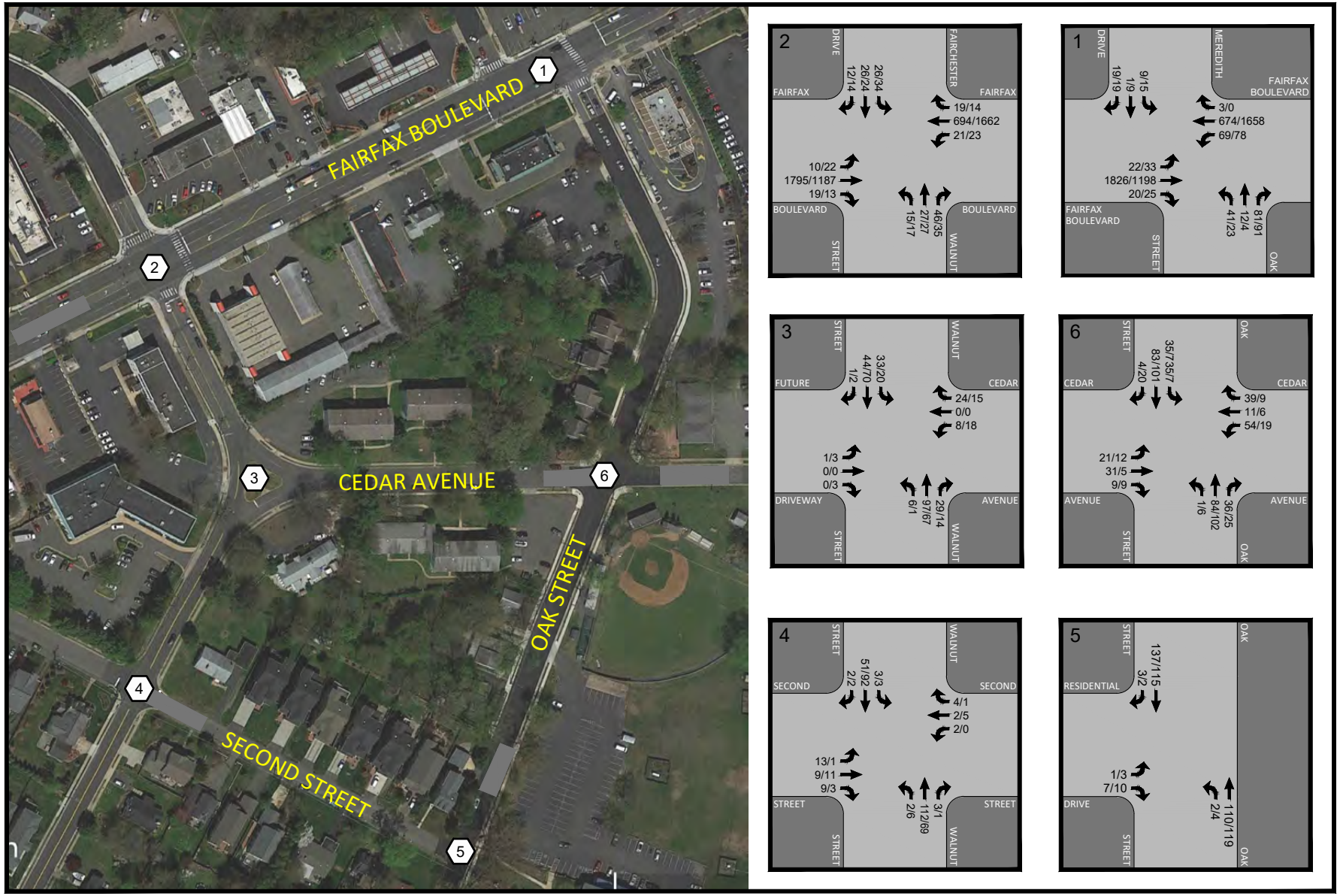

Figure 5-2
2024 Background Future Peak Hour Traffic Forecasts
With Pipeline Developments

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

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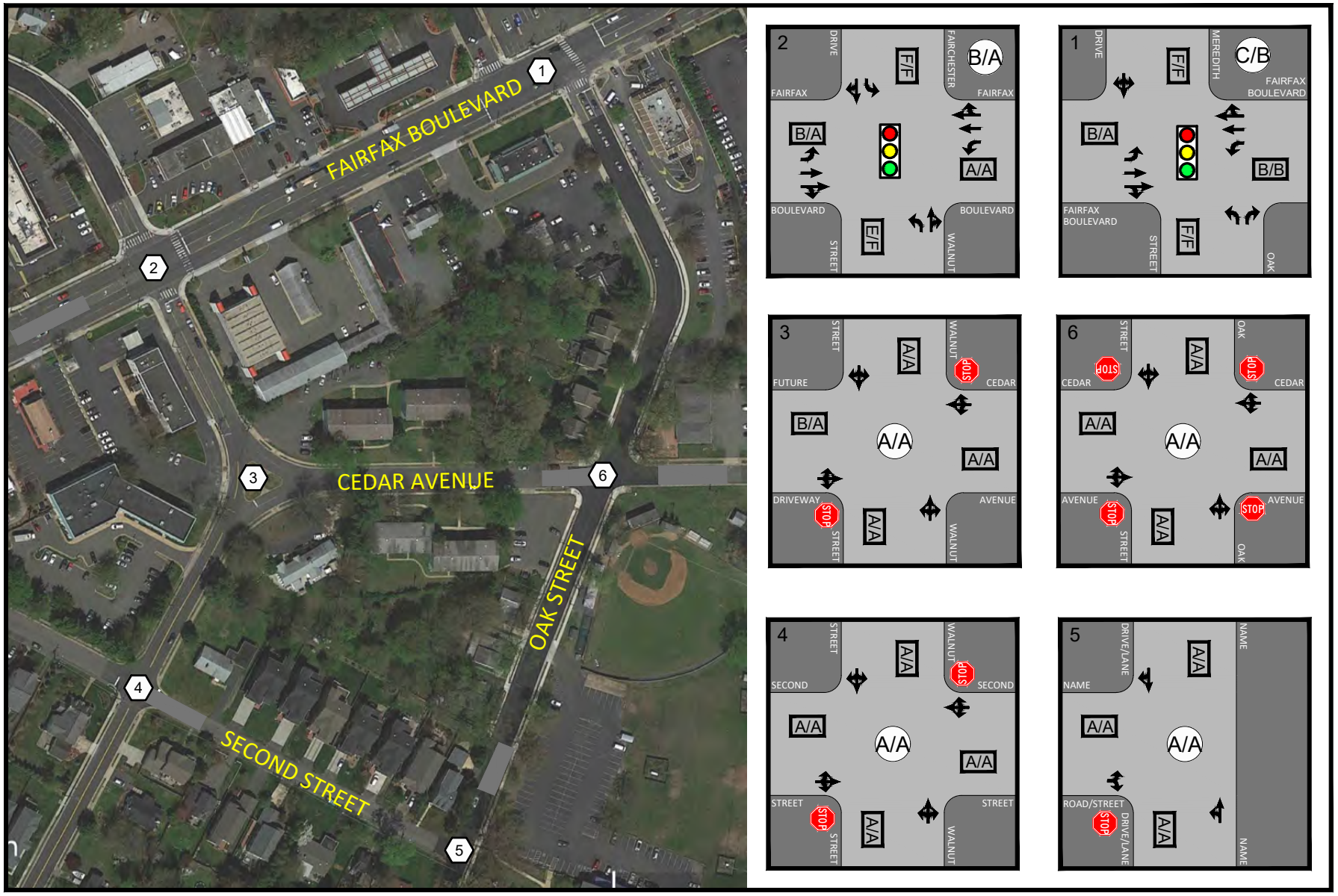

Figure 5-3
2024 Background Lane Use, Traffic Control and Levels of Service

B/B - Approach LOS - AM/PM
B/B - Intersection LOS - AM/PM
Represents One Travel Lane
Signalized Intersection
Stop Sign

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

SECTION 6
SITE ANALYSIS

Overview

Trips anticipated to be generated by the proposed development plan were forecasted and assigned to the surrounding roadway network. The generation, distribution, and assignment of site trips were based on the proposed redevelopment plan and program, as well as the locations of future site entrances in relation to the surrounding roadway network.

Existing Site Trips

As stated previously, the site is currently developed with the 50-room Breezeway Motel, the 38-unit Fairfax Garden Apartments, and four (4) single family homes. The redevelopment plan calls for the elimination of these uses and the construction of 62 residential townhouse units and a commercial building with up to 10,010 SF of space. Additionally, while traffic counts were conducted during the summer, Paul VI Catholic School generated some traffic as exhibited by by the traffic counts at the Oak Street/Cedar Avenue – Panther Place intersection. To provide a conservative analysis of future traffic conditions with the site, trips generated by the existing site uses and the activities at Paul VI Catholic School were not eliminated from the existing roadway network.

Proposed Site Access

The site plan provided on Figure 1-2 shows that access to the northern commercial portion of the site is proposed at two locations, one full-movement driveway along Fairfax Boulevard approximately 250' east of Walnut Street – Fairchester Drive and a Right-In/Right-Out/Left-Out driveway along Walnut Street. Access to the northern residential portion of the site will be provided via a full-movement driveway on Walnut Street south of the commercial driveway. Access to the southern residential parcel will be provided along Oak Street approximately 300' south of Cedar Avenue – Panther Place.

Trip Generation

Overview. Trip generation estimates for the AM and PM peak hours, as well as the average daily traffic, were derived from the standard Institute of Transportation Engineers (ITE) trip generation rates, as published in the Trip Generation Manual, 10th edition. The "Mullti-family Housing – Low-rise" (220) land use code was used for the proposed townhomes units. For purposes of this assessment, the "Shopping Center" (820) land use code was used for the commercial component; however, it is noted that another commercial use other than general retail may ultimately fill all or a portion of the commercial space.

The trip generation analysis for the existing and proposed uses is presented in Table 6-1 and reflects a reduction in peak hour and daily trips from the previous study submission. When compared to the existing uses on site, the proposed development plan would result in an

overall increase if two (2) additional AM peak hour trips, an overall increase of approximately 109 additional trips during the PM peak hour and approximately 1,237 additional daily trips. For purposes of this study, existing trips were not removed from the road network, and the total 40 AM peak hour trips and 140 PM peak hour trips for the proposed uses were added to the road network.

Table 6-1
Breezeway Property
ITE Trip Generation, 10th Edition

Land Use	Ref	Size	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Existing Site Uses										
Motel	320	50	Rooms	8	13	21	11	10	21	152
Multifamily (Low Rise)	220	6	DU's	1	2	3	1	1	2	44
Multifamily (Mid-Rise)	221	32	DU's	3	8	11	2	2	4	173
Single-Family Detached	210	4	DU's	1	2	3	3	1	4	38
Subtotal Existing Uses				**13**	**25**	**38**	**17**	**14**	**31**	**407**
Proposed Development Plan										
Town Homes - North Land Bay	220	20	D.U.	2	8	10	9	5	14	110
Town Homes - South Land Bay	220	42	D.U.	5	16	21	17	10	27	277
Commercial (Retail - Shopping Center)	820	10,010	SF	6	3	9	48	51	99	1,257
Subtotal Proposed Uses				**13**	**27**	**40**	**74**	**66**	**140**	**1,644**
Net Difference: Approved vs. Proposed				**0**	**2**	**2**	**57**	**52**	**109**	**1,237**

It should be noted that no reduction in site generated trips due to transit mode split was taken in this analysis. However, it is anticipated that the project would take advantage of public transit opportunities available in the proximity of the site.

Site Trip Distribution

As agreed upon in the scope with City staff, site trip distribution used in the analysis was based on existing travel patterns and engineering judgment. For purposes of this analysis, the following distribution was used in the forecasting of future site traffic:

To/From:	Residential	Commercial
West on Lee Highway/Fairfax Boulevard:	35%	35%
Northeast on Fairfax Boulevard:	50%	45%
Southeast on Main Street:	15%	15%
North on Fairchester Drive/Meredith Drive	0%	5%
TOTAL	100%	100%

Figure 6-1 graphically illustrates this trip distribution.

Site Trip Assignments

The assignments of the total vehicle trips generated upon the future build-out of the Breezeway Property redevelopment was based on the above distribution, and are depicted on Figures 6-2A and 6-2B.

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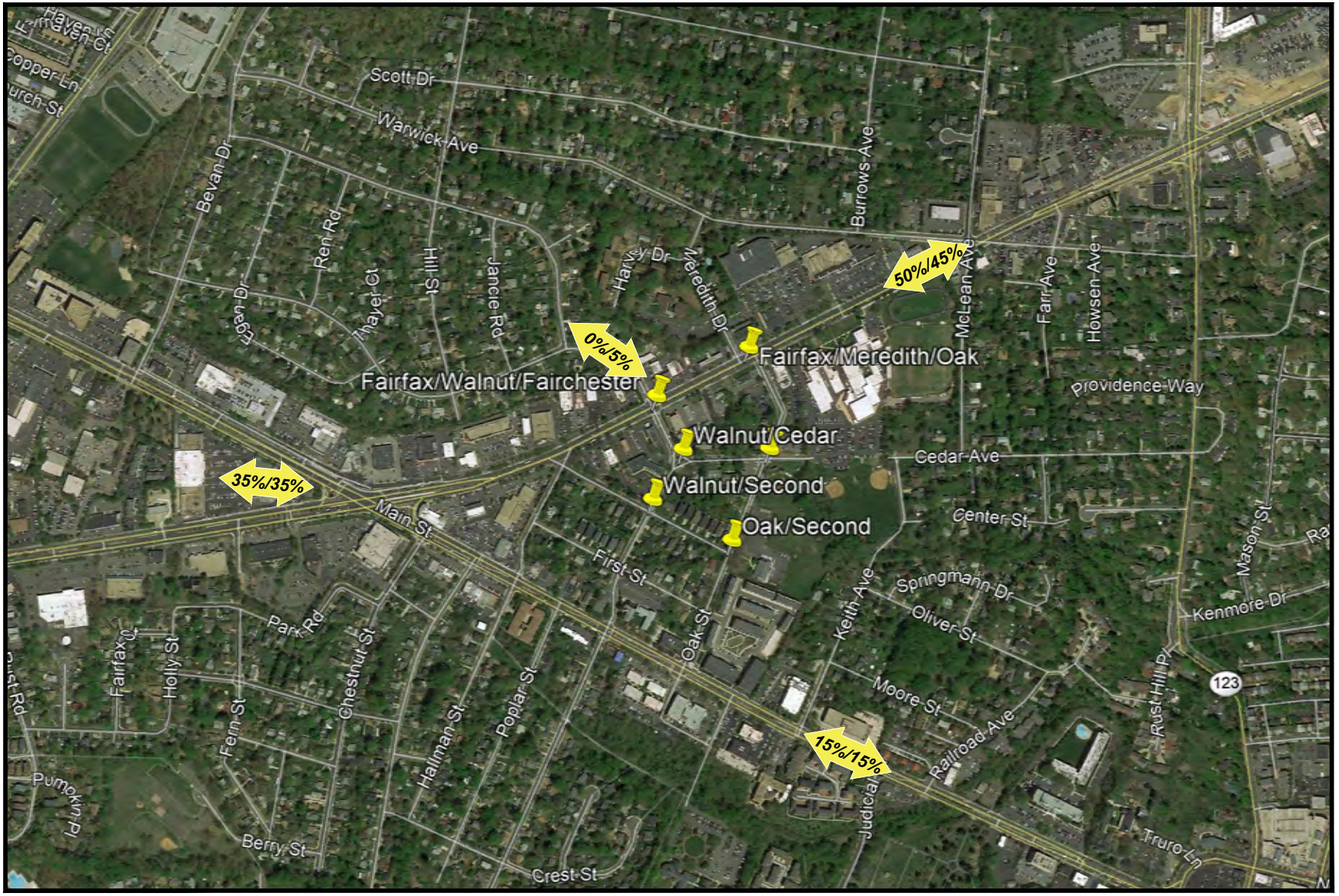

Figure 6-1
Site Traffic Directions of Approach
Breezeway Property

XX%/XX% - Residential/Commercial

NORTH

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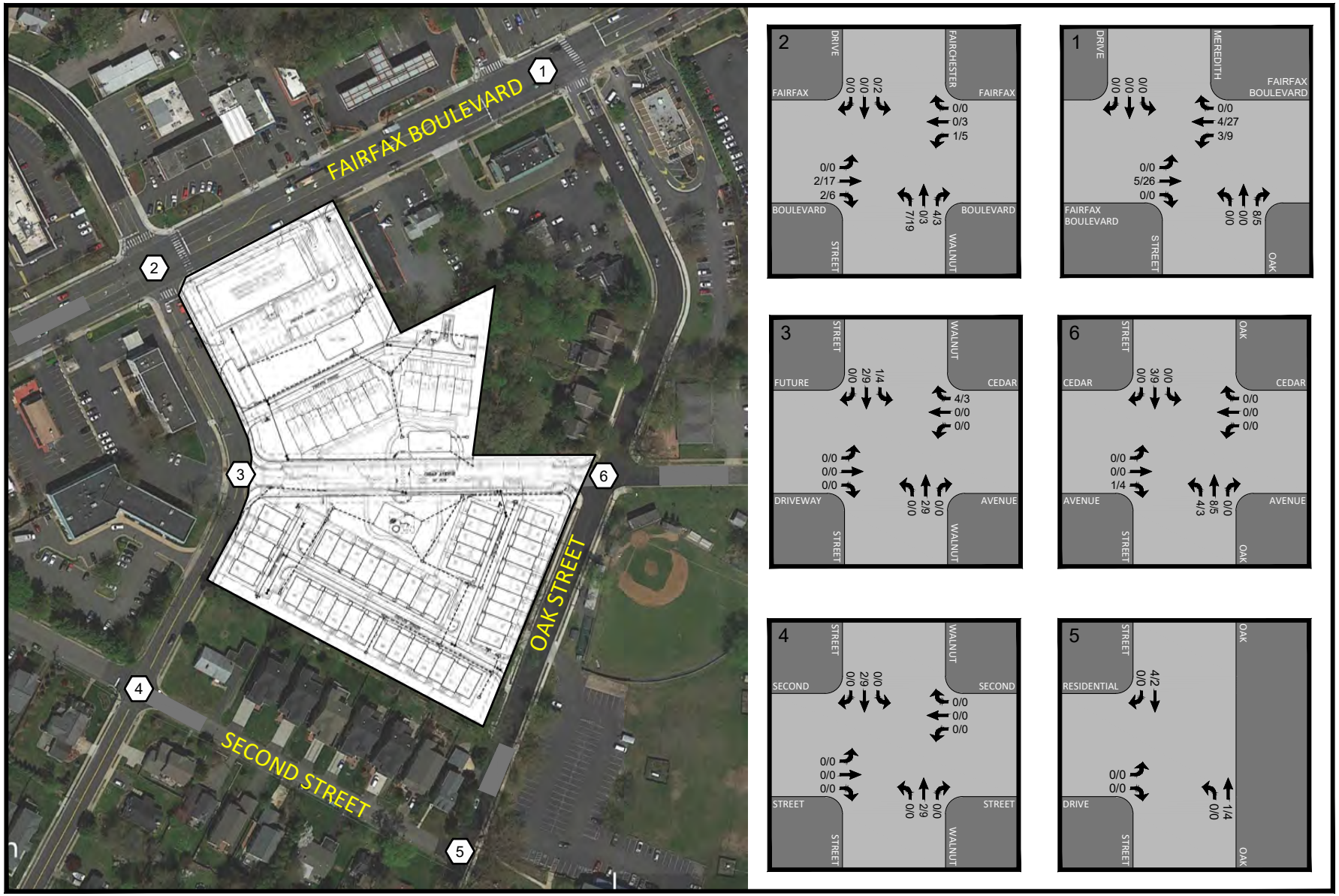

Figure 6-2A
2024 Site Traffic Assignments (Residential & Commercial)
Study Intersections

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

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City of Fairfax, Virginia

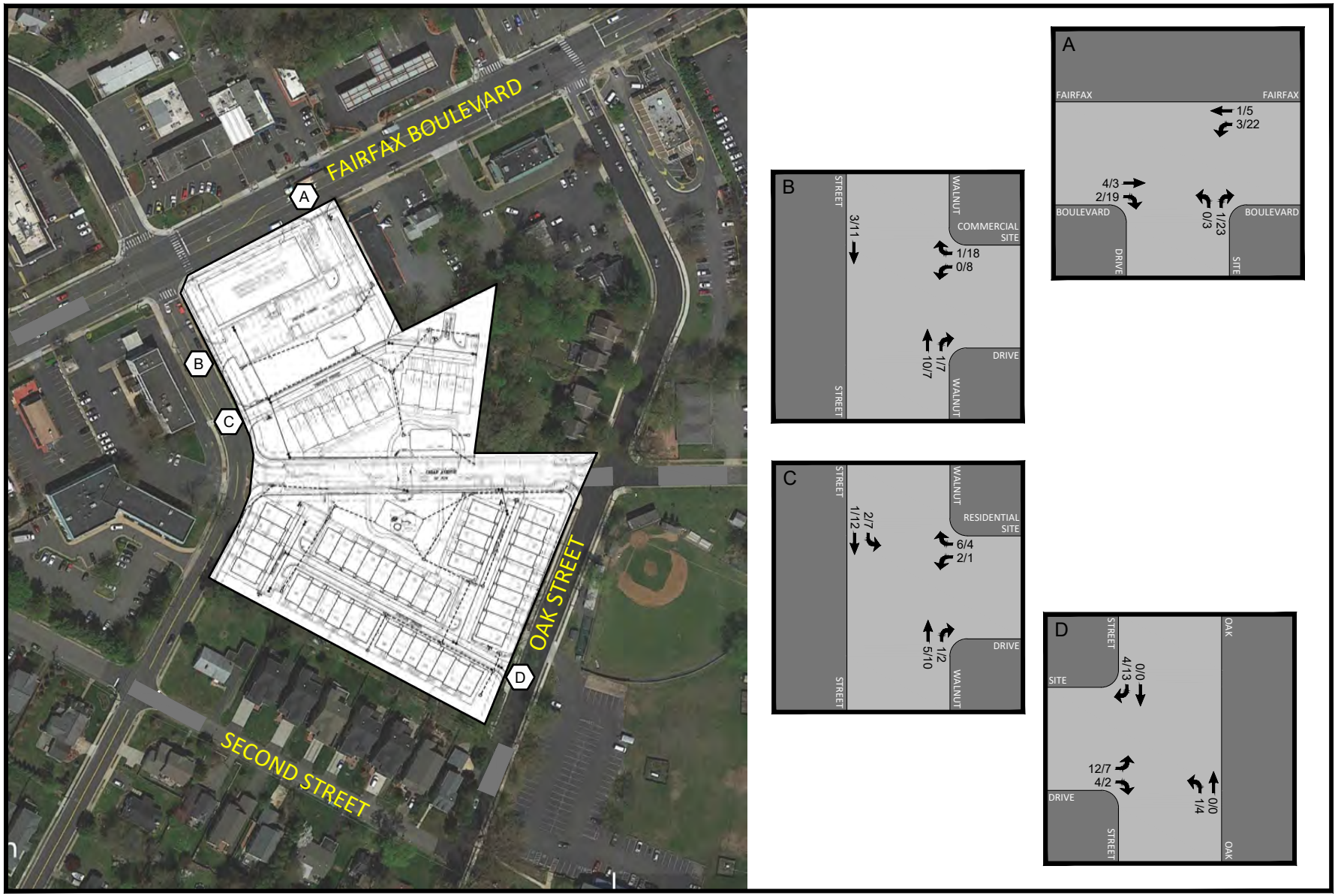

Figure 6-2B
Site Traffic Assignments (Residential & Commercial)
Site Driveways

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

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City of Fairfax, Virginia

SECTION 7
ANALYSIS OF FUTURE CONDITIONS WITH SITE DEVELOPMENT

Total Future Traffic Forecasts

Site trip assignments shown on Figures 6-2A and 6-2B were added to the background traffic forecasts to yield 2024 total future traffic forecasts, shown on Figures 7-1A and 7-1B.

Proposed Improvements

The design of the existing Walnut Street/Cedar Avenue intersection is not conventional. The Walnut Street and Cedar Avenue approaches are separated by a triangular median island. Two-way traffic is permitted along each side of the median island that results in multiple conflict points and is potentially confusing to drivers as to who has right-of-way when traversing the intersection. The Applicant intends to improve this situation by reconstructing the intersection to provide a typical four-legged stop sign controlled intersection with Walnut Street operating and the major (uncontrolled) approach. Cedar Avenue (the east approach) and the existing commercial driveway (the west approach) will be stop sign controlled. This redesign will enhance vehicular, pedestrian and bicycle safety by reducing crossing widths and providing conventional design features recognized by the average motorist.

Additionally, access to the existing Breezeway Motel is currently provided at two locations along Fairfax Boulevard. The Applicant intends to consolidate these access drives to a single location providing enhanced access management along this arterial roadway.

Lane use and traffic control at each of the study intersections for 2024 total future conditions is shown on Figure 7-2A and 7-2B.

Total Future Levels of Service with Proposed Development Plan

Future levels of service with the proposed development plan were determined at the study intersections based on the future traffic volumes shown on Figures 7-1A and 7-1B, future lane use and traffic control shown on Figures 7-2A and 7-2B, and the 2000 HCM methodologies for signalized and unsignalized intersections calculated using the Synchro 10 traffic analysis software. The results of these analyses are provided in Appendix E and summarized in Table 7-1.

As shown in Table 7-1, levels of service under future site development conditions would remain generally consistent with future background conditions (i.e., without site development).

The analyses show that the signalized intersections along Fairfax Boulevard will continue to operate at level of service "C" (LOS "C") or better during the AM and PM peak commuter periods. The side street approaches to the signalized intersections will continue to operate at LOS "E" and "F" with average delays between 76.5 seconds and 105.9 seconds. However, the volume-to-capacity (v/c) ratios for the side street approaches at intersections along Fairfax Boulevard will be well below 1.0, indicating that the lengthy delays will be the result of long cycle lengths (190 seconds during the AM commuter peak hour and 220 seconds during the PM commuter peak hours) and the assignment of the predominance of the green time to the Fairfax Boulevard approaches, rather than insufficient capacity.

All approaches at the unsignalized intersections of Walnut Street/Cedar Avenue, Walnut Street/Second Street, Oak Street/Second Street, and Oak Street/Cedar Avenue – Panther Place will continue to operate at LOS "B" or better during each of the peak periods.

As previously noted, an additional alternative analysis is included in Appendix F that also includes the potential redevelopment of the (not currently approved) American Legion (Toll Brothers) redevelopment on the east side of Oak Street as a pipeline development. The results of this additional anlaysis is generally consistent with the results summarized in Table 7-1 below with additional delays of less than 2 seconds/vehicle for any intersection approach included in the study.

