APPLICATION FOR LAND USE MAP AMENDMENT

OFFICE OF PLANNING AND CODE ENFORCEMENT, MADISON COUNTY, KY

APPLICANT INFORMATION

Property Owner's Name: Carter H. Bradenburg, Steven N. Bradenburg, Michael H. Bradenburg, Susan G. Bybee — Date: 9/24/2024

Owner's Street Address: 1978 Boonesboro Road, Richmond, Kentucky 40475 — Apartment/Unit #:

City: Richmond — State: Kentucky — ZIP: 40475

Phone: — E-mail Address:

Address of Property Requesting Zone Change

Lot Number: — Subdivision Name: — Total Acres: 159.971 +/-

Existing Zoning Classification: R-7/RC-7

Proposed Zoning Classification: Single Family Residential (UC-1)

Date Applicant Purchased Property: — Deed Book / Page Number: 744/408

SURROUNDING PROPERTY USE / ZONING INFORMATION

DIRECTION	CURRENT LAND USE	CURRENT ZONING CLASSIFICATION
EAST	Vacant/Farmland	RC-7
WEST	Vacant/Farmland	RC-7/R-7
NORTH	Vacant/Farmland	RC-7/R-7
SOUTH	Vacant/Farmland	RC-7/R-7

URBAN SERVICES

SERVICES PROVIDED	YES	NO	SERVICES PROVIDED BY
SEWAGE			
GARBAGE DISPOSAL			
WATER			
POLICE PROTECTION			
FIRE PROTECTION			
GAS			
ELECTRIC			
STORM SEWERS			
MUNICIPAL SEWERS			

FINDINGS OF FACT, KRS 100.213

In accordance with KRS 100.213 before any map amendment is granted, the planning commission or legislative body or fiscal court must find the proposed map amendment is in agreement with the adopted Comprehensive Plan, or in the absence of such a finding, that one (1) or more of the following apply and such finding shall be recorded in the minutes and records of the planning commission or Fiscal Court.

It is the applicant's responsibility to determine and present evidence to support the specific findings of fact.

a) The proposed land use map amendment is in agreement with the adopted comprehensive plan for the following reasons:

Please see the attached proposed findings of fact.

b) The existing zoning classification given to the property is inappropriate and the proposed zoning classification is appropriate for the following reasons:

c) There have been major changes of an economic, physical or social nature within the area involved which were not anticipated in the adopted comprehensive plan and which have substantially altered the basic character of such area based upon the following reasons:

Please attach additional pages if more space is needed...

Applicant's Signature: I do hereby certify that, to the best of my knowledge and belief, all application materials are herewith submitted and the information is true and correct. I further certify that I am the owner of this property, since (mo. / year)

DATE 9/24/24 Owner's Signature: Attorney for Owner/Applicant

ADDITIONAL INFORMATION REQUIRED

The following items are required to be provided by the applicant before the application can be considered for placement on the Planning Commission Agenda:

Applicant's Attorney's Name: Preston C. Worley

Attorney's Address 201 East Main Street, Lexington, Kentucky 40507

ITEM	YES	NO	COMMENTS
DEED FOR THE PROPERTY			DEED MUST REFLECT ACTUAL ACRES TO BE RE-ZONED
VICINITY MAP			MAP MUST ACCURATELY DESCRIBE LOCATION OF PROPERTY
LIST OF ADJOINING PROPERTY OWNERS NAMES/ADDRESSES PER PVA			NAMES AND ADDRESSES MUST BE COMPLETE AND PER THE PVA RECORDS FOR ACCURACY
COMPLETED APPLICATION			APPLICATION MUST BE COMPLETED ENTIRELY AND SIGNED BY THE PROPERTY OWNER
APPLICATION FEES PAID			ALL ASSOCIATED FEES SHALL BE PAID IN FULL AT THE TIME OF MAKING APPLICATION

A conceptual drawing/site plan, describing the proposed use of the property in question, must be attached to the application. 12 copies of the plan must be submitted for review by the Planning Commission as part of their deliberation of the proposed land use change. This is not intended to relieve the applicant, or any future owner, of the requirement to submit a complete site development plan as required by Section 401.3 and Appendix G of the Madison County Land Use Regulations, prior to starting any construction.

THIS SECTION FOR OFFICIAL USE ONLY

Date of Public Hearing:

Motion made by to

Motion Second by

VOTE: YES NO ABSTAIN

Reasons for NO Votes:

FISCAL COURT DECISION

Upheld PC Decision		**Over-turned PC Decision**		**Order /Ordinance #**
Yes	No	Yes	NO	

Comments:

Madison County Office of Planning and Code Enforcement
321 North Madison Avenue
Richmond, Kentucky 40475
859-624-4780
www.madisoncountyky.us

MADISON COUNTY KENTUCKY
PLANNING & ZONING COMMISSION

IN RE:APPLICATION FOR ZONING MAP AMENDMENT

OWNER: Carter H. Bradenburg
Steven N. Bradenburg
Michael H. Bradenburg
Susan G. Bybee

PROPERTY ADDRESS: 1978 Boonesboro Road, Richmond, KY 40475

PROPOSED FINDINGS OF FACT AND CONCLUSIONS AND RECOMMENDATIONS

This matter came before a meeting of the Madison County Planning & Zoning Commission on October 15, 2024, on the application submitted by the above named Property Owner to re-zone approximately 159.971 +/- total acres of land located on Boonesboro Road, Richmond, Kentucky, as follows: from Agricultural (R-7/RC-7) to Single Family Residential (UC-1).

After having heard argument of counsel for the landowner and after having considered the application, the evidence, and the record, the Commission, with a quorum sitting, makes the following FINDINGS OF FACT:

1. Proper notification of this hearing was given pursuant to KRS 100.212 and KRS 424.130, et. seq., by notices published in the Richmond Register, by posting signs on the subject property, and by the Secretary of the Commission notifying the adjoining property owners by first class mail.

2. The subject property is a tract of undeveloped agricultural land lying within the County limits along Boonesboro Road. The applicants have submitted a rendering which is attached hereto as **Exhibit A** reflecting the property, its proposed zoning classifications, how each tract relates to the others, and to the surrounding property.

3. The property fronts on Boonesboro Road. The property to the north is zoned Agricultural and currently utilized as farm land. The adjacent property to the South is zoned Agricultural. The property to the West is likewise zoned Agricultural. To the Northwest, there a cluster residential development along Old Boonesboro Road. The applicant proposes to rezone their property f~~or multifamily~~ residential development.

4. The legal justification for the requested zone change is that said change is in conformity with the Comprehensive Plan of Madison County and that the requested UC-1 classification is appropriate, given the property's location and the Comprehensive

Plan's call for this to be developed as residential.

5. This Property is located along Boonesboro Road, which per the Comprehensive Plan, is called to be developed as residential. Page 22 of the Comprehensive plan makes clear that;

> Northern Madison County is the closest in proximity to Lexington and **could serve as a prime location for residential growth** for high-wage earners that work in Lexington but want to live in Madison County. Municipal sanitary sewer services are available in limited areas of Northern Madison County, however, expansion projects are planned for this region of the county. New development in this area should consider high-density, high-quality development that promotes upper-end housing, shopping options, and promotes walkability. Low density residential and pockets of neighborhood commercial uses would be most appropriate along rural corridors that extend from Northern Madison County at the I-75 interchange to Boonesborough and Clark County.

6. The Comprehensive Plan's Future Land Use Map, located on page 19 of the Comprehensive Plan, also clearly depicts this Property as Single-Family Residential. A copy of the Future Land Use Map is attached hereto as **Exhibit B**.

7. The current zoning classification of the subject property is R-7/RC-7. The proposed map amendment would change the zoning classification to UC-1_which is in agreement with the comprehensive plan, particularly but not limited to:

> Goal 1: Land Use & Development: Actively support planning and land use management as a high priority.
>
> Update the existing land use regulations and evaluate them on a regular basis to better facilitate the ever-changing needs of the County
>
> Goal 5: Housing: Provide a Range of housing opportunities including affordable housing options.
>
> Encourage new residential development in areas that currently provide or are planned to provide adequate transportation access and infrastructure.
>
> Allow a diverse range of housing types to meet housing needs such as attached single-family, multifamily, and senior housing.

Available housing stock attracts business and investment in the community. This

proposed rezoning and development will provide an attractive housing type, providing a diverse housing option while complementing existing development. Additionally, the proposed rezoning (1) is in agreement with the Comprehensive Plan, (2) the Plan's Future Land Use Map and (3) request for residential development along Boonesboro Road in Northern Madison County.

From the foregoing Findings of Fact, the Commission finds that:

1. The proper notification of this hearing was given pursuant to KRS 100.212 and KRS 424.130, et seq.

2. The requested zone designation is in conformity with the Comprehensive Plan of Madison County.

3. That the requested zone designation to UC-1 will be in conformity with the existing use and development of other property near the subject property and is appropriate under the circumstances.

Based upon the foregoing, it is the conclusion of the Madison County Planning & Zoning Commission that the application of Carter H. Bradenburg, Steven N. Bradenburg, Michael H. Bradenburg and Susan G. Bybee, to rezone 159.971 +/- acres located at 1978 Boonesboro Road from RC-7/R-7 to UC-1 is consistent with the intent of the Comprehensive Plan, the Development Ordinance and with other development around and near the subject property and should thus be, and is recommended for, approval.

RECOMMENDATION

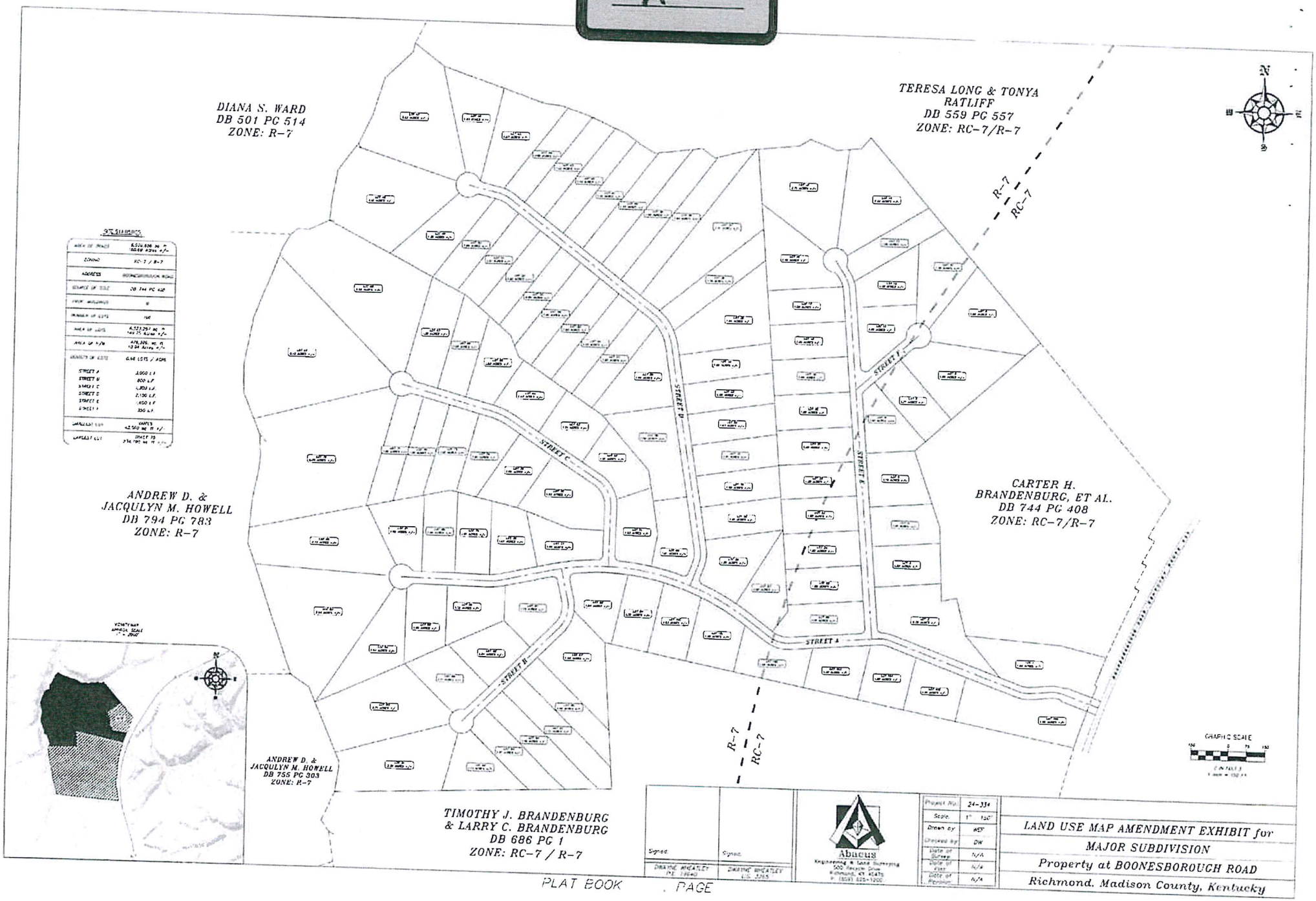
Based on the foregoing, The Madison County Fiscal Court recommends to the Madison County Fiscal Court that the subject property be zoned_____.

