

SUBDIVISION REPORT - CONCEPT/DEVELOPMENT PLAN

► FILE #: 12-SC-22-C AGENDA ITEM #: 21

12-C-22-DP (REVISED) AGENDA DATE: 2/9/2023

POSTPONEMENT(S): 12/8/2022

SUBDIVISION: THE PRESERVE AT WHITES CREEK

▶ APPLICANT/DEVELOPER: W. SCOTT WILLIAMS & ASSOCIATES

OWNER(S): Randy Guinard Cafe International LLC

TAX IDENTIFICATION: 59 00201,002 View map on KGIS

JURISDICTION: County Commission District 8

STREET ADDRESS: 4760 BEVERLY RD (0 NEW BEVERLY BAPTIST CHURCH RD)

► LOCATION: Northeast side of Beverly Rd, north of Greenway Dr

SECTOR PLAN: North City

GROWTH POLICY PLAN: Urban Growth Area (Outside City Limits)

WATERSHED: Whites Creek

APPROXIMATE ACREAGE: 84.56 acres

ZONING:
PR (Planned Residential), F (Floodway)

► EXISTING LAND USE: Agriculture/Forestry/Vacant Land

▶ PROPOSED USE: Attached and detached residential subdivision

SURROUNDING LAND

North: Industrial, Agricultural/Forestry/Vacant -- I-G (General Industrial), I

USE AND ZONING: (Industrial)

South: Single family residential, Rural residential, agricultural/forestry/vacant,

Office, and Industrial -- RB (General Residential), RA (Low Density

Residential), I (Industrial), A (Agricultural)

East: Agricultural/forestry/vacant -- RB (General Residential), I (General

Industrial), F (Floodway)

West: Agricultural/forestry/vacant -- I-G (General Industrial District), HP

(Hillside Protection Overlay), F (Floodplain Overlay)

NUMBER OF LOTS: 196

SURVEYOR/ENGINEER: Scott Williams W. Scott Williams and Associates

ACCESSIBILITY: Access is via Beverly Road, a major collector with a pavement width of 21-ft

within a right-of-way width of 48-ft.

► SUBDIVISION VARIANCES VARIANCES

REQUIRED: 1. Reduce the minimum vertical curve on Road 'A' from K=25 to

K=18.33 at STA 0+93.22

ALTERNATIVE DESIGN STANDARDS REQUIRING KNOXVILLE-KNOX

COUNTY PLANNING COMMISSION APPROVAL

1. Reduce the minimum horizontal curve radius from 250' to 150' on

Road 'A' at STA 0+53.67

- 2. Reduce the minimum horizontal curve radius from 250' to 200' on Road 'B' at STA 2+03.29
- 3. Reduce the minimum horizontal curve radius from 250' to 200' on Road 'B' at STA 17+89.77
- 4. Reduce the minimum street frontage width from 25' to 22' for lots 6-10, 16-20, 26-30, 41-45, 51-55, 61-65, 71-80, 86-90, 96-100, and 106-110.

ALTERNATIVE DESIGN STANDARDS REQUIRING KNOX COUNTY ENGINEERING AND PUBLIC WORKS APPROVAL

1. NONE

STAFF RECOMMENDATION:

Approve the requested variance and alternative design standards based on the justification provided by the applicant and recommendations of the Knox County Department of Engineering and Public Works.

Approve the Concept Plan subject to 11 conditions.

- 1) Connection to sanitary sewer and meeting other relevant utility provider requirements.
- 2) Provision of street names consistent with the Uniform Street Naming and Addressing System within Knox County (County Ord. 91-1-102).
- 3) Certifying that the required sight distance is available along Beverly Road in both directions at the Road 'A' intersection, with documentation provided to the City of Knoxville Department of Engineering for review and approval during the design plan phase. The sight distance shall be certified using design grades at the entrance before grading permits are issued for the site.
- 4) Obtaining all necessary permits from the City of Knoxville for work within the Beverly Road right-of-way.
- 5) Provide guest parking in accordance with Section 3.03.B.1. of the Subdivision Regulations, which allows reduction of the minimum 25-ft street frontage if guest parking is provided throughout the development. Adjustments to the guest parking location may be approved by Planning staff during the design plan phase.
- 6) Providing a 50-ft wide right-of-way stub-out at the eastern terminus of Road 'A' that extends to the eastern property boundary. The stub-out shall be provided on the Final Plat and identified for future connection per section 3.04.C.2.d. of the Subdivision Regulations.
- 7) Land disturbance within the HP area shall not exceed 12.6 acres, as recommended by the slope analysis (attached). The limit of disturbance is to be verified and delineated on the site with high-visibility fencing before grading permits are issued for the site. Undergrowth in the undisturbed HP areas may be cleared for passive recreational uses, such as walking trails. Selective tree removal is permissible for the removal of invasive species or to alleviate safety hazards, such as trees that are falling, dead, or dying.
- 8) Implementing the recommendations of the Transportation Impact Analysis for The Preserve at Whites Creek (AJAX Engineering, 11/16/2022), as revised and approved by Planning Commission staff, Knox County Engineering and Public Works, and City of Knoxville Engineering (see Exhibit A). The City of Knoxville is not requiring the applicant to make off-site improvements. However, sight distance along Beverly Road must be certified per condition #3.
- 9) Meeting all applicable requirements of the Knox County Department of Engineering and Public Works and the City of Knoxville Department of Engineering.
- 10) Before certification of the final plat for the subdivision, establish a home owners association responsible for maintaining common facilities, such as common areas, amenities, private roads, and/or stormwater drainage systems. The PR (Planned Residential) zone requires all common open space to be controlled by an HOA if lots less than 3,000 sqft are created.
- 11) The boundary of the F (Floodway) zone must be provided on the plans submitted for design plan review with Knox County Engineering and Public Works. All uses, including structures, must meet the requirements of the F (Floodway) zone (Section 5.70 of the Knox County Zoning Ordinance). No residential structures are permitted in the F (Floodway) zone per Section 5.70.04.B.1.
- Approve the development plan for an attached and detached residential subdivision with up to 196 dwellings on individual lots, subject to 3 conditions.
 - 1) Meeting all applicable requirements of the Knox County Zoning Ordinance.
 - 2) The maximum height of the attached dwellings shall be 35 feet.
 - 3) The minimum building setback is 20 ft along the Road 'A' frontage of lot 110.

With the conditions noted, this plan meets the requirements for approval in the PR district and the criteria for

approval of a development plan.

COMMENTS:

This proposal is a residential subdivision with 196 lots on 84.56 acres at a density of 2.31 du/ac. There are 110 attached and 86 detached residential house lots.

REZONING AND ALLOWED DENSITY [CORRECTED 2/6/2023 -- added F (Floodway) to the property zoning] In February 2021, Knox County Commission approved rezoning the property from I (Industrial), RB (General Residential), and F (Floodway) to PR (Planned Residential) zoning up to 2.51 du/ac and F (Floodway), as recommended by the Planning Commission (1-E-21-RZ). As documented in the staff report, the recommended density was based on allowing the requested 196 dwelling units on the total acreage of the site, which was assumed to be 78 acres at the time (196 units / 78 acres = 2.51 du/ac). The staff report noted that the applicant requested a density of 3.22 du/ac on the 61 acres (3.22 du/ac x 61 acres = 196 units), which excluded the 16-17 acres in the floodway.

The applicant intends to donate land in and around the floodway to Legacy Parks Foundation. The applicants concern during the rezoning was that the act of donating the land would reduce the total area of the site and therefore reduce the number of residential dwellings allowed. If the land donation happens, it will be after the approval of the concept plan and development plan, so it will not negatively impact the allowed number of dwelling units.

