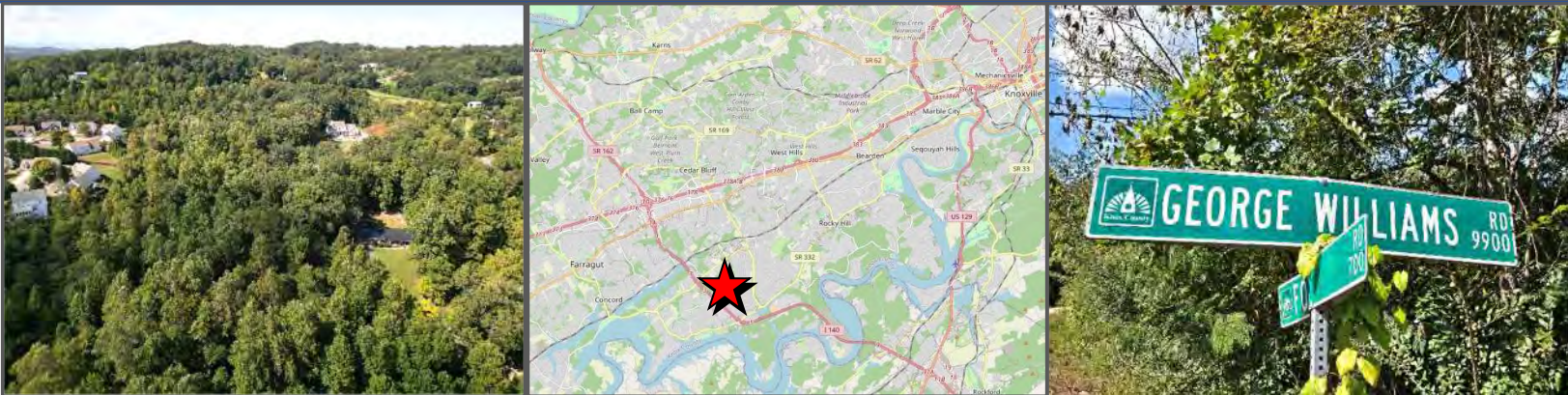


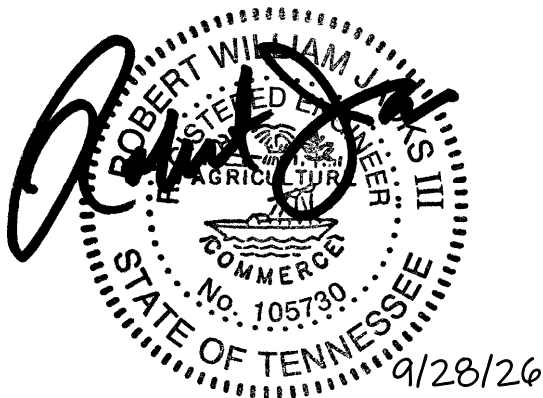


Transportation Impact Study George Williams Road Subdivision Knox County, Tennessee



September 2026

Prepared for:
S&E Properties
405 Montbrook Lane
Knoxville, TN 37919



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EXECUTIVE SUMMARY

Preface:

S&E Properties proposes a residential subdivision on the north side and at the western end of George Williams Road in West Knox County, TN. The subdivision will include up to 101 single-family detached houses and is estimated to be fully built and occupied by 2028. This development is referred to in this report as “George Williams Road Subdivision” because a formal name has not yet been chosen.

The primary purpose of this study is to determine and evaluate the potential impacts of the residential subdivision on the adjacent transportation system. The study includes a review of the primary access road, George Williams Road; the proposed entrance intersection at George Williams Road; and the nearby T-intersection of Fox Road at George Williams Road. This report is a Level 1 study, and Knoxville/Knox County Planning identified these intersections for inclusion. The scope of work for this project’s Transportation Impact Study (TIS) from Planning is provided in Appendix A. Recommendations and mitigation measures are offered if transportation operations are projected to fall below recognized engineering standards.

Study Results:

The significant findings of this study include the following:

- The George Williams Road Subdivision, with up to 101 single-family detached houses, is estimated to generate 1,081 vehicle trips on an average weekday at full build-out and occupancy in 2028. Of these daily trips, 73 are estimated to occur during the AM peak hour and 97 in the PM peak hour.
- The existing operations at the Fox Road at George Williams Road intersection include fairly substantial vehicle delays (LOS E in 2026 AM peak hour) and queues on the westbound approach of George Williams Road. This poor condition is expected to worsen in the future due to general vehicle growth in the area and the increase in trips generated by the George Williams Road Subdivision. The proposed subdivision will add a modest number of trips, with most of the future degradation due to background growth. With the project, the westbound approach of George Williams Road is projected to be LOS F in both the 2028 AM and PM peak hours.
- The TIS scope of work requested an All-Way Stop Control (AWSC) evaluation of the existing unsignalized T-intersection of Fox Road at George Williams Road. The evaluation determined that the intersection does not satisfy MUTCD warrants

to justify converting the intersection to stop control on all approaches, given the current operation of free-flow conditions on Fox Road and stop conditions for the minor approach of George Williams Road.

- The Proposed Entrance intersection for the subdivision at George Williams Road is calculated to have minimal vehicle delays and queues during the projected 2028 morning and afternoon peak hours, operating under two-way stop-controlled conditions.
- The projected 2028 entering vehicular volumes into the George Williams Road Subdivision from George Williams Road were determined and estimated not to meet Knox County warrant thresholds for separate entering turn lanes.

Recommendations:

The following summary recommendations are presented based on the study's analyses to minimize the impacts of the proposed development on the adjacent transportation system while aiming to achieve acceptable traffic flow and improved safety. More details regarding all the recommendations are discussed at the end of the report. The discussions, evaluations, and guidance for the nearby intersection of Fox Road at George Williams Road are provided in response to a requested review.

George Williams Road at Proposed Entrance for George Williams Road Subdivision:

- A single exit lane for George Williams Road Subdivision, allowing both left and right turn movements at George Williams Road, will be sufficient according to the calculations.
- Future landscaping, existing vegetation, or proposed signage must not impact the intersection sight distances looking from the Proposed Entrance to the west and east on George Williams Road.
- Based on a posted speed limit of 30 mph on George Williams Road, the required intersection sight distance will be 300 feet for exiting left- and right-turning vehicles. The existing sight distances from George Williams Road at the Proposed Entrance location were visually estimated to be adequate in both directions, assuming the existing vegetation on the north side of George Williams Road along the property's road frontage will be removed during construction and the existing utility pole will be relocated. Further verification should be provided by a land surveyor or by the site civil engineer to ensure that it will be met.
- It is recommended that a Stop Sign (R1-1) be posted and a 24" white stop bar be applied to the Proposed Entrance approach at George Williams Road. The stop

bar should be applied a minimum of 4 feet away from the traveled edge of George Williams Road and placed at the desired stopping point that maximizes the sight distance.

George Williams Road Subdivision Internal Roads:

- A 25-mph Speed Limit Sign (R2-1) with additional plaque signage, as shown in the report, is recommended to be posted near the beginning of the Proposed Entrance road, Road “A”, off George Williams Road. It is also recommended that a “No Outlet” Sign (W14-2a) be posted at the front of the subdivision. This sign can be posted above or below the street name sign.
- Stop Signs (R1-1) are recommended to be installed on the minor approaches of Road “B” at the internal roadway T-intersections, as shown in the report.
- Sight distances at the new internal intersections must not be impacted by new signage, parked cars, or future landscaping. The civil site designer should ensure that appropriate internal sight distances will be met.
- If directed by the local post office, the site designer should include a parking area and a centralized mail delivery center within the development for the subdivision residents.
- All drainage grates and covers for the residential development must be pedestrian and bicycle-safe.
- The main internal road, Road “A”, in the subdivision will have long, straight road segments with steep road grades due to the existing topography. Straight road segments with steep grades encourage higher vehicle speeds. It is recommended that the site designer consider traffic calming measures on this main internal road, and this should be discussed with Knox County Engineering in the detailed design phase.
- All road and intersection elements should be designed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) and the Manual on Uniform Traffic Control Devices (MUTCD), as well as Knox County’s specifications and guidelines, to ensure proper roadway operations.

Fox Road at George Williams Road:

- This intersection, as requested, was evaluated for All-Way Stop Control (AWSC), converting it from its existing configuration operating as Two-Way Stop Control (TWSC). The evaluation was conducted based on MUTCD warrants and

determined that it did not satisfy any of the warrants to clearly justify its conversion.

- This intersection was further evaluated in the 2028 projected conditions with three alternatives: maintain the existing TWSC as-is; convert the intersection to AWSC; or keep TWSC and add a separate westbound right-turn lane on George Williams Road so left- and right-turn movements operate in separate lanes. The most beneficial option, and the most expensive to implement, is a westbound right-turn lane with 125 feet of storage, with the intersection remaining TWSC. However, this new lane should not be considered a condition of this development. The high westbound delays and queues already exist on George Williams Road and will worsen with background growth even without the subdivision (LOS F in the 2028 AM peak hour and LOS D in the 2028 PM peak hour).
- At a minimum, if this lane addition is not provided, it is still recommended that Knox County address an existing asphalt drop-off/failure at the northern corner of George Williams Road at Fox Road, observed during the field visit. This pavement failure has been caused and worsened by right-turning vehicles that occasionally attempt to “squeeze by” stopped vehicles turning left onto southbound Fox Road. A similar pavement edge failure was also observed at the opposite corner, likely due to vehicles off-tracking or taking the corner too sharply from northbound Fox Road onto George Williams Road.

DESCRIPTION OF EXISTING CONDITIONS

▪ STUDY AREA:

The location of the proposed George Williams Road Subdivision is shown on a map in Figure 1. This development will be situated on the north side of George Williams Road, between Fox Road and Hidden Glen Lane in West Knox County, Tennessee. External road access to the new development will be provided via a single entrance on George Williams Road, slightly northeast of an Interstate 140 underpass. Transportation impacts associated with the development were analyzed at the proposed entrance, where the development will have road access to and from external destinations. In addition, Knoxville/Knox County Planning requested that the study include the nearby unsignalized T-intersection of Fox Road at George Williams Road and determine whether this Two-Way Stop Control (TWSC) intersection would warrant or be appropriately considered to operate as an All-Way Stop Control (AWSC) to increase functionality.

The development will be constructed on an existing parcel along George Williams Road and on a portion of an adjacent parcel to the north that will be subdivided. These parcel areas are mostly wooded, with a portion maintained as an open area. Several single-family detached houses are adjacent to the proposed development property, including the remaining parcel to the north, which has external road access via Triplett Lane further to the north. The topography of the proposed development property is characterized by fairly steep terrain, sloping from the north toward George Williams Road to the south.



The proposed development property is located in an area that has gradually transitioned and has more recently seen a significant amount of activity in new residential development, infilling the remaining properties with more challenging features. These recent residential developments include Foxborough Hills and Fox Garden Subdivisions.

In the immediate area along George Williams Road and Fox Road, besides the residential subdivisions and standalone residences, the only other land use is Anoor Academy, located off Foxvue Road, which intersects Fox Road near where Interstate 140 crosses over Fox Road at a bridge.



Figure 1
Location Map

▪ **EXISTING ROADWAYS:**

Table 1 lists the characteristics of the existing primary roadways near the development property and included in the study:

TABLE 1
STUDY CORRIDOR CHARACTERISTICS

NAME	CLASSIFICATION ¹	SPEED LIMIT	LANES	ROAD WIDTH ²	TRANSIT ³	PEDESTRIAN FACILITIES	BICYCLE FACILITIES
George Williams Road	Major Collector	30 mph	2 undivided	20 feet	None	No Sidewalks	No bike lanes
Fox Road	Minor Collector / Major Collector	30 mph	2 undivided	31 feet	None	No Sidewalks	No bike lanes

¹ 2018 Major Road Plan by Knoxville/Knox County Planning

² From edges of pavement or face of curbs near project site

³ According to Knoxville Area Transit (KAT) System Map

George Williams Road is classified as a Major Collector, with the western and mid-portions operating with two travel lanes. At the proposed development site on the western end, George Williams Road has two travel lanes, one in each direction. George Williams Road begins at Fox Road on the western end and ends at S Peters Road on its eastern end, with a total length of 2.2 miles. A little more than halfway along its length from the western end, George Williams Road makes a sharp turn, shortly followed by a signalized 4-way intersection at Millstone Lane and the entrance to West Valley Middle School. Beyond this signalized intersection to the east, George Williams Road is a 3-lane section with a lane in each direction and a center two-way left-turn lane (TWLTL). It ultimately ends at a signalized T-intersection with S Peters Road. Technically, there is another 850-foot section of George Williams Road further to the north, offset 900 feet from the S Peters Road signalized intersection, that runs between S Peters Road and Ebenezer Road.

Adjacent to the development site on George Williams Road, the roadway has a very straight horizontal alignment and, aside from one minor vertical curve to the east, gradually descends toward Fox Road. George Williams Road has a total pavement width of 20 feet



along the road frontage of the George Williams Road Subdivision. The roadway at the development site is marked with faded white edge lines and a double yellow centerline. Additionally, the pavement along George Williams Road, roughly between the I-140 underpass to the southwest and Zola Road to the northeast, has recently experienced an open road cut and a rough pavement patch along this length in the southern, eastbound lane. This construction on George Williams Road's pavement was undertaken by the First Utility District of Knox County (FUD) for a waterline replacement. FUD's website states that "following completion of water line replacement, Knox County Engineering & Public Works is planning to repave the affected sections of George Williams in the remainder of the 2026 calendar year."

The Proposed Entrance for the George Williams Road Subdivision will be approximately 1,400 feet to the northeast of the T-intersection with Fox Road. Additionally, this proposed entrance will be approximately 800 feet from George Williams Road's passage under a bridge of Interstate 140.

Along its length, except for West Valley Middle School, a daycare, and a small private Christian school near its intersection with S Peters Road, George Williams Road primarily provides access to individual residences, several residential subdivisions, and smaller pockets of remaining undeveloped and forested land. The posted speed limit on George Williams Road at the development site is 30 mph. There are no utility streetlights along George Williams Road at the proposed development site for roadway illumination.

At the unsignalized T-intersection of George Williams Road and Fox Road, southwest of the proposed development property, each approach has a single lane. The George Williams Road approach is controlled by a Stop Sign (R1-1), and vehicles on Fox Road operate freely without stopping.



Intersection of Fox Road at
George Williams Road

Fox Road is classified as a Minor Collector from Kingston Pike to George Williams Road, where it runs generally northwest-southeast near the development property. At its north end, Fox Road begins at Kingston Pike (US 11/US 70/SR 1) at an unsignalized T-intersection. Fox Road continues south for 1.6 miles, where it intersects George Williams Road, then makes a substantial bend west

at a T-intersection with Emory Church Road. At Emory Church Road, Fox Road crosses a railroad track just north of the intersection and then follows the edge of Fort Loudoun Lake southwest for one mile. The roadway then makes a sharp bend north, crosses the railroad track again, and continues as Canton Hollow Road. Fox Road has a total length of 2.6 miles and is classified on its southern portion as a Major Collector from George Williams Road to Canton Hollow Road.

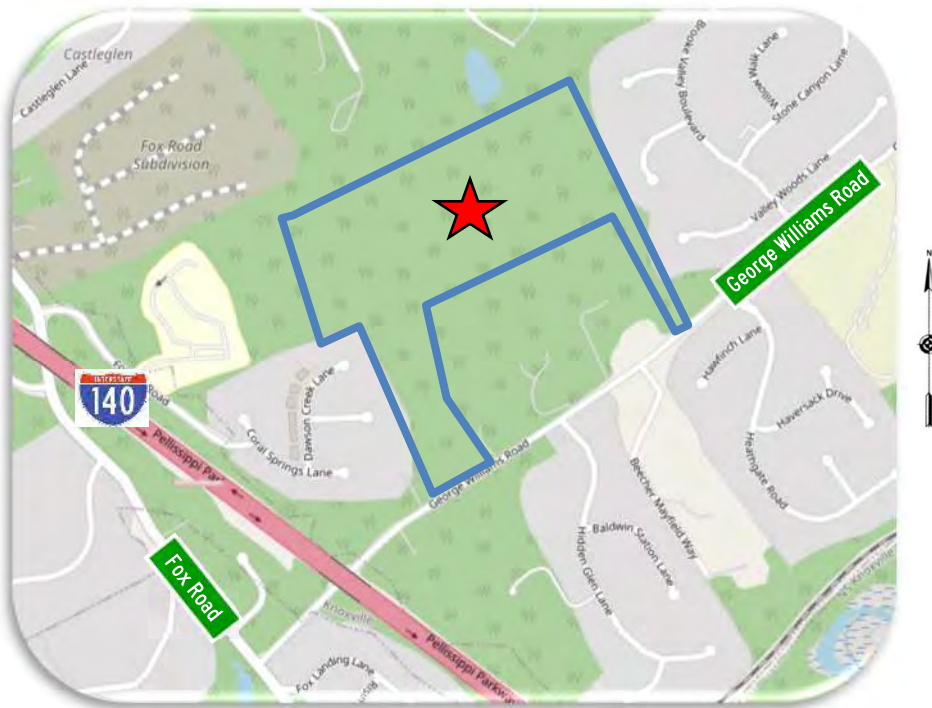
Fox Road, at and near George Williams Road, currently consists of a 2-lane pavement section with 12-foot lanes and a total pavement width of 31 feet. The roadway is striped with white edge lines and a double yellow center line. Outside the white edge lines, the pavement edge extends roughly an additional three or four feet on each side. On the western side of Fox Road at George Williams Road, a guardrail has been installed for approximately 630 feet between Tan Rara Drive and Fox Landing Lane. This guardrail provides a barrier between Fox Road and an inlet of Fort Loudoun Lake. The guardrail is located 6 feet outside the edge of the pavement. A guardrail is also present along George Williams Road at the southern corner of the Fox Road intersection, wrapping around the southern edge of George Williams Road nearly up to the I-140 overpass.

Two streets intersect Fox Road near George Williams Road, one to the north and one to the south. These include Alani Hill Way, 210 feet to the north of George Williams Road, and Fox Landing Lane, 150 feet to the south.

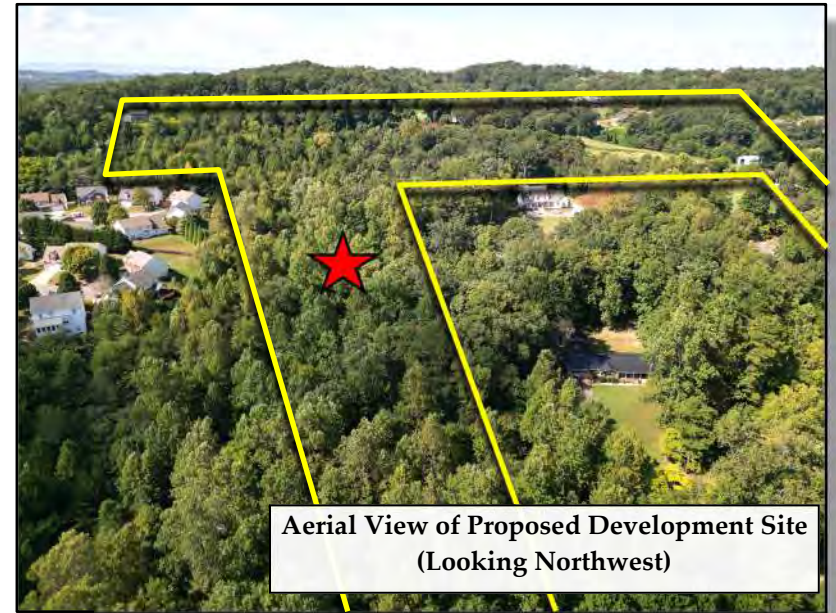
The posted speed limit on Fox Road is 30 mph, and sidewalks and streetlights are not provided along the roadway at the intersection with George Williams Road.

Figure 2 shows the traffic count locations for the study, the current traffic signage along George Williams Road in the vicinity of the development site and down to Fox Road, and the traffic lane configuration of the traffic count intersection locations. The signage only includes warning and regulatory signage and does not show directional road signage. The pages following Figure 2 provide a further overview of the site study area, accompanied by photographs.

PHOTO EXHIBITS



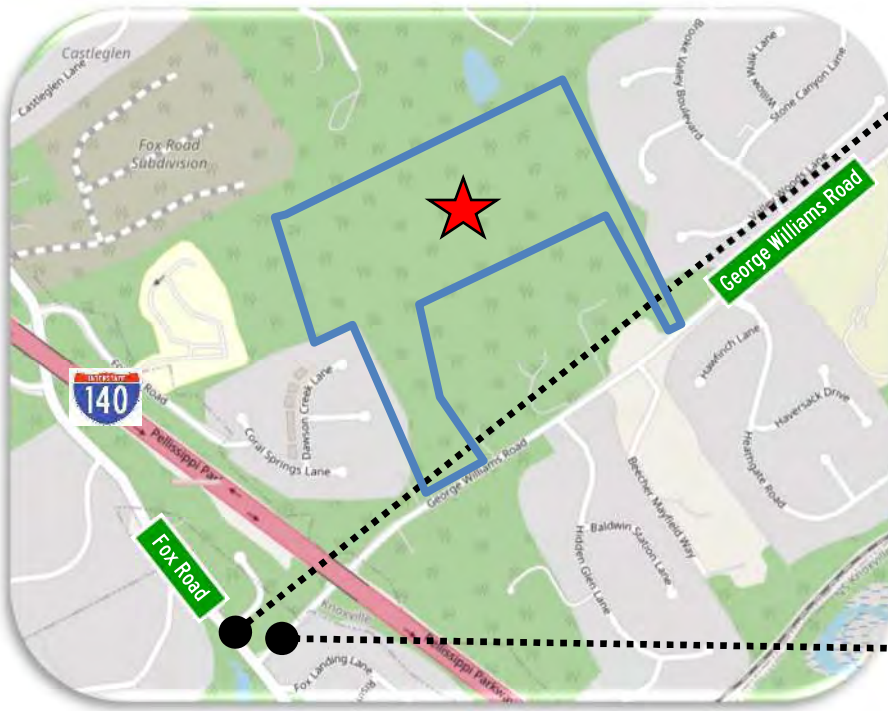
Proposed Development Site



Aerial View of Proposed Development Site
(Looking Northwest)



Aerial View of Proposed Development Site
(Looking Northeast)



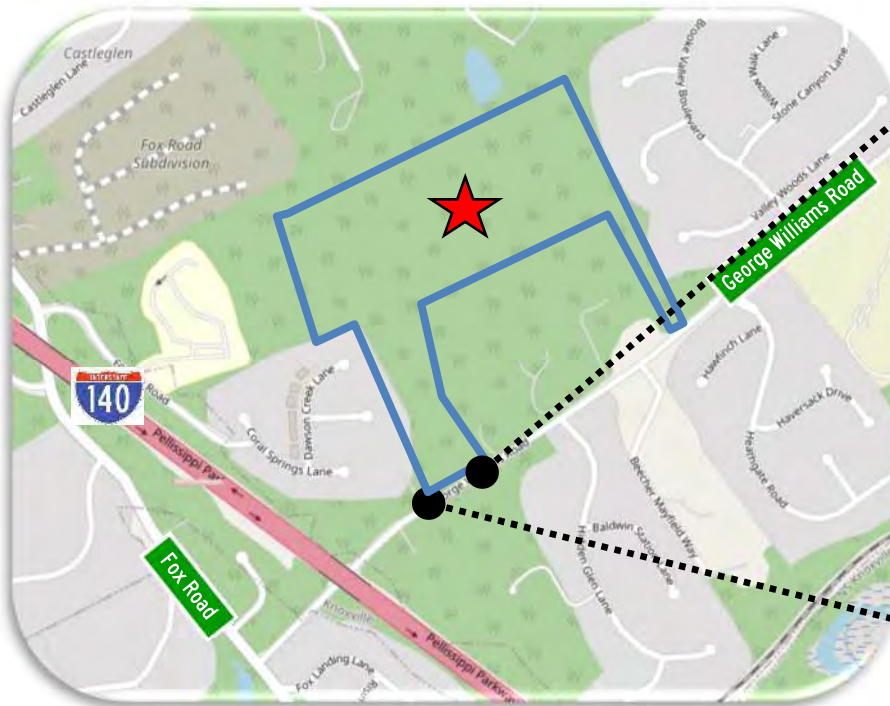
Intersection of Fox Road at George Williams Road



**View of Fox Road at
George Williams Road
(Looking Southeast)**



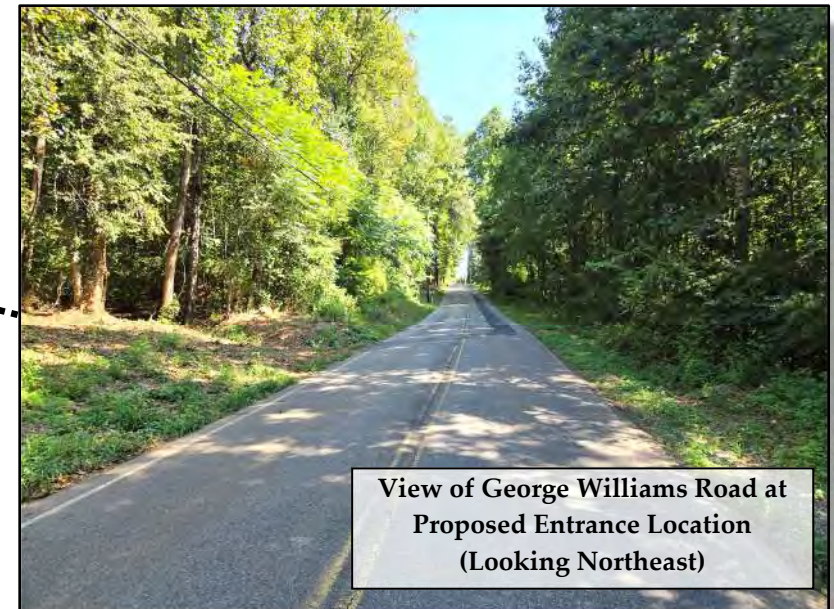
**View of George Williams Road at
Fox Road
(Looking Southwest)**



George Williams Road at Proposed Entrance Location



View of George Williams Road at Proposed Entrance Location (Looking Southwest)



View of George Williams Road at Proposed Entrance Location (Looking Northeast)

▪ **EXISTING TRANSPORTATION VOLUMES PER MODE:**

There are two annual vehicular traffic count locations near the project development site, and both are conducted by the Tennessee Department of Transportation (TDOT). The following count location data is provided and can be viewed with further details in Appendix B:

○ Existing vehicular roadway traffic:

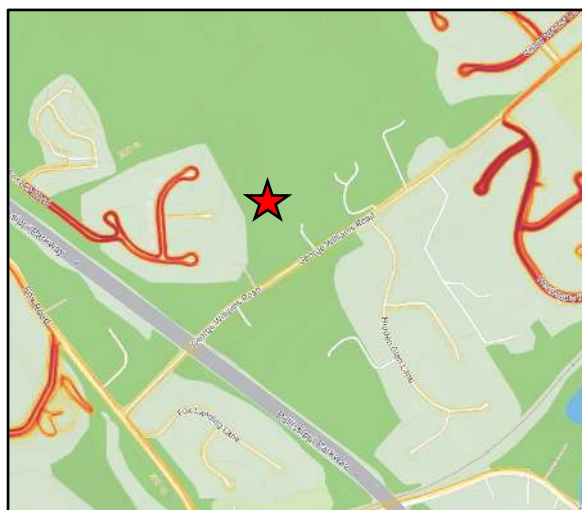
The TDOT reported the following Average Annual Daily Traffic (AADT):

- George Williams Road, northeast of the development site, with 4,314 vehicles per day in 2025. From 2015 to 2025, this count station has reported an average annual growth rate of +4.0%.
- Fox Road, southwest of the development site and south of George Williams Road, with 4,407 vehicles per day in 2025. From 2015 to 2025, this count station has reported an average annual growth rate of +4.9%.

