Brandywine Aggregates, LLC
Case No.: 2023-0221-S: Special Exception, 2882 Patuxent River Road, Davidsonville, MD 21035
Hearing before Administrative Hearing Officer on February 29, 2024 at 11:30 a.m.

EXHIBIT LIST

Affidavit of Posting with photo of notice sign

1. Mine Plan & 40' scale inset plan (2 pages)
2. Mine Plan with zoning
3. Letter dated February 2, 2024 from Reliable re: closure
4. Office of Law Memorandum dated January 7, 2016
5. Road Functional Classification Map – Bill No. 12-15
6. CV – Mike Klebasko
7. CV – Jackie Chandler
8. Traffic Impact Study – February, 2023
9. Traffic Concepts letter – March 13, 2023
10. Patuxent River Rd. & Rossback Rd. – Technical Memo
11. Rossback Road – Technical Memo
12. CV – Jon Ferdinand
13. Vibra-Tech letter dated January 6, 2024
14. CV – Shep Tullier
15. Scenic & Historic Roads – OPZ Review Policy & Guidelines v. Aug 2018
16. Property on Maps (2 pages)
17. Images/renderings "Photo 4"
18. Images/renderings "Photo 5"
19. Images/renderings "Photo 6"

BEFORE THE ADMINISTRATIVE HEARING OFFICER
FOR ANNE ARUNDEL COUNTY

In re: Brandywine Aggregates, LLC * Case No.: 2023-0221-S

*

*

* * * * * * * * * * * *

AFFIDAVIT OF POSTING

I, the undersigned, being over the age of eighteen (18) and competent to testify to the matters contained herein do solemnly declare and affirm under the penalties of perjury the following:

(1) That I posted the notice sign in Case Nos.: 2023-0221-S in the name of Brandywine Aggregates, LLC.

(2) That the sign was posted on the 9 day of February, 2024.

(3) That the sign will be monitored to ensure that it remains posted until February 29, 2024.

(4) That the location of the sign that I posted is as follows:

a) 2882 Patuxent River Road, Davidsonville, Maryland 21035.

Signature of Affiant:

Daniel A Jones

Printed Name of Affiant:

Daniel Jones

Complete address of Affiant:

2050 Generals Highway

Annapolis, MD 21401

Date:

2/9/24


NOTICE
AN APPLICATION HAS BEEN FILED FOR SPECIAL EXCEPTION
TO ALLOW A CLAY AND BORROW PIT AND
SAND AND GRAVEL OPERATION IN A RA-DEA
AGRICULTURAL DISTRICT
LOCATION 2882 BRIGHT RING ROAD DARNESTOWN
CASE NO. 2023-0215-S
HEARING DATE: AUGUST 11,
PENDING A PUBLIC ZOOM MEETING. FOR INFO CONTACT
THE ZONING DIVISION AT 410-222-7437 OR VIEW WEBSITE
WWW.MDCOURTS.GOV/BOA/BOAHEARINGS

APP. EXHIBIT# 1
CASE: 2023-0221-S
DATE: 2/29/24

ZONING MAP

SITE#2822
3,704,424 SF OR 85.042 AC
2882 PAX, LLC
TM. 54, PARCEL 1
L.39428, F. 59

AREA FOR
STATIONARY
EQUIPMENT AND
STOCKPILES
789,409 SF
OR
18.122 AC

PROP. MINING AREA
2,482,920 SF
OR
57.012 AC

EX. STREAM "UPPER
PATUXENT RIVER
(PERENNIAL)

100' STREAM
BUFFER

PATUXENT RIVER ROAD

SITE

VICINITY MAP

PLAN
SCALE: 1"=100'

LINE TABLE

LEGEND

OWNERS
2882 PAX, LLC
2058 GENERAL HIGHWAY
ANNAPOLIS MD 21401

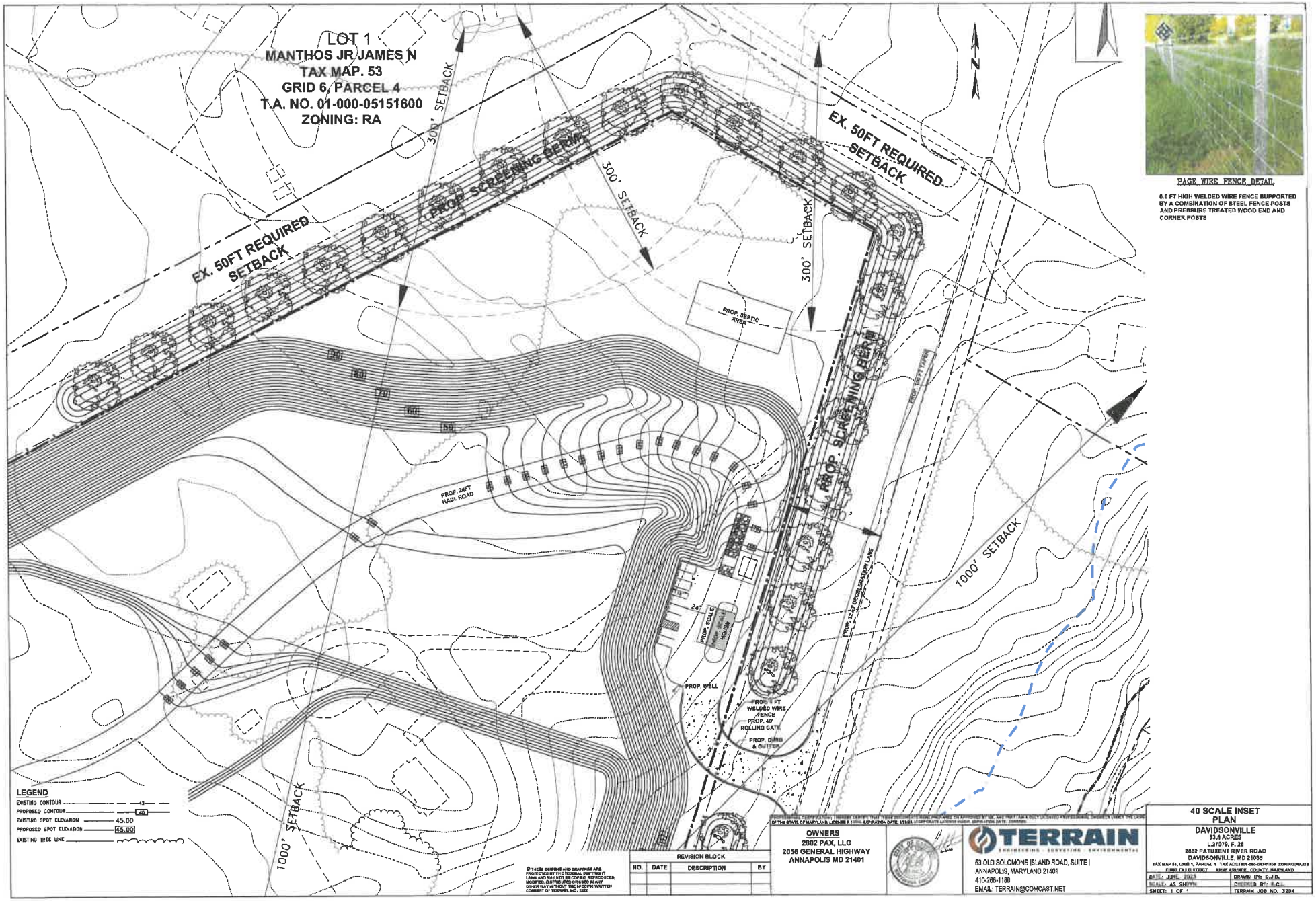
REVISION BLOCK

NO.	DATE	DESCRIPTION	BY

TERRAIN
53 OLD SOLOMONS ISLAND ROAD, SUITE I
ANNAPOLIS, MARYLAND 21401
410-266-1100
EMAIL: TERRAIN@COMCAST.NET

MINING
PLAN
DAVIDSONVILLE
63.4 ACRES
L.37679, F. 25
2882 PATUXENT RIVER ROAD
DAVIDSONVILLE, MD 21035
TAX MAP 54, GRID 1, PARCEL 1 TAX ACCT.NO.2-047-90014960 ZONING: RA/OS
FIRST TAX DISTRICT ANNE ARUNDEL COUNTY, MARYLAND

DATE: JUNE, 2023	DRAWN BY: D.J.B.
SCALE: AS SHOWN	CHECKED BY: E.C.L.
SHEET: 1 OF 1	TERRAIN JOB NO. 5204



PAGE WIRE FENCE DETAIL

6.0 FT HIGH WELDED WIRE FENCE SUPPORTED BY A COMBINATION OF STEEL FENCE POSTS AND PRESSURE TREATED WOOD END AND CORNER POSTS

REVISION BLOCK			
NO.	DATE	DESCRIPTION	BY

OWNERS
2882 PAX, LLC
2056 GENERAL HIGHWAY
ANNAPOLIS MD 21401

TERRAIN
ENGINEERING · SURVEYING · ENVIRONMENTAL
53 OLD SOLOMONS ISLAND ROAD, SUITE I
ANNAPOLIS, MARYLAND 21401
410-266-1180
EMAIL: TERRAIN@COMCAST.NET

40 SCALE INSET PLAN

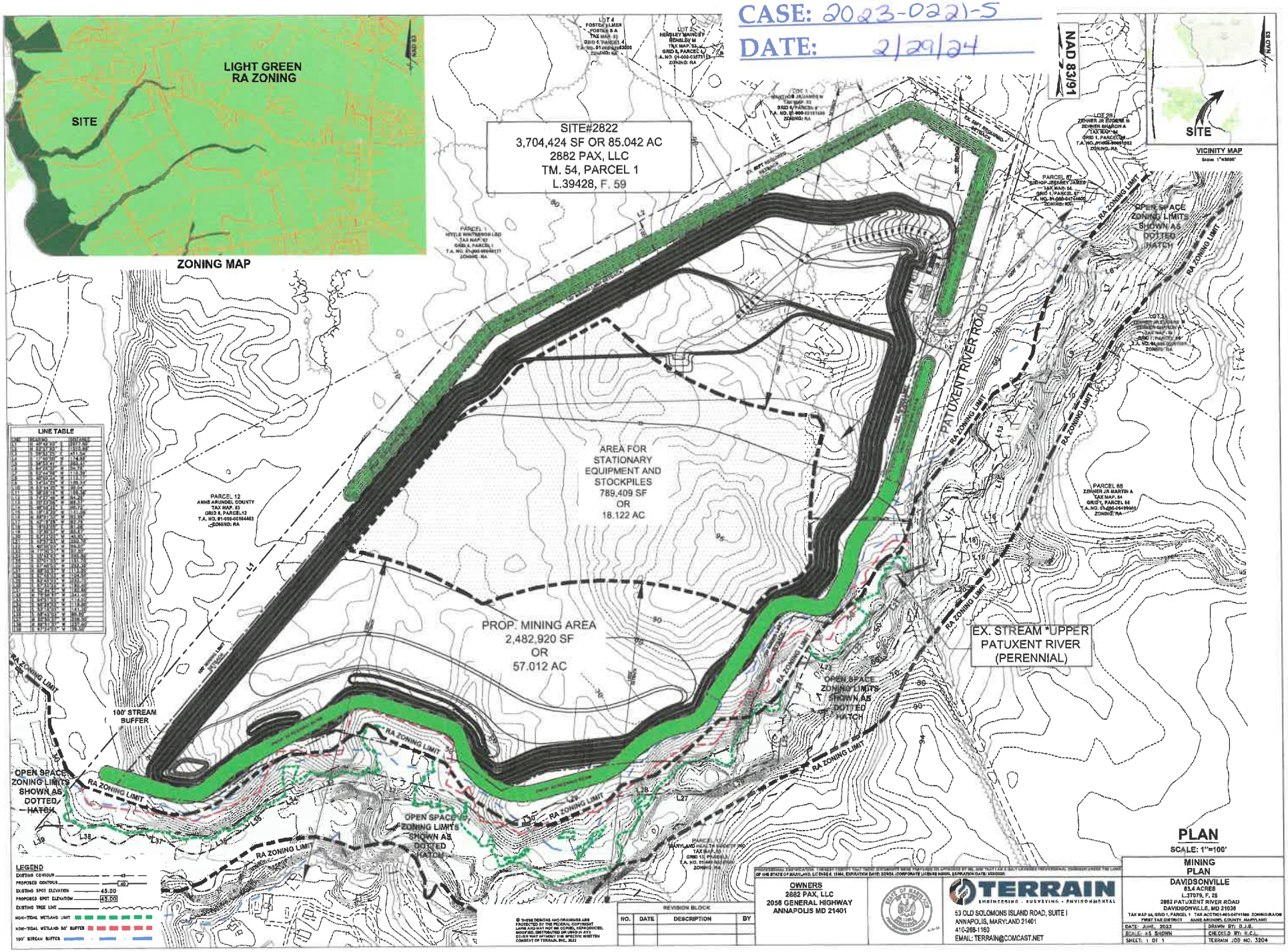
DAVIDSONVILLE
83.4 ACRES
L.37379, F. 26
2882 PATUXENT RIVER ROAD
DAVIDSONVILLE, MD 21035
TAX MAP 54, GRID 5, PARCEL 1 TAX ACCT#1-000-24749304 ZONING:RA/OS
FIRST TAX ID DISTRICT ANNE ARUNDEL COUNTY, MARYLAND

DATE: JUNE, 2023	DRAWN BY: D.J.B.
SCALE: AS SHOWN	CHECKED BY: E.C.
SHEET: 1 OF 1	TERRAIN JOB NO. 3224

APP. EXHIBIT# 2

CASE: 2023-0221-S

DATE: 2/29/24



PLAN

SCALE: 1"=100'

REVISION BLOCK

NO.	DATE	DESCRIPTION	BY

OWNERS
2882 PAX, LLC
2058 GENERAL HIGHWAY
ANNAPOLIS MD 21401

TERRAIN
ENGINEERING - SURVEYING - ENVIRONMENTAL
53 OLD SOLOMONS ISLAND ROAD, SUITE I
ANNAPOLIS, MARYLAND 21401
410-266-1180
EMAIL: TERRAIN@COMCAST.NET

MINING PLAN
DAVIDSONVILLE
83.4 ACRES
L.37079, F. 28
2882 PATUXENT RIVER ROAD
DAVIDSONVILLE, MD 21035
TAX MAP 54, GRID 1, PARCEL 1 TAX ACCT#01-003-04741680 ZONING:RA/OS
FIRST TAX DISTRICT ANNE ARUNDEL COUNTY, MARYLAND

DATE: JUNE, 2023	DRAWN BY: D.J.B.
SCALE: AS SHOWN	CHECKED BY: E.C.L.
SHEET: 1 OF 1	TERRAIN JOB NO. 3204

APP. EXHIBIT# 3
CASE: 2023-0221-S
DATE: 2/29/24

2/2/2024

Dear valued customer,

As we get into the new construction season, I would like to take a moment to thank you for your past support and wish you a safe and prosperous 2023.

Reliable continues to offer a broad range of services at our Waugh Chapel facility to cover your construction needs. From Bulk Tack, manufacturing Hot Mix, Warm Mix and Cold Mix asphalt products to recycling your broken asphalt and concrete. Reliable is ready to make your projects more profitable. We also sell common borrow, select borrow, RBRG/screened millings and an array of soil products

We will be closing our dirt pits permanently as of February 1st 2024. Sorry for any inconvenience this may cause, please feel free to contact me for other options in the area.

As a reminder we ask that you place your asphalt orders the night before if possible. If you are placing a same day asphalt order please call as early as possible.

Our winter hours of operations are 7am – 4pm

Our Haul Rate is $90 an hour portal to portal, plus a fuel surcharge when applicable

Sincerely,

Rob Scrivener, Vice President

Zeenat Timm, Sales Manager

Nathan Scrivener, Plants Manager

APP. EXHIBIT# 4
CASE: 2023-0221-S
DATE: 2/29/24

interoffice
MEMORANDUM

Anne Arundel County Office of Law

Attorney/Client Privileged –Work Product

To: Larry R. Tom, Planning and Zoning Officer

From: Gregory J. Swain, Senior Assistant County Attorney /S/

Via: Nancy McCutchan Duden, County Attorney /S/

Via: Lori L. Blair, Supervising County Attorney /S/

Date: January 7, 2016

Subject: State Preemption of Regulation of Sand and Gravel Mines

Question: Does State law preempt certain provisions of County law (§ 18-11-113) regulating sand and gravel mines?

Answer: Yes. Regulation of sand and gravel mines under State law largely preempts local regulation of sand and gravel mines. In my opinion, §§ 18-11-113(2), (3), (6), (8), (13), (15), (16) and (19) are preempted by State law, either by direct conflict or by implication.

Analysis:

The owner of the Riddle sand and gravel mine on Sands Road is seeking to expand operations and has asserted that certain provisions of the County's Special Exception law regulating sand and gravel mines are preempted by State law. The owner identified eight subsections of § 18-11-113 as preempted: §§ 18-11-113(2), (3), (6), (8), (13), (15), (16) and (19).

Maryland has enacted substantial statutory and regulatory measures that regulate virtually every aspect of surface mines. *See* Md. Code Annotated, *Environment* Article, Title 15 ("Mines and Mining"), Subtitle 8 ("Surface Mining"), §§ 15-801-15-834; COMAR 26.21.01.01-26.21.04.12. This statutory and regulatory scheme has been in place since 1975. *See* Laws of Maryland, Chapter 581 (1975). While the County has had some conditions for sand and gravel mines in place since 1971, the bulk of the County's current special exception requirements date to 1991. (County Bill 22-91).

The question of preemption of local law by State mining law was recently addressed in a 2012 case

decided by the Court of Special Appeals, *East Star LLC v. County Commissioners of Queen Anne's County,* 203 Md. App. 477 (2012). The issue in *East Star* was the same issue addressed in this Opinion: does the State's comprehensive statutory and regulatory scheme regulating sand and gravel mines preempt regulation of those facilities by local governments?

In *East Star*, Queen Anne's County enacted a zoning ordinance (Ordinance CO 08-20) that imposed certain conditions on sand and gravel mines, including limiting the actual extraction area to 20 acres or less, limiting the duration of the operation to five years, prohibiting new extraction areas from opening until the used area had been reclaimed, and requiring any extension of the five year operating term to be approved by the Board of Appeals. The licensee argued that the County law was preempted in light of the extensive State regulation of surface mines. The Court of Special Appeals reviewed the three types of preemption: express preemption, preemption by implication, or preemption by conflict:

> Express preemption occurs when the General Assembly, by statutory language, prohibits local legislation in a field. Preemption by implication occurs when a local law "deals with an area in which the [General Assembly] has acted with such force that an intent by the State to occupy the entire field must be implied." Conflict preemption occurs "when [a local law] prohibits activity which is intended to be permitted by state law, or permits an activity which is intended to be prohibited by state law."

East Star, LLC v. County Comm'r of Queen Anne's County, 203 Md. App. 477, 485 (2012). The Court then reviewed the extensive regulation of sand and gravel mines by the Department of the Environment and concluded that this regulatory scheme showed a clear intent by the State to exclusively occupy that field of regulation:

> In short, we hold that State law has provided a detailed and elaborate regulatory program for surface mining and manifests the general legislative purpose to create an all-encompassing scheme governing the areas Queen Anne's County seeks to control through CO 08-20. By addressing the maximum disturbance for surface mines, the time periods for mining activities, the reclamation process and conditional use approval of renewal or expansion, the County has acted beyond its zoning powers and impermissibly entered the realm of a State law that impliedly preempts its authority.

East Star, LLC, 203 Md. App. at 493. Thus, the Court concluded that the four components of the Queen Anne's County ordinance that were challenged were preempted by conflict, since the County law directly conflicted with the State law in all four of the relevant provisions.

A more recent decision of the Court of Special Appeals, *Prince George's County Council sitting as the District Council v. Bardon, Inc.,* No. 1695, filed September 18, 2015, cited extensively to *East Star* in holding that a provision of Prince George's County law that limited the operation of a sand and gravel mine to 5 years was unenforceable. This decision was an unreported decision and therefore may not be cited as precedent, but still indicates that the holding of *East Star* is sound.

Our Zoning Code provides that sand and gravel operations are a special exception (§ 18-11-113) requiring 19 different conditions to be met. Under the holding in *East Star*, some of these conditions directly conflict with State law provisions or encroach upon the State's comprehensive legislation and regulatory scheme. Specifically, in our opinion the following County Code provisions are preempted by conflict with State law:

> § 18-11-113(3) (preservation of archaeological sites) – preempted by COMAR 26.21.01.26 (archaeological investigations at the discretion of MDE).
>
> § 18-11-113(8) (reclamation may not increase grade above undisturbed areas) – preempted by State Code, *Environment* Article, § 15-822 (imposing comprehensive reclamation requirements)
>
> § 18-11-113(13) (area of disturbance) – preempted by COMAR 26.21.01.04F (MDE shall determine the area of maximum disturbance)
>
> § 18-11-113(15) (maximum time for operations shall be established as part of special exception approval) – preempted by State Code, *Environment* Article, § 15-814 (maximum time for operations to be set by MDE, but no more than 25 years)
>
> § 18-11-113(19) (combustion ash may not be used as fill for reclamation) – preempted by COMAR 26.21.04.01 through .12 (allowing use of combustion ash fill if approved by MDE).

In our opinion, the following provisions of the County Code are preempted by implication, in light of the State's extensive regulation in this area:

> § 18-11-113 (2) (operation shall not be noxious or offensive)
>
> § 18-11-113 (6) (limits on the use of machinery on site)
>
> § 18-11-113(16) (site to be cleared of litter daily)

These three conditions are already addressed in the State law requiring a detailed mining and reclamation plan that covers all operations of a mining site, as specified in *Environment* Article § 15-822. In addition, as discussed in *East Star*, an important factor in considering preemption is whether the State law pre-dated the County law, and in this case it does, in that the State law was largely enacted in 1975 while the County Code provisions only date to 1991. We therefore conclude that these three conditions are preempted by implication by State law.

In sum, the *East Star* case is directly on point and provides a framework for local governments to analyze whether zoning code provisions regarding sand and gravel mines (surface mines) are preempted, either by direct conflict or implication, by State law. As set out above, in our opinion 8 of the 19 special exception criteria for sand and gravel mines either conflict directly with State law or

are preempted by implication in light of the extensive State regulation in this area, and are therefore unenforceable. Please note that I have addressed only these specific sub-sections of § 18-11-113, as requested; if you would like me to review § 18-11-113 in its entirety please let me know and I would be happy to do so.