It is staff's opinion that up to 196 dwellings can be requested and approved on this site because the total acreage of the site, including the portion zoned F (Floodway), and the requested 196 dwelling units on the rezoning application were considered when determining the recommended and approved density (dwelling units per acre) for the site. During the rezoning, the assumed acreage of the site was 78 acres. The concept plan states that the site is 84.56 acres. Even though the site is approximately 6 acres larger than previously thought, the number of dwelling units cannot exceed 196.

SITE CONSTRAINTS

This 84-acre site has approximately 40.5 acres in the Hillside Protection (HP) area, and approximately 26.5 acres in the FEMA 500-year floodplain. There are approximately 17 acres that are not constrained (20% of the site), which is where the majority of the lots are located. The slope analysis recommends a maximum disturbance of 12.6 acres in the HP area. The preliminary limit of disturbance proposes 9.5 acres of disturbance in the HP area. Staff is recommending that disturbance within the HP area not exceed 12.6 acres, as recommended by the slope analysis. This is to be verified during the design plan phase and delinaeated with high visibility fencing before grading permits are issued for the site.

ROAD CONNECTIVITY

This 196-lot development has single access from Beverly Road and a single-loaded 26-ft wide road until the first intersection with Road 'B'. The number of dwellings exceeds the long-standing unwritten design policy requiring a second entrance or a boulevard entrance road when a subdivision has more than 150 lots. The purpose of this policy is to address access for emergency services, but it also has the secondary benefit of increasing connectivity when multiple entrances are established.

This site does not have a feasible secondary access point because of the limited frontage on Beverly Road, the stream and rail line to the north, and the ridge to the south. In staff's opinion, a boulevard road cross-section from Beverly Road to the Road 'B' intersection does not provide enough additional benefit to warrant requiring a boulevard in this case. With dwellings located only on one side of the street, the roadway between Beverly Road and Road 'B' will be less congested with on-street parking and vehicles entering and exiting driveways.

A right-of-way stub-out is provided at the eastern terminus of Road 'A'. However, this only provides marginal benefit as secondary access, such as for emergency purposes, if the Beverly Road access is blocked. The only potential road connection to the east is McCampbell Drive, which is narrow with limited opportunity for widening because of the adjacent rail line, and is frequently flooded by Murphy Creek and Whites Creek.

STORMWATER

The site design must meet the standards in the Knox County Stormwater Ordinance. The preliminary stormwater plan on the concept plan includes three (3) detention ponds; one near Beverly Road and two in the eastern half of the development on the north side of Road 'A'.

VARIANCES AND ALTERNATIVE DESIGN STANDARDS

There is one (1) variance and four (4) alternative design standards requested. The variance is to reduce the

minimum vertical curve at the entrance of the subdivision, Road 'A' at Beverly Road, from K=25 to K=18.33. This results in a road grade transition that is sharper than normally required at an intersection with a classified road (collector or arterial). The Beverly Road right-of-way (ROW) is in the City of Knoxville. The Road 'A' connection must meet the City standards for sight distance and road design in the ROW and the County road design standards on the subject site. The City uses AASHTO road design standards which has alternative methods of design to match the needs of the site. The County uses the standards in the Subdivision Regulations, which are not flexible. Once the Road 'A' enters the subject property, a variance is required to match the road design allowed in the City. One reason that a greater K value is required along classified roads is to make it easier, or in some instances feasible, to widen the classified road and tie in the side street with grades that are not too steep. If Beverly Road is ever widened or realigned in the future, it will most likely be to the west side of Beverly Road because of the steep hillside to the east, and it will reduce the sharpness of the S-curve in this section of roadway.

There are three (3) alternative design standard requests to reduce the minimum 250-ft horizontal curve radius. On Road 'A', the request is for a 150-ft radius near the Beverly Road intersection. The larger required radius is less of a concern in this lcoation because vehicles will be traveling at a reduced speed as they slow when approaching the intersection or still accelerating as they enter the site. On Road 'B', there are two requests for 200-ft radii. These horizontal curves are near intersections but they are longer in length so they need to accommodate a slightly greater vehicle speed. The 200-ft horizontal curve meets AASHTO standards for a road design speed of 25 mph, which all residential streets in Knox County are posted.

The other alternative design standard is a request to reduce the minimum lot frontage from 25 ft to 22 ft. Section 3.03.B.1. of the Subdivision Regulations allows the Planning Commission to reduce the minimum street frontage to 20 ft for attached house lots if guest parking is provided throughout the development. Guest parking is provided in several locations on Road 'A' and Road 'B'.

DEVELOPMENT PLAN ANALYSIS PER ARTICLE 6, SECTION 6.50.06 (APPROVAL OR DENIAL)

In the exercise of its administrative judgment, the Planning Commission shall determine if the proposed plan is in harmony with the general purpose and intent of the zoning ordinance and adopted plans.

- 1) ZONING ORDINANCE -- [MODIFIED 2/6/2023 -- added F (Floodway) zone] PR (Planned Residential) up to 2.51 du/ac and F (Floodway):
- a) The PR zone allows detached and attached houses as a permitted use. The administrative procedures for the PR zone require the Planning Commission to approve the development plan before permits can be issued (Article 5, Section 5.13.15).
- b) This PR zone district is approved for a maximum of 2.51 du/ac for the total acreage of the site, but not to exceed 196 dwellings (see the Rezoning and Allowed Density comments). This proposal is for 196 dwelling units at 2.31 du/ac (based on the total acreage on the Concept Plan).
- c) The maximum height is determined by the Planning Commission for any use other than houses and duplexes. Staff recommends a maximum height of 35 ft for the attached dwellings, which is consistent with the maximum height allowed in nearby residentially zoned properties.
- d) The F (Floodway) zone allows open-type uses, subject to approval by the county engineer. A summary of the permitted uses allowed when adjacent to adjacent agricultural, residential, and estates zone districts are as follows: agricultural; roads and utilities; pubic and provide parks; recreational camp, campgrounds, and camp trailer parks; commercial excavation of natural materials and improvements of a stream channel; and yard/rummage sales. See Section 5.70.02.A. of the Knox County Zoning Ordinance for a full list of permitted uses.
- e) The F (Floodway) zoned area is part of the common open space for the subdivision.

2) GENERAL PLAN – DEVELOPMENT POLICIES

- a) Encourage flexible, planned development zones to protect hillsides, woodlands, wildlife habitats, and stream corridors (Policy 6.1) The subject site has both Hillside Protection (HP) and Stream Protection (SP) areas. The slope analysis recommends a maximum of 12.6 acres of disturbance in the HP area. The land disturbance in the HP area proposed in the concept plan is 9.5 acres. The SP area aligns with the FEMA 500-year flood plan. The proposed land disturbance encroaches into the 500-year flood plain only a small amount for the detached residential lots on the north side of Road 'A' (lots 111-155). According to the Knox County Stormwater Ordinance, this is permissible as long as the ground elevation is not raised beyond the "no fill line", which is half the distance between the FEMA floodway and the 100-year floodplain. Exhibit C shows the "no fill line" with a red line.
- b) Ensure that the context of new development, including scale and compatibility, does not impact existing

neighborhoods and communities (Policy 9.3) – The development will consist of detached and attached houses, which is the same as other residentially zoned properties.

c) Encourage a mixture of housing sizes and prices within planned residential developments (Policy 9.8) – This development included a mix of attached and detached houses. This proposal diversifies the housing mix in the area and should provide different price points.