○ Existing bicycle and pedestrian volumes:

The average daily pedestrian and bicycle traffic along George Williams Road and Fox Road is unknown. Due to the lack of nearby amenities, it is assumed that minimal pedestrian and bicycle activity occurs in the study area outside of exercise. During the traffic counts for this project, three pedestrians were observed over 8 hours at the intersection of Fox Road and George Williams Road. Six bicyclists were observed, with five traveling between the southern approaches of Fox Road and George Williams Road and the other traveling along Fox Road only.

An online website, [strava.com](https://www.strava.com), provides “heat” maps detailing routes taken by pedestrians, joggers, and bicyclists. The heat maps display data from the last two years, are updated monthly, and are compiled from individuals who have allowed their smart devices to track and record their routes (millions of users). Activity on the maps is represented on the roads by color intensity, with darker colors indicating higher activity. The Strava heat maps indicate minimal pedestrian traffic on George Williams Road and Fox Road. Higher pedestrian activity is shown on the streets in the nearby, existing residential subdivisions. Surprisingly, a fair to high amount of bicyclist activity is shown on George Williams Road and Fox Road, especially to the south of George Williams Road.



Strava Heat Map for Pedestrians and Joggers

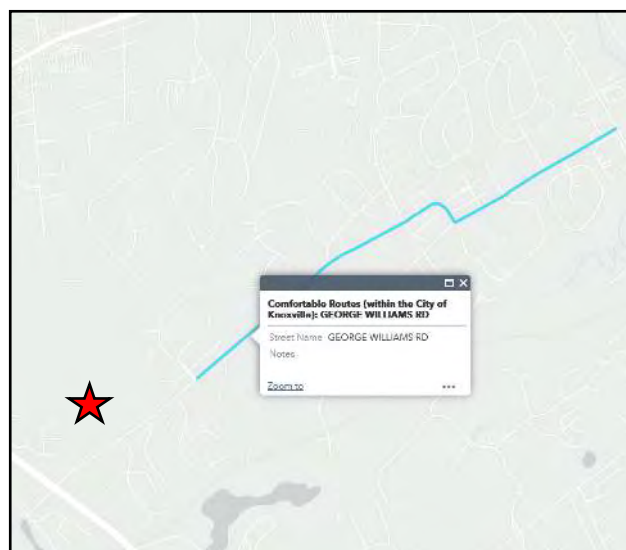


Strava Heat Map for Bicyclists

▪ **PEDESTRIAN AND BICYCLE FACILITIES:**

Pedestrian facilities are not currently available on any of the roadways studied within the project site study area. However, sidewalks are provided at the eastern end of George Williams Road. Along this stretch, sidewalks are provided on both sides of George Williams Road in the vicinity of the West Valley Middle School. Further to the east of this campus, only the sidewalk on the southern side is provided.

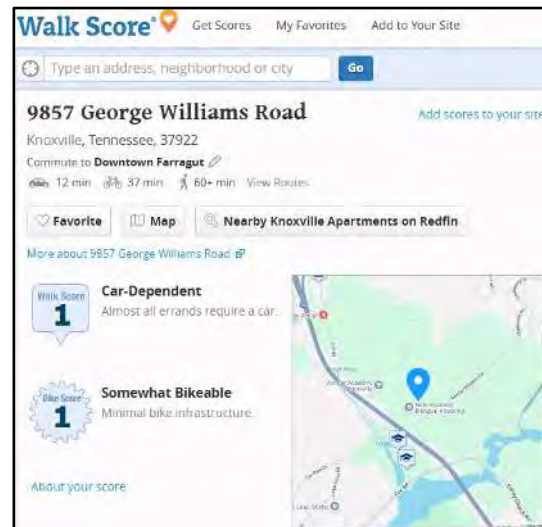
Bicycle facilities (lanes) are not currently available on any of the roadways studied within the project site study area. While bike lanes are not provided on George Williams Road, Knoxville Transportation Planning Organization (TPO) mapping shows it as a “Comfortable Route” for bicycle travel along its mid and eastern ends between Brooke Valley Boulevard and S Peters Road. Brooke Valley Boulevard is approximately 2,000 feet to the northeast of the proposed development site. George Williams Road lacks painted white bicycle pavement markings or signage warning motorists of potential bicycle activity. A “Comfortable Route” is defined as a route “based on low to medium traffic speeds and volumes along with other criteria.”



Regional Bicycle Facilities in Study Area

▪ **WALK SCORE:**

A private company offers a website at walkscore.com that grades and gives scores to locations within the United States based on “walkability”, “bikeability”, and transit availability, using a patented system. According to the website, the numerical values assigned to the Walk Score and Bike Score are based on the distance to the closest amenity in various relevant categories (such as businesses, schools, and parks) and are graded from 0 to 100.

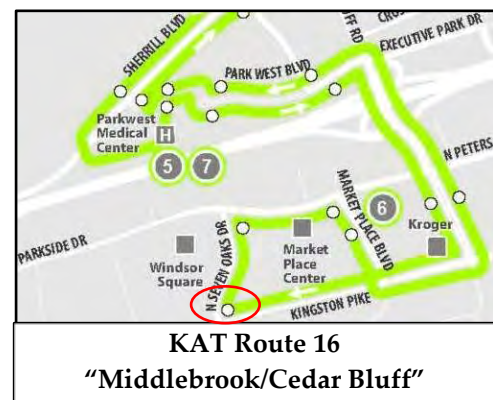


The site location for the George Williams Road Subdivision is graded with a Walk Score of 1 at the approximate development property address (9857 George Williams Road). This Walk Score indicates that almost all errands currently require a vehicle for travel at the development property location. The Walk Score is graded very low due to the lack of nearby amenities and sidewalks. The site is assigned a Bike Score of 1, indicating minimal bike infrastructure. A Transit Score is not provided since there are no public transportation opportunities near the development site. Overall, this study assumed no reductions in vehicle trips due to pedestrian or bicyclist activity by future residents of George Williams Road Subdivision.

▪ **TRANSIT SERVICES:**

The City of Knoxville offers a network of public transit options through Knoxville Area Transit (KAT). However, bus service is not available near the development site.

The closest public transit bus stop to the development site is 2.6 miles to the north on Route 16, “Middlebrook/Cedar Bluff”. This closest bus stop is located near the corner of Kingston Pike and N Seven Oaks Drive in the Windsor Square shopping mall. This route has established bus



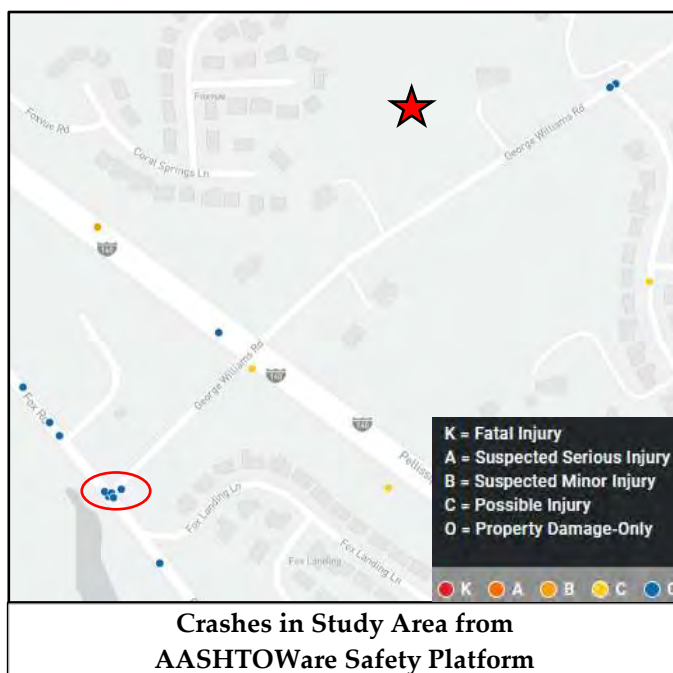
service every 60 minutes at this bus stop, and this route map is included in Appendix C. It operates on weekdays and weekends on a slightly reduced schedule. Other transit services in the area include the East Tennessee Human Resource Agency (ETHRA) and the Community Action

Committee (CAC), which provide transportation services upon request.

Given that the distance to the nearest public bus service is many miles, with no sidewalks or bike lanes available to access the bus stop without a vehicle, the proposed George Williams Road Subdivision is not expected or assumed to experience a reduction in vehicle trips due to public transit usage.

▪ **CRASH DATA:**

For this project, access to the AASHTOWare Safety online platform was provided. This AASHTO (American Association of State Highway and Transportation Officials) platform is part of several offerings, including compiling crash data for local state DOTs to use in safety analyses. TDOT provides vehicle crash data to this system and is an extension of its existing E-TRIMS (Enhanced Tennessee Roadway Information Management System) database. The crash data in the E-TRIMS system is from the statewide TITAN (Tennessee Integrated Traffic Analysis Network) database. The TITAN database includes all reportable vehicle crash data from Tennessee law enforcement agencies.



Over the past five years, no crashes have been recorded on George Williams Road at or near the proposed development property. However, in the vicinity, at the intersection of Fox Road and George Williams Road, five crashes occurred during the past 5 years between August 27th, 2021, and August 26th, 2026. A summary of the data for these 5 crashes from the AASHTOWare Safety Platform is presented in Table 2.

Of the 5 crashes, all were property-damage-only (PDO) incidents without injuries or fatalities. The “manner of first collision” at the intersection included three angle crashes, and the other two were “no collision with vehicle”. The two crashes not involving another vehicle were vehicles

that struck a guardrail at the intersection. The attributable driver actions reported in the majority of the five crashes were “no contributing actions”, with one reported as due to “GPS distractions”.

Overall, no crashes have been recorded along George Williams Road along the development property’s road frontage, and the crashes at the adjacent intersection with Fox Road over the past 5 years have averaged one per year.

Overall, despite the small sample size, the data show a pattern of angle crashes and crashes in which vehicles leave the roadway and strike the guardrails at the intersection. With access to the individual crash reports, further analysis may provide additional insight into the causes and potential remediation for these crash types. Nonetheless, a T-intersection is expected to experience angle crashes due to the turning movements performed. Both guardrail crashes occurred during clear weather, and both occurred at night. However, one of the guardrail crashes was attributed to “GPS distractions”.

TABLE 2
CRASH DATA IN STUDY AREA
8/27/21 - 8/26/26

CRASH LOCATION	MANNER OF FIRST COLLISION	TYPE OF CRASH	TOTAL VEHICLES	VEHICLE MOST HARMFUL EVENT (1st Vehicle / 2nd Vehicle)	DRIVER ACTIONS (1st Vehicle / 2nd Vehicle)
Fox Road at George Williams Road					
Along Roadway	No Collision with Vehicle	(O) Property-Damage Only	1	Guardrail Face	GPS Distractions
At an Intersection	Angle	(O) Property-Damage Only	2	Vehicle in Transport / Vehicle in Transport	No Contributing Actions
At an Intersection	Angle	(O) Property-Damage Only	2	Vehicle in Transport / Vehicle in Transport	No Contributing Actions
At an Intersection	No Collision with Vehicle	(O) Property-Damage Only	1	Guardrail Face	-
Along Roadway	Angle	(O) Property-Damage Only	2	Vehicle in Transport / Vehicle in Transport	No Contributing Actions / No Contributing Actions

From AASHTOWare Safety online platform

PROJECT DESCRIPTION

▪ LOCATION AND SITE PLAN:

The proposed plan layout for the George Williams Road Subdivision, featuring a maximum of 101 single-family detached houses, is designed by Urban Engineering and illustrated in Figure 3. The figure shows 101 house lots, spread across three new internal roads. The development property will be spread across two existing parcels, with the northern portion subdivided from the existing residence, which has access to Triplett Lane further to the north. As shown in the figure, only one entrance will be constructed at the northern edge of George Williams Road. The Proposed Entrance on George Williams Road will be approximately 1,400 feet east of the two-way stop-controlled T-intersection with Fox Road. The Proposed Entrance will also be located roughly midway along the property's western road frontage. Along the property's eastern road frontage, a small strip, approximately 100 feet wide, has access to George Williams Road but will remain undeveloped and will not provide any additional vehicular access.

The civil site design includes three internal streets, Roads "A, B, and C", all of which terminate at cul-de-sacs except for Road "B", a short north-south road that ties together the two longest streets, Roads "A and C". The George Williams Road Subdivision will have a substantial amount of undeveloped space, including areas along the western portion of the development property and the previously mentioned narrow 100-foot strip.

The typical size of each single-family detached house lot in the subdivision will be approximately 10,000 square feet (~1/4 acre). Each house will have a separate garage and driveway.

The completion schedule for the George Williams Road Subdivision depends on economic conditions and construction timelines but is expected to be aggressive. This project is also contingent on permitting, design, and other regulatory approvals. Overall, the local real estate market for new housing remains healthy, driven by population growth, in-migration, and other factors. Thus, this study assumed that the total construction build-out of the George Williams Road Subdivision and full occupancy would occur by 2028, as estimated by the developer.



Figure 3
Proposed Plan Layout
George Williams Road Subdivision

Not to Scale –
Annotated by Ajax
Engineering for
Display Purposes

▪ **PROPOSED USES AND ZONING REQUIREMENTS:**

The existing parcel and the parcel to the north, which will be subdivided, comprising the George Williams Road Subdivision development property, are located in Knox County, TN, and both are zoned as Planned Residential (PR) with a density of less than 2.5 units per acre. The Knox County Commission approved this rezoning in June 2026. Uses permitted in the Planned Residential (PR) zone include single-family dwellings, duplexes, and multi-dwelling structures and developments. The most recently published online KGIS zoning map is provided in Appendix D and shown here. The existing adjacent surrounding zoning and land uses are the following:



- All the adjacent parcels to the development property are either zoned as Planned Residential (PR), Agricultural (A), or Low Density Residential (RA).
- Three adjacent properties to the west are zoned either Agricultural (A) or Planned Residential (PR). The Agricultural (A) properties are to the northwest and southwest, with the northwest property occupied by two structures for a religious foundation and the southwest property occupied by a single-family detached house. The largest adjacent property on the western edge consists of a subdivision, Fox Vue, zoned as Planned Residential (PR), and consists of 41 single-family detached houses with external access to Fox Road further to the west.
- George Williams Road bounds the development property to the south along two fingers of the property. The properties along George Williams Road, south of the development and between the two fingers, are zoned as Agricultural (A), with four smaller properties zoned as Low Density Residential (RA). These dozen properties consist of single-family detached houses, all with access to George Williams Road to the south.
- To the east, the development property is bounded by several dozen single-family detached houses in The Woods at West Valley Subdivision. Access to this subdivision is provided by a single entrance to George Williams Road on its northern edge, approximately 2,100 feet to the northeast of the Proposed Entrance for the George Williams Road Subdivision.

- To the northwest, the development property will be adjacent to the remaining portion of the parcel being subdivided, and it consists of a single-family detached house with several outbuildings. This remaining portion of the original parcel to the north was also rezoned as Planned Residential (PR), part of the recent rezoning process. To the northeast, the development property will be bounded by a property zoned as Agricultural (A) with a single-family detached house and several outbuildings. Both of these properties to the north have external road access further to the north via long, narrow strips of land or easements for driveways to Triplett Lane.

▪ **ON-SITE CIRCULATION:**

The three new internal roads in the George Williams Road Subdivision will total 3,350 feet (0.63 miles) and will be designed and constructed to Knox County specifications. The development will have asphalt-paved internal roadways with concrete curbs. Each internal lane will be 13 feet wide, for a total pavement width of 26 feet. The public right-of-way within the development will be 50 feet wide. Knox County will maintain the streets in the subdivision after construction, and they will be dedicated public roads.

▪ **SERVICE AND DELIVERY VEHICLE ACCESS AND CIRCULATION:**

In addition to residential passenger vehicles, the internal roadways will support service, delivery, maintenance, and access for fire protection and rescue vehicles. These vehicle types will not affect roadway operations except when they occasionally enter or exit the development. Curbside private garbage collection services are expected to be available for this residential subdivision if desired.

The new public streets will be designed and constructed to Knox County specifications and are expected to be adequate for fire protection and rescue vehicles, trash collection trucks, and single-unit delivery trucks. The development's internal drives will accommodate larger vehicles as well as residents' standard passenger vehicles. The internal roads will be sufficiently sized to allow all vehicles to turn around in the proposed cul-de-sacs.

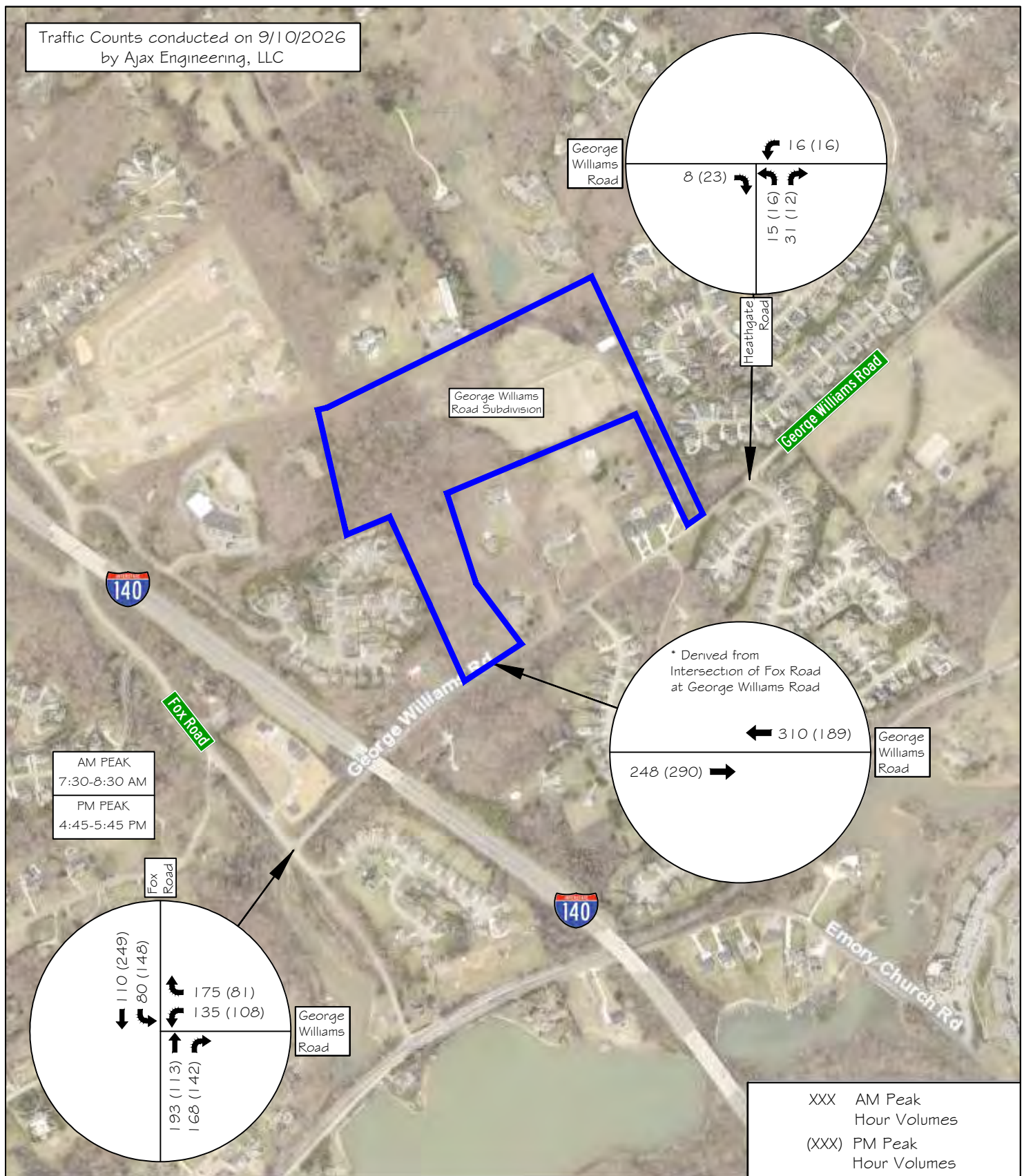
ANALYSIS OF EXISTING AND PROJECTED CONDITIONS

▪ EXISTING TRAFFIC CONDITIONS:

This study conducted an 8-hour traffic count at the unsignalized, two-way stop-controlled T-intersection of Fox Road at George Williams Road on Thursday, September 10th, 2026, while schools were in session. Based on the traffic volumes collected at the intersection, the AM and PM peak hours were observed from 7:30 to 8:30 am and from 4:45 to 5:45 pm. The peak hour tabulated traffic counts at the intersection are shown in Figure 4, and the full 8-hour counts are provided in Appendix E. The thru volumes shown in Figure 4 on George Williams Road at the Proposed Entrance location for the subdivision were derived from the traffic volumes tabulated at the T-intersection. An auxiliary traffic count during the identified peak hours (2 hours) was also conducted further northeast at the single entrance to West Arden Subdivision at George Williams Road. It included only turning movements and is discussed later in the report. Observations of traffic on the adjacent George Williams Road corridor, particularly at the Fox Road intersection, include the following:

- The majority of vehicles observed during the traffic count were passenger cars. However, a couple of public-school buses were observed traveling on George Williams Road and Fox Road. In addition, several school bus stops occurred during the traffic count just south of the intersection of Fox Road and George Williams Road, serving students in the Fox Landing Subdivision. A flat-bed semi-trailer truck was observed on Fox Road, and other non-passenger vehicles included garbage trucks, large box trucks, and landscape trucks with trailers.
- Three pedestrians were observed at the intersection of Fox Road and George Williams Road during the counts, and all these movements appeared to be exercise-related.
- Five bicyclists were observed traveling between George Williams Road and the southern section of Fox Road. One bicyclist was observed traveling northbound on Fox Road without traveling onto George Williams Road. All the bicyclists' travel was observed in the afternoon.
- Fairly substantial vehicle queues were observed on George Williams Road at the Fox Road intersection during peak periods.
- The relative closeness (~150 feet) of Fox Landing Lane to the Fox Landing Subdivision, located south of the intersection of Fox Road and George Williams Road, and its exit movements in particular, appeared to contribute to hesitation among some motorists attempting to turn from George Williams Road onto Fox Road.