Table 7-1

Breezeway Property

Total Future Intersection Capacity Analysis Summary

	Intersection	Intersection Control	Approach	Existing		Background Future		Total Future	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1.	Fairfax Boulevard & Meredith Drive/Oak Street	Signal	EB Appr	B (17.8)	A (8.8)	B (17.2)	A (8.1)	B (18.5)	A (9.3)
			WB Appr	B (14.9)	B (17.3)	B (13.8)	B (17.2)	B (14.2)	B (17.6)
			NB Appr	F (87.1)	F (100.2)	F (84.4)	F (100.3)	F (84.3)	F (100.3)
			SB Appr	F (88.4)	F (102.4)	F (88.3)	F (104.7)	F (88.3)	F (104.7)
			Overall	**C (21.2)**	**B (18.7)**	**C (20.3)**	**B (17.9)**	**C (21.5)**	**B (18.6)**
2.	Fairfax Boulevard & Fairchester Drive/Walnut Street	Signal	EB Appr	B (13.0)	A (8.0)	B (12.8)	A (8.3)	B (12.9)	A (8.6)
			WB Appr	A (3.0)	A (1.7)	A (2.8)	A (1.7)	A (2.6)	B (11.9)
			NB Appr	E (76.5)	F (90.3)	E (76.6)	F (90.4)	E (76.5)	F (90.7)
			SB Appr	F (92.7)	F (105.7)	F (91.7)	F (103.9)	F (92.9)	F (105.9)
			Overall	**B (14.6)**	**A (9.4)**	**B (14.0)**	**A (8.9)**	**B (14.3)**	**B (15.4)**
3.	Walnut Street/Cedar Avenue	Stop	EB Appr	A (0.0)	A (9.4)	B (10.7)	A (9.4)	B (10.8)	A (9.5)
			WB Appr	A (9.4)	A (9.6)	A (9.4)	A (9.5)	A (9.4)	A (9.6)
			NB Appr	A (0.4)	A (0.1)	A (0.4)	A (0.1)	A (0.4)	A (0.1)
			SB Appr	A (3.2)	A (1.5)	A (3.3)	A (1.7)	A (3.3)	A (1.8)
			Overall	**A (2.4)**	**A (2.5)**	**A (2.6)**	**A (2.5)**	**A (2.6)**	**A (2.5)**
4.	Walnut Street/Second Street	Stop	EB Appr	A (7.5)	A (7.3)	A (7.4)	A (7.3)	A (7.4)	A (7.4)
			WB Appr	A (7.2)	A (7.3)	A (7.2)	A (7.3)	A (7.2)	A (7.3)
			NB Appr	A (7.8)	A (7.5)	A (7.8)	A (7.5)	A (7.8)	A (7.6)
			SB Appr	A (7.5)	A (7.7)	A (7.4)	A (7.6)	A (7.5)	A (7.7)
			Overall	**A (7.7)**	**A (7.6)**	**A (7.6)**	**A (7.5)**	**A (7.6)**	**A (7.6)**
5.	Oak Street/Second Street	Stop	EB Appr	A (7.0)	A (7.1)	A (7.0)	A (7.1)	A (7.1)	A (7.1)
			NB Appr	A (7.7)	A (7.7)	A (7.8)	A (7.8)	A (7.8)	A (7.9)
			SB Appr	A (7.8)	A (7.7)	A (7.9)	A (7.8)	A (7.9)	A (7.8)
			Overall	**A (7.7)**	**A (7.7)**	**A (7.8)**	**A (7.8)**	**A (7.8)**	**A (7.8)**
6.	Oak Street/Cedar Avenue/Panther Place	Stop	EB Appr	A (8.1)	A (7.6)	A (8.1)	A (7.6)	A (8.2)	A (7.6)
			WB Appr	A (8.0)	A (7.5)	A (8.3)	A (7.8)	A (8.3)	A (7.8)
			NB Appr	A (8.1)	A (7.9)	A (8.2)	A (8.0)	A (8.3)	A (8.1)
			SB Appr	A (8.4)	A (7.9)	A (8.5)	A (8.0)	A (8.5)	A (8.1)
			Overall	**A (8.2)**	**A (7.8)**	**A (8.3)**	**A (7.9)**	**A (8.3)**	**A (8.0)**
A.	Fairfax Boulevard/ Site Driveway	Stop	EB Appr	Future Intersection		Future Intersection		A (0.0)	A (0.0)
			WB Appr					A (0.1)	A (6.2)
			NB Appr					B (10.6)	B (12.8)
			Overall					**B (0.0)**	**A (0.5)**
B.	Walnut Street/ Commercial Site Driveway	Stop	WB Appr	Future Intersection		Future Intersection		A (8.7)	A (9.1)
			NB Appr					A (0.0)	A (0.0)
			SB Appr					A (0.0)	A (0.0)
			Overall					**A (0.0)**	**A (1.1)**
C.	Walnut Street/ Residential Site Driveway	Stop	WB Appr	Future Intersection		Future Intersection		A (9.0)	A (8.9)
			NB Appr					A (0.0)	A (0.0)
			SB Appr					A (0.2)	A (0.5)
			Overall					**A (0.4)**	**A (0.5)**
D.	Oak Street/ Residential Site Driveway	Stop	EB Appr	Future Intersection		Future Intersection		B (10.0)	B (10.0)
			NB Appr					A (0.1)	A (0.2)
			SB Appr					A (0.0)	A (0.0)
			Overall					**A (0.6)**	**A (0.4)**

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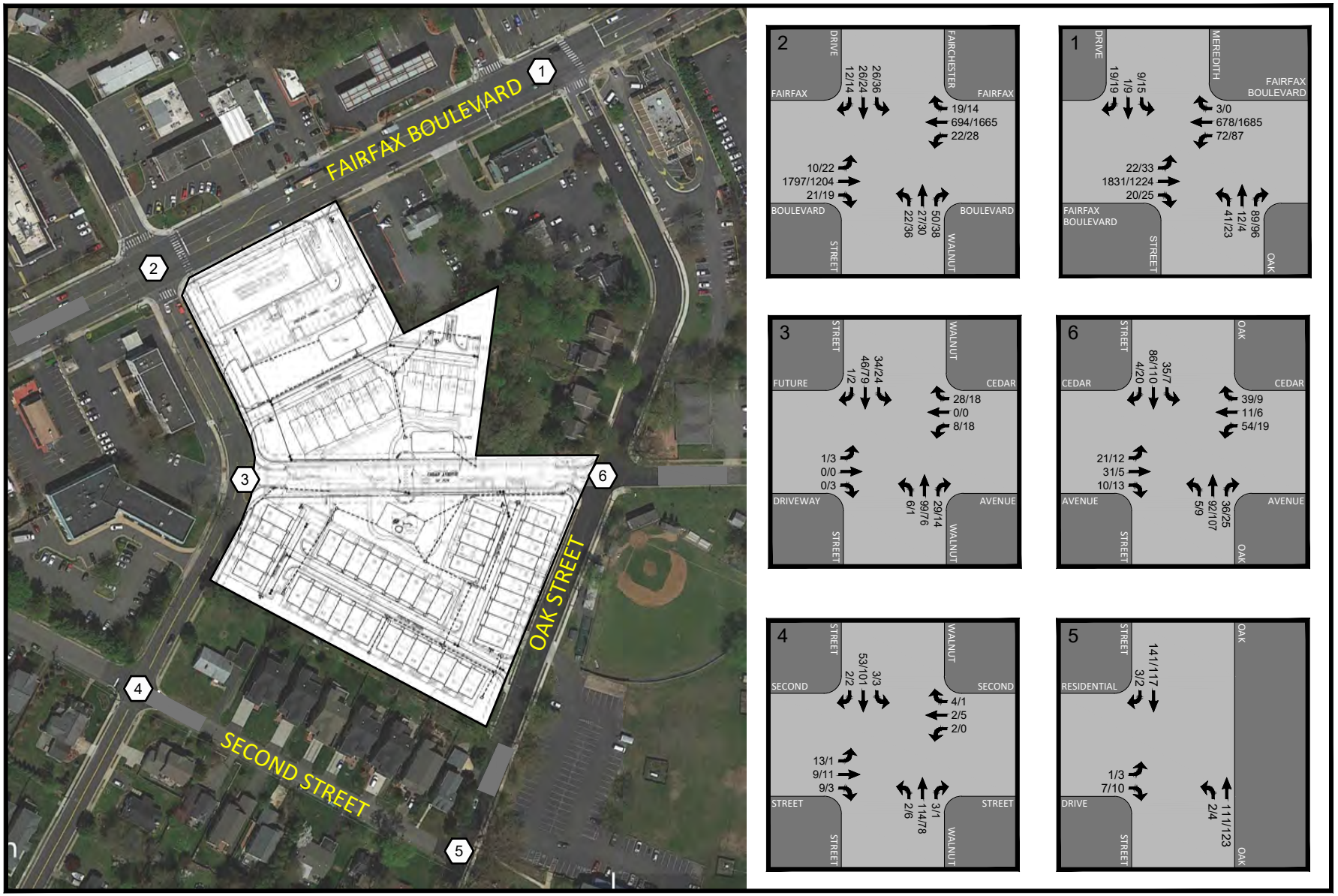

Figure 7-1A
2024 Total Future Peak Hour Traffic Forecasts
Study Intersections

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

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City of Fairfax, Virginia

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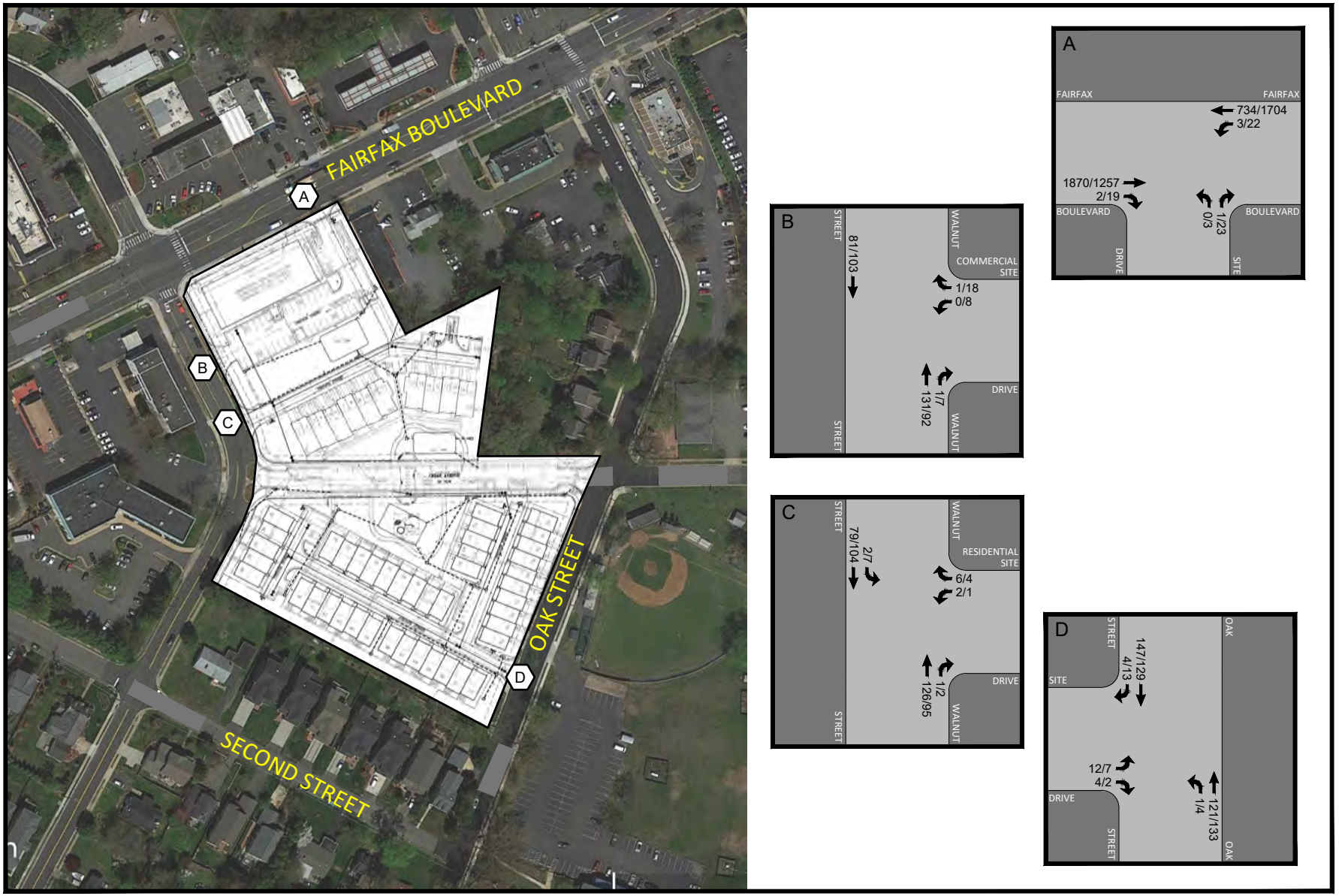

Figure 7-1B
2024 Total Future Peak hour Traffic Forecasts
Site Driveways

AM PEAK HOUR
PM PEAK HOUR
000 / 000

NORTH

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City of Fairfax, Virginia

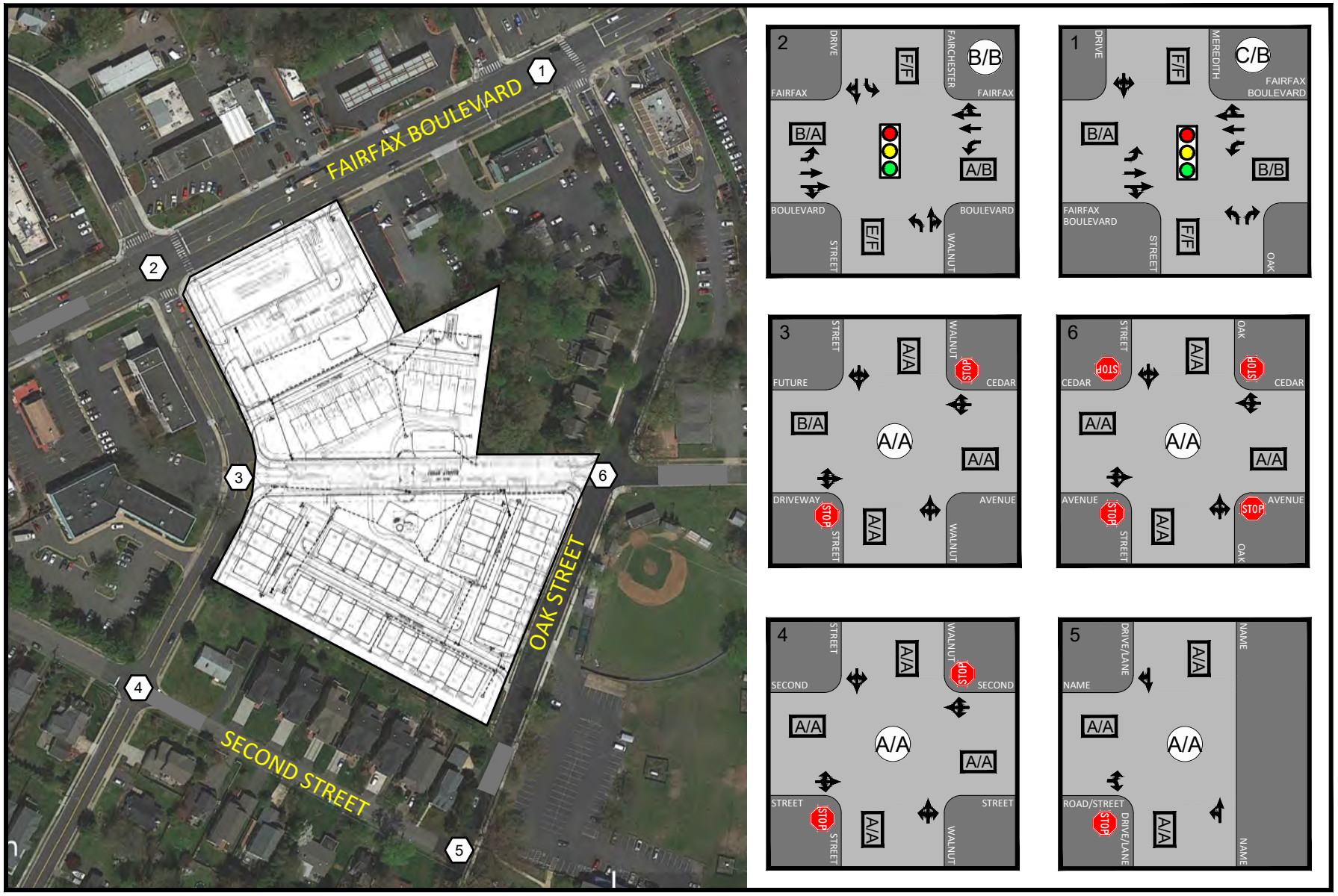

Figure 7-2A
2024 Total Future Lane Use, Traffic Control and Levels of Service Study Intersections

B/B - Approach LOS - AM/PM
B/B - Intersection LOS - AM/PM
Represents One Travel Lane
Signalized Intersection
Stop Sign

NORTH

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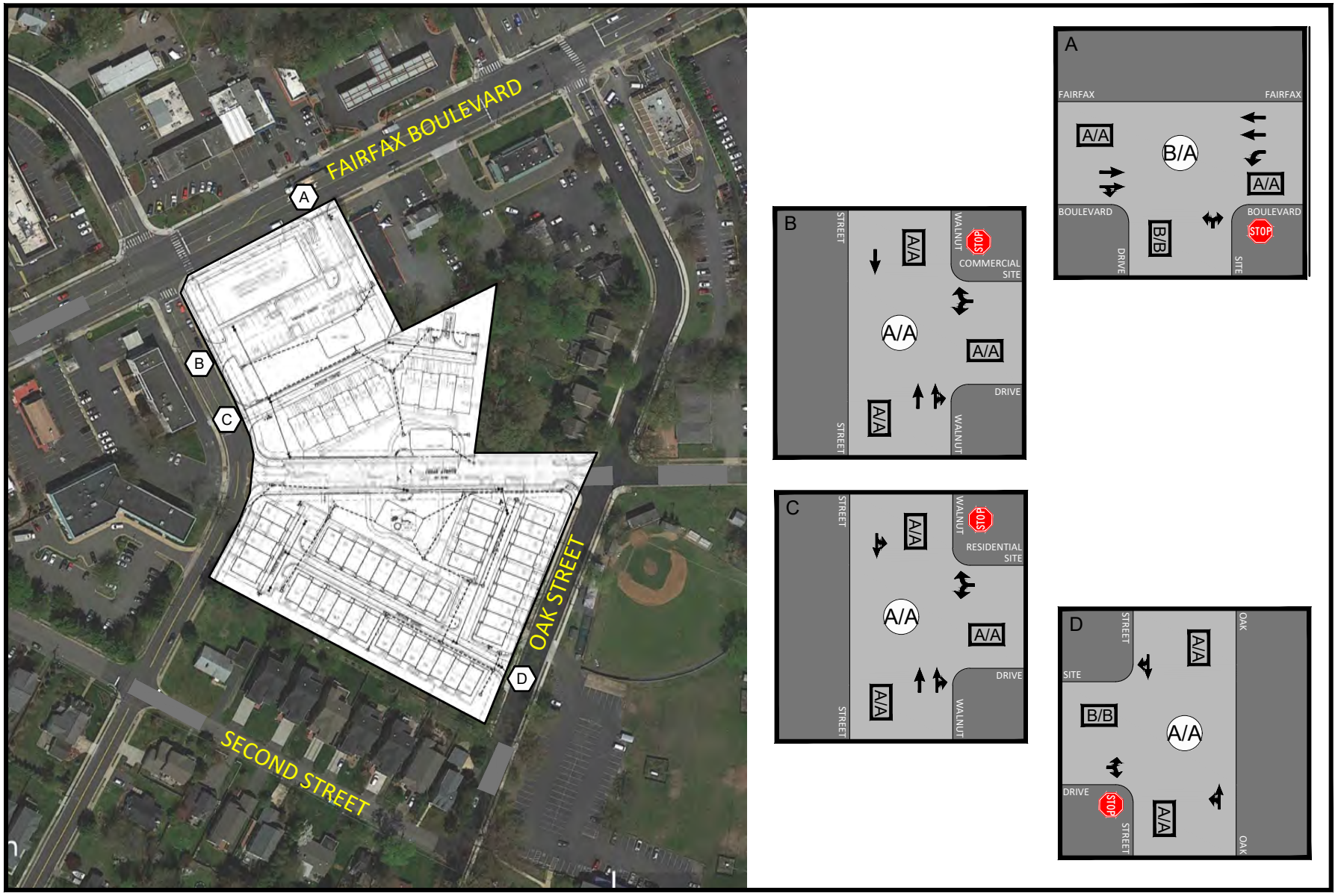

Figure 7-2B
2024 Total Future Lane Use, Traffic Control and Levels of Service
Site Driveways

B/B - Approach LOS - AM/PM
B/B - Intersection LOS - AM/PM
Represents One Travel Lane
Signalized Intersection
Stop Sign

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

SECTION 8
CONCLUSIONS

Based on the results of this traffic impact study, the following may be concluded:

1. The Fairfax Boulevard/Oak Street – Meredith Drive and Fairfax Boulevard/Walnut Street – Fairchester Drive signalized intersections currently operate at an overall LOS "C" or better during the AM and PM commuter peak periods based on Highway Capacity Manual calculations using the Synchro 10 traffic analysis software. Side street approaches at these intersections currently operate at LOS "E" or "F" during the peak periods due to long cycle lengths and the assignment of most of the green time to the Fairfax Boulevard Approaches.

2. Historic VDOT traffic data indicates that average daily traffic counts along Fairfax Boulevard have increased by approximately 0.55% per year between 2013 and 2018.

3. The Novus Fairfax Gateway and Paul VI Redevelopment approved pipeline developments are anticipated to generate 543 AM commuter peak hour trips, 912 PM commuter peak hour trips at full buildout.

4. Under future 2024 traffic conditions minimal increases in delay at the study intersections are expected due to the trips generated by approved pipeline developments in the vicinity of the site and overall levels of service would remain generally consistent with existing conditions.

5. The site is currently developed with the 50-room Breezeway Motel, the 38-unit Fairfax Garden Apartments, and four (4) single family homes.

6. The Applicant proposes to redevelop the site with 62 residential townhouse units and up to 10,010 SF of commercial uses.

7. The project is estimated to generate 40 AM peak commuter hour trips and 140 PM peak commuter hour trips upon buildout.

8. Under future 2024 traffic conditions, with the development of the subject site, intersection levels of service would remain generally consistent with existing and background conditions. The analyses show that the Fairfax Boulevard signalized intersections will continue to operate at LOS "C" or better during the AM and PM commuter peak periods.

9. All unsignalized intersection and access drive approaches will operate at LOS "B" or better during each of the studied peak periods.

10. Access to the commercial portion of the site will be via one full access driveway along Fairfax Boulevard and one right-in/right-out/left-out driveway on Walnut Street. Access to the northern residential portion of the site will be provided via one full access

driveway along Walnut Street. Access to the southern residential portion of the site will be provided via one full access driveway along Oak Street.

11. The Applicant intends to improve the roadway geometrics at the Walnut Street/Cedar Avenue intersection by reconstructing the intersection to provide a typical four-legged stop sign controlled intersection in order to enhance vehicular, pedestrian and bicycle safety by reducing crossing widths and providing conventional design features recognized by the average motorist.

12. The Applicant intends to consolidate these access drives along Fairfax Boulevard from two locations currently serving the Breezeway Motel to a single location providing enhanced access management along this arterial roadway.

13. An alternative analysis has been added in this revision of the study to include the added impact of the potential redevelopment of the American Legion (Toll Brothers) site on the east side of Oak Street per the current development proposal for that site. Since the application for that redevelopment is not currently approved, this additional assessment is provided for informational purposes. The results indicate that both background and total future conditions would be generally consistent with those presented in this study that do not include the American Legion (Toll Brothers) redevelopment. This is primarily due to the relatively low increase in site traffic that would result from that redevelopment and the excess capacity along Oak Street that can adequately accommodate the additional traffic. Additional details regarding this additional alternative analysis are presented in Appendix F.

APPENDIX A

City of Fairfax Scoping Agreement

SCOPE OF WORK MEETING FORM

Information on the Project
Traffic Impact Analysis Base Assumptions

ROUTE 50 BREEZEWAY PROPERTY
CITY OF FAIRFAX, VIRGINIA
July 3, 2019
Scoping Meeting Held June 25, 2019

Contact Information			
Consultant Name: Tele: E-mail:	Christopher Turnbull - Wells + Associates, Inc. 703-917-6620 cturnbull@wellsandassociates.com		
Developer/Owner Name: Tele: E-mail:	Stephen S. Collins, Jr. P.E. 703.934.9369 Stephen.Collins@Pultegroup.com		
Project Information			
Project Name:	Route 50 Breezeway Property	Locality/County:	City of Fairfax
Project Location: (Attach regional and site specific location map)	The project is generally located south of Fairfax Boulevard, between Main Street and Chain Bridge Road. See Attachment 1 for the site location.		
Submission Type	Comp Plan ☐	Rezoning ☒ (SUP)	Site Plan ☐	Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The Applicant is proposing to redevelop the property with 62 residential units to include townhomes and stacked condos. And up to 10,920 square feet of commercial space. The Site Layout is provided as Attachment 2.		
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☒	Other ☐
(See Attachment – 3)	**Residential Uses(s)** Number of Units: 62 ITE LU Code(s): 221 **Commercial Use(s)** ITE LU Code(s): TBD Square Ft or Other Variable: 10,920		**Other Use(s)** ITE LU Code(s): ____ ____ ____ Independent Variable(s): ____ ____ ____	
Total Peak Hour Trip Projection:	Less than 100 ☐	100 – 499 ☒	500 – 999 ☐	1,000 or more ☐

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: 2019	Build-out Year: 2024	Design Year: n/a
Study Area Boundaries	North: Fairfax Boulevard (US Route 50)	South: Second Street	
	East: Oak Street	West: Walnut Street	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	• Novus Fairfax Gateway redevelopment • Paul VI Redevelopment		
Consistency With Comprehensive Plan (Land use, transportation plan)	The proposed development conforms with the City's 2035 Comprehensive Plan that identifies the northers portion of the site along Fairfax Boulevard as "Commercial Corridor" and the remainder of the site "Multifamily Neighborhood." The current CR (Commercial Retail) and RMF (Residential Multifamily) would permit the proposed land uses. The roadway network is consistent with the intent of the City Transportation Plan.		
Available Traffic Data (Historical, forecasts)	VDOT historical traffic count data indicates: 2018 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 37,000 vpd (Main Street to Chain Bridge Road) 2017 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 36,000 vpd (Main Street to Chain Bridge Road) 2016 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 36,000 vpd (Main Street to Chain Bridge Road) 2015 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 35,000 vpd (Main Street to Chain Bridge Road) 2014 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 36,000 vpd (Main Street to Chain Bridge Road) 2013 VDOT Average Annual Daily Traffic (AADT): Fairfax Boulevard (US Route 50): 36,000 vpd (Main Street to Chain Bridge Road)		
Trip Distribution (Pending data from existing traffic counts)(See Attachment 4)	From the West: 35%	From the Northeast: 50%Resid./45% Commercial	
	From the North: 0% Resid./5% Comm.	From the Southeast: 15%	
Annual Vehicle Trip Growth Rate:	1% or per VDOT AADT counts	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
		Peak Hour of the Generator	N/A
Study Intersections and/or Road Segments (See Attachment 1)	1. Fairfax Boulevard/Meredith Drive, Oak Street	6. Oak Street/Cedar Avenue/Panther Place	
	2. Fairfax Blvd/Fairchester Drive, Walnut Street	7. Site Access Drives	
	3. Walnut Street/Cedar Avenue		
	4. Walnut Street/Second Street		
	5. Oak Street/Second Street		

Trip Adjustment Factors	Internal allowance: ☐ Yes ☒ No Reduction: _____% trips	Pass-by allowance: ☐ Yes ☒ No Reduction: %trips
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other Synchro Version 8	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	None	
Improvement(s) Assumed or to be Considered	Reconfigure Walnut Street/Cedar Avenue intersection to a conventional design.	
Background Traffic Studies Considered	• Avalon • Novus Fairfax Gateway Traffic Impact Analysis • Paul VI Redevelopment	
Plan Submission	☒ Master Development Plan (MDP) ☐ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)	
Additional Issues to be Addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☒ Bike/Ped Accommodations ☐ Intersection(s) ☐ TDM Measures ☐ Other _____	

NOTES on ASSUMPTIONS:

1. Synchro 8 will be used to conduct capacity analysis with peak hour factors measured in the field for existing conditions (0.85<PHF<0.92). Under background and total future conditions a PHF of 0.92 will be used for all movements.
2. Existing Synchro (signal timing) files to be provided by the city.

