

# **SUBDIVISION REPORT - CONCEPT**

► FILE #: 7-SB-21-C	AGENDA ITEM #: 2
	AGENDA DATE: 7/8/202
SUBDIVISION:	CAPITAL DRIVE
APPLICANT/DEVELOPER:	PATRICK SCHAAD TRUSTEE
OWNER(S):	Schaad Residential Real Estate
TAX IDENTIFICATION:	131 122 & 122.24 (PART OF) <u>View map on KGI</u>
JURISDICTION:	County Commission District 3
STREET ADDRESS:	9933 & 0 Kingston Pk.
LOCATION:	North side of Kingston Pike at Capital Drive
SECTOR PLAN:	Southwest County
GROWTH POLICY PLAN:	Urban Growth Area
WATERSHED:	Sinking Creek
APPROXIMATE ACREAGE:	2.153 acres
ZONING:	CB (Business and Manufacturing)
EXISTING LAND USE:	Retail store, vacant land
PROPOSED USE:	Commercial subdivision
SURROUNDING LAND USE AND ZONING:	North: Vacant land - CB (Business and Manufacturing) South: Kingston Pike - OP (Office Park) and PC (Planned Commercial) East: Church - C-H-1 (Highway Commercial) West: Retail and vacant land - I-G (General Industrial) and C-H-2 (Highway Commercial)
NUMBER OF LOTS:	4
SURVEYOR/ENGINEER:	David Harbin / Batson, Himes, Norvell & Poe
ACCESSIBILITY:	Access is via Kingston Pike, a major arterial street with 4 travel lanes and a continuous middle turn lane within an 87-foot right-of-way.
SUBDIVISION VARIANCES REQUIRED:	

#### **STAFF RECOMMENDATION:**

Postpone the Concept Plan application until the August 12, 2021, Planning Commission meeting as requested by staff for the reasons listed below. (The applicant is requesting approval of the Concept Plan and a variance to reduce the Kingston Pike right-of-way from 50-FT to 44-FT).

Staff is recommending postponement of the concept plan to allow the applicant to provide additional details on the concept plan as outlined below.

1) Show all major recommendations of the Capital Drive-Kingston Pike Retail Development Traffic Impact Study (CDM Smith, revised June 21, 2021) on the concept plan (see Exhibit A), including the reconfiguration of the northbound approach on Capital Drive.

2) Correct the right-of-way and curb radii at the intersection of the new road and Kingston Pike. The minimum radii in commercial and industrial zones at intersections is 75-FT, however, this can be reduced to 50-FT with

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the approval of City or County Engineering. The proposed radii appear to be 25-FT which would require approval of a variance by the Planning Commission.

3) Removal of the westbound acceleration lane for vehicles turning right from the new road onto Kingston Pike.

4) Provide a preliminary detention pond plan for Lot #4 to demonstrate that the modified parking lot for the existing retail store (GemStore) can feasibly remain in compliance with the zoning standards.

5) Show a sidewalk along the Kingston Pike frontages of lots 1 and 4.

6) Provide either a 5-FT sidewalk with a 2-FT planting strip or a 7-FT wide sidewalk along the new road. The proposed sidewalk has a width of 5-FT without the planting strip.

#### COMMENTS:

This proposal is for a nonresidential subdivision located on the north side of Kingston Pike at the Capital Drive intersection that includes four lots and a new 3-lane public road with a sidewalk on one side that is approximately 400-FT long. It is anticipated that in the future, this new road will be extended further to the north and potentially connect to Parkside Drive. The subject property and the new road are located in Knox County (outside the City limits), however, the right-of-way for Kingston Pike and Capital Drive are within the City of Knoxville. So, the new road must meet the standards for Knox County but the Kingston Pike/Capital Drive intersection improvements must meet the requirements of the City of Knoxville and the Tennessee Department of Transportation.