Traffic Counts conducted on 9/10/2026
by Ajax Engineering, LLC



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FIGURE 4

George Williams Road Subdivision

2026 Peak Hour Traffic Volumes -
Existing Traffic Conditions

Capacity analyses were conducted to determine the Level of Service (LOS) for the existing 2026 intersection traffic volumes, as shown in Figure 4, at the unsignalized intersection of Fox Road and George Williams Road. These results are being provided because this intersection was included in the scope of work provided by Knoxville/Knox County Planning. The capacity analyses were calculated following the Highway Capacity Manual (HCM) methods and utilizing Synchro (Version 12) traffic software.

Methodology:

LOS is a qualitative measurement developed by the transportation profession to express how well an intersection or roadway performs based on a driver's perception. LOS designations include LOS A through LOS F. The designation of LOS A signifies a roadway or intersection operating at best, while LOS F signifies road operations at worst. This grading system provides a reliable, straightforward means to communicate road operations to the public. The HCM provides level of service criteria for unsignalized and signalized intersections.



LOS is defined by vehicle delay, and roadway facilities are additionally characterized by the volume-to-capacity ratio (v/c). LOS designations are reported differently for unsignalized and signalized intersections. For example, a 20-second delay at an unsignalized intersection would indicate LOS C, representing the additional delay a motorist would experience while traveling through the intersection. However, a 20-second delay at a signalized intersection would indicate LOS B. This difference is primarily due to motorists' differing expectations of the two road facilities. In most cases, the LOS D/LOS E boundary is considered the upper limit of acceptable delay during peak periods in urban and suburban areas.

For unsignalized intersections, LOS is characterized by delay (in seconds). This measure attempts to quantify delay, including travel time, driver discomfort, and fuel consumption. For unsignalized intersections, the analysis assumes that mainline thru and right-turn traffic does not stop and is not affected by traffic on minor side streets. Thus,

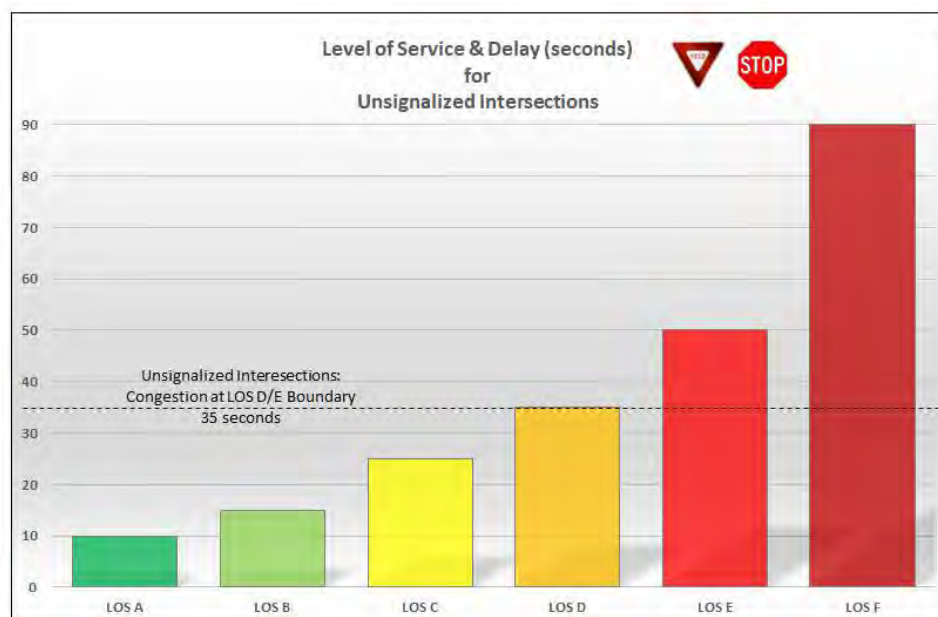
the LOS for a two-way stop (or yield) controlled intersection is defined by the delay for each minor approach and the left-turn movements on the major street. Table 3 lists the level of service criteria for unsignalized intersections. The analysis results for unsignalized intersections using HCM methodologies are conservative because they rely on cautious vehicle-gap parameters. More often, under normal road conditions, drivers are more willing to accept smaller gaps in traffic than the HCM methodology models. The unsignalized intersection methodology also does not account for the larger gaps that nearby upstream and downstream signalized intersections can sometimes create if present. For unsignalized intersections, the upper limit of acceptable delay during peak hours is typically the LOS D/E boundary of 35 seconds.

TABLE 3
LEVEL OF SERVICE AND DELAY FOR UNSIGNALIZED INTERSECTIONS



LEVEL OF SERVICE	DESCRIPTION	CONTROL DELAY (seconds/vehicle)
A	Little or no delay	0 - 10
B	Short Traffic Delays	>10 - 15
C	Average Traffic Delays	>15 - 25
D	Long Traffic Delays	>25 - 35
E	Very Long Traffic Delays	>35 - 50
F	Extreme Traffic Delays	>50

Source: Highway Capacity Manual, 7th Edition



The intersection capacity results for the existing 2026 peak hour traffic are shown in Table 4. The intersection in the table is shown with a LOS (Level of Service) designation, delay (in seconds), and v/c ratio (volume-to-capacity ratio) for the AM and PM peak hours. Appendix F includes the worksheets from the traffic software for the existing 2026 peak hour capacity analyses.

As shown in Table 4, the intersection of Fox Road and George Williams Road is calculated to operate with very good LOS and short vehicle delays in the existing 2026 peak hour conditions for the southbound left-turn movements on Fox Road. However, the westbound approach of George Williams Road shows fairly high delays during the AM peak hour (LOS E) and modest delays in the PM peak hour (LOS C).

TABLE 4
INTERSECTION CAPACITY ANALYSIS RESULTS -
2026 EXISTING PEAK HOUR TRAFFIC CONDITIONS

INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	AM PEAK			PM PEAK		
			LOS ^a	DELAY ^b (seconds)	V/C ^c	LOS ^a	DELAY ^b (seconds)	V/C ^c
Fox Road (NB & SB) at George Williams Road (WB)		Westbound Left/Right	E	37.5	0.804	C	24.5	0.579
		Southbound Left	A	8.8	0.093	A	8.2	0.123

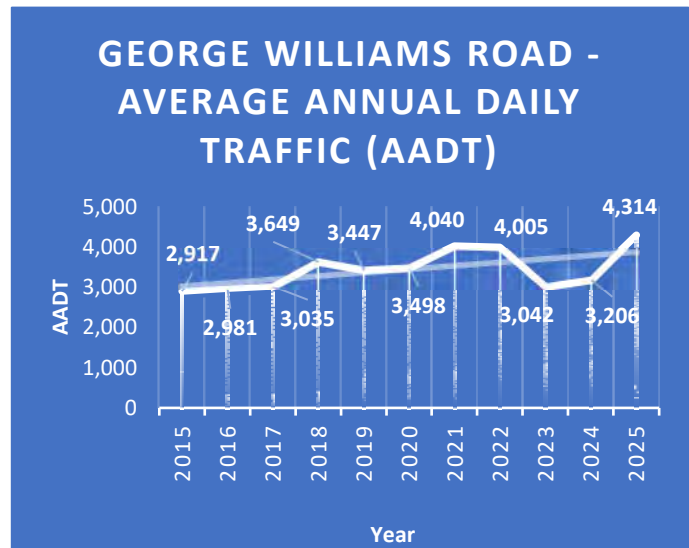
Note: All analyses were calculated in Synchro 12 software and reported using HCM 7th Edition intersection methodology

^a Level of Service, ^b Average Delay (sec/vehicle), ^c Volume-to-Capacity Ratio

▪ **PROJECTED TRAFFIC CONDITIONS WITHOUT THE PROJECT:**

Horizon year traffic conditions represent the projected traffic volumes in the study area if the proposed project is not developed (no-build option). For this study, the George Williams Road Subdivision development is assumed to reach build-out and full occupancy by 2028.

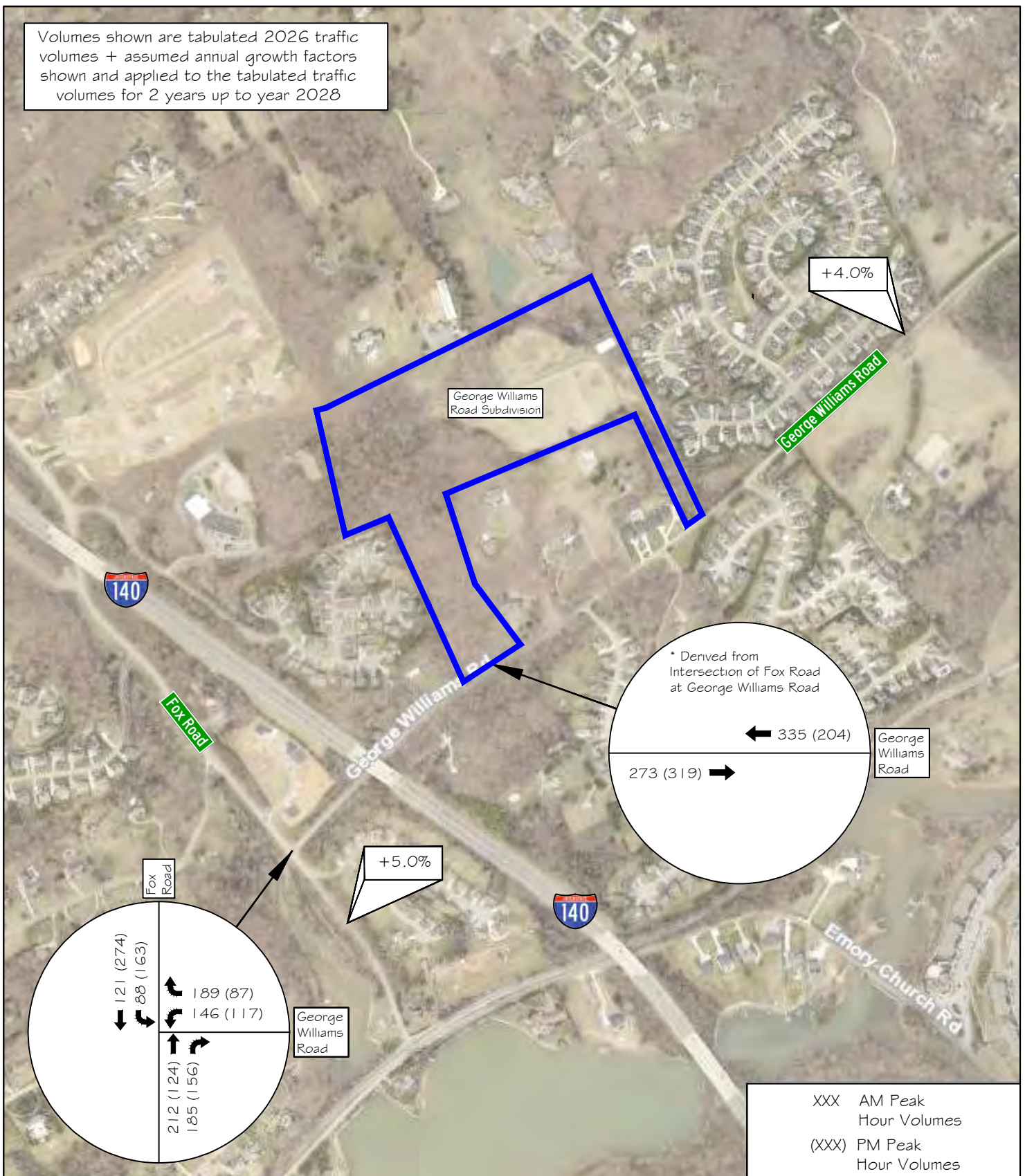
According to the closest traffic count stations to the development property, vehicular traffic has grown moderately to strongly over the past few years. Specifically, the count data shown in Appendix B indicate that over the past decade, from 2015 to 2025, George Williams Road had 4.0% growth, and Fox Road had 4.9% growth.



To account for future growth, this study used an annual growth rate of +4% on George Williams Road and 5% on Fox Road, ensuring a conservative result. These assumed annual growth factors were applied to the existing 2026 volumes at the intersection of George Williams Road and Fox Road to estimate future volumes in the horizon year of 2028, without any generated traffic from the George Williams Road Subdivision development.

Figure 5 shows the projected 2028 AM and PM peak hour traffic volumes on Fox Road at George Williams Road and at George Williams Road at the Proposed Entrance location for the subdivision based on the assumed growth rates applied over two years from 2026 to 2028.

Volumes shown are tabulated 2026 traffic volumes + assumed annual growth factors shown and applied to the tabulated traffic volumes for 2 years up to year 2028



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FIGURE 5

George Williams Road Subdivision

2028 Peak Hour Traffic Volumes -
 Projected Traffic Conditions
 Without the Project

Capacity analyses were undertaken to determine the projected LOS in 2028 at the T-intersection, excluding any new vehicles being generated from the George Williams Road Subdivision, assuming the no-build option. The results are shown in Table 5, and Appendix F includes the capacity analysis worksheets from the software.

The table shows greater vehicle delays at the intersection under the 2028 projected conditions than under the existing 2026 conditions. This result is due to increased traffic volumes driven by the assumed growth, with the westbound approach of George Williams Road reaching LOS F during the AM peak hour and LOS D during the PM peak hour. These results are projected to occur even without the proposed George Williams Road Subdivision.

TABLE 5
INTERSECTION CAPACITY ANALYSIS RESULTS -
2028 PROJECTED PEAK HOUR TRAFFIC CONDITIONS WITHOUT THE PROJECT

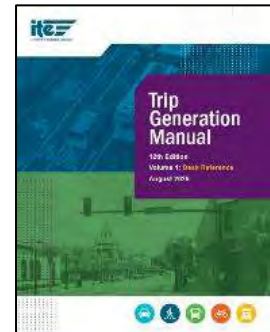
INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	AM PEAK			PM PEAK		
			LOS ^a	DELAY ^b (seconds)	V/C ^c	LOS ^a	DELAY ^b (seconds)	V/C ^c
Fox Road (NB & SB) at George Williams Road (WB)		Westbound Left/Right	F	64.3	0.953	D	33.8	0.699
		Southbound Left	A	9.1	0.108	A	8.3	0.139

Note: All analyses were calculated in Synchro 12 software and reported using HCM 7th Edition intersection methodology

^a Level of Service, ^b Average Delay (sec/vehicle), ^c Volume-to-Capacity Ratio

▪ **TRIP GENERATION:**

A generated trip is a single, one-way vehicle movement entering or exiting the study site. The estimated traffic generated by the proposed George Williams Road Subdivision was calculated using rates and equations from the Trip Generation Manual, 12th Edition, an Institute of Transportation Engineers (ITE) publication. The Trip Generation Manual is the most widely used resource for determining trip generation rates in transportation impact studies. The Manual includes research-based data on various land uses and provides equations and rates to calculate generated trips based on development variables such as the number of dwelling units or building square footage.



The data and calculations from ITE for the proposed George Williams Road Subdivision are shown in Appendix G. A summary of the trip generation information is presented in the following table:

TABLE 6
TRIP GENERATION FOR GEORGE WILLIAMS ROAD SUBDIVISION
101 Single-Family Detached Houses

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	GENERATED TRAFFIC AM PEAK HOUR			GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#210	Single-Family Detached Housing	101	1,081	27%	73%		62%	38%	
				20	53	73	60	37	97
Total New Volume Site Trips			1,081	20	53	73	60	37	97

ITE Trip Generation Manual, 12th Edition

Trips calculated by using Fitted Curve Equations

For the proposed George Williams Road Subdivision with 101 single-family detached houses, it is estimated that 20 vehicles will enter and 53 will exit, resulting in a total of 73 generated trips during the AM peak hour in 2028. Similarly, it is estimated that 60 vehicles will enter and 37 will exit, resulting in a total of 97 generated trips during the PM peak hour in 2028. The calculated trips for an average weekday are estimated at 1,081 vehicles for the proposed development. No vehicle trip reductions were included in the calculations or analysis due to pedestrian, bicyclist, or transit activity. All these estimated generated vehicle trips will enter and exit at the Proposed Entrance at George Williams Road.

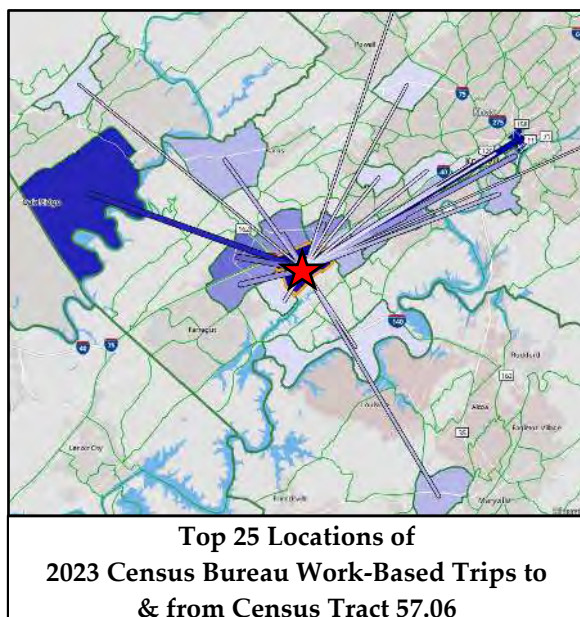
▪ **TRIP DISTRIBUTION AND ASSIGNMENT:**

The projected trip distribution and assignment for George Williams Road Subdivision are based on several sources and engineering judgment. The first source is the existing traffic count volumes and the observed travel directions collected from the auxiliary traffic count at the entrance to an adjacent residential subdivision.

This auxiliary count was conducted at the intersection of George Williams Road and Heathgate Road, the single entrance to West Arden Subdivision, which has 75 single-family detached houses and is approximately 1,600 feet east of the proposed development site. This auxiliary count was conducted only during the identified AM and PM peak hours (2 hours). The observed entering and exiting splits at this established residential entrance are projected to be a good analog for the future residents of the George Williams Road Subdivision development, since this entrance serves a similar residential land use to that proposed for the development site. The entering and exiting percentages during the observed AM and PM peak hours to and from Heathgate Road at George Williams Road are shown in the adjacent table (and in Figure 4):

**Observed Peak Hour Entering and Exiting
Vehicle Distribution at West Arden Subdivision**

AM PEAK HOUR		
	Volumes	%
ENTER FROM WEST	8	33%
ENTER FROM EAST	16	67%
EXIT TO WEST	15	33%
EXIT TO EAST	31	67%
PM PEAK HOUR		
ENTER FROM WEST	23	59%
ENTER FROM EAST	16	41%
EXIT TO WEST	16	57%
EXIT TO EAST	12	43%

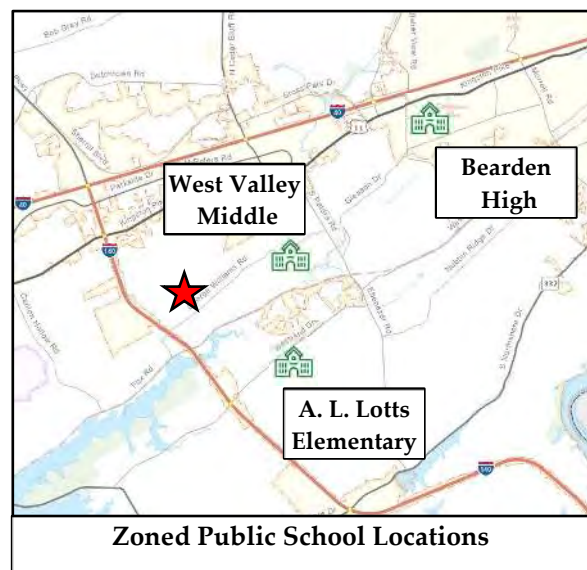


Another source for determining the projected trip distribution is based on work-related trips in the local area. Work-based trips will be a significant impetus for trips generated by the development, and these trips are more likely to travel to and from the northeast and northwest. This assertion is based on data from the United States Census Bureau website for Census Tract 57.06, where the subdivision property is located. Based on the 2023 (latest available) census data, as presented in Appendix H, most work-based trips in the surrounding area occur in the adjacent West Knoxville area, downtown Knoxville, and Oak

Ridge, TN. Other higher work-based locations in the Census Tract include travel to and from the University of Tennessee area and Maryville, TN. The largest share of work-based travel is to and from the adjacent West Knoxville area at 6.4%, followed by downtown Knoxville at 5.8%, and Oak Ridge at 5.3%.

In addition to employment centers, a smaller share of traffic generated by the development's residential uses will travel to and from public and private schools. Schools will be another incentive for residents with school-age children to make external trips. The development property is currently zoned for A. L. Lotts Elementary, West Valley Middle, and Bearden High School. The quickest route to the elementary school will be via the southwest, using George Williams Road, Fox Road, and Emory Church Road to Westland Drive. The middle school is located off George Williams Road at its eastern end and will be the closest school to the subdivision. Travel to Bearden High School will be to and from the northeast, with the quickest route, according to online mapping, using George Williams Road, S Peters Road, and Ebenezer Road to S Gallaher View Road. A. L. Lotts is 2.1 miles away by roadway from the development, West Valley Middle at 1.6 miles, and Bearden High School at 4.3 miles.

The Knox County Schools Transportation Department has developed Parental Responsibility Zones (PRZs) to determine whether students are eligible for transportation services to and from school. The PRZ is defined as 1.5 miles for grades 6–12 and 1.0 mile for grades K–5, measured from where the students' parcel is accessed to the point where the buses unload at the school. Because the development property is outside these distances, all school-age children in this subdivision will be able to use the public-school bus service.

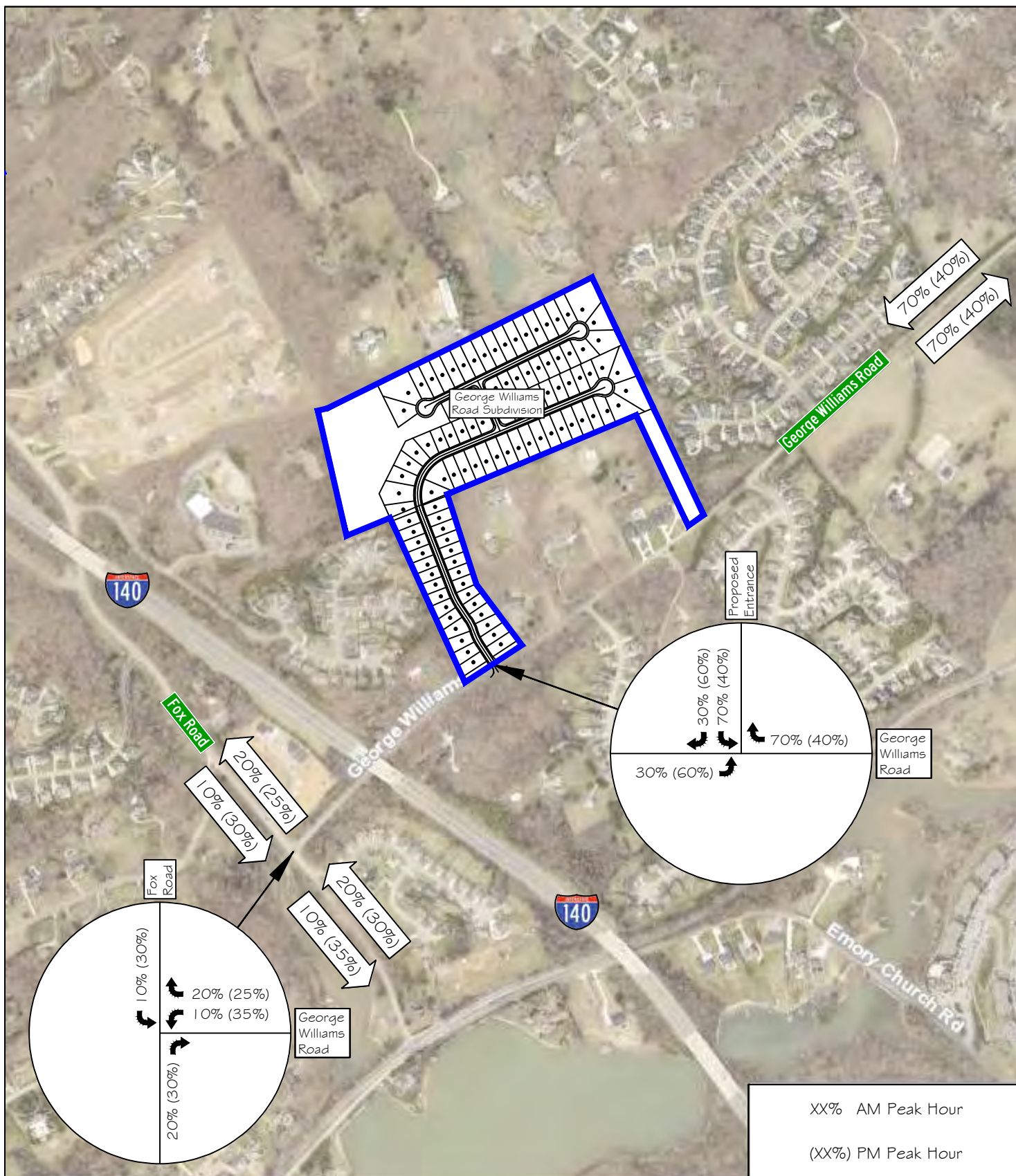


Besides employment- and school-related traffic, such as leisure, medical, shopping, and other attractors, the inflow and outflow of trips generated for these other travel purposes are expected to reflect the locations of the surrounding population and development centers. Ultimately, the analog trip data from the nearby residential subdivision, the Census Bureau data, the school orientations, and the surrounding population and development were all taken into account to

estimate future trip directions and distributions for the proposed George Williams Road Subdivision.