3) NORTH CITY SECTOR PLAN

- a) The property is classified LDR (Low Density Residential), SP (Stream Protection), and HP (Hillside Protection).
- b) The LDR land use allows consideration of up to 5 du/ac. The proposed density is 2.31 du/ac.
- c) There are approximately 40.5 acres in the HP (Hillside Protection). The slope analysis recommends a maximum of 12.6 acres of disturbance in the HP area. The land disturbance in the HP area proposed in the concept plan is 9.5 acres.
- d) The SP (Stream Protection) area aligns with the FEMA 500-year floodplain. The proposed land disturbance encroaches into the 500-year flood plain only a small amount for the detached residential lots on the north side of Road 'A' (lots 111-155). According to the Knox County Stormwater Ordinance, this is permissible as long as the ground elevation is not raised beyond the "no fill line", which is half the distance between the FEMA floodway and the 100-year floodplain. Exhibit C shows the "no fill line" with a red line.

4) KNOXVILLE - FARRAGUT - KNOX COUNTY GROWTH POLICY PLAN

a) The property is within the Urban Growth Boundary. The purpose of the Planned Growth Boundary designation is to encourage a reasonably compact pattern of development, promote the expansion of the Knoxville-Knox County economy, offer a wide range of housing choices, and coordinate the actions of the public and private sectors, particularly with regard to the provision of adequate roads, utilities, schools, drainage and other public facilities and services.

ESTIMATED TRAFFIC IMPACT: A traffic impact study was prepared by the applicant. The findings of that study were used in formulating the recommendations of this staff report.

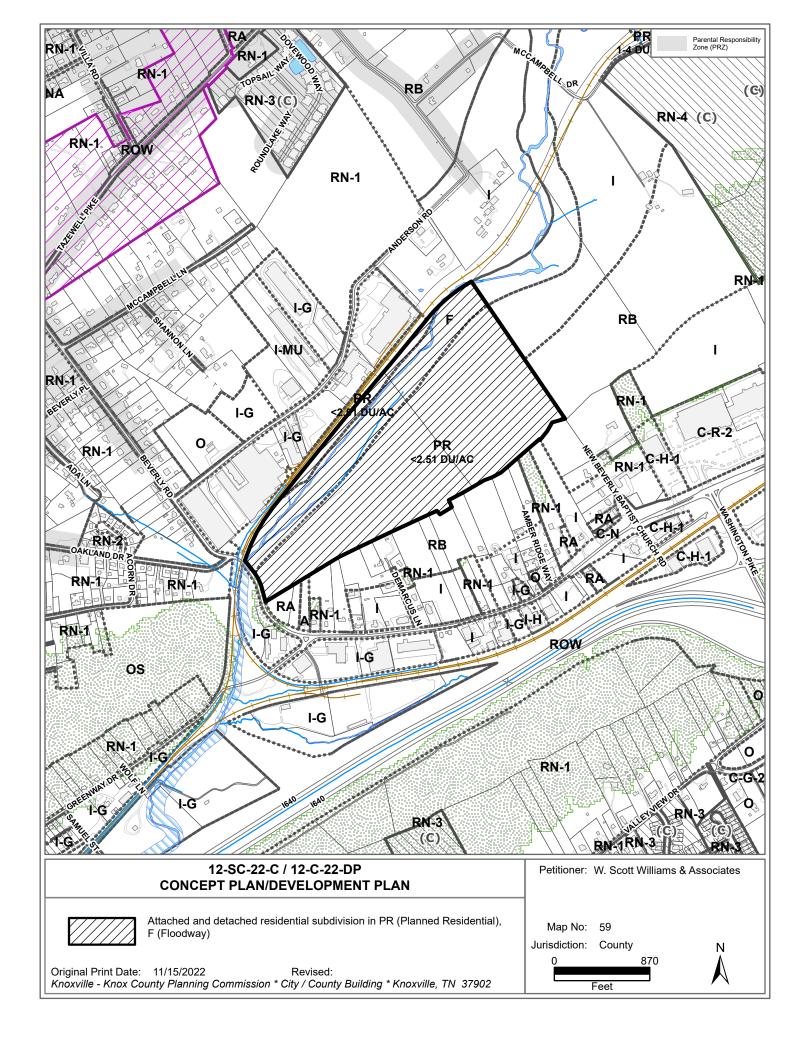
ESTIMATED STUDENT YIELD: 30 (public school children, grades K-12)

Schools affected by this proposal: Shannondale Elementary, Gresham Middle, and Central High.

- Potential new school population is estimated using locally-derived data on public school student yield generated by new housing.
- Students are assigned to schools based on current attendance zones as determined by Knox County Schools. Students may request transfers to different zones, and zone boundaries are subject to change.
- Estimates presume full build-out of the proposed development. Build-out is subject to market forces, and timing varies widely from proposal to proposal.
- Student yields from new development do not reflect a net addition of children in schools. Additions occur incrementally over the build-out period. New students may replace current population that ages through the system or moves from the attendance zone.

Knoxville-Knox County Planning Commission's approval or denial of this concept plan request is final, unless the action is appealed to Knox County Chancery Court. The date of the Knox County Chancery Court hearing will depend on when the appeal application is filed.

The Planning Commission's approval or denial of this development plan request is final, unless the action is appealed either to the Board of Zoning Appeals or to a court of competent jurisdiction within thirty (30) days of the decision being appealed (Knox County, Tennessee Code of Ordinances, Appendix A, Zoning, 6.50.08).



Requested Variances & Alternative Design Standards

12-SC-22-C / 12-C-22-DP- THE PRESERVE AT WHITES CREEK

VARIANCES

1. Reduce the minimum vertical curve on Road 'A' from K=25 to K=18.33 at STA 0+93.22

ALTERNATIVE DESIGN STANDARDS REQUIRING KNOXVILLE-KNOX COUNTY PLANNING COMMISSION APPROVAL

- 1. Reduce the minimum horizontal curve radius from 250' to 150' on Road 'A' at STA 0+53.67
- 2. Reduce the minimum horizontal curve radius from 250' to 200' on Road 'B' at STA 2+03.29
- 3. Reduce the minimum horizontal curve radius from 250' to 200' on Road 'B' at STA 17+89.77
- 4. Reduce the minimum street frontage width from 25' to 22' for lots 6-10, 16-20, 26-30, 41-45, 51-55, 61-65, 71-80, 86-90, 96-100, and 106-110.

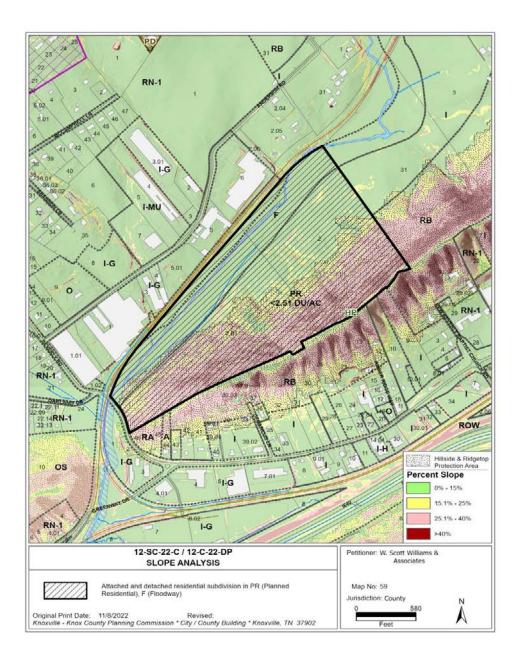
ALTERNATIVE DESIGN STANDARDS REQUIRING KNOX COUNTY ENGINEERING AND PUBLIC WORKS APPROVAL