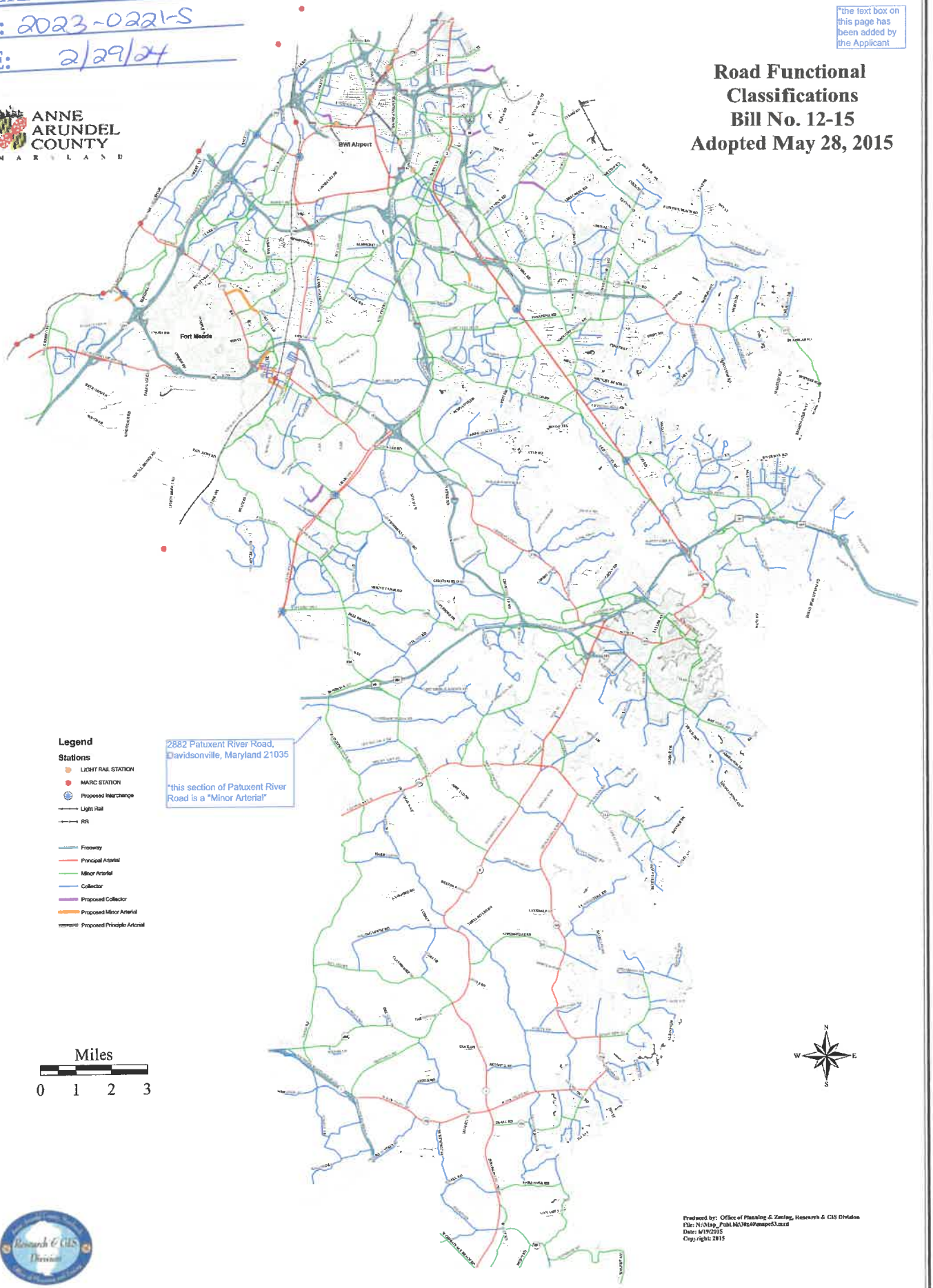
Notwithstanding the enclosed opinion, all of the provisions of § 18-11-113 are still part of County law and could be imposed by the Administrative Hearing Officer or Board of Appeals, but would be subject to legal attack based on the principles of preemption set forth in the *East Star* case.

APP. EXHIBIT# 5
CASE: 2023-0221-S
DATE: 2/29/24

*the text box on this page has been added by the Applicant

ANNE ARUNDEL COUNTY
MARYLAND

Road Functional Classifications
Bill No. 12-15
Adopted May 28, 2015



Produced by: Office of Planning & Zoning, Research & GIS Division
File: N:\Map_Publ.bk\MapManager53.mxd
Date: 6/19/2015
Copyright: 2015

APP. EXHIBIT# 6
CASE: 2023-0221-S
DATE: 2/29/24

Michael J. Klebasko, PWS

Manager-Maryland Division

Firm Association
Wetland Studies and Solutions, Inc. (WSSI)

Project Assignment
Senior Environmental Scientist

Years of Experience
With this firm: 6+
With other firms: 23.5

Education:
1991: M.S.,Marine-Estuarine Environmental Sciences, University of Maryland, College Park

1990: B.A. Biology, St. Mary's College of Maryland

Registrations & Certifications

1995 - US Army Corps of Engineers Certified Wetland Delineator (#WDCP94MD0310109B)

1995 - Professional Wetland Scientist (#000777), Society of Wetland Scientists

1996 - Qualified Forestry Professional in the State of Maryland

Mr. Klebasko has more than 29 years of extensive experience and expertise in the environmental science field. He has performed both nontidal and tidal wetland delineations within the State of Maryland and the District of Columbia on well over 20,000 acres of land and has worked with the Corps of Engineers to obtain written verification on the majority of his wetland delineations. Mr. Klebasko also has expertise in performing forest stand delineations; natural resource inventory studies; rare plant surveys; submerged aquatic vegetation surveys, and stream monitoring studies, as well as providing expert environmental testimony at Federal, State, and local hearings. He has designed, overseen construction, and prepared post-construction monitoring reports on more than 115 acres of wetland creation/mitigation sites. Finally, Mr. Klebasko has prepared, submitted and obtained Federal and State wetland permits on hundreds of projects on Federal, State, and local properties, for utility lines, and for commercial and residential development projects.

Mr. Klebasko is responsible for overseeing a team of environmental scientists, regulatory specialists, and certified arborists for all projects within the Maryland division.

Mr. Klebasko's relevant experience includes:

BeechTree, Prince George's County, MD: Delineated the limits of nontidal wetlands and streams on the 1,200±acre property. Prepared and submitted a joint Federal/State wetland permit application for infrastructure impacts such as road crossings and utility line connections, as well as the construction of a 25-acre instream lake. Attended numerous interagency meetings, attended local, federal and state sponsored public hearings, conducted stream monthly stream monitoring for 3+ years, designed and monitored a 3.04-acre wetland creation site. Conducted Forest Stand Delineation study and prepared report. Performed stream surveys for a State-listed endangered fish.

Port Tobacco Wetland Mitigation Bank, Charles County, MD: Environmental Scientist responsible for designing, overseeing construction, and preparing annual post-construction monitoring reports on the 90-acre consolidated wetland mitigation bank. Delineated the limits of existing nontidal wetlands and streams on the site, obtained authorization from the Corps of Engineers and the Maryland Department of the Environment to utilize the site as a wetland mitigation bank. Responsible for managing the dissemination of mitigation credits to purchasers.

Brandywine Community Park, Prince George's County, MD: Environmental Scientist responsible for delineating the limits of nontidal wetlands and streams on the 63-acre site for the MNCPPC – Park Planning and Development Division, and for obtaining written confirmation of the delineation from the U.S. Army Corps of Engineers. Mr. Klebasko also performed a Natural Resource Inventory (NRI) study and prepared an NRI Plan for the site which was subsequently approved by the MNCPPC – Environmental Planning Section.

Fairland Park Community, Montgomery & Prince George's Counties, MD:

Delineated limits of nontidal wetlands and streams on the 400±acre property. Attended site visits with Corps of Engineers to obtain written confirmation of wetland delineation. Conducted surveys for State-listed endangered plant species. Prepared and submitted a joint wetland permit application for jurisdictional impacts, including installation of off-site sanitary sewer lines. Attended numerous interagency meetings and site visits and provided expert environmental testimony at re-zoning hearings.

Sucker Branch 12-inch Sewer Main Rehabilitation, Howard County, MD: Environmental Scientist responsible for delineating limits of nontidal wetlands and streams along 800± linear feet of existing sanitary sewer line ROW. Prepared and submitted joint wetland permit application to replace several sections of exposed sewer pipe within Sucker Branch, as well as to install stream bank protection and stream invert protection at shallow water crossings. Coordinated with regulatory personnel and obtained Federal and State wetland permits.

APP. EXHIBIT# 7
CASE: 2023-0221-S
DATE: 2/29/24

Jackie Lynn Chandler

Lead Transportation Planner

Lead Transportation Planner

Summary of Professional Skills:

Over the past 40 years, I have served as a dedicated Project Manager and Transportation Planner, primarily based in Maryland. My role has encompassed providing comprehensive traffic engineering consulting services to both public and private sectors. Throughout my career, I have conducted numerous traffic impact studies across various counties and towns in the state.

My responsibilities have included developing detailed traffic impact studies, utilizing critical lane analyses, highway capacity analyses, and traffic signal warrant analyses. I have conducted extensive Anne Arundel County Road Rating analyses and managed traffic signal operation analyses using the "SYNCHRO" traffic simulation model.

I have been instrumental in the creation and management of over 2000 traffic impact studies throughout Maryland. Utilizing software such as AutoCAD and MicroStation, I have crafted road improvement concepts and pavement marking plans. I have actively participated in the planning and development process, collaborating on road improvements, roadway design, signage, pavement marking, and internal site circulation patterns.

My role has also involved a thorough review and analysis of feedback from state, county, and local review agencies regarding proposed development projects. Effective coordination with county and state personnel, elected officials, community representatives, and fellow engineering consultants has been integral to my work. I have been deeply involved in various work groups and committees aimed at enhancing the traffic impact study review process with governmental agencies.

Furthermore, I have played a pivotal role in shaping resolutions for traffic engineering studies, proposing mitigation measures to enhance traffic operations. I have demonstrated expertise by delivering expert testimony before multiple Planning Commissions and Boards of Appeals in various jurisdictions, including the City of Aberdeen, City of Cambridge, City of Bowie, Queen Anne's County, St. Mary's County, Charles County, Prince George's County Planning Board, Anne Arundel County Hearing Officer, Anne Arundel County Board of Appeals, Charles County Board of Appeals, St. Mary's County Board of Appeals, and Baltimore County Administrative Law Judge.

In summary, my four-decade-long journey as a Project Manager and Transportation Planner reflects an extensive and multifaceted engagement in traffic engineering, project management, collaboration with stakeholders, and expert testimony in support of improving transportation systems and infrastructure.

Professional Registrations

Member of the Institute of Transportation Engineers

Member of the Transportation CORE of the Baltimore Metropolitan Council

Member of the Maryland Building Industry Association

Member of NAIOP Commercial Real Estate Development Association

Member of the Anne Arundel County Adequate Public Facilities Transportation Workgroup

Member of the Maryland-National Capital Park and Planning Commission Industry Stakeholders Workgroup for the Upgrade to the Transportation Review Guidelines for Prince George's County

YEARS EMPLOYED AT TRAFFIC CONCEPTS INC.

30

Professional Experience:

Traffic Concepts, Inc.

7525 Connelley Drive, Suite B Hanover, Maryland 21076

Contact Number: 410-450-3189

Project Manager/Transportation Planner, August 1993 - Present

- Offering consulting services in traffic engineering to both public and private sectors, involving the creation of traffic impact studies across diverse counties and towns within Maryland.
- Designing comprehensive traffic impact studies encompassing critical lane analyses, highway capacity assessments, and traffic signal warrant evaluations.
- Conducting Anne Arundel County Road Rating analyses and overseeing traffic signal operation analyses using the "SYNCHRO" traffic simulation model.
- Directly managing and contributing to the development of over 2000 traffic impact studies throughout Maryland.
- Creating road improvement concepts and pavement marking plans using computer-aided design and drafting tools like AutoCAD and MicroStation.
- Active participation in the development and planning process, contributing insights to road enhancements, roadway design, signage, pavement marking, and internal site circulation patterns.
- Thoroughly reviewing and analyzing feedback from State, County, and Local review agencies concerning proposed developments.
- Extensive coordination with county and state personnel, elected officials, community representatives, and fellow engineering consultants to collaboratively develop, present, explain, and implement various development and traffic engineering projects.
- Expertly evaluating and recommending solutions for traffic engineering studies, including proposing measures to enhance traffic operations.
- Engaging in multiple work groups and committees to enhance the traffic impact study review process in collaboration with governmental agencies.
- Crafting technical and price proposals for a range of transportation engineering studies.
- Defining the scope of traffic impact studies through discussions and meetings with various counties and towns across Maryland.
- Providing expert testimony before Planning Commissions including the City of Aberdeen, City of Cambridge, City of Bowie, Queen Anne's County, St. Mary's County, and Charles County, as well as the Prince George's County Planning Board.
- Acknowledged as a traffic expert, delivering expert testimony before the Anne Arundel County Hearing Officer, Anne Arundel County Board of Appeals, Charles County Board of Appeals, St. Mary's County Board of Appeals, and the Baltimore County Administrative Law Judge.

Ronald W. Johnson Associates, INC.

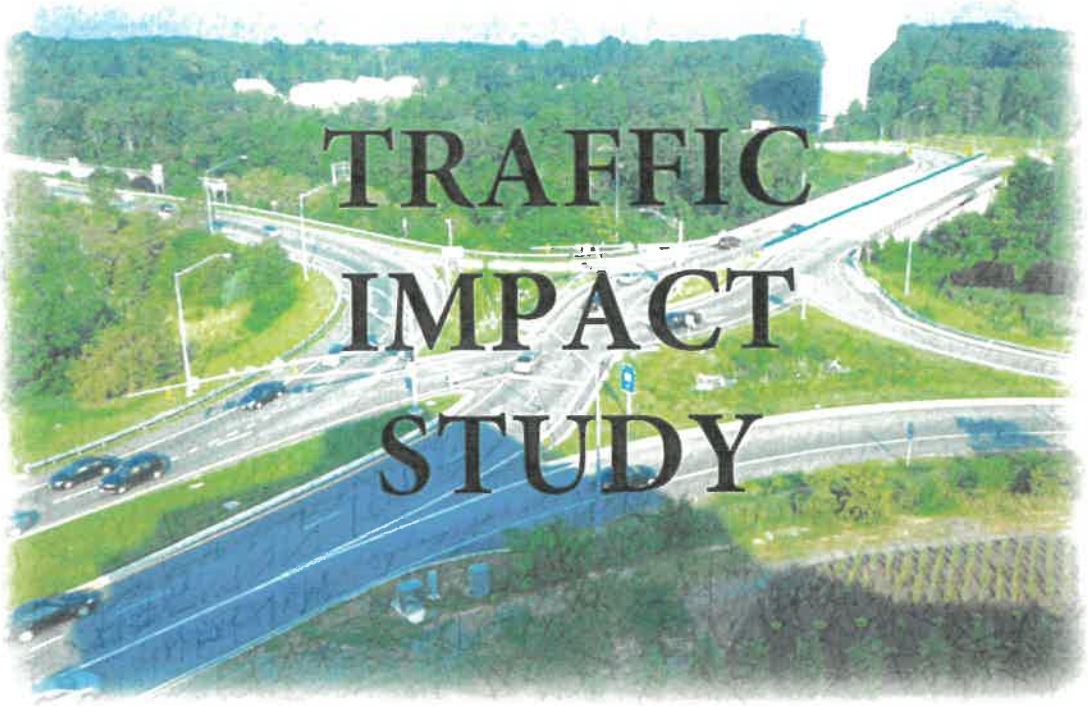
2661 Riva Road, Suite 420, Annapolis, Maryland 21401

Contact Number: 410-841-5221

Supervisor of Drafting Division, October 1982 to August 1993

- Oversee the day-to-day activities of the drafting division, managing a team of five draftspersons and two secretaries. Responsibilities include proficient utilization of AutoCAD, Microsoft Excel, and Microsoft Word software.
- Create comprehensive construction blueprints for planned roadways, encompassing maintenance of traffic strategies. Generate official record plats and corresponding plans for prospective subdivisions spanning Anne Arundel County.
- Formulate Public Works Agreements tailored for upcoming developments within Anne Arundel County.

APP. EXHIBIT# 8
CASE: 2023-0221-S
DATE: 2/29/24



SAND AND GRAVEL MINE OPERATION

2882 PATUXENT RIVER ROAD
ANNE ARUNDEL COUNTY, MARYLAND

FEBRUARY, 2023

PREPARED FOR:
BRANDYWINE AGGREGATES, LLC

PREPARED BY:
TRAFFIC CONCEPTS, INC.
7525 CONNELLEY DRIVE
SUITE B
HANOVER, MARYLAND 21076
410-760-2911
www.traffic-concepts.com

TC #3958

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
EXHIBIT 1 SITE LOCATION	
EXISTING CONDITION	4
EXHIBIT 2 LANE CONFIGURATION	
EXHIBIT 3 EXISTING TRAFFIC VOLUMES	
BACKGROUND CONDITION	7
FUTURE CONDITION	8
EXHIBIT 4 SITE GENERATED TRAFFIC	
EXHIBIT 5 TOTAL FUTURE TRAFFIC VOLUMES	
INTERSECTION CAPACITY ANALYSIS	11
CONCLUSIONS	12

APPENDICES

APPENDIX I	INTERSECTION CAPACITY CALCULATIONS
APPENDIX II	TRAFFIC COUNT INFORMATION
APPENDIX III	SCOPING AGREEMENT

INTRODUCTION

This traffic impact study was conducted for a proposed sand and gravel mine operation to be located at 2882 Patuxent River Road in Davidsonville, Maryland.

Project Description

The site is located along the west side of Patuxent River Road, south of Governor Bridge Road. The site will create a full movement access to Patuxent River Road. The property is proposed to generate approximately 200 truckloads per day.

Scope of Services

The study was developed in accordance with the Anne Arundel County Adequate Public Facilities Ordinance (APFO). The scope of services for this study is contained in a traffic scoping letter that was approved by the Anne Arundel County Office of Planning and Zoning and is dated February 7, 2023. The scoping letter is included in Appendix III. The key intersections listed below were analyzed during the weekday AM (7:00 AM to 9:00 AM) peak hours and the weekday PM (4:00 PM to 6:00 PM) peak hours. All road links are deemed "Scenic & Historic", therefore link analyses are not required.

Key Intersections

MD 424 @ Patuxent River Road/Rossback Road
MD 214 @ Patuxent River Road
Patuxent River Road @ Site Access

The key intersections and the location of the site are shown on Exhibit 1 and the lane use configurations are provided on Exhibit 2.

Study Methodology

The key intersections were analyzed with the Critical Lane Volume (CLV) methodology. The new site generated vehicle trips were determined with the *Institute of Transportation Engineers, Trip Generation Manual 11th Edition*. In addition, any signalized intersection with a critical lane volume greater than 1300 has been analyzed utilizing the Highway Capacity Manual.

Study Format

The study is structured to include analyses of the key intersections under existing, background and future traffic conditions.

The existing traffic condition is determined with the existing peak hour intersection turning movements and creates the baseline intersection levels of service.

The background traffic condition analysis of the key intersections includes peak hour trips generated by the nearby background developments. The total background trips are added to the existing traffic volumes to create the total background traffic volumes.

The future traffic condition determines the site generated peak hour trips. The total background traffic volumes are added to the site trips to create the total future traffic volumes. The total future traffic condition is described with the following formula:

Total Future Traffic = (Existing Traffic + Approved Development Traffic + Site Generated Traffic)

● – Intersection Studied

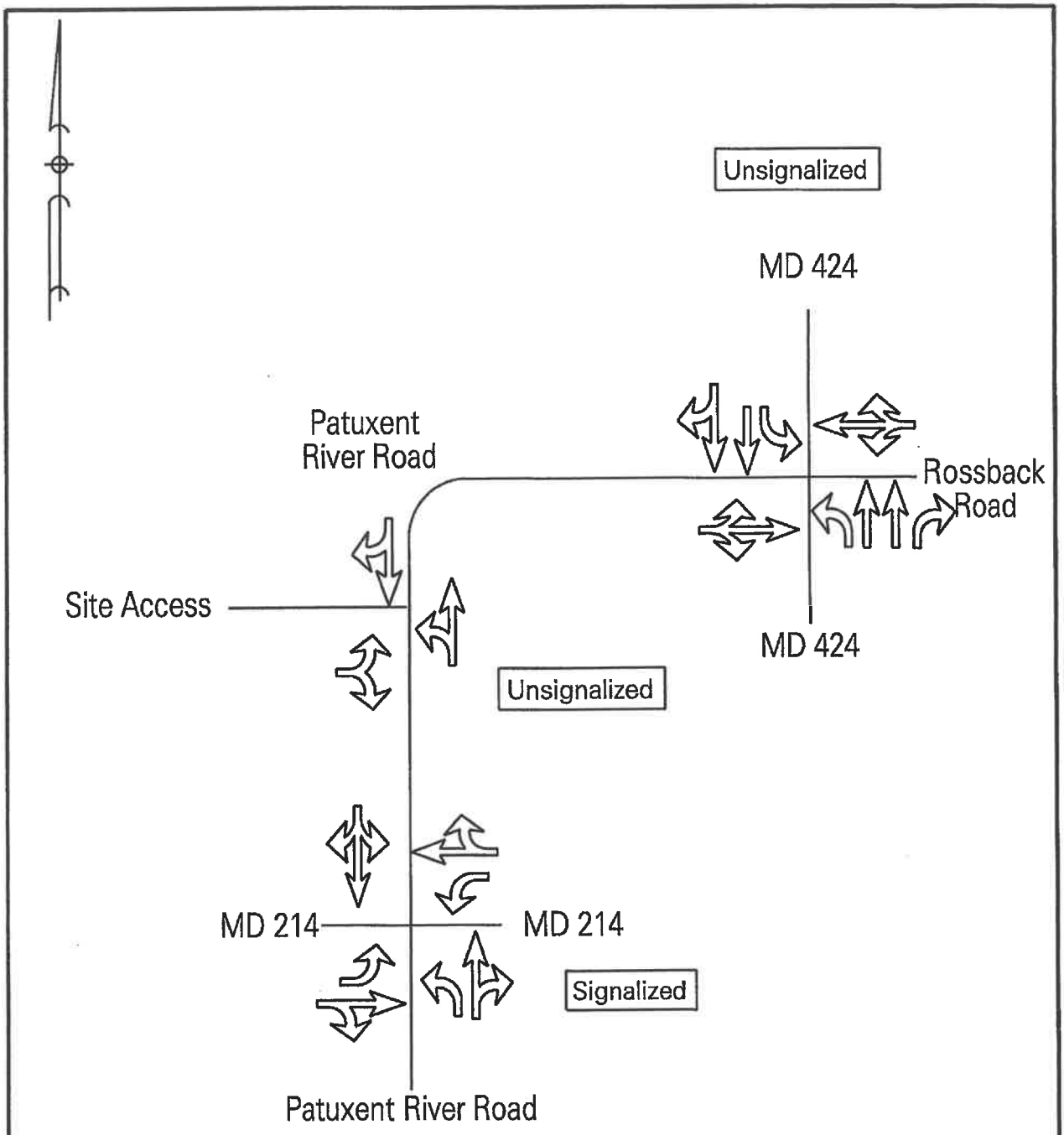
TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

EXHIBIT 1

Site Location

EXISTING CONDITION

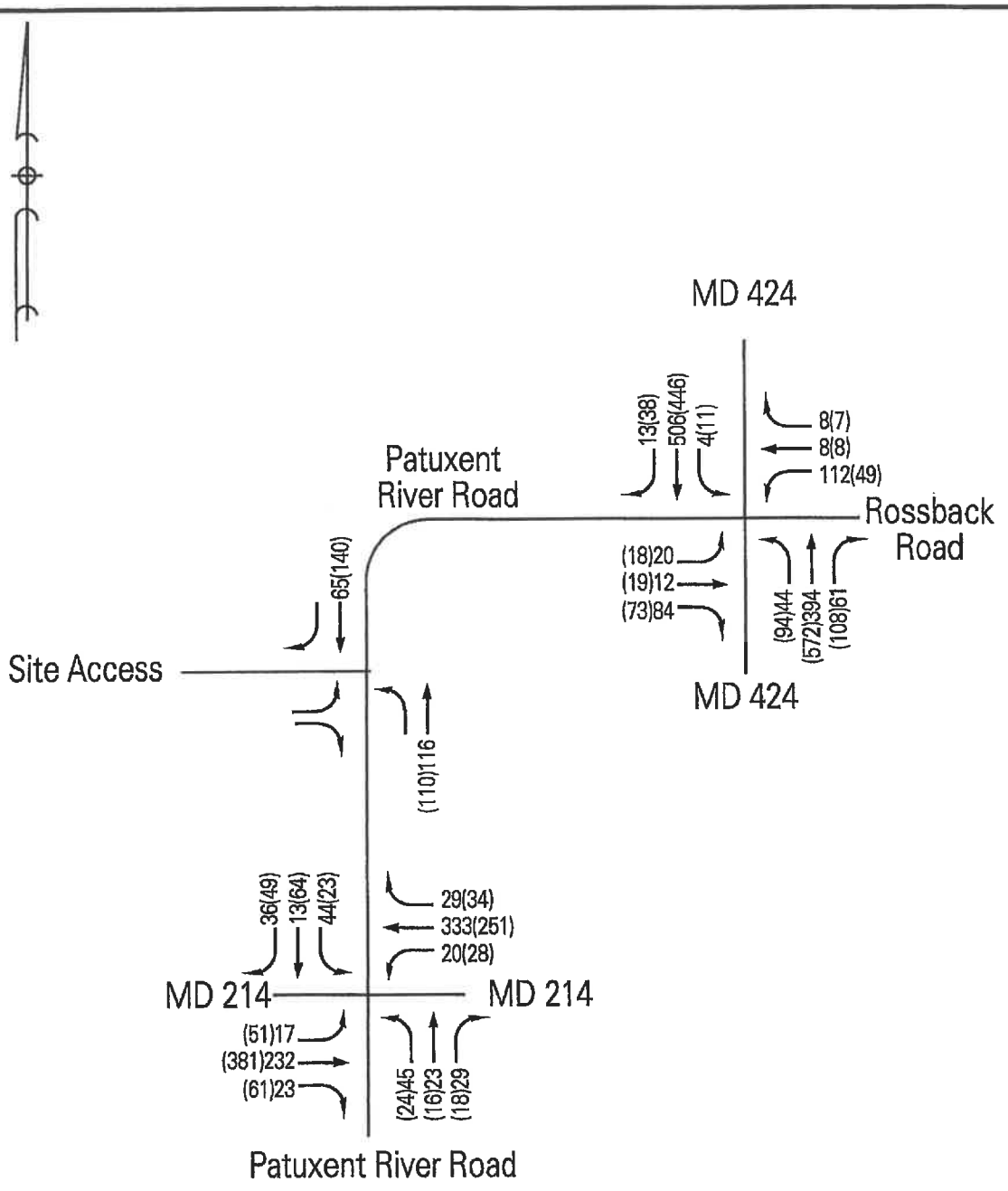
Peak hour turning movement counts were performed at the key intersections. Since these intersections have been counted after September 9, 2021, the traffic counts are allowed per Green Notice OPZ-21-06. The counts have been verified for accuracy based on review of historical data. Please note that the traffic volumes may not balance between intersections due to mid-block generators as well as possible differences in peak hours and/or dates the counts were performed. The existing base-line peak hour volumes are displayed on Exhibit 3. Details of the traffic count data, intersection condition diagrams and a copy of the Anne Arundel County Public Schools website can be found in Appendix II of this study.