Figure 6 shows the projected distribution of traffic entering and exiting the George Williams Road Subdivision development. The percentages shown in the figure pertain only to trips generated by the proposed dwellings in the development, calculated using the ITE trip rates.

Figure 7 shows the traffic assignment of the computed trips generated by the development and is based on the assumed distribution of trips shown in Figure 6.



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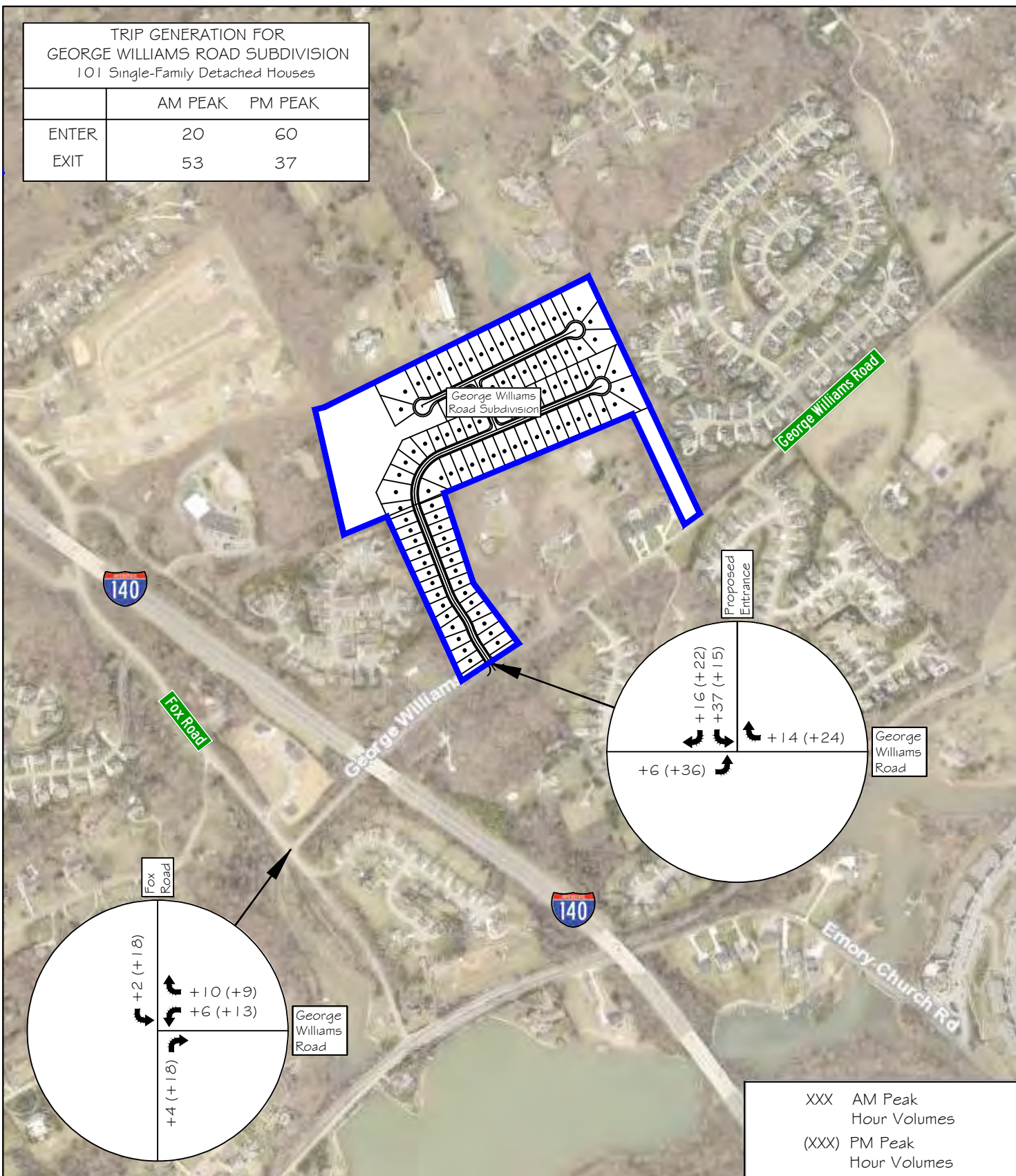


FIGURE 6

George Williams Road Subdivision

Directional Distribution of Generated Traffic during AM and PM Peak Hours

TRIP GENERATION FOR GEORGE WILLIAMS ROAD SUBDIVISION 101 Single-Family Detached Houses		
	AM PEAK	PM PEAK
ENTER	20	60
EXIT	53	37



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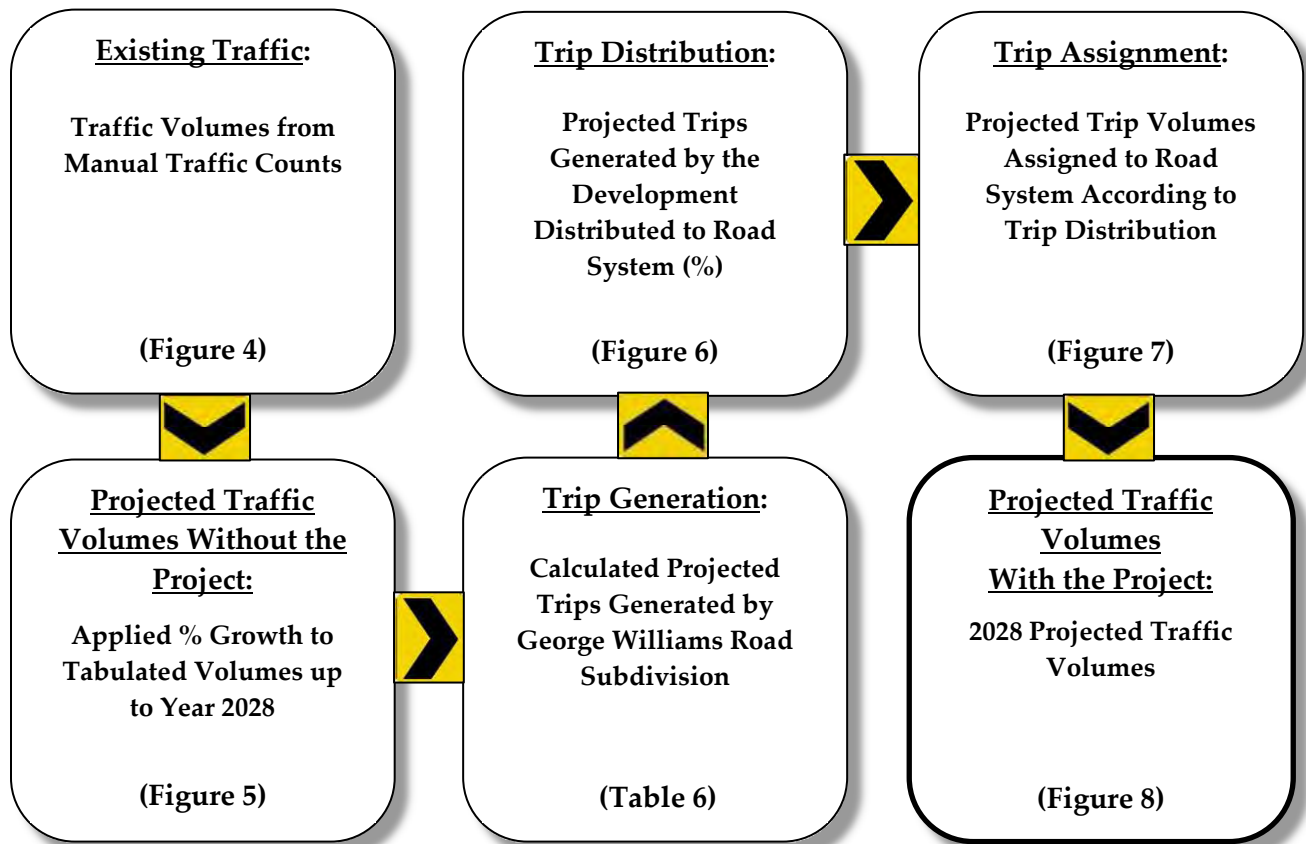
FIGURE 7

George Williams Road Subdivision

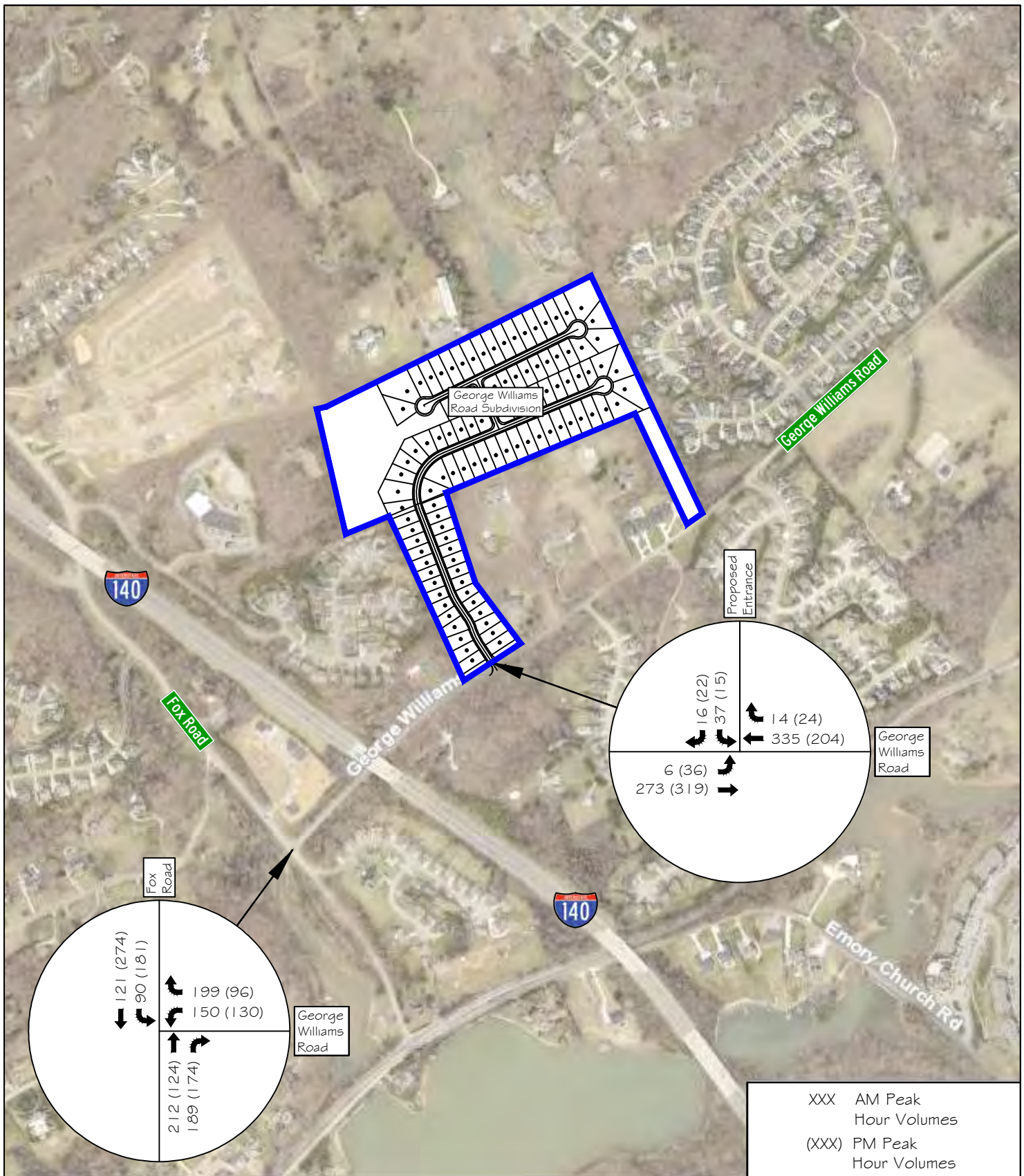
Traffic Assignment of Generated Trips
 during AM and PM Peak Hours

▪ **PROJECTED TRAFFIC CONDITIONS WITH THE PROJECT:**

Several additive steps were taken to estimate the total projected traffic volumes at the intersection of Fox Road and George Williams Road and at the Proposed Entrance for the subdivision at George Williams Road when the subdivision is fully built out and occupied in 2028. The steps are illustrated below for clarity and review:



The calculated peak hour traffic (Table 6) generated by the George Williams Road Subdivision was added to the 2028 horizon year peak hour traffic (Figure 5) by following the predicted trip distributions and assignments (Figures 6 & 7). This procedure was completed to obtain the total projected peak hour traffic volumes when the development is fully built out and occupied in 2028. Figure 8 shows the projected 2028 AM and PM peak hour traffic volumes with the generated development traffic at the Proposed Entrance intersection at George Williams Road and at the existing intersection of Fox Road at George Williams Road.



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FIGURE 8

George Williams Road Subdivision

2028 Peak Hour Traffic Volumes -
 Projected Traffic Conditions
 With the Project

The intersection capacity results for the projected 2028 peak hour traffic, with the new subdivision contributing vehicle trips, are shown in Table 7. Compared with the 2028 no-build results in Table 5, the westbound approach of George Williams Road remains LOS F in the AM peak hour, with delay increasing from 64.3 to 75.4 seconds. In the PM peak hour, westbound delay increases from 33.8 seconds (LOS D) to 51.0 seconds (LOS F). The subdivision adds a modest number of trips; most of the future degradation is from background growth. The proposed entrance at George Williams Road is projected to operate with very good LOS and short delays in both peak hours. Appendix F includes the capacity analysis worksheets from the software.

TABLE 7
INTERSECTION CAPACITY ANALYSIS RESULTS -
2028 PROJECTED PEAK HOUR TRAFFIC CONDITIONS WITH THE PROJECT

INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	AM PEAK			PM PEAK		
			LOS ^a	DELAY ^b (seconds)	V/C ^c	LOS ^a	DELAY ^b (seconds)	V/C ^c
Fox Road (NB & SB) at George Williams Road (WB)	 Unsignalized	Westbound Left/Right	F	75.4	0.999	F	51.0	0.838
		Southbound Left	A	9.1	0.111	A	8.4	0.157
George Williams Road (EB & WB) at Proposed Entrance (SB)	 Unsignalized	Eastbound Left	A	8.1	0.006	A	7.8	0.030
		Southbound Left/Right	B	11.2	0.092	B	10.3	0.057

Note: All analyses were calculated in Synchro 12 software and reported using HCM 7th Edition intersection methodology

^a Level of Service, ^b Average Delay (sec/vehicle), ^c Volume-to-Capacity Ratio

▪ **POTENTIAL TRANSPORTATION SAFETY ISSUES:**

The study area was investigated for potential safety issues, both existing and future, that may arise during development. These transportation features are discussed in the following pages.

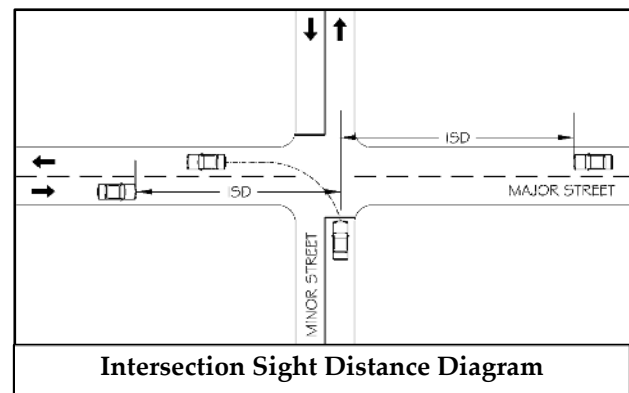
○ **EVALUATION OF SIGHT DISTANCE**

For intersections, sight distance evaluations are categorized into two types: Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD).

Methodology:

SSD is the distance required for a motorist on a major street to perceive, react, and for the vehicle to come to a complete stop before colliding with an object on the road. For evaluating intersections, this object would be another vehicle entering the intersection from a minor street. SSD can be considered the minimum visibility distance standard for evaluating intersection safety.

ISD is considered the required visibility distance standard used to evaluate intersection safety. ISD is based on the time required to perceive, react, and complete the desired traffic maneuver once a motorist on a minor street decides to do so. Three traffic maneuvers are available for vehicles stopped on a minor street at a 4-way



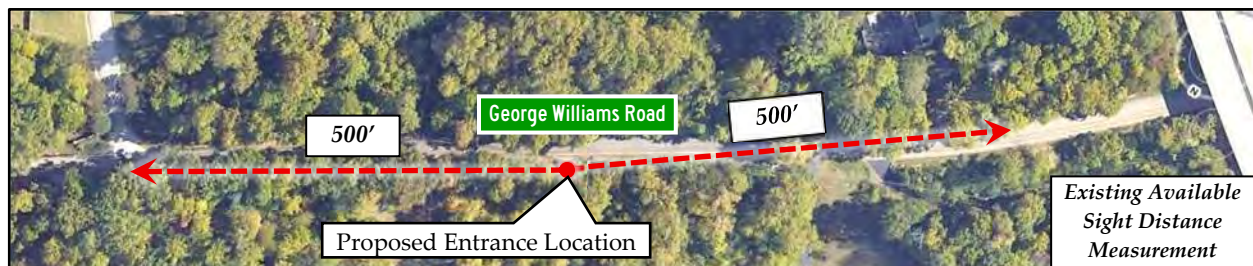
intersection: (1) a left-turn, (2) a right-turn, or (3) a crossing maneuver across the major street. For turns from the minor street, the ISD is needed to allow a stopped motorist to turn onto a major street without being overtaken by an approaching vehicle. The most critical ISD is for left turns from the minor street. The ISD for this maneuver includes the time to turn left and clear half of the intersection without conflicting with oncoming traffic from the left and accelerating to the road's operating speed without causing the approaching vehicles from the right to reduce their speed substantially.

George Williams Road has a posted speed limit of 30 miles per hour. Based on Knox County's policy of requiring 10 feet of sight distance per 1 mph of speed, the required intersection sight

distance is 300 feet. This distance is required for a motorist to exit safely to the left or right from the Proposed Entrance onto George Williams Road.

As a safety check, available sight distances at the Proposed Entrance location on George Williams Road were measured with a Nikon laser rangefinder. The visually measured sight distance was 500 feet to the west and 500 feet to the east. However, vegetation along the north side of George Williams Road limited the measurements. Sight distance to the east beyond 500 feet is unavailable because of a vertical curve on George Williams Road. To the west, distances beyond 500 feet are unavailable due to a minor horizontal curve on Fox Road as it approaches the I-140 underpass. Based on these measurements, the available sight distances from the Proposed Entrance will be adequate for vehicles exiting the development, provided the existing vegetation along the property's road frontage is removed, and the existing nearby utility pole is relocated during construction. A land surveyor or the site civil engineer should provide further verification.

Images of the existing sight distances at the Proposed Entrance location are labeled in the following, with the required ISD and the rangefinder-measured sight distances shown in bold italics.



View of Sight Distance on George Williams Road
at Proposed Entrance Location
(Looking East)



View of Sight Distance on George Williams Road
at Proposed Entrance Location
(Looking West)

- **EVALUATION OF TURN LANE THRESHOLDS**

The need for a separate westbound right-turn or an eastbound left-turn entering lane on George Williams Road at the Proposed Entrance was evaluated in the projected 2028 conditions.

The criteria used for this turn lane evaluation were based on Knox County's "Access Control and Driveway Design Policy". This design policy relates vehicle volume thresholds based on prevailing speeds for two-lane and four-lane roadways. The location of the Proposed Entrance intersection is within a 30 mph speed zone; thus, the intersection was evaluated based on this posted speed. The worksheets for these evaluations are provided in Appendix I.

Based on the projected 2028 traffic volumes at the Proposed Entrance intersection, separate left and right-turn entering lanes on George Williams Road will not be warranted.

- **PROJECTED VEHICLE QUEUES**

An additional software program calculated the projected vehicle queues during the 2028 AM and PM peak hours with the subdivision fully built out. The previously mentioned Synchro traffic software includes SimTraffic. The Synchro portion of the software performs macroscopic calculations for intersections, while SimTraffic handles micro-simulation and animation of vehicular traffic. SimTraffic software was utilized to estimate the projected vehicle queues at the intersections.

The 95th percentile vehicle queue is the recognized metric in the transportation engineering profession and serves as the design standard for assessing vehicle queue lengths. A 95th percentile vehicle queue length indicates 95% certainty that the queue will not exceed that length. The calculated vehicle queue results were based on averaging the outcomes from 10 one-hour traffic simulations in the software.

The 95th percentile vehicle queue lengths at the intersection of Fox Road at George Williams Road and at the Proposed Entrance intersection for the subdivision are shown in Table 8 for the 2028 projected peak hour conditions. The vehicle queue worksheet results from the SimTraffic software are in Appendix J.

TABLE 8
VEHICLE QUEUE SUMMARY -
2028 PROJECTED PEAK HOUR TRAFFIC CONDITIONS WITH THE PROJECT

INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	95 th PERCENTILE VEHICLE QUEUE LENGTH (ft)	
			AM PEAK HOUR	PM PEAK HOUR
Fox Road (NB & SB) at George Williams Road (WB)	 Unsignalized	Westbound Left/Right	161	143
		Southbound Left/Thru	72	98
George Williams Road (EB & WB) at Proposed Entrance (SB)	 Unsignalized	Eastbound Left/Thru	18	39
		Southbound Left/Right	43	36

Note: 95th percentile vehicle queues were calculated in SimTraffic 12 software

Table 8 shows minimal vehicle queue lengths at the Proposed Entrance intersection approaches during the 2028 AM and PM peak hours. Moderate vehicle queues are projected for the southbound left/thru approach of Fox Road at George Williams Road. Fairly substantial vehicle queues are projected on the westbound approach of George Williams Road at Fox Road during the 2028 AM and PM peak hours. A queue of 161 feet in the morning peak hour and 143 feet in the afternoon peak hour is projected for this approach. Based on these results, the expected vehicle queues on George Williams Road at Fox Road will be seven passenger vehicles in the AM peak and six in the PM peak hour, assuming each vehicle is 25 feet in length.

CONCLUSIONS & RECOMMENDATIONS

The following is an overview of recommendations to minimize the transportation impacts of George Williams Road Subdivision on the adjacent transportation system while achieving acceptable traffic flow and safety levels.