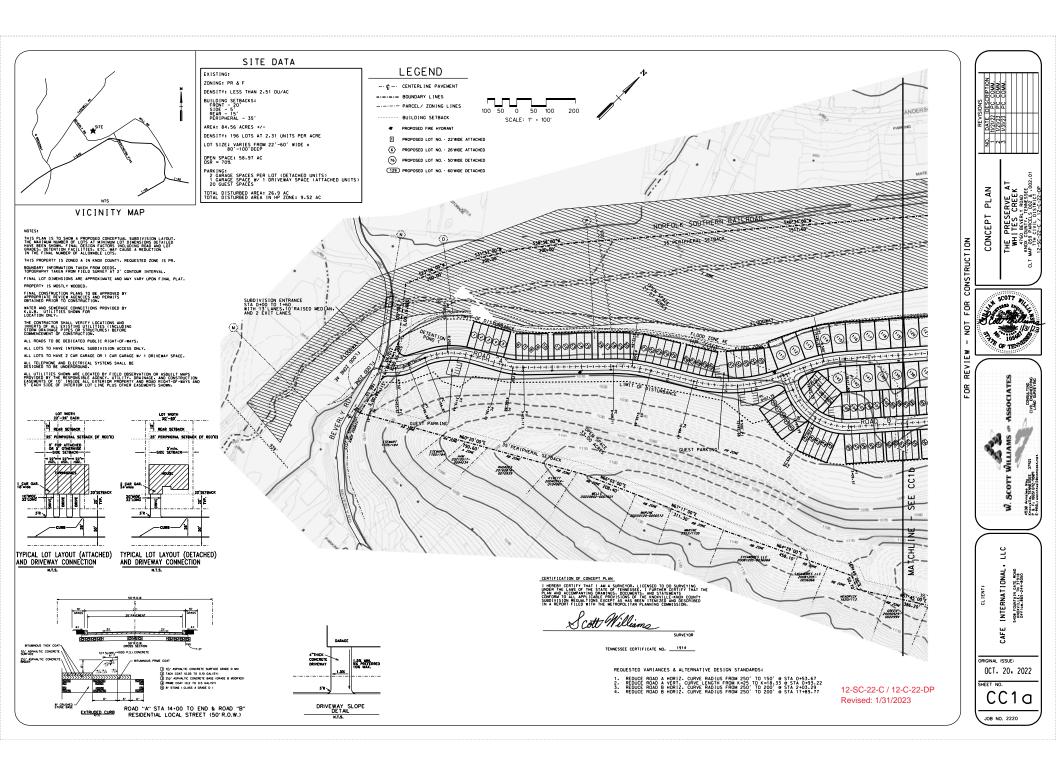
1. NONE

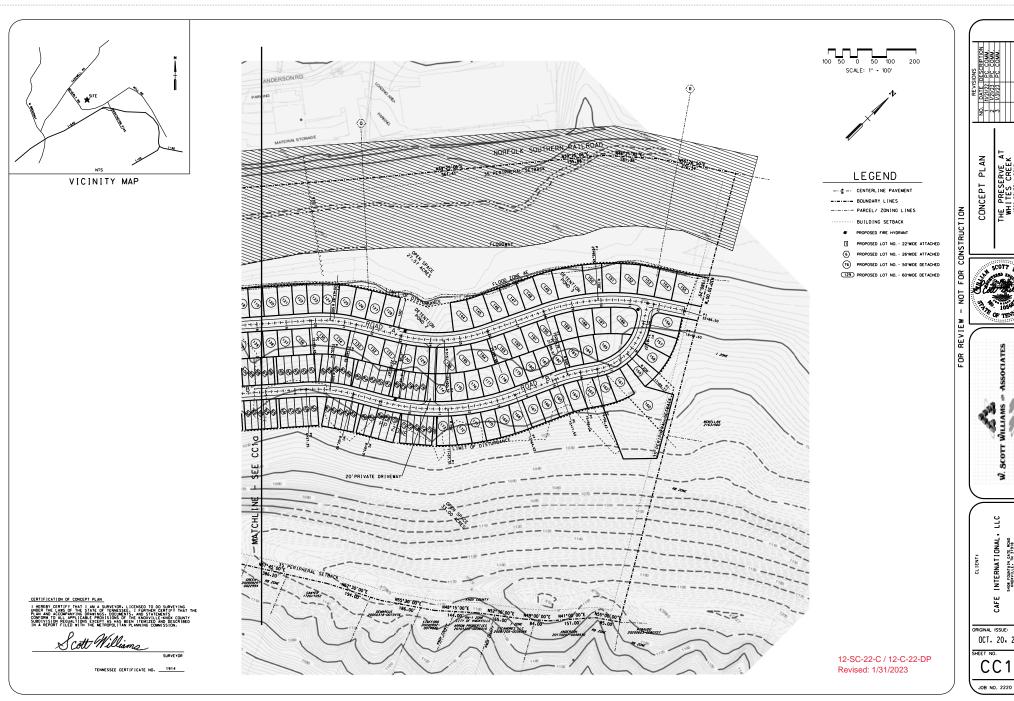
KNOX COUNTY ENGINEERING AND PUBLIC WORKS RECOMMENDATION:

Approve Apr 2/a/23

CATEGORY	ACRES	RECOMMENDED DISTURBANCE BUDGET (Percent)	DISTURBANCE AREA (Acres)
Total Area of Site	80.27		
Non-Hillside	39.77	N/A	
0-15% Slope	3.13	100%	3.1
15-25% Slope	8.99	50%	4.5
25-40% Slope	21.86	20%	4.4
Greater than 40% Slope	6.51	10%	0.7
Ridgetops			
Hillside Protection (HP) Area	40.50	Recommended disturbance budget within HP Area (acres)	12.6
		Percent of HP Area	0.3



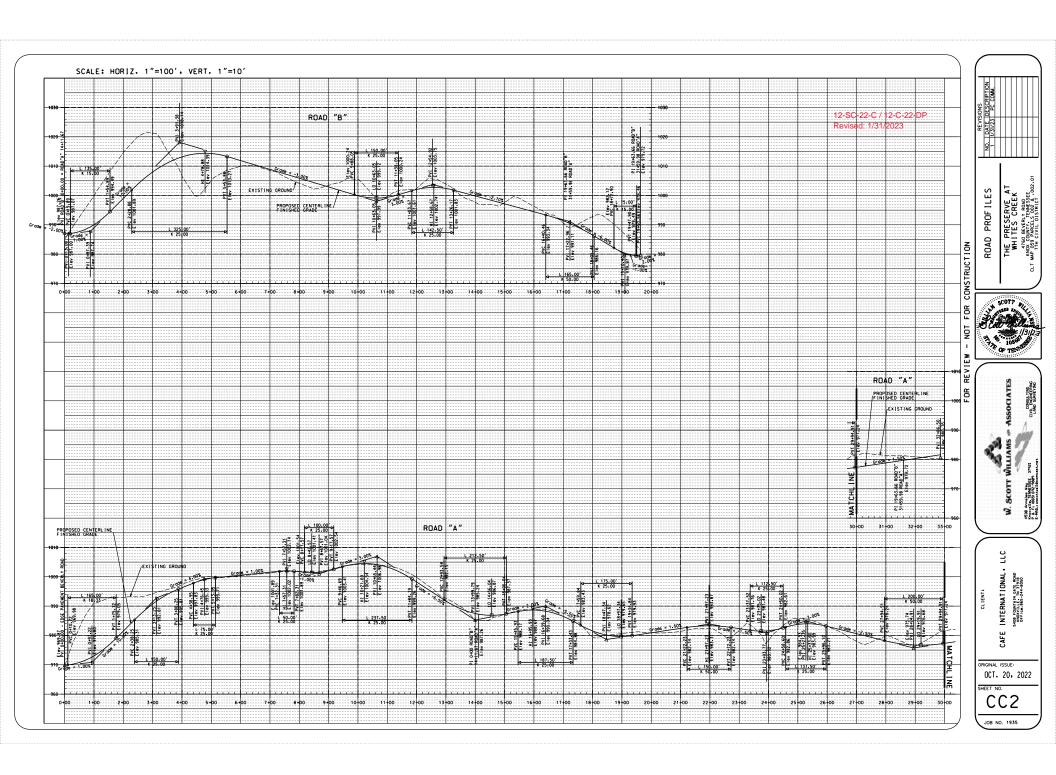




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OCT. 20, 2022

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Transportation Impact Study The Preserve at Whites Creek Knox County, Tennessee