NOT TO SCALE

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

EXHIBIT 2
Lane Configurations



NOT TO SCALE

AM(PM)

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

EXHIBIT 3

Existing Traffic Volumes

BACKGROUND CONDITION

The background condition analysis evaluates the key intersections with vehicle trips generated by nearby background developments. As indicated in the scoping letter (a copy can be found in Appendix III), there are no such developments.

FUTURE CONDITION

The future traffic condition determines the vehicle trips generated by the proposed project. The trip generated rates were based on anticipated site traffic of 200 truckloads distributed evenly between the hours of 7 am and 4 pm.

Trip Generation

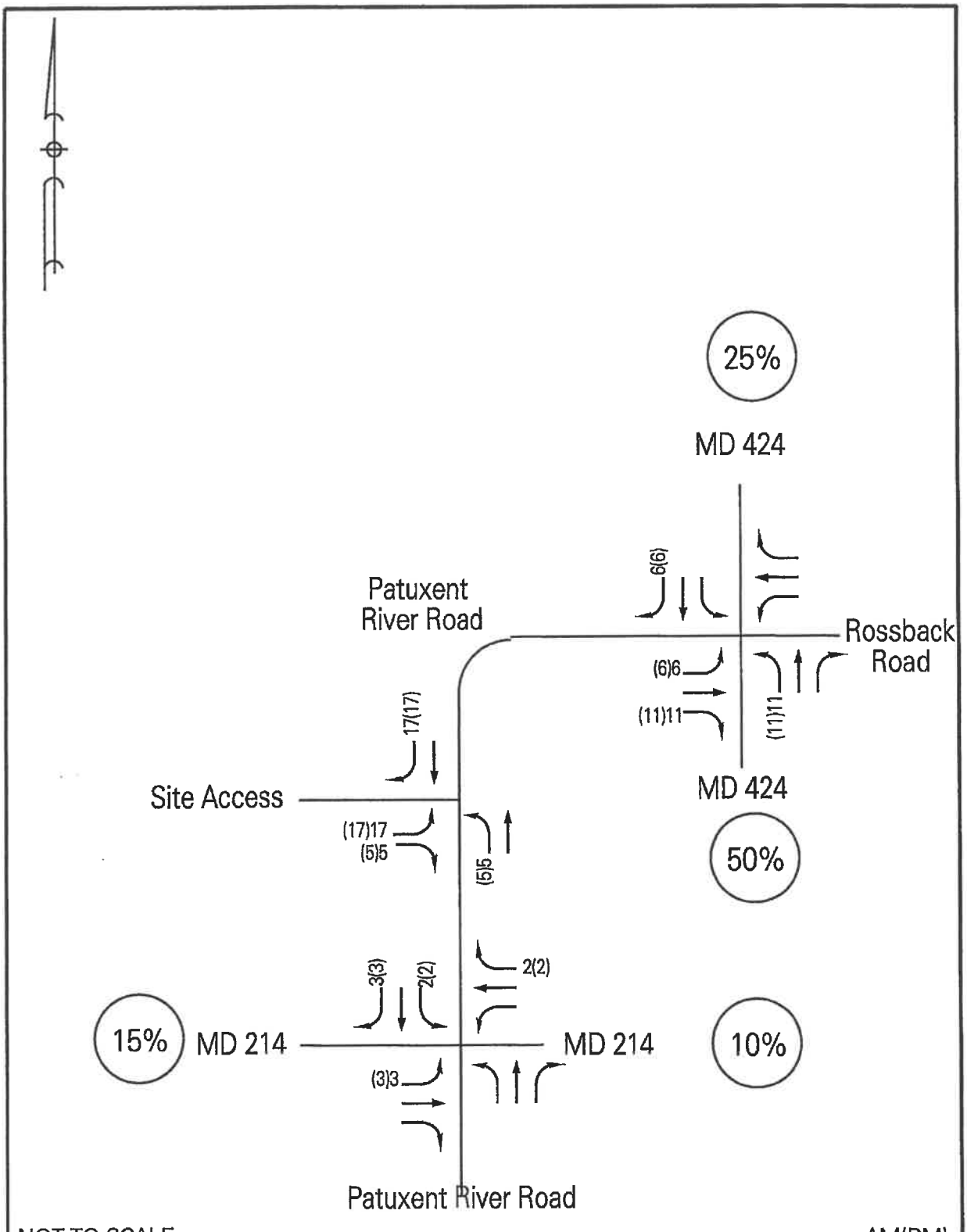
The site generated vehicle trips are shown below. The distribution of the new trips is shown on Exhibit 4.

ITE Trip Generation

	AM		PM	
	IN	OUT	IN	OUT
400 trips	22	22	22 *	22 *

* The truckloads should be finished by 4 PM but in order to create a worst-case scenario we have assumed the trucks will still be operating during the PM peak.

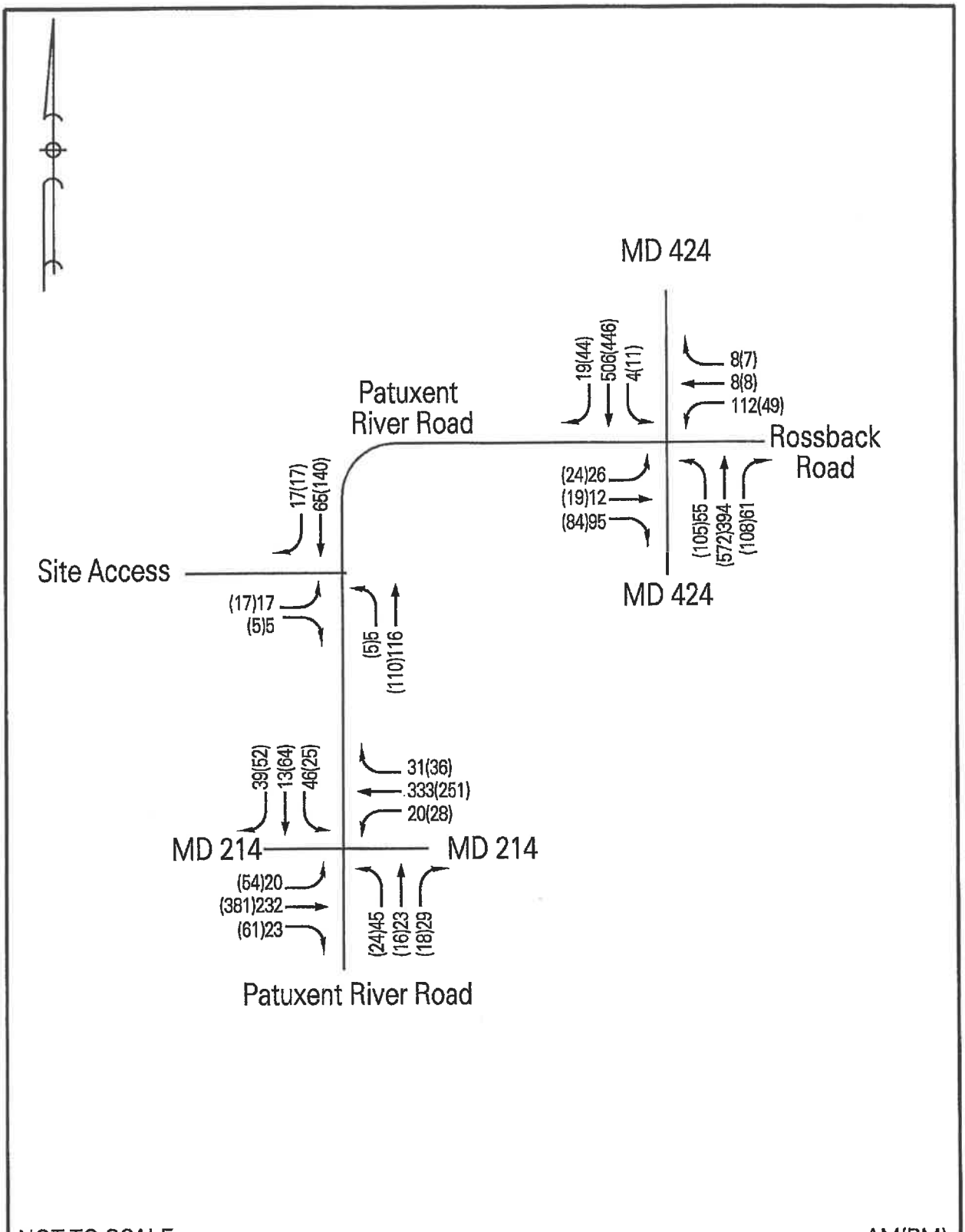
The total future traffic volumes shown on Exhibit 5 include the total background traffic volumes and the site trips.



NOT TO SCALE

AM(PM)

TRAFFIC CONCEPTS, INC. 7525 Connelley Drive Suite B Hanover, Maryland 21076 410-760-2911	EXHIBIT 4 Site Generated Traffic



NOT TO SCALE

AM(PM)

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

EXHIBIT 5

Total Future Traffic Volumes

INTERSECTION CAPACITY ANALYSIS

The key intersections were analyzed during the existing, background and future traffic conditions using the Critical Lane Volume (CLV) method with the results listed on the following chart and the detailed calculations are included in Appendix I.

CRITICAL LANE VOLUME ANALYSIS – AM PEAK HOUR		
KEY INTERSECTIONS	EXISTING Delay / LOS	FUTURE Delay / LOS
MD 424 @ Patuxent River Road/Rossback Road	559 / A	592 / A
MD 214 @ Patuxent River Road	521 / A	532 / C
Patuxent River Road @ Site Access	--	144 / A

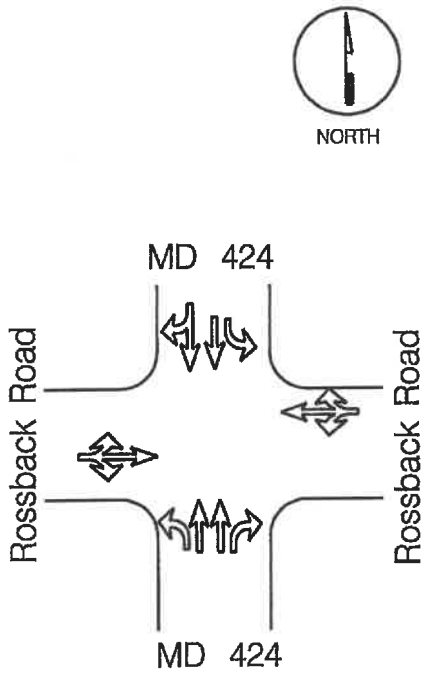
CRITICAL LANE VOLUME ANALYSIS – PM PEAK HOUR		
KEY INTERSECTIONS	EXISTING Delay / LOS	FUTURE Delay / LOS
MD 424 @ Patuxent River Road/Rossback Road	521 / A	552 / A
MD 214 @ Patuxent River Road	632 / A	637 / C
Patuxent River Road @ Site Access	--	184 / A

CONCLUSIONS

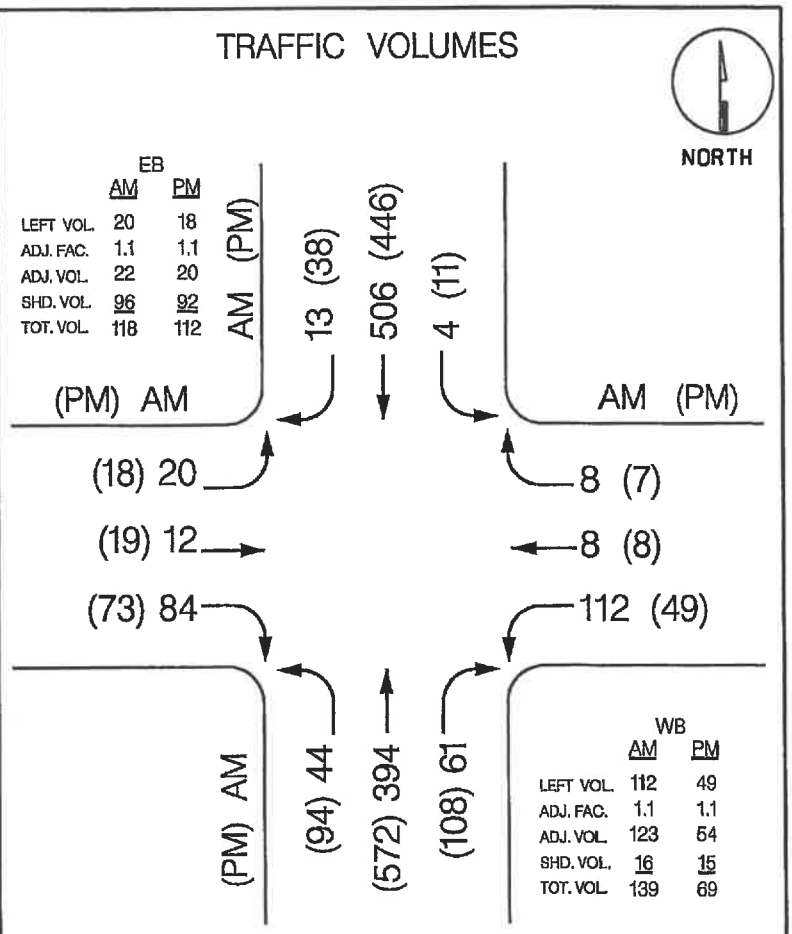
The analysis has shown that the key intersections will continue to operate at satisfactory levels of service under future conditions. Therefore, we respectfully request that your office approve this development from a traffic impact standpoint.

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



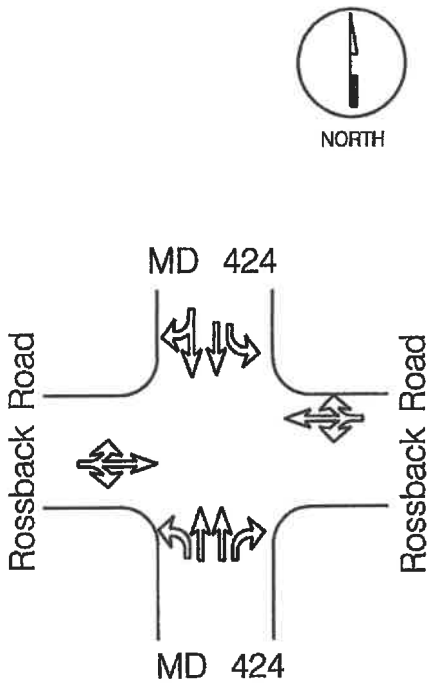
		TOTAL VOLUME * LUF			+	OPPOSING LEFTS * LUF			=	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	394	*	.55	+	4	*	1	=	221	
	SB	(506 + 13)	*	.55	+	44	*	1	=	329*	
	EB	118	*	1	+	112	*	1	=	230*	A
	WB	139	*	1	+	20	*	1	=	159	559
PM	NB	572	*	.55	+	11	*	1	=	326	
	SB	(446 + 38)	*	.55	+	94	*	1	=	360*	
	EB	112	*	1	+	49	*	1	=	161*	A
	WB	69	*	1	+	18	*	1	=	87	521

CRITICAL LANE ANALYSIS

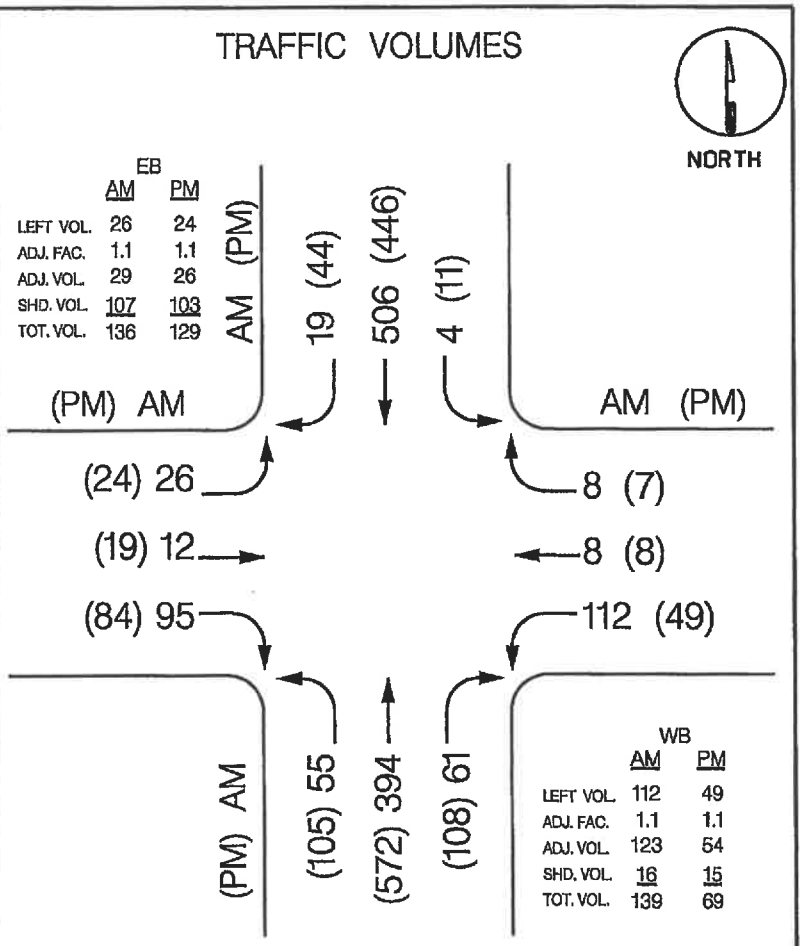
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



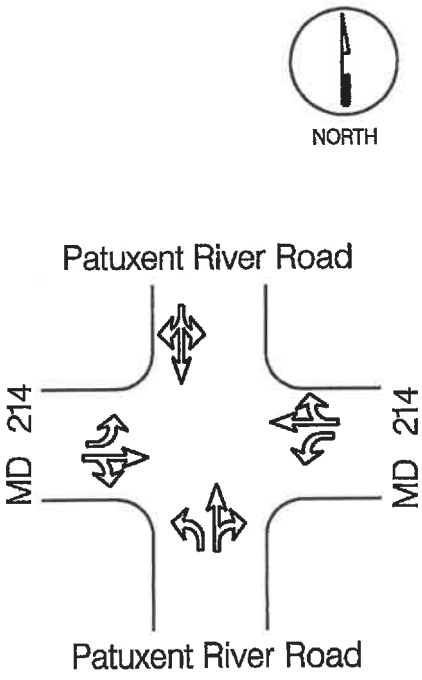
		TOTAL VOLUME * LUF			+	OPPOSING LEFTS * LUF			=	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	394	*	.55	+	4	*	1	=	221	
	SB	(506 + 19)	*	.55	+	55	*	1	=	344*	
	EB	136	*	1	+	112	*	1	=	248*	A
	WB	139	*	1	+	26	*	1	=	165	592
PM	NB	572	*	.55	+	11	*	1	=	326	
	SB	(446 + 44)	*	.55	+	105	*	1	=	374*	
	EB	129	*	1	+	49	*	1	=	178*	A
	WB	69	*	1	+	24	*	1	=	93	552

CRITICAL LANE ANALYSIS

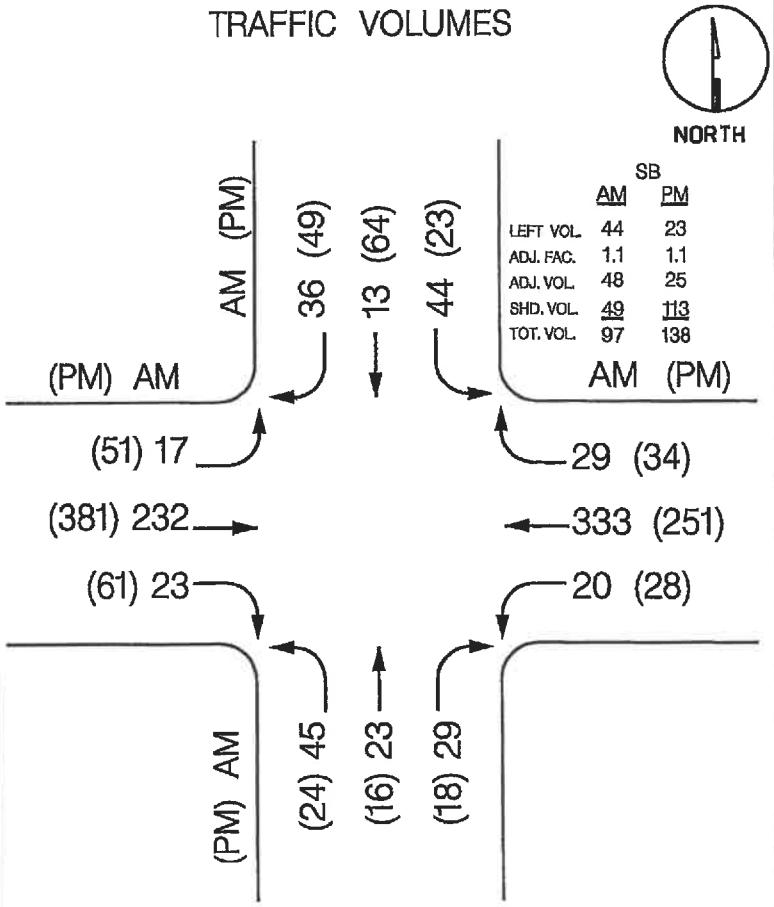
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