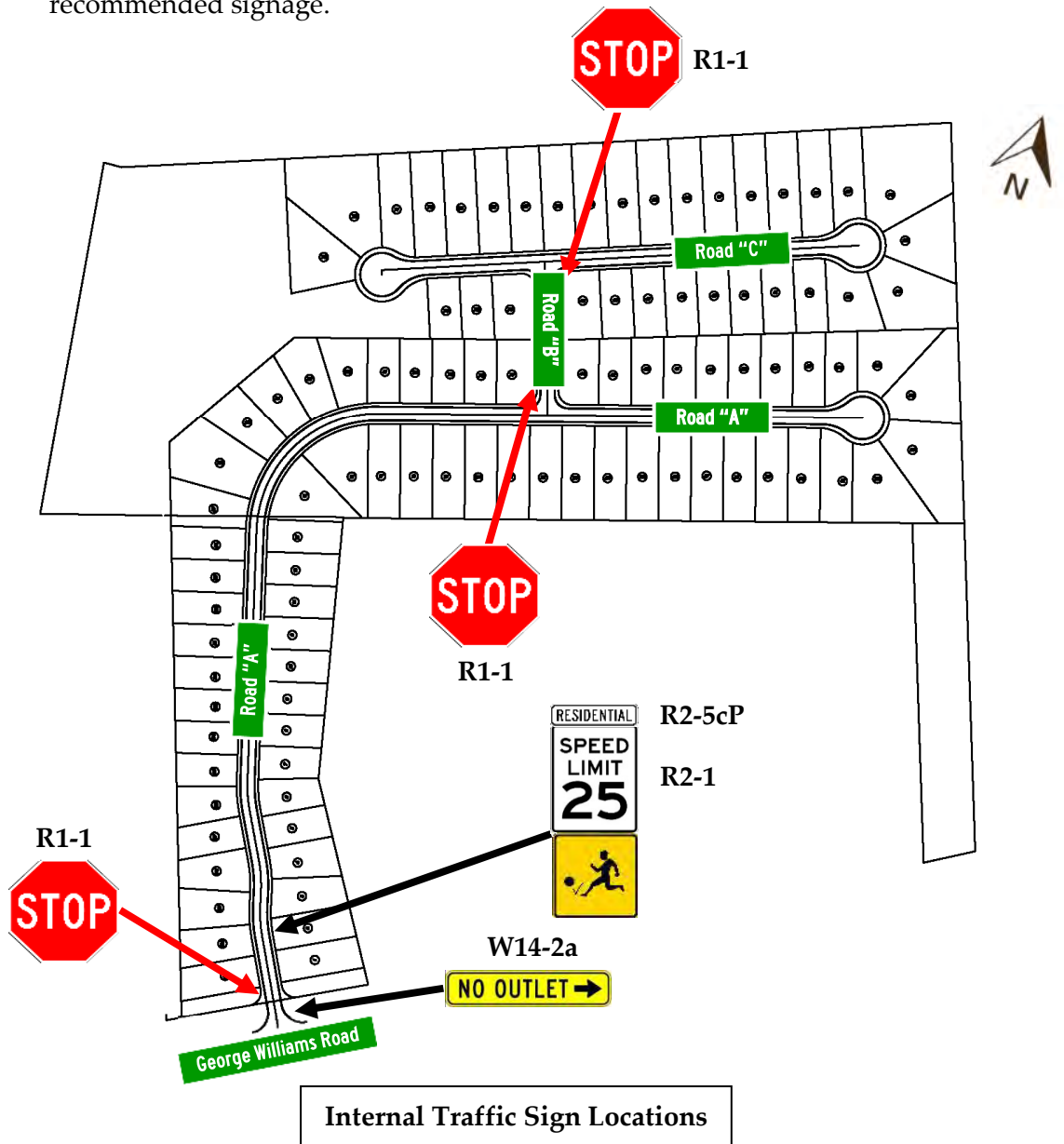
George Williams Road at Proposed Entrance: A single exit lane for the George Williams Road Subdivision, allowing both left and right turn movements at George Williams Road, will be sufficient, according to the calculations. The delays associated with these exiting vehicle movements are projected to be minimal in the projected 2028 conditions.

- 1a) Future landscaping, existing vegetation, or proposed signage must not impact the intersection sight distances looking from the Proposed Entrance to the west and east on George Williams Road.
- 1b) Based on a posted speed limit of 30 mph on George Williams Road, the required intersection sight distance will be 300 feet for exiting left- and right-turning vehicles. The existing sight distances from George Williams Road at the Proposed Entrance location were visually estimated to be adequate in both directions, assuming the existing vegetation on the north side of George Williams Road along the property's road frontage will be removed during construction and the existing utility pole will be relocated. Further verification should be provided by a land surveyor or by the site civil engineer to ensure that it will be met.
- 1c) It is recommended that a Stop Sign (R1-1) be posted and a 24" white stop bar be applied to the Proposed Entrance approach at George Williams Road. The stop bar should be applied a minimum of 4 feet away from the traveled edge of George Williams Road and placed at the desired stopping point that maximizes the sight distance.



George Williams Road Subdivision Internal Roads: The site layout plan shows three new streets, as shown in Figure 3.

- 2a) A 25-mph Speed Limit Sign (R2-1) with additional plaque signage is recommended to be posted near the beginning of the Proposed Entrance road, Road "A", off George Williams Road. It is also recommended that a "No Outlet" Sign (W14-2a) be posted at the front of the subdivision. This sign can be posted above or below the street name sign.
- 2b) Stop Signs (R1-1) are recommended to be installed on the minor approaches of Road "B" at the internal roadway T-intersections, as shown in the image below with other recommended signage.



- 2c) Sight distances at the new internal intersections must not be impacted by new signage, parked cars, or future landscaping. The civil site designer should ensure that appropriate internal sight distances will be met.
- 2d) If directed by the local post office, the site designer should include a parking area and a centralized mail delivery center within the development for the subdivision residents.
- 2e) All drainage grates and covers for the residential development must be pedestrian and bicycle-safe.
- 2f) The main internal road, Road "A", in the subdivision will have long, straight road segments with steep road grades due to the existing topography. Straight road segments with steep grades encourage higher vehicle speeds. It is recommended that the site designer consider traffic calming measures on this main internal road, and this should be discussed with Knox County Engineering in the detailed design phase.
- 2g) All road and intersection elements should be designed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) and the Manual on Uniform Traffic Control Devices (MUTCD), as well as Knox County's specifications and guidelines, to ensure proper roadway operations.



Fox Road at George Williams Road: As discussed and described previously, the westbound approach of George Williams Road at Fox Road currently experiences high vehicle delays during peak hours. These delays are expected to increase under future conditions even without the proposed subdivision. With the project, the westbound approach remains LOS F in the AM peak hour and changes from LOS D to LOS F in the PM peak hour, as shown in Tables 5 and 7.

As originally requested by Planning, this intersection was to be investigated to determine whether converting it to All-Way Stop Control (AWSC) could be warranted or desirable. The evaluation in this study was based on the criteria outlined in the Manual on Uniform Traffic Control Devices (MUTCD), 11th Edition, produced by the Federal Highway Administration (FHWA). The MUTCD defines the standards for all traffic control devices on public roads, including pavement markings, signage, and traffic signals. It also provides warrants for an engineering study to evaluate AWSC at an intersection in Section 2B. However, as stated in the MUTCD, the warrants are not a substitute for engineering judgment, and satisfaction of the warrants shall not require the installation of AWSC at an unsignalized intersection. The MUTCD states that the engineering study should include applicable factors and evaluations, including:

- A. All-Way Stop Control Warrant A: Crash Experience
- B. All-Way Stop Control Warrant B: Sight Distance
- C. All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection
- D. All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)
- E. All-Way Stop Control Warrant E: Other Factors

The following includes the MUTCD warrant language (in blue) and a review of whether the intersection's data and characteristics meet or do not meet each warrant.

Section 2B.13 All-Way Stop Control Warrant A: Crash Experience

Option:

All-way stop control may be installed at an intersection where an engineering study indicates that:

- A. For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

- B. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

As documented and presented in the study report, there have been a total of 5 crashes at the intersection over the past five years (August 2021 – August 2026), with 3 occurring in the past 3 years (August 2023 – August 2026). There have not been more than 4 crashes in any 12-month period. Furthermore, there have not been more than 5 crashes in any 36-month period. All 5 crashes involved vehicles striking the guardrails (2) or angle crashes (3). While angle crashes are likely a type of crash that would be susceptible to correction by the installation of all-way stop control, the overall crash numbers presented in the data do not satisfy this warrant.

Section 2B.14 All-Way Stop Control Warrant B: Sight Distance

Option:

All-way stop control may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

Support:

At such a location, a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.

Based on visual observation, the sight distance from George Williams Road at Fox Road is more than sufficient for the posted speed limit of 30 mph, which, under Knox County standards, requires a sight distance of 300 feet. Sight distance from George Williams Road to the north and south along Fox Road is much longer than this required distance, and thus this intersection does not satisfy this warrant.

Section 2B.15 All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection

Option:

All-way stop control may be installed at locations where all-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal (see Chapter 4C) at the intersection or for the installation of yield control at a circular intersection.

No traffic signal is planned for this intersection, nor is yield control planned as a circular intersection, and thus this intersection does not satisfy this warrant.

Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

Option:

All-way stop control may be installed at an intersection where an engineering study indicates:

- A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and
- B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.

If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in Paragraph 1 of this Section.

The traffic count at the intersection of Fox Road at George Williams Road was conducted for eight hours on a typical day (7:00–9:00 a.m., 11:00 a.m.–1:00 p.m., and 2:00–6:00 p.m.). The volumes presented and used for this warrant include only vehicles and exclude the minimal number of bicyclists and pedestrians observed during the traffic count. The major-street entering volume comprises Fox Road southbound left turns and thru movements, plus Fox Road northbound thru movements and right turns. The minor-street entering volume comprises George Williams Road westbound left and right turns.

For this warrant evaluation, a spot speed study was also conducted. It measured the speeds of vehicles heading north and south on Fox Road, slightly in advance of the influence of George Williams Road. The study was conducted during the afternoon in off-peak hours. The results indicated an 85th percentile speed of 46 mph for northbound traffic on Fox Road and 48 mph for southbound traffic on Fox Road. The data included 100 observations in each direction and are included in Appendix K.

The governing major-street 85th percentile speed is 48 mph. Because that exceeds 40 mph, Section 2B.16 allows 70 percent thresholds (210 / 140 vehicles per hour) instead of the 100 percent standard of (300 / 200 vehicles per hour).

Warrant D requires the same eight hours to meet both the major-street and minor-street thresholds, with the tabulated 8-hour traffic volumes being as follows in Table 9:

TABLE 9
AWSC WARRANT ANALYSIS - MUTCD Section 2B.16 All-Way Stop Control, Warrant D

Major Street: Fox Road (SB and NB)

9/10/26 (Thursday)

Minor Street: George Williams Road (WB)

Hot and Mostly Sunny

Traffic Control: Stop Control on Minor Street

Conducted by: Ajax Engineering

Hour	Fox Road (Major)	George Williams Road (Minor)	Total	Both 300 / 200? (vph)	Both 210 / 140? (vph)
7 - 8 am	450	261	711	Yes	Yes
8 - 9 am	386	239	625	Yes	Yes
11 am - 12 pm	220	82	302	No	No
12 - 1 pm	266	106	372	No	No
2 - 3 pm	306	105	411	No	No
3 - 4 pm	491	183	674	No	Yes
4 - 5 pm	554	163	717	No	Yes
5 - 6 pm	626	186	812	No	Yes
8 - hour TOTAL	3,299	1,325	4,624	2 hours	5 hours

Fox Road reaches 300 vph in six hours; George Williams Road reaches 200 vph in only two morning hours. At 70 percent, five hours meet both criteria, but eight hours are required. Based on the data, the midday minor-street volume is the controlling deficiency to meeting this warrant. Additionally, the eight-hour approach volumes are unbalanced (3,299 vs. 1,325), and the MUTCD warns that AWSC is less effective when approach volumes differ substantially. Based on the tabulated intersection volumes and 85th percentile speeds, this intersection does not satisfy this warrant.

Section 2B.17 All-Way Stop Control Warrant E: Other Factors

Option:

All-way stop control may be installed at an intersection where an engineering study indicates that all-way stop control is needed due to other factors not addressed in the other all-way stop control warrants. Such other factors may include, but are not limited to, the following:

- A. The need to control left-turn conflicts,
- B. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection, or

C. Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

In relation to Part A, under Section 2B.17 for Warrant E, at this intersection, left-turn conflicts could be considered a factor based on the crash history. Further, the observed and calculated high vehicle delays on George Williams Road, with a single lane, may make motorists more accepting of short gaps in traffic than they otherwise might be. As described previously, in addition to the conflicts presented by vehicles on Fox Road, motorists on George Williams Road attempting to turn are also hampered by the relative closeness of Fox Landing Lane to the Fox Landing Subdivision, which appeared to occasionally contribute to hesitation among motorists attempting to turn onto Fox Road. Fox Landing Lane intersects Fox Road at an acute angle, facing the George Williams Road intersection. Other than possible right-of-way issues, it is unknown why this entrance to the Fox Landing Subdivision was allowed or pursued to be built at this angle and proximity instead of a desired perpendicular configuration.

Otherwise, under Section 2B.17 for Warrant E, Part B would not apply to this intersection. Part C notes that, although pedestrian and bicyclist activity can be considered supportive, the volume of these non-vehicular movements was relatively low during the 8-hour traffic count. Based on these factors, Warrant E is also not satisfied.

For a final review, the intersection of Fox Road at George Williams Road was modeled under projected 2028 conditions and volumes, considering three alternatives: keeping the intersection as-is with two-way stop control (TWSC) (do-nothing approach), converting the intersection to AWSC operations despite not fully meeting any MUTCD warrants, or keeping the intersection as-is (TWSC) but adding a separate turn lane on George Williams Road. The least expensive alternative would be keeping the intersection as-is, followed by converting it to AWSC, with the most expensive being the construction of a separate westbound turn lane for George Williams Road. The calculations for this final review are provided in the Synchro and SimTraffic worksheets in Appendices F and J, and the results are summarized in the following two tables, Tables 10 and 11, which present total intersection (all approaches combined) vehicle delay and vehicle queues by approach, respectively.

The results in Table 10 indicate that the alternative of converting the intersection to AWSC yields the highest total vehicle delays per vehicle, whereas maintaining TWSC for the

intersection with an additional turn lane on George Williams Road yields the lowest.

The results shown in Table 11 indicate that converting the intersection to AWSC would reduce vehicle queues on the westbound approach at George Williams Road, but it would create queues on the northbound approach of Fox Road and increase queue lengths on the southbound approach of Fox Road. Maintaining TWSC for the intersection with an additional turn lane on George Williams Road yields the shortest vehicle queues on George Williams Road by spreading the vehicle load into two lanes instead of the current one lane. This option also does not induce any stops or queues on the approaches of Fox Road. An additional caveat of converting the intersection to AWSC is that vehicle queues on Fox Road could back up far enough to interfere with operations at the nearby Fox Landing Lane to the south and Alani Hill Way to the north.

TABLE 10
FOX ROAD AT GEORGE WILLIAMS ROAD
2028 ALTERNATIVE COMPARISON - TOTAL INTERSECTION VEHICLE DELAY (s/veh)

ALTERNATIVE	TRAFFIC CONTROL	AM PEAK	PM PEAK
		VEHICLE DELAY (seconds/veh)	VEHICLE DELAY (seconds/veh)
No Changes (As-Is)	TWSC	25.5	14.9
Modified to AWSC	AWSC	28.9	17.1
Maintain TWSC / Add WB Turn Lane	TWSC	8.3	9.6

TABLE 11
FOX ROAD AT GEORGE WILLIAMS ROAD
2028 ALTERNATIVE COMPARISON - VEHICLE QUEUES (ft)

ALTERNATIVE	TRAFFIC CONTROL	APPROACH/ MOVEMENT	AM PEAK	PM PEAK
			VEHICLE QUEUE (ft)	VEHICLE QUEUE (ft)
No Changes (As-Is)	TWSC	Westbound Left/Right	161	143
		Southbound Left/Thru	72	98
Modified to AWSC	AWSC	Westbound Left/Right	108	77
		Northbound Thru/Right	106	81
		Southbound Left/Thru	77	126
Maintain TWSC / Add WB Turn Lane	TWSC	Westbound Left	87	99
		Westbound Right	78	59
		Southbound Left/Thru	74	101

Thus, based on the warrant evaluations for AWSC and the vehicle delay and queue results for the alternatives, it is recommended that if improvements are pursued at the intersection, the most prudent modification would be to add an additional westbound lane to separate left and right turns on George Williams Road. It is not recommended that the intersection be converted to AWSC due to the lack of satisfying the warrants and the overall increase in vehicle delays and queues on the major road approaches of Fox Road that would be induced.

The westbound approach of George Williams Road at Fox Road currently experiences high vehicle delays, is expected to see further increases in delays under future conditions due to general growth, and is expected to operate at LOS F in the AM peak hour and LOS D in the PM peak hour (as shown in Table 5), even without the proposed subdivision.

Providing a separate turn lane on George Williams Road would be the most expensive alternative of the three reviewed. If provided, it is recommended that this separate lane be dedicated to right-turn movements and have a minimum storage length of 125 feet to allow motorists to bypass the left-turn queues attempting to turn south onto Fox Road. The right-of-way, as shown in the KGIS mapping, appears sufficient to provide this lane without encroaching on private property. Implementation will face challenges, including topography and stormwater, due to the substantial terrain drop-off with a drainage ditch and culvert along the northern edge of George Williams Road at Fox Road. An additional lane for right-turn movements should not be considered a condition of this proposed development, as this is an existing issue with substantial vehicle delays and queues already occurring during peak periods.

General note: A roundabout at this intersection location would be an attractive alternative, but its proximity to an inlet of Fort Loudoun Lake would entail a substantial construction and monetary burden and was not considered a viable solution.

At a minimum, if this lane addition is not provided, it is still recommended that Knox County address an existing asphalt drop-off/failure at the northern corner of George Williams Road at Fox Road, observed during



the field visit. This pavement failure has been caused and worsened by right-turning vehicles that occasionally attempt to “squeeze by” stopped vehicles turning left onto southbound Fox Road. A similar pavement edge failure was also observed at the opposite corner, likely due to vehicles off-tracking or taking the corner too sharply from northbound Fox Road onto George Williams Road.

APPENDIX A

KNOXVILLE/KNOX COUNTY PLANNING SCOPE OF WORK

ATTACHMENT B: Pre-Submittal Transportation Impact Analysis (TIA) Scope Determination Form

DEVELOPMENT INFORMATION		
Project name:	0 George Williams Road	
Project Description:	85-lot detached single family subdivision	
Project Location	0 George Williams (37922)	
Existing Zoning:	PR	
Development Name:	0 George Williams Road	
Developer name & address:	S&E Properties, LLC (405 Montbrook Lane)	
Telephone number:	(865) 539-1112	
Email:	ericmoseley@icloud.com	
Tax Map & Parcel #:	144 00408 & Part of 144 001	
CHECKLIST (All items should be available at the time of discussion)		
Complete description of the development that includes:		
	Site Map details (this should be <u>attached</u>):	
☒	Building footprints	
☒	Number of units/unit size	
☒	Access points	
☒	Internal roadways (if any)	
☐	Adjacent streets	
☐	Proposed sidewalks and bicycle facilities, and	
☐	Location and number of proposed parking spaces (if applicable)	
	Phasing plan (if applicable) that includes:	
☐	Phase size, location, & timing	Single Phase - 24-months

BELOW TO BE FILLED OUT BY KNOXVILLE-KNOX COUNTY PLANNING STAFF

☐

Pre-study scope meeting **needed**

☒

Pre-study scope meeting **not needed**

Intersection(s) to study:

Proposed access point(s) to George Williams Rd and Intersection of George Williams Rd at Fox Rd

Level of Analysis:

Level 1 Transportation impact Study (TIS) - Refer to Section 7 of the Knoxville-Knox County Planning Transportation Impact Analysis Guidelines for scope and report elements.

Notes:

Full safety and operational evaluation of new access point(s) to George Williams Rd including capacity analysis, turn lane warrants and available sight distance.

The George Williams Rd at Fox Rd intersection will be a focus area and should include capacity analyses and an All-Way Stop evaluation.



8/18/2026

Signature

Date

APPENDIX B

HISTORICAL TRAFFIC COUNT DATA

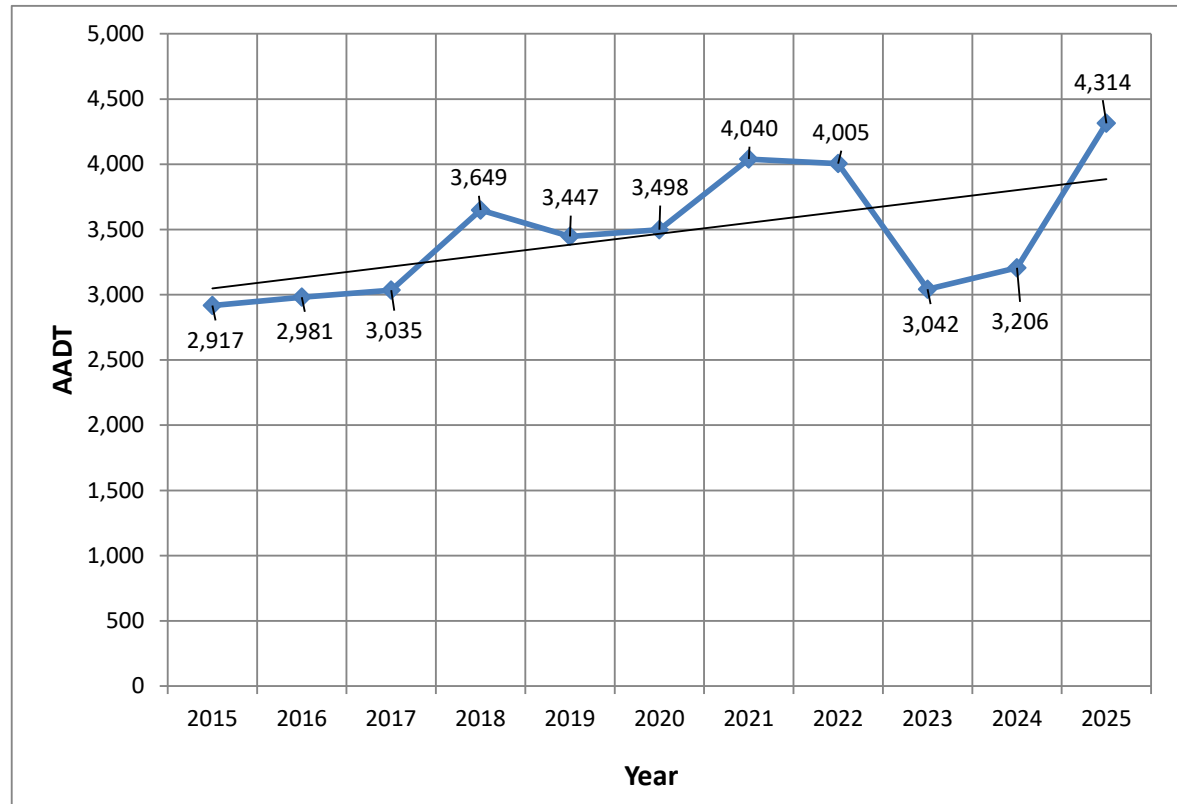
Historical Traffic Counts

Organization: TDOT

Station ID #: 47000498

Location: George Williams Road, northeast of Brooke Valley Blvd

YEAR	AADT	
2015	2,917	Trendline ↓
2016	2,981	
2017	3,035	
2018	3,649	
2019	3,447	
2020	3,498	
2021	4,040	
2022	4,005	
2023	3,042	
2024	3,206	
2025	4,314	



2015 - 2025 Growth Rate = 47.9%

Average Annual Growth Rate = 4.0%

Disclaimer: Please note that the AADT displayed for the current year is only a preliminary estimate, updated adjustment factors have not yet been applied to the traffic count information to produce a final AADT.

List View

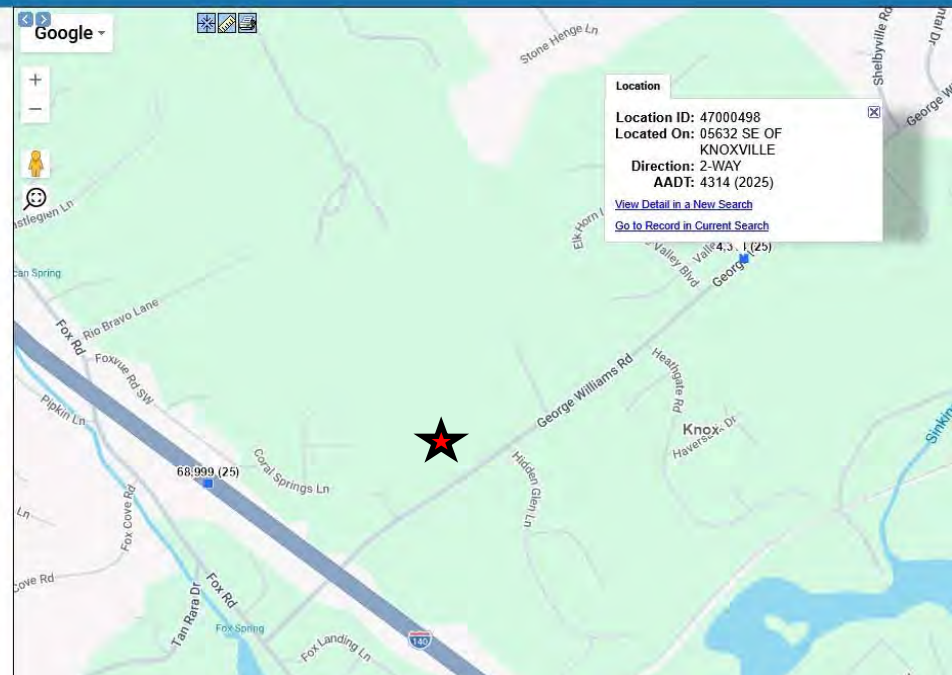
Record 7973 of 16433 Goto Record go

Location ID	47000498	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	471563201P00000	LRS Loc Pt.	1.534
SF Group	Lower FC (2026)	Route Type	
AF Group	Region 1 Urban Minor Collector (2026)	Route	
GF Group	Knox (2026)	Active	Yes
Class Dist Grp	Region 1 Urban Minor Collector (2026)	Category	CC
Seas Class Grp			
WIM Group			
QC Group	Default		
Funct'l Class	Minor Collector	Milepost	
Located On	05632		
Loc-On Alias	GEORGE WILLIAMS RD.		
	SE OF KNOXVILLE		
More Detail			

STATION DATA

Directions: 2-WAY ?