Revised November 2022

Prepared for: Café International, LLC Attn: Randy Guignard 5408 Fountain Gate Road Knoxville, TN 37918



12-SC-22-C / 12-C-22-DP TIS Version 2 11/15/2022

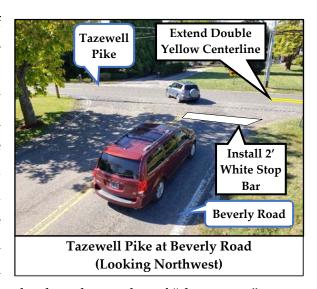
CONCLUSIONS & RECOMMENDATIONS

The following is an overview of recommendations to minimize the transportation impacts of The Preserve at Whites Creek on the adjacent transportation system while attempting to achieve an acceptable traffic flow and safety level.



<u>Tazewell Pike at Beverly Road</u>: The existing and projected 2027 level of service calculations for this intersection resulted in very poor LOS and massively long queues on Beverly Road during peak hours. These poor operations will increase cut-thru traffic on adjacent roadways if remediation is not carried out. These side roads are primarily residential and are not constructed to handle a large influx of vehicles or vehicles speeding to compensate for the perceived lost time due to the longer travel distances to and from Tazewell Pike. The recent placement of speed humps on Beverly Place attests to the traffic volumes spilling from Beverly Road.

In the interim, to reduce the possibility of vehicles clipping each other at the intersection, it is recommended that a 24" white stop bar be installed on Beverly Road and the yellow double centerline on the westbound approach of Tazewell Pike be extended further west. It is believed that these pavement markings would provide a better visual target to designate the appropriate location and turning path for westbound left-turn motorists on



Tazewell Pike turning onto Beverly Road and reduce the number of "short-turns".

There was a study in the past that determined that this intersection met warrants for traffic signalization. Though traffic signal warrants were met in the past, it is not known by the analyst why this intersection was not remediated with a traffic signal. It is highly recommended that this intersection be converted to a traffic signal as soon as feasible. In addition to installing a traffic signal, turn lanes on the approaches at the t-intersection will need to be constructed to remediate the vehicle delays and queues fully. Overall, the existing vehicle delays and queues are not acceptable and are projected to worsen in the future, even without The Preserve at Whites Creek being developed.



As a further investigation into potential remediation for this intersection in the projected 2027 conditions, the intersection was analyzed with a traffic signal to provide some general recommendations based on the results of this study. The traffic signal timing at the intersection was optimized in Synchro software. The intersection was designed to fully contain the projected 95th percentile vehicle queue lengths and result in reasonable LOS. The results of this additional analysis are included in Appendix G, and the results are shown in Table 9.

TABLE 9
2027 INTERSECTION CAPACITY ANALYSIS RESULTS PROJECTED TRAFFIC CONDITIONS (WITH THE PROJECT) AND TRAFFIC SIGNAL

	TRAFFIC	APPROACH/		AM PEAK			PM PEAK	
INTERSECTION	CONTROL	MOVEMENT	LOS a	DELAY b	v/c °	LOS a	DELAY b	v/c °
				(seconds)			(seconds)	
Tazwell Pike (EB & WB) at	_ p ₀	Eastbound	A	5.9		С	30.2	
Beverly Road (NB)	alize	Westbound	В	17.6		В	10.5	
	ign ign	Northbound	С	25.1		C	28.6	
	S	Summary	В	15.5	0.730	С	24.1	0.780

Note: All analyses were calculated in Synchro 11 software and reported using HCM 2000 intersection methodology

The analysis with a traffic signal and the results shown in Table 9 included additional lanes at the intersection. These lanes included a new eastbound right-turn lane on Tazewell Pike with a storage length of 75 feet, a new westbound left-turn lane on Tazewell Pike with a storage length of 100 feet, and a northbound right-turn lane on Beverly Road with a storage length of 125 feet. Compared to the results in Table 6, with the intersection operating as-is with stop conditions on Beverly Road, the vehicle delays for the northbound approach are incredibly reduced with a traffic signal and additional lanes.





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



Beverly Road at Proposed Entrance: The projected 2027 level of service calculations for the Proposed Entrance intersection at Beverly Road resulted in low vehicle delays. The construction of left and right-turn lanes on Beverly Road for entering traffic is not warranted at the Proposed Entrance. Dual exiting lanes are shown in the layout plan, but a single exiting lane for the development entrance will be sufficient.

- 2a) It is recommended that a Stop Sign (R1-1) be installed, and a 24" white stop bar be applied to the Proposed Entrance approach at Beverly Road. The stop bar should be applied a minimum of 4 feet away from the edge of Beverly Road and placed at the desired stopping point that maximizes the sight distance.
- 2b) Sight distances at the Proposed Entrance approach at Beverly Road must not be impacted by future landscaping, signage, or existing vegetation. Based on a posted speed limit of 30-mph on Beverly Road, the required intersection sight distance is 335 feet looking in each direction at the entrance. The stopping sight distance is 200 feet looking to the north and 220 feet to the south at the Proposed Entrance location on Beverly Road. A visual inspection determined that the intersection and stopping sight distances are available at the Proposed Entrance location. The site designer must ensure that these sight distances are accounted for and provided in the design plans.

Since there is existing vegetation and a sharp horizontal curve to the south of the Proposed Entrance on Beverly Road, it is recommended that a registered land surveyor make measurements to determine the available sight distance. Likewise, while the sight distance to the north appears to be more than what is required, it is recommended that the registered land surveyor measure the sight distance to the north as well. The horizontal s-curve alignment of Beverly Road, the railroad structures, and the vegetation along the railroad hinders full sight distance availability.

2c) The 95th percentile vehicle queue calculations for the southbound approach in the projected 2027 conditions on Beverly Road at the Proposed Entrance resulted in 61 feet. This distance is available between the railroad track and the Proposed Entrance location. Due to the hazards presented at an at-grade railroad crossing, it is recommended that the site designer keep this separation between the two.

Keeping the Proposed Entrance on Beverly Road as far south from the railroad and creek crossing helps ensure that any potential backups do not extend back to the track.



Furthermore, due to the low elevation and proximity to Whites Creek, keeping the Proposed Entrance away, there will be a reduced possibility that the entrance will be blocked during significant storm events.

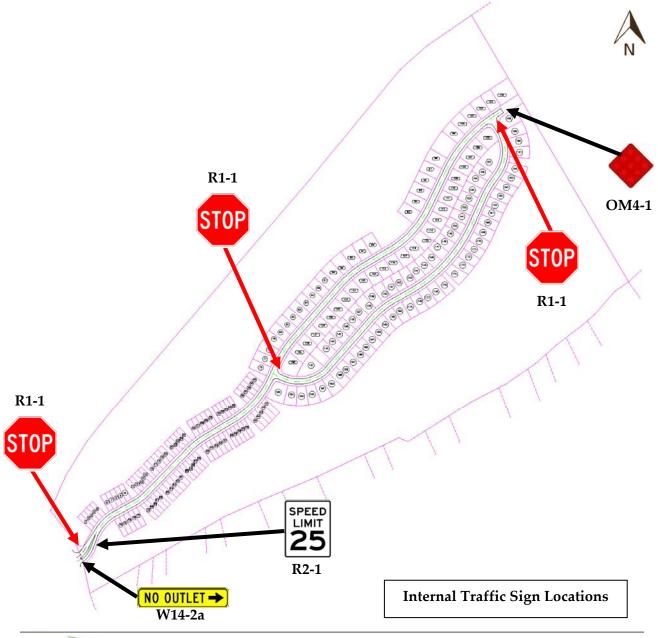
The potential for a secondary access point into the development is non-existent. This non-potential is due to the limited road frontage along Beverly Road, the existing land features, and the lack of other roads around the development property. The existing land features include the mountain ridge with steep topography, Whites Creek, the railroad line, and these all contribute to limited opportunities to develop a secondary access point.