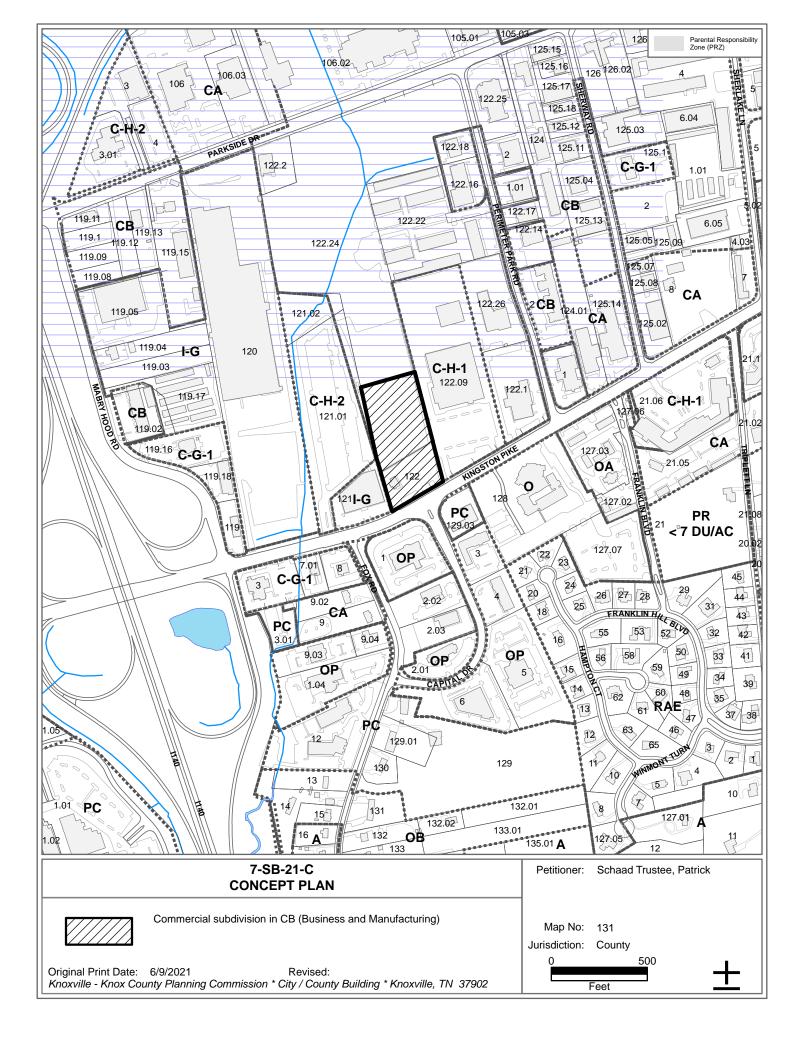
The traffic signal at this Kingston Pike intersection must be modified to accommodate this new road and the Capital Drive intersection on the south side of this intersection needs to be reconfigured to function properly with the construction of the new road. When Capital Drive was constructed, it was in Knox County and was subsequently annexed into the City of Knoxville. There is a landscape island with a directory sign for the office development in the middle of Capital Drive at the Kingston Pike intersection. It is unknown when this sign was installed but it and the landscape island are in the public right-of-way and must be removed as part of the intersection improvements to create a dedicated left-turn lane.

The City of Knoxville requires sidewalks to be installed along road frontages when a property is developed or redeveloped, so a sidewalk along the Kingston Pike frontage, which is in the City of Knoxville, will require a sidewalk. The developer can make a formal request to the City of Knoxville Director of Engineering for a waiver to this requirement, however, this has not been requested as of the publication of this staff report and there is no guarantee this waiver will be approved. The existing detention ponds on lots 1 and 4 are constructed right up to the Kingston Pike right-of-way so the installation of sidewalks would require them to be moved further away from Kingston Pike. These detention ponds will be modified as part of the installation of the new road and can be relocated as part of that process. While there are no existing sidewalks in the immediate area on Kingston Pike, if the detention ponds remain in their current location, it will be much more difficult to install sidewalks in the future

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: Not applicable.

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



## CAPITAL DRIVE-KINGSTON PIKE RETAIL DEVELOPMENT KNOX COUNTY, TENNESSEE

## TRANSPORTATION IMPACT ANALYSIS



Prepared for: ALL ELEVEN GENERAL PARTNERSHIP

**Prepared by:** 



7-SB-21-C Revised: 6/21/2021

# **JUNE 2021**

### CAPITAL DRIVE-KINGSTON PIKE RETAIL DEVELOPMENT KNOX COUNTY, TENNESSEE

### TRANSPORTATION IMPACT ANALYSIS

**Prepared for** 

All Eleven General Partnership 150 Major Reynolds Place Knoxville, Tennessee 37919



May 2021 Revised June 2021

Prepared by

CDM Smith 1100 Marion Street, Suite 300 Knoxville, Tennessee 37921

### **EXECUTIVE SUMMARY**

CDM Smith is pleased to submit this report to address the transportation impact analysis and access requirements of the proposed retail developments at the intersection of Kingston Pike (S.R. 1) and Capital Drive, in Knox County, TN. The basis of this study required the collection of traffic data, generation of anticipated traffic volumes for the proposed site and development of projected traffic volumes for normal growth and from the potential site. Analyses of the resulting traffic projections were conducted to determine the capacity and levels of service for the intersection of Capital Drive and Kingston Pike.