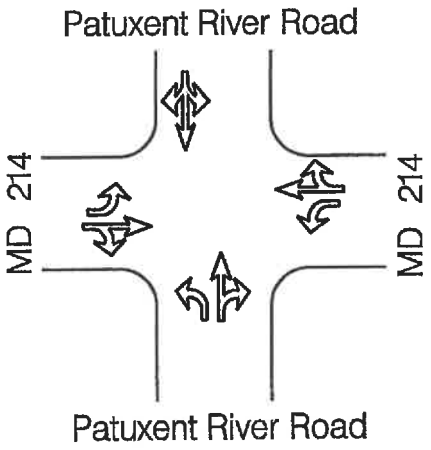
		TOTAL VOLUME * LUF	+	OPPOSING LEFTS * LUF	=	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(23 + 29) * 1	+	44 * 1	=	96	
	SB	97 * 1	+	45 * 1	=	142*	
	EB	(232 + 23) * 1	+	20 * 1	=	275	A
	WB	(333 + 29) * 1	+	17 * 1	=	379*	521
PM	NB	(16 + 18) * 1	+	23 * 1	=	57	
	SB	138 * 1	+	24 * 1	=	162*	
	EB	(381 + 61) * 1	+	28 * 1	=	470*	A
	WB	(251 + 34) * 1	+	51 * 1	=	336	632

CRITICAL LANE ANALYSIS

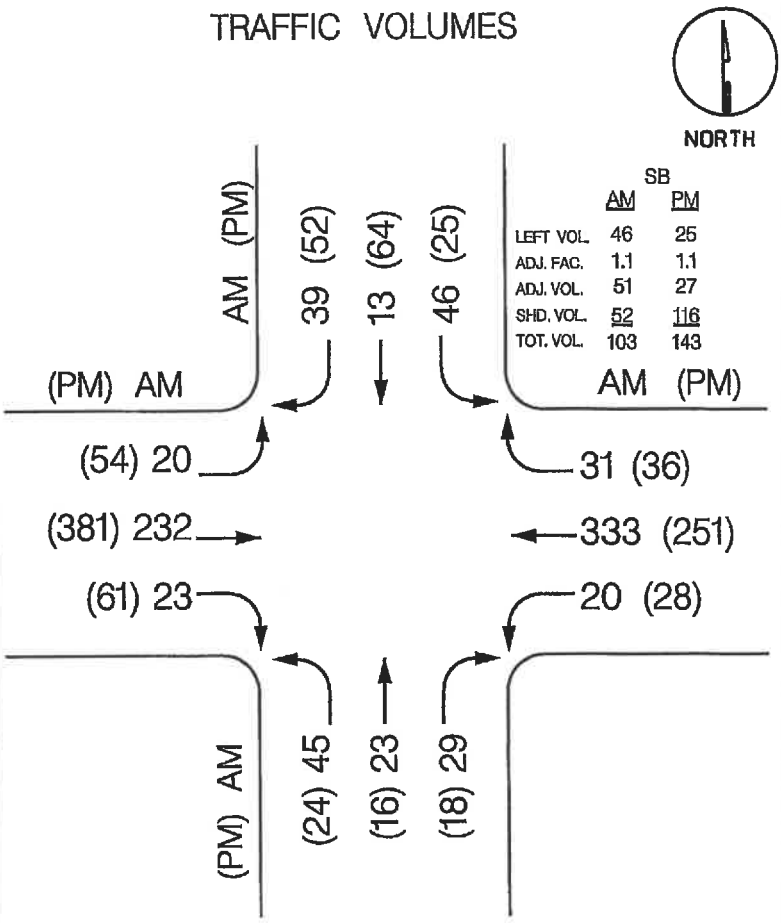
Prepared By: C. ATKINSON Condition: EXISTING

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



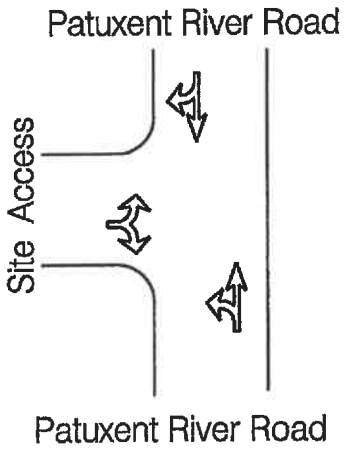
		TOTAL VOLUME * LUF	+	OPPOSING LEFTS * LUF	=	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	(23 + 29) * 1	+	46 * 1	=	98	
	SB	103 * 1	+	45 * 1	=	148*	
	EB	(232 + 23) * 1	+	20 * 1	=	275	A
	WB	(333 + 31) * 1	+	20 * 1	=	384*	532
PM	NB	(16 + 18) * 1	+	25 * 1	=	59	
	SB	143 * 1	+	24 * 1	=	167*	
	EB	(381 + 61) * 1	+	28 * 1	=	470*	A
	WB	(251 + 36) * 1	+	54 * 1	=	341	637

CRITICAL LANE ANALYSIS

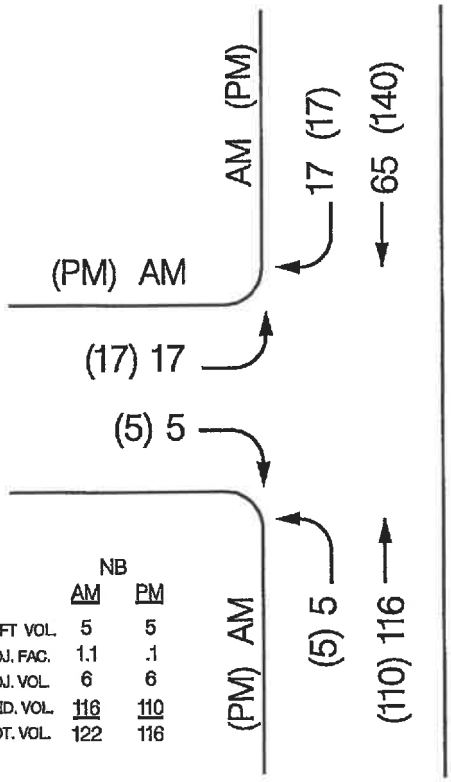
Prepared By: C. ATKINSON Condition: FUTURE

TRAFFIC CONCEPTS, Inc.

LANE CONFIGURATION



TRAFFIC VOLUMES



NB	AM	PM
LEFT VOL.	5	5
ADJ. FAC.	1.1	.1
ADJ. VOL.	6	6
SHD. VOL.	116	110
TOT. VOL.	122	116

		TOTAL VOLUME * LUF	+	OPPOSING LEFTS * LUF	=	CRITICAL LANE VOLUME	LEVEL OF SERVICE
AM	NB	122 * 1			=	122*	
	SB	(65 + 17) * 1	+	5 * 1	=	87	
	EB	(17 + 5) * 1		1	=	22*	A
	WB	—				—	144
PM	NB	116 * 1			=	116	
	SB	(140 + 17) * 1	+	5 * 1	=	162*	
	EB	(17 + 5) * 1			=	22*	A
	WB	—				—	184

CRITICAL LANE ANALYSIS

Prepared By: C. ATKINSON Condition: FUTURE

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 214 @ PATUXENT RIVER ROAD **COUNTY:** ANNE ARUNDEL

COUNT BY: CAMERA **DATE:** JANUARY 12, 2023

WEATHER: OVERCAST \ RAIN **DAY:** THURSDAY

CAM

	PATUXENT RIVER RD NORTHBOUND			PATUXENT RIVER RD SOUTHBOUND			MD 214 EASTBOUND			MD 214 WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	8	4	6	2	1	6	5	35	2	6	60	2	137
7:15-7:30	13	5	6	3	5	8	1	44	7	3	85	2	182
7:30-7:45	9	9	6	10	4	9	4	62	3	5	84	3	208
7:45-8:00	11	5	8	14	4	13	8	72	10	7	85	13	250
8:00-8:15	9	8	4	12	3	8	2	53	4	4	68	3	178
8:15-8:30	16	1	11	8	2	6	3	45	6	4	96	10	208
8:30-8:45	7	5	5	10	3	8	3	44	6	5	87	3	186
8:45-9:00	7	3	8	10	3	11	5	52	4	3	48	4	158
PEAK HR 7:30-8:30 TOTALS	45	23	29	44	13	36	17	232	23	20	333	29	PHF 0.84
PM													
4:00-4:15	8	8	5	8	12	12	5	78	18	7	64	8	233
4:15-4:30	11	7	3	4	23	12	19	99	17	7	57	12	271
4:30-4:45	2	3	4	6	16	12	11	85	15	4	59	7	224
4:45-5:00	3	5	5	4	18	11	7	95	16	14	79	11	268
5:00-5:15	8	1	6	9	7	14	14	102	13	3	56	4	237
5:15-5:30	5	2	4	10	15	4	6	101	19	3	71	7	247
5:30-5:45	9	4	3	5	10	9	7	83	7	5	68	6	216
5:45-6:00	3	2	4	6	9	5	9	82	10	4	45	8	187
PEAK HR 4:15-5:15 TOTALS	24	16	18	23	64	49	51	381	61	28	251	34	PHF 0.92

TRAFFIC CONCEPTS, INC.
7525 CONNELLEY DRIVE, SUITE B
HANOVER, MARYLAND 21076
410-760-2911
E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

M:\3958

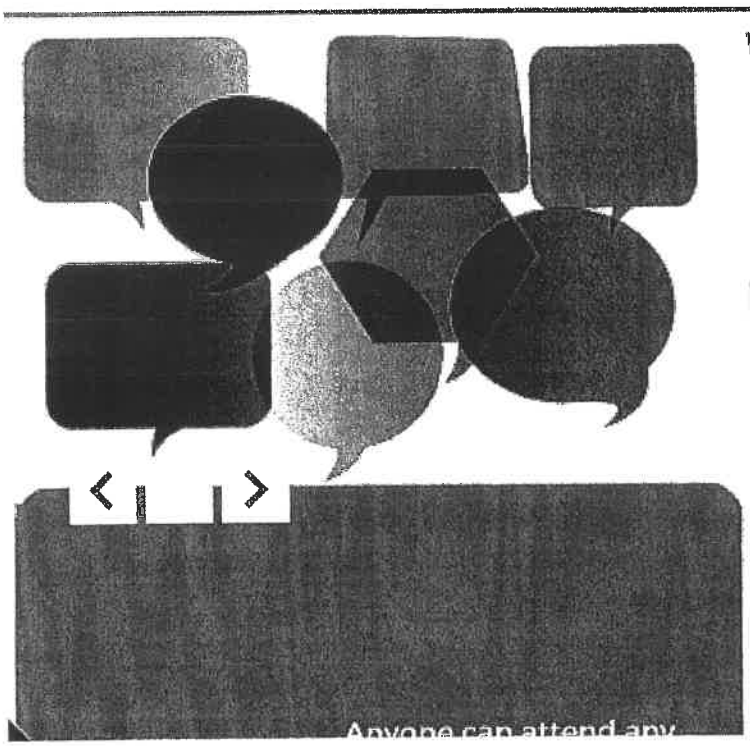
SCHOOLS TODAY
01/12/2023

All schools open and operating on a normal schedule
Delay notices are posted as soon as they become available.

Select Language
Powered by Google Translate

ANNE ARUNDEL COUNTY PUBLIC SCHOOLS

ELEVATING ALL STUDENTS...ELIMINATING ALL GAPS



What would you say that AACPS does well and what would you like to see us continue to do?

What would you like to see AACPS do better or eliminate altogether?

What new things would you like to see in AACPS?

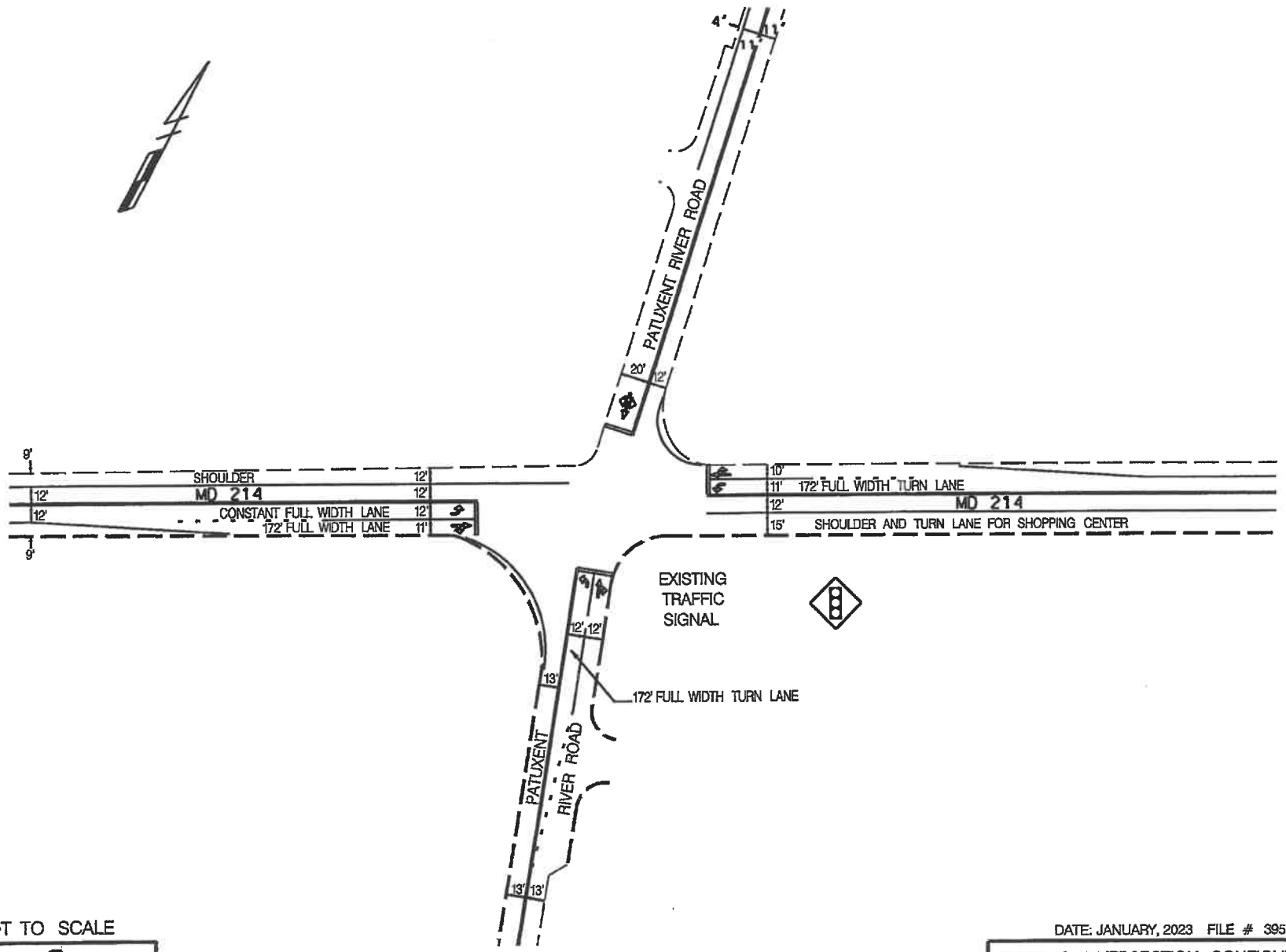
Upcoming Dates

January 3: Crofton High School
January 4: Tyler Heights Elementary (Spanish; begins at 5:30 p.m.)
January 5: Severna Park High
January 9: South River High
January 10: Southern High
January 11: Arundel High
January 19: Brock Bridge Elementary (Spanish; begins at 6:00 p.m.)

DR. BEDELL'S LISTENING & LEARNING TOUR

Sessions begin @ 6 p.m. (Tyler Heights begins at 5:30 p.m.) Read additional details here

2022-2023 SCHOOL YEAR



NOT TO SCALE

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, MD 21076
410-760-2911
EMAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

DATE: JANUARY, 2023 FILE # 3958

EXISTING INTERSECTION CONFIGURATION

MD 214 AT PATUXENT RIVER ROAD

ANNE ARUNDEL COUNTY, MARYLAND

PEAK HOUR TURNING MOVEMENT COUNT

INTERSECTION: MD 424 @ ROSSBACK ROAD **COUNTY:** ANNE ARUNDEL

COUNT BY: CAMERA **DATE:** JANUARY 12, 2023

WEATHER: OVERCAST / RAIN **DAY:** THURSDAY

CAM

	MD 424 NORTHBOUND			MD 424 SOUTHBOUND			ROSSBACK ROAD EASTBOUND			ROSSBACK ROAD WESTBOUND			
TIME	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL
AM													
7:00-7:15	10	86	26	1	87	2	4	0	14	27	2	1	260
7:15-7:30	18	103	11	0	97	3	6	0	15	29	5	3	290
7:30-7:45	13	101	17	2	135	2	0	1	27	33	3	1	335
7:45-8:00	7	125	14	2	132	3	7	5	19	33	1	3	351
8:00-8:15	12	86	15	0	112	4	6	3	23	20	1	2	284
8:15-8:30	12	82	15	0	127	4	7	3	15	26	3	2	296
8:30-8:45	13	113	12	0	118	8	2	0	18	28	1	1	314
8:45-9:00	12	85	10	1	120	3	3	3	14	18	2	0	271
PEAK HR 7:30-8:30 TOTALS	**44**	**394**	**61**	**4**	**506**	**13**	**20**	**12**	**84**	**112**	**8**	**8**	**PHF 0.90**
PM													
4:00-4:15	22	147	18	1	113	11	8	6	19	12	0	1	358
4:15-4:30	26	136	33	4	119	13	5	6	26	16	2	1	387
4:30-4:45	24	155	29	3	109	8	2	5	20	10	5	4	374
4:45-5:00	22	134	28	3	105	6	3	2	8	11	1	1	324
5:00-5:15	19	116	25	1	118	13	5	3	11	13	4	2	330
5:15-5:30	20	131	22	1	120	9	5	2	10	13	4	1	338
5:30-5:45	29	116	29	0	124	5	7	2	6	15	2	1	336
5:45-6:00	18	111	19	0	89	4	4	2	5	12	2	0	266
PEAK HR 4:00-5:00 TOTALS	**94**	**572**	**108**	**11**	**446**	**38**	**18**	**19**	**73**	**49**	**8**	**7**	**PHF 0.93**

TRAFFIC CONCEPTS, INC.
7525 CONNELLEY DRIVE, SUITE B
HANOVER, MARYLAND 21076
410-760-2911 FAX 410-760-2915
E-MAIL TRAFFIC@TRAFFIC-CONCEPTS.COM

M:\3958

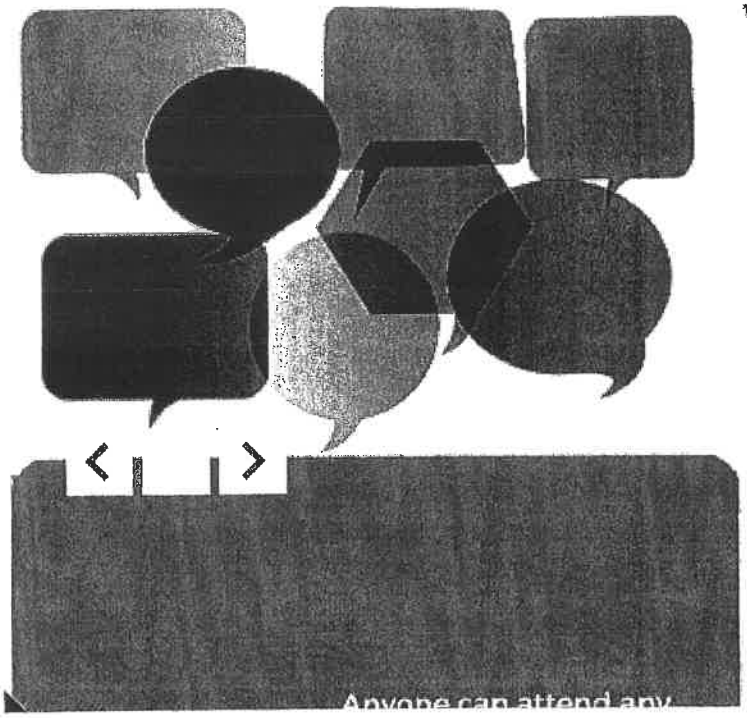
SCHOOLS TODAY
01/12/2023

All schools open and operating on a normal schedule
Delay notices are posted as soon as they become available.

Select Language
Powered by Google Translate

ANNE ARUNDEL COUNTY PUBLIC SCHOOLS

ELEVATING ALL STUDENTS...ELIMINATING ALL GAPS



What would you say that AACPS does well and what would you like to see us continue to do?

What would you like to see AACPS do better or eliminate altogether?

What new things would you like to see in AACPS?

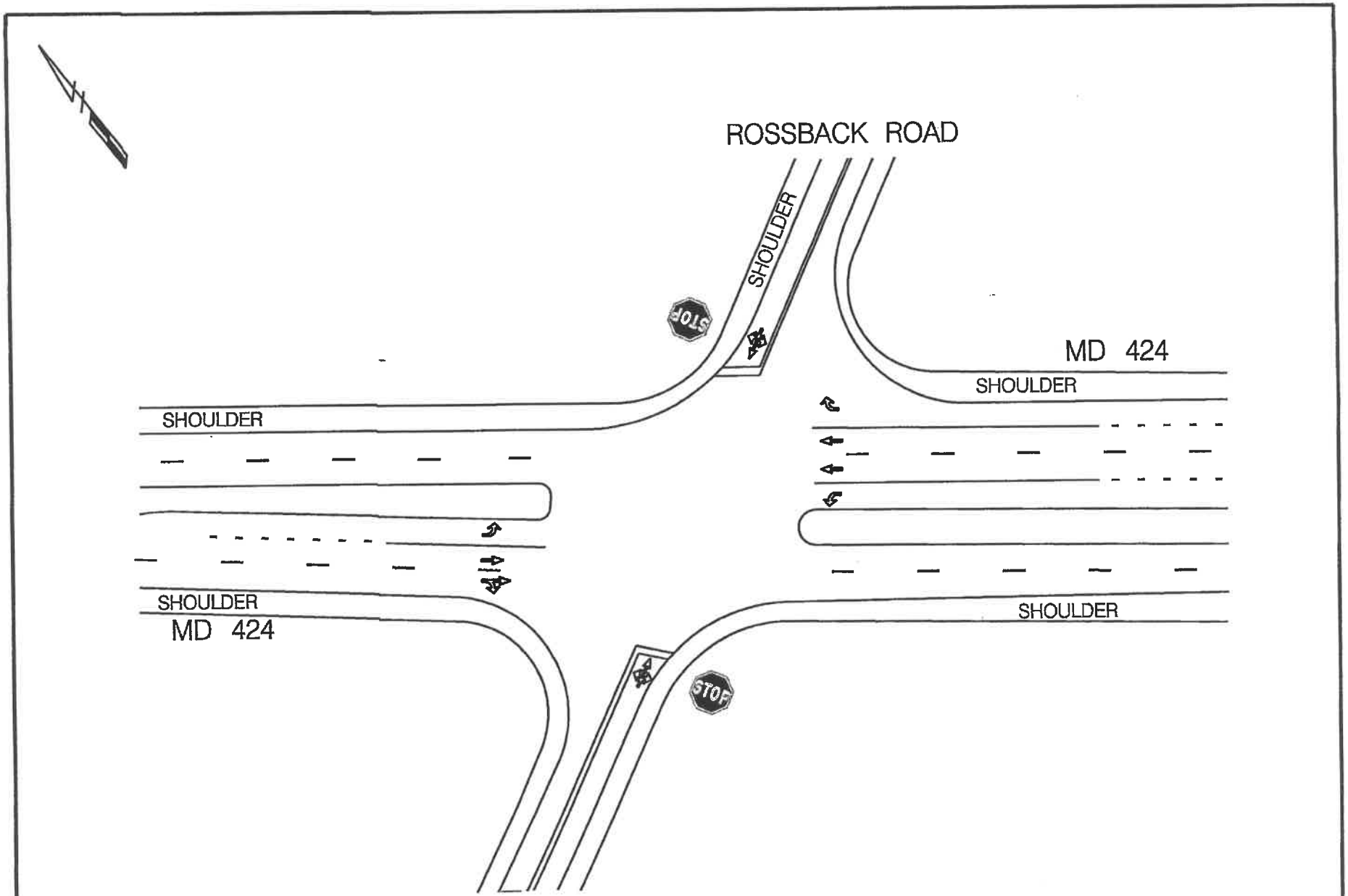
Upcoming Dates

January 3: Crofton High School
January 4: Tyler Heights Elementary (Spanish; begins at 5:30 p.m.)
January 5: Severna Park High
January 9: South River High
January 10: Southern High
January 11: Arundel High
January 19: Brock Bridge Elementary (Spanish; begins at 6:00 p.m.)