AADT 								
	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2025	4,314	597	14	65	4,194 (97%)	120 (3%)	Grown from 2023
	2024	3,206 ³		15	65	3,091 (96%)	115 (4%)	
	2023	3,042	448	15	65	2,945 (97%)	97 (3%)	
	2022	4,005	529	13	65	3,905 (98%)	100 (2%)	
	2021	4,040	401	10	65	3,984 (99%)	56 (1%)	
 		1-5 of 16						



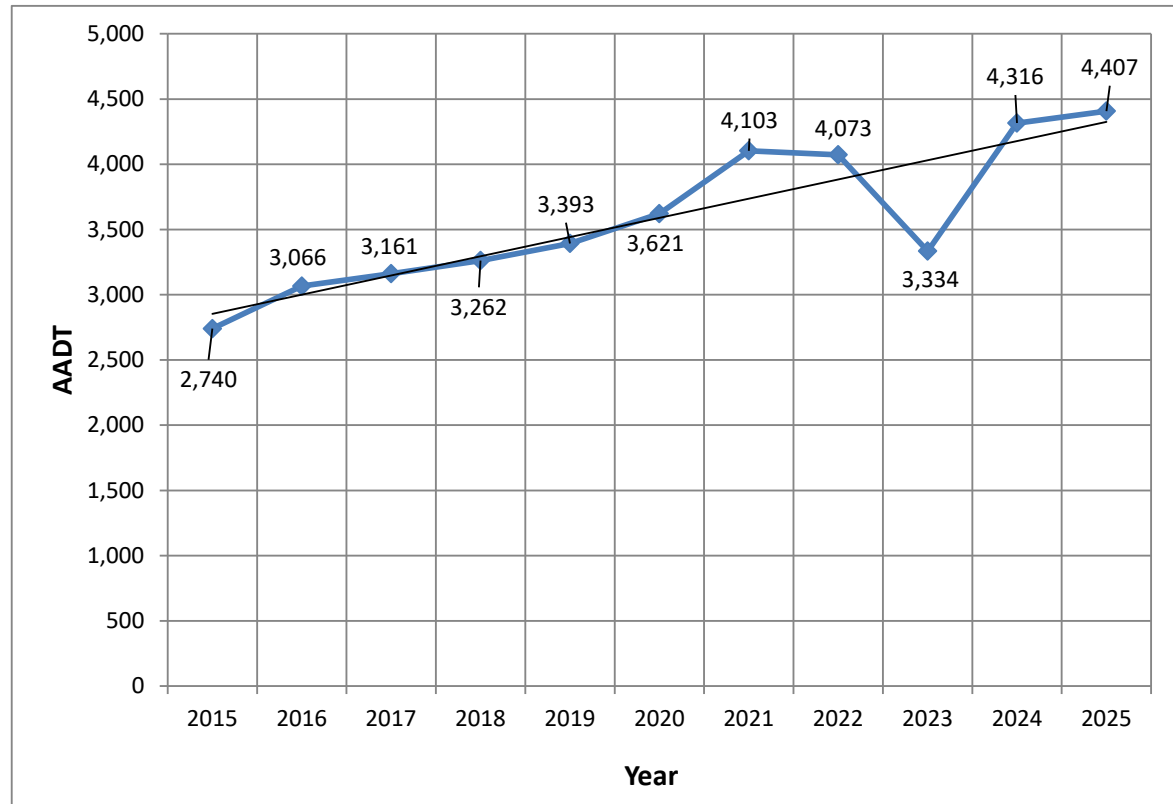
Historical Traffic Counts

Organization: TDOT

Station ID #: 47000473

Location: Fox Road, between George Williams Road and Emory Church Road

YEAR	AADT	
2015	2,740	Trendline ↓
2016	3,066	
2017	3,161	
2018	3,262	
2019	3,393	
2020	3,621	
2021	4,103	
2022	4,073	
2023	3,334	
2024	4,316	
2025	4,407	



2015 - 2025 Growth Rate = 60.8%

Average Annual Growth Rate = 4.9%

Disclaimer: Please note that the AADT displayed for the current year is only a preliminary estimate, updated adjustment factors have not yet been applied to the traffic count information to produce a final AADT.

List View

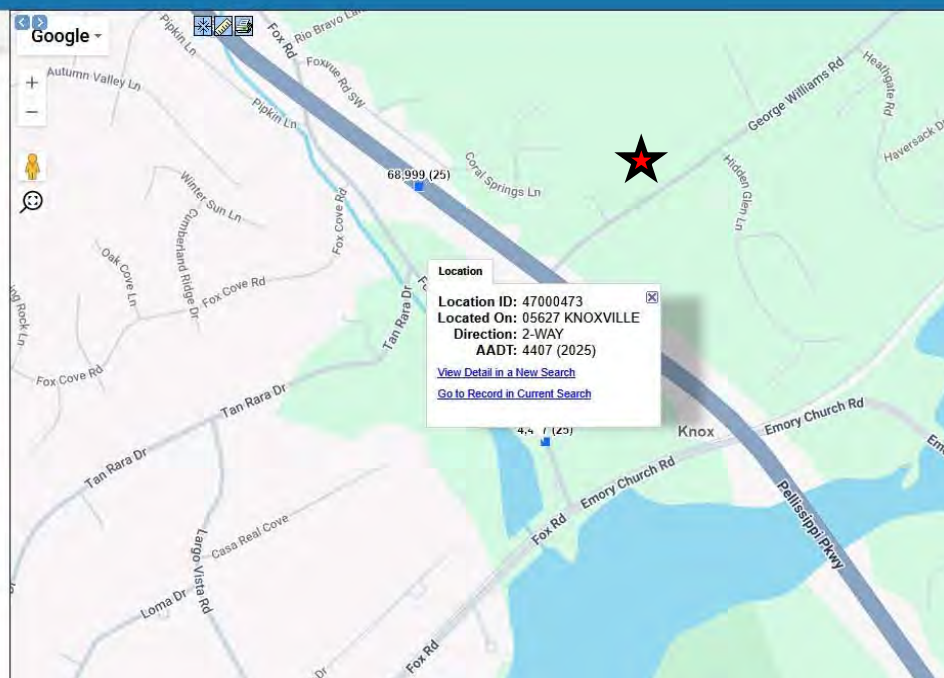
Record 7949 of 16433 Goto Record go

Location ID	47000473	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	47L562701P00000	LRS Loc Pt.	0.14
SF Group	Lower FC (2026)	Route Type	
AF Group	Region 1 Urban Minor Collector (2026)	Route	
GF Group	Knox (2026)	Active	Yes
Class Dist Grp	Region 1 Urban Minor Collector (2026)	Category	CC
Seas Class Grp			
WIM Group			
QC Group	Default		
Functl Class	Minor Collector	Milepost	
Located On	05627		
Loc On Alias	FOX RD.		
	KNOXVILLE		
More Detail			

STATION DATA

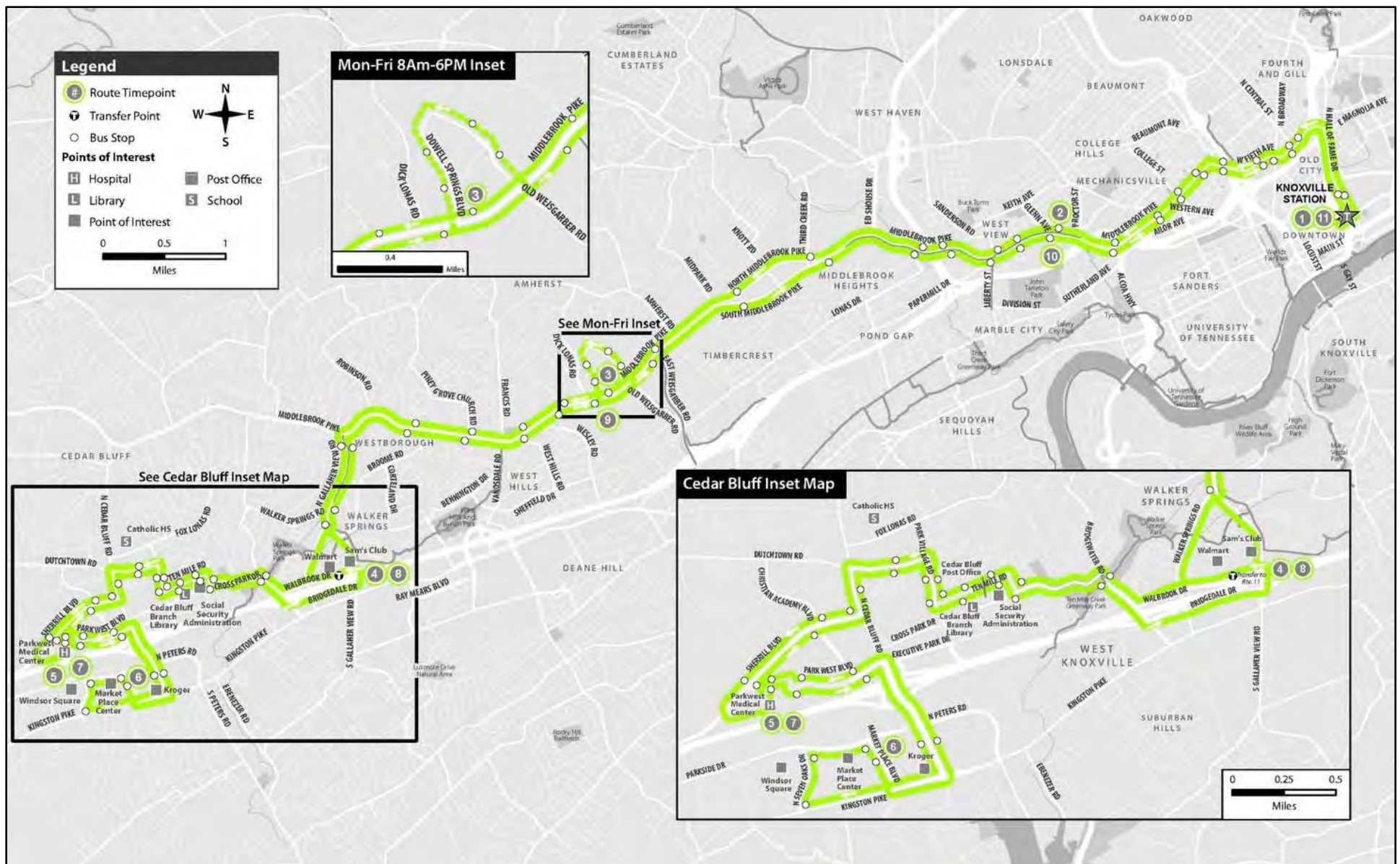
Directions: 2-WAY ?

AADT 								
	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2025	4,407 ³		13	65	4,285 (97%)	122 (3%)	Growth from 2024
	2024	4,316	545	13	65	4,161 (96%)	155 (4%)	
	2023	3,334	471	14	65	3,228 (97%)	106 (3%)	
	2022	4,073	550	14	65	3,972 (98%)	101 (2%)	
	2021	4,103	410	10	65	4,046 (99%)	57 (1%)	
<< < > >>		1-5 of 16						



APPENDIX C

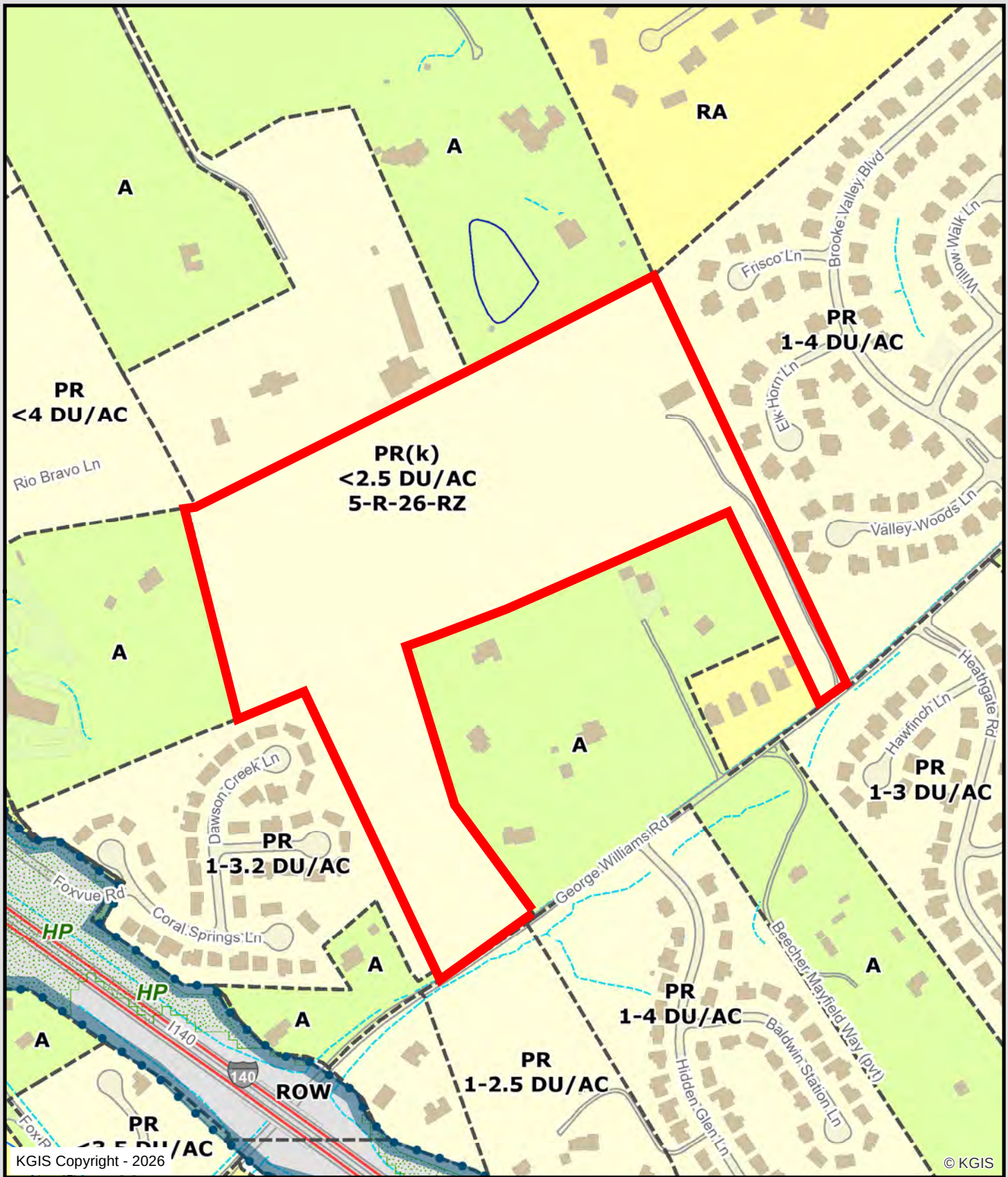
KNOXVILLE AREA TRANSIT (KAT) MAP AND INFORMATION



KAT BUS ROUTE 16: MIDDLEBROOK/CEDAR BLUFF

APPENDIX D

ZONING MAP



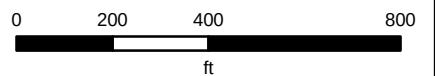
Zoning Map

8.25.26

Knoxville - Knox County - KUB Geographic Information System



Printed: 8/25/2026 at 10:56:53 AM



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APPENDIX E

MANUAL TRAFFIC COUNT DATA

TRAFFIC COUNT DATA

Major Street: Fox Road (SB and NB)
 Minor Street: George Williams Road (WB)
 Traffic Control: Stop Control on Minor Street

9/10/26 (Thursday)
 Hot and Mostly Sunny
 Conducted by: Ajax Engineering

	Fox Road		George Williams Road		Fox Road			
TIME BEGIN	SOUTHBOUND		WESTBOUND		NORTHBOUND		VEHICLE TOTAL	PEAK HOUR
	LT	THRU	LT	RT	THRU	RT		
7:00 AM	6	19	21	20	11	11	88	
7:15 AM	17	35	35	30	21	15	153	
7:30 AM	18	24	37	45	49	31	204	7:30 AM - 8:30 AM
7:45 AM	19	38	24	49	73	63	266	
8:00 AM	27	27	46	47	40	49	236	
8:15 AM	16	21	28	34	31	25	155	
8:30 AM	18	22	21	24	26	12	123	
8:45 AM	6	22	14	25	27	17	111	
TOTAL	127	208	226	274	278	223	1336	
11:00 AM	10	22	8	10	20	7	77	
11:15 AM	12	15	7	14	13	5	66	
11:30 AM	11	26	6	9	11	6	69	
11:45 AM	9	21	8	20	26	6	90	11:45 AM - 12:45 PM
12:00 PM	11	26	12	14	21	8	92	
12:15 PM	11	23	8	9	28	7	86	
12:30 PM	15	27	9	26	21	14	112	
12:45 PM	15	12	11	17	19	8	82	
TOTAL	94	172	69	119	159	61	674	
2:00 PM	6	29	12	10	23	13	93	
2:15 PM	16	26	9	10	25	12	98	
2:30 PM	13	27	14	18	13	7	92	
2:45 PM	20	27	16	16	32	17	128	
3:00 PM	16	38	22	16	33	22	147	
3:15 PM	26	37	13	15	26	31	148	
3:30 PM	20	44	17	15	38	23	157	
3:45 PM	26	57	45	40	29	25	222	
4:00 PM	30	40	25	21	25	30	171	
4:15 PM	29	46	18	17	28	29	167	
4:30 PM	33	60	28	15	25	22	183	
4:45 PM	38	66	18	21	25	28	196	4:45 PM - 5:45 PM
5:00 PM	39	65	21	21	32	39	217	
5:15 PM	29	53	39	22	28	33	204	
5:30 PM	42	65	30	17	28	42	224	
5:45 PM	36	49	24	12	25	21	167	
TOTAL	419	729	351	286	435	394	2614	

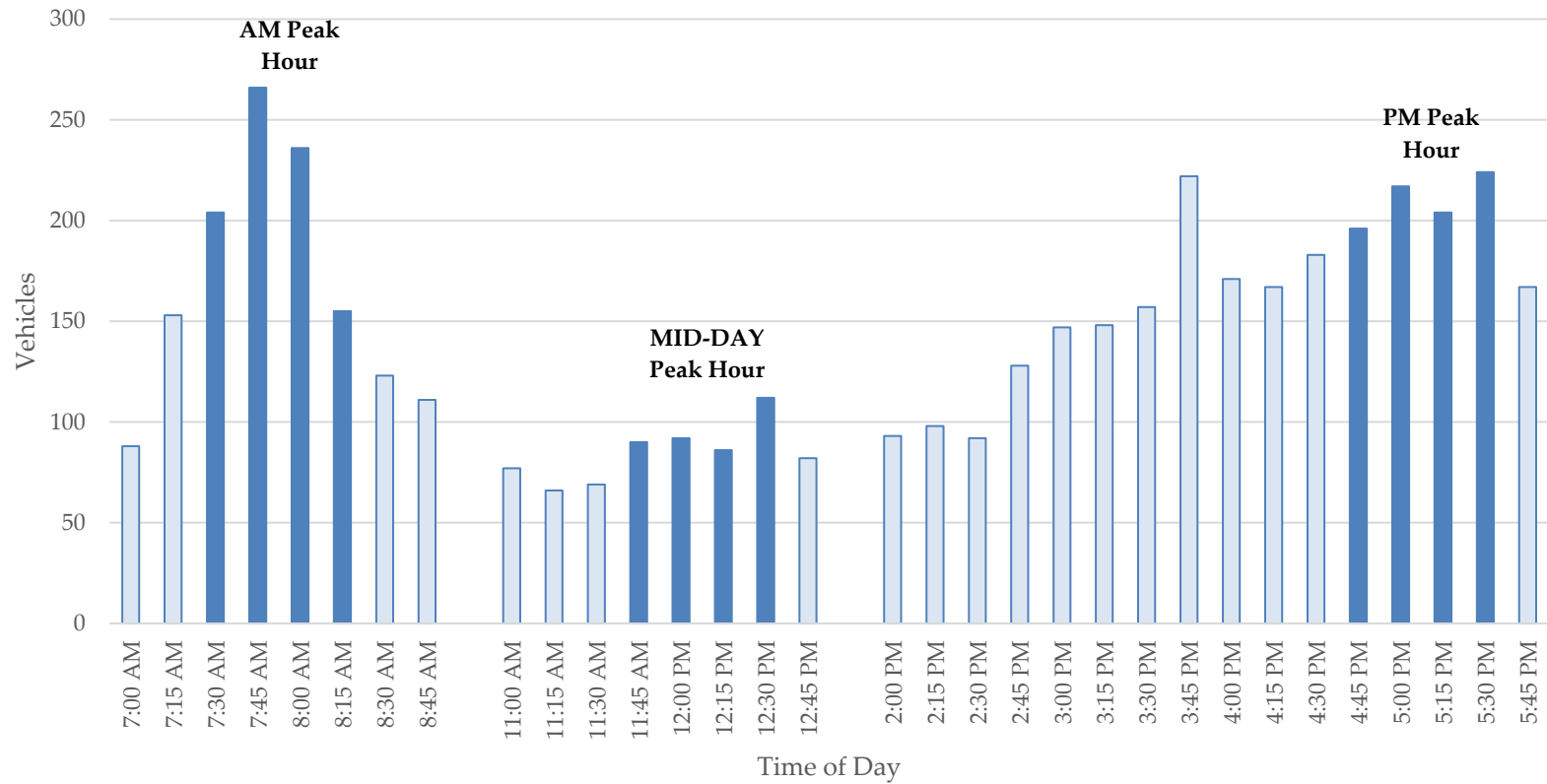
2026 AM Peak Hour 7:30 AM - 8:30 AM

	Fox Road		George Williams Road		Fox Road	
TIME	SOUTHBOUND		WESTBOUND		NORTHBOUND	
BEGIN	LT	THRU	LT	RT	THRU	RT
7:30 AM	18	24	37	45	49	31
7:45 AM	19	38	24	49	73	63
8:00 AM	27	27	46	47	40	49
8:15 AM	16	21	28	34	31	25
TOTAL	80	110	135	175	193	168
TRUCK %	0.0%	2.7%	0.7%	0.6%	0.0%	3.0%
PHF _{mvmt}	0.74	0.72	0.73	0.89	0.66	0.67
PHF _{app}	0.83		0.83		0.66	
PHF _{int}	0.81					

2026 PM Peak Hour 4:45 PM - 5:45 PM

	Fox Road		George Williams Road		Fox Road	
TIME	SOUTHBOUND		WESTBOUND		NORTHBOUND	
BEGIN	LT	THRU	LT	RT	THRU	RT
4:45 PM	38	66	18	21	25	28
5:00 PM	39	65	21	21	32	39
5:15 PM	29	53	39	22	28	33
5:30 PM	42	65	30	17	28	42
TOTAL	148	249	108	81	113	142
TRUCK %	0.0%	0.0%	0.0%	1.2%	0.9%	0.0%
PHF _{mvmt}	0.88	0.94	0.69	0.92	0.88	0.85
PHF _{app}	0.93		0.77		0.90	
PHF _{int}	0.94					