This transportation impact analysis follows guidelines and procedures as recommended by the Institute of Transportation Engineers (ITE), Knoxville-Knox County Planning (formerly MPC), Knox County Engineering and Public Works (EPW), the City of Knoxville Traffic Engineering Department, and the Tennessee Department of Transportation (TDOT). The study of this development required the collection of traffic data, development of future traffic volumes, generation of anticipated traffic volumes to and from the proposed development, analysis of the resulting traffic conditions, and the development of necessary recommendations to mitigate any resulting traffic impacts.

This study evaluated existing and projected traffic conditions with and without the proposed site. Background traffic was determined using a 1.0-percent compounded annual growth rate until the horizon buildout year of 2026. Trip generation for the proposed buildout of a 2,500 square foot (SF) coffee/donut shop with a drive-through window and two-10,000 SF retail developments was determined using the ITE Trip Generation, 10<sup>th</sup> Edition. Capacity and level of service (LOS) analysis for the projected turning movements were conducted using Synchro, version 10, and the Highway Capacity Manual 6<sup>th</sup> Edition methodologies.

Analysis results of existing conditions for 2021 found that the study intersection currently operates at acceptable levels of service during the AM peak hour but declines to failing conditions during the PM peak hour, likely due to the high volumes of northbound left-turning vehicles from Capital Drive. Analysis of 2026 projected conditions provided results that indicates acceptable operation of the study intersection can be attained through mitigation measures of exclusive turn lanes, phasing modification, and signal split optimization.



### RECOMMENDATIONS

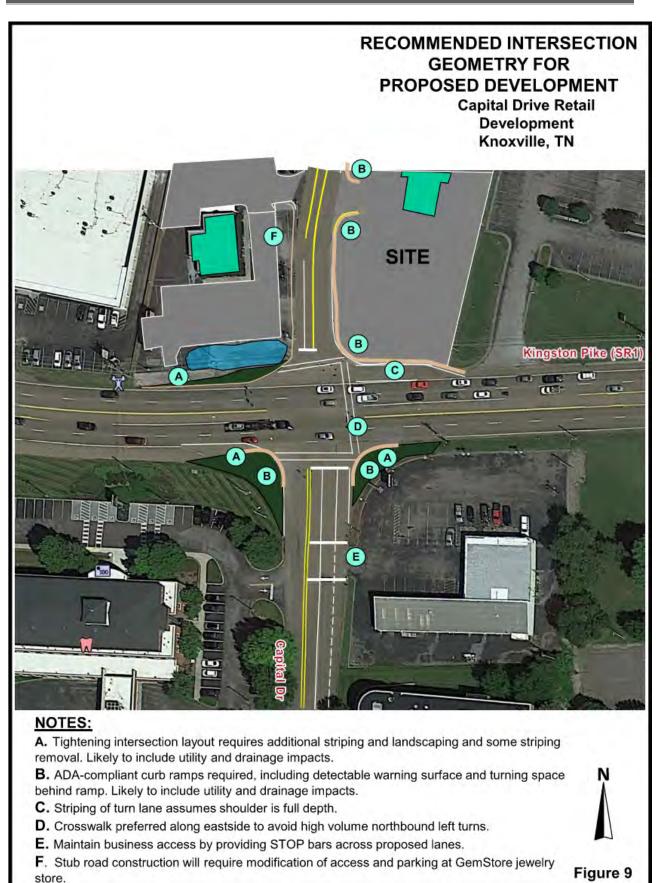
The analyses conducted identifies the following recommendations:

- Construct approximately 400 feet of a three-lane roadway north of Kingston Pike (S.R. 1) to provide access to the existing GemStore jewelry store, proposed coffee/donut shop, and two proposed retail developments.
- Provide 100-foot storage for a left-turn lane on the new connector stub road at the southbound approach to Kingston Pike as shown in **Figure 9**.
  - Ensure there are no driveway openings to the GemStore and proposed retail developments within this storage length.
- Reconfigure the northbound approach on Capital Drive to provide a 300-foot storage leftturn lane, a separate through lane, and a separate right-turn lane as shown in **Figure 9**.
  - This will require the removal of the landscaped median and relocation of the monument sign in the median. If the removal and relocation are unfeasible, the northbound approach can maintain its existing configuration and provide a split-phased operation for the northbound and southbound approaches.
  - The northbound and southbound approaches can also operate with split-phased operation with a three-lane configuration (NBL, NBL-T, NBR). Though there is slight improvement to delays and v/c ratios, this configuration worsens queueing conditions for the northbound approach. Also, if lane distributions vary more evenly than our assumptions, additional queueing may occur.
  - Maintain existing Do Not Block Driveway sign (R10-7 mod) at the existing access to the Broadway Carpets business on Capital Drive. Provide STOP bar striping across all northbound lanes to support sign.
  - Provide adequate distance between the turning path of the proposed northbound left-turn lane and the STOP bar locations of the eastbound travel lanes.
- Provide a 50-foot storage westbound right-turn lane on Kingston Pike via appropriate striping as shown in **Figure 9**.
- City of Knoxville staff have indicated that sidewalks will likely be required both internally along the new connector stub of Capital Drive and along the Kingston Pike road frontage. This will require the construction of sidewalk and ADA-compliant curb ramps along the proposed Kingston Pike westbound right-turn lane to Capital Drive, around the radii of the new connector stub road, and any connecting corners of the study intersection.
- Provide crosswalk striping from the northwest to northeast to southeast corners of the study intersection as shown in **Figure 9**.
- Post STOP signs (R1-1) for exiting traffic from the GemStore, proposed coffee/donut shop, and proposed retail strip development driveways located along the new connector road north of Kingston Pike.
- Modify signal operations of existing span-wire system to include appropriate signal parameters to facilitate the proposed connector stub road, recommended turn lanes, and pedestrian accommodations, which include:
  - Provide protected-permissive phasing for eastbound left-turn with additional signal heads and phasing and timing updates.



- Provide protected-permissive phasing for northbound left-turn with additional signal heads and phasing and timing updates.
- Should the northbound and southbound approaches utilize split-phased operation, provide the appropriate signal heads and phasing and timing updates.
- Provide countdown pedestrian signal heads with audible ADA-compliant pushbuttons, and pedestrian signs. Signal phasing and timing updates should be provided for this pedestrian crossing maneuver.
- Minimize landscaping, using low growing vegetation, and signing at the proposed street access to insure that safe sight distance is maintained.
- Intersection and roadway design should conform to the recommended standards and practices of TDOT, AASHTO, ITE, the City of Knoxville Traffic Engineering Department, and Knox County EPW.







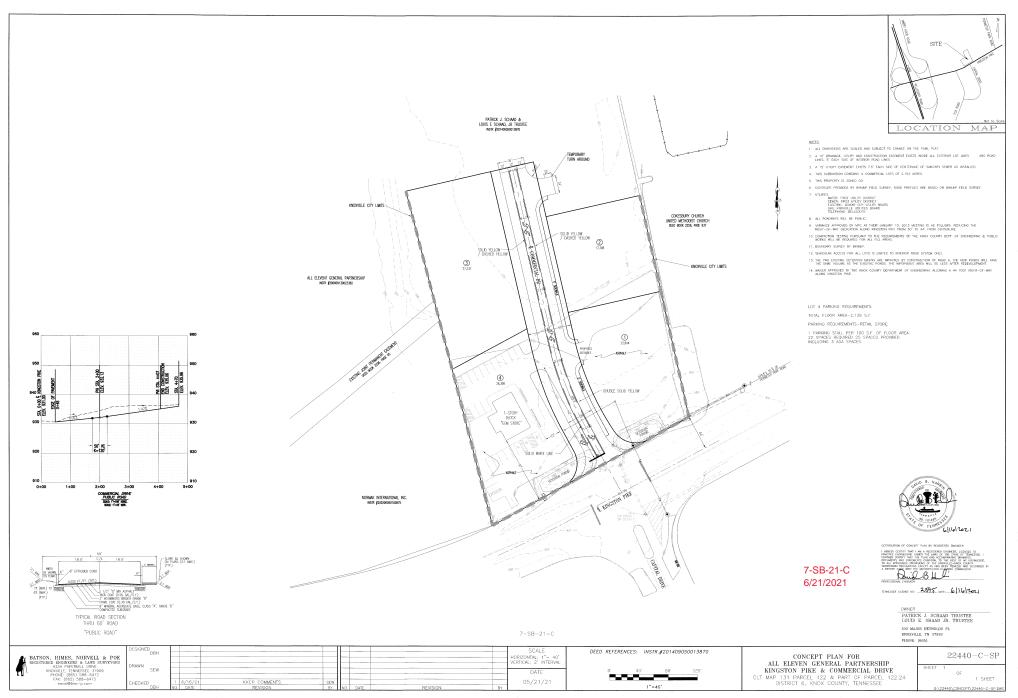
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### CONCLUSION