DR. BEDELL'S LISTENING & LEARNING TOUR

Sessions begin @ 6 p.m. (Tyler Heights begins at 5:30 p.m.) Read additional details here

2022-2023 SCHOOL YEAR



NOT TO SCALE

TRAFFIC CONCEPTS, INC.
7525 Connelley Drive
Suite B
Hanover, Maryland 21076
410-760-2911

DATE: JANUARY, 2023 FILE# 3958

EXISTING INTERSECTION CONFIGURATION
MD 424 AT ROSSBACK ROAD
ANNE ARUNDEL COUNTY, MARYLAND

ANNE ARUNDEL COUNTY
MARYLAND
Office of Planning and Zoning

2664 Riva Road, P.O. Box 6675
Annapolis, MD 21401
410-222-7450

Jenny Jarkowski
Planning and Zoning Officer

February 7, 2023

Mr. Jon Mayer
Traffic Concepts, Inc.
7525 Connelley Drive, Suite B
Hanover, MD 21076

RE 2882 Patuxent River Road
Traffic Impact Study Scoping Letter

Dear Mr. Mayer:

This letter is in response to your traffic impact study scoping letter dated January 12, 2023, 2882 Patuxent River Road project located in Davidsonville. The study limits as described in your letter are accepted.

Please also note the following conditions that must be addressed in the study, in accordance with, and in addition to, the "Guidelines for Traffic Impact Studies" found in the *Anne Arundel County Design Manual, Chapter 3, and Appendix N*:

- All counts are subject to Green Notice OPZ-21-06.
- Note that if any changes are made to the site layout resulting in access point changes, the scope of study will need to be revised accordingly.
- In accordance with 17-5-401(a) (2), perform road rating analysis on all road segments, including state roads.
- As required in the County's Guidelines for Traffic Impact Studies, the latest version of the Highway Capacity Manual intersection analysis will be required for any intersection with a total critical volume of 1300 or more. Regardless of other analyses requested by the county or provided by the applicant, a Critical Lane Volume (CLV) of 1450 represents a failure which must be addressed through mitigation.
- Please note that additional comments may follow from MDOT-SHA after further review.
- It is the consultant's responsibility to account for all developments under construction, and to include only the remaining build out in the background development analysis.
- Include all signalized intersections within the study limits in the intersections to be studied.
- The County will generally accept trip generation rates found in the latest edition of the Institute of Transportation Engineers Trip Generation report. This report provides three methods to determine average trip generation for proposed developments: weighted trip generation rate, a plot of actual trip ends versus an independent variable, and a regression equation. The consultant should determine which

method provides the best fit for the type and size of the proposed development in accordance with the county's "Guideline for Traffic Impact Study" in the Design Manual. Questions of interpretation should be directed to this office, which will have the final determination of what method to be used.

- A copy of the scoping letter and this response letter must be included as an Appendix to the Traffic Impact Study when the study is submitted.

Should you have any questions regarding the information in this response letter, please contact me at pzfowl22@aacounty.org.

Sincerely,

Sarah E. Fowler, P.E.
Planning Administrator
Transportation Team – Development Division
Office of Planning and Zoning
2664 Riva Road
Annapolis, MD 21401

cc: Charlie Wang, Martha Arzu-McIntosh, Chungom Ntonifor, OPZ
Courtney Wilson OPZ
Nestor Flores, Kirsten Cook, DPW
Jonathan Makhlouf, MDOT SHA

TRAFFIC CONCEPTS, INC.

Traffic Impact Studies • Feasibility • Traffic Signal Design • Traffic Counts • Expert Testimony

January 12, 2023

Ms. Sarah Fowler, P.E.
Anne Arundel County
Office of Planning & Zoning
2664 Riva Road
Annapolis, MD 21401

RE: 2882 Patuxent River Road
Traffic Impact Study
Scoping Letter
TC# 3958

Dear Ms. Fowler:

The above referenced project is located on the west side of Patuxent River Road south of Governor's Bridge Road in the Davidsonville portion of the county. The proposed sand and gravel operation will gain access via a single access to Patuxent River Road Attached please find an aerial diagram showing the location of the project and the proposed study limits. Since the road link of Patuxent River Road is Scenic & Historic, a road link analysis is not required.

We propose to analyze the following intersections during the weekday AM and weekday PM peak periods as part of the traffic impact study:

Intersections

- Patuxent River Road @ Site Access
- Patuxent River Road @ MD 214
- Patuxent River Road @ MD 424

Also, we have reviewed the County subdivision activity maps and note that there are no background developments that would impact the key intersections.

Please provide our office with any Capital Improvement Projects that may affect the proposed study area, as well as any approved mitigation proposals for the background developments listed.

7525 Connelley Drive • Suite B • Hanover, MD 21076 • Phone (410) 760-2911 • Fax (410) 760-2915

We respectfully request that your office review and approve the study limits as well as the background development list for this project. If you have any questions or require additional information, please do not hesitate to contact our office at your convenience.

Sincerely,

TRAFFIC CONCEPTS, INC.

Jon F. Mayer

By: Jon F. Mayer
jmayer@traffic-concepts.com


Area
Patuxent River Road @
MD 424
3
50
424
Bowie
SITE
Patuxent River Road
@ Site Access
Patuxent River
Davidsonville
Park
ursery
Anne Arundel Sch
Renditions Golf Course
301
Patuxent River Road @
MD 214
214
ich

TRAFFIC CONCEPTS, INC.

Traffic Impact Studies • Feasibility • Traffic Signal Design • Traffic Counts • Expert Testimony

APP. EXHIBIT# 9
CASE: 2023-0221-S
DATE: 2/29/24

March 13, 2023

Mr. Daniel S. Jones, Esquire
Jones of Annapolis
2056 Generals Highway
Annapolis, Maryland 21401

REF: Proposed Sand & Gravel Operation
2882 Patuxent River Road
Davidsonville, Maryland 21035

Dear Mr. Jones,

As requested, Traffic Concepts, Inc. a traffic engineering consultant firm, has evaluated the truck traffic associated with a proposed sand and gravel mine to be located at 2882 Patuxent River Road, Davidsonville, MD. As outlined in a recent traffic impact study conducted for the proposed project, 75% of the truck traffic associated with this project is anticipated to travel northward towards the Rossback Road/MD 424 intersection. Likewise, 25% of the truck traffic is anticipated to travel southwards towards the Patuxent River Road/MD 214 intersection.

The proposed sand & gravel site is currently a private residence/agricultural property with access derived directly from the southbound side of Patuxent River Road. Patuxent River Road, a county owned/maintained 2-lane roadway (10-11' lanes in each direction), is deemed as a "scenic and historic" roadway by Anne Arundel County/Office of Planning & Zoning, with a posted speed limit of 30 mph, limited shoulders and 2,840 ADT (Average Daily Trips). Despite the roadways' occasional serpentine alignment and having limited shoulder improvements, both Patuxent River Road and Rossback Road are relatively flat, with no presence of significant drop-off from the outside limits of the roadway surface and beyond. The section in question which stretches between MD 214 and MD 424 (via Rossback Road) is striped with white edge lines and a solid yellow center-line which prohibits passing in both directions. During a recent field visit it was determined that both Patuxent River Road and Rossback Road are in excellent condition with no signs of pavement deterioration.

MD 424 is a state owned/maintained 45 mph dual highway featuring two lanes in either direction separated by a landscaped median in the vicinity of the unsignalized Rossback Road intersection. Left turns from eastbound Rossback Road onto MD 424 are permitted with sufficient sight distance in both directions and adequate shoulder improvements to accommodate merging with southbound MD 424 traffic.

7525 Connelley Drive • Suite B • Hanover, MD 21076 • Phone (410) 760-2911 • Fax (410) 760-2915

MD 214 is a state owned/maintained two-lane roadway with a posted speed limit of 40 mph and adequate shoulder improvements along both sides throughout. The MD 214/Patuxent River Road intersection is signalized and the roadway is in excellent condition, featuring solid white edge lines and a double yellow center line.

Intersection Sight Distance

The proposed sand and gravel mine is to be located along the west side of Patuxent River Road approximately one quarter mile south of the Governor Bridge intersection. Dump trucks transporting sand/gravel will exit the proposed site toward MD 424 to the north and MD 214 to the south. The existing driveway slated for access offers unobstructed sight distance in excess of 500 feet in both directions along Patuxent River Road.

The American Association of State Highway Transportation Officials (AASHTO) sight distance standard guidelines establish that a roadway with a posted speed limit of 30 mph/design speed of 40 mph provide a minimum of 305 feet of Stopping Sight Distance/445 feet of Intersection Sight Distance. The existing site access exceeds both of these standard requirements along Patuxent River Road in both directions.

Plant Operation

It is anticipated that the proposed sand and gravel mine will conduct normal operations on weekdays (Monday thru Friday) between the hours of 7:00 AM and 4:00 PM. The operation is projected to generate 200 trips per day, with approximately 20 of these trips (using 10 trucks) during the peak hour of the adjacent roadway. Parking and staging of trucks will be provided onsite. The site access to Patuxent River Road will be controlled with a STOP sign.

Conclusions

There is inherent impact to area roadways with any change to the surrounding land use; therefore, this analysis addresses the impact of this operation's access to Patuxent River Road Road and the remainder of the roadway network previously discussed. The question is whether the impact at this location is greater than if this proposed use were located on a similarly zoned property elsewhere in the county. The primary access for this site is Patuxent River Road with the ultimate access being to MD 424 and MD 214 respectively, both of which are state owned/maintained roadways designed to handle trucks of the type generated by the proposed use.

The general area contours are flat and although there are limited shoulders along both Patuxent River Road and Rossback Road, the volume of daily traffic along these roadways is minor. We conclude, that with the proximity of this site access to the ultimate connection with the state highway system, the existence of adequate access sight lines for ingress and egress, and the low volume of existing traffic along the local roadways, the sand and gravel mine will operate safely and in harmony with the immediate surrounding neighborhood.

We also conclude the use will not pose any unusual danger to the public or burden to the roadway network and is acceptable from a traffic impact perspective for the duration of the mining operations. This usage is site specific and the use of the existing site access will have minor impact to the surrounding local roadways than already exists. Based on the levels of proposed traffic using the site, the operation of the sand and gravel mine on this site will not overburden the existing roads. It is our assessment that the proposed sand and gravel operation should be granted from a traffic impact standpoint.

Sincerely,

TRAFFIC CONCEPTS, INC.

Jon F. Mayer

Jon F. Mayer
JMayer@traffic-concepts.com

APP. EXHIBIT# 10
CASE: 2023-0221-S
DATE: 2/29/24

Karen Henry, Director

TECHNICAL MEMORANDUM

TO: File
FROM: Erik Terry, Engineer III, Traffic Engineering Division
SUBJECT: Patuxent River Rd & Rossback Rd - Data Collection Summary
DATE: February 16, 2024
Revised: February 17, 2024

Data Collection

Stattrak radar devices were set at various locations along Patuxent River Road & Rossback Road from January 31, 2024 through February 6, 2024. Vehicle speeds, traffic volumes and vehicle class data was collected and averaged for a 7 day period to determine the median speed (50%), the prevailing speed (85%), average daily traffic (ADT) and the percentage of small, medium and large vehicles traveling the subject road

Data Collection Locations

1. Rossback Road *west* of MD 424
2. Patuxent River Road *north* of Governors Bridge Road
3. Patuxent River Road *north* of Sunshine Avenue
4. Patuxent River Road *north* of Double Gate Road

Speed & Volume Data Summary Table

Year	Method	Location	Posted Speed Limit (mph)	Median Speed - 50% (mph)	Prevailing Speed - 85% (mph)	Average Daily Traffic (veh/day)
2024	Stattrak	1 - Rossback Rd *west* of MD 424	35	45	52	2,092
2024	Stattrak	2 - Patuxent River Rd *north* of Governors Bridge Rd	25	37	42	2,101
2024	Stattrak	3 - Patuxent River *Rd north of* Sunshine Ave	30	40	46	1,906
2024	Stattrak	*4* - Patuxent River Rd *north* of Double Gate Rd	35	41	48	1,936

Notes: The median speed is the speed below which 50% of motorists travel. Similarly, the prevailing speed is the speed at below which 85% of motorists travel.

Vehicle Class Data Summary Table

Location	% Small (class 1)	% Medium (class 2-3)	% Large (class 4-12)	Average Daily Traffic (veh/day)
1 - Rossback Rd *west* of MD 424	.4	86.6	13	2,092
2 - Patuxent River Rd *north* of Governors Bridge Rd	1.8	86.2	12.1	2,101
3 - Patuxent River *Rd north of* Sunshine Ave	1.1	86.6	12.4	1,906
4 - Patuxent River Rd *north* of Double Gate Rd	1.3	89.2	9.5	1,936

Crash Summaries

Patuxent River Rd - Crash Summary

Crash Dates From 2018 To 2023

Crash Years

2012	2013	2014	2015	2016
0	0	0	0	0
2017	**2018**	**2019**	**2020**	**2021**
0	5	5	2	6
2022	**2023**			
9	10			

Day of Week

Sunday	12
Monday	2
Tuesday	6
Wednesday	4
Thursday	4
Friday	3
Saturday	6
Unknown	0

Event

Other Vehicle	9
Parked Vehicle	0
Pedestrian	0
Bicycle	0
Animal	0
Fixed Object	16
Off Road	2
Other	7

Severity

Unknown	0
Property Damage Only	23
Injury	14
Fatal	0

Weather

Clear/Cloudy	0
Foggy	0
Raining	12
Snow/Sleet	0
Severe Winds	0
Clear	22
Cloudy	2
Snow	0
Sleet	0
Blowing Snow	0
Blowing, Sand, etc	0
Wintery Mix	0
Other	1
Unknown	0
Not Applicable	0

Light Condition

Daylight	20
Dawn/Dusk	0
Dark - Lights On	7
Dark -No Lights	8
Dawn	1
Dusk	1
Dark - Unknown	0
Other	0
Unknown	0
Not Applicable	0

Surface Condition

Wet	18
Dry	17
Snow	0
Ice	1
Mud, Dirt Gravel	0
Slush	0
Water (Stand/Move)	0
Sand	0
Oil	0
Other	0
Unknown	0
Not Applicable	1

Collision Type

Head On	0
Head On Left Turn	2
Same Dir - Rear End	3
Same Dir - Rend Rt Turn	0
Same Dir - Rend Lt Turn	0
Opposite Dir - Sideswipe	0
Same Dir - Sideswipe	0
Same Dir - Right Turn	0
Same Dir - Left Turn	1
Same Dir - Both Left Turn	0
Straight Movement Angle	3
Angle Meets Right Turn	0
Angle Meets Left Turn	0
Angle Meets Left Turn Head On	0
Opposite Dir Both Left Turn	1
Single Vehicle	24
Other	3
Unknown	0
Not Applicable	0

Road Condition

No Defects	33
Shoulder Defect	0
Holes, Ruts, etc	1
Foreign Material	0
Loose Material	1
Obst - Not Lighted	1
Obst - Not Signaled	0
View Obstructed	0
Other	0
Unknown	0
Not Applicable	1

Vehicle Body

Passenger	29
SUV	3
Van	0
Truck (Light)	1
Truck (Medium/Heavy)	1
Bus	0
Emergency Vehicles	0
Non-Emergency Vehicles	0
Other	0
Unknown	0
Not Applicable	0

** Road Grade

Level	18
Hill Crest	4
Hill Uphill	3
Grade Downhill	9
Dip Sag	1
On Bridge	0
Other	0
Unknown	0
Not Applicable	2

** Road Alignment

Straight	15
Curve Left	8
Curve Right	14
Other	0
Unknown	0
Not Applicable	0

** New Values for 2018 Data ONLY

Rossback Rd - Crash Summary

Crash Dates From 2012 To 2023

Crash Years

2012	2013	2014	2015	2016
2	6	2	4	2

2017	2018	2019	2020	2021
1	1	4	0	3

2022	2023
0	3

Day of Week

Sunday	4
Monday	5
Tuesday	1
Wednesday	3
Thursday	2
Friday	8
Saturday	5
Unknown	0

Event

Other Vehicle	21
Parked Vehicle	0
Pedestrian	0
Bicycle	0
Animal	0
Fixed Object	4
Off Road	1
Other	0

Severity

Unknown	0
Property Damage Only	17
Injury	11
Fatal	0

Weather

Clear/Cloudy	8
Foggy	0
Raining	1
Snow/Sleet	0
Severe Winds	0
Clear	15
Cloudy	3
Snow	0
Sleet	0
Blowing Snow	0
Blowing, Sand, etc	0
Wintery Mix	0
Other	0
Unknown	0
Not Applicable	1

Light Condition

Daylight	21
Dawn/Dusk	0
Dark - Lights On	7
Dark -No Lights	0
Dawn	0
Dusk	0
Dark - Unknown	0
Other	0
Unknown	0
Not Applicable	0

Surface Condition

Wet	3
Dry	25
Snow	0
Ice	0
Mud, Dirt Gravel	0
Slush	0
Water (Stand/Move)	0
Sand	0
Oil	0
Other	0
Unknown	0
Not Applicable	0

Collision Type

Head On	0
Head On Left Turn	1
Same Dir - Rear End	18
Same Dir - Rend Rt Turn	0
Same Dir - Rend Lt Turn	0
Opposite Dir - Sideswipe	0
Same Dir - Sideswipe	0
Same Dir - Right Turn	0
Same Dir - Left Turn	0
Same Dir - Both Left Turn	0
Straight Movement Angle	4
Angle Meets Right Turn	0
Angle Meets Left Turn	0
Angle Meets Left Turn Head On	0
Opposite Dir Both Left Turn	0
Single Vehicle	4
Other	1
Unknown	0
Not Applicable	0

Road Condition

No Defects	27
Shoulder Defect	0
Holes, Ruts, etc	0
Foreign Material	0
Loose Material	0
Obst - Not Lighted	0
Obst - Not Signaled	0
View Obstructed	0
Other	0
Unknown	0
Not Applicable	1

Vehicle Body

Passenger	32
SUV	5
Van	2
Truck (Light)	0
Truck (Medium/Heavy)	0
Bus	0
Emergency Vehicles	0
Non-Emergency Vehicles	0
Other	0
Unknown	4
Not Applicable	0

** Road Grade

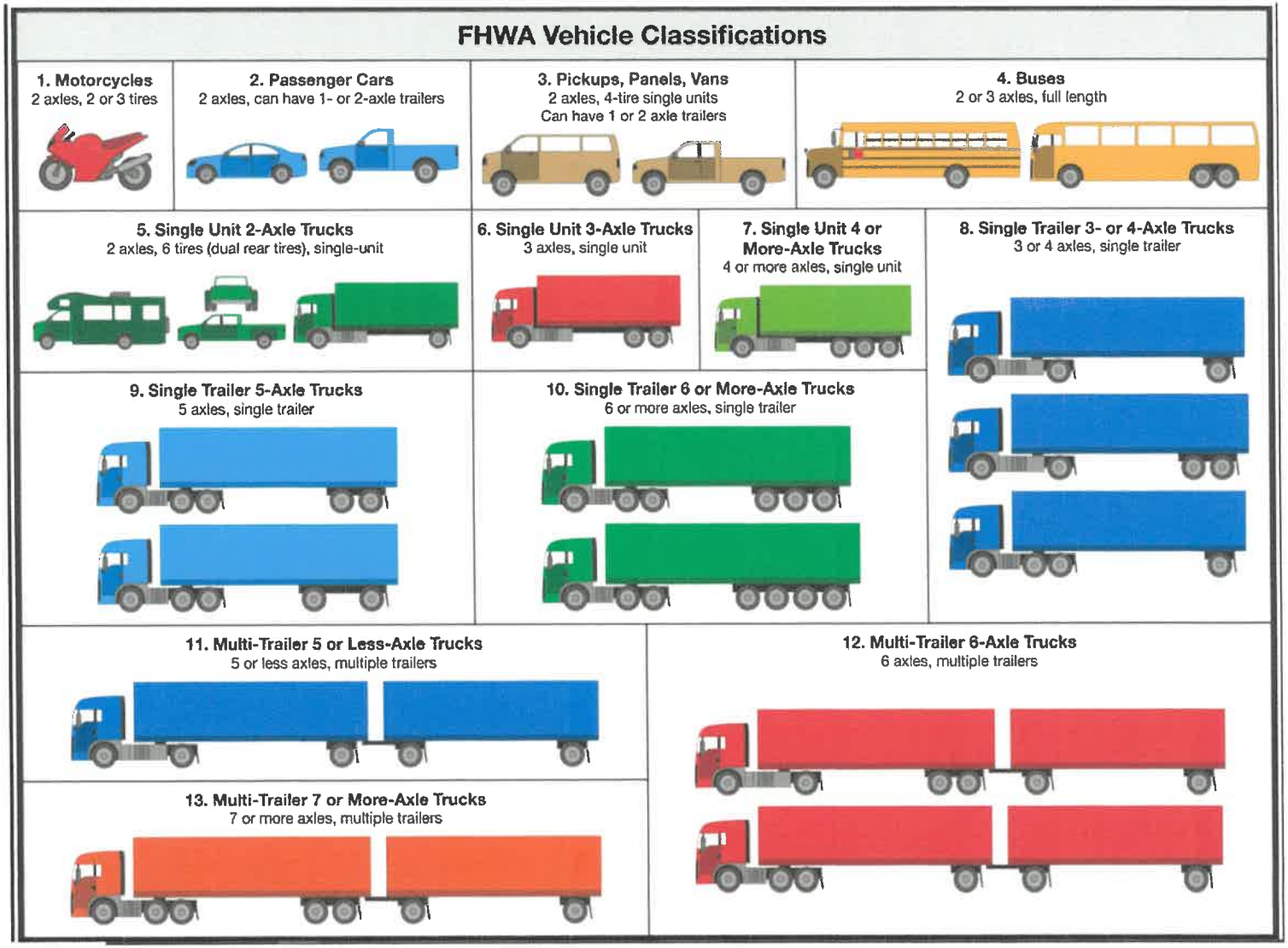
Level	8
Hill Crest	0
Hill Uphill	1
Grade Downhill	1
Dip Sag	0
On Bridge	0
Other	1
Unknown	0
Not Applicable	17

** Road Alignment

Straight	11
Curve Left	0
Curve Right	0
Other	0
Unknown	0
Not Applicable	17

** New Values for 2018 Data ONLY

Appendix


FHWA Vehicle Classifications
1. Motorcycles
2 axles, 2 or 3 tires
2. Passenger Cars
2 axles, can have 1- or 2-axle trailers
3. Pickups, Panels, Vans
2 axles, 4-tire single units
Can have 1 or 2 axle trailers
4. Buses
2 or 3 axles, full length
5. Single Unit 2-Axle Trucks
2 axles, 6 tires (dual rear tires), single-unit
6. Single Unit 3-Axle Trucks
3 axles, single unit
7. Single Unit 4 or More-Axle Trucks
4 or more axles, single unit
8. Single Trailer 3- or 4-Axle Trucks
3 or 4 axles, single trailer
9. Single Trailer 5-Axle Trucks
5 axles, single trailer
10. Single Trailer 6 or More-Axle Trucks
6 or more axles, single trailer
11. Multi-Trailer 5 or Less-Axle Trucks
5 or less axles, multiple trailers
12. Multi-Trailer 6-Axle Trucks
6 axles, multiple trailers
13. Multi-Trailer 7 or More-Axle Trucks
7 or more axles, multiple trailers

ALL TRAFFIC SOLUTIONS

Traffic Analysis Report

Rossback rd location 1, NB

Start: 2024-01-31
End: 2024-02-06
Times: 0:00:00-23:59:59

Speed Range: 1-150 mph
Violation Threshold: 10
Lanes Included: 1, 2

Speed

Speed Limit	35 mph
85th Percentile Speed	52 mph
50th Percentile Speed	45 mph
Average Speed	44.9 mph
Pace Speed Range (10 mph)	40 - 50 mph
Max Speed	93 mph
Min Speed	6 mph

Vehicles

Total Vehicles	12912 counts
85th Percentile Vehicles	11215 counts

Volumes

	Time	5 Day (Mon-Fri)	7 Day (Sun-Sat)
ADT		2092	1844
AM Peak	8:00 - 9:00	141	120
PM Peak	16:00 - 17:00	246	206

	Over Threshold	% Violators	Avg Violator Speed
Sunday	582	53.5	51.2
Monday	861	43.3	51.0
Tuesday	945	45.0	51.0
Wednesday	907	44.4	50.9
Thursday	1029	46.6	50.9
Friday	895	42.2	50.7
Saturday	727	53.3	50.9

Class Counts

	Number	%
Small (Class 1)	48	0.4
Medium (Class 2-3)	11186	86.6
Large (Class 4-12)	1678	13.0

Discussion - Max speed of 93 mph is considered an outlier. After performing statistical analysis, the max speed from the data set is 63 mph.