<u>The Preserve at Whites Creek Internal Roads:</u> The layout plan shows one entrance on Beverly Road constructed for the development, as shown in Figure 3.

- 3a) A 25-mph Speed Limit Sign (R2-1) is recommended to be posted near the beginning of the development entrance off Beverly Road. It is recommended that a "No Outlet" Sign (W14-2a) be installed at the front of the development at Beverly Road. This sign can be installed above or below the street name sign.
- 3b) End of roadway signage (OM4-1) should be installed at the eastern end of Road "A" if a stub road is constructed. Stop Signs (R1-1) with 24" white stop bars and other traffic signage are recommended to be installed at the internal locations, as shown below:





- 3c) Sight distance at the new internal road intersections must not be impacted by signage, parked cars, or future landscaping. With a proposed speed limit of 25-mph in the development, the internal intersection sight distance is 250 feet. The required stopping sight distance is 155 feet for a level road grade. The site designer should ensure that these internal sight distance lengths are met.
- 3d) All drainage grates and covers for the residential development must be pedestrian and bicycle safe.
- 3e) The site designer should include a parking area and a centralized mail delivery center within the development if directed by the local post office. The site plan does not show a general location in the development, but a specific plan with a parking area should be designed and provided if required.
- 3f) For residential subdivisions with a single access point and more than 150 units, the County has a long-standing unwritten design policy requiring a boulevard road typical section at the entrance. This policy is to ensure access to the subdivision during potential emergencies. Since the proposed layout of The Preserve at Whites Creek only includes one means of ingress and egress and will have 195 units, the subdivision entrance is recommended to be designed and constructed with a boulevard roadway section. At a minimum, the boulevard section should have a 10-foot median with 2 18-foot lanes within 60 feet of right-of-way. Typically, a boulevard road section is designed and constructed to the first intersecting street within the development, which would be Road "B" in this case.
- All road grade and intersection elements should be designed to AASHTO, TDOT, the City of Knoxville, and Knox County specifications and guidelines to ensure proper operation.





<u>Other Transporation Considerations</u>: Other transportation-related considerations include the following:

4a) It is recommended that a "Do Not Stop on Tracks" (R8-8) sign be installed to provide additional awareness regarding the railroad crossing if an unexpectedly long vehicle queue forms on the southbound approach of Beverly Road at the intersection with the Proposed Entrance. The sign should be located on the right-hand side of Beverly Road on the near side (north side) of the railroad grade crossing facing southbound traffic.



Do Not Stop on Tracks (R8-8)

4b) According to Google Street Maps, as recently as February 2019, a "Narrow Bridge" (W5-2) sign was installed for southbound traffic on Beverly Road just north of the railroad crossing and south of the intersection with Oakland Drive. This sign is no longer installed. To match the existing warning sign for northbound traffic on Beverly Road before the bridge and to provide advance warning, this signage should be reinstalled. Its previous location may need re-examination



Narrow Bridge (W5-2)

since the image in Google Maps shows the signage leaning backward, suggesting that a larger vehicle turning right from Oakland Drive to southbound Beverly Road may have struck and pushed it over.

4c) The existing bridge alignment and width on Beverly Road adjacent to the rail crossing are not ideal. Still, it has sufficient width (just over 20 feet) even though it does make some motorists driving larger vehicles uncomfortable to cross simultaneously, as observed. However, this bridge, along with the s-curvature of Beverly Road and the railroad crossing, does seem to reduce vehicle speeds in the vicinity and acts as a "natural" traffic calming measure.

Addendum to:

12-SC-22-C / 12-C-22-DP

TIS Version 2

Addendum Date: 1/30/2023

Original TIS Version 2 Date: 11/15/2022



11812 Black Road Knoxville, Tennessee 37932 Phone (865) 556-0042 ajaxengineering@gmail.com

January 30, 2023

PROJECT NAME: The Preserve at Whites Creek

TO: Knoxville-Knox County Planning

SUBJECT: Memo for The Preserve at Whites Creek Transportation Impact Study (TIS) (12-SC-22-C/12-C-22-DP)

Knoxville-Knox County Planning, Knox County Engineering, & City of Knoxville Staff:

An email from Mike Conger, PE, dated January 30th, 2023, requested a response to address the number of proposed dwelling units and types being revised in The Preserve at Whites Creek development site plan.

The final TIS submitted on November 15th, 2022, for this development was based on trip generation calculations for 120 single-family detached houses and 75 multi-family attached townhouses in The Preserve at Whites Creek. The following table was included in this report:

TABLE 5
TRIP GENERATION FOR THE PRESERVE AT WHITES CREEK
120 Single-Family Detached Homes & 75 Multi-Family Attached Townhouses

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	AM	ENERATE TRAFFIC PEAK HC	OUR	PM	ENERATE TRAFFIC PEAK HC	OUR
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
	Single-Family			26%	74%		63%	37%	
#210	Detached	120	1,193	23	65	88	74	44	118
	Housing			23	63	00	74	44	118
Local Trip	Multi-Family			22%	78%		55%	45%	
Rate	Attached	75	737	0	22	41	33	27	(0
Rate	Townhouses			9	32	41	33	27	60
Total	New Volume Site	Trips	1,930	32	97	129	107	71	178

ITE Trip Generation Manual, 11th Edition and Local Trip Rates

Trips calculated by using Fitted Curve Equations

Since the final TIS submittal, the site plan designed by W. Scott Williams has been revised and includes a different mixture of residential types. The new site plan includes 86 single-family detached houses and 110 multi-family attached townhouses. The updated trip generation is presented in the following table, and the calculations are attached to the end of this memo:

UPDATED TRIP GENERATION FOR THE PRESERVE AT WHITES CREEK - 1/30/2023

86 Single-Family Detached Homes & 110 Multi-Family Attached Townhouses

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	AM	ENERATE TRAFFIC PEAK HC	OUR	PM	ENERATI TRAFFIC PEAK HO	OUR
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
	Single-Family			26%	74%		63%	37%	
#210	Detached Housing	86	878	17	48	65	54	32	86
Local Trip	Multi-Family			22%	78%		55%	45%	
Rate	Attached Townhouses	110	1,040	13	45	58	46	38	84
Tota	l New Volume Site	Trips	1,918	30	93	123	100	70	170
									•

ITE Trip Generation Manual, 11th Edition and Local Trip Rates

Trips calculated by using Fitted Curve Equations

Comparing the before and after shows that the updated total number of trips generated results in a slight reduction, as shown below:

REDUCTION IN NUMBER OF GENERATED TRIPS	GENERATED DAILY TRAFFIC	GENERATED TRAFFIC AM PEAK HOUR		GENERATED TRAFFIC PM PEAK HOUR			
		ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
Total New Volume Site Trips	-12	-2	-4	-6	-7	-1	-8
							•

Since the change in residential types resulted in an overall reduction of projected generated trips, the site plan revision does not alter the recommendations presented in the final TIS submitted on November 15th, 2022.