SCOPE OF WORK MEETING

ADDITIONS TO THE REQUIRED ELEMENTS, CHANGES TO THE METHODOLOGY OR STANDARD ASSUMPTIONS, AND SIGNATURE PAGE

Any additions to the Required Elements or changes to the Methodology or Standard Assumptions due to special circumstances that are approved by the City of Fairfax:

_____

_____

_____

_____

_____

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_____

_____

_____

_____

_____

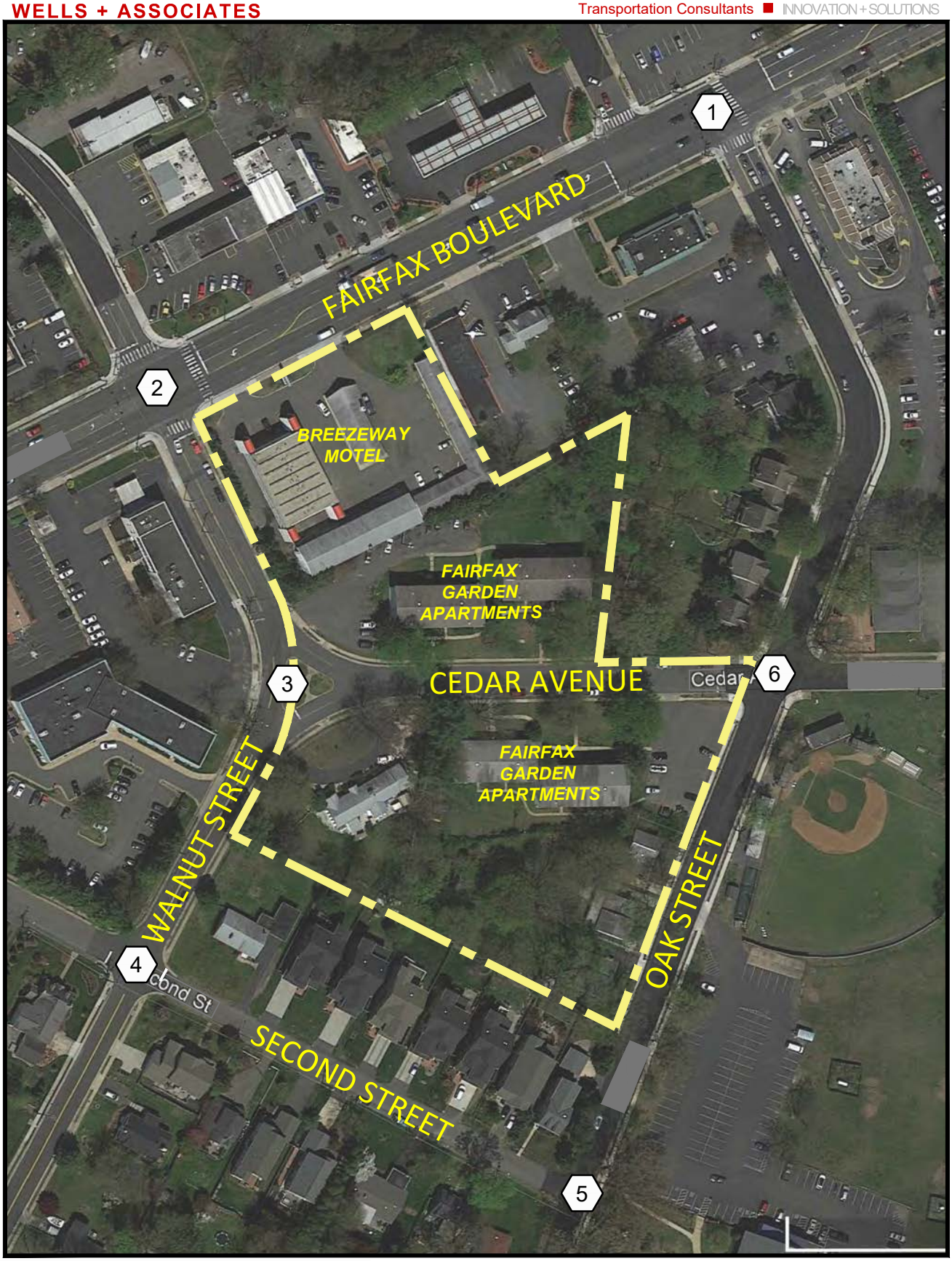
AGREED: _____ DATE: 07/03/2019
Consultant

PRINT NAME: Christopher Turnbull
Consultant

SIGNED: _____ DATE: _____

PRINT NAME: _____

Attachments:
Attachment 1 - Site Location and Study Intersections
Attachment 2 – Site Layout
Attachment 3 – Trip Generation
Attachment 4 – Directions of Approach



Attachment 1
Site Location
PulteGroup, Inc.
Breezeway Property
City of Fairfax, Virginia

(X) - Study Intersection

NORTH

SITE AREA:

- 4.739 AC W/ R.O.W. DEDICATION
- 4.634 AC W/OUT R.O.W. DEDICATION
- RESIDENTIAL: (NORTH AND SOUTH OF CEDAR)

  3.838 AC = 1.507+2.331
- COMMERCIAL:

  0.796 AC

TOTAL OPEN SPACE REQUIRED: 20% SITE AREA

TOTAL OPEN SPACE PROVIDED: 24.8%

0.287 AC + 0.101 AC + 0.267 AC + 0.296 AC = 0.9510 AC

PARKING TABULATIONS:

PARKING TABULATIONS (PER FAIRFAX CITY ZONING ORDINANCE)				
PARKING TYPE	QUANTITY	REQUIREMENT	REQUIRED	PROVIDED
RESIDENTIAL	62 UNITS	2 SPACES/UNIT	124	TOTAL 144 20 SURFACE 104 GARAGE 20 TANDEM
COMMERCIAL	10,920 S.F.	1 SPACE/200 S.F.	55	TOTAL 44 44 SURFACE
		TOTAL	179	188

PRODUCT TYPES:

RESIDENTIAL PRODUCT TYPES	QUANTITY
TOWN HOME – REAR LOAD 20' WIDE	14
TOWN HOME – REAR LOAD 22' WIDE	15
TOWN HOME – FRONT LOAD 22' WIDE	13
STACKED CONDO – REAR LOAD 24' WIDE (2 DU / BUILDING)	20
TOTAL	62

Attachment 2

0 20' 40' 80'
SCALE:1" = 40'

SUBMISSION NO.	DATE	REVISION NO.	DATE	DESCRIPTION
-	--/--/----	-	--/--/----	-
-	--/--/----	-	--/--/----	-
-	--/--/----	-	--/--/----	-
-	--/--/----	-	--/--/----	-
-	--/--/----	-	--/--/----	-
-	--/--/----	-	--/--/----	-

CLIENT
PULTE GROUP, INC.
9302 LEE HIGHWAY, SUITE 1000
FAIRFAX, VA 22031

ATCS®
13861 SUNRISE VALLEY DRIVE, SUITE 200
HERNDON, VIRGINIA 20171
(703) 430-7500 FAX (703) 430-0889
HERNDON - BALTIMORE - BLACKSBURG
CULPEPER - NEWPORT NEWS - RALEIGH
WALDORF - RICHMOND - WASHINGTON, DC
WWW.ATCSPLC.COM

SITE LAYOUT

RT. 50 BREEZEWAY PROPERTY

LOCATION:
FAIRFAX CITY, VIRGINIA

AUTHOR: A.A.H.
CHECK: G.A.B.
PROJ#: 001271
DATE: 4/24/2019
SCALE: 1" = 40'

SHEET
CS-101
SHEET: 1 OF 1

FILE PATH: K:\DOCUMENT\1271 - Breezeway Motel\Civil\Design_Xref\001271-P-BASE_v5_REV2.6.dwg PLOT DATE:4/24/2019 12:50:47 PM BY: AMIR HABIBI

Attachment 3

Breezeway Property - City of Fairfax

Trip Generation Comparison Existing Residential Uses Vs. Proposed Residential Uses (1)

Use		ITE Land Use Code	Amount	Units	AM Peak Hour			PM Peak Hour			ADT
					In	Out	Total	In	Out	Total	
Existing Residential Uses											
Multifamily (Low Rise)	Apartments	220	6	DU's	1	2	3	3	2	5	44
Multifamily (Mid-Rise)	Apartments	221	32	DU's	3	8	11	9	6	15	173
Single-Family Detached	Houses	210	4	DU's	1	2	3	3	1	4	38
Total Existing Uses			42		5	12	17	15	9	24	255
Proposed Residential Use											
Residential (Mid-Rise)	Town Homes	221	62	DU's	5	16	21	17	11	28	336
Difference Proposed Uses Less Existing Uses					0	4	4	2	2	4	81

Trip Generation Comparison Potential Commercial Uses Vs. Existing and By-Right Commercial Uses(1)

Use		ITE Land Use Code	Amount	Units	AM Peak Hour			PM Peak Hour			ADT
					In	Out	Total	In	Out	Total	
Existing Commercial Use											
Motel		320	50	Rooms	8	13	21	11	10	21	152
Potential By-Right Commercial Uses (2)											
Allowed CR Zone Use	Most Similar ITE Land Use										
Art Gallery or Studio	Retail Shopping Center	820	10,920	SF	6	4	10	51	55	106	1,334
Catering or Delivery Service			8,800	SF	5	3	8	43	47	90	1,152
Retail General			8,800	SF	5	3	8	43	47	90	1,152
Retail large Format			8,800	SF	5	3	8	43	47	90	1,152
Shopping Centers			8,800	SF	5	3	8	43	47	90	1,152
Tobacco and Smoke Shop			8,800	SF	5	3	8	43	47	90	1,152
Services General			8,800	SF	5	3	8	43	47	90	1,152
Services Personal			8,800	SF	5	3	8	43	47	90	1,152
Building Supplies and Lumber Sales	Building Materials and Lumber Store	812	10,920	SF	11	6	17	11	11	22	N/A
Furniture, Appliance or carpeting/flooring store	Furniture Store	890	10,920	SF	3	1	4	3	3	6	103
Office, General	General Office	710	10,920	SF	11	2	13	2	12	14	106
Office, Medical	Medical-Dental Office	720	8,800	SF	20	6	26	9	23	32	250
Schools, technical, trade, business	Junior/Community College	540	10,920	SF	47	14	61	10	10	20	221
Brew Pub	Drinking Place	925	10,920	SF	0	0	0	82	42	124	N/A
Restaurant or Food Service	Quality Restaurant	931	8,800	SF	3	3	6	46	23	69	738
	High-Turnover Restaurant	932	8,800	SF	48	39	87	53	33	86	987
Day Care/Nursery School	Day Care Center	565	8,800	SF	51	46	97	46	52	98	419

Notes: (1) Based on Institute of Transportation Engineers', Trip Generation, 10th Edition
(2) Square footage based on ability to surface park use.

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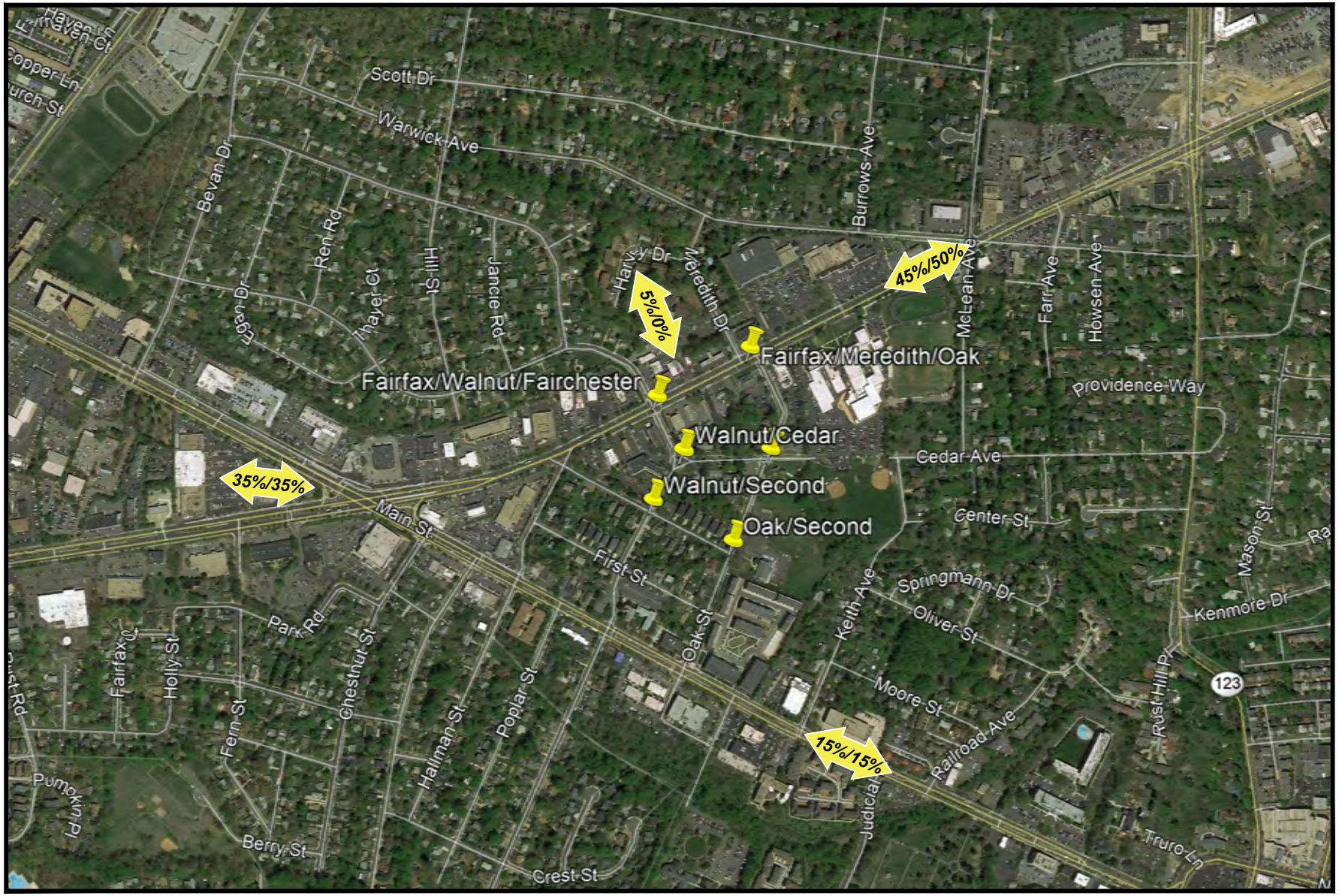


Attachment 4
Directions of Approach
Breezeway Property

XX%/XX% - *Commercial / Residential*

NORTH

Pulte Group, Inc.
City of Fairfax, Virginia

APPENDIX B

Existing Traffic Volumes

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Fairfax Boulevard & Meredith Drive/Oak Street
LOCATION: City of Fairfax, VA

DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: Halid & Salih
INPUTED BY: Dyron

SOUTHBOUND ROAD: Meredith Drive
NORTHBOUND ROAD: Oak Street
WESTBOUND ROAD: Fairfax Boulevard
EASTBOUND ROAD: Fairfax Boulevard

Time Period	Southbound Meredith Drive					Westbound Fairfax Boulevard					Northbound Oak Street					Eastbound Fairfax Boulevard					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	0	0	0	0		1	46	7	54		8	0	0	8		2	220	3	225		8	279	287
6:15 AM - 6:30 AM	5	0	4	9		1	44	5	50		5	0	1	6		3	345	4	352		15	402	417
6:30 AM - 6:45 AM	3	0	2	5		0	65	2	67		8	1	5	14		0	396	1	397		19	464	483
6:45 AM - 7:00 AM	2	0	1	3		0	82	4	86		11	0	3	14		3	406	1	410		17	496	513
7:00 AM - 7:15 AM	4	0	3	7		0	99	3	102		17	1	4	22		2	393	4	399		29	501	530
7:15 AM - 7:30 AM	3	0	0	3		0	117	10	127		9	1	6	16		0	412	3	415		19	542	561
7:30 AM - 7:45 AM	4	0	2	6		0	122	10	132		21	0	7	28		2	399	4	405		34	537	571
7:45 AM - 8:00 AM	8	1	3	12		0	133	16	149		14	1	4	19		2	386	3	391		31	540	571
8:00 AM - 8:15 AM	3	0	1	4		0	131	17	148		21	4	7	32		0	448	7	455		36	603	639
8:15 AM - 8:30 AM	4	0	2	6		1	150	21	172		17	3	6	26		1	400	5	406		32	578	610
8:30 AM - 8:45 AM	9	0	0	9		2	132	17	151		20	4	9	33		5	468	5	478		42	629	671
8:45 AM - 9:00 AM	2	1	6	9		0	143	12	155		21	1	16	38		12	370	4	386		47	541	588
Total	47	2	24	73		5	1264	124	1393		172	16	68	256		32	4643	44	4719		329	6112	6441
AM One Hour Volumes																							
6:00 AM - 7:00 AM	10	0	7	17	0.47	2	237	18	257	0.75	32	1	9	42	0.75	8	1367	9	1384	0.84	59	1641	1700
6:15 AM - 7:15 AM	14	0	10	24	0.67	1	290	14	305	0.75	41	2	13	56	0.64	8	1540	10	1558	0.95	80	1863	1943
6:30 AM - 7:30 AM	12	0	6	18	0.64	0	363	19	382	0.75	45	3	18	66	0.75	5	1607	9	1621	0.98	84	2003	2087
6:45 AM - 7:45 AM	13	0	6	19	0.68	0	420	27	447	0.85	58	2	20	80	0.71	7	1610	12	1629	0.98	99	2076	2175
7:00 AM - 8:00 AM	19	1	8	28	0.58	0	471	39	510	0.86	61	3	21	85	0.76	6	1590	14	1610	0.97	113	2120	2233
7:15 AM - 8:15 AM	18	1	6	25	0.52	0	503	53	556	0.93	65	6	24	95	0.74	4	1645	17	1666	0.92	120	2222	2342
7:30 AM - 8:30 AM	19	1	8	28	0.58	1	536	64	601	0.87	73	8	24	105	0.82	5	1633	19	1657	0.91	133	2258	2391
7:45 AM - 8:45 AM	24	1	6	31	0.65	3	546	71	620	0.90	72	12	26	110	0.83	8	1702	20	1730	0.90	141	2350	2491
8:00 AM - 9:00 AM	**18**	**1**	**9**	**28**	**0.78**	**3**	**556**	**67**	**626**	**0.91**	**79**	**12**	**38**	**129**	**0.85**	**18**	**1686**	**21**	**1725**	**0.90**	**157**	**2351**	**2508**
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	3	0	5	8		0	338	14	352		21	2	3	26		7	377	4	388		34	740	774
4:15 PM - 4:30 PM	2	0	0	2		0	311	13	324		27	0	7	34		7	229	11	247		36	571	607
4:30 PM - 4:45 PM	6	3	6	15		0	336	21	357		27	2	7	36		5	199	8	212		51	569	620
4:45 PM - 5:00 PM	7	6	4	17		0	310	28	338		13	0	4	17		3	226	9	238		34	576	610
5:00 PM - 5:15 PM	13	2	4	19		1	201	16	218		20	0	6	26		5	202	6	213		45	431	476
5:15 PM - 5:30 PM	3	2	4	9		3	195	14	212		19	1	7	27		7	192	7	206		36	418	454
5:30 PM - 5:45 PM	1	3	2	6		1	327	19	347		22	2	6	30		13	170	2	185		36	532	568
5:45 PM - 6:00 PM	13	5	5	23		1	313	20	334		19	2	3	24		3	156	7	166		47	500	547
6:00 PM - 6:15 PM	11	1	5	17		1	310	18	329		15	2	2	19		7	150	6	163		36	492	528
6:15 PM - 6:30 PM	8	4	6	18		3	318	17	338		6	3	4	13		0	198	10	208		31	546	577
6:30 PM - 6:45 PM	19	2	2	23		3	272	11	286		12	0	2	14		3	194	11	208		37	494	531
6:45 PM - 7:00 PM	19	1	7	27		0	253	16	269		10	0	5	15		6	162	5	173		42	442	484
Total	105	29	50	184		13	3484	207	3704		211	14	56	281		66	2455	86	2607		465	6311	6776
PM One Hour Volumes																							
4:00 PM - 5:00 PM	**18**	**9**	**15**	**42**	**0.62**	**0**	**1295**	**76**	**1371**	**0.96**	**88**	**4**	**21**	**113**	**0.78**	**22**	**1031**	**32**	**1085**	**0.70**	**155**	**2456**	**2611**
4:15 PM - 5:15 PM	28	11	14	53	0.70	1	1158	78	1237	0.87	87	2	24	113	0.78	20	856	34	910	0.92	166	2147	2313
4:30 PM - 5:30 PM	29	13	18	60	0.79	4	1042	79	1125	0.79	79	3	24	106	0.74	20	819	30	869	0.91	166	1994	2160
4:45 PM - 5:45 PM	24	13	14	51	0.67	5	1033	77	1115	0.80	74	3	23	100	0.83	28	790	24	842	0.88	151	1957	2108
5:00 PM - 6:00 PM	30	12	15	57	0.62	6	1036	69	1111	0.80	80	5	22	107	0.89	28	720	22	770	0.90	164	1881	2045
5:15 PM - 6:15 PM	28	11	16	55	0.60	6	1145	71	1222	0.88	75	7	18	100	0.83	30	668	22	720	0.87	155	1942	2097
5:30 PM - 6:30 PM	33	13	18	64	0.70	6	1268	74	1348	0.97	62	9	15	86	0.72	23	674	25	722	0.87	150	2070	2220
5:45 PM - 6:45 PM	51	12	18	81	0.88	8	1213	66	1287	0.95	52	7	11	70	0.73	13	698	34	745	0.90	151	2032	2183
6:00 PM - 7:00 PM	57	8	20	85	0.79	7	1153	62	1222	0.90	43	5	13	61	0.80	16	704	32	752	0.90	146	1974	2120

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Fairfax Boulevard & Fairchester Drive/Walnut Street
LOCATION: City of Fairfax, VA
DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: James & Inita
INPUTED BY: Dyron
SOUTHBOUND ROAD: Fairchester Drive
NORTHBOUND ROAD: Walnut Street
WESTBOUND ROAD: Fairfax Boulevard
EASTBOUND ROAD: Fairfax Boulevard

Time Period	Southbound Fairchester Drive					Westbound Fairfax Boulevard					Northbound Walnut Street					Eastbound Fairfax Boulevard					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	3	0	4	7		4	41	0	45		7	0	0	7		1	219	1	221		14	266	280
6:15 AM - 6:30 AM	5	4	5	14		4	57	0	61		4	1	2	7		0	329	1	330		21	391	412
6:30 AM - 6:45 AM	6	0	5	11		4	56	1	61		9	1	2	12		1	390	3	394		23	455	478
6:45 AM - 7:00 AM	8	34	6	48		3	74	3	80		15	1	0	16		1	271	70	342		64	422	486
7:00 AM - 7:15 AM	11	3	6	20		3	76	3	82		10	2	2	14		2	384	2	388		34	470	504
7:15 AM - 7:30 AM	5	2	6	13		3	127	12	142		15	4	2	21		0	348	1	349		34	491	525
7:30 AM - 7:45 AM	2	8	6	16		3	119	3	125		13	0	1	14		0	414	2	416		30	541	571
7:45 AM - 8:00 AM	8	4	4	16		8	174	6	188		8	5	2	15		8	363	2	373		31	561	592
8:00 AM - 8:15 AM	0	3	3	6		3	142	5	150		10	8	5	23		1	452	0	453		29	603	632
8:15 AM - 8:30 AM	3	14	9	26		5	131	3	139		18	4	3	25		4	416	1	421		51	560	611
8:30 AM - 8:45 AM	1	4	9	14		2	159	6	167		9	9	3	21		4	430	7	441		35	608	643
8:45 AM - 9:00 AM	0	7	7	14		6	155	5	166		11	5	8	24		29	308	6	343		38	509	547
Total	52	83	70	205		48	1311	47	1406		129	40	30	199		51	4324	96	4471		404	5877	6281
AM One Hour Volumes																							
6:00 AM - 7:00 AM	22	38	20	80	0.42	15	228	4	247	0.77	35	3	4	42	0.66	3	1209	75	1287	0.82	122	1534	1656
6:15 AM - 7:15 AM	30	41	22	93	0.48	14	263	7	284	0.87	38	5	6	49	0.77	4	1374	76	1454	0.92	142	1738	1880
6:30 AM - 7:30 AM	30	39	23	92	0.48	13	333	19	365	0.64	49	8	6	63	0.75	4	1393	76	1473	0.93	155	1838	1993
6:45 AM - 7:45 AM	26	47	24	97	0.51	12	396	21	429	0.76	53	7	5	65	0.77	3	1417	75	1495	0.90	162	1924	2086
7:00 AM - 8:00 AM	26	17	22	65	0.81	17	496	24	537	0.71	46	11	7	64	0.76	10	1509	7	1526	0.92	129	2063	2192
7:15 AM - 8:15 AM	15	17	19	51	0.80	17	562	26	605	0.80	46	17	10	73	0.79	9	1577	5	1591	0.88	124	2196	2320
7:30 AM - 8:30 AM	13	29	22	64	0.62	19	566	17	602	0.80	49	17	11	77	0.77	13	1645	5	1663	0.92	141	2265	2406
7:45 AM - 8:45 AM	12	25	25	62	0.60	18	606	20	644	0.86	45	26	13	84	0.84	17	1661	10	1688	0.93	146	2332	2478
8:00 AM - 9:00 AM	4	28	28	60	0.58	16	587	19	622	0.93	48	26	19	93	0.93	38	1606	14	1658	0.92	153	2280	2433
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	3	4	13	20		2	382	6	390		9	8	3	20		1	272	7	280		40	670	710
4:15 PM - 4:30 PM	4	4	1	9		4	344	5	353		8	4	4	16		3	218	10	231		25	584	609
4:30 PM - 4:45 PM	2	9	14	25		3	347	4	354		8	7	6	21		2	163	3	168		46	522	568
4:45 PM - 5:00 PM	5	6	5	16		5	385	7	397		9	7	3	19		5	171	1	177		35	574	609
5:00 PM - 5:15 PM	3	7	6	16		4	355	11	370		12	4	4	20		6	164	7	177		36	547	583
5:15 PM - 5:30 PM	7	7	4	18		6	327	6	339		7	16	0	23		2	185	12	199		41	538	579
5:30 PM - 5:45 PM	6	8	5	19		6	318	3	327		5	5	4	14		22	153	2	177		33	504	537
5:45 PM - 6:00 PM	3	4	9	16		6	337	5	348		3	5	7	15		0	151	5	156		31	504	535
6:00 PM - 6:15 PM	11	11	9	31		5	335	3	343		12	4	5	21		2	140	5	147		52	490	542
6:15 PM - 6:30 PM	11	6	8	25		4	337	11	352		6	6	1	13		4	193	1	198		38	550	588
6:30 PM - 6:45 PM	4	0	3	7		4	341	5	350		9	9	1	19		3	175	7	185		26	535	561
6:45 PM - 7:00 PM	4	6	14	24		7	330	7	344		6	3	3	12		1	142	3	146		36	490	526
Total	63	72	91	226		56	4138	73	4267		94	78	41	213		51	2127	63	2241		439	6508	6947
PM One Hour Volumes																							
4:00 PM - 5:00 PM	14	23	33	70	0.70	14	1458	22	1494	0.94	34	26	16	76	0.90	11	824	21	856	0.76	146	2350	2496
4:15 PM - 5:15 PM	14	26	26	66	0.66	16	1431	27	1474	0.93	37	22	17	76	0.90	16	716	21	753	0.81	142	2227	2369
4:30 PM - 5:30 PM	17	29	29	75	0.75	18	1414	28	1460	0.92	36	34	13	83	0.90	15	683	23	721	0.91	158	2181	2339
4:45 PM - 5:45 PM	21	28	20	69	0.91	21	1385	27	1433	0.90	33	32	11	76	0.83	35	673	22	730	0.92	145	2163	2308
5:00 PM - 6:00 PM	19	26	24	69	0.91	22	1337	25	1384	0.94	27	30	15	72	0.78	30	653	26	709	0.89	141	2093	2234
5:15 PM - 6:15 PM	27	30	27	84	0.68	23	1317	17	1357	0.97	27	30	16	73	0.79	26	629	24	679	0.85	157	2036	2193
5:30 PM - 6:30 PM	31	29	31	91	0.73	21	1327	22	1370	0.97	26	20	17	63	0.75	28	637	13	678	0.86	154	2048	2202
5:45 PM - 6:45 PM	29	21	29	79	0.64	19	1350	24	1393	0.99	30	24	14	68	0.81	9	659	18	686	0.87	147	2079	2226
6:00 PM - 7:00 PM	30	23	34	87	0.70	20	1343	26	1389	0.99	33	22	10	65	0.77	10	650	16	676	0.85	152	2065	2217