ALL TRAFFIC SOLUTIONS

Traffic Analysis Report

Patuxent river rd location 2, NB

Start: 2024-01-31
End: 2024-02-06
Times: 0:00:00-23:59:59

Speed Range: 1-150 mph
Violation Threshold: 10
Lanes Included: 1, 2

Speed

Speed Limit	25 mph
85th Percentile Speed	42 mph
50th Percentile Speed	37 mph
Average Speed	36.6 mph
Pace Speed Range (10 mph)	32 - 42 mph
Max Speed	84 mph
Min Speed	5 mph

Vehicles

Total Vehicles	12882 counts
85th Percentile Vehicles	11175 counts

Volumes

	Time	5 Day (Mon-Fri)	7 Day (Sun-Sat)
ADT		2101	1840
AM Peak	8:00 - 9:00	141	119
PM Peak	16:00 - 17:00	246	206

	Over Threshold	% Violators	Avg Violator Speed
Sunday	769	73.9	40.5
Monday	1187	59.5	40.4
Tuesday	1011	48.2	40.7
Wednesday	1202	59.3	40.2
Thursday	1390	61.8	40.2
Friday	1277	59.7	40.2
Saturday	975	73.0	40.3

Class Counts

	Number	%
Small (Class 1)	226	1.8
Medium (Class 2-3)	11101	86.2
Large (Class 4-12)	1555	12.1

Discussion - Max speed of 84 mph is considered an outlier. After performing statistical analysis, the max speed from the data set is 52 mph.

ALL TRAFFIC SOLUTIONS

Traffic Analysis Report

patuxent river rd location 3, SB

Start: 2024-01-31
End: 2024-02-06
Times: 0:00:00-23:59:59

Speed Range: 1-150 mph
Violation Threshold: 10
Lanes Included: 1, 2

Speed

Speed Limit	30 mph
85th Percentile Speed	46 mph
50th Percentile Speed	40 mph
Average Speed	40.0 mph
Pace Speed Range (10 mph)	35 - 45 mph
Max Speed	96 mph
Min Speed	12 mph

Vehicles

Total Vehicles	11672 counts
85th Percentile Vehicles	10235 counts

Volumes

	Time	5 Day (Mon-Fri)	7 Day (Sun-Sat)
ADT		1906	1667
AM Peak	8:00 - 9:00	130	109
PM Peak	16:00 - 17:00	245	202

	Over Threshold	% Violators	Avg Violator Speed
Sunday	500	53.0	45.1
Monday	821	45.7	44.7
Tuesday	964	49.0	45.0
Wednesday	849	45.9	44.9
Thursday	930	45.7	44.8
Friday	867	46.0	44.8
Saturday	661	55.2	45.0

Class Counts

	Number	%
Small (Class 1)	123	1.1
Medium (Class 2-3)	10106	86.6
Large (Class 4-12)	1443	12.4

Discussion - Max speed of 96 mph is considered an outlier. After performing statistical analysis, the max speed is 56 mph.

ALL TRAFFIC SOLUTIONS

Traffic Analysis Report

patuxent river rd location 4, SB

Start: 2024-01-31
End: 2024-02-06
Times: 0:00:00-23:59:59

Speed Range: 1-150 mph
Violation Threshold: 10
Lanes Included: 1, 2

Speed

Speed Limit	35 mph
85th Percentile Speed	48 mph
50th Percentile Speed	41 mph
Average Speed	41.5 mph
Pace Speed Range (10 mph)	36 - 46 mph
Max Speed	100 mph
Min Speed	11 mph

Vehicles

Total Vehicles	12019 counts
85th Percentile Vehicles	10483 counts

Volumes

	Time	5 Day (Mon-Fri)	7 Day (Sun-Sat)
ADT		1936	1717
AM Peak	8:00 - 9:00	133	110
PM Peak	16:00 - 17:00	256	214

	Over Threshold	% Violators	Avg Violator Speed
Sunday	296	27.9	50.9
Monday	438	23.9	49.6
Tuesday	528	26.4	50.0
Wednesday	444	24.2	49.7
Thursday	471	22.6	49.6
Friday	430	22.2	50.2
Saturday	365	28.6	50.1

Class Counts

	Number	%
Small (Class 1)	152	1.3
Medium (Class 2-3)	10720	89.2
Large (Class 4-12)	1147	9.5

Discussion - Max speed of 100 mph is considered an outlier. After performing statistical analysis, the max speed is 57 mph.

Christopher J. Phipps, P.E., Director

APP. EXHIBIT# 11
CASE: 2023-0221-S
DATE: 2/29/24

TECHNICAL MEMORANDUM

TO: File

FROM: Erik Terry, Engineer, Traffic Engineering Division

SUBJECT: Rossback Road, Vehicle Class Study

DATE: July 30, 2019

Data Collection:

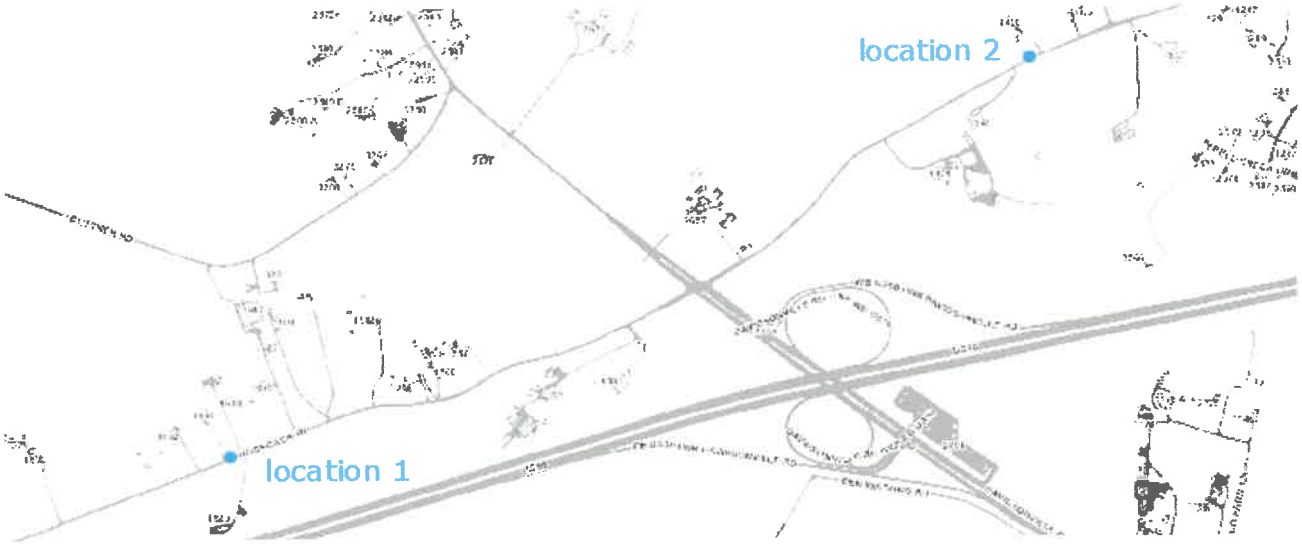
Machine counts were performed at the following locations in March 2019

1. Rossback Rd (minor arterial) west of Davidsonville Rd (minor arterial) near mailbox 1625
2. Rossback Rd (collector) east of Davidsonville Rd (minor arterial) near mailbox 1345

Data Summary

Year	Method	Location	ADT - Average Daily Traffic (vehicles/day)	Average Daily Volume Over 5 Ton GVW (Vehicles)	Percent Over 5 Ton GVW (%)
2019	Machine	1.- west of MD 424	2,477	208	8.4%
2019	Machine	2.- east of MD 424	2,227	28	1.3%

Graphic Showing machine counter locations



Phone: 410-222-7331
Recycled Paper

Large vehicle cut through traffic on Rossback Rd west of MD 424

Rossback Rd averages 75 vehicles per day that are classified as over 5 Ton GVW in the west bound direction and 133 in the east bound direction. Given that Rossback Rd functions as a minor arterial which connects MD 424 (minor arterial) to Patuxent Rd (minor arterial) our experience suggests that a fair amount of larger vehicle traffic is to be expected. Immediately south of the intersection of Rossback Rd & MD 424 is the exit for Route 50 which functions as a major Freeway in the State. Another issue which may contribute to large vehicle traffic is the presence of the Brandywine Aggregates dump site, located at 3026 Patuxent River Rd. Large dump trucks accessing this dump site are considered local traffic. There are alternate routes which may eliminate at least part of the large vehicle traffic on a section of Rossback Rd – mainly through the use of Governor Bridge Road and Double Gate Rd to the south. However both of these road function as Collector roads which are of a lower functional classification than Rossback Rd. Note that Double Gate Rd is restricted to trucks over 5 Ton GVW.

Conclusion

In our experience, given the functional classification of Rossback Rd, its geographical proximity to other arterial roads and freeway access, and the presence of Brandywine Aggregates dump site, the amount of large vehicle traffic is not unordinary and is to be expected.

If we were to prohibit large trucks on Rossback Rd west of MD 424, dump trucks coming from and to Brandywine Aggregates dump site would be forced to use Governor Bridge Rd. This route would add approximately 2.5 miles to every trip adding to fuel consumption, pollution and operation costs.

APP. EXHIBIT# 12
CASE: 2023-0221-S
DATE: 2/29/24

PROFESSIONAL QUALIFICATIO

Jonathan Ferdinand

Vibration and Noise Specialist

Education

- M.S. – Science and Ecology, Pennsylvania State University, 1996
- B.S. – Science, Pennsylvania State University, 1991

Continuing Education Programs

- CadnaA Noise Projection Analysis, DataKustik
- Applied Acoustics and Noise Control Theory and Applications, AVNC Consulting Engineers in Acoustics and Vibration, 3.0 CEU
- Efficient Blasting Techniques, Blast Dynamics Inc., 3.0 CEU
- 5th Soil Dynamics Short Course, Missouri University of Science and Technology, 16 Professional Development Hrs.
- Geotechnical Instrumentation for Field Measurements, University of Florida, 1.5 CEU
- Structural and Geotechnical Monitoring, Campbell Scientific, 3.8 CEU
- Structural Vibration Analysis, Design and Troubleshooting, American Society of Civil Engineers, 3.1 CEU
- Air Dispersion Modeling-AERMOD Regulatory Dispersion Model, Trinity Consultants, 2.0 CEU
- Geotechnical Instrumentation and Monitoring Workshop, American Society of Civil Engineers, 2.0 CEU
- CR1000/Loggernet Training and Programming, Campbell Scientific, 2.8 CEU
- Visible Emissions Evaluation Program - EPA FRM 9, The Pennsylvania State University, 1.0 CEU
- OSHA 29 CFR 1910.120 40 Hr. Hazardous Waste Training
- MSHA-HAZCOM Surface, Metal, Non-Metal, Underground Safety Trained
- New York City - MTA Track Safety Training
- Philadelphia - PATCO Track Safety Training

Professional Background

May 2004 to Present

Vibra-Tech Engineers, Inc. – Hazleton, Pennsylvania

Present Position – Vibration and Noise Specialist

In his current position with Vibra-Tech, Mr. Ferdinand is responsible for developing scope of work and cost proposals for vibration, noise, dust and geotechnical monitoring projects. In addition, he provides project management and assistance to office managers within the company. Mr. Ferdinand has over 15 years of experience in the areas of community noise monitoring, on-site and remote noise monitoring equipment, noise projection and impact analysis, and project management. He has completed numerous sound level studies in relation to construction, mining, transportation and the oil and gas industry. Mr. Ferdinand has provided noise consulting services, legal deposition and expert witness testimony for numerous community noise related zoning and legal matters. With regard to noise impact assessment, Mr. Ferdinand uses the most current noise monitoring equipment, noise projection software, internal cloud-based data infrastructure and experience to provide a complete noise analysis. This analysis includes an accurate and representative ambient noise survey, prediction of expected noise, comparison of ambient to expected noise and applicable noise criteria, and a comprehensive noise monitoring plan for long term noise evaluation and compliance. Following the completion of the impact analysis and establishment of a monitoring program, Mr. Ferdinand provides education and training in understanding and interpreting the noise data to assist clients in making informed decisions regarding noise impact and compliance issues.

Professional Experience

- City/County of Broomfield (CCOB) Colorado – Extraction Oil and Gas Well Pad Development, Broomfield, Colorado

  Vibra-Tech was retained by the City and County of Broomfield (CCOB) to provide fully automated remote monitoring of noise associated with four new gas well pads that were being developed in their community. As part of this monitoring service, Vibra-Tech provided a cloud-based web suite for data presentation and analysis. Eleven (11) remote noise monitoring stations were established to provide both A and C weighted noise levels as per project specifications. Systems were also put into place to record sound audio files for noise levels above a threshold limit and automatically send files to the data base for review and identification of the noise source. The allowable noise limits for the well pad development were based in part on the Colorado Oil and Gas Conservation Commission (COGCC) and an operator's agreement between the oil and gas extraction company and CCOB. Vibra-Tech provided noise projecting analysis, consulting, training of inspectors on use and operation of equipment, documentation, test procedures and enforcement program guidance for the project as CCOB local officials must understand and constantly analyze the data in order to protect the citizens of their community.

- Lhoist North American - Marble Falls Operation, Burnet, Texas
  Lhoist North America retained Vibra-Tech to measure and document the existing noise levels from the Marble Falls operation and to conduct a noise level projection analysis for the entire operation. The Lhoist Marble Falls operation is comprised of aggregate and limestone mining and processing equipment as well as a material bagging and hot mix plant. By taking reference noise measurements from individual pieces of equipment at the site, an overall noise level projection model for the entire operation was completed. Once the model was developed, noise attenuation from individual and groups of equipment was made to receptor locations in the surrounding community. The noise projection modeling provides the ability to project Marble Falls operational noise attenuation due to distance, but also provides the ability to consider only noise from this particular operation and exclude other extraneous noise sources in the area or other noise sources closer to a receptor point than the Marble Falls operation.

- Coronado Global Resources – Mon Valley Minerals Mine, Monongahela, Pennsylvania
  Coronado Global Resources was in the process of developing a green field site for establishing the new Mon Valley Minerals Mine located in Monongahela, Pennsylvania. As part of this process, Vibra-Tech provided noise level projection and an impact analysis for a proposed mining operation. To complete this analysis, Vibra-Tech visited a Buchanan Mine in Raven, VA to measure reference noise levels from individual pieces of equipment. These pieces of equipment would be the same or similar to equipment being proposed for the new mine in Monongahela. Utilizing the reference noise levels for all equipment, an AutoCAD file of the proposed mine layout, and the coordinates for each piece of equipment, the projected noise from the proposed mine to the surrounding community was completed. The results of this type of sound level projection yield an overall or combined noise level from the proposed mine operation to a particular receptor location. An assessment can then be made by comparing the projected operational noise levels to a particular ordinance or criteria of acceptable noise levels.

- Pennsy Supply Inc.—Small Mountain Quarry, Dorrance, Pennsylvania
  Vibra-Tech was retained as consultant to determine potential noise impacts to surrounding community resulting from relocation of quarry equipment closer to residential homes. Conducted ambient noise monitoring and noise level projection analysis. Provided expert testimony to local zoning hearing board.

- Preferred Real Estate Investment, Inc.—Conshohocken, Pennsylvania
  Vibra-Tech conducted a sound and vibration study to record levels relative to the operation of a nearby SEPTA Regional Rail at the Chestnut Hill Branch. Sound level measurements were taken outside the building at a single location to determine background noise levels for this area and also inside the building at four to five locations on each floor. Collected data was compared to the American Public Transit Association and the Federal Transit Administration Noise Impact Criteria. Vibration levels were measured at six locations on the first, second and fourth floors. Vibration data was compared to the Federal Transit Administration and the American Institute of Steel Construction (AISC) Vibration Criteria. All sound and vibration levels were measured with and without the influence of the train passing the building.

Publications

- "Noise and Dust: A Sound Approach to a Cloudy Issue," AGG1 2013 Academy and Expo, San Antonio, TX (2013)
- "Particulate Matter as an Air Pollutant, Past, Present, and Future," Proceedings of the 5th Biennial Blasting Vibration Technology Conference, Key West, FL (2004)
- "Particulate Matter as an Air Pollutant - Measurement Methods and Federal Regulations," Environmental Resource Management 430 - Penn State University, University Park, PA Guest Lecturer - 2003 to 2008

Depositions and Testimony

Client: Affiliated Local Government Coalition (ALGC) of Colorado
Project: The Colorado Oil and Gas Conservation Commission (COGCC)
Provided testimony with regard to suggested noise regulations

Client: Kirkpatrick & Lockhart Nicholson LLP
Project: St. Lawrence Cement Co., L.L.C, Camden, New Jersey
Deposed as expert witness for Class Action Law Suit –settled out of court

Client: Rynearson, Suess, Schnurbusch, & Champion
Project: Burkeemper v. Fred Webber and Magruder Limestone, Floresant, Missouri
Deposed as expert witness for law suit – settled out of court

Client: Shelton-Valdez Attorneys at Law
Project: Smith et al. v. H. E. Butt Grocery Co., Corpus Christi, Texas
Deposed as expert witness for Class Action Law Suit – settled out of court

Client: Pennsy Supply Inc.
Project: Small Mountain Quarry Expansion, Dorrance, Pennsylvania
Provided expert testimony regarding noise - Dorrance Township Zoning Hearing Board

Client: York Building Products
Project: Merrick Farm Mine Project Queen Anne's County, Maryland
Provided expert testimony regarding noise- Queen Anne's County, Maryland Zoning Board

Client: Amerikohl Mining, Inc.
Project: Proposed Curry Surface Mine, Dunbar Township - Fayette County PA
Provided expert testimony regarding noise – Fayette County Zoning Board

Client: Byler Materials, LLC.
Project: Application for Major Extraction Permit, Queen Anne's County, Maryland Zoning Board.
Provided expert testimony regarding noise- Queen Anne's County, Maryland Zoning Board

Client: Cynthia Kennelly – Home owner
Project: Kennelly v. Russell's Hauling – West Wyoming, PA
Small Claims Court – Luzerne County, PA
Provided expert testimony regarding noise

Client: Martin Marietta Materials, Inc.

Project: Baker v. Martin Marietta, Inc., Circuit Court, Jackson County, MO.

Expert witness in case regarding sound level testing and results measured along designated truck route

January 6, 2024

Mr. Skip Gardiner
Patuxent Companies
2124 Priest Drive, Suite 18
Crofton, Md. 21114

Vibra-Tech
Vibratechinc.com

Phone 570.455.5861
Fax 570.455.0626

APP. EXHIBIT# 13
CASE: 2023-0221-S
DATE: 2/29/24

RE: Noise Level Analysis
Proposed Sand & Gravel Pit
Brandywine Aggregates, LLC
2882 Patuxent River Road
Davidsonville, MD 21035

Project Description:

Vibra-Tech has prepared this report which provides the predicted noise levels associated with the development and operation of the proposed Brandywine Aggregates, LLC operation. Based on reference noise levels for the proposed equipment that will be used on the site, the distances from the equipment to property line locations, and the addition of landscape berms, Vibra-Tech completed a noise level analysis for the project. Vibra-Tech understands the applicable noise limits are as follows: The sound level at all lot lines does not exceed a peak of 65 dB and average of 55 dBA. Based on a review of the Code of Maryland Noise regulations, the allowable maximum noise levels in Table 2 apply to this project. The allowable design maximum noise limit of 65 dBA (Daytime Residential) has been used in this analysis. The allowable noise levels in Table 1, based on 24 hour sound level equivalent (Leq) calculations do not pertain as the proposed hours of operation for the proposed Brandywine Aggregates, LLC operation are 7 am to 5:00 pm, and will not be a 24 hour operation.

B. Standards for Environmental Noise - General.

Table I. Environmental Noise standards

Zoning District	Level	Measure
Industrial	70 dBA	$L_{eq}(24)$
Commercial	64 dBA	L_{dn}
Residential	55 dBA	L_{dn}

Table 2. Maximum Allowable Noise Level (dBA) For Receiving Land Use Categories

Day/Night	Industrial	Commercial	Residential
Day	75	67	65
Night	75	62	55

Noise level predictions for this project was completed using CadnaA-BMP which is a three dimensional graphics oriented program that uses the International Standards Organization (ISO) 9613-2, a general purpose standard for outdoor noise propagation. CadnaA determines how the noise from each piece of equipment will vary with distance. CadnaA also provides a method to sum the noise from each piece of equipment at various noise receptor locations.

The following items were used to complete the noise impact analysis for the site:

1. Estimated reference noise source data for each piece of equipment at 50 feet (Table 1).
2. The proposed site plan indicating property lines, proposed equipment location, ground elevation (existing and proposed) and proposed 10' landscape berm (Figures 1 below).
3. Distances from proposed equipment to nearest landscape berm and to corresponding property line location (Table 2).
4. The noise level criteria or ordinances that will apply to the project.

Table 1. Reference noise levels at 50 feet for proposed equipment at Brandywine Aggregates, LLC.

Proposed Equipment	Max dBA @ 50'
Electric Wash Plant	80
Cat 730 Truck Haul	82
Cat 366 Excavator	82
Cat 980 Loaders	83

Using the above information, Vibra-Tech conducted noise modeling to predict the estimated maximum noise levels from each piece of proposed equipment to adjacent property line locations. The factors used in the model that determine the attenuation of noise from the source at 50 feet away to a receiver farther away are the distance between the source and the receiver, the presence of any berms or barriers in between the source and the receptor, and ground elevation changes.