Dated: _____ By: _____
Chairman, Madison County Planning
and Zoning Commission

4872-3178-0328, v. 1

EXHIBIT

A



Signed: DWAYNE WHEATLEY PE 19640

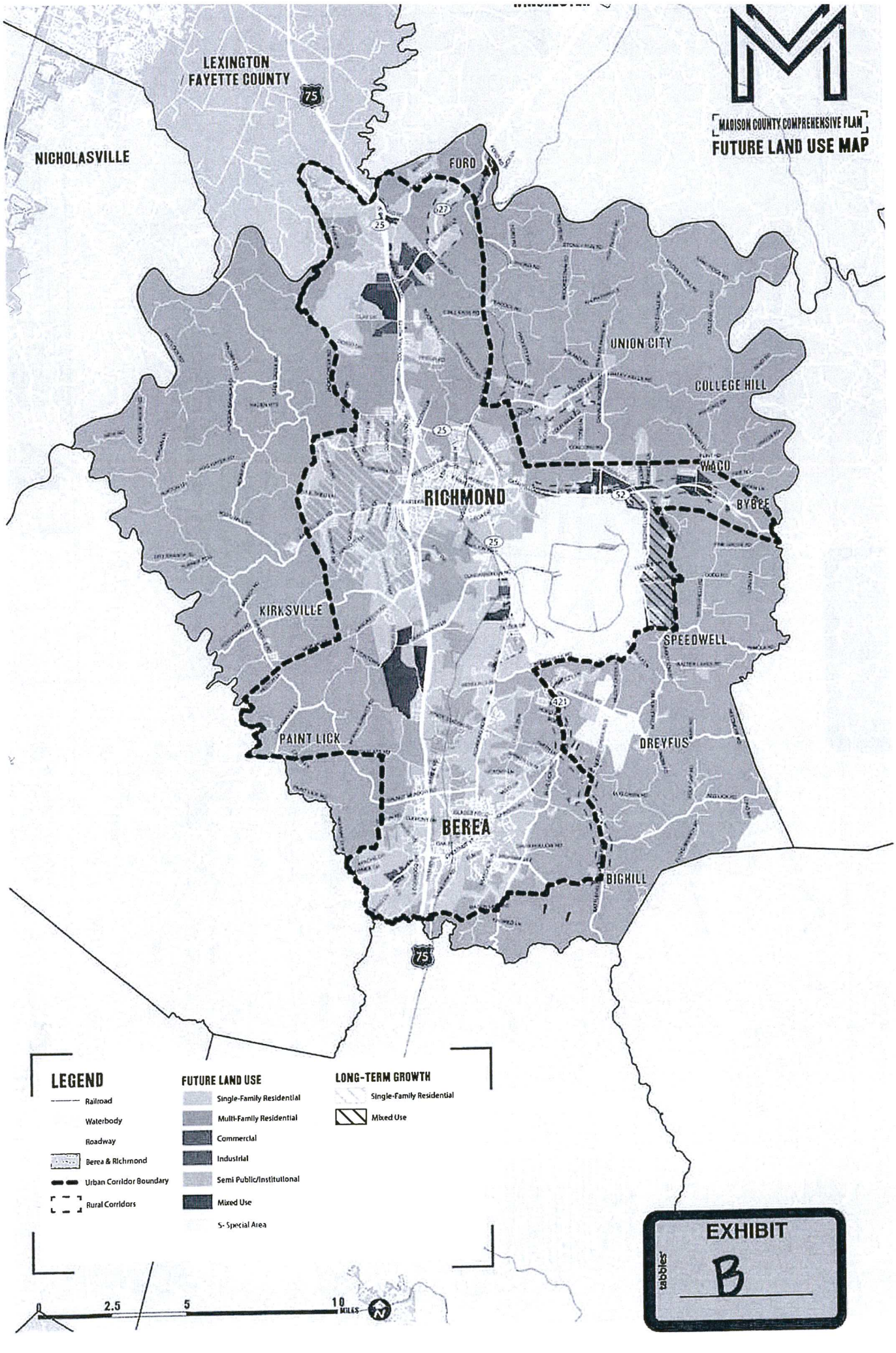
Signed: DWAYNE WHEATLEY LS 3265

Abacus
Engineering & Land Surveying
500 Lexington Drive
Richmond, KY 40475
P: (859) 625-1200

Project No.	24-334
Scale	1" = 150'
Drawn by	WEF
Checked by	DW
Date of Survey	N/A
Date of Field Visit	N/A
Date of Revision	N/A

LAND USE MAP AMENDMENT EXHIBIT for
MAJOR SUBDIVISION
Property at BOONESBOROUGH ROAD
Richmond, Madison County, Kentucky

PLAT BOOK . PAGE


MADISON COUNTY COMPREHENSIVE PLAN
FUTURE LAND USE MAP
LEXINGTON / FAYETTE COUNTY
NICHOLASVILLE
FORD
UNION CITY
COLLEGE HILL
WACO
BYBEE
RICHMOND
KIRKSVILLE
SPEEDWELL
PAINT LICK
DREYFUS
BEREA
BIGHILL
LEGEND
Railroad
Waterbody
Roadway
Berea & Richmond
Urban Corridor Boundary
Rural Corridors
FUTURE LAND USE
Single-Family Residential
Multi-Family Residential
Commercial
Industrial
Semi Public/Institutional
Mixed Use
S- Special Area
LONG-TERM GROWTH
Single-Family Residential
Mixed Use
0
2.5
5
10
MILES
N
EXHIBIT
tabbies
B

8

2802

After recording please return to:
COY, GILBERT, SHEPHERD & WILSON
212 North Second Street
P.O. Box 1178
Richmond, KY 40476-1178
Our File No. 41480

In-care-of address for property tax bill(s):
C/O Carter Hogan Brandenburg
Susan Gail Brandenburg Bybee
Michael Hampton Brandenburg
Steven Noel Brandenburg
1978 Boonesboro Road
Richmond, KY 40475

DEED OF CORRECTION

This deed of conveyance dated the 28th day of April, 2017, but effective as of October 29, 2012, by and between **TIMOTHY JOE BRANDENBURG, a single man,** of 1384 Boonesboro Road, Richmond, Madison County, Kentucky, 40475; **LARRY CHARLES BRANDENBURG and BRENDA BRANDENBURG, spouses,** of 8007 Wexford Drive, Richmond, Madison County, Kentucky, 40475; **CARTER HOGAN BRANDENBURG and ANNE BRANDENBURG, spouses,** of 194 Winding Creek Way, Hubert, North Carolina, 28439; **SUSAN GAIL BRANDENBURG BYBEE and JACKIE BYBEE, spouses,** of 196 Crutcher Pike, Richmond, Madison County, Kentucky, 40475; **MICHAEL HAMPTON BRANDEBURG, a single man,** of 3105 Inland Street North, Mrytle Beach, South Carolina, 29582; and **STEVEN NOEL BRANDENBURG, a single man,** of 3105 Inland Street North, Mrytle Beach, South Carolina, 29582, parties of the first part, and **CARTER HOGAN BRANDENBUR, a married man,** of 194 Winding Creek Way, Hubert, North Carolina, 28439; **SUSAN GAIL BRANDENBURG BYBEE, a married woman,** of 196 Crutcher Pike, Richmond, Madison County, Kentucky, 40475; **MICHAEL HAMPTON BRANDEBURG, a single man,** of 3105 Inland Street North, Mrytle Beach, South Carolina, 29582; and **STEVEN NOEL BRANDENBURG, a single man,** of 3105 Inland Street North, Mrytle Beach, South Carolina, 29582, parties of the second part,

WHEREAS, the parties hereto were conveyed certain property by deed dated October 29, 2012, and recorded in **Deed Book D686 at page 6,** in the office of the Madison County Clerk; and

WHEREAS, due to scrivener's error, said deed erroneously excluded a land-locked 35.25 acre tract of land as shown on the plat of record in Plat Book P26 at page 111, off of Tract 1 on said plat, and also failed to convey Tract 3 on said plat; and

WHEREAS, said deed should not have excluded any property off of Tract 1, it being the intention for second parties to acquire all of Tract 1 consisting of 179.971 acres, more or less, as depicted on the plat of record in Plat Book P26 at page 111; and

WHEREAS, said deed failed to include Tract 3 consisting of .721 acre, more or less, as shown on Plat Book P26 at page 111, said Tract 3 being the remainder of the original 125 acre tract, described in Deed Book 47 at page 546, Tract 3 being the property severed off the original boundary by the construction of Boonesboro Road; and

WHEREAS, the derivation of title in Deed Book D686 at page 6 was incomplete.

WHEREAS, the parties hereto wish to correct said errors in said property description and derivation of title.

WITNESSETH: That the first parties, for and in consideration of the foregoing, and for the division of jointly owned property, Timothy Joe Brandenburg and Larry Charles Brandenburg having received Tract 2 consisting of 145.444 acres, more or less, as depicted on the plat of record in Plat Book P26 at page 111, by division deed of record in Deed Book D686 at page 1, the receipt of which is hereby

acknowledged, do hereby **BARGAIN, SELL, GRANT and CONVEY** unto the parties of the second part, in fee simple their heirs and assigns, the following described property, located in Madison County, Kentucky, to-wit:

All of **Tract 1** described as **179.971 acres** as recorded in the Virginia Hogan Brandenburg Heirs Minor Plat recorded in Plat Book **P26 at page 11**, in the Madison County Clerk's office, reference to which plat being hereby made for a more particular description of said property; and the improvements thereon being known and designated as **1978 Boonesboro Road, Richmond, Kentucky**.

Tax map no. 0051-0000-0016

And

All of **Tract 3** described as **.721 acre** as recorded in the Virginia Hogan Brandenburg Heirs Minor Plat recorded in Plat Book **P26 at page 11**, in the Madison County Clerk's office, reference to which plat being hereby made for a more particular description of said property; and being known and designated as _____ **Old Boonesboro Road, Richmond, Kentucky.**

Tax map no. 0051-0000-0016-C

TRACTS 1 & 3 consist of a part of the property (and all of the 125 acre tract less that portion conveyed to the Department of Highways for Boonesboro Road by deed of record in Deed Book 215 at page 1) conveyed to S. Q. Royce, by deed dated December 13, 1897, from D. C. Munday, and recorded in Deed Book 47 at page 546, in the office of the Madison County Clerk, Richmond, Kentucky.

TRACT 1 also consists of all of the 44.75 acre tract shown on Plat Book P26 at page 111, which was conveyed to Samuel Q. Royce, by deed dated April 14, 1900, from the Executor of the Estate of James W. Garrison, deceased, and recorded in Deed Book 49 at page 349, in the office of the Madison County Clerk, Richmond, Kentucky.

S. Q. Royce (a/k/a Samuel Q. Royce) died in 1919, and pursuant to the second item of his Last Will and Testament, of record in Will Book 4 at page 45, he devised all his property to his wife, Mary A. Royce.

Mary A. Royce conveyed all the property she owned on Boonesboro Road, to her daughter, Virginia Hogan, for life, with remainder to her children that she may have living at her death, by deed dated November 6, 1929, and recorded in Deed Book 106 at page 578, in the office of the Madison County Clerk. Mary A. Royce retained a life estate in said deed. Mary A. Royce (a/k/a Mary Addie Royce and Mary Adelaide Royce) died on July 16, 1952, at which time her life estate in said property was extinguished.

Virginia Hogan Brandenburg (f/k/a Virginia Hogan) died on November 13, 2009, at which time her life estate in said property was extinguished.

Virginia Hogan Brandenburg had only two (2) children, Ralph Hampton Brandenburg and Carter Royce Brandenburg, both of whom predeceased their mother. Ralph Hampton Brandenburg died intestate on October 20, 1967, leaving as his only heirs at law, his children: Timothy Joe Brandenburg and Larry Charles Brandenburg. Carter Royce Brandenburg died intestate on September 12, 2007, leaving as his only heirs at law, his children: Carter Hogan Brandenburg, Michael Hampton Brandenburg, and Susan Gail Brandenburg Kendrick. See the Affidavit of Descent and Affidavit in Aid of Title, of record in Deed Book D667 at page 784.

TRACT 1 also consists of all of the 35.25 acre tract shown on Plat Book P26 at page 111, which was once owned by Samuel Q. Royce, but conveyed by him in 1889 to Robert Fox, and later acquired by Joe Brandenburg, by deed dated May 2, 1963, from James Mays and Ora Mays, husband and wife, and recorded in Deed Book 201 at page 403, in the office of the Madison County Clerk, Richmond, Kentucky.

Joe Brandenburg died testate, a resident of Madison County, Kentucky, in 1982, and pursuant to the First Item of his Last Will and Testament, of record in Will Book 23 at page 267, he devised all his property to his wife, Virginia H. Brandenburg.

Virginia H. Brandenburg died testate, a resident of Madison County, Kentucky, on November 13, 2009, and pursuant to Items III & IV of her Last Will and Testament, of record in Will Book W58 at page 182, she devised all her property to the child or children of her predeceased child, Carter R. Brandenburg.

Carter R. Brandenburg (a/k/a Carter Royce Brandenburg) predeceased his mother on September 12, 2007, leaving four (4) children: Michael H. Brandenburg, Carter H. Brandenburg, Steven N. Brandenburg, and Susan G. Brandenburg Kendrick, as evidenced by the Affidavit in Aid of Tile of record in Deed Book D666 at page 793, in the office of the Madison County Clerk, Richmond, Kentucky.

TO HAVE AND TO HOLD the same, together with all appurtenances thereunto belonging unto the parties of the second part, in fee simple, their heirs and assigns forever.

Said parties of the first part do hereby release and relinquish unto the said parties of the second part, their heirs and assigns, all of their right, title and interest in and to the above-described property, including homestead and all exemptions allowed by law, and hereby covenant to and with the said parties of the second part, their heirs and assigns, that they are lawfully seized in fee simple to said property and have a good right to convey the same as herein done, and that said property is free and clear of all encumbrances of whatever nature and that they will **WARRANT GENERALLY** the title to said property.