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Walnut Street & Cedar Avenue
LOCATION: City of Fairfax, VA

DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: Laura
INPUTED BY: Dyron

SOUTHBOUND ROAD: Walnut Street
NORTHBOUND ROAD: Walnut Street
WESTBOUND ROAD: Cedar Avenue
EASTBOUND ROAD: Driveway

Time Period	Southbound Walnut Street					Westbound Cedar Avenue					Northbound Walnut Street					Eastbound Driveway					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	0	1	2	3		1	0	0	1		0	9	0	9		0	0	0	0		12	1	13
6:15 AM - 6:30 AM	0	3	2	5		1	0	0	1		0	8	0	8		0	0	0	0		13	1	14
6:30 AM - 6:45 AM	0	1	1	2		2	0	1	3		2	14	0	16		0	0	0	0		18	3	21
6:45 AM - 7:00 AM	0	4	1	5		1	0	0	1		4	17	0	21		0	0	0	0		26	1	27
7:00 AM - 7:15 AM	0	6	1	7		1	0	1	2		1	13	0	14		0	0	0	0		21	2	23
7:15 AM - 7:30 AM	0	12	2	14		8	0	0	8		6	18	0	24		0	0	0	0		38	8	46
7:30 AM - 7:45 AM	0	13	2	15		2	0	1	3		9	19	0	28		0	0	0	0		43	3	46
7:45 AM - 8:00 AM	0	17	5	22		7	0	1	8		16	13	0	29		0	0	0	0		51	8	59
8:00 AM - 8:15 AM	0	8	2	10		5	0	1	6		10	18	0	28		0	0	0	0		38	6	44
8:15 AM - 8:30 AM	1	12	9	22		2	0	2	4		8	25	4	37		0	0	1	1		59	5	64
8:30 AM - 8:45 AM	0	9	4	13		5	0	1	6		6	23	2	31		0	0	0	0		44	6	50
8:45 AM - 9:00 AM	0	14	16	30		9	0	3	12		4	28	0	32		0	0	0	0		62	12	74
Total	1	100	47	148		44	0	11	55		66	205	6	277		0	0	1	1		425	56	481
AM One Hour Volumes																							
6:00 AM - 7:00 AM	0	9	6	15	0.75	5	0	1	6	0.50	6	48	0	54	0.64	0	0	0	0	0.00	69	6	75
6:15 AM - 7:15 AM	0	14	5	19	0.68	5	0	2	7	0.58	7	52	0	59	0.70	0	0	0	0	0.00	78	7	85
6:30 AM - 7:30 AM	0	23	5	28	0.50	12	0	2	14	0.44	13	62	0	75	0.78	0	0	0	0	0.00	103	14	117
6:45 AM - 7:45 AM	0	35	6	41	0.68	12	0	2	14	0.44	20	67	0	87	0.78	0	0	0	0	0.00	128	14	142
7:00 AM - 8:00 AM	0	48	10	58	0.66	18	0	3	21	0.66	32	63	0	95	0.82	0	0	0	0	0.00	153	21	174
7:15 AM - 8:15 AM	0	50	11	61	0.69	22	0	3	25	0.78	41	68	0	109	0.94	0	0	0	0	0.00	170	25	195
7:30 AM - 8:30 AM	1	50	18	69	0.78	16	0	5	21	0.66	43	75	4	122	0.82	0	0	1	1	0.25	191	22	213
7:45 AM - 8:45 AM	1	46	20	67	0.76	19	0	5	24	0.75	40	79	6	125	0.84	0	0	1	1	0.25	192	25	217
8:00 AM - 9:00 AM	**1**	**43**	**31**	**75**	**0.63**	**21**	**0**	**7**	**28**	**0.58**	**28**	**94**	**6**	**128**	**0.86**	**0**	**0**	**1**	**1**	**0.25**	**203**	**29**	**232**
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	0	11	1	12		2	0	7	9		1	21	0	22		0	0	0	0		34	9	43
4:15 PM - 4:30 PM	1	16	6	23		5	0	3	8		4	16	0	20		1	0	0	1		43	9	52
4:30 PM - 4:45 PM	1	13	3	17		5	0	8	13		3	16	0	19		1	0	2	3		36	16	52
4:45 PM - 5:00 PM	0	17	5	22		1	0	2	3		2	18	1	21		0	0	1	1		43	4	47
5:00 PM - 5:15 PM	0	22	3	25		3	0	4	7		4	15	0	19		1	0	0	1		44	8	52
5:15 PM - 5:30 PM	0	17	1	18		2	0	5	7		4	10	0	14		0	0	0	0		32	7	39
5:30 PM - 5:45 PM	0	12	4	16		4	0	9	13		3	16	0	19		0	0	0	0		35	13	48
5:45 PM - 6:00 PM	1	12	2	15		8	0	4	12		1	11	1	13		0	0	0	0		28	12	40
6:00 PM - 6:15 PM	0	14	4	18		2	0	5	7		0	18	0	18		3	0	1	4		36	11	47
6:15 PM - 6:30 PM	0	17	6	23		2	1	4	7		2	15	0	17		0	0	1	1		40	8	48
6:30 PM - 6:45 PM	0	13	0	13		2	0	1	3		1	17	0	18		0	0	0	0		31	3	34
6:45 PM - 7:00 PM	0	15	3	18		0	0	5	5		0	10	0	10		0	0	0	0		28	5	33
Total	3	179	38	220		36	1	57	94		25	183	2	210		6	0	5	11		430	105	535
PM One Hour Volumes																							
4:00 PM - 5:00 PM	2	57	15	74	0.80	13	0	20	33	0.63	10	71	1	82	0.93	2	0	3	5	0.42	156	38	194
4:15 PM - 5:15 PM	**2**	**68**	**17**	**87**	**0.87**	**14**	**0**	**17**	**31**	**0.60**	**13**	**65**	**1**	**79**	**0.94**	**3**	**0**	**3**	**6**	**0.50**	**166**	**37**	**203**
4:30 PM - 5:30 PM	1	69	12	82	0.82	11	0	19	30	0.58	13	59	1	73	0.87	2	0	3	5	0.42	155	35	190
4:45 PM - 5:45 PM	0	68	13	81	0.81	10	0	20	30	0.58	13	59	1	73	0.87	1	0	1	2	0.50	154	32	186
5:00 PM - 6:00 PM	1	63	10	74	0.74	17	0	22	39	0.75	12	52	1	65	0.86	1	0	0	1	0.25	139	40	179
5:15 PM - 6:15 PM	1	55	11	67	0.93	16	0	23	39	0.75	8	55	1	64	0.84	3	0	1	4	0.25	131	43	174
5:30 PM - 6:30 PM	1	55	16	72	0.78	16	1	22	39	0.75	6	60	1	67	0.88	3	0	2	5	0.31	139	44	183
5:45 PM - 6:45 PM	1	56	12	69	0.75	14	1	14	29	0.60	4	61	1	66	0.92	3	0	2	5	0.31	135	34	169
6:00 PM - 7:00 PM	0	59	13	72	0.78	6	1	15	22	0.79	3	60	0	63	0.88	3	0	2	5	0.31	135	27	162

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Walnut Street & Second Street
LOCATION: City of Fairfax, VA

DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: Amar
INPUTED BY: Dyron

SOUTHBOUND ROAD: Walnut Street
NORTHBOUND ROAD: Walnut Street
WESTBOUND ROAD: Second Street
EASTBOUND ROAD: Second Street

Time Period	Southbound Walnut Street					Westbound Second Street					Northbound Walnut Street					Eastbound Second Street					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	1	1	0	2		1	0	0	1		0	9	0	9		0	0	0	0		11	1	12
6:15 AM - 6:30 AM	0	2	1	3		0	0	0	0		0	10	0	10		1	0	0	1		13	1	14
6:30 AM - 6:45 AM	0	1	0	1		0	1	0	1		0	14	0	14		0	0	0	0		15	1	16
6:45 AM - 7:00 AM	0	3	0	3		0	2	0	2		1	21	0	22		1	0	1	2		25	4	29
7:00 AM - 7:15 AM	0	7	0	7		1	1	0	2		0	20	0	20		0	3	1	4		27	6	33
7:15 AM - 7:30 AM	0	15	0	15		1	0	0	1		0	11	3	14		0	0	3	3		29	4	33
7:30 AM - 7:45 AM	0	10	0	10		0	0	0	0		0	26	0	26		2	3	3	8		36	8	44
7:45 AM - 8:00 AM	0	18	0	18		1	1	0	2		2	23	2	27		3	4	5	12		45	14	59
8:00 AM - 8:15 AM	0	7	1	8		3	0	1	4		0	29	0	29		1	0	3	4		37	8	45
8:15 AM - 8:30 AM	1	11	2	14		0	1	1	2		0	32	0	32		2	3	0	5		46	7	53
8:30 AM - 8:45 AM	1	13	0	14		0	0	0	0		1	25	0	26		3	2	5	10		40	10	50
8:45 AM - 9:00 AM	2	10	0	12		2	0	2	4		0	23	1	24		3	3	5	11		36	15	51
Total	5	98	4	107		9	6	4	19		4	243	6	253		16	18	26	60		360	79	439
AM One Hour Volumes																							
6:00 AM - 7:00 AM	1	7	1	9	0.75	1	3	0	4	0.50	1	54	0	55	0.63	2	0	1	3	0.38	64	7	71
6:15 AM - 7:15 AM	0	13	1	14	0.50	1	4	0	5	0.63	1	65	0	66	0.75	2	3	2	7	0.44	80	12	92
6:30 AM - 7:30 AM	0	26	0	26	0.43	2	4	0	6	0.75	1	66	3	70	0.80	1	3	5	9	0.56	96	15	111
6:45 AM - 7:45 AM	0	35	0	35	0.58	2	3	0	5	0.63	1	78	3	82	0.79	3	6	8	17	0.53	117	22	139
7:00 AM - 8:00 AM	0	50	0	50	0.69	3	2	0	5	0.63	2	80	5	87	0.81	5	10	12	27	0.56	137	32	169
7:15 AM - 8:15 AM	0	50	1	51	0.71	5	1	1	7	0.44	2	89	5	96	0.83	6	7	14	27	0.56	147	34	181
7:30 AM - 8:30 AM	1	46	3	50	0.69	4	2	2	8	0.50	2	110	2	114	0.89	8	10	11	29	0.60	164	37	201
7:45 AM - 8:45 AM	**2**	**49**	**3**	**54**	**0.75**	**4**	**2**	**2**	**8**	**0.50**	**3**	**109**	**2**	**114**	**0.89**	**9**	**9**	**13**	**31**	**0.65**	**168**	**39**	**207**
8:00 AM - 9:00 AM	4	41	3	48	0.86	5	1	4	10	0.63	1	109	1	111	0.87	9	8	13	30	0.68	159	40	199
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	1	20	0	21		0	0	1	1		0	22	1	23		1	1	0	2		44	3	47
4:15 PM - 4:30 PM	0	21	1	22		0	0	0	0		0	14	1	15		1	2	4	7		37	7	44
4:30 PM - 4:45 PM	4	17	1	22		0	0	1	1		0	15	0	15		2	1	0	3		37	4	41
4:45 PM - 5:00 PM	1	19	0	20		0	2	0	2		0	19	2	21		1	1	1	3		41	5	46
5:00 PM - 5:15 PM	1	25	1	27		0	0	0	0		1	17	3	21		1	4	0	5		48	5	53
5:15 PM - 5:30 PM	0	22	2	24		1	0	0	1		0	14	0	14		0	5	0	5		38	6	44
5:30 PM - 5:45 PM	0	23	0	23		0	3	0	3		0	16	1	17		1	1	0	2		40	5	45
5:45 PM - 6:00 PM	0	14	0	14		0	1	1	2		1	13	0	14		2	3	0	5		28	7	35
6:00 PM - 6:15 PM	1	18	2	21		0	1	0	1		2	17	0	19		2	4	0	6		40	7	47
6:15 PM - 6:30 PM	1	21	0	22		1	0	0	1		0	13	1	14		0	3	0	3		36	4	40
6:30 PM - 6:45 PM	0	14	0	14		0	0	1	1		0	20	1	21		0	2	0	2		35	3	38
6:45 PM - 7:00 PM	1	19	0	20		0	1	0	1		0	10	0	10		2	0	1	3		30	4	34
Total	10	233	7	250		2	8	4	14		4	190	10	204		13	27	6	46		454	60	514
PM One Hour Volumes																							
4:00 PM - 5:00 PM	6	77	2	85	0.97	0	2	2	4	0.50	0	70	4	74	0.80	5	5	5	15	0.54	159	19	178
4:15 PM - 5:15 PM	6	82	3	91	0.84	0	2	1	3	0.38	1	65	6	72	0.86	5	8	5	18	0.64	163	21	184
4:30 PM - 5:30 PM	6	83	4	93	0.86	1	2	1	4	0.50	1	65	5	71	0.85	4	11	1	16	0.80	164	20	184
4:45 PM - 5:45 PM	**2**	**89**	**3**	**94**	**0.87**	**1**	**5**	**0**	**6**	**0.50**	**1**	**66**	**6**	**73**	**0.87**	**3**	**11**	**1**	**15**	**0.75**	**167**	**21**	**188**
5:00 PM - 6:00 PM	1	84	3	88	0.81	1	4	1	6	0.50	2	60	4	66	0.79	4	13	0	17	0.85	154	23	177
5:15 PM - 6:15 PM	1	77	4	82	0.85	1	5	1	7	0.58	3	60	1	64	0.84	5	13	0	18	0.75	146	25	171
5:30 PM - 6:30 PM	2	76	2	80	0.87	1	5	1	7	0.58	3	59	2	64	0.84	5	11	0	16	0.67	144	23	167
5:45 PM - 6:45 PM	2	67	2	71	0.81	1	2	2	5	0.63	3	63	2	68	0.81	4	12	0	16	0.67	139	21	160
6:00 PM - 7:00 PM	3	72	2	77	0.88	1	2	1	4	1.00	2	60	2	64	0.76	4	9	1	14	0.58	141	18	159

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Oak Street & Second Street
LOCATION: City of Fairfax, VA

DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: Maria
INPUTED BY: Dyron

SOUTHBOUND ROAD: Oak Street
NORTHBOUND ROAD: Oak Street
WESTBOUND ROAD: N/A
EASTBOUND ROAD: Second Street

Time Period	Southbound Oak Street					Westbound N/A					Northbound Oak Street					Eastbound Second Street					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	0	8	0	8		0	0	0	0		0	9	0	9		0	0	0	0		17	0	17
6:15 AM - 6:30 AM	0	5	0	5		0	0	0	0		0	8	0	8		1	0	0	1		13	1	14
6:30 AM - 6:45 AM	0	3	0	3		0	0	0	0		0	13	0	13		0	0	0	0		16	0	16
6:45 AM - 7:00 AM	1	4	0	5		0	0	0	0		0	14	0	14		2	0	0	2		19	2	21
7:00 AM - 7:15 AM	0	5	0	5		0	0	0	0		0	19	0	19		1	0	1	2		24	2	26
7:15 AM - 7:30 AM	0	11	0	11		0	0	0	0		0	15	0	15		0	0	0	0		26	0	26
7:30 AM - 7:45 AM	1	14	0	15		0	0	0	0		0	19	0	19		3	0	0	3		34	3	37
7:45 AM - 8:00 AM	0	20	0	20		0	0	0	0		0	19	0	19		4	0	2	6		39	6	45
8:00 AM - 8:15 AM	2	23	0	25		0	0	0	0		0	23	1	24		0	0	0	0		49	0	49
8:15 AM - 8:30 AM	1	36	0	37		0	0	0	0		0	23	0	23		5	0	0	5		60	5	65
8:30 AM - 8:45 AM	0	20	0	20		0	0	0	0		0	27	0	27		2	0	0	2		47	2	49
8:45 AM - 9:00 AM	0	33	0	33		0	0	0	0		0	28	1	29		0	0	1	1		62	1	63
Total	5	182	0	187		0	0	0	0		0	217	2	219		18	0	4	22		406	22	428
AM One Hour Volumes																							
6:00 AM - 7:00 AM	1	20	0	21	0.66	0	0	0	0	0.00	0	44	0	44	0.79	3	0	0	3	0.38	65	3	68
6:15 AM - 7:15 AM	1	17	0	18	0.90	0	0	0	0	0.00	0	54	0	54	0.71	4	0	1	5	0.63	72	5	77
6:30 AM - 7:30 AM	1	23	0	24	0.55	0	0	0	0	0.00	0	61	0	61	0.80	3	0	1	4	0.50	85	4	89
6:45 AM - 7:45 AM	2	34	0	36	0.60	0	0	0	0	0.00	0	67	0	67	0.88	6	0	1	7	0.58	103	7	110
7:00 AM - 8:00 AM	1	50	0	51	0.64	0	0	0	0	0.00	0	72	0	72	0.95	8	0	3	11	0.46	123	11	134
7:15 AM - 8:15 AM	3	68	0	71	0.71	0	0	0	0	0.00	0	76	1	77	0.80	7	0	2	9	0.38	148	9	157
7:30 AM - 8:30 AM	4	93	0	97	0.66	0	0	0	0	0.00	0	84	1	85	0.89	12	0	2	14	0.58	182	14	196
7:45 AM - 8:45 AM	3	99	0	102	0.69	0	0	0	0	0.00	0	92	1	93	0.86	11	0	2	13	0.54	195	13	208
8:00 AM - 9:00 AM	**3**	**112**	**0**	**115**	**0.78**	**0**	**0**	**0**	**0**	**0.00**	**0**	**101**	**2**	**103**	**0.89**	**7**	**0**	**1**	**8**	**0.40**	**218**	**8**	**226**
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	1	16	0	17		0	0	0	0		0	21	1	22		0	0	0	0		39	0	39
4:15 PM - 4:30 PM	0	16	0	16		0	0	0	0		0	20	0	20		1	0	0	1		36	1	37
4:30 PM - 4:45 PM	1	25	0	26		0	0	0	0		0	25	0	25		1	0	0	1		51	1	52
4:45 PM - 5:00 PM	0	31	0	31		0	0	0	0		0	17	3	20		1	0	1	2		51	2	53
5:00 PM - 5:15 PM	0	21	0	21		0	0	0	0		0	23	0	23		4	0	1	5		44	5	49
5:15 PM - 5:30 PM	1	22	0	23		0	0	0	0		0	30	1	31		4	0	1	5		54	5	59
5:30 PM - 5:45 PM	2	25	0	27		0	0	0	0		0	17	1	18		0	0	0	0		45	0	45
5:45 PM - 6:00 PM	3	15	0	18		0	0	0	0		0	30	1	31		3	0	0	3		49	3	52
6:00 PM - 6:15 PM	4	16	0	20		0	0	0	0		0	15	0	15		4	0	2	6		35	6	41
6:15 PM - 6:30 PM	0	26	0	26		0	0	0	0		0	7	1	8		2	0	1	3		34	3	37
6:30 PM - 6:45 PM	0	17	0	17		0	0	0	0		0	14	0	14		1	0	0	1		31	1	32
6:45 PM - 7:00 PM	0	18	0	18		0	0	0	0		0	14	1	15		2	0	1	3		33	3	36
Total	12	248	0	260		0	0	0	0		0	233	9	242		23	0	7	30		502	30	532
PM One Hour Volumes																							
4:00 PM - 5:00 PM	2	88	0	90	0.73	0	0	0	0	0.00	0	83	4	87	0.87	3	0	1	4	0.50	177	4	181
4:15 PM - 5:15 PM	1	93	0	94	0.76	0	0	0	0	0.00	0	85	3	88	0.88	7	0	2	9	0.45	182	9	191
4:30 PM - 5:30 PM	**2**	**99**	**0**	**101**	**0.81**	**0**	**0**	**0**	**0**	**0.00**	**0**	**95**	**4**	**99**	**0.80**	**10**	**0**	**3**	**13**	**0.65**	**200**	**13**	**213**
4:45 PM - 5:45 PM	3	99	0	102	0.82	0	0	0	0	0.00	0	87	5	92	0.74	9	0	3	12	0.60	194	12	206
5:00 PM - 6:00 PM	6	83	0	89	0.82	0	0	0	0	0.00	0	100	3	103	0.83	11	0	2	13	0.65	192	13	205
5:15 PM - 6:15 PM	10	78	0	88	0.81	0	0	0	0	0.00	0	92	3	95	0.77	11	0	3	14	0.58	183	14	197
5:30 PM - 6:30 PM	9	82	0	91	0.84	0	0	0	0	0.00	0	69	3	72	0.58	9	0	3	12	0.50	163	12	175
5:45 PM - 6:45 PM	7	74	0	81	0.78	0	0	0	0	0.00	0	66	2	68	0.55	10	0	3	13	0.54	149	13	162
6:00 PM - 7:00 PM	4	77	0	81	0.78	0	0	0	0	0.00	0	50	2	52	0.87	9	0	4	13	0.54	133	13	146

Wells + Associates, Inc.

McLean, Virginia

Turning Movement Count - All Vehicles

PROJECT: Pulte Homes Breezeway - City of Fairfax
W+A JOB NO: 7476
INTERSECTION: Oak Street & Second Street
LOCATION: City of Fairfax, VA

DATE: 7/11/2019
DAY: Thursday
WEATHER: clear
COUNTED BY: Laura
INPUTED BY: Dyron

SOUTHBOUND ROAD: Oak Street
NORTHBOUND ROAD: Oak Street
WESTBOUND ROAD: Panther Place
EASTBOUND ROAD: Cedar Avenue

Time Period	Southbound Oak Street					Westbound Panther Place					Northbound Oak Street					Eastbound Cedar Avenue					North & South	East & West	Total
	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF	Right	Thru	Left	Total	PHF			
AM 15 Minute Volumes																							
6:00 AM - 6:15 AM	2	9	1	12		0	1	0	1		0	8	0	8		1	1	1	3		20	4	24
6:15 AM - 6:30 AM	0	5	2	7		0	0	0	0		0	8	1	9		1	1	0	2		16	2	18
6:30 AM - 6:45 AM	1	3	0	4		0	0	0	0		1	12	0	13		0	1	2	3		17	3	20
6:45 AM - 7:00 AM	0	6	1	7		0	0	0	0		1	12	1	14		0	2	4	6		21	6	27
7:00 AM - 7:15 AM	2	6	1	9		1	1	1	3		3	16	0	19		1	0	2	3		28	6	34
7:15 AM - 7:30 AM	2	10	0	12		1	0	0	1		2	14	1	17		2	0	5	7		29	8	37
7:30 AM - 7:45 AM	0	13	1	14		1	0	0	1		4	13	0	17		1	5	7	13		31	14	45
7:45 AM - 8:00 AM	2	21	6	29		1	2	2	5		4	15	1	20		1	12	5	18		49	23	72
8:00 AM - 8:15 AM	0	19	5	24		6	2	7	15		8	22	0	30		0	7	7	14		54	29	83
8:15 AM - 8:30 AM	2	26	1	29		8	1	5	14		7	16	0	23		2	4	6	12		52	26	78
8:30 AM - 8:45 AM	1	14	11	26		5	2	6	13		5	22	1	28		4	4	5	13		54	26	80
8:45 AM - 9:00 AM	1	22	16	39		17	3	13	33		9	22	0	31		3	14	2	19		70	52	122
Total	13	154	45	212		40	12	34	86		44	180	5	229		16	51	46	113		441	199	640
AM One Hour Volumes																							
6:00 AM - 7:00 AM	3	23	4	30	0.63	0	1	0	1	0.25	2	40	2	44	0.79	2	5	7	14	0.58	74	15	89
6:15 AM - 7:15 AM	3	20	4	27	0.75	1	1	1	3	0.25	5	48	2	55	0.72	2	4	8	14	0.58	82	17	99
6:30 AM - 7:30 AM	5	25	2	32	0.67	2	1	1	4	0.33	7	54	2	63	0.83	3	3	13	19	0.68	95	23	118
6:45 AM - 7:45 AM	4	35	3	42	0.75	3	1	1	5	0.42	10	55	2	67	0.88	4	7	18	29	0.56	109	34	143
7:00 AM - 8:00 AM	6	50	8	64	0.55	4	3	3	10	0.50	13	58	2	73	0.91	5	17	19	41	0.57	137	51	188
7:15 AM - 8:15 AM	4	63	12	79	0.68	9	4	9	22	0.37	18	64	2	84	0.70	4	24	24	52	0.72	163	74	237
7:30 AM - 8:30 AM	4	79	13	96	0.83	16	5	14	35	0.58	23	66	1	90	0.75	4	28	25	57	0.79	186	92	278
7:45 AM - 8:45 AM	5	80	23	108	0.93	20	7	20	47	0.78	24	75	2	101	0.84	7	27	23	57	0.79	209	104	313
8:00 AM - 9:00 AM	**4**	**81**	**33**	**118**	**0.76**	**36**	**8**	**31**	**75**	**0.57**	**29**	**82**	**1**	**112**	**0.90**	**9**	**29**	**20**	**58**	**0.76**	**230**	**133**	**363**
PM 15 Minute Volumes																							
4:00 PM - 4:15 PM	7	20	3	30		1	2	1	4		4	20	1	25		0	0	1	1		55	5	60
4:15 PM - 4:30 PM	5	20	0	25		4	4	2	10		1	17	0	18		4	4	3	11		43	21	64
4:30 PM - 4:45 PM	8	25	3	36		3	3	3	9		1	27	2	30		3	1	2	6		66	15	81
4:45 PM - 5:00 PM	2	30	0	32		1	1	0	2		1	18	1	20		3	0	4	7		52	9	61
5:00 PM - 5:15 PM	5	23	1	29		1	0	2	3		1	24	2	27		2	1	3	6		56	9	65
5:15 PM - 5:30 PM	4	20	1	25		1	1	3	5		1	30	1	32		1	1	3	5		57	10	67
5:30 PM - 5:45 PM	8	28	0	36		0	1	1	2		0	18	1	19		2	1	2	5		55	7	62
5:45 PM - 6:00 PM	4	19	2	25		1	2	1	4		0	32	3	35		1	1	1	3		60	7	67
6:00 PM - 6:15 PM	3	20	1	24		0	0	2	2		0	19	2	21		3	0	0	3		45	5	50
6:15 PM - 6:30 PM	4	19	1	24		0	1	1	2		0	8	0	8		3	0	2	5		32	7	39
6:30 PM - 6:45 PM	2	22	0	24		0	0	0	0		0	15	1	16		0	0	1	1		40	1	41
6:45 PM - 7:00 PM	5	20	0	25		0	0	0	0		0	11	0	11		1	0	0	1		36	1	37
Total	57	266	12	335		12	15	16	43		9	239	14	262		23	9	22	54		597	97	694
PM One Hour Volumes																							
4:00 PM - 5:00 PM	22	95	6	123	0.85	9	10	6	25	0.63	7	82	4	93	0.78	10	5	10	25	0.57	216	50	266
4:15 PM - 5:15 PM	20	98	4	122	0.85	9	8	7	24	0.60	4	86	5	95	0.79	12	6	12	30	0.68	217	54	271
4:30 PM - 5:30 PM	**19**	**98**	**5**	**122**	**0.85**	**6**	**5**	**8**	**19**	**0.53**	**4**	**99**	**6**	**109**	**0.85**	**9**	**3**	**12**	**24**	**0.86**	**231**	**43**	**274**
4:45 PM - 5:45 PM	19	101	2	122	0.85	3	3	6	12	0.60	3	90	5	98	0.77	8	3	12	23	0.82	220	35	255
5:00 PM - 6:00 PM	21	90	4	115	0.80	3	4	7	14	0.70	2	104	7	113	0.81	6	4	9	19	0.79	228	33	261
5:15 PM - 6:15 PM	19	87	4	110	0.76	2	4	7	13	0.65	1	99	7	107	0.76	7	3	6	16	0.80	217	29	246
5:30 PM - 6:30 PM	19	86	4	109	0.76	1	4	5	10	0.63	0	77	6	83	0.59	9	2	5	16	0.80	192	26	218
5:45 PM - 6:45 PM	13	80	4	97	0.97	1	3	4	8	0.50	0	74	6	80	0.57	7	1	4	12	0.60	177	20	197
6:00 PM - 7:00 PM	14	81	2	97	0.97	0	1	3	4	0.50	0	53	3	56	0.67	7	0	3	10	0.50	153	14	167