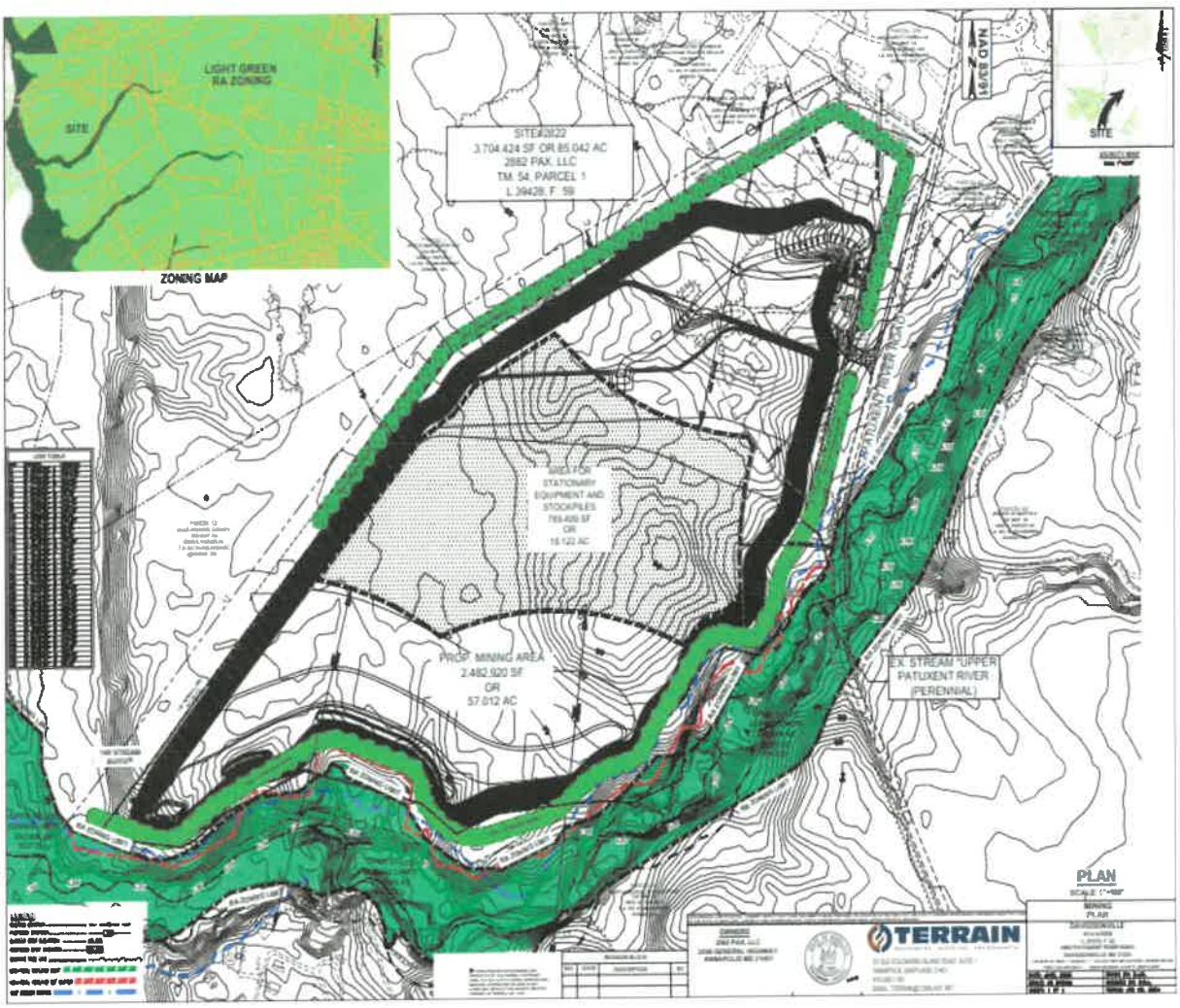


Figure 1. Proposed site plan for Brandywine Aggregates, LLC.

The site plan for the proposed operation consists of two main areas of equipment operation consisting of the stationary and stockpile area and the proposed mining area. There is a proposed 10' earth berm proposed along the north, east, south, and northwest property lines of the site. The noise sources within the stationary equipment and stockpile area will be between 250 to 500 feet from any property line. The noise sources operating in the mining area will begin work approximately 1000 feet from the south property line and move to 100 feet. These noise sources may also be within 100' from the east and west property lines at some time during the mining process. Tables 1 and 2 provide a list of proposed equipment and distances to landscape berm and property lines.

Table 2. Distances from proposed equipment associated with the stationary and stockpile areas of Brandywine Aggregates, LLC to nearest landscape berm and to corresponding property line location.

Stationary Equipment and Stockpiles		
Proposed Equipment	Distance to Berm (Ft)	Distance to PL (Ft)
*Wash Plant	151	300
*Cat 980 Loader	151	300
Cat 730 Truck Site Entrance	151	300
Cat 730 Truck-Scale House	101	250
Cat 730 Plant and Stockpile Area	400	500
Cat 730 Haul Road North of Plant and Stockpile Area	300	400

Table 3. Distances to nearest property line location of proposed equipment associated with the mining area of Brandywine Aggregates, LLC.

Mining Area		
Proposed Equipment	Distance to Berm (Ft)	Distance to PL (Ft)
Cat 730 Truck	100	100 to 1000
Cat 366 Excavator	100	100 to 1000

Results

Without Change in elevation or Berm

The distance between the noise source(s) and the receptor location(s) is the most significant factor in the outcome of the impact analysis. The decrease in sound level over distance normally follows the inverse square law. At distances of fifty (50) feet or greater from a sound source, every doubling of distance produces a 6 dBA reduction in sound. Therefore, a sound of 70 dBA at 50 feet would have a sound level of approximately 64 dBA at 100 feet. At 200 feet the sound level would be 58 dBA.

Using the information in Tables 1-2, the predicted maximum equipment noise levels were determined at the closest property lines locations adjacent to the stationary equipment and stock pile area (Table 4). For the prediction of the maximum noise levels at the property line of the mining area (Table 5), the reference noise levels in Table 1 and the distances in Table 3 were used.

Table 4. Maximum noise level of proposed equipment in the stationary equipment and stockpile area adjacent to the property line of Brandywine Aggregates, LLC without a noise berm or change in site elevations.

Stationary Equipment and Stockpile Area – No Site Work or Berm			
Proposed Equipment	Distance to PL (Ft)	Current Site Elevation (Ft)	Max dBA
Wash Plant	300	80	65
Cat 980 Loader	300	80	68
Cat 730 Truck	300	80	67
*Cat 730 Scale House	254	80	68
Cat 730 Plant Entrance	500	80	62
Cat 730 Haul Road (N)	400	80	64

Table 5. Maximum noise level of proposed equipment in the mining area adjacent to the property line of Brandywine Aggregates without a noise berm or change in elevation due to excavation.

Mining Area – No Site Work or Berm			
Proposed Equipment	**Distance to PL (Ft)**	**Current Site Elevation (Ft)**	**Max dBA**
Cat 730 Truck	100	70	76
Cat 366 Excavator	100	70	76
Cat 730 Truck	200	70	70
Cat 366 Excavator	200	70	70
Cat 730 Truck	300	70	66
Cat 366 Excavator	300	70	66
Cat 730 Truck	1000	70	58
Cat 366 Excavator	1000	70	58

The results in Tables 4 provide the predicted maximum noise levels for the stationary equipment in the stockpile area, the haul truck on site and at the scale house, and equipment operating in the mining area. These results do not take into account any site work, excavation, or noise berms.

During the initial site development work, a 10 ft. high landscape berm will be established in areas along the west, north, and east sides of the site. This berm will also be staggered to conceal the site entrance along Patuxent River Road. In addition to the landscape berm, the initial site work will also lower the current ground elevation of the stationary equipment/stockpile area. This site grading will lower the current ground elevation and create a high wall and natural berm between the operating equipment and the property line. The ground elevation in the stationary equipment area will be lowered approximately -10 to -50 feet below the current ground elevation of 80 feet. In addition, as shown in Figure 1, the construction of the landscape berm will further mitigate noise levels at the property lines.

Excavation work in the mining area will start approximately 1000 feet from the southern property line. As excavation work begins in the mining area, the initial ground elevation of 60-70 feet will progressively decrease to a final depth of approximately 50 feet. This decrease in elevation will create a high wall berm that will attenuate noise levels at the property line.

Figures 2 and 3 below shows the general noise attenuation resulting from a noise berm or barrier between a noise source and receptor. Noise berms or walls are commonly constructed between a source of noise and a noise sensitive receptor point or area for the purpose of noise level attenuation and mitigation. Noise berms can potentially absorb, transmit, reflect, or force noise to take a longer travel path over the wall, thus travel a further distance to the receptor (Figure 2). As shown in Figure 3, once the initial line of sight is blocked, a 5 dB reduction can be expected. For each additional increase of approximately 3 ft. (1 meter), an additional 1.5 dB attenuation can be achieved.

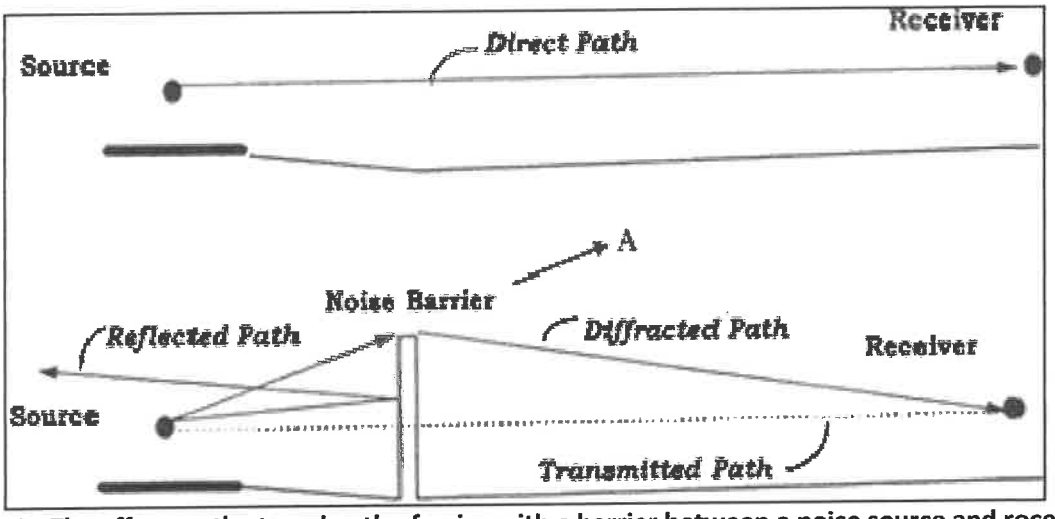


Figure2. The effect on the travel path of noise with a barrier between a noise source and receiver.

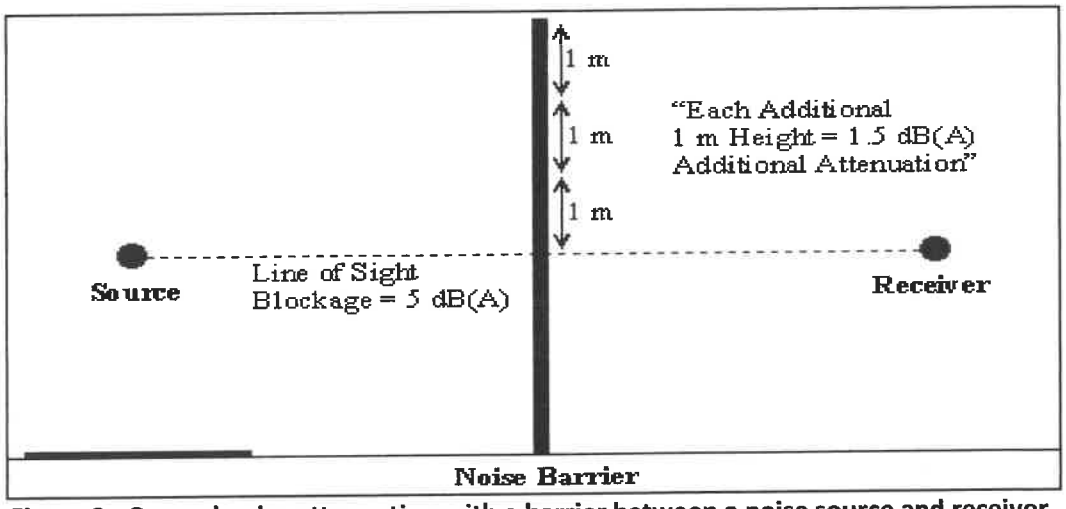


Figure 3. General noise attenuation with a barrier between a noise source and receiver.

Results

With Change in elevation or Berm

Taking into account noise mitigation due to the proposed berm and changes in site elevations, the analysis was repeated. For the stationary equipment and stockpile area, this analysis used the equipment distance from the property line, the distance from the equipment to the berm, as well as the height of the berm, and the change in ground elevation due to site work that will occur before the equipment is located at the site. The results for this area are provided in Table 6.

In the mining area, after the initial cut, the ground elevation will progressively deepen. The initial ground elevation of 60-70 feet will progressively decrease to a final depth of approximately 50 feet. This decrease in elevation will create a high wall berm that will attenuate noise levels at the property line. In addition to the creation of this high wall berm, a 10 ft. berm along the property line of the mining area was required for additional noise attenuation. These results are provided in Table 7.

Table 6. Maximum noise level of proposed equipment in the stationary equipment and stockpile area located within 300 feet from the property line of Brandywine Aggregates, LLC with ground elevation reduction and proposed 10' landscape berm.

Stationary Equipment and Stockpile Area – With Site Work and Berm				
Proposed Equipment	**Distance to PL (Ft)**	**Current Site Elevation (Ft)**	**Required Site Elevation (Ft)**	**Max Noise dBA with Decrease Elevation and 10' Berm**
Wash Plant	300	80	59	59.5
Cat 980 Loader	300	80	75	62.5
Cat 730 Truck	300	80	75	61.5
*Cat 730 Scale House	254	80	70	63.0
Cat 730 Plant Entrance	500	80	80	57.0
Cat 730 Haul Road (N)	400	80	80	59.0

**The required change in elevation can be achieved by a combination of lowering the existing ground elevation and raising the height of the berm.*

Table 7. Maximum noise level from proposed equipment in mining area located within 100 to 1000 feet from the property line of Brandywine Aggregates, LLC with ground elevation and 10 ft. Berm.

Site Elevation (Ft)	**Max dBA 100'**	**Max dBA 200'**	**Max dBA 250'**	**Max dBA 300'**	**Max dBA 1000'**
70'	71	65	64	62	58
60'	66	60	59	57	53
55'	63.5	56	57	55	51
50'	61	55	54	52	50

Conclusion

Based on the results of this analysis, with the proposed 10 ft. tall landscape berm in place, and the required site elevation reduction (Table 6), the noise from the Stationary Equipment and Stockpile Area will be below 65 dBA at the nearest property lines.

The maximum noise levels expected from the mining area 200 feet from the property line, with a 10 ft. berm at an excavation depth of 60 ft. below existing ground level (Table 7) will be below 65 dBA. As mining progresses closer to the property line (100ft) and the depth of the excavation increases, the maximum noise levels will remain below 65 dBA once the excavation depth of 55 feet. The required change in elevation and expected maximum noise levels can be achieved by a combination of lowering the existing ground elevation and raising the height of the berm.

Respectfully submitted,
VIBRA-TECH ENGINEERS, INC.

Jonathan A. Ferdinand
Sound and Vibration Specialist

APP. EXHIBIT# 14
CASE: 2023-0221-S
DATE: 2/29/24

LandVisions, Inc.

SHEPARD TULLIER

BACKGROUND SUMMARY

Over 35 years of experience in planning, zoning and land use issues with a strong emphasis on the zoning, development and the legislative process, comprehensive planning and growth management procedures.

LAND USE
Provided expert testimony * in Court on land use, planning/subdivision issues and before the administrative bodies and Board of Appeals on rezonings, special exceptions and variances, school waivers, land use and need studies, etc. Drafted legislation and amendments for Council adoption. Performed feasibility studies for rezonings and property analysis/development potential reports. Prepared land use, parking and sewer cost analysis report for due diligence studies.

* Anne Arundel and Howard County Circuit Courts, Anne Arundel County Administrative Hearings and Board of Appeals, Calvert County Board of Appeals and Planning Commission, Howard County Board of Appeals, Prince Georges County Zoning Hearing Examiner and Planning Commission, Annapolis City Council, City of Annapolis Board of Appeals and Planning Commission, Baltimore County Zoning Hearings, City of Hagerstown Zoning Board of Appeals, City of Westminster Planning Commission, City of Leonardtown Board of Appeals.

DEVELOPMENT FACILITATION
Assisted in resolution of subdivision and Critical Areas questions. Represented clients on a wide range of matters involving Code analysis, water and sewer and septic issues, and other zoning and administrative processes.

ALCOHOL BEVERAGE LICENSE APPLICATIONS

As an expert witness testified before the Anne Arundel County Liquor Board and the City of Annapolis Alcohol Beverage Control Board re: need for license, impacts on adjacent licenses, etc.

GOVERNMENTAL RELATIONS
As a registered lobbyist testified before the Anne Arundel County Council on zoning and land use legislation. Prepared legislation and met with Council members for support of legislation.

7 Elliott Road, Annapolis, MD 21403 (410) 991-8716

PROFESSIONAL EXPERIENCE

LandVisions, Inc. President	7/93 to present
Anne Arundel County Office of Planning and Zoning	
Comprehensive Planning Administrator	12/90 to 6/93
Administrative Planner	3/88 to 11/90
Zoning Analyst	9/86 to 2/88
Comprehensive Planner	7/83 to 9/86
Legislative Planner	2/81 to 6/83
Environmental Planner	11/77 to 1/81

EDUCATION

University of Maryland
B.A. Political Science, 1971

MEMBERSHIP

American Planning Association (APA)
Maryland Chapter, APA

ELECTED OFFICE

Annapolis City Council 1993-1997

OFFICE OF PLANNING AND ZONING

CULTURAL RESOURCES SECTION

APP. EXHIBIT# 15
CASE: 2023-0221-S
DATE: 2/29/24

Scenic & Historic Roads

OPZ Review Policy & Guidelines

History of the Program & its Codification

In 2006, the County Council approved legislation that recognized over 150 roads in the County as scenic and historic roads worthy of some level of protection. This Bill was a result of an initial study conducted in 1993 that surveyed the County's roads and identified roads of special historic and scenic interest. This survey effort was followed by the formation of a public commission, which studied the topic further, and compiled a report submitted to the County Council in 1997. The Scenic and Historic Roads Commission recommended that the County establish a Scenic and Historic Roads program. Resolution #45-97 was approved confirming that action be taken to include the Commission's recommendations in the zoning and development regulations.

When the subdivision and development regulations were revised in 2005, Bill #21-06 codified an inventory of 153 roads and road segments that would be subject to design and development regulations under Article 17-6-504, which is applied during the Site Development Process. Twenty-four of the most highly scenic and significant roads or road segments were set aside for additional protection under zoning regulations as per Bill #04-06. As such, two "lists" have been established;

1) Scenic & Historic Roads (n=153) are protected under Article 17 - Development provisions.
2) Scenic & Historic 'Rural' Roads (n=24) are further protected under Article 18 -Zoning provisions.

(Maps delineating these roads as adopted by the two different bills are included as Appendix C and D respectively.)

The final inventory of all Scenic and Historic Roads subject to Site Development Plan Review under Article 17 include those identified in 1993 and recommended for protections by the Commission in 1997. When the bill was before the County Council, additional roads that had not previously been studied or considered were added to the final list by individual Council members as an amendment to Bill#21-06. OPZ staff also included roads in the original bill based on recommendations that came from the adopted Small Area Plans.

Note that "**Rural Roads**" refer to the 24 collector roads called out in Bill#4-06 which are located in South County, adjacent to RA zoned property, which have exceptional integrity or historic/scenic character. That bill defines those roads for zoning purposes only, and restricts the location of certain conditional and special exception uses on those roads.

ALL 153 Scenic and Historic Roads are subject to Article 17-6-504 regulations, while the subset of 24 "Rural Roads" are subject to additional zoning requirements. These two classifications of roads are readily available in map form in the GeoCortex GIS mapping tool available to all County Employees.

Road Classifications and Character

The Commission's 1997 report established three road classifications (essentially a ranking system) and defined two types of roads; Rural and Neighborhood. Though this level of detail was not incorporated into code language, the classification system established by the Commission's work serves as a guideline for the Cultural Resources Section staff when reviewing development plans to determine how to apply the fourteen criteria set forth in 17-6-504. The 1997 classifications identify variations in treatment for each road, and help staff determine whether leniency or strict application of the code is appropriate.

These Classification Levels are 1) Preservation, 2) Protection, and 3) Recognition. The Commission report also defines two road types; 'Neighborhood' and 'Rural.' In general, all of the Category 1 (Preservation) roads are also rural roads and have the highest scenic and historic integrity. The Commission did not identify any neighborhood roads that they classified for Preservation, the highest level of treatment. For this purpose, Preservation is defined as per the National Park Service Standards as "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property." Categories 2 (Protection), and 3 (Recognition), include both Rural and Neighborhood roads.

It is also important to note that some of the roads have seen changes in the 20 years since the classifications were initially proposed, and OPZ/ CR Staff has reassessed several roads since that study and reclassified them based on new information or change of character. A spreadsheet with the full inventory of roads, showing their relative classifications and type is attached as Appendix A for reference purposes. Below is a brief summary in table format of the nature of the Scenic and Historic Roads Inventory.

Designation	**Number**
Classification	
"1" Roads (Preservation)	**49**
"2" Roads (Protection)	**64**
"3" Roads (Recognition)	**40**
Types	
Rural	**95**
Neighborhood	**58**
"RURAL Roads" *(as defined for ZONING applications)*	**24**

Implementation: The Site Development Review Process

The Office of Planning and Zoning/ Cultural Resources staff reviews each development project and evaluates the impacts to each road on a case by case basis. Note that not all fourteen of the 17-6-504 criteria will be applicable in each instance and it depends on what characteristics contribute to the S & H roads importance as defined by the initial documentation study. (The 14 criteria as found in Article 17-6-504 are attached as Appendix B). The Preservation and Protection goals seek to minimize road improvements but this does not prohibit improvements when legitimate safety concerns are demonstrated.

When there are questions as to the appropriateness of proposed improvements, the Cultural Resources Section will consult with the development planner and transportation specialists, and other agencies as needed. CRS defers to Transportation and Department of Public Works (DPW) planners' opinions, and the information presented by the applicant to determine if safety concerns are present that would warrant improvements, and to what extent. As our office reviews each project, we balance preserving the integrity of the Scenic and Historic Road with safety concerns as we evaluate proposals for widening roads, adding shoulders, bike lanes, curbs, and gutters, road straightening or realignments and vegetation removal. The goal is to maintain existing conditions in so far as possible, be it a historic neighborhood road alignment or gridded street pattern, a broad open scenic vista overlooking cropland or pasture, or maintaining the winding, deeply trenched 'rolling roads' of the colonial era. Below is a summary of each road classification and the approach that should be taken for road improvements, as provided in the 1997 Scenic & Historic Roads Commission Report.

Category 1: Road Preservation

Roads in this category are generally unspoiled by development, and contain outstanding scenic and historical characteristics. "Preservation" roads shall receive the highest level of protection. Improvements to these roads shall be limited to minimal safety improvements. Development on land abutting these roads shall meet the 14 criteria in Article 17-6-504 of the County Code in order to minimize any adverse impacts.

Category 2: Road Protection

While roads in this category may not be pristine as those in Category #1, they are still worthy of protection. Any required improvements, such as road frontage improvements, shall be kept to a minimum. Development along these roads shall also meet the 14 criteria in Article 17-6-504 of the County Code.