Provided, however, there is excepted from the foregoing warranty and covenants, the following:

1. Any restrictive covenants of record in the Madison County Clerk's Office.

2. All conditions and/or restrictions, if any, affecting the property herein conveyed and contained on any plat of record in the aforesaid Clerk's Office.

3. Zoning and building restrictions, regulations and ordinances, if any.

4. Easements and rights-of-way of whatever nature and kind reserved and recorded in the aforesaid Clerk's Office.

CONSIDERATION CERTIFICATE: We, the undersigned, hereby certify that the consideration reflected in this deed is the full consideration paid for the property; and the fair market value of said property was $125,000.00 on October 29, 2012. The second parties join in this instrument for the sole purpose of certifying the consideration paid.

FIRST PARTY:

Timothy Joe Brandenburg

TIMOTHY JOE BRANDENBURG

STATE OF KENTUCKY

COUNTY OF MADISON

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **TIMOTHY JOE BRANDENBURG, a single man**, party of the first part, this the 28th day of April, 2017

Amy D. Felty

Notary Public

My commission expires: 4-15-2019

FIRST PARTY:

Larry Charles Brandenburg

LARRY CHARLES BRANDENBURG

FIRST PARTY:

Brenda Brandenburg

BRENDA BRANDENBURG

STATE OF KENTUCKY

COUNTY OF MADISON

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **LARRY CHARLES BRANDENBURG, husband of BRENDA BRANDENBURG**, party of the first part, this the 28th day of April, 2017

Rhonda Nottingham Notary ID: 490601

Notary Public

My commission expires: 6/24/2017

STATE OF KENTUCKY

COUNTY OF MADISON

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **BRENDA BRANDENBURG, wife of LARRY CHARLES BRANDENBURG**, party of the first part, this the 28th day of April, 2017

Rhonda Nottingham Notary ID: 490601

Notary Public

My commission expires: 6/24/2017

FIRST PARTY/SECOND PARTY:

Carter Hogan Brandenburg
CARTER HOGAN BRANDENBURG

FIRST PARTY:

Anne Brandenburg
ANNE BRANDENBURG

STATE OF North Carolina

COUNTY OF Carteret

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **CARTER HOGAN BRANDENBURG, husband of ANNE BRANDENBURG**, party of the first and second parts, this the 28th day of November, 2016.

Stephanie F Matas
Notary Public
My commission expires: 12.06.2020

STEPHANIE F MATAS NOTARY PUBLIC CARTERET COUNTY, NC

STATE OF North Carolina

COUNTY OF Carteret

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **ANNE BRANDENBURG, wife of CARTER HOGAN BRANDENBURG**, party of the first part, this the 28th day of November, 2016.

Stephanie F Matas
Notary Public
My commission expires: 12.06.2020

STEPHANIE F MATAS NOTARY PUBLIC CARTERET COUNTY, NC

FIRST PARTY/SECOND PARTY:

Susan Gail Brandenburg Bybee
SUSAN GAIL BRANDENBURG BYBEE
(f/k/a SUSAN GAIL BRANDENBURG KENDRICK)

FIRST PARTY:

JACKIE BYBEE

STATE OF KENTUCKY

COUNTY OF MADISON

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **SUSAN GAIL BRANDENBURG BYBEE (f/k/a SUSAN GAIL BRANDENBURG KENDRICK), wife of JACKIE BYBEE**, party of the first and second parts, this the 21st day of November, 2016.

Chasity Kendrick #577536
Notary Public
My commission expires: 8/29/18

STATE OF KENTUCKY

COUNTY OF MADISON

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **JACKIE BYBEE, husband of SUSAN GAIL BRANDENBURG BYBEE**, party of the first part, this the 21st day of November, 2016.

Chasity Kendrick #577536
Notary Public
My commission expires: 8/29/18

FIRST PARTY/SECOND PARTY:

Michael H Brandenburg
MICHAEL HAMPTON BRANDENBURG

STATE OF SOUTH CAROLINA

COUNTY OF Horry

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **MICHAEL HAMPTON BRANDENBURG, a single man**, party of the first and second parts, this the 14th day of January 2017, ~~2016.~~

Seal:

Notary Public
My commission expires: _____

FIRST PARTY/SECOND PARTY:

ROBERT A. BLACKWELL
Notary Public
South Carolina
My Comm. Expires Sept. 18, 2017

Steven Noel Brandenburg
STEVEN NOEL BRANDENBURG

STATE OF SOUTH CAROLINA

COUNTY OF Horry

The foregoing Deed and Consideration Certificate was acknowledged and sworn before me by **STEVEN NOEL BRANDENBURG, a single man**, party of the first and second parts, this the 14th day of January 2017, ~~2016.~~

Seal:

Notary Public
My commission expires: _____

Prepared by and after recording return to:
COY, GILBERT, SHEPHERD & WILSON
212 North Second Street
Richmond, Kentucky 40475
(859) 623-3877

Mark A. Shepherd

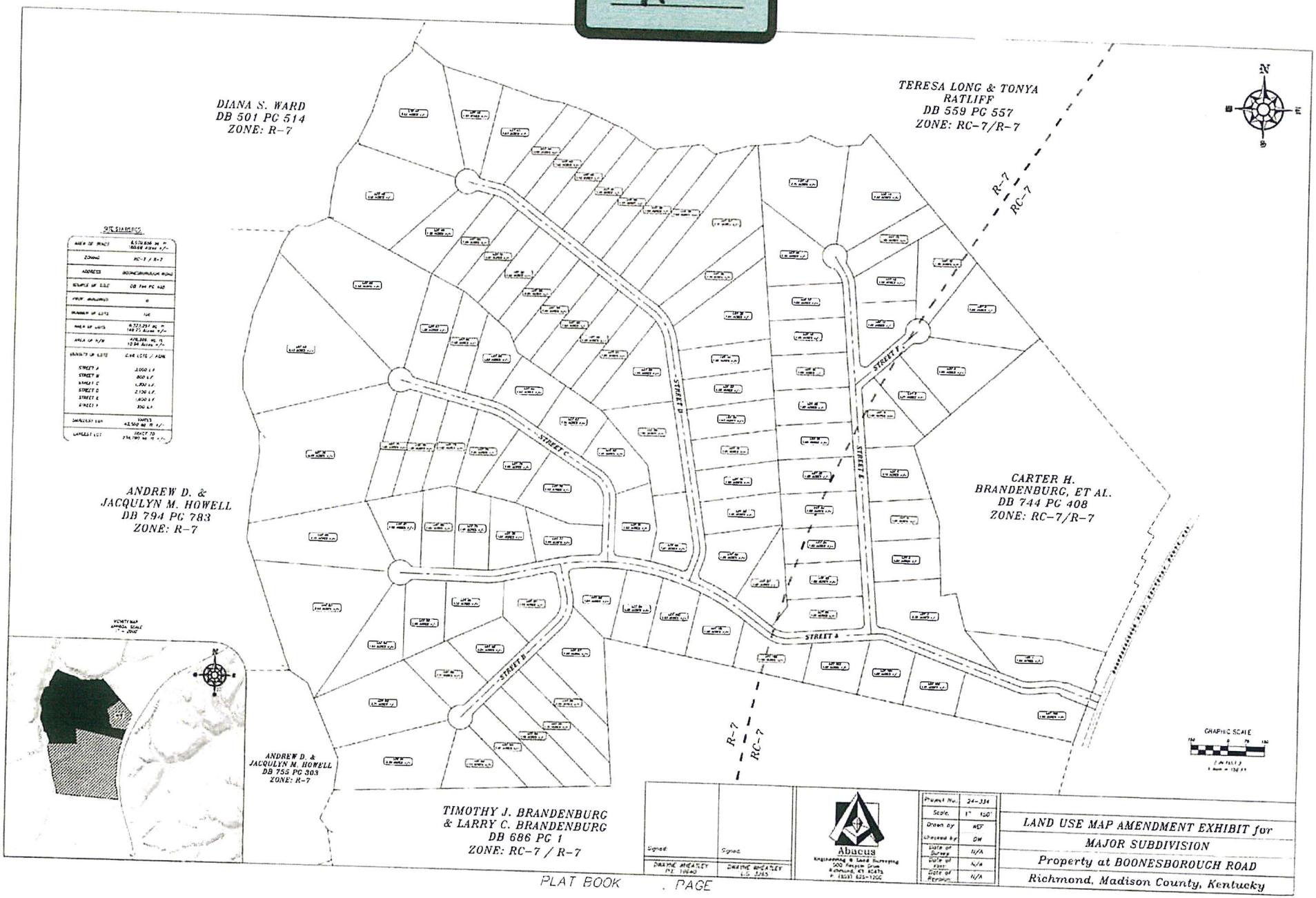
ROBERT A. BLACKWELL
Notary Public
South Carolina
My Comm. Expires Sept. 18, 2017

MADISON COUNTY
D744 PG415

DOCUMENT NO: 2013958404
RECORDED:May 10,2017 10:47:00 AM
TOTAL FEES: $28.00
COUNTY CLERK: KENNY BARGER
DEPUTY CLERK: BETH HUDSON
COUNTY: MADISON COUNTY
BOOK: D744 PAGES: 408 - 415