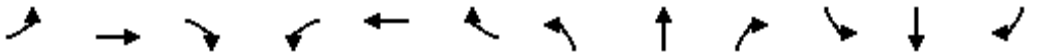
APPENDIX C

Existing Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	1692	18	67	588	3	38	12	79	9	1	18
Future Volume (vph)	21	1692	18	67	588	3	38	12	79	9	1	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3500		1805	3404			1830	1615		1708	
Flt Permitted	0.37	1.00		0.03	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	621	3500		66	3404			1830	1615		1708	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	25	1991	21	79	692	4	45	14	93	11	1	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	86	0	20	0
Lane Group Flow (vph)	25	2012	0	79	696	0	0	59	7	0	13	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	132.5	126.7		140.9	130.9			11.6	11.6		6.5	
Effective Green, g (s)	134.5	128.7		142.9	132.9			13.6	13.6		8.5	
Actuated g/C Ratio	0.71	0.68		0.75	0.70			0.07	0.07		0.04	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	474	2370		150	2381			130	115		76	
v/s Ratio Prot	0.00	c0.57		c0.03	0.20			c0.03			c0.01	
v/s Ratio Perm	0.04			0.36					0.00			
v/c Ratio	0.05	0.85		0.53	0.29			0.45	0.06		0.17	
Uniform Delay, d1	8.3	23.3		44.6	10.8			84.6	82.2		87.4	
Progression Factor	0.83	0.64		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.0		3.3	0.3			2.5	0.2		1.1	
Delay (s)	6.9	17.9		47.9	11.1			87.1	82.4		88.4	
Level of Service	A	B		D	B			F	F		F	
Approach Delay (s)		17.8			14.9			84.3			88.4	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1661	17	20	606	18	13	26	45	25	25	12
Future Volume (vph)	10	1661	17	20	606	18	13	26	45	25	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3501		1805	3397		1805	1572		1752	1771	
Flt Permitted	0.36	1.00		0.07	1.00		0.73	1.00		0.47	1.00	
Satd. Flow (perm)	636	3501		127	3397		1385	1572		871	1771	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	12	1954	20	24	713	21	15	31	53	29	29	14
RTOR Reduction (vph)	0	0	0	0	1	0	0	40	0	0	10	0
Lane Group Flow (vph)	12	1974	0	24	733	0	15	44	0	29	33	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	148.5	145.7		151.3	147.1		20.4	20.4		9.3	9.3	
Effective Green, g (s)	150.5	146.7		153.3	148.1		22.4	22.4		11.3	11.3	
Actuated g/C Ratio	0.79	0.77		0.81	0.78		0.12	0.12		0.06	0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	524	2703		148	2647		163	185		51	105	
v/s Ratio Prot	0.00	c0.56		c0.00	0.22			c0.03			0.02	
v/s Ratio Perm	0.02			0.13			0.01			c0.03		
v/c Ratio	0.02	0.73		0.16	0.28		0.09	0.24		0.57	0.31	
Uniform Delay, d1	4.2	11.3		12.6	5.9		74.7	76.1		87.0	85.6	
Progression Factor	1.00	1.00		0.98	0.42		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.5	0.3		0.2	0.7		13.7	1.7	
Delay (s)	4.2	13.1		12.9	2.7		75.0	76.7		100.7	87.3	
Level of Service	A	B		B	A		E	E		F	F	
Approach Delay (s)		13.0			3.0			76.5			92.7	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/22/2020

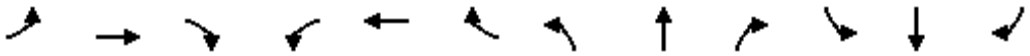
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	7	0	21	6	94	28	31	43	1
Future Volume (Veh/h)	0	0	0	7	0	21	6	94	28	31	43	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	8	0	25	7	111	33	36	51	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)											366	
pX, platoon unblocked												
vC, conflicting volume	290	282	52	265	266	128	52			144		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290	282	52	265	266	128	52			144		
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	99	100	97	100			97		
cM capacity (veh/h)	630	609	1016	672	621	923	1554			1438		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	33	151	88
Volume Left	0	8	7	36
Volume Right	0	25	33	1
cSH	1700	846	1554	1438
Volume to Capacity	0.00	0.04	0.00	0.03
Queue Length 95th (ft)	0	3	0	2
Control Delay (s)	0.0	9.4	0.4	3.2
Lane LOS	A	A	A	A
Approach Delay (s)	0.0	9.4	0.4	3.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	24.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/22/2020



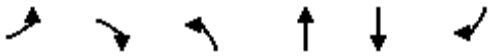
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	9	9	2	2	4	2	109	3	3	49	2
Future Volume (vph)	13	9	9	2	2	4	2	109	3	3	49	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	15	11	11	2	2	5	2	128	4	4	58	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	9	134	64
Volume Left (vph)	15	2	2	4
Volume Right (vph)	11	5	4	2
Hadj (s)	-0.06	-0.25	0.02	0.03
Departure Headway (s)	4.3	4.1	4.1	4.2
Degree Utilization, x	0.04	0.01	0.15	0.07
Capacity (veh/h)	801	828	860	847
Control Delay (s)	7.5	7.2	7.8	7.5
Approach Delay (s)	7.5	7.2	7.8	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.7			
Level of Service	A			
Intersection Capacity Utilization	16.5%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
5: Oak Street & Second Street

10/22/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	1	7	2	101	112	3
Future Volume (vph)	1	7	2	101	112	3
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	8	2	119	132	4

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	9	121	136
Volume Left (vph)	1	2	0
Volume Right (vph)	8	0	4
Hadj (s)	-0.48	0.04	0.02
Departure Headway (s)	4.0	4.1	4.0
Degree Utilization, x	0.01	0.14	0.15
Capacity (veh/h)	848	864	879
Control Delay (s)	7.0	7.7	7.8
Approach Delay (s)	7.0	7.7	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Oak Street & Cedar Avenue

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	29	9	31	8	36	1	82	29	33	81	4
Future Volume (vph)	20	29	9	31	8	36	1	82	29	33	81	4
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	34	11	36	9	42	1	96	34	39	95	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	69	87	131	139
Volume Left (vph)	24	36	1	39
Volume Right (vph)	11	42	34	5
Hadj (s)	0.01	-0.17	-0.12	0.07
Departure Headway (s)	4.6	4.4	4.3	4.5
Degree Utilization, x	0.09	0.11	0.16	0.17
Capacity (veh/h)	719	753	796	762
Control Delay (s)	8.1	8.0	8.1	8.4
Approach Delay (s)	8.1	8.0	8.1	8.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	25.8%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1031	22	76	1455	0	21	4	88	15	9	18
Future Volume (vph)	32	1031	22	76	1455	0	21	4	88	15	9	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3496		1805	3406			1824	1615		1761	
Flt Permitted	0.09	1.00		0.18	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	156	3496		342	3406			1824	1615		1761	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	38	1213	26	89	1712	0	25	5	104	18	11	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	99	0	12	0
Lane Group Flow (vph)	38	1239	0	89	1712	0	0	30	5	0	38	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	162.9	156.7		166.9	158.7			9.4	9.4		10.5	
Effective Green, g (s)	164.9	158.7		168.9	160.7			11.4	11.4		12.5	
Actuated g/C Ratio	0.75	0.72		0.77	0.73			0.05	0.05		0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	164	2521		323	2487			94	83		100	
v/s Ratio Prot	0.01	0.35		c0.01	c0.50			c0.02			c0.02	
v/s Ratio Perm	0.17			0.20					0.00			
v/c Ratio	0.23	0.49		0.28	0.69			0.32	0.06		0.38	
Uniform Delay, d1	14.6	13.2		9.2	16.1			100.6	99.2		100.0	
Progression Factor	0.81	0.61		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.6		0.5	1.6			2.0	0.3		2.4	
Delay (s)	12.5	8.7		9.7	17.7			102.5	99.6		102.4	
Level of Service	B	A		A	B			F	F		F	
Approach Delay (s)		8.8			17.3			100.2			102.4	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Walnut Street/Fairchester Drive & Fairfax Boulevard

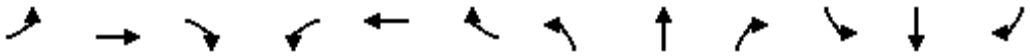
10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	1018	11	22	1458	14	16	26	34	33	23	14
Future Volume (vph)	21	1018	11	22	1458	14	16	26	34	33	23	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3403		1805	1597		1752	1761	
Flt Permitted	0.10	1.00		0.21	1.00		0.71	1.00		0.54	1.00	
Satd. Flow (perm)	183	3500		390	3403		1355	1597		995	1761	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	25	1198	13	26	1715	16	19	31	40	39	27	16
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	0	0	10	0
Lane Group Flow (vph)	25	1211	0	26	1731	0	19	46	0	39	33	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	178.2	172.5		178.2	172.5		22.1	22.1		12.7	12.7	
Effective Green, g (s)	180.2	173.5		180.2	173.5		24.1	24.1		14.7	14.7	
Actuated g/C Ratio	0.82	0.79		0.82	0.79		0.11	0.11		0.07	0.07	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	2760		362	2683		148	174		66	117	
v/s Ratio Prot	c0.00	0.35		0.00	c0.51			c0.03			0.02	
v/s Ratio Perm	0.10			0.06			0.01			c0.04		
v/c Ratio	0.13	0.44		0.07	0.65		0.13	0.26		0.59	0.28	
Uniform Delay, d1	8.1	7.5		4.6	10.0		88.5	89.8		99.7	97.6	
Progression Factor	1.00	1.00		0.15	0.07		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.5		0.1	0.9		0.4	0.8		13.4	1.3	
Delay (s)	8.4	8.0		0.7	1.6		88.9	90.6		113.1	98.9	
Level of Service	A	A		A	A		F	F		F	F	
Approach Delay (s)		8.0			1.6			90.3			105.7	
Approach LOS		A			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/22/2020



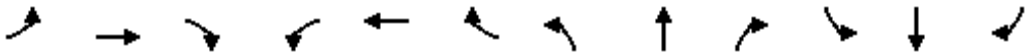
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	3	17	0	14	1	65	13	17	68	2
Future Volume (Veh/h)	3	0	3	17	0	14	1	65	13	17	68	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	4	0	4	20	0	16	1	76	15	20	80	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)											366	
pX, platoon unblocked												
vC, conflicting volume	222	214	81	210	208	84	82			91		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222	214	81	210	208	84	82			91		
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	100	100	97	100	98	100			99		
cM capacity (veh/h)	714	674	979	736	680	976	1515			1504		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	36	92	102
Volume Left	4	20	1	20
Volume Right	4	16	15	2
cSH	825	826	1515	1504
Volume to Capacity	0.01	0.04	0.00	0.01
Queue Length 95th (ft)	1	3	0	1
Control Delay (s)	9.4	9.6	0.1	1.5
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.6	0.1	1.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	21.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/22/2020



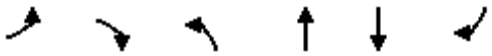
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	11	3	0	5	1	6	66	1	3	89	2
Future Volume (vph)	1	11	3	0	5	1	6	66	1	3	89	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	1	13	4	0	6	1	7	78	1	4	105	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	18	7	86	111
Volume Left (vph)	1	0	7	4
Volume Right (vph)	4	1	1	2
Hadj (s)	-0.09	-0.05	0.04	0.03
Departure Headway (s)	4.2	4.3	4.1	4.1
Degree Utilization, x	0.02	0.01	0.10	0.13
Capacity (veh/h)	806	797	857	872
Control Delay (s)	7.3	7.3	7.5	7.7
Approach Delay (s)	7.3	7.3	7.5	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
5: Oak Street & Second Street

10/22/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	3	10	4	95	99	2
Future Volume (vph)	3	10	4	95	99	2
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	4	12	5	112	116	2

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	16	117	118
Volume Left (vph)	4	5	0
Volume Right (vph)	12	0	2
Hadj (s)	-0.37	0.04	0.02
Departure Headway (s)	4.0	4.1	4.1
Degree Utilization, x	0.02	0.13	0.13
Capacity (veh/h)	839	862	873
Control Delay (s)	7.1	7.7	7.7
Approach Delay (s)	7.1	7.7	7.7
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Oak Street & Cedar Avenue

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	3	9	6	5	8	6	99	4	5	98	19
Future Volume (vph)	12	3	9	6	5	8	6	99	4	5	98	19
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	14	4	11	7	6	9	7	116	5	6	115	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	29	22	128	143
Volume Left (vph)	14	7	7	6
Volume Right (vph)	11	9	5	22
Hadj (s)	-0.10	-0.15	0.02	-0.05
Departure Headway (s)	4.4	4.4	4.2	4.1
Degree Utilization, x	0.04	0.03	0.15	0.16
Capacity (veh/h)	754	761	838	861
Control Delay (s)	7.6	7.5	7.9	7.9
Approach Delay (s)	7.6	7.5	7.9	7.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.8			
Level of Service	A			
Intersection Capacity Utilization	17.9%	ICU Level of Service	A	
Analysis Period (min)	15			

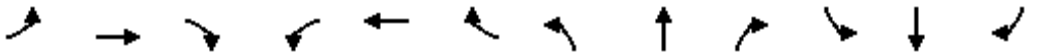
APPENDIX D

2024 Background Future Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1826	20	69	674	3	41	12	81	9	1	19
Future Volume (vph)	22	1826	20	69	674	3	41	12	81	9	1	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3500		1805	3404			1829	1615		1705	
Flt Permitted	0.36	1.00		0.04	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	599	3500		68	3404			1829	1615		1705	
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)	24	1985	22	75	733	3	45	13	88	10	1	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	82	0	20	0
Lane Group Flow (vph)	24	2007	0	75	736	0	0	58	6	0	12	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	131.6	127.2		142.0	132.4			11.5	11.5		6.5	
Effective Green, g (s)	133.6	129.2		144.0	134.4			13.5	13.5		8.5	
Actuated g/C Ratio	0.70	0.68		0.76	0.71			0.07	0.07		0.04	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	449	2380		148	2407			129	114		76	
v/s Ratio Prot	0.00	c0.57		c0.03	0.22			c0.03			c0.01	
v/s Ratio Perm	0.04			0.35					0.00			
v/c Ratio	0.05	0.84		0.51	0.31			0.45	0.05		0.16	
Uniform Delay, d1	8.6	22.8		40.9	10.4			84.7	82.3		87.3	
Progression Factor	0.82	0.63		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	2.9		2.7	0.3			2.5	0.2		1.0	
Delay (s)	7.1	17.3		43.6	10.7			87.2	82.5		88.3	
Level of Service	A	B		D	B			F	F		F	
Approach Delay (s)		17.2			13.8			84.4			88.3	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1795	19	21	694	19	15	27	46	26	26	12
Future Volume (vph)	10	1795	19	21	694	19	15	27	46	26	26	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3397		1805	1571		1752	1773	
Flt Permitted	0.35	1.00		0.07	1.00		0.73	1.00		0.50	1.00	
Satd. Flow (perm)	608	3500		129	3397		1388	1571		918	1773	
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)	11	1951	21	23	754	21	16	29	50	28	28	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	40	0	0	9	0
Lane Group Flow (vph)	11	1972	0	23	775	0	16	39	0	28	32	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	148.9	146.1		151.7	147.5		20.0	20.0		8.9	8.9	
Effective Green, g (s)	150.9	147.1		153.7	148.5		22.0	22.0		10.9	10.9	
Actuated g/C Ratio	0.79	0.77		0.81	0.78		0.12	0.12		0.06	0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	504	2709		150	2655		160	181		52	101	
v/s Ratio Prot	0.00	c0.56		c0.00	0.23			c0.02			0.02	
v/s Ratio Perm	0.02			0.12			0.01			c0.03		
v/c Ratio	0.02	0.73		0.15	0.29		0.10	0.22		0.54	0.31	
Uniform Delay, d1	4.1	11.1		12.2	5.9		75.1	76.2		87.1	86.0	
Progression Factor	1.00	1.00		0.86	0.40		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.5	0.3		0.3	0.6		10.3	1.8	
Delay (s)	4.1	12.8		11.0	2.6		75.4	76.8		97.4	87.7	
Level of Service	A	B		B	A		E	E		F	F	
Approach Delay (s)		12.8			2.8			76.6			91.7	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/22/2020

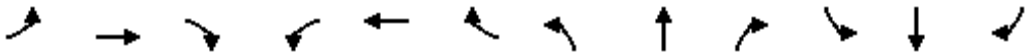
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	8	0	24	6	97	29	33	44	1
Future Volume (Veh/h)	1	0	0	8	0	24	6	97	29	33	44	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	0	9	0	26	7	105	32	36	48	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)											366	
pX, platoon unblocked												
vC, conflicting volume	282	272	48	256	256	121	49			137		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	282	272	48	256	256	121	49			137		
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	99	100	97	100			98		
cM capacity (veh/h)	637	617	1020	682	629	930	1558			1447		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	35	144	85
Volume Left	1	9	7	36
Volume Right	0	26	32	1
cSH	637	851	1558	1447
Volume to Capacity	0.00	0.04	0.00	0.02
Queue Length 95th (ft)	0	3	0	2
Control Delay (s)	10.7	9.4	0.4	3.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.7	9.4	0.4	3.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	9	9	2	2	4	2	112	3	3	51	2
Future Volume (vph)	13	9	9	2	2	4	2	112	3	3	51	2
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)	14	10	10	2	2	4	2	122	3	3	55	2

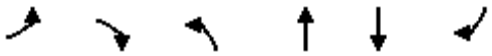
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	8	127	60
Volume Left (vph)	14	2	2	3
Volume Right (vph)	10	4	3	2
Hadj (s)	-0.06	-0.22	0.02	0.02
Departure Headway (s)	4.2	4.1	4.1	4.1
Degree Utilization, x	0.04	0.01	0.14	0.07
Capacity (veh/h)	807	828	863	852
Control Delay (s)	7.4	7.2	7.8	7.4
Approach Delay (s)	7.4	7.2	7.8	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.7%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street

10/22/2020



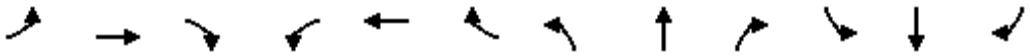
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	1	7	2	110	137	3
Future Volume (vph)	1	7	2	110	137	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	8	2	120	149	3

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	9	122	152
Volume Left (vph)	1	2	0
Volume Right (vph)	8	0	3
Hadj (s)	-0.48	0.04	0.02
Departure Headway (s)	4.0	4.1	4.1
Degree Utilization, x	0.01	0.14	0.17
Capacity (veh/h)	838	861	878
Control Delay (s)	7.0	7.8	7.9
Approach Delay (s)	7.0	7.8	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Oak Street & Cedar Avenue

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	31	9	54	11	39	1	84	36	35	83	4
Future Volume (vph)	21	31	9	54	11	39	1	84	36	35	83	4
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	34	10	59	12	42	1	91	39	38	90	4

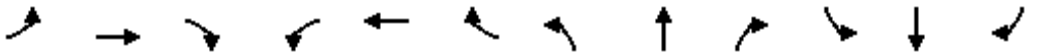
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	67	113	131	132
Volume Left (vph)	23	59	1	38
Volume Right (vph)	10	42	39	4
Hadj (s)	0.01	-0.08	-0.14	0.07
Departure Headway (s)	4.7	4.5	4.3	4.6
Degree Utilization, x	0.09	0.14	0.16	0.17
Capacity (veh/h)	714	744	786	747
Control Delay (s)	8.1	8.3	8.2	8.5
Approach Delay (s)	8.1	8.3	8.2	8.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	29.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1198	25	78	1658	0	23	4	91	15	9	19
Future Volume (vph)	33	1198	25	78	1658	0	23	4	91	15	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3496		1805	3406			1821	1615		1756	
Flt Permitted	0.08	1.00		0.16	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	138	3496		307	3406			1821	1615		1756	
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)	36	1302	27	85	1802	0	25	4	99	16	10	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	94	0	14	0
Lane Group Flow (vph)	36	1329	0	85	1802	0	0	29	5	0	33	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	165.0	158.9		169.0	160.9			9.3	9.3		8.5	
Effective Green, g (s)	167.0	160.9		171.0	162.9			11.3	11.3		10.5	
Actuated g/C Ratio	0.76	0.73		0.78	0.74			0.05	0.05		0.05	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	151	2556		300	2521			93	82		83	
v/s Ratio Prot	0.01	0.38		c0.01	c0.53			c0.02			c0.02	
v/s Ratio Perm	0.17			0.21					0.00			
v/c Ratio	0.24	0.52		0.28	0.71			0.31	0.06		0.39	
Uniform Delay, d1	15.4	12.8		9.3	15.7			100.6	99.3		101.7	
Progression Factor	0.82	0.57		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7		0.5	1.8			1.9	0.3		3.1	
Delay (s)	13.4	8.0		9.8	17.5			102.5	99.6		104.7	
Level of Service	B	A		A	B			F	F		F	
Approach Delay (s)		8.1			17.2			100.3			104.7	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1187	13	23	1662	14	17	27	35	34	24	14
Future Volume (vph)	22	1187	13	23	1662	14	17	27	35	34	24	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3403		1805	1595		1752	1762	
Flt Permitted	0.09	1.00		0.18	1.00		0.72	1.00		0.56	1.00	
Satd. Flow (perm)	160	3500		349	3403		1370	1595		1032	1762	
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)	24	1290	14	25	1807	15	18	29	38	37	26	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	0	0	10	0
Lane Group Flow (vph)	24	1304	0	25	1822	0	18	42	0	37	31	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	178.7	173.0		178.5	172.9		21.7	21.7		12.3	12.3	
Effective Green, g (s)	180.7	174.0		180.5	173.9		23.7	23.7		14.3	14.3	
Actuated g/C Ratio	0.82	0.79		0.82	0.79		0.11	0.11		0.07	0.07	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	2768		330	2689		147	171		67	114	
v/s Ratio Prot	c0.00	0.37		0.00	c0.54			c0.03			0.02	
v/s Ratio Perm	0.11			0.06			0.01			c0.04		
v/c Ratio	0.14	0.47		0.08	0.68		0.12	0.25		0.55	0.27	
Uniform Delay, d1	9.2	7.7		4.8	10.4		88.7	90.0		99.7	97.9	
Progression Factor	1.00	1.00		0.14	0.07		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.1	1.0		0.4	0.8		9.5	1.3	
Delay (s)	9.6	8.2		0.8	1.7		89.1	90.7		109.2	99.2	
Level of Service	A	A		A	A		F	F		F	F	
Approach Delay (s)		8.3			1.7			90.4			103.9	
Approach LOS		A			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/22/2020

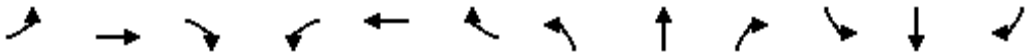
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	3	18	0	15	1	67	14	20	70	2
Future Volume (Veh/h)	3	0	3	18	0	15	1	67	14	20	70	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	20	0	16	1	73	15	22	76	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)											366	
pX, platoon unblocked												
vC, conflicting volume	220	211	77	206	204	80	78			88		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	211	77	206	204	80	78			88		
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	97	100	98	100			99		
cM capacity (veh/h)	716	676	984	740	681	980	1520			1508		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	36	89	100
Volume Left	3	20	1	22
Volume Right	3	16	15	2
cSH	829	830	1520	1508
Volume to Capacity	0.01	0.04	0.00	0.01
Queue Length 95th (ft)	1	3	0	1
Control Delay (s)	9.4	9.5	0.1	1.7
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.5	0.1	1.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	21.6%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	11	3	0	5	1	6	69	1	3	92	2
Future Volume (vph)	1	11	3	0	5	1	6	69	1	3	92	2
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	12	3	0	5	1	7	75	1	3	100	2

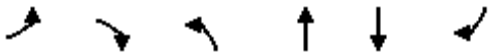
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	6	83	105
Volume Left (vph)	1	0	7	3
Volume Right (vph)	3	1	1	2
Hadj (s)	-0.07	-0.07	0.04	0.03
Departure Headway (s)	4.2	4.3	4.1	4.1
Degree Utilization, x	0.02	0.01	0.09	0.12
Capacity (veh/h)	808	805	860	876
Control Delay (s)	7.3	7.3	7.5	7.6
Approach Delay (s)	7.3	7.3	7.5	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.5			
Level of Service	A			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street

10/22/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	3	10	4	119	115	2
Future Volume (vph)	3	10	4	119	115	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	11	4	129	125	2

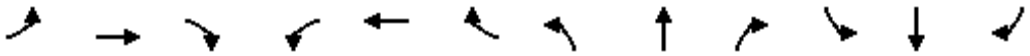
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	14	133	127
Volume Left (vph)	3	4	0
Volume Right (vph)	11	0	2
Hadj (s)	-0.39	0.04	0.02
Departure Headway (s)	4.1	4.1	4.1
Degree Utilization, x	0.02	0.15	0.14
Capacity (veh/h)	830	862	871
Control Delay (s)	7.1	7.8	7.8
Approach Delay (s)	7.1	7.8	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

6: Oak Street & Cedar Avenue

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	5	9	19	6	9	6	102	25	7	101	20
Future Volume (vph)	12	5	9	19	6	9	6	102	25	7	101	20
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)	13	5	10	21	7	10	7	111	27	8	110	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	28	38	145	140
Volume Left (vph)	13	21	7	8
Volume Right (vph)	10	10	27	22
Hadj (s)	-0.09	-0.01	-0.07	-0.05
Departure Headway (s)	4.5	4.5	4.1	4.2
Degree Utilization, x	0.03	0.05	0.17	0.16
Capacity (veh/h)	742	734	846	847
Control Delay (s)	7.6	7.8	8.0	8.0
Approach Delay (s)	7.6	7.8	8.0	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.9			
Level of Service	A			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A	
Analysis Period (min)	15			