The study addressed the transportation impact analysis and access requirements of an existing GemStore jewelry store and a proposed coffee/donut shop and two retail store developments within a Capital Drive retail development via an approximately 400-foot long proposed Capital Drive stub road constructed to Knox County standards from centerline of Kingston Pike (S.R. 1). Traffic signal system parameters were maintained throughout the study except when phasing modification and split optimization are required. Peak hour factors were consistent between all PM peak hour analysis periods to provide a conservative queue length and operational analysis. Adjustments were made to peak hour factors at the proposed stub road during the AM peak hour with the proposed development to account for new trips. Existing traffic for the signalized intersection was found to be operating at LOS A and LOS F for the AM and PM peak hours. Background traffic was determined using a 1.0-percent compounded growth rate until the horizon year 2026. The analysis does not include development of the undeveloped 25-acre tract north of the proposed site as there are no known development plans. Without the proposed development, the study intersection will maintain its LOS A in the AM peak hour and LOS F during the PM peak hour. Traffic associated with the proposed development was generated for a 2,500 SF coffee/donut shop with drive-through window and two 10,000 SF retail stores. The site will generate 4,060 daily trips, and after consideration of pass-by traffic, approximately 2,840 primary trips will be generated. Trips were assigned to the study intersection projected conditions and analyzed for capacity and level of service. Analyses found that acceptable levels of service can be achieved for the study intersection with improvements of added turn lanes, phasing modifications, and split optimizations. Driveways should be located to the most extreme property limits to minimize the number of events where queues block access during the peak hours. Acceptable sight distances for the site driveways should be provided. With the recommendations of this report, the impact of this proposed site can be minimized and manageable.



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Planning RNOXVILLE I KNOX COUNTY	Development Development Plan Planned Development Use on Review / Special Use Hillside Protection COA	t Reque subdivision Concept Plan Final Plat	<b>St</b> <b>ZONING</b> Plan Amendment SP OYP Rezoning	
PATRICK SCHAAD TRU Applicant Name	JSTEE	Affiliati	on	
5/24/21 Date Filed	7   8   2   Meeting Date (if applicable)	7-SE	File Number(s)	
CORRESPONDENCE	orrespondence related to this application sl	hould be directed to the ap	proved contact listed below.	
🗌 Applicant 🗌 Owner 🗌 Opti	ion Holder 🛛 Project Surveyor 🕅 Eng	ineer 🗌 Architect/Land	scape Architect	
DAVID HARBIN Name	BATSON, HII Compar	MES, NORVELL & 1 NY	DOE	
4334 PAPERMILL DR Address	KNOXVILL City	E TN State	37909 ZIP	
865 - 588 - 6472 Phone	harbin@bhn-p.com Email			
CURRENT PROPERTY INFO				
Schaad Residential Real E Owner Name (if different)	State 150 MAJOR REYNOLDS Owner Address 37916		Owner Phone	
9933 KINGSTON PIKE Property Address	map 13	Parcel 122 Parcel ID	& part of parcel 122.24	
FUD Sewer Provider	FUD Water Provider		N Septic (Y/N)	
STAFF USE ONLY				
North side of Kingston Pike General Location	@ Capital Dr	2.153 Tract Siz		
City X County District	CBCO, AgForVacZoning DistrictExisting Land Use			
Southwest County	MU-SD Sector Plan Land Use Classification		n Growth Policy Plan Designation	

December 2020

### DEVELOPMENT REQUEST

Development Plan     Use on Review / Special Use     Hillside Protection COA     Residential     Non-Residential			l City Permit Number(s)	
Home Occupation (specify)				
Other (specify)				
SUBDIVISION REQUEST				
		Related	Rezoning File Number	
Proposed Subdivision Name				
Unit / Phase Number	Total Number of Lots Cre	ated		
1 Other (specify) 4 COMMERCIAL LOTS OF 2				
Attachments / Additional Requirements				
ZONING REQUEST				
		Pend	Pending Plat File Number	
Zoning Change Proposed Zoning				
Plan Amendment Change				
Proposed Plan Designation(s)				
Proposed Density (units/acre) Previous Rezoning Req	uests			
Other (specify)				
STAFF LISE ONLY				
STAFF USE ONLY PLAT TYPE	Fee 1		Total	
Staff Review Planning Commission			lotui	
ATTACHMENTS	0107	500.00		
Property Owners / Option Holders  Variance Request	Fee 2			
ADDITIONAL REQUIREMENTS				
Design Plan Certification (Final Plat)	Fee 3			
Use on Review / Special Use (Concept Plan)	i ee o			
X Traffic Impact Study			500.00	
COA Checklist (Hillside Protection)				

By signing below, I certify I am the property owner, applicant or the owners outhorized representative.

Applicant Signature



David Harbon Please Print 5/24/2021 Date

harbin@bhn-p.com Email

Marc Payne

Please Print

5/25/2021