EXHIBIT

A

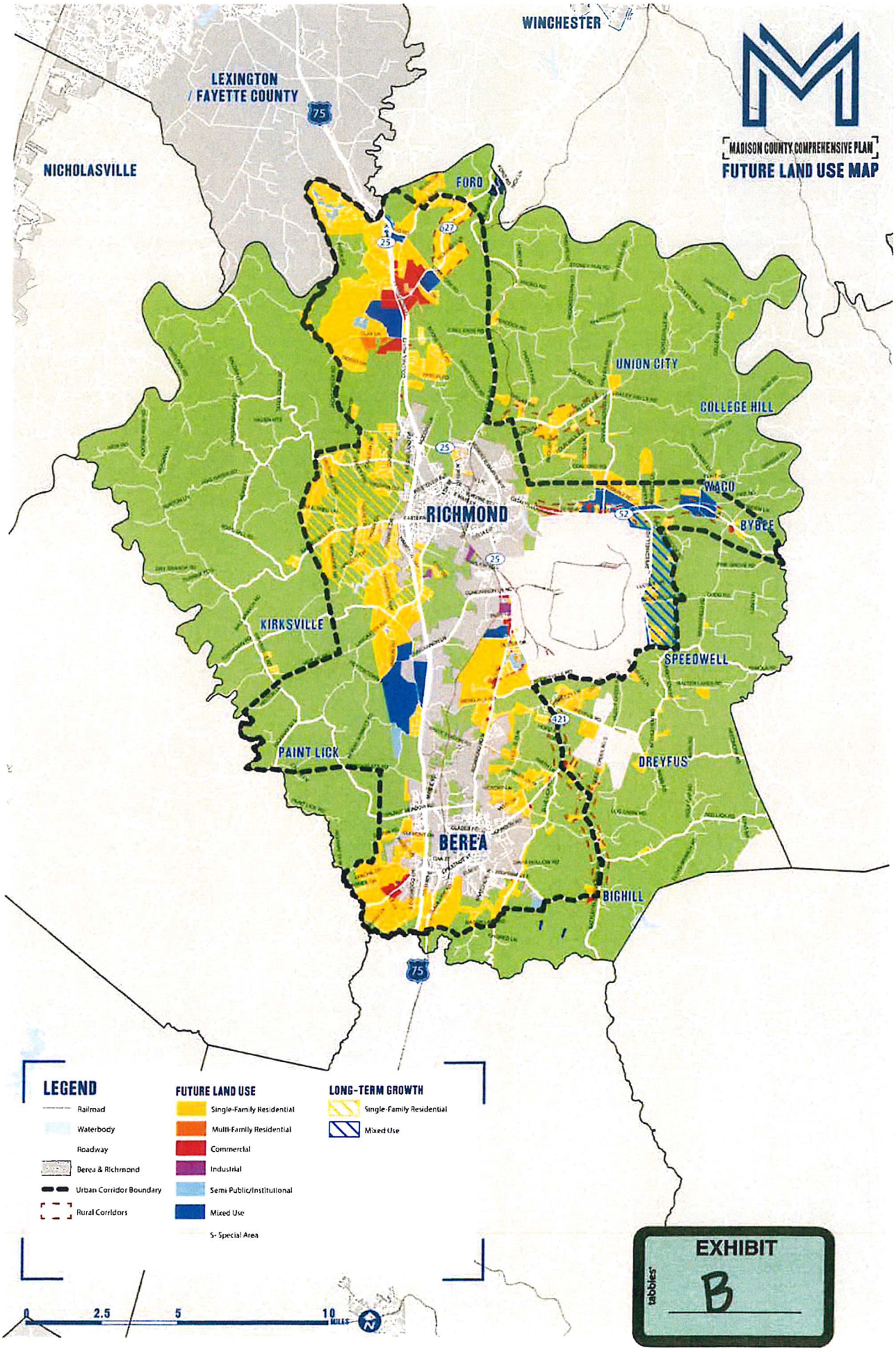


PLAT BOOK . PAGE

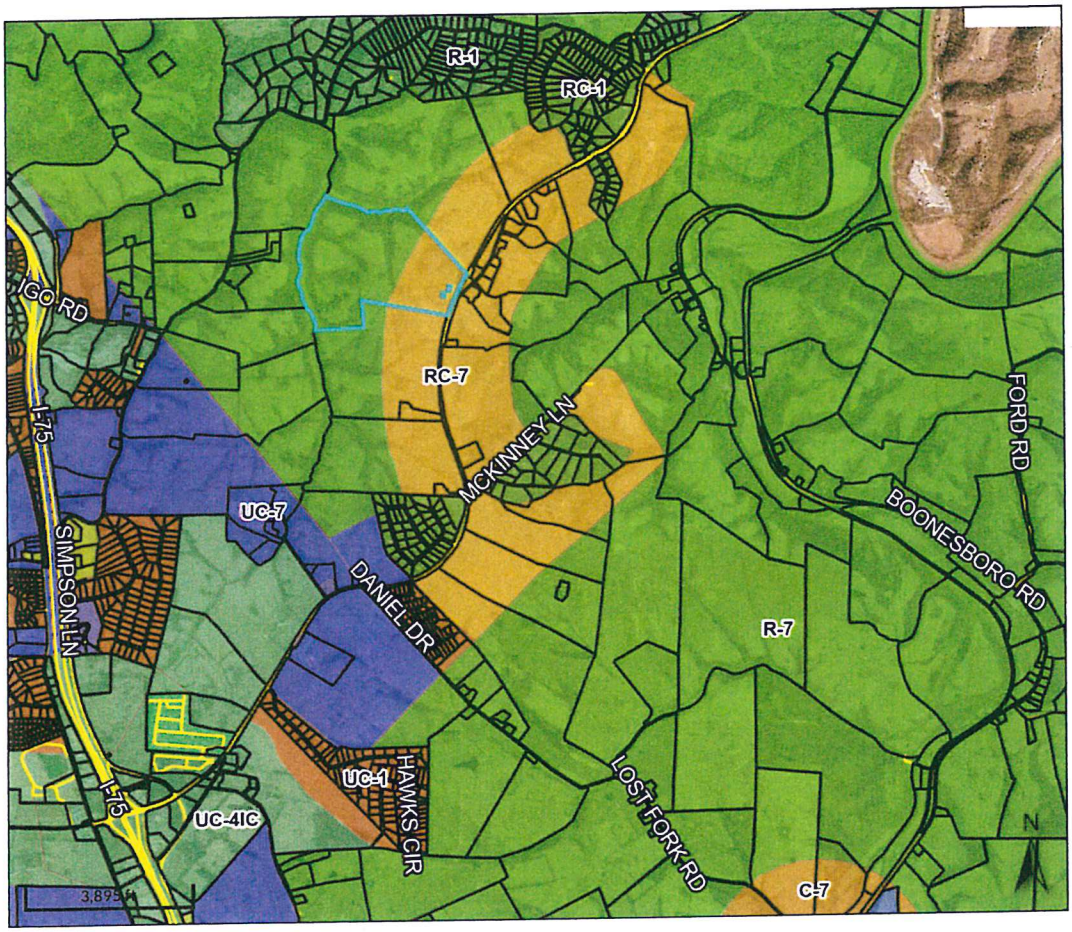
Abacus
Engineering & Land Surveying
500 Empire Drive
Lexington, KY 40516
(859) 225-7200

Project No.	24-334
Scale	1" = 150'
Drawn by	MEF
Checked by	DW
Date of Survey	N/A
Date of Plat	N/A
Date of Revision	N/A

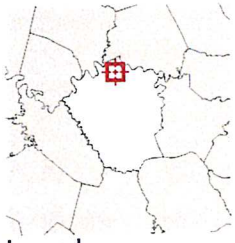
LAND USE MAP AMENDMENT EXHIBIT for
MAJOR SUBDIVISION
Property at BOONESBOROUGH ROAD
Richmond, Madison County, Kentucky


WINCHESTER
LEXINGTON / FAYETTE COUNTY
NICHOLASVILLE
FORD
UNION CITY
COLLEGE HILL
WACO
BYBEE
RICHMOND
KIRKSVILLE
SPEEDWELL
PAINT LICK
DREYFUS
BEREA
BIGHILL
MADISON COUNTY COMPREHENSIVE PLAN
FUTURE LAND USE MAP
LEGEND
Railroad
Waterbody
Roadway
Berea & Richmond
Urban Corridor Boundary
Rural Corridors
FUTURE LAND USE
Single-Family Residential
Multi-Family Residential
Commercial
Industrial
Semi-Public/Institutional
Mixed Use
S- Special Area
LONG-TERM GROWTH
Single-Family Residential
Mixed Use
0
2.5
5
10
MILES
EXHIBIT
B

qPublic.net™ Madison County, KY PVA



Overview



Legend

- Parcels
- Roads

Zoning

- A-1
- AG
- B-1
- B-2
- B-3
- B-4
- C-1
- C-4
- C-5
- C-6
- C-7
- I-1
- I-2
- INS
- MP
- P-1
- PSF
- PSP
- PUD
- R-1
- R-1A
- R-1B
- R-1C
- R-1T
- R-2
- R-3
- R-4
- R-7
- R-8
- RC-1
- RC-1B
- RC-3
- RC-4
- RC-5
- RC-6

MADISON COUNTY UTILITIES DISTRICT

297 Michelle Dr. P.O. Box 670, Richmond KY 40476-0670

Office 859-624-1735 * Fax 859-623-8220 * Email info@madisoncountyutilities.com

October 15, 2024

Mr. Andrew Luxon
Luxon Contracting LLC

RE: 1978 Boonesborough Road Development
Madison County Utilities District

Dear Sir:

The proposal for the Boonesborough Road Development and hydrant installation has been reviewed and approved by the Madison County Utilities District. The District has the capacity to provide water for fire hydrants and to the development proposed in this project while maintaining satisfactory pressure and flow in their distribution system.

Sincerely,

Jared Webb
Manager

cc: HMB
file

TRAFFIC IMPACT STUDY



September
2024

1978 Boonesborough Road
Planned Residential Community
KY 627 Rural Principal Arterial Road
Madison County, Kentucky

VISION ENGINEERING



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TRAFFIC COUNTS AND EXHIBITS

INTERSECTION TURNING MOVEMENTS COUNTS – KY 627 AT LOST FORK ROAD (KY 3377)

EXISTING AND DEV YEAR 2035 KY 627 AM PEAK HOUR TRAFFIC V-1 AND V-2 EXHIBITS

EXISTING AND FUTURE 2035 KY 627 PM PEAK HOUR TRAFFIC V-3 AND V-4 EXHIBITS

KYTC HIGHWAY DESIGN MANUAL EXHIBIT 700-03 RURAL ARTERIAL ROADS SIGHT DISTANCE

BOONESBOROUGH ROAD (KY 627) KYTC LEFT AND RIGHT TURN WARRANT CALCULATIONS

HIGHWAY CAPACITY MANUAL (HCM) ANALYSIS – UNSIGNALIZED INTERSECTIONS

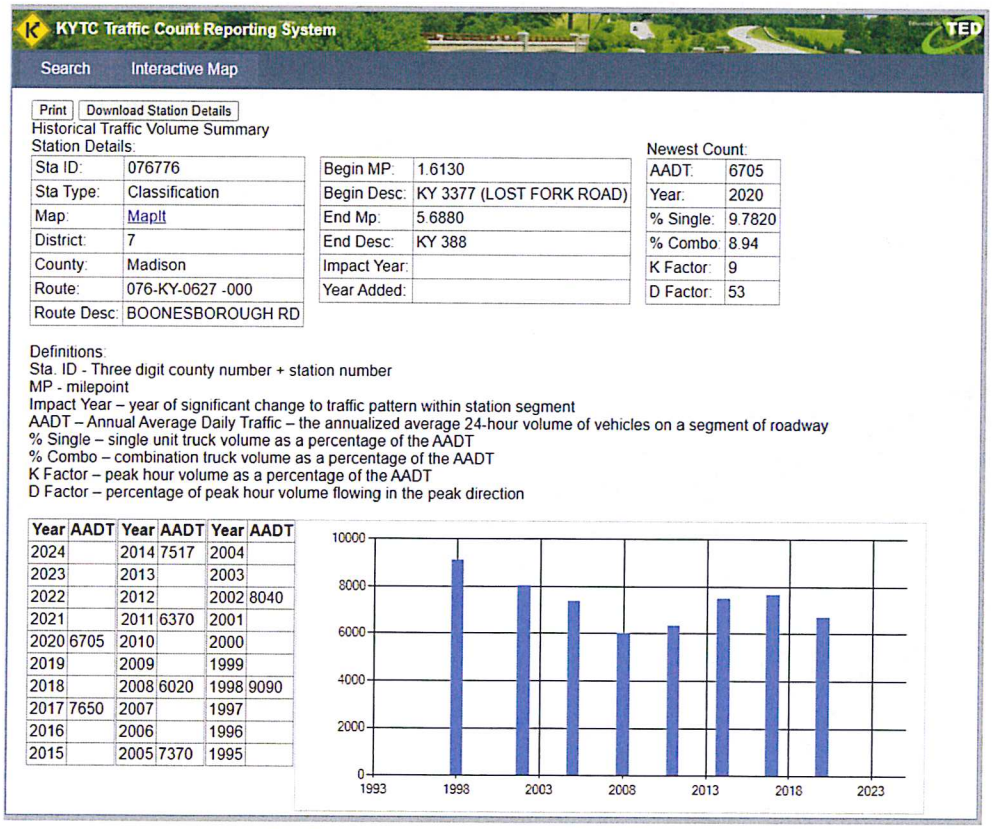
EXISTING 2024 AND FUTURE 2035 AM AND PM PEAK HOUR CONDITIONS – KY 627 MADISON CO.

Study Area

This Traffic Impact Study reviews a planned Boonesborough Road residential community (KY 627) in Madison County and considers accident history, sight distance, existing traffic conditions and capacity analysis. The Boonesborough Road study area is east of Interstate 75, US 25 (Exit 95) in Madison County and west of the Clark County / Madison County line.

Data Collection

A 2020 Kentucky Transportation Cabinet (KYTC) Division of Planning with an Average Daily Traffic count (ADT) of 6,705 on Boonesborough Road (KY 627) between Lost Fork Road (KY 3377) and near the Fort Boonesborough State Park (KY 388). Turning movement traffic in the weekday morning peak hour (7:00 to 8:30 a.m.) and the weekday afternoon (2:45 – 5:45 p.m.) were counted at the Boonesborough Road (KY 627) / Lost Fork Road (KY 3377), an unsignalized intersection.



KYTC Traffic Count Reporting System

Search Interactive Map

Print Download Station Details

Historical Traffic Volume Summary

Station Details:

Sta ID:	076776	Begin MP:	1.6130	Newest Count:	
Sta Type:	Classification	Begin Desc:	KY 3377 (LOST FORK ROAD)	AADT:	6705
Map:	MapIt	End Mp:	5.6880	Year:	2020
District:	7	End Desc:	KY 388	% Single:	9.7820
County:	Madison	Impact Year:		% Combo:	8.94
Route:	076-KY-0627 -000	Year Added:		K Factor:	9
Route Desc:	BOONESBOROUGH RD			D Factor:	53

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2024		2014	7517	2004	
2023		2013		2003	
2022		2012		2002	8040
2021		2011	6370	2001	
2020	6705	2010		2000	
2019		2009		1999	
2018		2008	6020	1998	9090
2017	7650	2007		1997	
2016		2006		1996	
2015		2005	7370	1995	

Existing Conditions / Sight Distance

Boonesborough Road (KY 627) is a 2-lane rural principal arterial, eight (8) paved shoulders on each side with rumble strips near the through lane edge line. The road has a 55 mph posted speed between I-75 (exit 95) interchange and KY 388 in Madison County (approximately five (5) miles in length.

Existing KY 627 sight distance east and westbound approaches to the residential entrances exceeds the KYTC Highway Design Manual (Exhibit 700-03) minimum stopping sight distance of 495 feet for a rural principal arterial road that serves Boonesborough Road.

The KYTC required sight distance for the planned residential street intersection exceeds the 495 feet in the westbound view (to the right) and more than 900 feet in the eastbound direction (to the left). The roadway grades in the area are two (2) percent and less in each direction.



Boonesborough Road (KY 627) Eastbound (sight distance from planned access – existing barn)



KY 627 Westbound (sight distance from planned Boonesborough Road entrance – existing barn)



KY 627 Boonesborough Road aerial plan view near planned access, along property roadway frontage

Level of Service

Level of Service is a school grade describing traffic conditions as defined by the FHWA Highway Capacity Manual and a KYTC guideline. An unsignalized intersection Level of Service C is in the acceptable range that indicates moderate congestion with reduced speeds for some turning movements.

Estimated Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th edition contains trip generation rates and nationwide trip rates, average for different land uses. The manual was utilized for the planned Boonesborough Road single family home, residential land use code 210.

Boonesborough Road (KY 627) 106 planned residential lots (RC-7, R-7 zoning)		Trip Generation AM Peak Hour		Trip Generation PM Peak Hour	
Planned Residential Community	ITE code	Entering	Exiting	Entering	Exiting
1978 Boonesborough Road	210	20	59	66	39

Capacity Analysis and Estimated Level of Service / Average Vehicle Delay

Intersection traffic capacity analysis was conducted using the Trafficware Synchro version 10 software and FHWA Highway Capacity Manual (HCM) to view signalized and unsignalized intersection performance. The table below outlines average intersection delay per vehicle in the existing weekday 2022 and future development year time frames. A one (1) percent annual growth rate is applied for an estimated full-development year 2035. KY 627 daily traffic have been decreasing in past KYTC counts but Madison County growth is generally 1% per year, given the 2020 census, population trends.