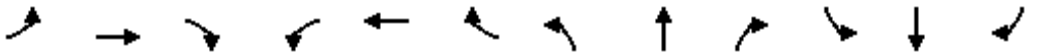
APPENDIX E

2024 Total Future Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1831	20	72	678	3	41	12	89	9	1	19
Future Volume (vph)	22	1831	20	72	678	3	41	12	89	9	1	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3500		1805	3404			1829	1615		1705	
Flt Permitted	0.36	1.00		0.03	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	598	3500		66	3404			1829	1615		1705	
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)	24	1990	22	78	737	3	45	13	97	10	1	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	90	0	20	0
Lane Group Flow (vph)	24	2012	0	78	740	0	0	58	7	0	12	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	131.3	126.9		142.3	132.4			11.5	11.5		6.5	
Effective Green, g (s)	133.3	128.9		144.3	134.4			13.5	13.5		8.5	
Actuated g/C Ratio	0.70	0.68		0.76	0.71			0.07	0.07		0.04	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	447	2374		149	2407			129	114		76	
v/s Ratio Prot	0.00	c0.57		c0.03	0.22			c0.03			c0.01	
v/s Ratio Perm	0.04			0.37					0.00			
v/c Ratio	0.05	0.85		0.52	0.31			0.45	0.06		0.16	
Uniform Delay, d1	8.7	23.1		44.4	10.4			84.7	82.3		87.3	
Progression Factor	1.01	0.68		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	2.9		3.3	0.3			2.5	0.2		1.0	
Delay (s)	8.8	18.7		47.7	10.7			87.2	82.6		88.3	
Level of Service	A	B		D	B			F	F		F	
Approach Delay (s)		18.5			14.2			84.3			88.3	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/23/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1797	21	22	694	19	22	27	50	26	26	12
Future Volume (vph)	10	1797	21	22	694	19	22	27	50	26	26	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.90		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3397		1805	1565		1752	1773	
Flt Permitted	0.35	1.00		0.07	1.00		0.73	1.00		0.47	1.00	
Satd. Flow (perm)	608	3500		128	3397		1388	1565		871	1773	
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)	11	1953	23	24	754	21	24	29	54	28	28	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	9	0
Lane Group Flow (vph)	11	1976	0	24	775	0	24	40	0	28	32	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	148.8	146.0		151.6	147.4		20.1	20.1		9.0	9.0	
Effective Green, g (s)	150.8	147.0		153.6	148.4		22.1	22.1		11.0	11.0	
Actuated g/C Ratio	0.79	0.77		0.81	0.78		0.12	0.12		0.06	0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	503	2707		149	2653		161	182		50	102	
v/s Ratio Prot	0.00	c0.56		c0.00	0.23			c0.03			0.02	
v/s Ratio Perm	0.02			0.13			0.02			c0.03		
v/c Ratio	0.02	0.73		0.16	0.29		0.15	0.22		0.56	0.31	
Uniform Delay, d1	4.1	11.2		12.4	5.9		75.5	76.1		87.1	85.9	
Progression Factor	1.00	1.00		0.87	0.35		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.5	0.3		0.4	0.6		13.6	1.7	
Delay (s)	4.2	12.9		11.3	2.4		75.9	76.7		100.7	87.6	
Level of Service	A	B		B	A		E	E		F	F	
Approach Delay (s)		12.9			2.6			76.5			92.9	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/23/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	8	0	28	6	99	29	34	46	1
Future Volume (Veh/h)	1	0	0	8	0	28	6	99	29	34	46	1
Sign Control		Stop			Stop			Free			Free	
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	0	0	9	0	30	7	108	32	37	50	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)											366	
pX, platoon unblocked												
vC, conflicting volume	292	278	50	262	263	124	51			140		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	292	278	50	262	263	124	51			140		
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	99	100	97	100			97		
cM capacity (veh/h)	624	611	1018	674	623	927	1555			1443		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	39	147	88
Volume Left	1	9	7	37
Volume Right	0	30	32	1
cSH	624	853	1555	1443
Volume to Capacity	0.00	0.05	0.00	0.03
Queue Length 95th (ft)	0	4	0	2
Control Delay (s)	10.8	9.4	0.4	3.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.8	9.4	0.4	3.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	25.0%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/23/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	9	9	2	2	4	2	114	3	3	53	2
Future Volume (vph)	13	9	9	2	2	4	2	114	3	3	53	2
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)	14	10	10	2	2	4	2	124	3	3	58	2

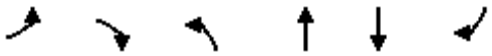
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	8	129	63
Volume Left (vph)	14	2	2	3
Volume Right (vph)	10	4	3	2
Hadj (s)	-0.06	-0.22	0.02	0.02
Departure Headway (s)	4.3	4.1	4.1	4.1
Degree Utilization, x	0.04	0.01	0.15	0.07
Capacity (veh/h)	804	825	862	852
Control Delay (s)	7.4	7.2	7.8	7.5
Approach Delay (s)	7.4	7.2	7.8	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street

10/23/2020



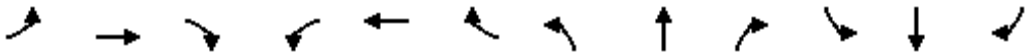
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	1	7	2	111	141	3
Future Volume (vph)	1	7	2	111	141	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	8	2	121	153	3

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	9	123	156
Volume Left (vph)	1	2	0
Volume Right (vph)	8	0	3
Hadj (s)	-0.48	0.04	0.02
Departure Headway (s)	4.0	4.1	4.1
Degree Utilization, x	0.01	0.14	0.18
Capacity (veh/h)	835	860	877
Control Delay (s)	7.1	7.8	7.9
Approach Delay (s)	7.1	7.8	7.9
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Oak Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	31	10	54	11	39	5	92	36	35	86	4
Future Volume (vph)	21	31	10	54	11	39	5	92	36	35	86	4
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	34	11	59	12	42	5	100	39	38	93	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	68	113	144	135
Volume Left (vph)	23	59	5	38
Volume Right (vph)	11	42	39	4
Hadj (s)	0.00	-0.08	-0.12	0.07
Departure Headway (s)	4.7	4.6	4.4	4.6
Degree Utilization, x	0.09	0.14	0.18	0.17
Capacity (veh/h)	707	735	781	744
Control Delay (s)	8.2	8.3	8.3	8.5
Approach Delay (s)	8.2	8.3	8.3	8.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	33.5%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
101: Site Driveway A & Fairfax Boulevard

10/23/2020

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1870	2	3	734	0	1
Future Volume (Veh/h)	1870	2	3	734	0	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)	2033	2	3	798	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	250			387		
pX, platoon unblocked			0.68		0.72	0.68
vC, conflicting volume			2035		2439	1018
vC1, stage 1 conf vol					2034	
vC2, stage 2 conf vol					405	
vCu, unblocked vol			1587		1730	96
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			280		102	643

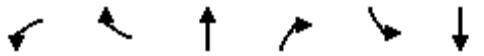
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1355	680	3	399	399	1
Volume Left	0	0	3	0	0	0
Volume Right	0	2	0	0	0	1
cSH	1700	1700	280	1700	1700	643
Volume to Capacity	0.80	0.40	0.01	0.23	0.23	0.00
Queue Length 95th (ft)	0	0	1	0	0	0
Control Delay (s)	0.0	0.0	18.0	0.0	0.0	10.6
Lane LOS			C			B
Approach Delay (s)	0.0		0.1			10.6
Approach LOS						B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

102: Walnut Street & Site Driveway B

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	131	1	0	81
Future Volume (Veh/h)	0	1	131	1	0	81
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)	0	1	142	1	0	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						131
pX, platoon unblocked	0.99					
vC, conflicting volume	230	72			143	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	215	72			143	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	745	976			1437	

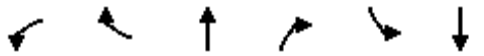
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	1	95	48	88
Volume Left	0	0	0	0
Volume Right	1	0	1	0
cSH	976	1700	1700	1700
Volume to Capacity	0.00	0.06	0.03	0.05
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	8.7	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

103: Walnut Street & Site Driveway C

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	6	126	1	2	79
Future Volume (Veh/h)	2	6	126	1	2	79
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)	2	7	137	1	2	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						264
pX, platoon unblocked	1.00					
vC, conflicting volume	228	69			138	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	69			138	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	742	980			1443	

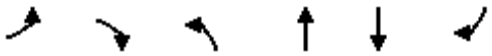
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	9	91	47	88
Volume Left	2	0	0	2
Volume Right	7	0	1	0
cSH	915	1700	1700	1443
Volume to Capacity	0.01	0.05	0.03	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.0	0.0	0.0	0.2
Lane LOS	A			A
Approach Delay (s)	9.0	0.0		0.2
Approach LOS	A			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

104: Oak Street & Site Driveway D

10/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	4	1	121	147	4
Future Volume (Veh/h)	12	4	1	121	147	4
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	4	1	132	160	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	296	162	164			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296	162	164			
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)	695	883	1414			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	17	133	164
Volume Left	13	1	0
Volume Right	4	0	4
cSH	731	1414	1700
Volume to Capacity	0.02	0.00	0.10
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.0	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.0	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/23/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1224	25	87	1685	0	23	4	96	15	9	19
Future Volume (vph)	33	1224	25	87	1685	0	23	4	96	15	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3496		1805	3406			1821	1615		1756	
Flt Permitted	0.08	1.00		0.15	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	131	3496		294	3406			1821	1615		1756	
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)	36	1330	27	95	1832	0	25	4	104	16	10	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	99	0	14	0
Lane Group Flow (vph)	36	1357	0	95	1832	0	0	29	5	0	33	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	164.6	158.4		169.4	160.8			9.3	9.3		8.5	
Effective Green, g (s)	166.6	160.4		171.4	162.8			11.3	11.3		10.5	
Actuated g/C Ratio	0.76	0.73		0.78	0.74			0.05	0.05		0.05	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	147	2548		294	2520			93	82		83	
v/s Ratio Prot	0.01	0.39		c0.01	c0.54			c0.02			c0.02	
v/s Ratio Perm	0.18			0.24					0.00			
v/c Ratio	0.24	0.53		0.32	0.73			0.31	0.07		0.39	
Uniform Delay, d1	16.2	13.2		9.8	16.1			100.6	99.3		101.7	
Progression Factor	0.96	0.64		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.8	0.7		0.6	1.9			1.9	0.3		3.1	
Delay (s)	16.4	9.1		10.5	18.0			102.5	99.7		104.7	
Level of Service	B	A		B	B			F	F		F	
Approach Delay (s)		9.3			17.6			100.3			104.7	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/23/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1204	19	28	1665	14	36	30	38	36	24	14
Future Volume (vph)	22	1204	19	28	1665	14	36	30	38	36	24	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.92		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3498		1805	3403		1805	1600		1752	1762	
Flt Permitted	0.09	1.00		0.18	1.00		0.72	1.00		0.52	1.00	
Satd. Flow (perm)	158	3498		337	3403		1372	1600		966	1762	
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)	24	1309	21	30	1810	15	39	33	41	39	26	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	24	0	0	10	0
Lane Group Flow (vph)	24	1330	0	30	1825	0	39	50	0	39	31	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	178.0	172.3		178.0	172.3		22.3	22.3		12.9	12.9	
Effective Green, g (s)	180.0	173.3		180.0	173.3		24.3	24.3		14.9	14.9	
Actuated g/C Ratio	0.82	0.79		0.82	0.79		0.11	0.11		0.07	0.07	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	175	2755		320	2680		151	176		65	119	
v/s Ratio Prot	c0.00	0.38		0.00	c0.54			c0.03			0.02	
v/s Ratio Perm	0.11			0.07			0.03			c0.04		
v/c Ratio	0.14	0.48		0.09	0.68		0.26	0.28		0.60	0.26	
Uniform Delay, d1	9.5	8.0		5.1	10.7		89.6	89.9		99.7	97.3	
Progression Factor	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.1	1.4		0.9	0.9		14.0	1.2	
Delay (s)	9.9	8.6		5.2	12.0		90.5	90.8		113.7	98.5	
Level of Service	A	A		A	B		F	F		F	F	
Approach Delay (s)		8.6			11.9			90.7			105.9	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: Walnut Street & Cedar Avenue

10/23/2020

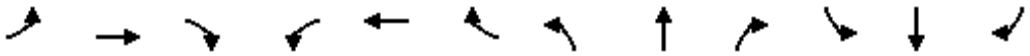
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	0	3	18	0	18	1	76	14	24	79	2
Future Volume (Veh/h)	3	0	3	18	0	18	1	76	14	24	79	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	20	0	20	1	83	15	26	86	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)											367	
pX, platoon unblocked												
vC, conflicting volume	252	239	87	234	232	90	88			98		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	252	239	87	234	232	90	88			98		
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	97	100	98	100			98		
cM capacity (veh/h)	678	650	971	708	656	967	1508			1495		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	40	99	114
Volume Left	3	20	1	26
Volume Right	3	20	15	2
cSH	799	818	1508	1495
Volume to Capacity	0.01	0.05	0.00	0.02
Queue Length 95th (ft)	1	4	0	1
Control Delay (s)	9.5	9.6	0.1	1.8
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.6	0.1	1.8
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	22.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Walnut Street & Second Street

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	11	3	0	5	1	6	78	1	3	101	2
Future Volume (vph)	1	11	3	0	5	1	6	78	1	3	101	2
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	12	3	0	5	1	7	85	1	3	110	2

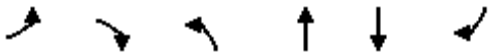
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	6	93	115
Volume Left (vph)	1	0	7	3
Volume Right (vph)	3	1	1	2
Hadj (s)	-0.07	-0.07	0.04	0.03
Departure Headway (s)	4.3	4.3	4.1	4.1
Degree Utilization, x	0.02	0.01	0.11	0.13
Capacity (veh/h)	796	794	858	873
Control Delay (s)	7.4	7.3	7.6	7.7
Approach Delay (s)	7.4	7.3	7.6	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.9%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street

10/23/2020



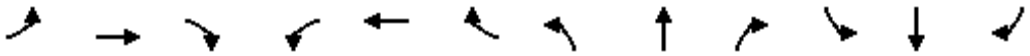
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	3	10	4	123	117	2
Future Volume (vph)	3	10	4	123	117	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	11	4	134	127	2

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	14	138	129
Volume Left (vph)	3	4	0
Volume Right (vph)	11	0	2
Hadj (s)	-0.39	0.04	0.02
Departure Headway (s)	4.1	4.1	4.1
Degree Utilization, x	0.02	0.16	0.15
Capacity (veh/h)	826	862	870
Control Delay (s)	7.1	7.9	7.8
Approach Delay (s)	7.1	7.9	7.8
Approach LOS	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Oak Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	5	13	19	6	9	9	107	25	7	110	20
Future Volume (vph)	12	5	13	19	6	9	9	107	25	7	110	20
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)	13	5	14	21	7	10	10	116	27	8	120	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	32	38	153	150
Volume Left (vph)	13	21	10	8
Volume Right (vph)	14	10	27	22
Hadj (s)	-0.15	-0.01	-0.06	-0.04
Departure Headway (s)	4.5	4.6	4.2	4.2
Degree Utilization, x	0.04	0.05	0.18	0.17
Capacity (veh/h)	742	724	839	841
Control Delay (s)	7.6	7.8	8.1	8.1
Approach Delay (s)	7.6	7.8	8.1	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
101: Site Driveway A & Fairfax Boulevard

10/23/2020

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1257	19	23	22	3	23
Future Volume (Veh/h)	1257	19	23	22	3	23
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)	1366	21	25	24	3	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	250			387		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			1387		1438	694
vC1, stage 1 conf vol					1376	
vC2, stage 2 conf vol					62	
vCu, unblocked vol			1141		1201	342
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	96
cM capacity (veh/h)			528		228	567

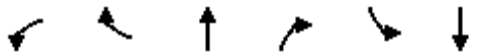
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	911	476	25	12	12	28
Volume Left	0	0	25	0	0	3
Volume Right	0	21	0	0	0	25
cSH	1700	1700	528	1700	1700	489
Volume to Capacity	0.54	0.28	0.05	0.01	0.01	0.06
Queue Length 95th (ft)	0	0	4	0	0	5
Control Delay (s)	0.0	0.0	12.2	0.0	0.0	12.8
Lane LOS			B			B
Approach Delay (s)	0.0		6.2			12.8
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

102: Walnut Street & Site Driveway B

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	18	92	7	0	103
Future Volume (Veh/h)	8	18	92	7	0	103
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)	9	20	100	8	0	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						145
pX, platoon unblocked	0.99					
vC, conflicting volume	216	54			108	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204	54			108	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			100	
cM capacity (veh/h)	759	1002			1480	

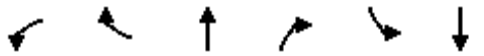
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	29	67	41	112
Volume Left	9	0	0	0
Volume Right	20	0	8	0
cSH	911	1700	1700	1700
Volume to Capacity	0.03	0.04	0.02	0.07
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.1	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

103: Walnut Street & Site Driveway C

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	4	95	2	7	104
Future Volume (Veh/h)	1	4	95	2	7	104
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)	1	4	103	2	8	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						261
pX, platoon unblocked	1.00					
vC, conflicting volume	233	52			105	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230	52			105	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	732	1004			1484	

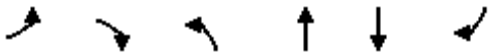
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	5	69	36	121
Volume Left	1	0	0	8
Volume Right	4	0	2	0
cSH	934	1700	1700	1484
Volume to Capacity	0.01	0.04	0.02	0.01
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.9	0.0	0.0	0.5
Lane LOS	A			A
Approach Delay (s)	8.9	0.0		0.5
Approach LOS	A			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

104: Oak Street & Site Driveway D

10/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	2	4	133	129	13
Future Volume (Veh/h)	7	2	4	133	129	13
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)	8	2	4	145	140	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	300	147	154			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	147	154			
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	100			
cM capacity (veh/h)	690	900	1426			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	149	154
Volume Left	8	4	0
Volume Right	2	0	14
cSH	723	1426	1700
Volume to Capacity	0.01	0.00	0.09
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.0	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.0	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX F

Alternative Additional Analyses Including the Potential Redevelopment of the American Legion (Toll Brothers) Site as Pipeline Development

Alternative Table 7-1 - With Potential American Legion (Toll Brothers) Redevelopment

Breezeway Property

Total Future Intersection Capacity Analysis Summary

	Intersection	Intersection Control	Approach	Existing		Background Future		Total Future	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1.	Fairfax Boulevard & Meredith Drive/Oak Street	Signal	EB Appr	B (17.8)	A (8.8)	B (18.4)	A (8.9)	B (19.8)	B (10.0)
			WB Appr	B (14.9)	B (17.3)	B (15.5)	B (17.3)	B (16.0)	B (17.8)
			NB Appr	F (87.1)	F (100.2)	F (84.2)	F (100.1)	F (84.1)	F (100.0)
			SB Appr	F (88.4)	F (102.4)	F (88.3)	F (104.7)	F (88.3)	F (104.7)
			Overall	**C (21.2)**	**B (18.7)**	**C (22.0)**	**B (18.6)**	**C (23.2)**	**B (19.4)**
2.	Fairfax Boulevard & Fairchester Drive/Walnut Street	Signal	EB Appr	B (13.0)	A (8.0)	B (12.8)	A (8.3)	B (12.9)	A (8.6)
			WB Appr	A (3.0)	A (1.7)	A (2.8)	A (1.7)	A (2.6)	A (2.8)
			NB Appr	E (76.5)	F (90.3)	E (76.6)	F (90.4)	E (76.5)	F (90.7)
			SB Appr	F (92.7)	F (105.7)	F (81.7)	F (103.9)	F (92.9)	F (105.9)
			Overall	**B (14.6)**	**A (9.4)**	**B (14.0)**	**A (8.9)**	**B (14.3)**	**B (10.5)**
3.	Walnut Street/Cedar Avenue	Stop	EB Appr	A (0.0)	A (9.4)	B (10.7)	A (9.4)	B (10.8)	A (9.5)
			WB Appr	A (9.4)	A (9.6)	A (9.4)	A (9.5)	A (9.4)	A (9.6)
			NB Appr	A (0.4)	A (0.1)	A (0.4)	A (0.1)	A (0.4)	A (0.1)
			SB Appr	A (3.2)	A (1.5)	A (3.3)	A (1.7)	A (3.3)	A (1.8)
			Overall	**A (2.4)**	**A (2.5)**	**A (2.6)**	**A (2.5)**	**A (2.6)**	**A (2.5)**
4.	Walnut Street/Second Street	Stop	EB Appr	A (7.5)	A (7.3)	A (7.4)	A (7.3)	A (7.4)	A (7.4)
			WB Appr	A (7.2)	A (7.3)	A (7.2)	A (7.3)	A (7.2)	A (7.3)
			NB Appr	A (7.8)	A (7.5)	A (7.8)	A (7.5)	A (7.8)	A (7.6)
			SB Appr	A (7.5)	A (7.7)	A (7.4)	A (7.6)	A (7.5)	A (7.7)
			Overall	**A (7.7)**	**A (7.6)**	**A (7.6)**	**A (7.5)**	**A (7.6)**	**A (7.6)**
5.	Oak Street/Second Street	Stop	EB Appr	A (7.0)	A (7.1)	A (7.2)	A (7.3)	A (7.2)	A (7.3)
			WB Appr	Future Driveway		A (7.6)	A (7.5)	A (7.6)	A (7.5)
			NB Appr	A (7.7)	A (7.7)	A (7.9)	A (8.0)	A (7.9)	A (8.1)
			SB Appr	A (7.8)	A (7.7)	A (8.2)	A (8.0)	A (8.2)	A (8.1)
			Overall	**A (7.7)**	**A (7.7)**	**A (8.0)**	**A (8.0)**	**A (8.0)**	**A (8.0)**
6.	Oak Street/Cedar Avenue/Panther Place	Stop	EB Appr	A (8.1)	A (7.6)	A (8.2)	A (7.7)	A (8.3)	A (7.8)
			WB Appr	A (8.0)	A (7.5)	A (8.4)	A (7.9)	A (8.4)	A (7.9)
			NB Appr	A (8.1)	A (7.9)	A (8.4)	A (8.1)	A (8.6)	A (8.2)
			SB Appr	A (8.4)	A (7.9)	A (8.6)	A (8.2)	A (8.7)	A (8.3)
			Overall	**A (8.2)**	**A (7.8)**	**A (8.5)**	**A (8.1)**	**A (8.6)**	**A (8.2)**
A.	Fairfax Boulevard/ Site Driveway	Stop	EB Appr	Future Intersection		Future Intersection		A (0.0)	A (0.0)
			WB Appr					A (0.1)	A (0.2)
			NB Appr					B (10.6)	B (12.8)
			Overall					**B (0.0)**	**B (0.2)**
B.	Walnut Street/ Commercial Site Driveway	Stop	WB Appr	Future Intersection		Future Intersection		A (8.7)	A (9.1)
			NB Appr					A (0.0)	A (0.0)
			SB Appr					A (0.0)	A (0.0)
			Overall					**A (0.0)**	**A (1.1)**
C.	Walnut Street/ Residential Site Driveway	Stop	WB Appr	Future Intersection		Future Intersection		A (9.0)	A (8.9)
			NB Appr					A (0.0)	A (0.0)
			SB Appr					A (0.2)	A (0.5)
			Overall					**A (0.4)**	**A (0.5)**
D.	Oak Street/ Residential Driveway	Stop	EB Appr	Future Intersection		Future Intersection		B (10.3)	B (10.3)
			NB Appr					A (0.1)	A (0.2)
			SB Appr					A (0.0)	A (0.0)
			Overall					**A (0.5)**	**A (0.4)**

1: Meredith Drive/Fairfax Boulevard
Trip Distribution

Traffic Component	Southbound Meredith Drive Right	Southbound Meredith Drive Through	Southbound Meredith Drive Left	Westbound Fairfax Boulevard Right	Westbound Fairfax Boulevard Through	Westbound Fairfax Boulevard Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Fairfax Boulevard Right	Eastbound Fairfax Boulevard Through	Eastbound Fairfax Boulevard Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial					45%						-45%	
Two Over Two Town Homes					50%						-50%	
Town Homes						50%	-50%					

1: Meredith Drive/Fairfax Boulevard 2024
AM Peak Hour

Traffic Component			Southbound Meredith Drive Right	Southbound Meredith Drive Through	Southbound Meredith Drive Left	Westbound Fairfax Boulevard Right	Westbound Fairfax Boulevard Through	Westbound Fairfax Boulevard Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Fairfax Boulevard Right	Eastbound Fairfax Boulevard Through	Eastbound Fairfax Boulevard Left
Existing Traffic Volume			18	1	9	3	588	67	79	12	38	18	1,692	21
Growth			1	-	-	-	18	2	2	-	1	1	51	1
Existing Adjusted			19	1	9	3	606	69	81	12	39	19	1,743	22
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214					22						50	
Paul VI - Redevelopment	71	141					46				2	1	33	
Toll Brothers - American Legion	26	48						13	24					
Subtotal	214	403	-	-	-	-	68	13	24	-	2	1	83	-
Background (With Toll Brothers Included)			19	1	9	3	674	82	105	12	41	20	1,826	22
Site Assignment														
Commercial	6	3	-	-	-	-	3	-	-	-	-	-	1	-
Two Over Two Town Homes	2	8	-	-	-	-	1	-	-	-	-	-	4	-
Town Homes	5	16	-	-	-	-	-	3	8	-	-	-	-	-
Site Total	**13**	**27**	**-**	**-**	**-**	**-**	**4**	**3**	**8**	**-**	**-**	**-**	**5**	**-**
Total Future (With Toll Brothers Included)			**19**	**1**	**9**	**3**	**678**	**85**	**113**	**12**	**41**	**20**	**1,831**	**22**

1: Meredith Drive/Fairfax Boulevard
PM Peak Hour

Traffic Component			Southbound Meredith Drive Right	Southbound Meredith Drive Through	Southbound Meredith Drive Left	Westbound Fairfax Boulevard Right	Westbound Fairfax Boulevard Through	Westbound Fairfax Boulevard Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Fairfax Boulevard Right	Eastbound Fairfax Boulevard Through	Eastbound Fairfax Boulevard Left
Existing Traffic Volume			18	9	15	-	1,455	76	88	4	21	22	1,031	32
Growth			1	-	-	-	44	2	3	-	1	1	31	1
Existing Adjusted			19	9	15	-	1,499	78	91	4	22	23	1,062	33
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206					60						32	
Paul VI - Redevelopment	221	190					99				1	2	104	
Toll Brothers - American Legion	26	48						24	16					
Subtotal	542	444	-	-	-	-	159	24	16	-	1	2	136	-
Background (With Toll Brothers Included)			19	9	15	-	1,658	102	107	4	23	25	1,198	33
Site Assignment														
Commercial	48	51	-	-	-	-	22	-	-	-	-	-	23	-
Two Over Two Town Homes	9	5	-	-	-	-	5	-	-	-	-	-	3	-
Town Homes	17	10	-	-	-	-	-	9	5	-	-	-	-	-
Site Total	**74**	**66**	**-**	**-**	**-**	**-**	**27**	**9**	**5**	**-**	**-**	**-**	**26**	**-**
Total Future (With Toll Brothers Included)			**19**	**9**	**15**	**-**	**1,685**	**111**	**112**	**4**	**23**	**25**	**1,224**	**33**

2: Fairchester Drive/Fairfax Boulevard
Trip Distribution

Traffic Component	Southbound Fairchester Drive			Westbound Fairfax Boulevard			Northbound Walnut Street			Eastbound Fairfax Boulevard		
	Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial			5%		-5%			-5%	-30%		35%	
Two Over Two Town Homes						50%	-50%		-25%	25%		
Town Homes									-25%	25%		

2: Fairchester Drive/Fairfax Boulevard
AM Peak Hour

2024

Traffic Component			Southbound Fairchester Drive			Westbound Fairfax Boulevard			Northbound Walnut Street			Eastbound Fairfax Boulevard		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume			12	25	25	18	606	20	45	26	13	17	1,661	10
Growth			-	1	1	1	18	1	1	1	-	1	50	-
Existing Adjusted			12	26	26	19	624	21	46	27	13	18	1,711	10
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214					22						50	
Paul VI - Redevelopment	71	141					48				2	1	34	
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	-	-	-	70	-	-	-	2	1	84	-
Background (With Toll Brothers Included)			12	26	26	19	694	21	46	27	15	19	1,795	10
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	-	1	-	2	-
Two Over Two Town Homes	2	8	-	-	-	-	-	1	4	-	2	1	-	-
Town Homes	5	16	-	-	-	-	-	-	-	-	4	1	-	-
Site Total	**13**	**27**	**-**	**-**	**-**	**-**	**-**	**1**	**4**	**-**	**7**	**2**	**2**	**-**
Total Future (With Toll Brothers Included)			**12**	**26**	**26**	**19**	**694**	**22**	**50**	**27**	**22**	**21**	**1,797**	**10**

2: Fairchester Drive/Fairfax Boulevard
PM Peak Hour

Traffic Component			Southbound Fairchester Drive			Westbound Fairfax Boulevard			Northbound Walnut Street			Eastbound Fairfax Boulevard		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume			14	23	33	14	1,458	22	34	26	16	11	1,018	21
Growth			-	1	1	-	44	1	1	1	-	-	31	1
Existing Adjusted			14	24	34	14	1,502	23	35	27	16	11	1,049	22
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206					60						32	
Paul VI - Redevelopment	221	190					100				1	2	106	
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	-	-	-	160	-	-	-	1	2	138	-
Background (With Toll Brothers Included)			14	24	34	14	1,662	23	35	27	17	13	1,187	22
Site Assignment														
Commercial	48	51	-	-	2	-	3	-	-	3	15	-	17	-
Two Over Two Town Homes	9	5	-	-	-	-	-	5	3	-	1	2	-	-
Town Homes	17	10	-	-	-	-	-	-	-	-	3	4	-	-
Site Total	**74**	**66**	**-**	**-**	**2**	**-**	**3**	**5**	**3**	**3**	**19**	**6**	**17**	**-**
Total Future (With Toll Brothers Included)			**14**	**24**	**36**	**14**	**1,665**	**28**	**38**	**30**	**36**	**19**	**1,204**	**22**