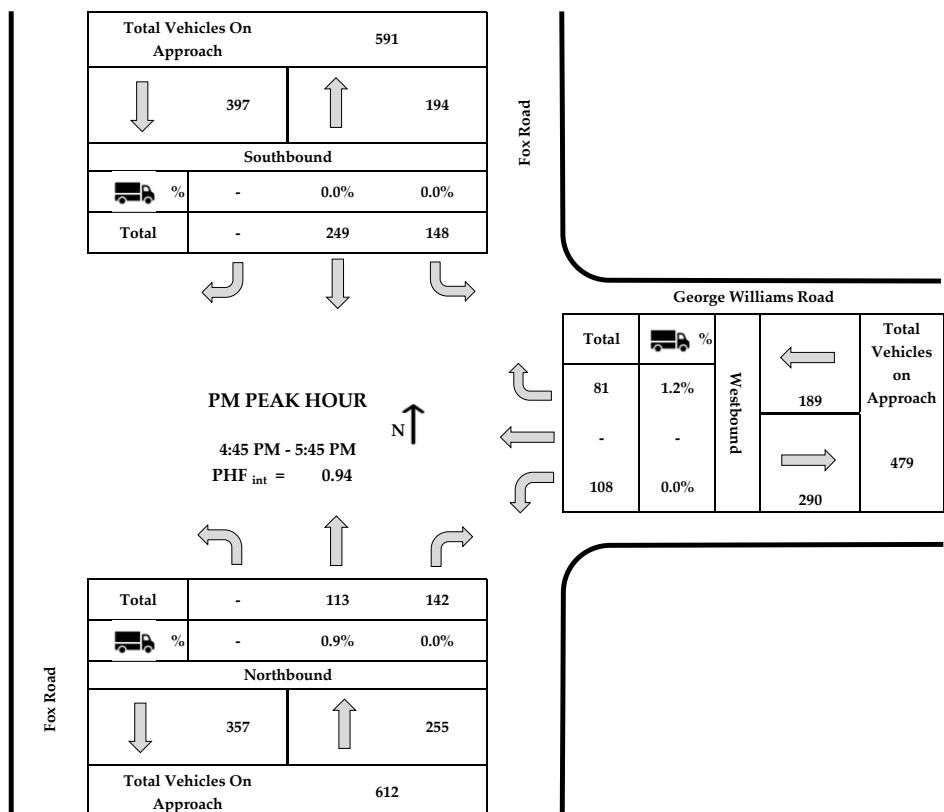
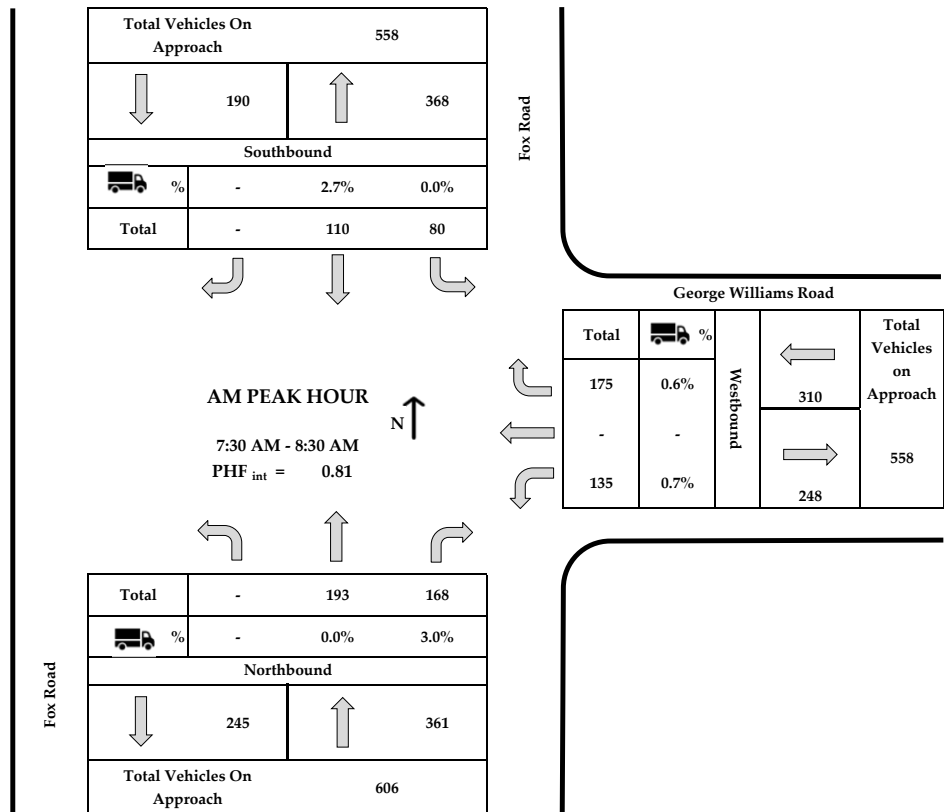
Fox Road at George Williams Road Intersection Traffic Count Totals 9/10/2026



PEAK HOUR DATA

Major Street: Fox Road (SB and NB)
 Minor Street: George Williams Road (WB)
 Traffic Control: Stop Control on Minor Street

9/10/26 (Thursday)
 Hot and Mostly Sunny
 Conducted by: Ajax Engineering



APPENDIX F

CAPACITY ANALYSES – HCM WORKSHEETS (SYNCHRO 12)

EXISTING CONDITIONS

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 12.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	135	175	193	168	80	110
Future Vol, veh/h	135	175	193	168	80	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	83	83	66	66	83	83
Heavy Vehicles, %	1	1	0	3	0	3
Mvmt Flow	163	211	292	255	96	133

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	745	420	0
Stage 1	420	-	-
Stage 2	325	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	383	636	-
Stage 1	665	-	-
Stage 2	734	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	344	636	-
Mov Cap-2 Maneuver	344	-	-
Stage 1	598	-	-
Stage 2	734	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	37.55	0	3.72
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	465	758
HCM Lane V/C Ratio	-	-	0.804	0.093
HCM Ctrl Dly (s/v)	-	-	37.5	8.8
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	7.4	0.3

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	108	81	113	142	148	249
Future Vol, veh/h	108	81	113	142	148	249
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	77	77	90	90	93	93
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	140	105	126	158	159	268

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	790	204	0
Stage 1	204	-	-
Stage 2	586	-	-
Critical Hdwy	6.4	6.21	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	-
Pot Cap-1 Maneuver	362	839	-
Stage 1	835	-	-
Stage 2	560	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	309	839	-
Mov Cap-2 Maneuver	309	-	-
Stage 1	714	-	-
Stage 2	560	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	24.53	0	3.05
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	671
HCM Lane V/C Ratio	-	-	0.579	0.123
HCM Ctrl Dly (s/v)	-	-	24.5	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	3.6	0.4

PROJECTED CONDITIONS WITHOUT THE PROJECT

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 21.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	146	189	212	185	88	121
Future Vol, veh/h	146	189	212	185	88	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	83	83	66	66	83	83
Heavy Vehicles, %	1	1	0	3	0	3
Mvmt Flow	176	228	321	280	106	146

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	819	461	0
Stage 1	461	-	-
Stage 2	358	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	346	602	-
Stage 1	637	-	-
Stage 2	710	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	306	602	-
Mov Cap-2 Maneuver	306	-	-
Stage 1	562	-	-
Stage 2	710	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	64.28	0	3.83
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	758
HCM Lane V/C Ratio	-	-	0.953	0.108
HCM Ctrl Dly (s/v)	-	-	64.3	9.1
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	11.1	0.4

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	117	87	124	156	163	274
Future Vol, veh/h	117	87	124	156	163	274
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	77	77	90	90	93	93
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	152	113	138	173	175	295

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	870	224	0
Stage 1	224	-	-
Stage 2	645	-	-
Critical Hdwy	6.4	6.21	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	-
Pot Cap-1 Maneuver	325	818	-
Stage 1	818	-	-
Stage 2	526	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	271	818	-
Mov Cap-2 Maneuver	271	-	-
Stage 1	682	-	-
Stage 2	526	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	33.85	0	3.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	379	671
HCM Lane V/C Ratio	-	-	0.699	0.139
HCM Ctrl Dly (s/v)	-	-	33.8	8.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	5.1	0.5

PROJECTED CONDITIONS WITH THE PROJECT

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 25.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	199	212	189	90	121
Future Vol, veh/h	150	199	212	189	90	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	83	83	66	66	83	83
Heavy Vehicles, %	1	1	0	3	0	3
Mvmt Flow	181	240	321	286	108	146

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	827	464	0
Stage 1	464	-	-
Stage 2	363	-	-
Critical Hdwy	6.41	6.21	-
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	-
Pot Cap-1 Maneuver	343	600	-
Stage 1	635	-	-
Stage 2	706	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	301	600	-
Mov Cap-2 Maneuver	301	-	-
Stage 1	558	-	-
Stage 2	706	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	75.37	0	3.89
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	421	768
HCM Lane V/C Ratio	-	-	0.999	0.111
HCM Ctrl Dly (s/v)	-	-	75.4	9.1
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	12.5	0.4

HCM 7th TWSC
6: George Williams Road & Proposed Entrance

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	273	335	14	37	16
Future Vol, veh/h	6	273	335	14	37	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	-3	-	-10	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	7	303	372	16	41	18

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	388	0	0 697 380
Stage 1	-	-	- 380 -
Stage 2	-	-	- 317 -
Critical Hdwy	4.1	-	- 4.4 5.2
Critical Hdwy Stg 1	-	-	- 3.4 -
Critical Hdwy Stg 2	-	-	- 3.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1182	-	- 604 746
Stage 1	-	-	- 859 -
Stage 2	-	-	- 886 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1182	-	- 600 746
Mov Cap-2 Maneuver	-	-	- 600 -
Stage 1	-	-	- 853 -
Stage 2	-	-	- 886 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.17	0	11.22
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	39	-	-	-	638
HCM Lane V/C Ratio	0.006	-	-	-	0.092
HCM Ctrl Dly (s/v)	8.1	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 7th TWSC
3: Fox Road & George Williams Road

Intersection

Int Delay, s/veh 14.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	96	124	174	181	274
Future Vol, veh/h	130	96	124	174	181	274
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	77	77	90	90	93	93
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	169	125	138	193	195	295

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	918	234	0
Stage 1	234	-	-
Stage 2	684	-	-
Critical Hdwy	6.4	6.21	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.309	-
Pot Cap-1 Maneuver	304	807	-
Stage 1	809	-	-
Stage 2	505	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	247	807	-
Mov Cap-2 Maneuver	247	-	-
Stage 1	657	-	-
Stage 2	505	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	51.04	0	3.36
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	350	716
HCM Lane V/C Ratio	-	-	0.838	0.157
HCM Ctrl Dly (s/v)	-	-	51	8.4
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	7.5	0.6

HCM 7th TWSC

5: George Williams Road & Proposed Entrance

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	319	204	24	15	22
Future Vol, veh/h	36	319	204	24	15	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	-3	-	-10	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	40	354	227	27	17	24

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	253	0	0 674 240
Stage 1	-	-	- 240 -
Stage 2	-	-	- 434 -
Critical Hdwy	4.1	-	- 4.4 5.2
Critical Hdwy Stg 1	-	-	- 3.4 -
Critical Hdwy Stg 2	-	-	- 3.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.3
Pot Cap-1 Maneuver	1324	-	- 615 859
Stage 1	-	-	- 919 -
Stage 2	-	-	- 837 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1324	-	- 592 859
Mov Cap-2 Maneuver	-	-	- 592 -
Stage 1	-	-	- 885 -
Stage 2	-	-	- 837 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.79	0	10.25
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	183	-	-	-	726
HCM Lane V/C Ratio	0.03	-	-	-	0.057
HCM Ctrl Dly (s/v)	7.8	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

PROJECTED CONDITIONS WITH THE PROJECT – AWSC

Intersection

Intersection Delay, s/veh	28.9
Intersection LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	199	212	189	90	121
Future Vol, veh/h	150	199	212	189	90	121
Peak Hour Factor	0.83	0.83	0.66	0.66	0.83	0.83
Heavy Vehicles, %	1	1	0	3	0	3
Mvmt Flow	181	240	321	286	108	146
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	21.6	40	14.5
HCM LOS	C	E	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	43%	43%
Vol Thru, %	53%	0%	57%
Vol Right, %	47%	57%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	401	349	211
LT Vol	0	150	90
Through Vol	212	0	121
RT Vol	189	199	0
Lane Flow Rate	608	420	254
Geometry Grp	1	1	1
Degree of Util (X)	0.911	0.694	0.451
Departure Headway (Hd)	5.396	5.938	6.384
Convergence, Y/N	Yes	Yes	Yes
Cap	662	601	567
Service Time	3.49	4.035	4.384
HCM Lane V/C Ratio	0.918	0.699	0.448
HCM Control Delay, s/veh	40	21.6	14.5
HCM Lane LOS	E	C	B
HCM 95th-tile Q	11.8	5.5	2.3

Intersection

Intersection Delay, s/veh	17.1
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	96	124	174	181	274
Future Vol, veh/h	130	96	124	174	181	274
Peak Hour Factor	0.77	0.77	0.90	0.90	0.93	0.93
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	169	125	138	193	195	295
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay, s/veh	14.1	13	21.6
HCM LOS	B	B	C

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	58%	40%
Vol Thru, %	42%	0%	60%
Vol Right, %	58%	42%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	298	226	455
LT Vol	0	130	181
Through Vol	124	0	274
RT Vol	174	96	0
Lane Flow Rate	331	294	489
Geometry Grp	1	1	1
Degree of Util (X)	0.478	0.475	0.729
Departure Headway (Hd)	5.2	5.822	5.366
Convergence, Y/N	Yes	Yes	Yes
Cap	692	616	670
Service Time	3.252	3.877	3.412
HCM Lane V/C Ratio	0.478	0.477	0.73
HCM Control Delay, s/veh	13	14.1	21.6
HCM Lane LOS	B	B	C
HCM 95th-tile Q	2.6	2.6	6.3

PROJECTED CONDITIONS WITH THE PROJECT – TWSC WITH TURN LANE

Intersection

Int Delay, s/veh 8.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	199	212	189	90	121
Future Vol, veh/h	150	199	212	189	90	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	83	83	66	66	83	83
Heavy Vehicles, %	1	1	0	3	0	3
Mvmt Flow	181	240	321	286	108	146

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	827	464	0	0	608	0
Stage 1	464	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	343	600	-	-	981	-
Stage 1	635	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	600	-	-	981	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	558	-	-	-	-	-
Stage 2	706	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	22.84	0	3.89
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT	
Capacity (veh/h)	-	- 301	600	768	-
HCM Lane V/C Ratio	-	- 0.599	0.4	0.111	-
HCM Ctrl Dly (s/v)	-	- 33.3	14.9	9.1	0
HCM Lane LOS	-	- D	B	A	A
HCM 95th %tile Q(veh)	-	- 3.6	1.9	0.4	-

Intersection

Int Delay, s/veh 9.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	96	124	174	181	274
Future Vol, veh/h	130	96	124	174	181	274
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	1	-	-	-1
Peak Hour Factor	77	77	90	90	93	93
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	169	125	138	193	195	295

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	918	234	0	0	331	0
Stage 1	234	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	304	807	-	-	1240	-
Stage 1	809	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	247	807	-	-	1240	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	30.92	0	3.36
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	247 807	716	-
HCM Lane V/C Ratio	-	-	0.684 0.154	0.157	-
HCM Ctrl Dly (s/v)	-	-	46.2 10.3	8.4	0
HCM Lane LOS	-	-	E B	A	A
HCM 95th %tile Q(veh)	-	-	4.5 0.5	0.6	-

APPENDIX G

ITE TRIP GENERATION DATA

Land Use: 210

Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates, based on a small sample of sites, are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 215), and higher than those for senior adult housing—single-family (Land Use 251). (Source 1008)

Additional Data

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alabama, Arizona, British Columbia (CAN), California, Delaware, Illinois, Kentucky, Massachusetts, Minnesota, Montana, New Jersey, New York, North Carolina, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, and West Virginia.

Source Numbers

356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079, 1204, 1221, 1225, 1236, 1251, 1265, 1267

Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 155

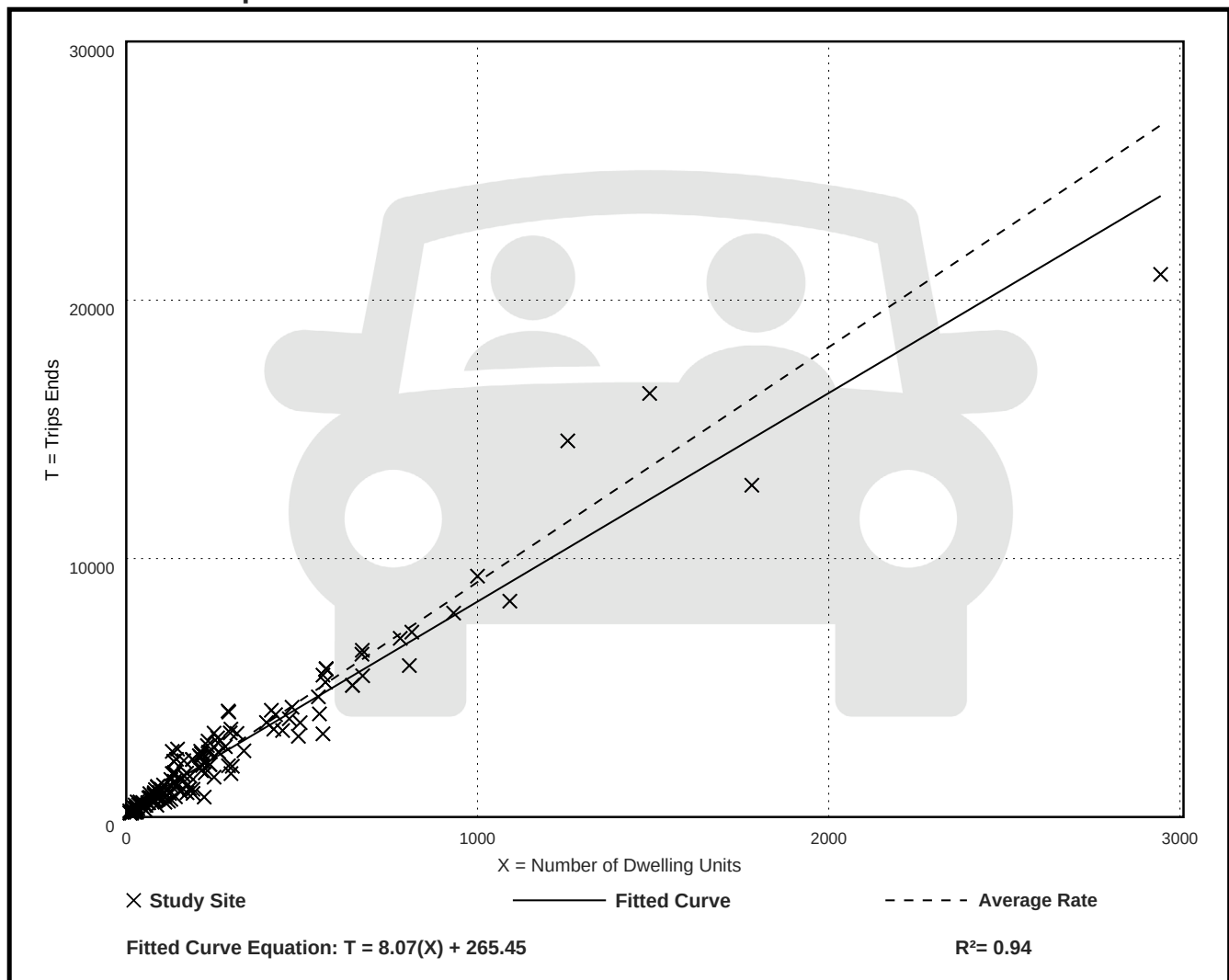
Avg. Num. of Dwelling Units: 261

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.09	3.47 - 23.80	2.29

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 153

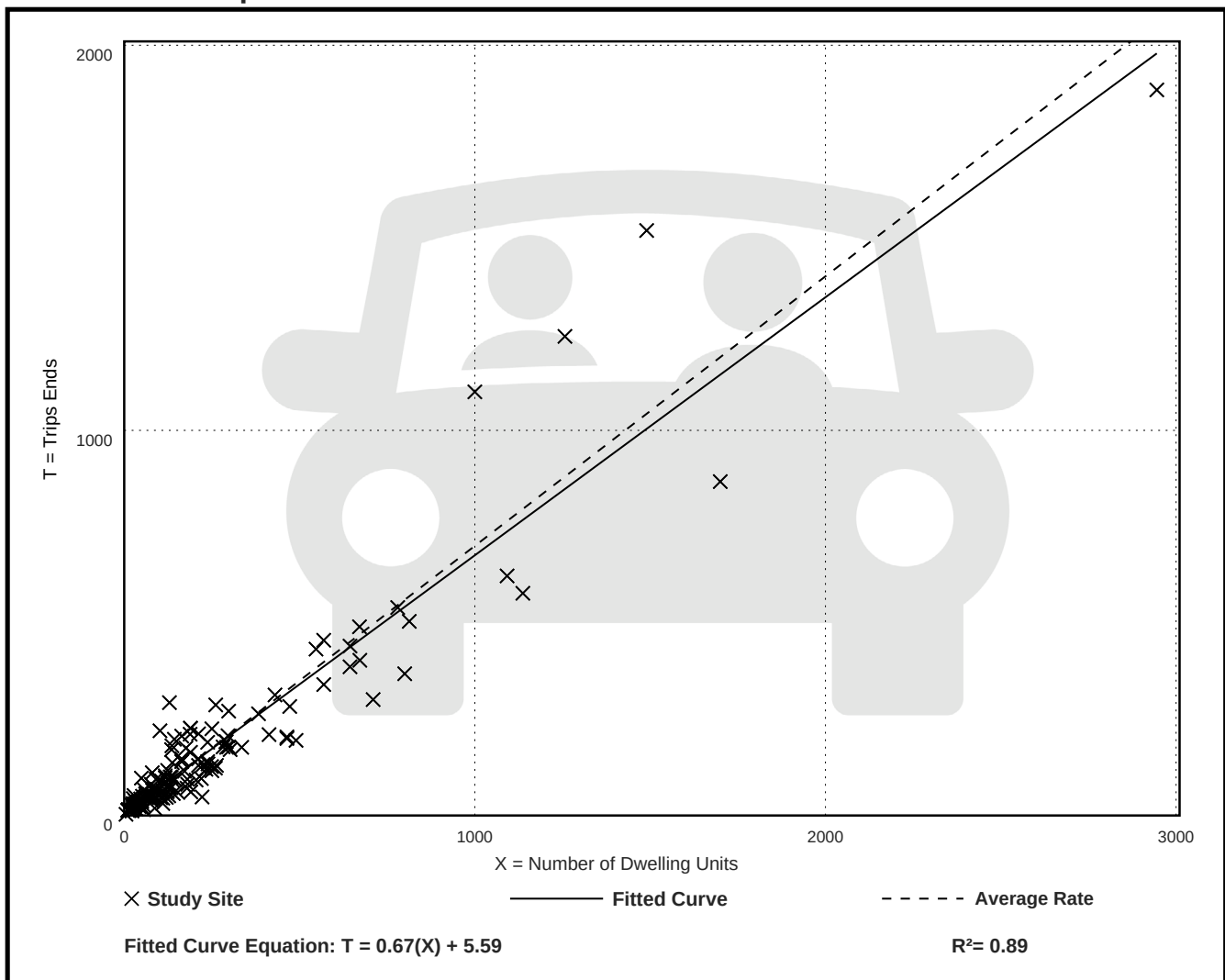
Avg. Num. of Dwelling Units: 239

Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.22 - 2.27	0.26

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 166

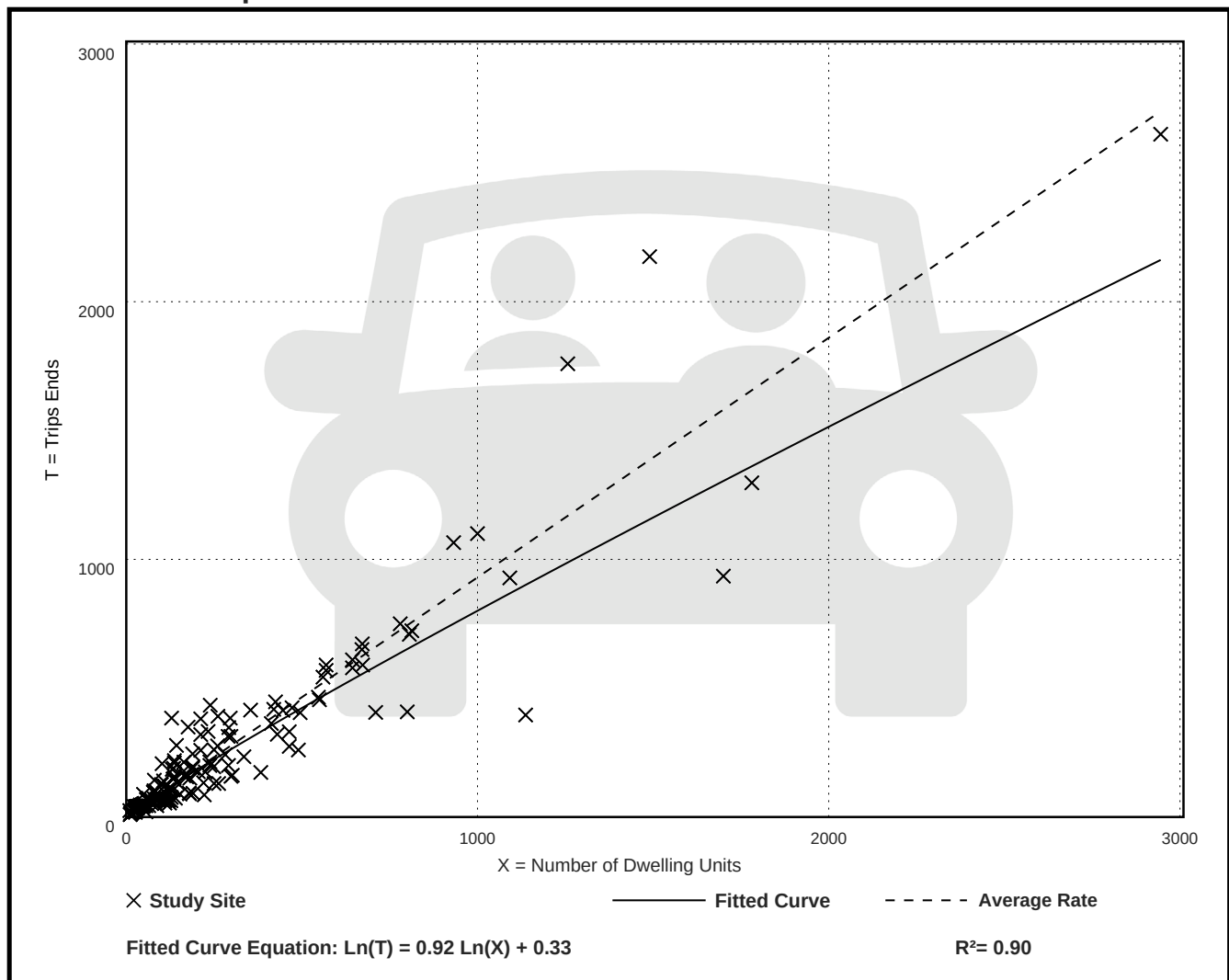
Avg. Num. of Dwelling Units: 266

Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.35 - 2.98	0.33

Data Plot and Equation



TRIP GENERATION FOR GEORGE WILLIAMS ROAD SUBDIVISION

101 Single-Family Detached Houses

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	GENERATED TRAFFIC AM PEAK HOUR			GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#210	Single-Family Detached Housing	101	1,081	27%	73%		62%	38%	
				20	53	73	60	37	97
Total New Volume Site Trips			1,081	20	53	73	60	37	97