Boonesborough Road (KY 627) Level of Service and Intersection Movement Delays (sec / vehicle)	2024 Existing AM Peak Hour	2035 Dev Year Morning AM Peak Hour	2024 Existing PM Peak Hour	2035 Dev Year Morning PM Peak Hour
Boonesborough KY 627 / KY 3377 Lost Fork	LOS A, 1	LOS A, 1	LOS A, 1	LOS A, 1
KY 627 Westbound Left	LOS A, 1	LOS A, 1	LOS A, 1	LOS A, 1
Lost Fork Road KY 3377 NB at KY 627	LOS C, 17	LOS C, 20	LOS C, 19	LOS C, 23
KY 627 / New Access SE exit left & right turns	--	LOS C, 17	--	LOS C, 21
KY 627 North-East Left Turn entering the site	--	LOS A, 8	--	LOS A, 9

Traffic Safety

A Kentucky State Police accident database review was completed from the last five (5) years (September 2019 to September 2024) along Boonesborough Road (KY 627) area from milepoint 1.0 (Gadwall Drive) east to milepoint 5.0 (Fort Boonesborough State Park).

The KY 627 crash history indicated eleven (11) injury accidents, three (3) fatal collisions and forty-one (41) property-damage only accidents in the span of five (5) years from September 2019 to September 2024.

A fatal accident near the Shearer Lane curve was described as drug involvement for a 35 year female driver that collided with a tree. An opposing left turn collision at Daniel Drive was caused by a 77 year male driver from Hurricane, West Virginia that crossed the centerline. A single vehicle collision with a drainage culvert near Settlers Trace was the third fatality in the last five (5) years. The accident reports at Daniel Drive and Settlers Trace identified the driving as inattention and not under proper control.

The fatal accidents are unfortunate, the overall collision rates are below the Kentucky statewide average. The crash rate is forty (40) percent lower than the Kentucky rural two-lane highway statewide average, based on recent Kentucky collision rates for a rural roadway. The posted Boonesborough Road speed limit is 55 mph and field observations during traffic counts show that traffic conforming with the posted speed. (Reference: University of Kentucky, Kentucky Transportation Center, Analysis of Traffic Crash Data in Kentucky (2018-2022)).

The Boonesborough Road (KY 627) five (5) year (September 2019 to September 2024) Accident Summary, milepoint 1.0 east to 5.0 is below:

AVERAGE DAILY TRAFFIC

SEGMENT LENGTH IN MILES (L): 4.0

AVERAGE DAILY TRAFFIC VOLUME (V): 6,705

TOTAL # OF CRASHES:	55	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR (A):	11.00

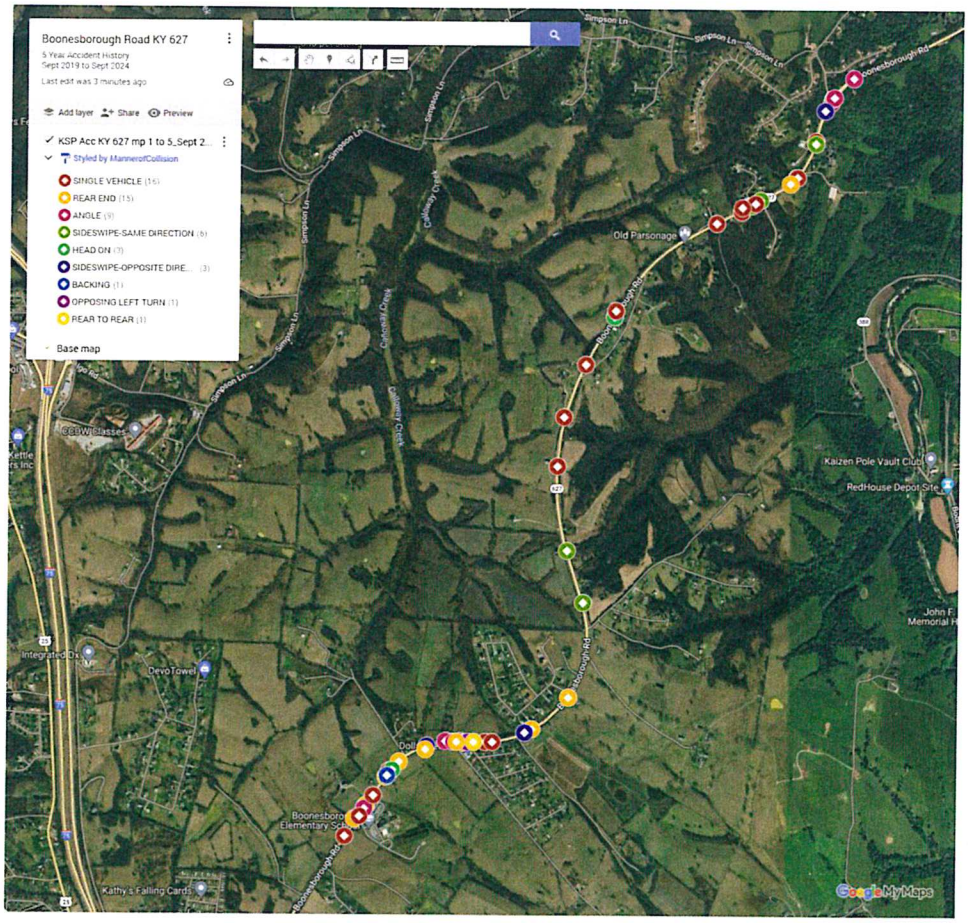
CRASH RATE CALCULATION : 112.37 RATE = (A * 100,000,000) / (L * V * 365)

Comments : Crash Rate Calculation -- KY Rural 2-lane Roadway

Project Title: Madison County Boonesborough Road (KY 627) milepoint 1.0 to 5.0

Table 2: Statewide RURAL Crash Rates
by Highway Type (5-Year Average)

Highway Type	Total Mileage*	AADT	Crashes per 100 MVM		
			All	Injury	Fatal
One-Lane	17	1,192	367	40	5.4
Two-Lane	22,745	1,291	201	46	2.7
Three-Lane	32	7,071	175	38	1.7
Four-Lane Divided (non-interstate or parkway)	608	9,537	91	21	1.4
Four-Lane Undivided	40	11,480	207	38	1.5
Parkway	842	27,212	62	9	0.5
Interstate	499	8,871	62	11	1.0
All	25,207	2,514	131	28	1.7



Findings, Conclusion

Level of service and delays are in acceptable levels at the Boonesborough Road (KY 627) unsignalized intersection at Lost Fork Road (KY 3377) and at the planned Boonesborough Road (KY 627) and planned residential development at 1978 Boonesborough Road address.

Boonesborough Road average daily traffic (ADT) 6,705 from a 2020 KYTC count and has approximately 800 vehicles in both directions in the peak hours. Available gaps in the traffic stream are present for an additional residential development and the state principal arterial road KY 627 can serve the planned residential development and future forecasted traffic on Boonesborough Road in northern Madison County.

Vision Engineering conducted Boonesborough Road intersection turning movement counts at Lost Fork Road (KY 3377) in the weekday morning and afternoon peak hours on Wednesday, September 25, 2024. The counts confirm the KYTC daily count traffic and the KY 627 location is midway between the Interstate 75 exit 95 interchange and the planned residential development.

Kentucky Transportation Cabinet (KYTC) Highway Design Manual Rural Principal Arterial minimum sight distance (495 feet) is exceeded for the Boonesborough Road (KY 627) mainline approaches to the planned 106 single-family home lot, residential development access at 1978 Boonesborough Road.

Capacity analysis indicate the planned 1978 Boonesborough Road residential entrance can handle the forecasted, development year 2035 Boonesborough Road traffic in the morning and peak hours with a Level of Service C and average delay of 21 seconds or less. A KYTC left turn lane calculation is warranted in a weekday development year 2035 afternoon peak hour but not in the future 2035 morning peak hour and other weekday hours throughout the day.

1978 Boonesborough Road (KY 627) Madison County, Kentucky

TRAFFIC COUNTS

TURNING MOVEMENT COUNTS – BOONESBOROUGH ROAD / LOST FORK ROAD (KY 3377)

EXHIBITS

V-1 Existing 2024 and Development Year 2035 AM Peak - KY 627 / Lost Fork Road (KY 3377)

V-2 Existing 2024 and Dev. Year 2035 AM Peak - KY 627 / Planned Residential Drive

V-3 Existing 2024 and Development Year 2035 PM Peak - KY 627 / Lost Fork Road (KY 3377)

V-4 Existing 2024 and Dev. Year 2035 PM Peak - KY 627 / Planned Residential Drive

KENTUCKY TRANSPORTATION CABINET (KYTC) EXHIBITS

KY Rural Arterial Roads Geometric Exhibit and Minimum Stopping Sight Distance Table

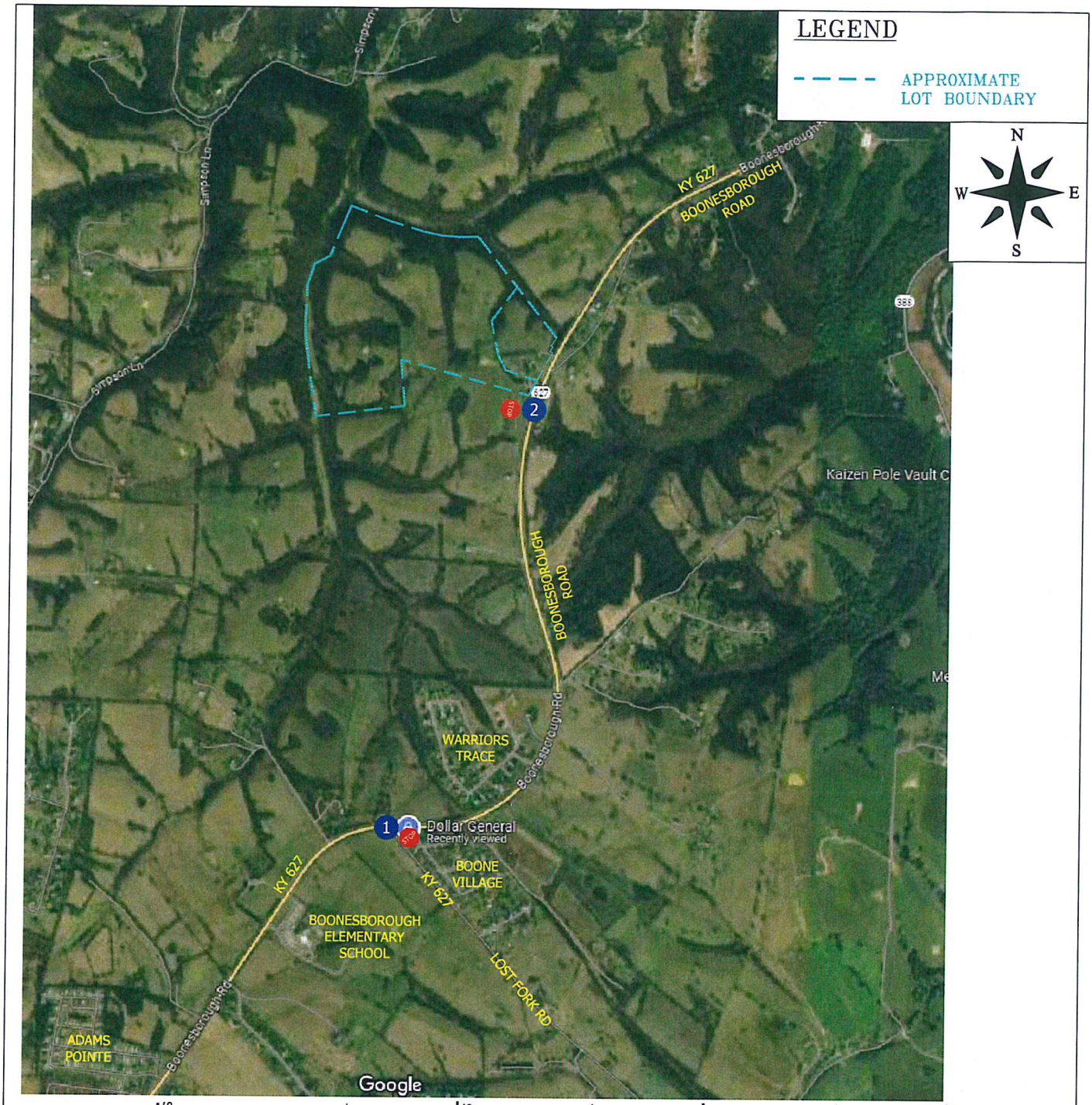
KYTC Left and Right Turn Lane Spreadsheet Calculations – KY 627 / Planned Residential Drive

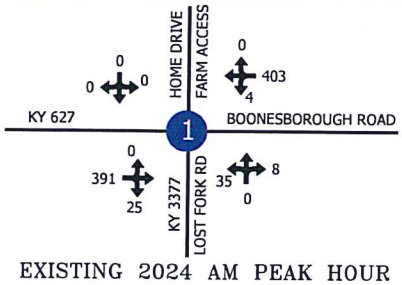
File Name: KY 627 at KY 3377_700 to 830 AM_Wed 09.25.2024.ppd
Start Date: Wednesday, 9/25/2024
Start Time: 7:00:00 AM
Location: Madison County - Boonesborough Road (KY 627) at Lost Fork Road (KY 3377)
Weather: Cloudy, 68 deg F, dry pavement conditions