3: Walnut Street/Cedar Avenue
Trip Distribution

Traffic Component	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Cedar Avenue Right	Westbound Cedar Avenue Through	Westbound Cedar Avenue Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Commercial Drive Right	Eastbound Commercial Drive Through	Eastbound Commercial Drive Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial		-15%						15%				
Two Over Two Town Homes		-25%						25%				
Town Homes			25%	-25%								

3: Walnut Street/Cedar Avenue
AM Peak Hour

2024

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Cedar Avenue Right	Westbound Cedar Avenue Through	Westbound Cedar Avenue Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Commercial Drive Right	Eastbound Commercial Drive Through	Eastbound Commercial Drive Left
Existing Traffic Volume			1	43	31	21	-	7	28	94	6	-	-	1
Growth			-	1	1	1	-	-	1	3	-	-	-	-
Existing Adjusted			1	44	32	22	-	7	29	97	6	-	-	1
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141			1	2		1						
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	-	1	2	-	1	-	-	-	-	-	-
Background (With Toll Brothers Included)			1	44	33	24	-	8	29	97	6	-	-	1
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	1	-	-	-	-
Two Over Two Town Homes	2	8	-	2	-	-	-	-	-	1	-	-	-	-
Town Homes	5	16	-	-	1	4	-	-	-	-	-	-	-	-
Site Total	**13**	**27**	**-**	**2**	**1**	**4**	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**1**	**46**	**34**	**28**	**-**	**8**	**29**	**99**	**6**	**-**	**-**	**1**

3: Walnut Street/Cedar Avenue
PM Peak Hour

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Cedar Avenue Right	Westbound Cedar Avenue Through	Westbound Cedar Avenue Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Commercial Drive Right	Eastbound Commercial Drive Through	Eastbound Commercial Drive Left
Existing Traffic Volume			2	68	17	14	-	17	13	65	1	3	-	3
Growth			-	2	1	-	-	1	-	2	-	-	-	-
Existing Adjusted			2	70	18	14	-	18	13	67	1	3	-	3
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190			2	1			1					
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	-	2	1	-	-	1	-	-	-	-	-
Background (With Toll Brothers Included)			2	70	20	15	-	18	14	67	1	3	-	3
Site Assignment														
Commercial	48	51	-	8	-	-	-	-	-	7	-	-	-	-
Two Over Two Town Homes	9	5	-	1	-	-	-	-	-	2	-	-	-	-
Town Homes	17	10	-	-	4	3	-	-	-	-	-	-	-	-
Site Total	**74**	**66**	**-**	**9**	**4**	**3**	**-**	**-**	**-**	**9**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**2**	**79**	**24**	**18**	**-**	**18**	**14**	**76**	**1**	**3**	**-**	**3**

4: Walnut Street/Second Street
Trip Distribution

Traffic Component	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Second Street Right	Westbound Second Street Through	Westbound Second Street Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial		-15%						15%				
Two Over Two Town Homes		-25%						25%				
Town Homes												

4: Walnut Street/Second Street
AM Peak Hour
2024

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Second Street Right	Westbound Second Street Through	Westbound Second Street Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Existing Traffic Volume			2	49	3	4	2	2	3	109	2	9	9	13
Growth			-	1	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			2	50	3	4	2	2	3	112	2	9	9	13
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141		1						-				
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	1	-	-	-	-	-	-	-	-	-	-
Background (With Toll Brothers Included)			2	51	3	4	2	2	3	112	2	9	9	13
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	1	-	-	-	-
Two Over Two Town Homes	2	8	-	2	-	-	-	-	-	1	-	-	-	-
Town Homes	5	16	-	-	-	-	-	-	-	-	-	-	-	-
Site Total	**13**	**27**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**2**	**53**	**3**	**4**	**2**	**2**	**3**	**114**	**2**	**9**	**9**	**13**

4: Walnut Street/Second Street
PM Peak Hour

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Second Street Right	Westbound Second Street Through	Westbound Second Street Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Existing Traffic Volume			2	89	3	1	5	-	1	66	6	3	11	1
Growth			-	3	-	-	-	-	-	2	-	-	-	-
Existing Adjusted			2	92	3	1	5	-	1	68	6	3	11	1
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190		-						1				
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	-	-	-	-	-	-	1	-	-	-	-
Background (With Toll Brothers Included)			2	92	3	1	5	-	1	69	6	3	11	1
Site Assignment														
Commercial	48	51	-	8	-	-	-	-	-	7	-	-	-	-
Two Over Two Town Homes	9	5	-	1	-	-	-	-	-	2	-	-	-	-
Town Homes	17	10	-	-	-	-	-	-	-	-	-	-	-	-
Site Total	**74**	**66**	**-**	**9**	**-**	**-**	**-**	**-**	**-**	**9**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**2**	**101**	**3**	**1**	**5**	**-**	**1**	**78**	**6**	**3**	**11**	**1**

5.: Oak Street/Second Street
Trip Distribution

Traffic Component	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Future Toll Brothers Right	Westbound Future Toll Brothers Through	Westbound Future Toll Brothers Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial												
Two Over Two Town Homes												
Town Homes		-25%						25%				

5.: Oak Street/Second Street
AM Peak Hour

2024

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Future Toll Brothers Right	Westbound Future Toll Brothers Through	Westbound Future Toll Brothers Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Existing Traffic Volume			3	112	-	-	-	-	-	101	2	7	-	1
Growth			-	3	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			3	115	-	-	-	-	-	104	2	7	-	1
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141		22						6				
Toll Brothers - American Legion	26	48		12	6	12		12	6	7				
Subtotal	214	403	-	34	6	12	-	12	6	13	-	-	-	-
Background (With Toll Brothers Included)			3	149	6	12	-	12	6	117	2	7	-	1
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	2	8	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	5	16	-	4	-	-	-	-	-	1	-	-	-	-
Site Total	**13**	**27**	**-**	**4**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**3**	**153**	**6**	**12**	**-**	**12**	**6**	**118**	**2**	**7**	**-**	**1**

5.: Oak Street/Second Street
PM Peak Hour

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Future Toll Brothers Right	Westbound Future Toll Brothers Through	Westbound Future Toll Brothers Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Second Street Right	Eastbound Second Street Through	Eastbound Second Street Left
Existing Traffic Volume			2	99	-	-	-	-	-	95	4	10	-	3
Growth			-	3	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			2	102	-	-	-	-	-	98	4	10	-	3
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190		13						21				
Toll Brothers - American Legion	26	48		9	12	8		8	12	12				
Subtotal	542	444	-	22	12	8	-	8	12	33	-	-	-	-
Background (With Toll Brothers Included)			2	124	12	8	-	8	12	131	4	10	-	3
Site Assignment														
Commercial	48	51	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	9	5	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	17	10	-	2	-	-	-	-	-	4	-	-	-	-
Site Total	**74**	**66**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**4**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**2**	**126**	**12**	**8**	**-**	**8**	**12**	**135**	**4**	**10**	**-**	**3**

6.: Oak Street/Cedar Avenue
Trip Distribution

Traffic Component	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Panther Place Right	Westbound Panther Place Through	Westbound Panther Place Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Cedar Avenue Right	Eastbound Cedar Avenue Through	Eastbound Cedar Avenue Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial												
Two Over Two Town Homes												
Town Homes		50%						-50%	-25%	25%		

6.: Oak Street/Cedar Avenue
AM Peak Hour
2024

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Panther Place Right	Westbound Panther Place Through	Westbound Panther Place Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Cedar Avenue Right	Eastbound Cedar Avenue Through	Eastbound Cedar Avenue Left
Existing Traffic Volume			4	81	33	36	8	31	29	82	1	9	29	20
Growth			-	2	1	1	-	1	1	2	-	-	1	1
Existing Adjusted			4	83	34	37	8	32	30	84	1	9	30	21
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141			1	2	3	22	6				1	
Toll Brothers - American Legion	26	48		13						24				
Subtotal	214	403	-	13	1	2	3	22	6	24	-	-	1	-
Background (With Toll Brothers Included)			4	96	35	39	11	54	36	108	1	9	31	21
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	2	8	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	5	16	-	3	-	-	-	-	-	8	4	1	-	-
Site Total	**13**	**27**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**8**	**4**	**1**	**-**	**-**
Total Future (With Toll Brothers Included)			**4**	**99**	**35**	**39**	**11**	**54**	**36**	**116**	**5**	**10**	**31**	**21**

6.: Oak Street/Cedar Avenue
PM Peak Hour

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound Panther Place Right	Westbound Panther Place Through	Westbound Panther Place Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Cedar Avenue Right	Eastbound Cedar Avenue Through	Eastbound Cedar Avenue Left
Existing Traffic Volume			19	98	5	8	5	6	4	99	6	9	3	12
Growth			1	3	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			20	101	5	8	5	6	4	102	6	9	3	12
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190			2	1	1	13	21				2	
Toll Brothers - American Legion	26	48		24						16				
Subtotal	542	444	-	24	2	1	1	13	21	16	-	-	2	-
Background (With Toll Brothers Included)			20	125	7	9	6	19	25	118	6	9	5	12
Site Assignment														
Commercial	48	51	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	9	5	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	17	10	-	9	-	-	-	-	-	5	3	4	-	-
Site Total	**74**	**66**	**-**	**9**	**-**	**-**	**-**	**-**	**-**	**5**	**3**	**4**	**-**	**-**
Total Future (With Toll Brothers Included)			**20**	**134**	**7**	**9**	**6**	**19**	**25**	**123**	**9**	**13**	**5**	**12**

A.: Commercial Drive/Fairfax Boulevard
Trip Distribution

Traffic Component	Southbound None			Westbound Fairfax Boulevard			Northbound Commercial Drive			Eastbound Fairfax Boulevard		
	Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial						45%	-45%		-5%	40%		
Two Over Two Town Homes					50%						-50%	
Town Homes												

A.: Commercial Drive/Fairfax Boulevard
AM Peak Hour

2024

Traffic Component			Southbound None			Westbound Fairfax Boulevard			Northbound Commercial Drive			Eastbound Fairfax Boulevard		
	IN	OUT	Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume							644						1,731	
Growth			-	-	-	-	19	-	-	-	-	-	52	-
Existing Adjusted			-	-	-	-	663	-	-	-	-	-	1,783	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214					22						50	
Paul VI - Redevelopment	71	141					48						33	
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	-	-	-	70	-	-	-	-	-	83	-
Background (With Toll Brothers Included)			-	-	-	-	733	-	-	-	-	-	1,866	-
Site Assignment														
Commercial	6	3	-	-	-	-	-	3	1	-	-	2	-	-
Two Over Two Town Homes	2	8	-	-	-	-	1	-	-	-	-	-	4	-
Town Homes	5	16	-	-	-	-	-	-	-	-	-	-	-	-
Site Total	**13**	**27**	**-**	**-**	**-**	**-**	**1**	**3**	**1**	**-**	**-**	**2**	**4**	**-**
Total Future (With Toll Brothers Included)			**-**	**-**	**-**	**-**	**734**	**3**	**1**	**-**	**-**	**2**	**1,870**	**-**

A.: Commercial Drive/Fairfax Boulevard
PM Peak Hour

Traffic Component			Southbound None			Westbound Fairfax Boulevard			Northbound Commercial Drive			Eastbound Fairfax Boulevard		
	IN	OUT	Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume							1,494						1,085	
Growth			-	-	-	-	45	-	-	-	-	-	33	-
Existing Adjusted			-	-	-	-	1,539	-	-	-	-	-	1,118	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206					60						32	
Paul VI - Redevelopment	221	190					100						104	
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	-	-	-	160	-	-	-	-	-	136	-
Background (With Toll Brothers Included)			-	-	-	-	1,699	-	-	-	-	-	1,254	-
Site Assignment														
Commercial	48	51	-	-	-	-	-	22	23	-	3	19	-	-
Two Over Two Town Homes	9	5	-	-	-	-	5	-	-	-	-	-	3	-
Town Homes	17	10	-	-	-	-	-	-	-	-	-	-	-	-
Site Total	**74**	**66**	**-**	**-**	**-**	**-**	**5**	**22**	**23**	**-**	**3**	**19**	**3**	**-**
Total Future (With Toll Brothers Included)			**-**	**-**	**-**	**-**	**1,704**	**22**	**23**	**-**	**3**	**19**	**1,257**	**-**

B.: Walnut Street/Commercial RIRO Drive
Trip Distribution

Traffic Component	Southbound Walnut Street			Westbound Commercial RIRO Drive			Northbound Walnut Street			Eastbound None		
	Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial				-35%		-15%	15%					
Two Over Two Town Homes		75%						-75%				
Town Homes		25%						-25%				

B.: Walnut Street/Commercial RIRO Drive
AM Peak Hour

2024

Traffic Component			Southbound Walnut Street			Westbound Commercial RIRO Drive			Northbound Walnut Street			Eastbound None		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume				75						116				
Growth			-	2	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			-	77	-	-	-	-	-	119	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141		1						2				
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	1	-	-	-	-	-	2	-	-	-	-
Background (With Toll Brothers Included)			-	78	-	-	-	-	-	121	-	-	-	-
Site Assignment														
Commercial	6	3	-	-	-	1	-	-	1	-	-	-	-	-
Two Over Two Town Homes	2	8	-	2	-	-	-	-	-	6	-	-	-	-
Town Homes	5	16	-	1	-	-	-	-	-	4	-	-	-	-
Site Total	**13**	**27**	**-**	**3**	**-**	**1**	**-**	**-**	**1**	**10**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**-**	**81**	**-**	**1**	**-**	**-**	**1**	**131**	**-**	**-**	**-**	**-**

B.: Walnut Street/Commercial RIRO Drive
PM Peak Hour

Traffic Component			Southbound Walnut Street			Westbound Commercial RIRO Drive			Northbound Walnut Street			Eastbound None		
			Right	Through	Left	Right	Through	Left	Right	Through	Left	Right	Through	Left
Existing Traffic Volume				87						82				
Growth			-	3	-	-	-	-	-	2	-	-	-	-
Existing Adjusted			-	90	-	-	-	-	-	84	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190		2						1				
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	2	-	-	-	-	-	1	-	-	-	-
Background (With Toll Brothers Included)			-	92	-	-	-	-	-	85	-	-	-	-
Site Assignment														
Commercial	48	51	-	-	-	18	-	8	7	-	-	-	-	-
Two Over Two Town Homes	9	5	-	7	-	-	-	-	-	4	-	-	-	-
Town Homes	17	10	-	4	-	-	-	-	-	3	-	-	-	-
Site Total	**74**	**66**	**-**	**11**	**-**	**18**	**-**	**8**	**7**	**7**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**-**	**103**	**-**	**18**	**-**	**8**	**7**	**92**	**-**	**-**	**-**	**-**

C.: Walnut Street/Residential Drive
Trip Distribution

Traffic Component	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Residential Drive Right	Westbound Residential Drive Through	Westbound Residential Drive Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound None Right	Eastbound None Through	Eastbound None Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial		-15%						15%				
Two Over Two Town Homes			75%	-75%		-25%	25%					
Town Homes		25%						-25%				

C.: Walnut Street/Residential Drive
AM Peak Hour
2024

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Residential Drive Right	Westbound Residential Drive Through	Westbound Residential Drive Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound None Right	Eastbound None Through	Eastbound None Left
Existing Traffic Volume			-	75	-	-	-	-	-	116	-	-	-	-
Growth			-	2	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			-	77	-	-	-	-	-	119	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141		1						2				
Toll Brothers - American Legion	26	48												
Subtotal	214	403	-	1	-	-	-	-	-	2	-	-	-	-
Background (With Toll Brothers Included)			-	78	-	-	-	-	-	121	-	-	-	-
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	1	-	-	-	-
Two Over Two Town Homes	2	8	-	-	2	6	-	2	1	-	-	-	-	-
Town Homes	5	16	-	1	-	-	-	-	-	4	-	-	-	-
Site Total	**13**	**27**	**-**	**1**	**2**	**6**	**-**	**2**	**1**	**5**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**-**	**79**	**2**	**6**	**-**	**2**	**1**	**126**	**-**	**-**	**-**	**-**

C.: Walnut Street/Residential Drive
PM Peak Hour

Traffic Component	IN	OUT	Southbound Walnut Street Right	Southbound Walnut Street Through	Southbound Walnut Street Left	Westbound Residential Drive Right	Westbound Residential Drive Through	Westbound Residential Drive Left	Northbound Walnut Street Right	Northbound Walnut Street Through	Northbound Walnut Street Left	Eastbound None Right	Eastbound None Through	Eastbound None Left
Existing Traffic Volume			-	87	-	-	-	-	-	82	-	-	-	-
Growth			-	3	-	-	-	-	-	2	-	-	-	-
Existing Adjusted			-	90	-	-	-	-	-	84	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190		2						1				
Toll Brothers - American Legion	26	48												
Subtotal	542	444	-	2	-	-	-	-	-	1	-	-	-	-
Background (With Toll Brothers Included)			-	92	-	-	-	-	-	85	-	-	-	-
Site Assignment														
Commercial	48	51	-	8	-	-	-	-	-	7	-	-	-	-
Two Over Two Town Homes	9	5	-	-	7	4	-	1	2	-	-	-	-	-
Town Homes	17	10	-	4	-	-	-	-	-	3	-	-	-	-
Site Total	**74**	**66**	**-**	**12**	**7**	**4**	**-**	**1**	**2**	**10**	**-**	**-**	**-**	**-**
Total Future (With Toll Brothers Included)			**-**	**104**	**7**	**4**	**-**	**1**	**2**	**95**	**-**	**-**	**-**	**-**

D.: Oak Street/Residential Drive
Trip Distribution

Traffic Component	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound None Right	Westbound None Through	Westbound None Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Residential Drive Right	Eastbound Residential Drive Through	Eastbound Residential Drive Left
Pipeline Developments												
Novus Fairfax Gateway					Assignment Per Novus Gateway TIA							
Paul VI - Redevelopment					Assignment Per Paul VI TIA							
Toll Brothers - American Legion					Assignment per Toll Brothers - American Legion TIA							
Breezeway Site Development												
Commercial												
Two Over Two Town Homes												
Town Homes	75%								25%	-25%		-75%

D.: Oak Street/Residential Drive
AM Peak Hour

2024

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound None Right	Westbound None Through	Westbound None Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Residential Drive Right	Eastbound Residential Drive Through	Eastbound Residential Drive Left
Existing Traffic Volume				121						112				
Growth			-	4	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			-	125	-	-	-	-	-	115	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	117	214												
Paul VI - Redevelopment	71	141		22						6				
Toll Brothers - American Legion	26	48		18						19				
Subtotal	214	403	-	40	-	-	-	-	-	25	-	-	-	-
Background (With Toll Brothers Included)			-	165	-	-	-	-	-	140	-	-	-	-
Site Assignment														
Commercial	6	3	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	2	8	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	5	16	4	-	-	-	-	-	-	-	1	4	-	12
Site Total	**13**	**27**	**4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**4**	**-**	**12**
Total Future (With Toll Brothers Included)			**4**	**165**	**-**	**-**	**-**	**-**	**-**	**140**	**1**	**4**	**-**	**12**

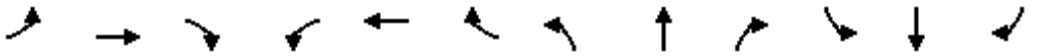
D.: Oak Street/Residential Drive
PM Peak Hour

Traffic Component	IN	OUT	Southbound Oak Street Right	Southbound Oak Street Through	Southbound Oak Street Left	Westbound None Right	Westbound None Through	Westbound None Left	Northbound Oak Street Right	Northbound Oak Street Through	Northbound Oak Street Left	Eastbound Residential Drive Right	Eastbound Residential Drive Through	Eastbound Residential Drive Left
Existing Traffic Volume				113						109				
Growth			-	3	-	-	-	-	-	3	-	-	-	-
Existing Adjusted			-	116	-	-	-	-	-	112	-	-	-	-
Pipeline Developments	IN	OUT												
Novus Fairfax Gateway	295	206												
Paul VI - Redevelopment	221	190		13						21				
Toll Brothers - American Legion	26	48		21						20				
Subtotal	542	444	-	34	-	-	-	-	-	41	-	-	-	-
Background (With Toll Brothers Included)			-	150	-	-	-	-	-	153	-	-	-	-
Site Assignment														
Commercial	48	51	-	-	-	-	-	-	-	-	-	-	-	-
Two Over Two Town Homes	9	5	-	-	-	-	-	-	-	-	-	-	-	-
Town Homes	17	10	13	-	-	-	-	-	-	-	4	2	-	7
Site Total	**74**	**66**	**13**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4**	**2**	**-**	**7**
Total Future (With Toll Brothers Included)			**13**	**150**	**-**	**-**	**-**	**-**	**-**	**153**	**4**	**2**	**-**	**7**

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020



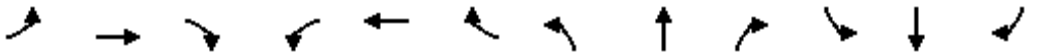
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1826	20	82	674	3	41	12	105	9	1	19
Future Volume (vph)	22	1826	20	82	674	3	41	12	105	9	1	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3500		1805	3404			1829	1615		1705	
Flt Permitted	0.36	1.00		0.03	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	605	3500		64	3404			1829	1615		1705	
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)	24	1985	22	89	733	3	45	13	114	10	1	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	106	0	20	0
Lane Group Flow (vph)	24	2007	0	89	736	0	0	58	8	0	12	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	130.3	125.9		143.3	132.4			11.5	11.5		6.5	
Effective Green, g (s)	132.3	127.9		144.4	134.4			13.5	13.5		8.5	
Actuated g/C Ratio	0.70	0.67		0.76	0.71			0.07	0.07		0.04	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	449	2356		157	2407			129	114		76	
v/s Ratio Prot	0.00	c0.57		c0.04	0.22			c0.03			c0.01	
v/s Ratio Perm	0.04			0.39					0.01			
v/c Ratio	0.05	0.85		0.57	0.31			0.45	0.07		0.16	
Uniform Delay, d1	8.9	23.8		50.7	10.4			84.7	82.4		87.3	
Progression Factor	0.81	0.65		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.1		4.6	0.3			2.5	0.3		1.0	
Delay (s)	7.3	18.5		55.3	10.7			87.2	82.7		88.3	
Level of Service	A	B		E	B			F	F		F	
Approach Delay (s)		18.4			15.5			84.2			88.3	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1795	19	21	694	19	15	27	46	26	26	12
Future Volume (vph)	10	1795	19	21	694	19	15	27	46	26	26	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3397		1805	1571		1752	1773	
Flt Permitted	0.35	1.00		0.07	1.00		0.73	1.00		0.50	1.00	
Satd. Flow (perm)	608	3500		129	3397		1388	1571		918	1773	
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)	11	1951	21	23	754	21	16	29	50	28	28	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	40	0	0	9	0
Lane Group Flow (vph)	11	1972	0	23	775	0	16	39	0	28	32	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	148.9	146.1		151.7	147.5		20.0	20.0		8.9	8.9	
Effective Green, g (s)	150.9	147.1		153.7	148.5		22.0	22.0		10.9	10.9	
Actuated g/C Ratio	0.79	0.77		0.81	0.78		0.12	0.12		0.06	0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	504	2709		150	2655		160	181		52	101	
v/s Ratio Prot	0.00	c0.56		c0.00	0.23			c0.02			0.02	
v/s Ratio Perm	0.02			0.12			0.01			c0.03		
v/c Ratio	0.02	0.73		0.15	0.29		0.10	0.22		0.54	0.31	
Uniform Delay, d1	4.1	11.1		12.2	5.9		75.1	76.2		87.1	86.0	
Progression Factor	1.00	1.00		0.86	0.40		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.5	0.3		0.3	0.6		10.3	1.8	
Delay (s)	4.1	12.8		11.0	2.6		75.4	76.8		97.4	87.7	
Level of Service	A	B		B	A		E	E		F	F	
Approach Delay (s)		12.8			2.8			76.6			91.7	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Walnut Street & Cedar Avenue

10/22/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	8	0	24	6	97	29	33	44	1
Future Volume (Veh/h)	1	0	0	8	0	24	6	97	29	33	44	1
Sign Control		Stop			Stop			Free			Free	
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	0	0	9	0	26	7	105	32	36	48	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)											366	
pX, platoon unblocked												
vC, conflicting volume	282	272	48	256	256	121	49			137		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	282	272	48	256	256	121	49			137		
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	99	100	97	100			98		
cM capacity (veh/h)	637	617	1020	682	629	930	1558			1447		

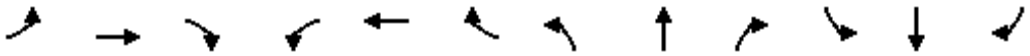
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	35	144	85
Volume Left	1	9	7	36
Volume Right	0	26	32	1
cSH	637	851	1558	1447
Volume to Capacity	0.00	0.04	0.00	0.02
Queue Length 95th (ft)	0	3	0	2
Control Delay (s)	10.7	9.4	0.4	3.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.7	9.4	0.4	3.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

4: Walnut Street & Second Street

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	9	9	2	2	4	2	112	3	3	51	2
Future Volume (vph)	13	9	9	2	2	4	2	112	3	3	51	2
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)	14	10	10	2	2	4	2	122	3	3	55	2

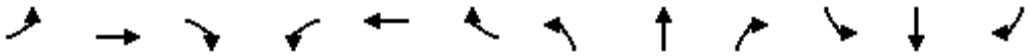
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	8	127	60
Volume Left (vph)	14	2	2	3
Volume Right (vph)	10	4	3	2
Hadj (s)	-0.06	-0.22	0.02	0.02
Departure Headway (s)	4.2	4.1	4.1	4.1
Degree Utilization, x	0.04	0.01	0.14	0.07
Capacity (veh/h)	807	828	863	852
Control Delay (s)	7.4	7.2	7.8	7.4
Approach Delay (s)	7.4	7.2	7.8	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.6		
Level of Service		A		
Intersection Capacity Utilization		16.7%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street/Driveway

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	0	7	12	0	12	2	117	6	6	149	3
Future Volume (vph)	1	0	7	12	0	12	2	117	6	6	149	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	0	8	13	0	13	2	127	7	7	162	3

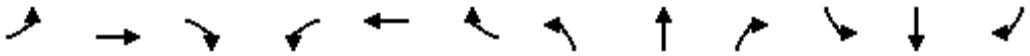
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	9	26	136	172
Volume Left (vph)	1	13	2	7
Volume Right (vph)	8	13	7	3
Hadj (s)	-0.48	-0.17	0.01	0.03
Departure Headway (s)	4.1	4.4	4.2	4.1
Degree Utilization, x	0.01	0.03	0.16	0.20
Capacity (veh/h)	798	751	845	854
Control Delay (s)	7.2	7.6	7.9	8.2
Approach Delay (s)	7.2	7.6	7.9	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	22.0%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

6: Oak Street & Cedar Avenue

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	31	9	54	11	39	1	108	36	35	96	4
Future Volume (vph)	21	31	9	54	11	39	1	108	36	35	96	4
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	34	10	59	12	42	1	117	39	38	104	4