If you have any questions or further comments, please feel free to contact me.

Sincerely,

Ajax Engineering, LLC Robert W. Jacks, P.E.

UPDATED TRIP GENERATION FOR THE PRESERVE AT WHITES CREEK - 1/30/2023 86 Single-Family Detached Houses

86 Residential Houses = X

Weekday:

Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68

$$Ln(T) = 0.92 * 4.45 + 2.68$$

Ln(T) = 6.78

T = 878 trips

Peak Hour of Adjacent Traffic between 7 and 9 am:

Fitted Curve Equation: Ln(T) = 0.91 Ln(X) + 0.12

$$T = 0.91 * 4 + 0.12$$

Ln(T) = 4.17

T = 65 trips

Peak Hour of Adjacent Traffic between 4 and 6 pm:

Fitted Curve Equation: Ln(T) = 0.94 Ln(X) + 0.27

$$Ln(T) = 0.94 * 4.45 + 0.27$$

Ln(T) = 4.46

T = 86 trips

UPDATED TRIP GENERATION FOR THE PRESERVE AT WHITES CREEK - 1/30/2023 110 Multi-Family Attached Townhouses

110 Residential Houses = X

Weekday:

Fitted Curve Equation: $T = 15.193(X)^{0.899}$

$$T = 15 * 68.42$$

T = 1,040 trips

Peak Hour of Adjacent Traffic between 7 and 9 am:

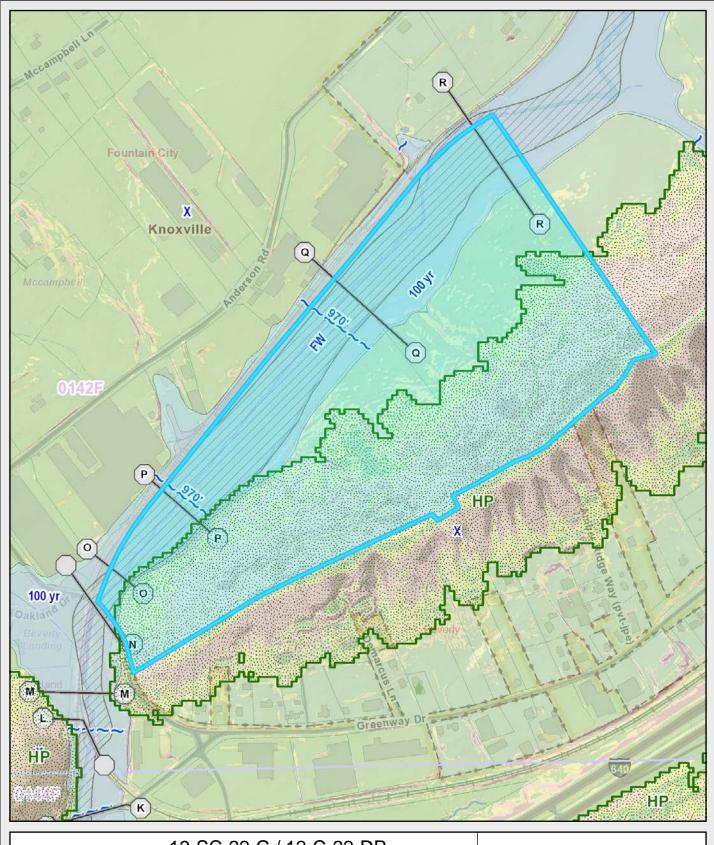
Fitted Curve Equation: $T = 0.758(X)^{0.924}$

T = 58 trips

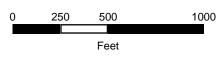
Peak Hour of Adjacent Traffic between 4 and 6 pm:

Fitted Curve Equation: T = 0.669(X)+10.069

$$T = 0.669 * 110 + 10.07$$



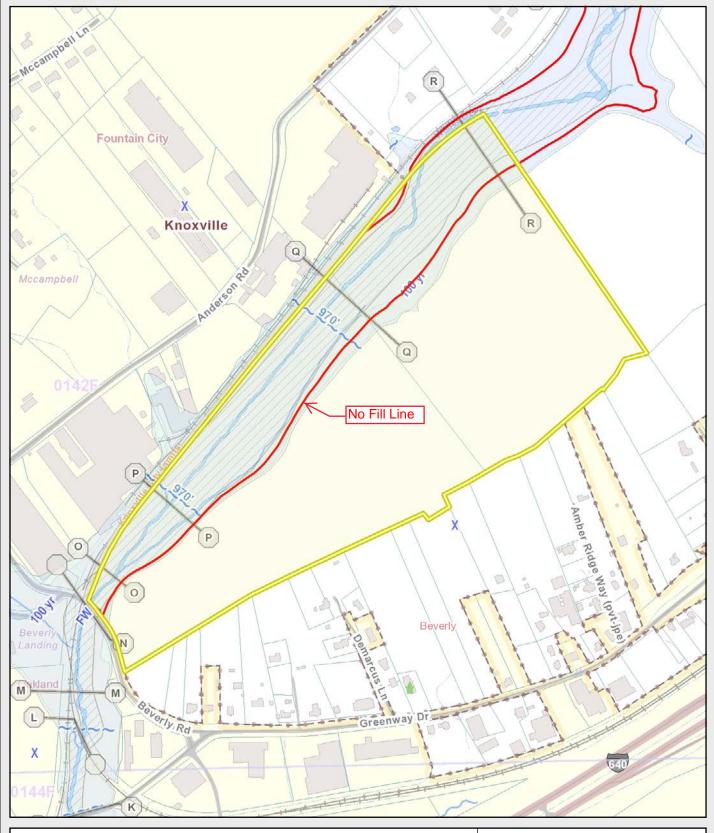


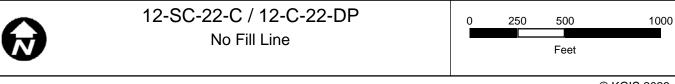


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Development Request

		DEVELOPMENT	SUBDIVIS	ION	ZONING
	annin	✓ Development Plan☐ Planned Development☐ Use on Review / Special Use☐ Hillside Protection COA	✓ Concept ☐ Final Pla		☐ Plan Amendment ☐ Sector Plan ☐ One Year Plan ☐ Rezoning
W. Scott	Williams & Associat	es			
Applicant	t Name			Affiliation	
10/25/20	022	12/8/2022	12-SC-22	-C / 12-C-22-D	P
Date Filed	d	Meeting Date (if applicable)	File Num	ber(s)	
CORRE	ESPONDENCE	All correspondence related to this application	n should be directea	to the approved	contact listed below.
W. Scott Name / C		Villiams and Associates			
4530 Ann	nalee Way Way Knox	xville TN 37921			
Address					
865-692- Phone / E	9809 / wscottwill@ @ Email	comcast.net			
CURRE	ENT PROPERTY IN	IFO			
Randy Gu	uinard Cafe Internat	ional LLC 2109 Dutch Valley Dr Knoxville	e TN 37918	865-244	-8050
Owner Na	ame (if different)	Owner Address		Owner F	Phone / Email
4760 BEV	/ERLY RD / 0 NEW B	EVERLY BAPTIST CHURCH RD			
Property	Address				
59 0020	1,002			84.56 ad	cres
Parcel ID		Part o	of Parcel (Y/N)?	Tract Siz	e
Knoxville	Utilities Board	Knoxville Utilitie	es Board		
Sewer Pro		Water Provider			Septic (Y/N)
STAFF	USE ONLY				
Northeas	st side of Beverly Rd	, north of Greenway Dr			
General L	ocation				
City	Commission District	8 PR (Planned Residential), F (Floodway)		Agriculture/Fore	estry/Vacant Land
✓ Count	District	Zoning District		Existing Land U	se
North Cit	ty	LDR (Low Density Residential), HP (Hillside I	Protection), S	Jrban Growth	Area (Outside City Limit
Planning :	Sector	Sector Plan Land Use Classification	(Growth Policy P	lan Designation