	Home Drive / Farm Access From North			Boonesborough Rd KY 627 From East			KY 3377 Lost Fork Road From South			Boonesborough Rd KY 627 From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total
7:00 AM					75	0	2		7	0	85		169
7:15 AM					**112**	**2**	**2**		**5**	**5**	**85**		**211**
7:30 AM					**125**	**0**	**1**		**12**	**9**	**112**		**259**
7:45 AM					**89**	**0**	**3**		**13**	**4**	**115**		**224**
8:00 AM					**77**	**2**	**2**		**5**	**7**	**79**		**172**
8:15 AM					79	1	4		5	0	81		170
7:15 to 8:15 AM Peak Hr					**403**	**4**	**8**		**35**	**25**	**391**		**866**
Peak Hr Factor					0.81						0.85		0.84

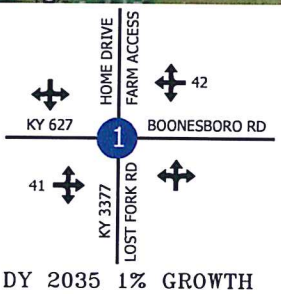
File Name: KY 627 at KY 3377_245 to 545 PM_Wed 09.25.2024.ppd
Start Date: Wednesday, 9/25/2024
Start Time: 2:45:00 PM
Weather: Cloudy, Light Rain, 74 deg F

	Home Drive / Farm Access From North			Boonesborough Road KY627 From East			KY 3377 Lost Fork Road From South			Boonesborough Road KY627 From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total
2:45 PM	0	0	0	0	78	1	1		3	8	109	0	200
3:00 PM	0	1	0	1	90	0	3		6	12	78	0	191
3:15 PM	0	0	1	0	80	1	1		6	11	98	0	198
3:30 PM	0	0	0	0	107	1	1		3	8	81	0	201
3:45 PM	0	0	0	0	105	0	2		4	11	83	0	205
4:00 PM	0	0	0	0	137	3	4		5	10	89	0	248
4:15 PM	0	0	0	0	128	3	3		0	14	98	0	246
4:30 PM	**0**	**0**	**1**	**0**	**119**	**3**	**2**		**4**	**19**	**109**	**0**	**257**
4:45 PM	**0**	**0**	**0**	**0**	**118**	**2**	**4**		**7**	**14**	**111**	**0**	**256**
5:00 PM	**0**	**0**	**0**	**0**	**126**	**2**	**1**		**3**	**10**	**101**	**0**	**243**
5:15 PM	**0**	**0**	**0**	**0**	**131**	**4**	**1**		**5**	**8**	**125**	**0**	**274**
5:30 PM	0	0	0	0	125	6	1		2	13	100	0	247
4:30 - 5:30 PM Peak Hr	**0**	**0**	**1**	**0**	**494**	**11**	**8**		**19**	**51**	**446**	**0**	**1030**
Peak Hr Factor					0.94						0.89		0.94





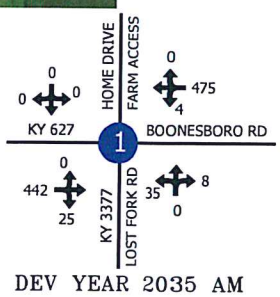
EXISTING 2024 AM PEAK HOUR



DY 2035 1% GROWTH



DY 2035 NEW TRIPS



DEV YEAR 2035 AM

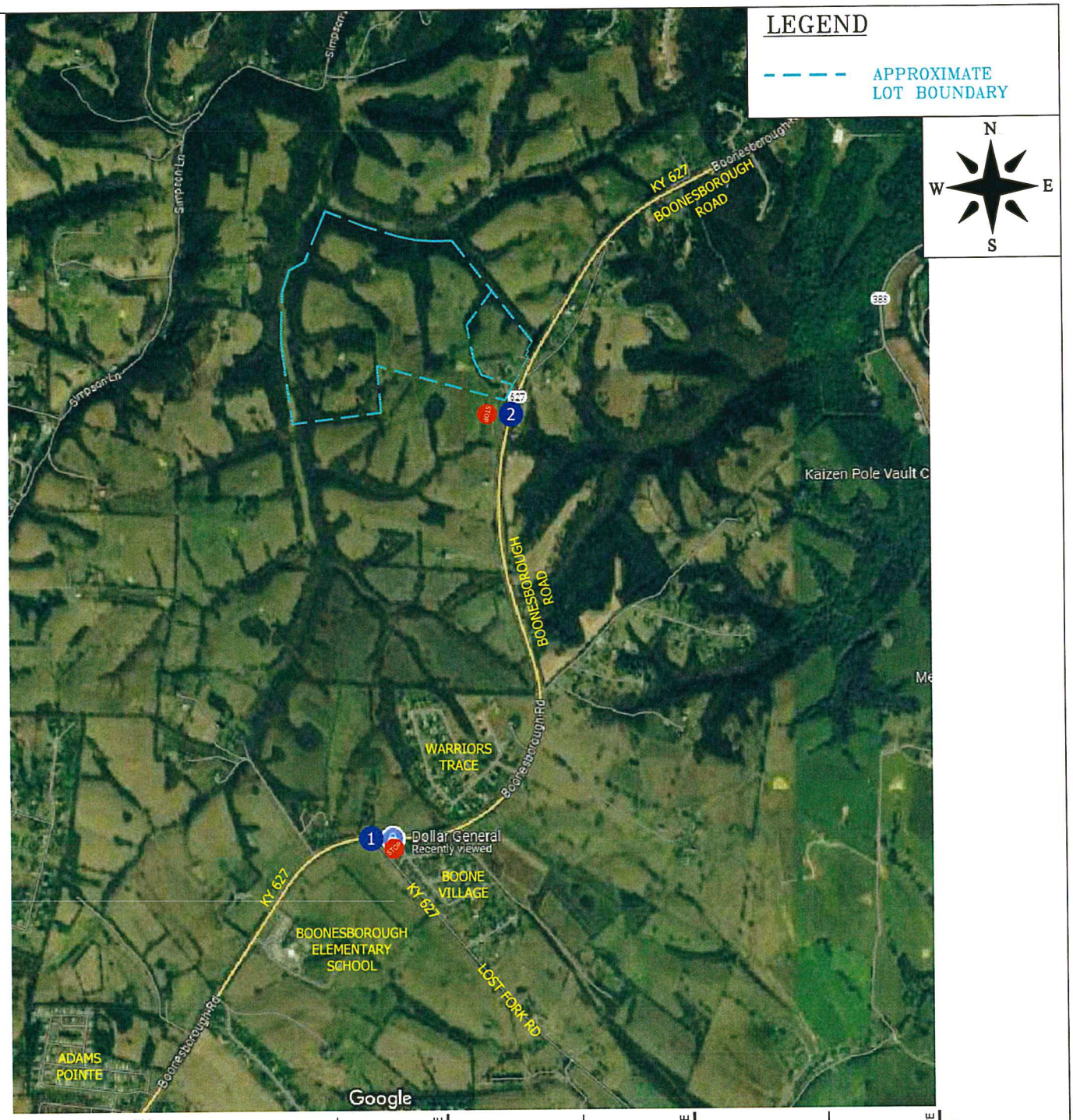
VISION ENGINEERING

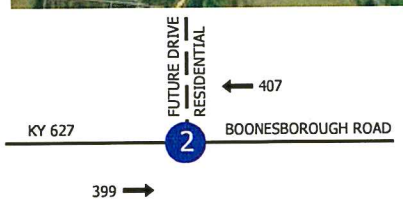
BOONESBOROUGH ROAD
KY 627

MADISON COUNTY, KENTUCKY

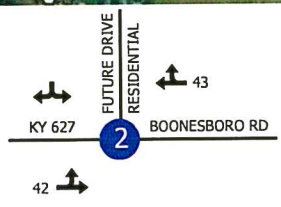
2024 WEEKDAY MORNING PEAK HOUR
EXISTING & FUTURE 2035 TRAFFIC

EXHIBIT V-1

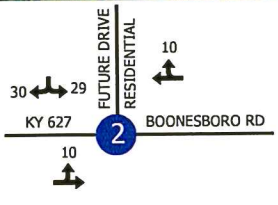




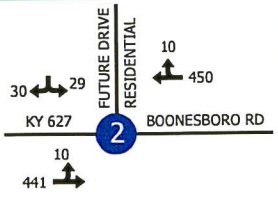
EXISTING 2024 AM PEAK HOUR



DY 2035 1% GROWTH



DY 2035 NEW TRIPS



DEV YEAR 2035 AM

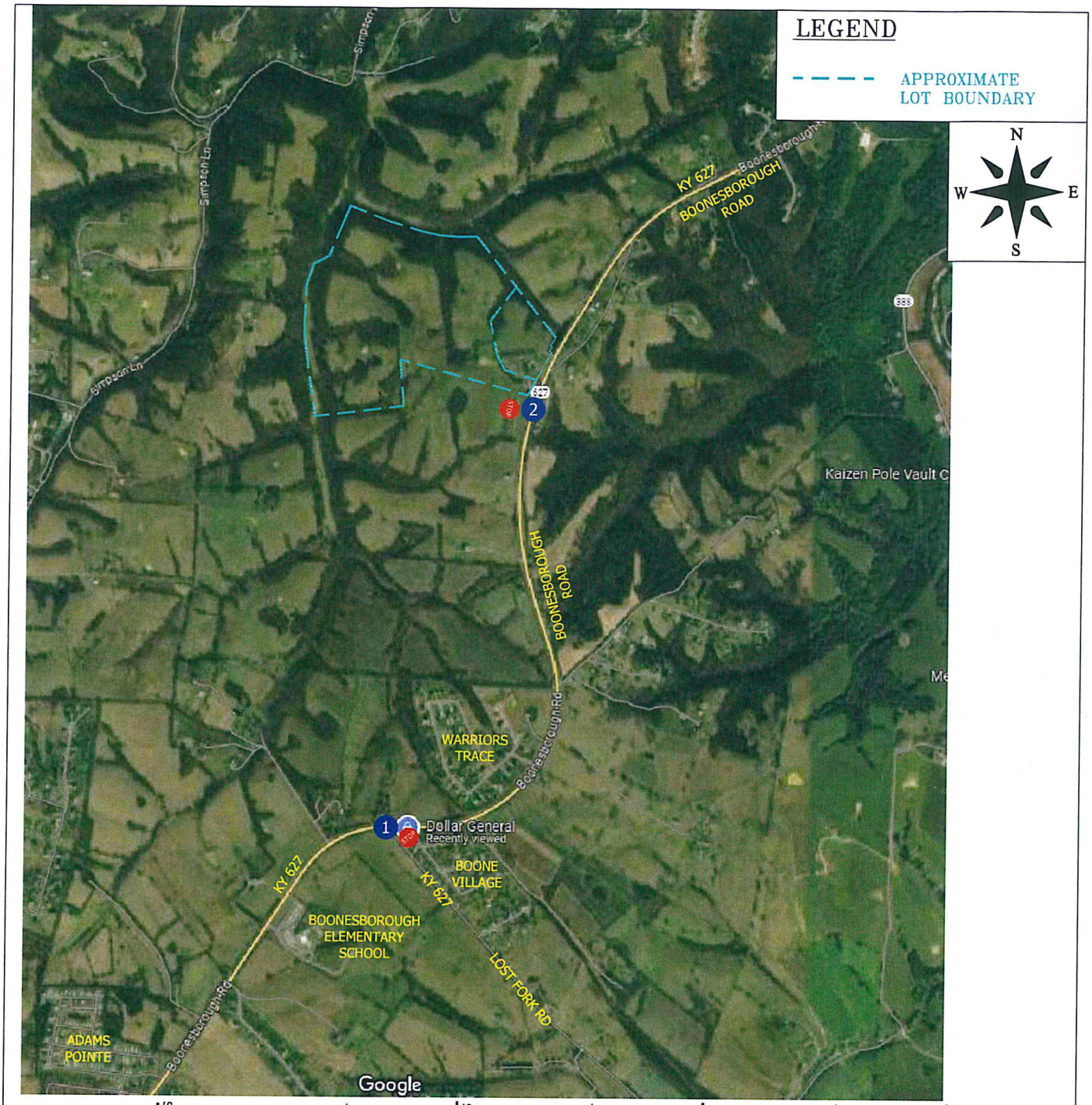
VISION ENGINEERING

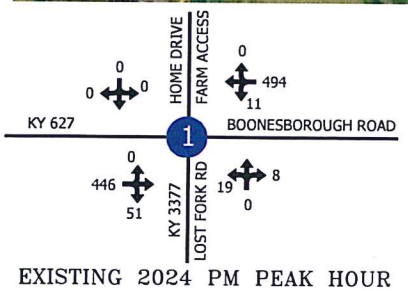
BOONESBOROUGH RD (KY 627) at Planned Residential Access