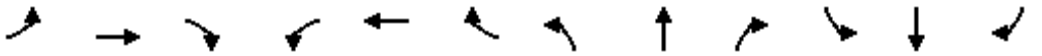
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	67	113	157	146
Volume Left (vph)	23	59	1	38
Volume Right (vph)	10	42	39	4
Hadj (s)	0.01	-0.08	-0.11	0.07
Departure Headway (s)	4.8	4.6	4.4	4.6
Degree Utilization, x	0.09	0.14	0.19	0.19
Capacity (veh/h)	694	724	777	741
Control Delay (s)	8.2	8.4	8.4	8.6
Approach Delay (s)	8.2	8.4	8.4	8.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.5			
Level of Service	A			
Intersection Capacity Utilization	34.6%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1198	25	102	1658	0	23	4	107	15	9	19
Future Volume (vph)	33	1198	25	102	1658	0	23	4	107	15	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3496		1805	3406			1821	1615		1756	
Flt Permitted	0.08	1.00		0.16	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	138	3496		302	3406			1821	1615		1756	
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)	36	1302	27	111	1802	0	25	4	116	16	10	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	110	0	14	0
Lane Group Flow (vph)	36	1329	0	111	1802	0	0	29	6	0	33	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	163.7	157.5		169.9	160.6			9.5	9.5		8.5	
Effective Green, g (s)	165.7	159.5		171.9	162.6			11.5	11.5		10.5	
Actuated g/C Ratio	0.75	0.72		0.78	0.74			0.05	0.05		0.05	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	151	2534		306	2517			95	84		83	
v/s Ratio Prot	0.01	0.38		c0.02	c0.53			c0.02			c0.02	
v/s Ratio Perm	0.17			0.27					0.00			
v/c Ratio	0.24	0.52		0.36	0.72			0.31	0.07		0.39	
Uniform Delay, d1	15.5	13.4		9.9	15.9			100.4	99.2		101.7	
Progression Factor	0.80	0.60		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.7		0.7	1.8			1.8	0.4		3.1	
Delay (s)	13.1	8.7		10.7	17.7			102.2	99.5		104.7	
Level of Service	B	A		B	B			F	F		F	
Approach Delay (s)		8.9			17.3			100.1			104.7	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/22/2020

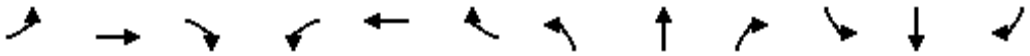
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1187	13	23	1662	14	17	27	35	34	24	14
Future Volume (vph)	22	1187	13	23	1662	14	17	27	35	34	24	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3403		1805	1595		1752	1762	
Flt Permitted	0.09	1.00		0.18	1.00		0.72	1.00		0.56	1.00	
Satd. Flow (perm)	160	3500		349	3403		1370	1595		1032	1762	
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)	24	1290	14	25	1807	15	18	29	38	37	26	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	25	0	0	10	0
Lane Group Flow (vph)	24	1304	0	25	1822	0	18	42	0	37	31	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	178.7	173.0		178.5	172.9		21.7	21.7		12.3	12.3	
Effective Green, g (s)	180.7	174.0		180.5	173.9		23.7	23.7		14.3	14.3	
Actuated g/C Ratio	0.82	0.79		0.82	0.79		0.11	0.11		0.07	0.07	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	2768		330	2689		147	171		67	114	
v/s Ratio Prot	c0.00	0.37		0.00	c0.54			c0.03			0.02	
v/s Ratio Perm	0.11			0.06			0.01			c0.04		
v/c Ratio	0.14	0.47		0.08	0.68		0.12	0.25		0.55	0.27	
Uniform Delay, d1	9.2	7.7		4.8	10.4		88.7	90.0		99.7	97.9	
Progression Factor	1.00	1.00		0.14	0.06		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.1	1.0		0.4	0.8		9.5	1.3	
Delay (s)	9.6	8.2		0.7	1.7		89.1	90.7		109.2	99.2	
Level of Service	A	A		A	A		F	F		F	F	
Approach Delay (s)		8.3			1.7			90.4			103.9	
Approach LOS		A			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Walnut Street & Cedar Avenue

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	3	18	0	15	1	67	14	20	70	2
Future Volume (Veh/h)	3	0	3	18	0	15	1	67	14	20	70	2
Sign Control		Stop			Stop			Free			Free	
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)	3	0	3	20	0	16	1	73	15	22	76	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)											366	
pX, platoon unblocked												
vC, conflicting volume	220	211	77	206	204	80	78			88		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	211	77	206	204	80	78			88		
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	97	100	98	100			99		
cM capacity (veh/h)	716	676	984	740	681	980	1520			1508		

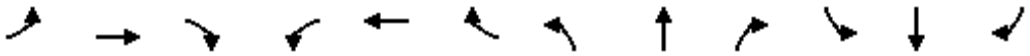
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	36	89	100
Volume Left	3	20	1	22
Volume Right	3	16	15	2
cSH	829	830	1520	1508
Volume to Capacity	0.01	0.04	0.00	0.01
Queue Length 95th (ft)	1	3	0	1
Control Delay (s)	9.4	9.5	0.1	1.7
Lane LOS	A	A	A	A
Approach Delay (s)	9.4	9.5	0.1	1.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	21.6%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

4: Walnut Street & Second Street

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	11	3	0	5	1	6	69	1	3	92	2
Future Volume (vph)	1	11	3	0	5	1	6	69	1	3	92	2
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	12	3	0	5	1	7	75	1	3	100	2

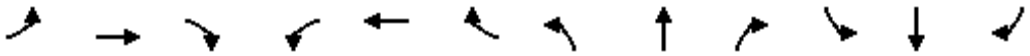
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	6	83	105
Volume Left (vph)	1	0	7	3
Volume Right (vph)	3	1	1	2
Hadj (s)	-0.07	-0.07	0.04	0.03
Departure Headway (s)	4.2	4.3	4.1	4.1
Degree Utilization, x	0.02	0.01	0.09	0.12
Capacity (veh/h)	808	805	860	876
Control Delay (s)	7.3	7.3	7.5	7.6
Approach Delay (s)	7.3	7.3	7.5	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.5			
Level of Service	A			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street/Driveway

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	0	10	8	0	8	4	131	12	12	124	2
Future Volume (vph)	3	0	10	8	0	8	4	131	12	12	124	2
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)	3	0	11	9	0	9	4	142	13	13	135	2

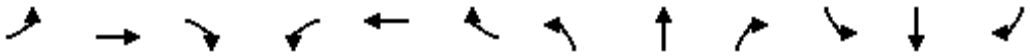
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	14	18	159	150
Volume Left (vph)	3	9	4	13
Volume Right (vph)	11	9	13	2
Hadj (s)	-0.39	-0.17	-0.01	0.04
Departure Headway (s)	4.2	4.4	4.1	4.2
Degree Utilization, x	0.02	0.02	0.18	0.17
Capacity (veh/h)	786	749	856	849
Control Delay (s)	7.3	7.5	8.0	8.0
Approach Delay (s)	7.3	7.5	8.0	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	22.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

6: Oak Street & Cedar Avenue

10/22/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	5	9	19	6	9	6	118	25	7	125	20
Future Volume (vph)	12	5	9	19	6	9	6	118	25	7	125	20
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)	13	5	10	21	7	10	7	128	27	8	136	22

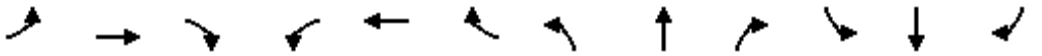
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	28	38	162	166
Volume Left (vph)	13	21	7	8
Volume Right (vph)	10	10	27	22
Hadj (s)	-0.09	-0.01	-0.06	-0.04
Departure Headway (s)	4.6	4.6	4.2	4.2
Degree Utilization, x	0.04	0.05	0.19	0.19
Capacity (veh/h)	721	714	838	840
Control Delay (s)	7.7	7.9	8.1	8.2
Approach Delay (s)	7.7	7.9	8.1	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.1			
Level of Service	A			
Intersection Capacity Utilization	20.5%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/23/2020



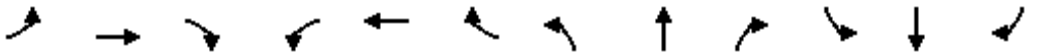
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1831	20	85	678	3	41	12	113	9	1	19
Future Volume (vph)	22	1831	20	85	678	3	41	12	113	9	1	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3500		1805	3404			1829	1615		1705	
Flt Permitted	0.36	1.00		0.03	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	604	3500		62	3404			1829	1615		1705	
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)	24	1990	22	92	737	3	45	13	123	10	1	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	114	0	20	0
Lane Group Flow (vph)	24	2012	0	92	740	0	0	58	9	0	12	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	130.0	125.6		143.4	132.4			11.5	11.5		6.5	
Effective Green, g (s)	132.0	127.6		144.4	134.4			13.5	13.5		8.5	
Actuated g/C Ratio	0.69	0.67		0.76	0.71			0.07	0.07		0.04	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	447	2350		159	2407			129	114		76	
v/s Ratio Prot	0.00	c0.57		c0.04	0.22			c0.03			c0.01	
v/s Ratio Perm	0.04			0.40					0.01			
v/c Ratio	0.05	0.86		0.58	0.31			0.45	0.08		0.16	
Uniform Delay, d1	9.0	24.1		53.1	10.4			84.7	82.4		87.3	
Progression Factor	1.00	0.69		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.2		5.0	0.3			2.5	0.3		1.0	
Delay (s)	9.0	19.9		58.1	10.7			87.2	82.7		88.3	
Level of Service	A	B		E	B			F	F		F	
Approach Delay (s)		19.8			16.0			84.1			88.3	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/23/2020



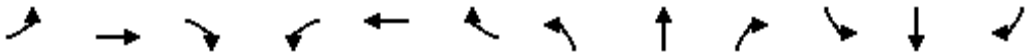
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1797	21	22	694	19	22	27	50	26	26	12
Future Volume (vph)	10	1797	21	22	694	19	22	27	50	26	26	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.90		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3500		1805	3397		1805	1565		1752	1773	
Flt Permitted	0.35	1.00		0.07	1.00		0.73	1.00		0.47	1.00	
Satd. Flow (perm)	608	3500		128	3397		1388	1565		871	1773	
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)	11	1953	23	24	754	21	24	29	54	28	28	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	9	0
Lane Group Flow (vph)	11	1976	0	24	775	0	24	40	0	28	32	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	148.8	146.0		151.6	147.4		20.1	20.1		9.0	9.0	
Effective Green, g (s)	150.8	147.0		153.6	148.4		22.1	22.1		11.0	11.0	
Actuated g/C Ratio	0.79	0.77		0.81	0.78		0.12	0.12		0.06	0.06	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	503	2707		149	2653		161	182		50	102	
v/s Ratio Prot	0.00	c0.56		c0.00	0.23			c0.03			0.02	
v/s Ratio Perm	0.02			0.13			0.02			c0.03		
v/c Ratio	0.02	0.73		0.16	0.29		0.15	0.22		0.56	0.31	
Uniform Delay, d1	4.1	11.2		12.4	5.9		75.5	76.1		87.1	85.9	
Progression Factor	1.00	1.00		0.87	0.35		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.8		0.5	0.3		0.4	0.6		13.6	1.7	
Delay (s)	4.2	12.9		11.3	2.4		75.9	76.7		100.7	87.6	
Level of Service	A	B		B	A		E	E		F	F	
Approach Delay (s)		12.9			2.6			76.5			92.9	
Approach LOS		B			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	190.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Walnut Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	8	0	28	6	99	29	34	46	1
Future Volume (Veh/h)	1	0	0	8	0	28	6	99	29	34	46	1
Sign Control		Stop			Stop			Free			Free	
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	0	0	9	0	30	7	108	32	37	50	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)											366	
pX, platoon unblocked												
vC, conflicting volume	292	278	50	262	263	124	51			140		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	292	278	50	262	263	124	51			140		
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	99	100	97	100			97		
cM capacity (veh/h)	624	611	1018	674	623	927	1555			1443		

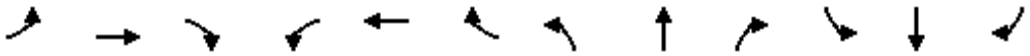
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	39	147	88
Volume Left	1	9	7	37
Volume Right	0	30	32	1
cSH	624	853	1555	1443
Volume to Capacity	0.00	0.05	0.00	0.03
Queue Length 95th (ft)	0	4	0	2
Control Delay (s)	10.8	9.4	0.4	3.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.8	9.4	0.4	3.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	25.0%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

4: Walnut Street & Second Street

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	9	9	2	2	4	2	114	3	3	53	2
Future Volume (vph)	13	9	9	2	2	4	2	114	3	3	53	2
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)	14	10	10	2	2	4	2	124	3	3	58	2

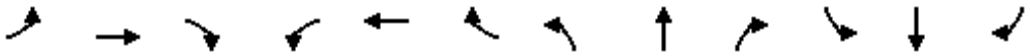
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	8	129	63
Volume Left (vph)	14	2	2	3
Volume Right (vph)	10	4	3	2
Hadj (s)	-0.06	-0.22	0.02	0.02
Departure Headway (s)	4.3	4.1	4.1	4.1
Degree Utilization, x	0.04	0.01	0.15	0.07
Capacity (veh/h)	804	825	862	852
Control Delay (s)	7.4	7.2	7.8	7.5
Approach Delay (s)	7.4	7.2	7.8	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street/Driveway

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	0	7	12	0	12	2	118	6	6	153	3
Future Volume (vph)	1	0	7	12	0	12	2	118	6	6	153	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	0	8	13	0	13	2	128	7	7	166	3

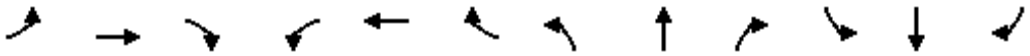
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	9	26	137	176
Volume Left (vph)	1	13	2	7
Volume Right (vph)	8	13	7	3
Hadj (s)	-0.48	-0.17	0.01	0.03
Departure Headway (s)	4.1	4.4	4.2	4.1
Degree Utilization, x	0.01	0.03	0.16	0.20
Capacity (veh/h)	795	749	844	854
Control Delay (s)	7.2	7.6	7.9	8.2
Approach Delay (s)	7.2	7.6	7.9	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

6: Oak Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	31	10	54	11	39	5	116	36	35	99	4
Future Volume (vph)	21	31	10	54	11	39	5	116	36	35	99	4
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	34	11	59	12	42	5	126	39	38	108	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	68	113	170	150
Volume Left (vph)	23	59	5	38
Volume Right (vph)	11	42	39	4
Hadj (s)	0.00	-0.08	-0.10	0.07
Departure Headway (s)	4.8	4.7	4.4	4.6
Degree Utilization, x	0.09	0.15	0.21	0.19
Capacity (veh/h)	687	715	773	738
Control Delay (s)	8.3	8.4	8.6	8.7
Approach Delay (s)	8.3	8.4	8.6	8.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	35.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

101: Site Driveway A & Fairfax Boulevard

10/23/2020

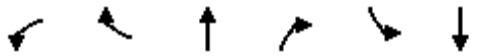
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1870	2	3	734	0	1
Future Volume (Veh/h)	1870	2	3	734	0	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2033	2	3	798	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	250			387		
pX, platoon unblocked			0.68		0.72	0.68
vC, conflicting volume			2035		2439	1018
vC1, stage 1 conf vol					2034	
vC2, stage 2 conf vol					405	
vCu, unblocked vol			1587		1730	96
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			280		102	643

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1355	680	3	399	399	1
Volume Left	0	0	3	0	0	0
Volume Right	0	2	0	0	0	1
cSH	1700	1700	280	1700	1700	643
Volume to Capacity	0.80	0.40	0.01	0.23	0.23	0.00
Queue Length 95th (ft)	0	0	1	0	0	0
Control Delay (s)	0.0	0.0	18.0	0.0	0.0	10.6
Lane LOS			C			B
Approach Delay (s)	0.0		0.1			10.6
Approach LOS						B

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	61.8%	ICU Level of Service		B
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

102: Walnut Street & Site Driveway B 10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	131	1	0	81
Future Volume (Veh/h)	0	1	131	1	0	81
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)	0	1	142	1	0	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						131
pX, platoon unblocked	0.99					
vC, conflicting volume	230	72			143	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	215	72			143	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	745	976			1437	

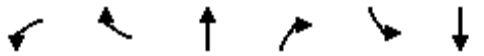
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	1	95	48	88
Volume Left	0	0	0	0
Volume Right	1	0	1	0
cSH	976	1700	1700	1700
Volume to Capacity	0.00	0.06	0.03	0.05
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.7	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	8.7	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

103: Walnut Street & Site Driveway C

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	6	126	1	2	79
Future Volume (Veh/h)	2	6	126	1	2	79
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)	2	7	137	1	2	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						264
pX, platoon unblocked	1.00					
vC, conflicting volume	228	69			138	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	69			138	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	742	980			1443	

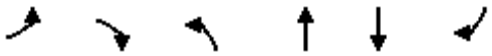
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	9	91	47	88
Volume Left	2	0	0	2
Volume Right	7	0	1	0
cSH	915	1700	1700	1443
Volume to Capacity	0.01	0.05	0.03	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.0	0.0	0.0	0.2
Lane LOS	A			A
Approach Delay (s)	9.0	0.0		0.2
Approach LOS	A			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

104: Oak Street & Site Driveway D

10/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	4	1	140	165	4
Future Volume (Veh/h)	12	4	1	140	165	4
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	4	1	152	179	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	335	181	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	335	181	183			
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)	660	862	1392			

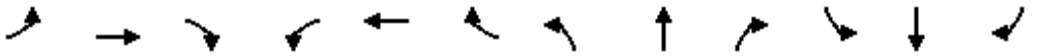
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	17	153	183
Volume Left	13	1	0
Volume Right	4	0	4
cSH	698	1392	1700
Volume to Capacity	0.02	0.00	0.11
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.3	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis

1: Oak Street/Meredith Drive & Fairfax Boulevard

10/23/2020



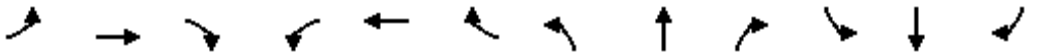
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	1224	25	111	1685	0	23	4	112	15	9	19
Future Volume (vph)	33	1224	25	111	1685	0	23	4	112	15	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	4.6		5.6	4.6			4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85		0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	
Satd. Flow (prot)	1597	3496		1805	3406			1821	1615		1756	
Flt Permitted	0.08	1.00		0.15	1.00			0.96	1.00		0.98	
Satd. Flow (perm)	132	3496		285	3406			1821	1615		1756	
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)	36	1330	27	121	1832	0	25	4	122	16	10	21
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	116	0	14	0
Lane Group Flow (vph)	36	1357	0	121	1832	0	0	29	6	0	33	0
Heavy Vehicles (%)	13%	3%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		4	4		7	7	
Permitted Phases	2			6					4			
Actuated Green, G (s)	162.3	156.1		171.1	160.5			9.6	9.6		8.5	
Effective Green, g (s)	164.3	158.1		173.1	162.5			11.6	11.6		10.5	
Actuated g/C Ratio	0.75	0.72		0.79	0.74			0.05	0.05		0.05	
Clearance Time (s)	6.6	6.6		6.6	6.6			6.5	6.5		6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	146	2512		304	2515			96	85		83	
v/s Ratio Prot	0.01	0.39		c0.02	c0.54			c0.02			c0.02	
v/s Ratio Perm	0.18			0.29					0.00			
v/c Ratio	0.25	0.54		0.40	0.73			0.30	0.08		0.39	
Uniform Delay, d1	16.3	14.2		10.8	16.3			100.3	99.1		101.7	
Progression Factor	0.93	0.64		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.8	0.8		0.9	1.9			1.8	0.4		3.1	
Delay (s)	16.0	9.9		11.7	18.2			102.1	99.5		104.7	
Level of Service	B	A		B	B			F	F		F	
Approach Delay (s)		10.0			17.8			100.0			104.7	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.2
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

2: Walnut Street/Fairchester Drive & Fairfax Boulevard

10/23/2020



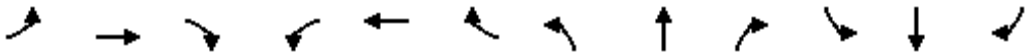
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1204	19	28	1665	14	36	30	38	36	24	14
Future Volume (vph)	22	1204	19	28	1665	14	36	30	38	36	24	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6		5.6	5.6		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.92		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3498		1805	3403		1805	1600		1752	1762	
Flt Permitted	0.09	1.00		0.18	1.00		0.72	1.00		0.52	1.00	
Satd. Flow (perm)	158	3498		337	3403		1372	1600		966	1762	
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)	24	1309	21	30	1810	15	39	33	41	39	26	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	24	0	0	10	0
Lane Group Flow (vph)	24	1330	0	30	1825	0	39	50	0	39	31	0
Heavy Vehicles (%)	8%	3%	0%	0%	6%	0%	0%	5%	12%	3%	3%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			7			3	
Permitted Phases	2			6			7			3		
Actuated Green, G (s)	178.0	172.3		178.0	172.3		22.3	22.3		12.9	12.9	
Effective Green, g (s)	180.0	173.3		180.0	173.3		24.3	24.3		14.9	14.9	
Actuated g/C Ratio	0.82	0.79		0.82	0.79		0.11	0.11		0.07	0.07	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	175	2755		320	2680		151	176		65	119	
v/s Ratio Prot	c0.00	0.38		0.00	c0.54			c0.03			0.02	
v/s Ratio Perm	0.11			0.07			0.03			c0.04		
v/c Ratio	0.14	0.48		0.09	0.68		0.26	0.28		0.60	0.26	
Uniform Delay, d1	9.5	8.0		5.1	10.7		89.6	89.9		99.7	97.3	
Progression Factor	1.00	1.00		0.07	0.17		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.1	1.0		0.9	0.9		14.0	1.2	
Delay (s)	9.9	8.6		0.5	2.9		90.5	90.8		113.7	98.5	
Level of Service	A	A		A	A		F	F		F	F	
Approach Delay (s)		8.6			2.8			90.7			105.9	
Approach LOS		A			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

3: Walnut Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	3	18	0	18	1	76	14	24	79	2
Future Volume (Veh/h)	3	0	3	18	0	18	1	76	14	24	79	2
Sign Control		Stop			Stop			Free			Free	
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)	3	0	3	20	0	20	1	83	15	26	86	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)											367	
pX, platoon unblocked												
vC, conflicting volume	252	239	87	234	232	90	88			98		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	252	239	87	234	232	90	88			98		
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	97	100	98	100			98		
cM capacity (veh/h)	678	650	971	708	656	967	1508			1495		

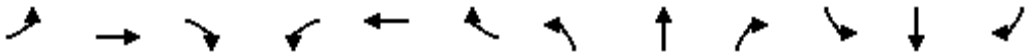
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	40	99	114
Volume Left	3	20	1	26
Volume Right	3	20	15	2
cSH	799	818	1508	1495
Volume to Capacity	0.01	0.05	0.00	0.02
Queue Length 95th (ft)	1	4	0	1
Control Delay (s)	9.5	9.6	0.1	1.8
Lane LOS	A	A	A	A
Approach Delay (s)	9.5	9.6	0.1	1.8
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	22.3%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

4: Walnut Street & Second Street

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	11	3	0	5	1	6	78	1	3	101	2
Future Volume (vph)	1	11	3	0	5	1	6	78	1	3	101	2
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	12	3	0	5	1	7	85	1	3	110	2

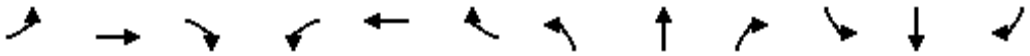
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	6	93	115
Volume Left (vph)	1	0	7	3
Volume Right (vph)	3	1	1	2
Hadj (s)	-0.07	-0.07	0.04	0.03
Departure Headway (s)	4.3	4.3	4.1	4.1
Degree Utilization, x	0.02	0.01	0.11	0.13
Capacity (veh/h)	796	794	858	873
Control Delay (s)	7.4	7.3	7.6	7.7
Approach Delay (s)	7.4	7.3	7.6	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	16.9%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

5: Oak Street & Second Street/Driveway

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	0	10	8	0	8	4	135	12	12	126	2
Future Volume (vph)	3	0	10	8	0	8	4	135	12	12	126	2
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)	3	0	11	9	0	9	4	147	13	13	137	2

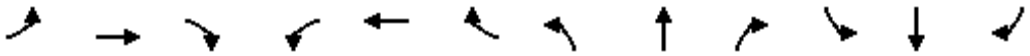
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	14	18	164	152
Volume Left (vph)	3	9	4	13
Volume Right (vph)	11	9	13	2
Hadj (s)	-0.39	-0.17	-0.01	0.04
Departure Headway (s)	4.2	4.4	4.1	4.2
Degree Utilization, x	0.02	0.02	0.19	0.18
Capacity (veh/h)	782	746	855	848
Control Delay (s)	7.3	7.5	8.1	8.1
Approach Delay (s)	7.3	7.5	8.1	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	22.5%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

6: Oak Street & Cedar Avenue

10/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	5	13	19	6	9	9	123	25	7	134	20
Future Volume (vph)	12	5	13	19	6	9	9	123	25	7	134	20
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)	13	5	14	21	7	10	10	134	27	8	146	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	32	38	171	176
Volume Left (vph)	13	21	10	8
Volume Right (vph)	14	10	27	22
Hadj (s)	-0.15	-0.01	-0.05	-0.03
Departure Headway (s)	4.6	4.7	4.2	4.2
Degree Utilization, x	0.04	0.05	0.20	0.21
Capacity (veh/h)	721	704	831	834
Control Delay (s)	7.8	7.9	8.2	8.3
Approach Delay (s)	7.8	7.9	8.2	8.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	21.4%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis

101: Site Driveway A & Fairfax Boulevard 10/23/2020

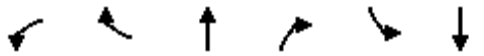
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1257	19	22	1704	3	23
Future Volume (Veh/h)	1257	19	22	1704	3	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1366	21	24	1852	3	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)	250			387		
pX, platoon unblocked			0.87		0.75	0.87
vC, conflicting volume			1387		2350	694
vC1, stage 1 conf vol					1376	
vC2, stage 2 conf vol					974	
vCu, unblocked vol			1141		1339	342
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	96
cM capacity (veh/h)			528		223	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	911	476	24	926	926	28
Volume Left	0	0	24	0	0	3
Volume Right	0	21	0	0	0	25
cSH	1700	1700	528	1700	1700	487
Volume to Capacity	0.54	0.28	0.05	0.54	0.54	0.06
Queue Length 95th (ft)	0	0	4	0	0	5
Control Delay (s)	0.0	0.0	12.1	0.0	0.0	12.8
Lane LOS			B			B
Approach Delay (s)	0.0		0.2			12.8
Approach LOS						B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

102: Walnut Street & Site Driveway B 10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	18	92	7	0	103
Future Volume (Veh/h)	8	18	92	7	0	103
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)	9	20	100	8	0	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						145
pX, platoon unblocked	0.99					
vC, conflicting volume	216	54			108	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204	54			108	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			100	
cM capacity (veh/h)	759	1002			1480	

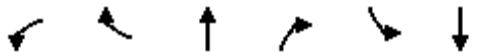
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	29	67	41	112
Volume Left	9	0	0	0
Volume Right	20	0	8	0
cSH	911	1700	1700	1700
Volume to Capacity	0.03	0.04	0.02	0.07
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.1	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

103: Walnut Street & Site Driveway C

10/23/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	4	95	2	7	104
Future Volume (Veh/h)	1	4	95	2	7	104
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)	1	4	103	2	8	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						261
pX, platoon unblocked	1.00					
vC, conflicting volume	233	52			105	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230	52			105	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	732	1004			1484	

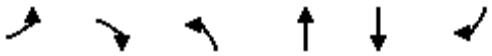
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	5	69	36	121
Volume Left	1	0	0	8
Volume Right	4	0	2	0
cSH	934	1700	1700	1484
Volume to Capacity	0.01	0.04	0.02	0.01
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.9	0.0	0.0	0.5
Lane LOS	A			A
Approach Delay (s)	8.9	0.0		0.5
Approach LOS	A			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

104: Oak Street & Site Driveway D

10/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	2	4	153	150	13
Future Volume (Veh/h)	7	2	4	153	150	13
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)	8	2	4	166	163	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	344	170	177			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	344	170	177			
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	100			
cM capacity (veh/h)	651	874	1399			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	170	177
Volume Left	8	4	0
Volume Right	2	0	14
cSH	686	1399	1700
Volume to Capacity	0.01	0.00	0.10
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.3	0.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		