ITE Trip Generation Manual, 12th Edition

Trips calculated by using Fitted Curve Equations

TRIP GENERATION FOR GEORGE WILLIAMS ROAD SUBDIVISION

101 Single-Family Detached Houses

101 Residential Houses = X

Weekday:

Fitted Curve Equation: $T = 8.07(X) + 265.45$

$$T = 815.07 + 265.45$$

$$T = 1080.52$$

$$T = \underline{\underline{1,081 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 7 and 9 am:

Fitted Curve Equation: $T = 0.67(X) + 5.59$

$$T = 67.67 + 5.59$$

$$T = 73.26$$

$$T = \underline{\underline{73 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 4 and 6 pm:

Fitted Curve Equation: $\ln(T) = 0.92 \ln(X) + 0.33$

$$\ln(T) = 0.92 * 4.62 + 0.33$$

$$\ln(T) = 4.58$$

$$T = \underline{\underline{97 \text{ trips}}}$$

APPENDIX H

2023 CENSUS BUREAU DATA

Destination Analysis

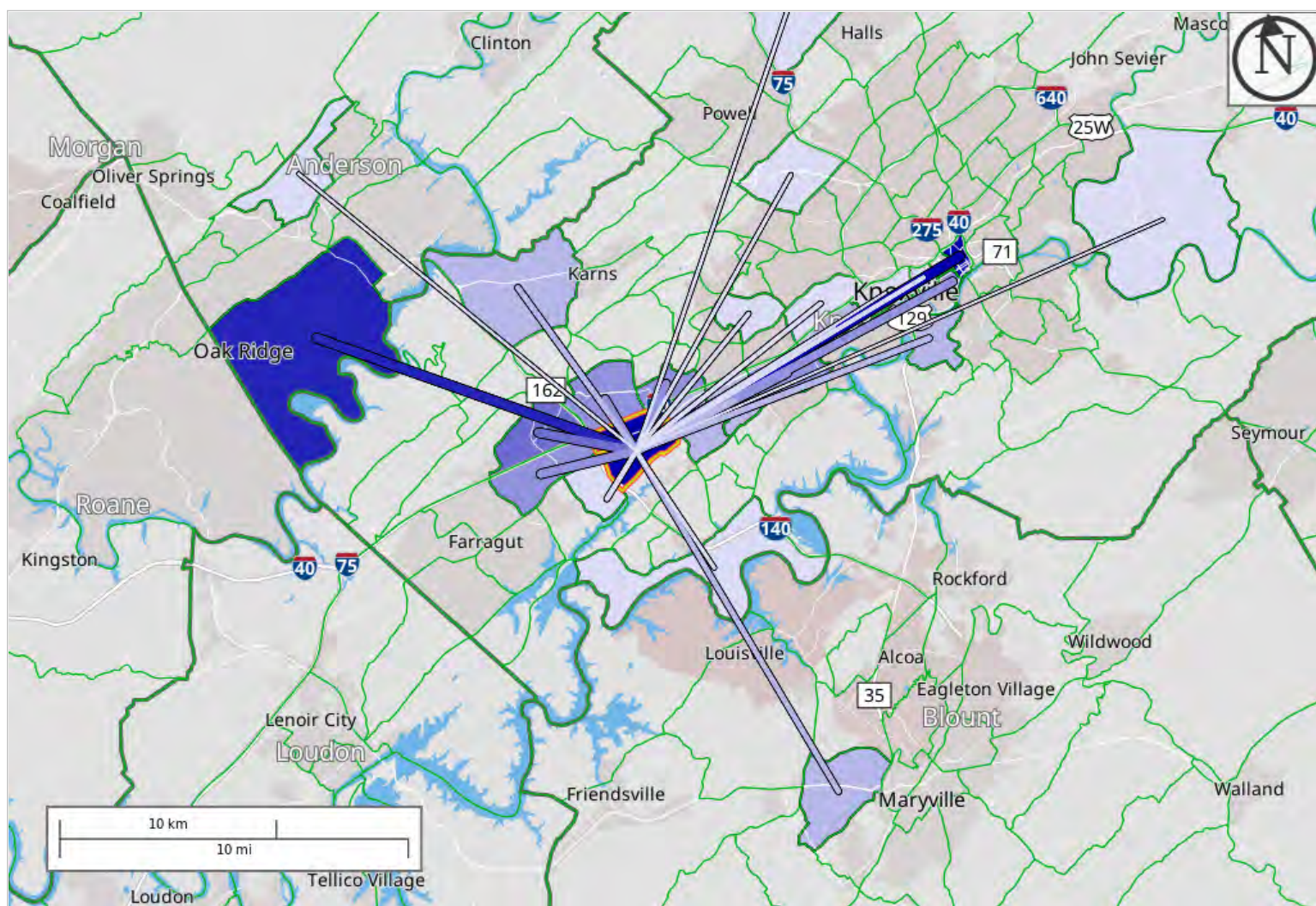
Workers: Living in 57.06 (Knox, TN)

Showing: Employment locations grouped by Census Tracts

Created by the U.S. Census Bureau's OnTheMap <https://onthemap.ces.census.gov> on 08/25/2026

Counts of All Jobs from Home Selection Area to Work Census Tracts in 2023

All Workers



Map Legend

Job Count

- 122 - 139
- 104 - 121
- 86 - 103
- 69 - 85
- 51 - 68
- 33 - 50
- 15 - 32

Selection Areas

- ▭ Home Area

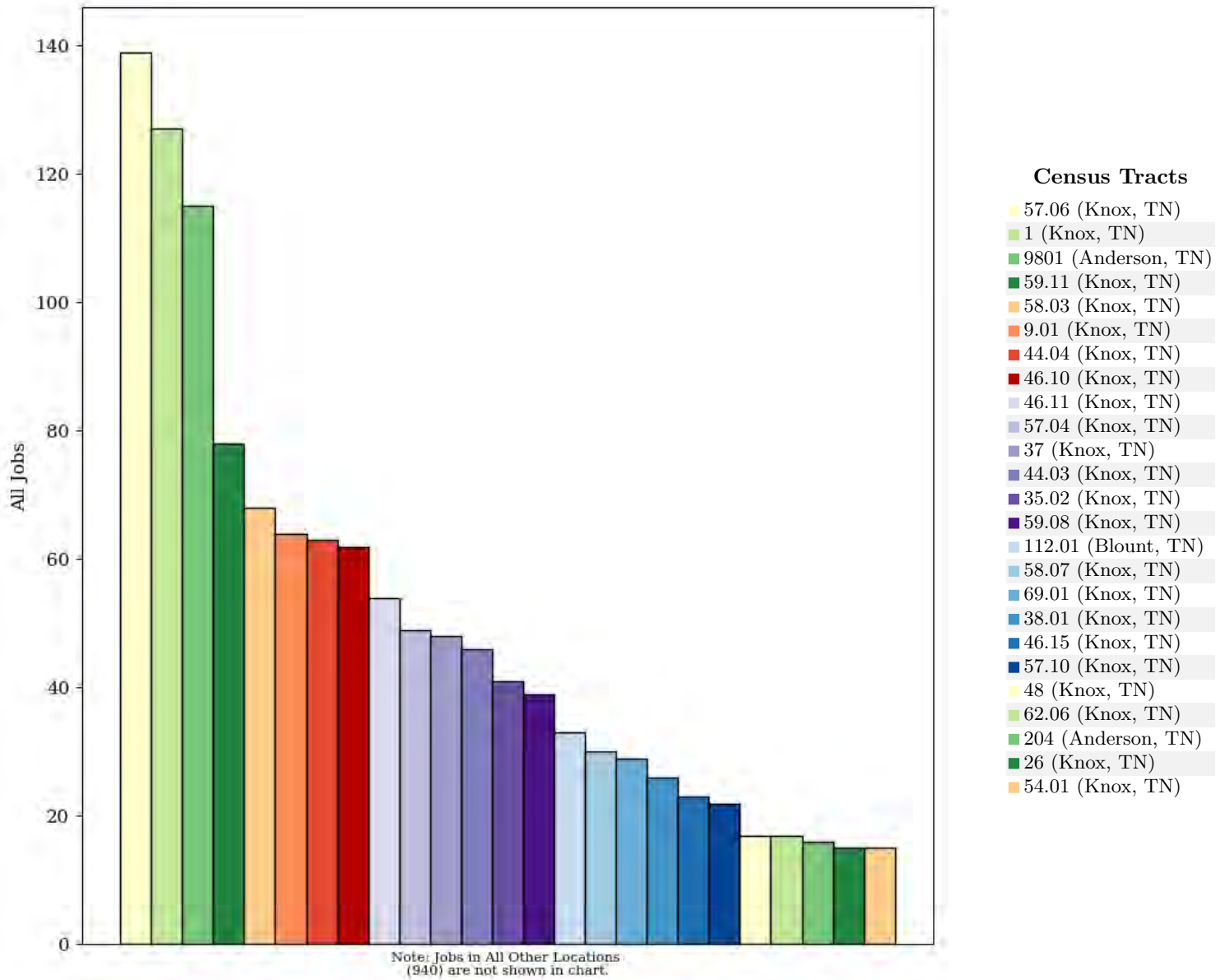
Job Count

- ▭ 122 - 139
- ▭ 104 - 121
- ▭ 86 - 103
- ▭ 69 - 85
- ▭ 51 - 68
- ▭ 33 - 50
- ▭ 15 - 32



All Jobs from Home Selection Area to Work Census Tracts in 2023

All Workers



All Jobs from Home Selection Area to Work Census Tracts in 2023

All Workers

Census Tracts as Work Destination Area	2023	
	Count	Share
All Census Tracts	2,176	100.0%
57.06 (Knox, TN)	139	6.4%
1 (Knox, TN)	127	5.8%
9801 (Anderson, TN)	115	5.3%
59.11 (Knox, TN)	78	3.6%
58.03 (Knox, TN)	68	3.1%
9.01 (Knox, TN)	64	2.9%
44.04 (Knox, TN)	63	2.9%
46.10 (Knox, TN)	62	2.8%
46.11 (Knox, TN)	54	2.5%
57.04 (Knox, TN)	49	2.3%

Census Tracts as Work Destination Area	2023	
	Count	Share
37 (Knox, TN)	48	2.2%
44.03 (Knox, TN)	46	2.1%
35.02 (Knox, TN)	41	1.9%
59.08 (Knox, TN)	39	1.8%
112.01 (Blount, TN)	33	1.5%
58.07 (Knox, TN)	30	1.4%
69.01 (Knox, TN)	29	1.3%
38.01 (Knox, TN)	26	1.2%
46.15 (Knox, TN)	23	1.1%
57.10 (Knox, TN)	22	1.0%
48 (Knox, TN)	17	0.8%
62.06 (Knox, TN)	17	0.8%
204 (Anderson, TN)	16	0.7%
26 (Knox, TN)	15	0.7%
54.01 (Knox, TN)	15	0.7%
All Other Locations	940	43.2%

Additional Information

Analysis Settings

Analysis Type	Destination
Destination Type	Census Tracts
Selection area as	Home
Year(s)	2023
Job Type	All Jobs
Selection Area	57.06 (Knox, TN) from Census Tracts
Selected Census Blocks	84
Analysis Generation Date	08/25/2026 11:16 - OnTheMap 6.26.1
Code Revision	8e0435a3cbc6e8c298add78764d42126c9686cc9
LODES Data Vintage	8.4 (20251202_1657)

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2023).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.

APPENDIX I

KNOX COUNTY TURN LANE VOLUME THRESHOLD WORKSHEETS

Table 4A. Left-Turn Lane Volume Thresholds
For Two-Lane Roadways with a Prevailing Speed of 35 MPH or Less

(If the left-turn volume exceeds the table value a left-turn lane is needed)

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME*					
	100 - 149	150 - 199	200 - 249	250 - 299	300 - 349	350 - 399
100 - 149	300	235	185	145	120	100
150 - 199	245	200	160	130	110	90
200 - 249	205	170	140	115	100	80
250 - 299	175	150	125	105	90	70
300 - 349	155	135	110	95	80	65
350 - 399	135	120	100	85	70	60
400 - 449	George Williams Road at Proposed Entrance 2028 Projected AM EB Left Turns = 6 Left Turn Lane NOT Warranted		90	75	65	55
450 - 499			80	70	60	50
500 - 549			70	65	55	50
550 - 599			65	60	50	45
600 - 649			60	55	45	40
650 - 699			55	50	40	35
700 - 749			50	45	35	30
750 or More			45	40	35	30

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME*					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 599	= / >600
100 - 149	100	80	70	60	55	50
150 - 199	90	75	65	55	50	45
200 - 249	80	72	60	55	50	45
250 - 299	70	65	55	50	45	40
300 - 349	65	60	50	50	45	40
350 - 399	60	55	50	45	40	40
400 - 449	55	50	45	45	40	35
450 - 499	50	45	45	40	35	35
500 - 549	50	45	40	40	35	35
550 - 599	45	40	40	35	35	35
600 - 649	40	35	35	35	35	30
650 - 699	35	35	35	30	30	30
700 - 749	30	30	30	30	30	30
750 or More	30	30	30	30	30	30

* Or through volume only if a right-turn lane exists.

Table 4B. Right-Turn Lane Volume Thresholds
For Two-Lane Roadways with a Prevailing Speed of 35 MPH or Less

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME*					
	<100	100 -199	200 - 249	250 -299	300 - 349	350 - 399
14 Fewer Than 25 25 - 49 50 - 99						
100 - 149 150 - 199	George Williams Road at Proposed Entrance 2028 Projected AM WB Right Turns = 14 Right Turn Lane NOT Warranted					
200 - 249 250 - 299						
300 - 349 350 - 399						
400 - 449 450 - 499						
500 - 549 550 - 599		Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME*					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 600	+ / >600
Fewer Than 25 25 - 49 50 - 99					Yes	Yes Yes
100 - 149 150 - 199			Yes	Yes Yes	Yes Yes	Yes Yes
200 - 249 250 - 299	Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
300 - 349 350 - 399	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

* Or through volume only if a left-turn lane exists.

Table 4A. Left-Turn Lane Volume Thresholds
For Two-Lane Roadways with a Prevailing Speed of 35 MPH or Less

(If the left-turn volume exceeds the table value a left -turn lane is needed)

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME*					
	100 - 149	150 - 199	200 - 249	250 - 299	300 - 349	350 - 399
100 - 149	300	235	185	145	120	100
150 - 199	245	200	160	130	110	90
200 - 249	205	170	140	115	100	80
250 - 299	175	150	125	105	90	70
300 - 349	155	135	110	95	80	65
350 - 399	135	120	100	85	70	60
400 - 449	George Williams Road at Proposed Entrance 2028 Projected PM EB Left Turns = 36 Left Turn Lane NOT Warranted		90	75	65	55
450 - 499			80	70	60	50
500 - 549			70	65	55	50
550 - 599			65	60	50	45
600 - 649			60	55	45	40
650 - 699			55	50	40	35
700 - 749			50	45	35	30
750 or More			45	40	35	30

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME*					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 599	= / >600
100 - 149	100	80	70	60	55	50
150 - 199	90	75	65	55	50	45
200 - 249	80	72	60	55	50	45
250 - 299	70	65	55	50	45	40
300 - 349	65	60	50	50	45	40
350 - 399	60	55	50	45	40	40
400 - 449	55	50	45	45	40	35
450 - 499	50	45	45	40	35	35
500 - 549	50	45	40	40	35	35
550 - 599	45	40	40	35	35	35
600 - 649	40	35	35	35	35	30
650 - 699	35	35	35	30	30	30
700 - 749	30	30	30	30	30	30
750 or More	30	30	30	30	30	30

* Or through volume only if a right-turn lane exists.

Table 4B. Right-Turn Lane Volume Thresholds
For Two-Lane Roadways with a Prevailing Speed of 35 MPH or Less

RIGHT-TURN VOLUME	204 THROUGH VOLUME PLUS LEFT-TURN VOLUME*					
	<100	100 -199	200 - 249	250 -299	300 - 349	350 - 399
24 Fewer Than 25 25 - 49 50 - 99						
100 - 149 150 - 199	George Williams Road at Proposed Entrance 2028 Projected PM WB Right Turns = 24 Right Turn Lane NOT Warranted					
200 - 249 250 - 299						
300 - 349 350 - 399						
400 - 449 450 - 499						
500 - 549 550 - 599		Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME*					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 600	+ / >600
Fewer Than 25 25 - 49 50 - 99					Yes	Yes Yes
100 - 149 150 - 199			Yes	Yes Yes	Yes Yes	Yes Yes
200 - 249 250 - 299	Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
300 - 349 350 - 399	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

* Or through volume only if a left-turn lane exists.

APPENDIX J

VEHICLE QUEUE WORKSHEETS (SIMTRAFFIC 12)

Queuing and Blocking Report

Baseline

Intersection: 3: Fox Road & George Williams Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	210	29	94
Average Queue (ft)	90	1	30
95th Queue (ft)	161	12	72
Link Distance (ft)	1328	741	770
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: George Williams Road & Proposed Entrance

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	35	50
Average Queue (ft)	2	21
95th Queue (ft)	18	43
Link Distance (ft)	1328	605
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report

Baseline

Intersection: 3: Fox Road & George Williams Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	188	25	126
Average Queue (ft)	75	2	48
95th Queue (ft)	143	12	98
Link Distance (ft)	1313	741	770
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: George Williams Road & Proposed Entrance

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	55	41
Average Queue (ft)	10	16
95th Queue (ft)	39	36
Link Distance (ft)	1313	608
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Fox Road & George Williams Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	137	126	89
Average Queue (ft)	69	70	50
95th Queue (ft)	108	106	77
Link Distance (ft)	1328	741	770
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Fox Road & George Williams Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	90	91	168
Average Queue (ft)	51	55	76
95th Queue (ft)	77	81	126
Link Distance (ft)	1313	741	770
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Fox Road & George Williams Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (ft)	114	94	22	99
Average Queue (ft)	50	50	2	30
95th Queue (ft)	87	78	13	74
Link Distance (ft)	1331	1331	741	759
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Fox Road & George Williams Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (ft)	134	73	25	133
Average Queue (ft)	54	35	3	48
95th Queue (ft)	99	59	15	101
Link Distance (ft)	1316	1316	741	759
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

APPENDIX K

SPOT SPEED STUDY

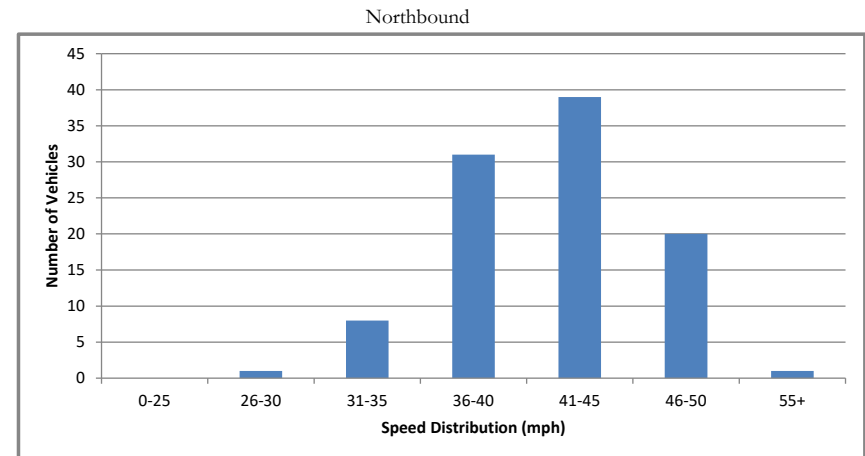
SPOT SPEED STUDY

Location: Fox Road near George Williams Road
 Posted Speed Limit: 30 mph
 Equipment: Bushnell Speedster III Radar Speed Gun
 Direction: Northbound

Date: 9/10/2026
 Weather: Hot/Clear
 Time: 1:00 - 3:45 PM
 Pavement Conditions: Dry

Vehicle #	Speed (mph)
1	45
2	48
3	34
4	38
5	39
6	40
7	33
8	50
9	45
10	46
11	38
12	40
13	46
14	41
15	42
16	46
17	47
18	41
19	31
20	37
21	41
22	42
23	34
24	45
25	36

Vehicle #	Speed (mph)
26	46
27	46
28	47
29	44
30	40
31	44
32	45
33	37
34	40
35	41
36	39
37	42
38	45
39	41
40	44
41	47
42	37
43	36
44	40
45	33
46	48
47	47
48	37
49	36
50	32



SPOT SPEED STUDY

Location: Fox Road near George Williams Road
 Posted Speed Limit: 30 mph
 Equipment: Bushnell Speedster III Radar Speed Gun
 Direction: Northbound

Date: 9/10/2026
 Weather: Hot/Clear
 Time: 1:00 - 3:45 PM
 Pavement Conditions: Dry

51	45
52	36
53	39
54	43
55	45
56	37
57	42
58	42
59	47
60	49
61	48
62	44
63	33
64	38
65	42
66	40
67	44
68	37
69	49
70	45
71	46
72	43
73	45
74	42
75	47

76	41
77	43
78	45
79	34
80	40
81	41
82	39
83	37
84	40
85	38
86	42
87	30
88	36
89	42
90	44
91	42
92	43
93	47
94	46
95	40
96	38
97	52
98	39
99	43
100	42

Northbound

Average speed =
 85th percentile speed =

41.5 mph
 46.0 mph

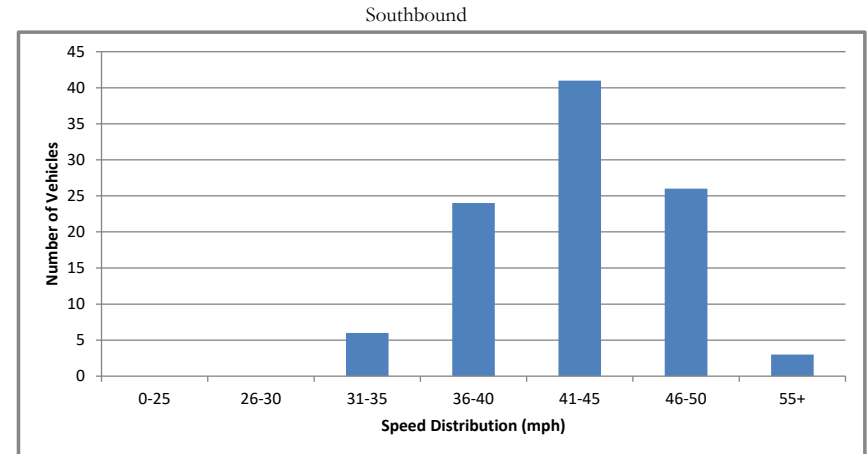
SPOT SPEED STUDY

Location: Fox Road near George Williams Road
 Posted Speed Limit: 30 mph
 Equipment: Bushnell Speedster III Radar Speed Gun
 Direction: Southbound

Date: 9/10/2026
 Weather: Hot/Clear
 Time: 1:00 - 3:45 PM
 Pavement Conditions: Dry

Vehicle #	Speed (mph)
1	36
2	43
3	45
4	52
5	46
6	42
7	42
8	46
9	40
10	48
11	50
12	37
13	50
14	46
15	46
16	39
17	42
18	40
19	44
20	47
21	39
22	47
23	35
24	49
25	50

Vehicle #	Speed (mph)
26	35
27	45
28	42
29	44
30	46
31	44
32	48
33	45
34	41
35	48
36	45
37	42
38	45
39	46
40	38
41	41
42	44
43	40
44	43
45	36
46	39
47	52
48	43
49	44
50	37



SPOT SPEED STUDY

Location: Fox Road near George Williams Road
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 Equipment: Bushnell Speedster III Radar Speed Gun
 Direction: Southbound

Date: 9/10/2026
 Weather: Hot/Clear
 Time: 1:00 - 3:45 PM
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86	53
87	42
88	43
89	50
90	42
91	37
92	40
93	41
94	43
95	43
96	42
97	43
98	38
99	48
100	42

Southbound Average speed = 42.8 mph
 85th percentile speed = 48.0 mph

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