MADISON COUNTY, KENTUCKY

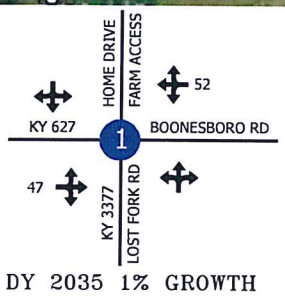
2024 WEEKDAY MORNING PEAK HOUR EXISTING & FUTURE 2035 TRAFFIC

EXHIBIT V-2

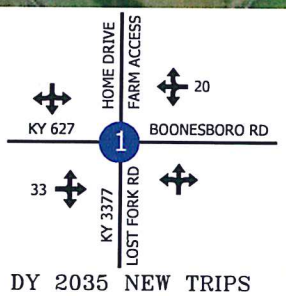




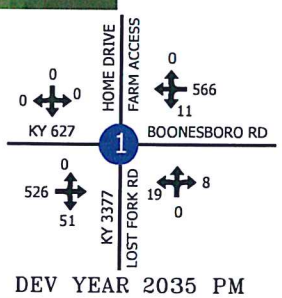
EXISTING 2024 PM PEAK HOUR



DY 2035 1% GROWTH



DY 2035 NEW TRIPS



DEV YEAR 2035 PM

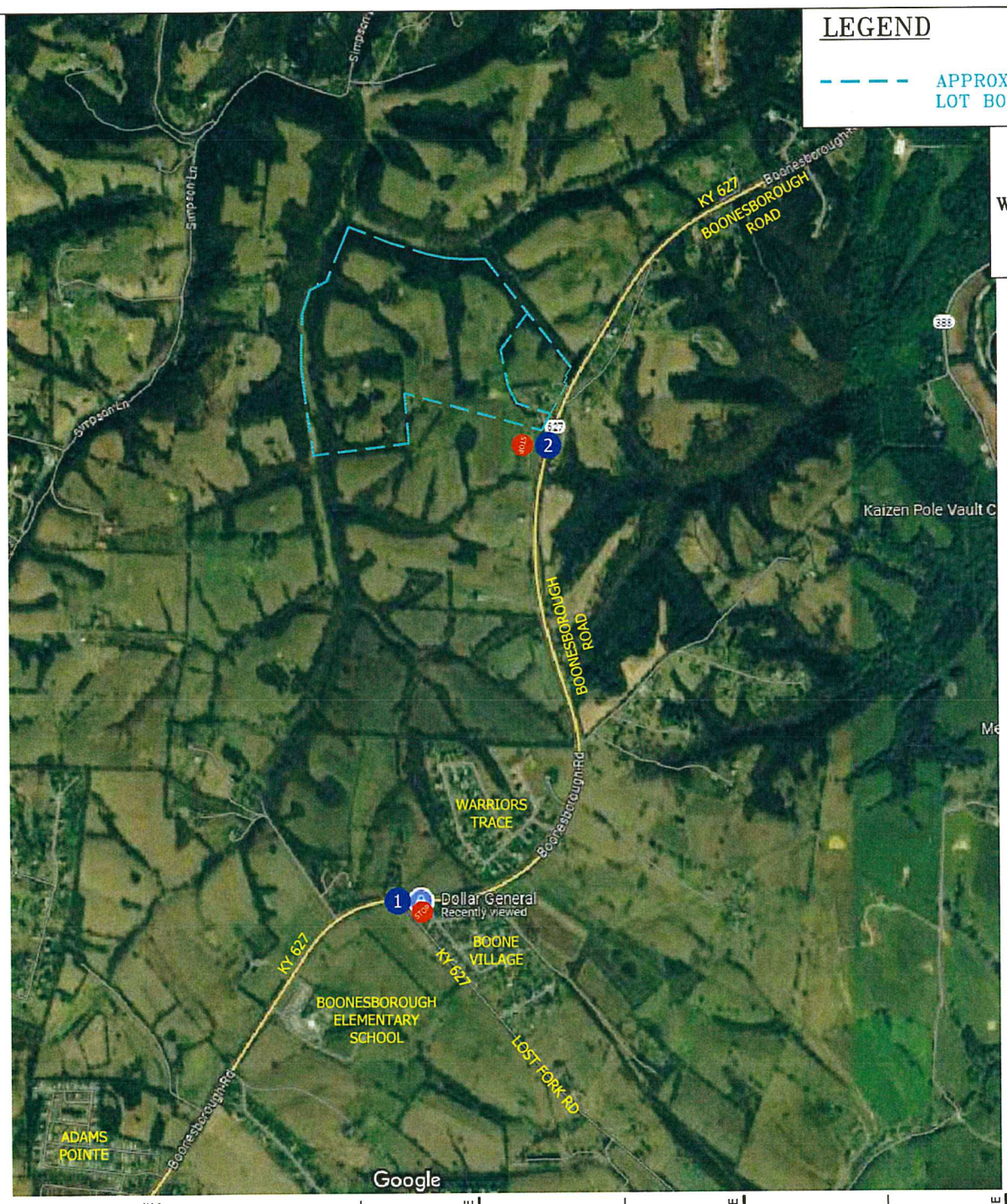
VISION ENGINEERING

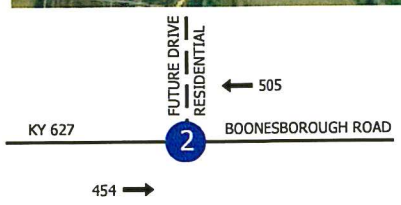
BOONESBOROUGH ROAD (KY 627) at LOST FORK ROAD (KY 3377)

MADISON COUNTY, KENTUCKY

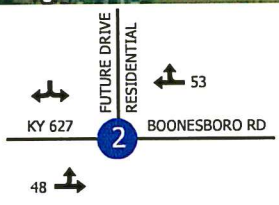
2024 WEEKDAY AFTERNOON PEAK HR EXISTING & FUTURE 2035 TRAFFIC

EXHIBIT V-3

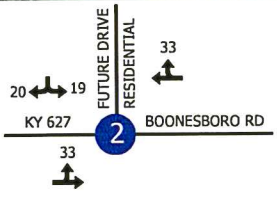




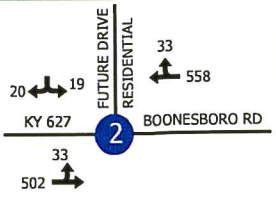
EXISTING 2024 AM PEAK HOUR



DY 2035 1% GROWTH



DY 2035 NEW TRIPS



DEV YEAR 2035 AM

VISION ENGINEERING

BOONESBOROUGH RD (KY 627) at Planned Residential Access

MADISON COUNTY, KENTUCKY

2024 WEEKDAY AFTERNOON PEAK HR EXISTING & FUTURE 2035 TRAFFIC

EXHIBIT V-4

Exhibit 700-03

COMMON GEOMETRIC PRACTICES — **EXHIBIT 700-03**

RURAL ARTERIAL ROADS (OTHER THAN FREEWAYS) ④⑦

	TERRAIN			
DESIGN SPEED (M.P.H.) ⑥	LEVEL	50-75		
	ROLLING	50-65		
	MOUNTAIN	45-60		
		TRAFFIC VOLUME		
LANE WIDTH (FEET) ③	DESIGN SPEED	UNDER 400 A.D.T ⑪	400-2000 A.D.T	OVER 2000 A.D.T
	40 MPH	10	11	12
	45 MPH			
	50 MPH	11	12	
	55 MPH			
	60 MPH			
	65 MPH			
	70 MPH			
	75 MPH			
MIN. USABLE SHOULDER WIDTH (FEET) ⑤⑨	ALL SPEEDS	4	6	8
MIN. CLEAR ROADWAY WIDTH OF NEW AND RECONSTRUCTED BRIDGES	ALL SPEEDS	TOTAL WIDTH OF LANES + USABLE SHOULDER WIDTHS ⑩		

MINIMUM RADIUS (FEET)	DESIGN SPEED	eMAX. 4%	eMAX. 6%	eMAX. 8%
	30 MPH	250	231	214
	35 MPH	371	340	314
	40 MPH	533	485	444
	45 MPH	711	643	587
	50 MPH	926	833	758
	55 MPH	1190	1060	960
	60 MPH	1500	1330	1200
	65 MPH	---	1660	1480
	70 MPH	---	2040	1810
	75 MPH	---	2500	2210

NORMAL PAVEMENT CROSS SLOPES ③	RATE OF CROSS SLOPES = 2%													
NORMAL SHOULDER CROSS SLOPES	EARTH = 8% PAVED = 4%													
MAXIMUM GRADE (PERCENT)	M.P.H.	20	25	30	35	40	45	50	55	60	65	70	75	80
	LEVEL	5						4		3				
	ROLLING	8		7		6		5		4				
	MOUNTAIN	10	9	8		7		6		5				
MINIMUM STOPPING SIGHT DISTANCE ①	(FEET)	115	155	200	250	305	360	425	495	570	645	730	820	910
MINIMUM PASSING SIGHT DISTANCE ②	(FEET)	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400

① MINIMUM STOPPING SIGHT DISANCE BASED ON AN EYE HEIGHT OF 3.5 FT AND AN OBJECT HEIGHT OF 2.0 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENTS.

② MINIMUM PASSING SIGHT DISTANCE BASED ON AN EYE HEIGHT OF 3.5 FT AND AN OBJECT HEIGHT OF 3.5 FT. CONSIDER BOTH HORIZONTAL AND VERTICAL ALIGNMENTS.

③ NORMAL PAVEMENT CROSS SLOPES ON BRIDGES IS 2%.

④ FOR GUIDANCE ON FREEWAYS, REFER TO AASHTO'S, "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS", CURRENT EDITION.

⑤ FOR SLOPES 4:1 OR FLATTER, USABLE WIDTH IS THE SAME AS GRADED WIDTH, FOR SLOPES STEEPER THAN 4:1, USABLE WIDTH TERMINATES AT SLOPE ROUNDING.

⑥ JUSTIFICATION FOR THE SELECTED DESIGN SPEED SHOULD BE DOCUMENTED IN THE DESIGN EXECUTIVE SUMMARY.

⑦ FOR GUIDANCE ON INTERSTATES, REFER TO AASHTO, "A POLICY ON DESIGN STANDARDS INTERSTATE SYSTEM", CURRENT EDITION.

⑧ ON ROADWAYS TO BE RECONSTRUCTED, EXISTING 11FT LANES MAY BE RETAINED WHERE THE SAFETY RECORDS AND ALIGNMENT ARE SATISFACTORY.

⑨ PREFERABLY, USABLE SHOULDERS ON ARTERIALS SHOULD BE PAVED; HOWEVER, WHERE VOLUMES ARE LOW OR IN AREAS WHERE WIDE PAVED SHOULDERS ARE UNDESIRABLE, THE PAVED PORTION MAY BE A MINIMUM OF 2FT, PROVIDED BICYCLE ACCOMMODATIONS ARE NOT BEING PROVIDED.

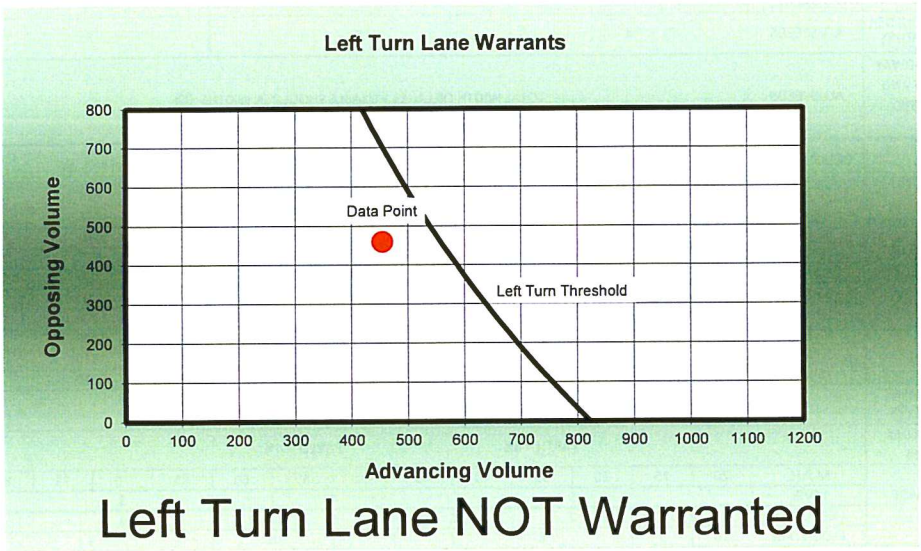
⑩ ON BRIDGES IN EXCESS OF 200FT IN LENGTH, OFFSET TO PARAPET, RAIL, OR BARRIER MAY BE AT A MINIMUM OF 4FT FROM EDGE OF TRAVELED WAY ON BOTH SIDES.

⑪ WHERE FREQUENT USE BY TRUCKS IS ANTICIPATED, ADDITIONAL TRAVELED-WAY SHOULD BE CONSIDERED.