12-SC-22-C Printed 10/27/2022 8:26:37 AM

DEVELOPMENT REQUEST					
✓ Development Plan ☐ Planne☐ Hillside Protection COA		on Review / S	Special Use Non-residential	Related City	Permit Number(s)
Home Occupation (specify)					
Other (specify) Attached and det	ached residential subdivisio	n		1	
SUBDIVSION REQUEST					
The Preserve at Whites Creek				Related Rezo	oning File Number
Proposed Subdivision Name				-	
			196		
Unit / Phase Number ✓ Sp	olit Parcels	Total Nu	ımber of Lots Created	1	
Additional Information					
Attachments / Additional Requi	rements				
ZONING REQUEST					
Zoning Change				Pending P	lat File Number
Proposed Zoni	ng			-	
□ Plan					
Amendment Proposed Pla	n Designation(s)			1	
	revious Zoning Requests				
Additional Information					
STAFF USE ONLY	_				T
PLAT TYPE			Fee 1		Total
☐ Staff Review ☐ Planning	g Commission		\$1,600.00		
ATTACHMENTS					
Property Owners / Option Hold		•	Fee 2		
ADDITIONAL REQUIREMENT COA Checklist (Hillside Protection					
☐ Design Plan Certification (Final I			Fee 3		-
✓ Site Plan (Development Reques	t)				
☐ Traffic Impact Study	. 51				
Use on Review / Special Use (Co	oncept Plan)				-
AUTHORIZATION					
	W. Scott Williams & A	Associates			10/25/2022
Applicant Signature	Please Print				Date
DI /5 1					
Phone / Email	Pandy Coinard Cafe I	Intornations	luc.		10/25/2022
Property Owner Signature	Randy Guinard Cafe I Please Print	iitei iiationa	ILLC		10/25/2022 Date

I declare under penalty of perjury the foregoing (i.e., he/she/they is/are the owner of the property and that the application and all associated materials are being submitted with his/her/their consent) is true and correct.

12-SC-22-C Printed 10/27/2022 8:26:37 AM

	4		
Pla	an	nin NOX COUNTY	g

Development Request SUBDIVISION ZO

ZONING

Planning KNOX COUNTY	☐ Development Plan ☐ Planned Development ☐ Use on Review / Special Use ☐ Hillside Protection COA	☑ Concept Plan ☐ Final Plat	☐ Plan Amendment ☐ SP ☐ OYP ☐ Rezoning
W. Scott William Applicant Name	s é Associates	Engil	neer ion
10/24/2022 Date Filed	12/8/2022 Meeting Date (if applicable)	12-SC-22-	File Number(s) C_12-C-22-DP
CORRESPONDENCE Applicant Property Ow	All correspondence related to this application		
Scott Williams	W.S	SCOTT WILLIAMS &	
4530 Annalee Wa	ky Knox	aville TN State	3792) ZIP
865-692-9809 Phone	wscottwill @ coma		211
CURRENT PROPERTY INFO			
Cate Internations Property Owner Name (if difference of New Beverly Bapt 4760 Beverly Rd. Property Address	Property Owner Addres	Dr. Knox, TN 3791 059 002 059 00201 Parcel ID	8 865-244-8050 Property Owner Phone
KUB	KUB		
Sewer Provider	Water Provider		Septic (Y/N)
Λ	ortheast side of Beverly Rd, north of G	Greenway Dr	
Parcel to NW of Agarry 12	Sand Disc	ty Baptis Church K	
General Location	Fand	Tract Size	6 acres
☐ City 🛛 County 👸 District	> PR < 2.51 DU/AC Zoning District	> Agfor Vac Existing Land Use	
North City	LDR & HP & SP		n Growth
Planning Sector	Sector Plan Land Use Classification		olicy Plan Designation

DEVELOPMENT REQUEST			
☐ Development Plan ☐ Use on Review / Special Use ☐ Hillside ☐ Residential ☐ Non-Residential Home Occupation (specify)	Relate	d City Permit Number(s)	
Other (specify) Attached and detached residential subdivi	ision		
SUBDIVISION REQUEST			
The Presence at Whites Creek Proposed Subdivision Name		Relate	d Rezoning File Number
Unit / Phase Number Combine Parcels Divide Parcel	196		-21-RZ
Other (specify) Attached and detached residential subc	otal Number of Lo division	ts Created	
☐ Attachments / Additional Requirements			
ZONING REQUEST			
☐ Zoning Change		Pend	ing Plat File Number
Proposed Zoning □ Plan Amendment Change			
Proposed Plan Designation(s)	***************************************		
Proposed Density (units/acre) Previous Rezoning Reques	sts		
Other (specify)			
STAFF USE ONLY		•	
PLAT TYPE	Fee 1		Total
☐ Staff Review ☐ Planning Commission ATTACHMENTS	102	Concept Plan	
☐ Property Owners / Option Holders ☐ Variance Request	Fee 2		
ADDITIONAL REQUIREMENTS		1	\$1,600
 □ Design Plan Certification (Final Plat) □ Use on Review / Special Use (Concept Plan) 	Fee 3		-
☐ Traffic Impact Study			
COA Checklist (Hillside Protection)			
AUTHORIZATION			
Scott Miller Scott WILL	JAMS	101	12/22
Applicant Signature Please Print		Date	
865-692-9809 WSGO-HWILL	@ comca	st.net	
Email			,
roperty owner signature Please print	Guigno	10/14 Date	1/22
declara lados applicados aprilha facilitados printidos p		/Date	

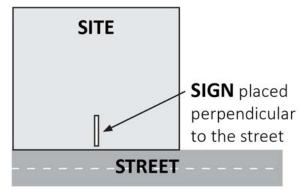
I declare under penalty of perjury the foregoing [i.e., he/she/they is/are the owner of the property and that the application and all associated materials are being submitted with his/her/their consent] is true and correct.



Sign Posting & Removal Requirement

Revised April 2021

The Administrative Rules and Procedures of the Knoxville-Knox County Planning Commission require a sign to be posted on the property for each application subject to consideration by the Planning Commission, including the following applications: rezoning, plan amendment, concept plan, use on review/special use, planned development, right-ofway closure, and name change.



The required public notice sign(s) will be provided by Planning to the applicant when an application is submitted. If an application is submitted electronically, Planning staff will post the required sign. If a replacement sign(s) is needed, the applicant is responsible for picking up the new sign(s) from Planning and will be charged \$10 for each replacement.

LOCATION AND VISIBILITY

The sign must be posted on the nearest adjacent/frontage street and in a location clearly visible to vehicles traveling in either direction. If the property has more than one street frontage, the sign should be placed along the street that carries more traffic. Planning staff may recommend a preferred location for the sign to be posted at the time of application.

TIMING

The sign(s) must be posted **not less than 12 days prior to the scheduled Planning Commission public hearing** and must remain in place until the day after the meeting. In the case of a postponement, the sign can either remain in place or be removed and reposted not less than 12 days prior to the next Planning Commission meeting. The applicant is responsible for removing the sign after the application has been acted upon by the Planning Commission.

The individual below is responsible for posting and removing the sign(s) provided consistent with the above guidelines and between the dates of:

11/25/2022	and	12/9/2022
(applicant or staff to post sign)		(applicant to remove sign)
Applicant Name: W. Scott Williams & Ass	sociates	
Date:10/25/22		X Sign posted by Staff
File Number: 12-C-22-C_12-C-22-DP		Sign posted by Applicant