Boonesborough Road (KY 627) Left Turn Lane Warrants

Input Fields

Left Turn Volume (vph)	10	Speed Limit (mph)	55
Advancing Volume (vph)	441	No. of through lanes	2
Opposing Volume (vph)	460	Percent Heavy Vehicles (decimal percent)	0.18



Left Turn Lane NOT Warranted

Development Year 2035 Morning Peak Hour

Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

Boonesborough Road (KY 627) -- Right Turn Lane Warrants

Input Fields

Right Turn Volume (vph)	10	Speed Limit (mph)	55
Advancing Volume (vph)	450		



Right Turn Lane NOT Warranted

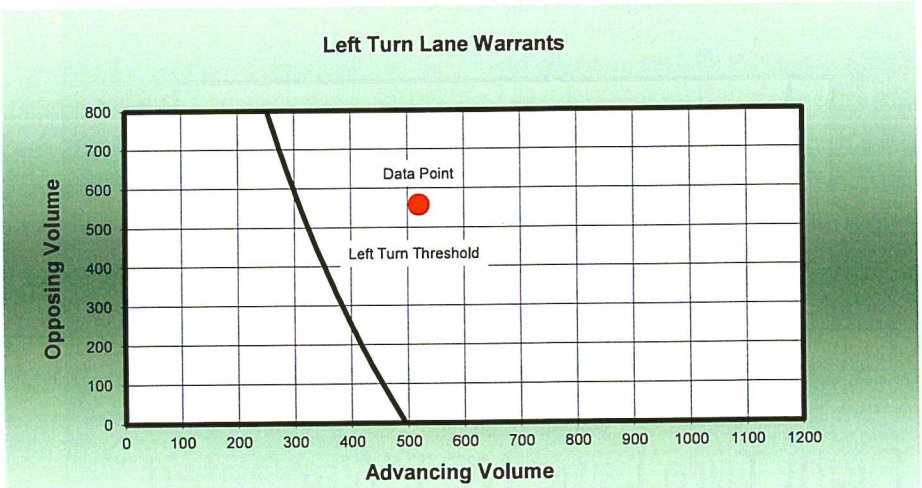
Development Year 2035 AM Peak Hour

Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

Boonesborough Road (KY 627) Left Turn Lane Warrants

Input Fields

Left Turn Volume (vph)	33	Speed Limit (mph)	55
Advancing Volume (vph)	502	No. of through lanes	2
Opposing Volume (vph)	558	Percent Heavy Vehicles (decimal percent)	0.18



Left Turn Lane WARRANTED

Development Year 2035 Afternoon Peak Hour

Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

Boonesborough Road (KY 627) -- Right Turn Lane Warrants

Input Fields

Right Turn Volume (vph)	33	Speed Limit (mph)	55
Advancing Volume (vph)	558		



Right Turn Lane NOT Warranted

Development Year 2035 PM Peak Hour

Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

Madison County, Kentucky

Trafficware Synchro version 10, HCM Capacity Analysis

Unsignalized Intersections:

- Boonesborough Road (KY 627) at Lost Fork Road – existing & future conditions
- Boonesborough Rd (KY 627) at Planned Residential Drive – existing & future

Highway Capacity Manual (HCM) Analysis Worksheets Order

Existing Weekday 2024 AM Morning Peak Hour

Future Weekday 2035 AM Peak Hour with 1% annual growth

Existing Weekday 2024 PM Afternoon Peak Hour

Future Weekday 2035 PM Peak Hour with 1% annual growth

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	391	25	4	403	35	8
Future Vol, veh/h	391	25	4	403	35	8
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, %	2	-	-	2	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	5	5	18	5	5
Mvmt Flow	425	27	4	438	38	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	452	0	885	439
Stage 1	-	-	-	-	439	-
Stage 2	-	-	-	-	446	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1093	-	312	612
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1093	-	310	612
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	639	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	341	-	-	1093	-
HCM Lane V/C Ratio	0.137	-	-	0.004	-
HCM Control Delay (s)	17.2	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	442	25	4	475	35	8
Future Vol, veh/h	442	25	4	475	35	8
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, %	2	-	-	2	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	5	5	18	5	5
Mvmt Flow	480	27	4	516	38	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	507	0	1018	494
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1043	-	260	569
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1043	-	259	569
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.1	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	288	-	-	1043	-
HCM Lane V/C Ratio	0.162	-	-	0.004	-
HCM Control Delay (s)	19.9	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	30	10	441	450	10
Future Vol, veh/h	29	30	10	441	450	10
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	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	18	18	2
Mvmt Flow	32	33	11	479	489	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	996	495	500	0	-	0
Stage 1	495	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	271	575	1064	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	267	575	1064	-	-	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1064	-	367	-	-
HCM Lane V/C Ratio	0.01	-	0.175	-	-
HCM Control Delay (s)	8.4	0	16.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	446	51	11	494	19	8
Future Vol, veh/h	446	51	11	494	19	8
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, %	2	-	-	2	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	5	5	18	5	5
Mvmt Flow	485	55	12	537	21	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	540	0	1074	513
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	561	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1013	-	240	555
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	565	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	236	555
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	565	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.2	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	284	-	-	1013	-
HCM Lane V/C Ratio	0.103	-	-	0.012	-
HCM Control Delay (s)	19.1	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	526	51	11	566	19	8
Future Vol, veh/h	526	51	11	566	19	8
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, %	2	-	-	2	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	5	5	18	5	5
Mvmt Flow	572	55	12	615	21	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	627	0	1239	600
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	639	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	940	-	191	495
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	940	-	187	495
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	NW
HCM Control Delay, s	0	0.2	23
HCM LOS			C

Minor Lane/Major Mvmt	NWLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	-	-	940	-
HCM Lane V/C Ratio	0.128	-	-	0.013	-
HCM Control Delay (s)	23	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	20	33	502	558	33
Future Vol, veh/h	19	20	33	502	558	33
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	-2	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	18	18	2
Mvmt Flow	21	22	36	546	607	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1243	625	643	0	-	0
Stage 1	625	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	193	485	942	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	182	485	942	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.9	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	942	-	268	-	-
HCM Lane V/C Ratio	0.038	-	0.158	-	-
HCM Control Delay (s)	9	0	20.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Traffic Impact Study Certification

I Mark McIntosh certify that this Traffic Impact Study has been prepared under my direct supervision and that I am a Professional Engineer registered in the State of Kentucky and have successfully completed the Traffic Impact Study Requirements training course required by KYTC. Furthermore, I certify that this study has been completed in accordance with the KYTC Traffic Impact Study Requirements and in accordance with engineering standards of practice. The results presented have been determined to be accurate representations of existing and anticipated conditions based on the assumptions and methodologies presented in this report.

Mark McIntosh
KY PE No. 23098

College of Engineering
Kentucky Transportation Center

TECHNOLOGY TRANSFER PROGRAM

TRAFFIC IMPACT STUDY COURSE
Certificate of Completion (3.5 PDH)

Mark McIntosh
KY PE License No. 23098

Completed: 07/15/2022
Expires: 07/15/2026
Company: University of Kentucky

TIM THARPE
Tim Tharpe, KYTC
Director of Traffic Operations

Adam Kirk, Instructor

The official status of this certificate can be verified with the KYTC Division of Traffic Operations

Mark S. McIntosh PE, PTOE

128 East Reynolds Road Suite 150, Lexington KY 40517
Email: mmcintosh@visionengr.com Office Phone: (859) 233-3150

Project leader and team member with abundant experience delivering traffic impact studies, traffic signal design, transportation field studies, safety and work zone plans, traffic modeling, computer simulation and roadway design. Technical expertise demonstrated in land development site design, planning and zoning projects, subdivision plats and development plans.

EDUCATION
University of Kentucky, 1997 Bachelor of Science (Civil Engineering)

REGISTRATIONS
Professional Engineer, KY #23098

Professional Traffic Operations Engineer #4366

KYTC Traffic Impact Study Training July 2022

KYTC / ACEC Basic Traffic Engineering Design Training November 2018

PROFESSIONAL MEMBERSHIPS
ITE

RELEVANT EXPERIENCE

Vision Engineering (August 2017 – present)

Prepares KYTC and City of Lexington roadway designs according to state and local standards. Conduct intersection turning movement counts and impact studies to support development sites and adhere to KYTC policy and local guidelines. KYTC signal designs have been prepared in Lexington (US 68) entrance Fountains at Palomar 16 acre commercial development, 200 acre Oak Grove Racing and Gaming entrance at Fort Campbell Blvd (US 41A), Louisville Poplar Level Road / Derby City Gaming access

Quest Engineers / HDR Engineering (August 1997 – August 2017)

Work experience included 40+ traffic signal design plans and reviewed construction cost estimates and reviewing bids. Approximately 100 Lexington record plats, development plans and zone change requests were prepared and certified. Work zone / traffic control plans for UK healthcare expansion on South Limestone were prepared according to FHWA MUTCD nationally accepted standards.

City of Lexington KY government (June 1992 - June 1997)

Served as a Traffic Engineer in new development plan review and staff engineer at Planning Commission, Building Inspection and Board of Adjustment public meetings. Provided traffic control plan review for lane closures, detours and roadway lighting design on residential streets and state highways.

Wilbur Smith Associates (CDM-Smith), (Sept. 1986 – June 1991)

Engineering Technician in highway design, hydrology, environmental analysis and traffic studies. Field surveying crew member on roadway and archaeological projects.

Computer Skill Set

Microsoft Word, Excel, PowerPoint, Outlook, Bluebeam Revu, AutoCAD and MicroStation computer aided drafting software, Autoturn Vehicle Tracking Software, GuidSign, SignCAD, PTV Group VISSIM, Synchro-SimTraffic and FHWA Highway Capacity Software, Bentley Systems ProjectWise Explorer

Sustainable Site Utilities for Palisades Craft Bourbon Distillery

The design and development of Palisades Craft Bourbon Distillery is deeply rooted in a commitment to sustainability and environmental stewardship. As we move forward with this project, we aim to significantly minimize reliance on traditional "grid" services by integrating renewable energy sources and sustainable infrastructure into every aspect of operations. This approach requires a lot of scrutiny, and we have not yet determined the project's specific needs. Currently, we have engaged with the following individuals and utility providers regarding this project:

- **Madison County Health Department**, Sam Metcalf —Next steps: Conduct on-site percolation in a test pit for the proposed septic leach field. Evaluation is anticipated to occur prior to the October 15 Planning Committee meeting.
- **Northern Madison County Sanitation District**, Elliot Turner – Discussed tap locations if the distillery needs to connect to sanitary sewer services. Clay's Ferry Estates is the nearest available and would require significant infrastructure to work (2 lift stations & grinder pump). Plans to extend SS across I-75 are underway and may provide a more feasible connection opportunity.
- **Madison County Utilities District**—We discussed tap locations for domestic water services. Carr Lane and Boones Trace are the nearest available; both have existing 4-inch lines.
- **Kentucky Utilities** – We identified the closest connection points to three-phase services.
- Nathan Cryder, Solar Energy Consultant – Currently designing the distillery's micro-grid to include photovoltaic arrays and Battery Energy Storage System (BESS). Calculations for distillery-specific equipment are ongoing.
- **C & I Engineering** – Optimizing distillery process solutions and sustainable design solutions.
- **Madison County Fire Department**, Tim Gray, Fire Chief – Discussed alternative fire water supply systems. Chief Gray expressed approval of an alternative supply source for fire suppression. Project consultants will continue to engage with Chief Gray as engineering design progresses. Fire water will now be stored in an above ground tank instead of sharing the volume of the cooling water pond. An on-site well will feed the tank to maintain required water levels.
- **Beam Institute**, Seth DeBolt—Excellent resource with a wealth of distilling knowledge from grain to finished product. Guides from a holistic perspective to successfully mix sustainability with innovation throughout the distilling process.

Energy Generation and Consumption

To reduce its carbon footprint, the distillery will harness the sun's power through a comprehensive solar panel installation across the campus. This renewable energy source will serve as the primary electricity provider for the distillery, powering production facilities, administrative offices, and visitor spaces. Solar energy will be supplemented by energy-efficient systems and equipment throughout the site, ensuring optimal resource use and minimizing waste.

In addition to solar energy, the distillery will employ innovative methods to convert distillation byproducts into a secondary energy source. Waste from the distillation process, such as spent grains and other organic materials, will be processed on-site using anaerobic digestion or other suitable technologies to generate biogas. This biogas will be captured and utilized as a supplemental energy source, further reducing our need for external energy inputs and aligning with the distillery's mission of waste reduction.

Conversations are in progress with Kentucky Utilities. Three-phase connection options are being considered. Ultimately, we anticipate the distillery utilizing a combination of solar-generated power and grid-tied power.

Water and Wastewater Management

Water is a vital component of bourbon production, and Palisades will prioritize the use of sustainable water sources. A dedicated well will be established on-site to supply the distillery with the necessary water for production, reducing its dependence on municipal water supplies. To ensure the well's long-term sustainability, water usage will be carefully monitored and managed in accordance with best practices. Tom Dugan of Bluestone Geologic identified preliminary well locations at the time of this initial development plan submittal. Further investigation is necessary better to understand the volume potential of the different well locations. In addition to providing process and domestic water, the goal is for the well to support the cooling and fire suppression retention pond levels. Furthermore, rainwater from the solar array and roof will be directed to a swale feature directed to the retention pond(s).

Wastewater generated by the distillery will be treated on-site using a system designed to handle the operation's specific needs. Process cooling water, separate from process/production water, will be recycled to the cooling water retention pond.

Stillage will be separated into thin and thick. Thin stillage will be treated appropriately and then go into the retention pond. Thick stillage will be converted to composted fertilizer for grain-growing operations. As mentioned, Phase 2 intends to incorporate anaerobic digestion to process stillage into usable energy and fertilizer.

A septic system will be developed with the local Authority Having Jurisdiction (AHJ) per local standards. The system will be engineered to meet all local regulations, ensuring that treated water is safely and responsibly returned to the environment. By treating wastewater on-site, we further decrease our reliance on external sewer systems and contribute to preserving local water resources.

Solid Waste

The distillery will employ the services of an approved garbage hauler in Madison County. The dumpster size and location are being determined.

Collaboration and Compliance

Throughout the development of the distillery, project consultants will work closely with local utility providers and regulatory agencies to identify the most effective strategies for achieving sustainability goals. This collaboration will ensure that the utility systems are designed and implemented in an environmentally responsible manner and compliant with all local codes and standards.

Given the innovative nature of the utility infrastructure, all proposed work will undergo rigorous engineering review and require approval by the local AHJ before any utility installations begin. This review process will serve as a safeguard, ensuring that our efforts to reduce grid dependency do not compromise safety, functionality, or environmental integrity.

In Conclusion

Palisades Craft Bourbon Distillery represents a bold step toward a more sustainable future in the spirits industry. By integrating renewable energy, sustainable water practices, and innovative waste management solutions into its programming, we aim to create a facility that produces exceptional bourbon and serves as a model for eco-conscious manufacturing. Palisades is committed to advancing this mission while working with local authorities and utility providers to ensure the project's successful and sustainable outcome.