For neighborhood roads in this Category, the original integrity of the roads shall be preserved and protected. Adjacent development or redevelopment should be designed to be compatible with the character of each neighborhood. Article 17-6-504 criteria should be utilized to enhance and maintain the scenic and historic qualities of each neighborhood to the extent possible.

Category 3: Road Recognition

Due to adjacent intensive development or other alterations, the integrity of roads in this category has been compromised to some extent. Existing road alignments should be preserved and any road improvements should follow jurisdictional road standards, and strive to meet the applicable criteria in Article 17-6-504 in so far as possible.

Road widening and sidewalks would not be appropriate on several of the most historic, narrow, entrenched winding roads found in South County. We would review if there a logical point of connection should a short segment of sidewalk be installed, or would it remain a "sidewalk to nowhere" and our office would consider if

there are larger plans to provide coordinated connectivity, or if there are public amenities that might warrant improved pedestrian access, such a school or community center. In these cases, our office would participate in the design and planning process to ensure that such actions would be thoughtfully executed, use creative design solutions, and ensure that the action would not fundamentally change the character and nature of the historic road. OPZ/ CR have identified 64 exceedingly pristine and notable roads that have a high degree of integrity or possess some other unique characteristics that warrant a more stringent application of the code and criteria. These have been noted with a 'hashtag' mark (#) in the attached spreadsheet and our Office recommends strict adherence to the provisions found in Article 17-6-504.

If the road is a Category 3 road in a neighborhood area, as is found in more urban communities like Odenton and Pasadena, sidewalks would not only be appropriate, but would likely reinforce the historic character of the road, many of which were established before vehicles ruled the landscape, when most citizens still walked or rode horses to their destinations. Design details evoking these footpaths, while still respecting modern design criteria can be achieved with increased coordination.

As development occurs over the years, even within the construct of a carefully administered Scenic and Historic Roads program, invariably changes will arise that may change the nature, character and integrity of certain roads. There are also several roads in the County that Staff has identified as meeting all of the characteristics and criteria for Scenic and Historic Road designation, yet they are not included in the list adopted under the Code in 2006. A regular process for re-assessment and reevaluation of the roads list should be established, perhaps as part of the General Development Plan every 8 years. Given this list was adopted more than a decade ago, at some point in the near future, consideration should be given to updating the official list and its classifications, to account not only for changes that have occurred since adoption, but also to address known or potential omissions from the original report and adopted Roads List under which we operate today.

Interagency Coordination and Recommendations

Since these roads were designated over a decade ago, actions outside and beyond Planning & Zoning's purview have impacted certain roads and road segments. Recent changes in OPZ Departmental policy and improved coordination with other County Agencies now allow OPZ to review more CIP and road construction projects and provide comment. It should be noted, however, that treatment of Scenic and Historic Roads are not addressed in the current DPW Design Manual, thus our recommendations, when we conduct courtesy reviews, are the only available guidance for DPW to achieve design solutions that avoid or minimize Scenic and Historic Road impacts. A comprehensive approach should be taken to address the treatment of Scenic and Historic roads in the Manual, as this document seems to be the primary source of regulations that is used to design road improvements. Including a design approach for Scenic and Historic roads will be crucial in order to ensure that the integrity of these roads is preserved.

> ***Our Office strongly recommends that any future amendments or revisions to the DPW Design Manual should both identify designated roads, and directly address the preferred treatment of Scenic and Historic Roads based on their type and classification.***
>
> ***The existing criteria in Article 17-6-504 of the Subdivision and Development section of the County Code should also be referenced and utilized by other County agencies for road improvement projects, as they offer measures that will enable the scenic and/or historic character of these roads to be preserved.***

State agencies and Utilities (SHA/ BGE) do not recognize or honor the criteria set forth in this local program, and spot changes, particularly related to vegetation removal along electrical lines, have compromised the visual integrity of certain segments of roads since adoption of the program.

> ***Our Office recommends conducting outreach with colleagues at the State Highway Administration and within BGE to raise awareness about our local provisions for protected designated roads and request that those Agencies consult with our office when work is occurring on designated roads to ensure sensitive treatment of Scenic and Historic Roads.***

The **Anne Arundel County Pedestrian and Bicycle Master Plan: 2013 Plan Update** notes that Scenic and Historic Roads are a concern, and may be a limiting factor for potential road improvement projects. Presently, the County is operating under the 2003 Pedestrian and Bicycle Master Plan, which was adopted in January 2003, prior to codification of the Scenic and Historic Roads protections adopted under Article 17-6-504 several years later.

The 2003 Plan includes a map of Tier 1 and Tier 2 roads. Tier 2 roads were routes recommended for future bicycle and pedestrian improvements when the opportunity arose. This plan calls out many roads for pedestrian and bike enhancements that are presently designated as ***Category 1 Rural Scenic and Historic Roads,*** or ***Category 2*** roads typed as both ***Rural*** and ***Neighborhood***. The Transportation Division has indicated that the Transportation Functional Master Plan (TFMP) will continue to reference and apply the recommendations found in the 2003 Bicycle and Pedestrian Master Plan.

"Rural /Category 1 Scenic and Historic Roads" have been called out for pedestrian or bicycle improvements in the 2003 Plan which may not be compatible and could threaten the scenic and historic integrity of those designated roads.

Our Office strongly recommends reconciling and resolving inconsistencies between 'Bike/ Ped' goals with the Scenic and Historic Roads preservation goals as an element of the Transportation Functional Master Plan. A close evaluation of recommended treatment or enhancements that would facilitate pedestrian or bicycle access improvements should be reconciled with the treatments recommended by the 1997 Commission Report and should ensure compliance under Article 17-6-504.

To assist in this process, the attached spreadsheet includes a column that indicates which affected roads should be specifically called out for limited or reduced improvements and which ones would be better suited for improvements to enhance "Ped/ Bike" goals. Forty-three (43) designated Scenic and Historic Roads are noted on maps or by name in the 2003 or 2013 Pedestrian and Bicycle Master Plan.

In 22 cases, this Office believes that physical improvements to accommodate pedestrian or bicycle traffic along these roads are general inappropriate or would prove incongruous with their character and physical nature, and improvements could likely not be accomplished without compromising the scenic and historic roads' integrity.

Of the remaining 21 roads that are both designated Scenic and Historic Roads and called out in the 2003 or 2013 Plans for Ped/Bike improvements, our Office finds that they could easily accommodate such actions without material impact to the roads' scenic or historic integrity. These are either larger State roads (such as Solomon's Island Route 2 or Muddy Creek Route 468), roads with traditions of more intensive development, or those designated as neighborhood and rural roads with a Classification Level 3 (Recognition,) which offers greater flexibility and lenience for improvements than would be permissible for Rural roads with a Classification Level 1 (Preservation) or Classification Level 2 (Protection).

Additional Recommendations

- Of the proposed non-vehicular trails in the Plan, one could directly impact Category 1 roads (the **Chesapeake Beach Rail Trail.**) The proposed trail would utilize 3 Scenic and Historic rural roads which include; Wrighton Rd, Pindell Rd, and part of Fishers Station Rd. Road improvements for this trail should be done in a sensitive manner to preserve the scenic and most character defining qualities of these roads. Our office should be involved in the design process for the trail should that move forward
- Clarification in the 2013 Plan Update should also be made in **Part V. Project Identification & Evaluation** where it is mentioned that Scenic and Historic roads are a limiting factor. The Plan appears to presume that if a road is designated Scenic and Historic, then no improvements can be made. We hope this policy document clarifies how the Classification Level and Type of each road impacts the review process and that some roads may be more suited for improvements than others. This section might also reiterate that projects are reviewed on a case by case basis.
- The Maryland Scenic Byways Program could provide support for larger Pedestrian and Bicycle initiatives and the Program may be a potentially valuable partner organization. The Program is administered through MDOT (SHA) and the goal of the Program is to help communities enhance the quality of life and pride as well as visitor appeal by identifying and promoting as well as encouraging the responsible management and preservation of the state's most scenic, cultural and historic roads and surrounding resources. Anne Arundel County contains one MD Scenic Byway which is called **"Roots & Tides"**. The Byway begins in Annapolis and ends in Fairhaven. Points of interests noted on the Byway are located in Annapolis, Edgewater, Shady Side, and Galesville.

Attachments:

APPENDIX A: SPREADSHEET OF DESIGNATED SCENIC & HISTORIC ROADS

APPENDIX B: EXCERPT OF ARTICLE 17-6-504 (14 criteria for review)

APPENDIX C: Map Showing all Scenic and Historic Roads (Bill #21-06)

APPENDIC D: Map Showing Rural Scenic & Historic Roads (Bill #04-06)

APPENDIX A: SPREADSHEET OF DESIGNATED SCENIC & HISTORIC ROADS

Designated Scenic & Historic Roads *(Adopted as per Bill #21-06)*	**Classification: Ranking from the 1997 Commission Report.**	**Road Type based on 1993 Identification Study**	**Rural Designation as per Bill 04-06** *(Article 18: Zoning)*	**High Integrity/ Unique Character** *Strict Adherence to 17-6-504 and Minimal Physical Improvements Recommended.*	**S & H Roads in the 2003 and/or 2013 Bicycle and Pedestrian Master Plan** *(includes Tier 1 and 2 roads)*
A Street	3	Neighborhood			
Arundel Road	2	Neighborhood			
Askewtown Road	2	Neighborhood			
Bacon Ridge Road *	1	Rural		#	
Bayfields Road	1	Rural	RURAL	#	
Becknel Road	2	Neighborhood			
Bell Branch Road	1	Rural	RURAL	#	
Brick Church Road	1	Rural		#	
Brooks-Woods Road	1	Rural	RURAL	#	
Catalfa Avenue	3	Neighborhood			
Catalpa Road	2	Neighborhood			
Central Avenue	3	Neighborhood			X
Chesterfield Road (Allis Streein Sylmac to Crownsville Road)	2	Rural			X
Chesterfield Road (St. Stephens Church Road to Allis Street in Sylmac)	1	Rural		#	X
Chestnut Road	2	Neighborhood			
Chestnut Street (E & W)	3	Neighborhood			

Collins Avenue	2	Rural			
Contees Wharf Road	1	Rural	RURAL	#	
Conway Road	3	Rural			
Crownsville Road	3	Rural			X
Cumberstone Road	1	Rural	RURAL	#	
D Street SW	3	Neighborhood			
Dairy Farm Road *	2	Rural			
Duckens Street	2	Neighborhood			
Ed Prout Road *	1	Rural	RURAL	#	
Fairhaven Road (Town Point Road to Friendship Road)	1	Rural		#	X
Ferry Point Road	3	Rural			
First Avenue	3	Neighborhood			
Fishers Station Road	1	Rural	RURAL	#	
Forest Avenue *	3	Rural			X
Francis Station Road	3	Rural (Exterminated by Piney Orchard Development)			
Franklin-Gibson Road (Fairhaven Road to Highview Road)	1	Rural		#	
Furnace Road	3	Rural			
Glenns Road *	3	Neighborhood			
Governor's Bridge Road	1	Rural	RURAL	#	X
Gray's Ford Road	2	Rural			X

Greenock Road	1	Rural		#	X
Greenway NW	3	Neighborhood			
Greenwood Road	3	Neighborhood			
Hamburg Street (E. & W.)	3	Neighborhood			
Hammonds Ferry Road	2	Neighborhood			X/ 2013
Harness Creek Road (Hunt Meadow Drive to South River)	1	Rural		#	
Harness Creek Road (Spa Road and Ferry Point to Hunt Meadow Road)	2	Rural			
Harwood Road	1	Rural		#	
Hawkins Road *	1	Rural		#	
Hawthorne Road	3	Neighborhood			
Herald Harbor Road	2	Rural		#	
Hilltop Road	2	Neighborhood			
Homewood Road South	2	Neighborhood			
Honeysuckle Lane	1	Rural		#	X
Indian Landing Road	2	Rural			
Jennings Road *	3	Neighborhood			
Jennings Road South *	3	Neighborhood			
Jewell Road	2	Rural		#	
Johns Hopkins Road (from Reidel Road to MD Rt. 3)	3	Rural			
Johns Hopkins Road (Reidel Road to St. Stephens Church Road)	1	Rural		#	
Joyce Lane	1	Rural		#	

Ken-Mar Avenue	3	Neighborhood			
Leitch Road	1	Rural		#	
Light Street Ave	3	Neighborhood			
Linden Ave	3	Neighborhood			
Little Road	1	Rural	RURAL	#	
Lower Pindell Road	1	Rural	RURAL	#	
Mallard Lane	1	Rural	RURAL	#	
Maple Avenue	3	Neighborhood			
Maple Lane SW	3	Neighborhood			
Maple Road (169)	2	Neighborhood			
McKendree Road	2	Rural			
MD 177, Mountain Road (Long Point Road to Gibson Island)	2	Rural			X
MD 178, Generals Highway (MD 32 to Veterans Highway)	2	Rural			X
MD 178, Generals Highway remainder excluding above mentioned segments	3	Rural			X/ 2013
MD 2, Solomons Island Road (Brick Church Road to MD 260)	2	Rural			X
MD 214 (within Davidsonville Historic District)	2	Rural			X
MD 255, Owensville Road (MD 2 to MD 468)	1	Rural		#	X
MD 258, Bay Front Road (MD 4 to Franklin-Gibson Road)	2	Rural			X

MD 261, Friendship Road (MD 2 to Rose Haven Harbor)	2	Rural		#	X
MD 422, Bayard Road (MD 2 to Polling House Road)	2	Rural		#	X
MD 424 (US 50 to MD 450)	3	Rural			X
MD 424, Birdsville Road *	3	Rural			X
MD 424, Davidsonville Road (US 50 to MD 214)	2	Rural			X
MD 450, Defense Highway (Annapolis Water Works to Staples Corner)	2	Rural			X
MD 648, B&A Boulevard (MD 2 near Arnold to Severna Park)	2	Rural			
MD Business 3, Crain Highway (from Fourth Street to B&A Blvd)	3	Neighborhood			2013
MD Rt. 408, Mt. Zion-Marlboro Road (MD 2 to Greenock Road)	1	Rural		#	X
Meyer's Station Road	2	Rural		#	
Middle Court	3	Neighborhood			
Mill Swamp Road	1	Rural	RURAL	#	X
Morgan Road, Odenton	3	Neighborhood			
New Cut Road (Burns Crossing to Gambrills Road) *	2	Rural		#	X
Nutwell Road	1	Rural	RURAL	#	
Nutwell-Sudley Road *	1	Rural	RURAL	#	
Oak Lane	3	Neighborhood			
Oakdale Road	3	Neighborhood			

Odenton Road	2	Neighborhood			2013
Old Camp Meade Road (170?)	2	Neighborhood			2013
Old County Road	2	Neighborhood			
Old Dairy Farm Road *	3	Rural			
Old Generals Highway (Dunton Road to MD 178)	2	Rural		#	X
Old Herald Harbor Road	2	Rural			
Old Mill Road (between Burns Crossing Rd N and Telegraph Rd) *	2	Rural			
Old Station Road	2	Neighborhood			
Old Sudley Road	1	Rural			
Padfield Boulevard	3	Neighborhood			
Pasadena Road	2	Neighborhood			2013
Patuxent River Road (Rossback Road to Sands Road) *	1	Rural		#	X
Patuxent Road (Village of Woodwardville)	1	Rural		#	X
Patuxent Road North	2	Neighborhood			
Pindell Road (formerly Plummer Lane)	1	Rural	RURAL	#	
Pleasant Plains Road	2	Rural		#	
Polling House Road	1	Rural	RURAL	#	X
Queen Anne Bridge Road	1	Rural	RURAL	#	
Railroad Avenue	3	Neighborhood			
Randell Road	2	Neighborhood			

Revel Road	2	Neighborhood			
Ridout Road	2	Neighborhood			
Riva Road (South River Bridge to MD 214) *	2	Rural			X
River Road (Crownsville)	1	Rural		#	
River Road (Patapsco)	1	Rural		#	
Riverview Road	2	Neighborhood			
Rossback Road	2	Rural		#	X
Round Bay Road	2	Neighborhood			
Rutland Road, upper section	2	Rural		#	X
Sands Road	2	Rural		#	X
School Lane	2	Neighborhood			
Second Avenue	3	Neighborhood			
Severn Chapel Road	1	Rural		#	
Severn River Road	2	Neighborhood		#	
Sherwood Forest Road	2	Rural			
Skyline Avenue	2	Neighborhood			
South Polling House Road	1	Rural	RURAL	#	
South River Clubhouse Road	1	Rural	RURAL	#	
Spruce Avenue	3	Neighborhood			
St. George Barber Road *	1	Rural	RURAL	#	
St. Margaret's Road (MD 179)	2	Rural		#	X
St. Stephens Church Road	2	Rural		#	X

Sudley Road (MD 255 to Muddy Creek Road)	1	Rural	RURAL	#	
Sudley Road (Nutwell-Sudley Rd to Muddy Creek Rd)	1	Rural		#	
Swamp Circle Road *	1	Rural		#	
Sweetser Road	3	Neighborhood			
Sycamore Road	2	Neighborhood			
Tower Drive	2	Neighborhood			
Town Point Road	1	Rural		#	
Underwood Road	2	Rural		#	
Upper Pindell Road	1	Rural	RURAL	#	X
Valley Road	2	Neighborhood			
Waco Avenue	2	Neighborhood			
Waterbury Road *	2	Rural		#	X
Waters Road	2	Neighborhood			
Wayson Road	1	Rural	RURAL	#	
Whitehall Road	1	Rural		#	
Whites Road *	3	Neighborhood			
Wigley Avenue *	2	Rural			
Wrighton Road	1	Rural	RURAL	#	
** Roads not originally classified or typed by 1993 study or the 1997 Commission Report have been evaluated and ranked by OPZ/ CR Staff.*					
(Unless a specific road segment is called out in parentheses, the above list refers to the entire road length as shown on the attached maps in Appendix C and D)					

APPENDIX B: ARTICLE 17-6-504 (Criteria)

Anne Arundel County MD Article 17: Subdivision and Development; SUBTITLE 5.

§ 17-6-504. Scenic or historic roads.

Development along a scenic or historic road shall preserve, maintain, and enhance the scenic or historic character of the landscape viewed from the road, and the achievement of maximum possible density is not a sufficient justification to allow impacts on a scenic or historic road. Development along a scenic or historic road shall occur in accordance with the following:

(1) structures and roads shall be designed to retain the open character of the site and to minimize the impact of the development on views from the road;

(2) structures and uses shall be located away from the road right-of-way unless sufficiently screened by topography or vegetation;

(3) development shall minimize tree and vegetation removal and protect existing vegetation adjacent to the road;

(4) the design shall minimize grading and retain existing slopes along the road frontage;

(5) development shall avoid having a rear facade oriented towards the road but, if that is unavoidable, the structure shall be set back as far as possible from the road;

(6) utilities, storm water management facilities, drainage structures, bridges, lighting, fences, and walls shall be located and designed to have the least impact, be unobtrusive, and harmonize with the surroundings and character of the road;

(7) the primary access or entrance to new development shall not be located on a scenic or historic road if any reasonable alternative access is available and, if unavailable, the primary access or entrance shall be located in an area that has the least impact to the scenic or historic qualities of the road;

(8) entrance features shall be low, open, and in keeping with the scenic or historic character of the surrounding area;

(9) road improvements required as a result of new development shall preserve, maintain, and enhance existing road alignments and be limited to those minimal improvements required for purposes of safety;

(10) there shall be a buffer of existing forest between the road and the proposed development that is sufficiently wide to preserve, maintain, or enhance the visual character of the road and, when there is inadequate existing forest to screen the development from the road, reforestation or landscaping shall be required to create a buffer;

(11) new structures shall be located to the extent practical behind natural screening or in or along the edges of forests, at the edges of fields and hedgerows, or near existing buildings;

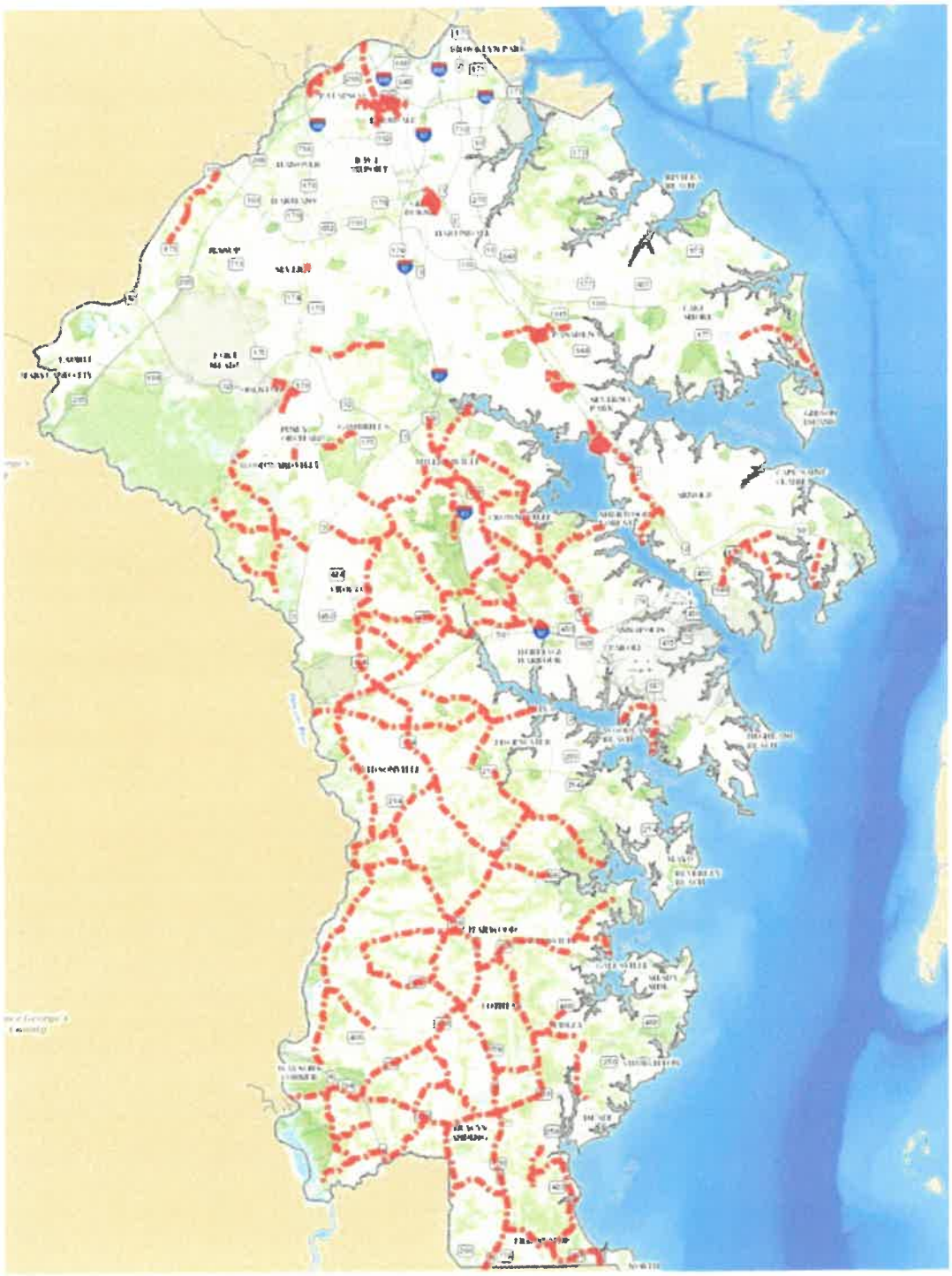
(12) the development shall preserve the existing forest, tree canopy, foreground meadow, pasture, crop land, and other natural screening and shall be designed to place development in the background as viewed from the road;

(13) the scenic or historic character of each road shall guide the design of visible shoulders, curbs, and sidewalks; and

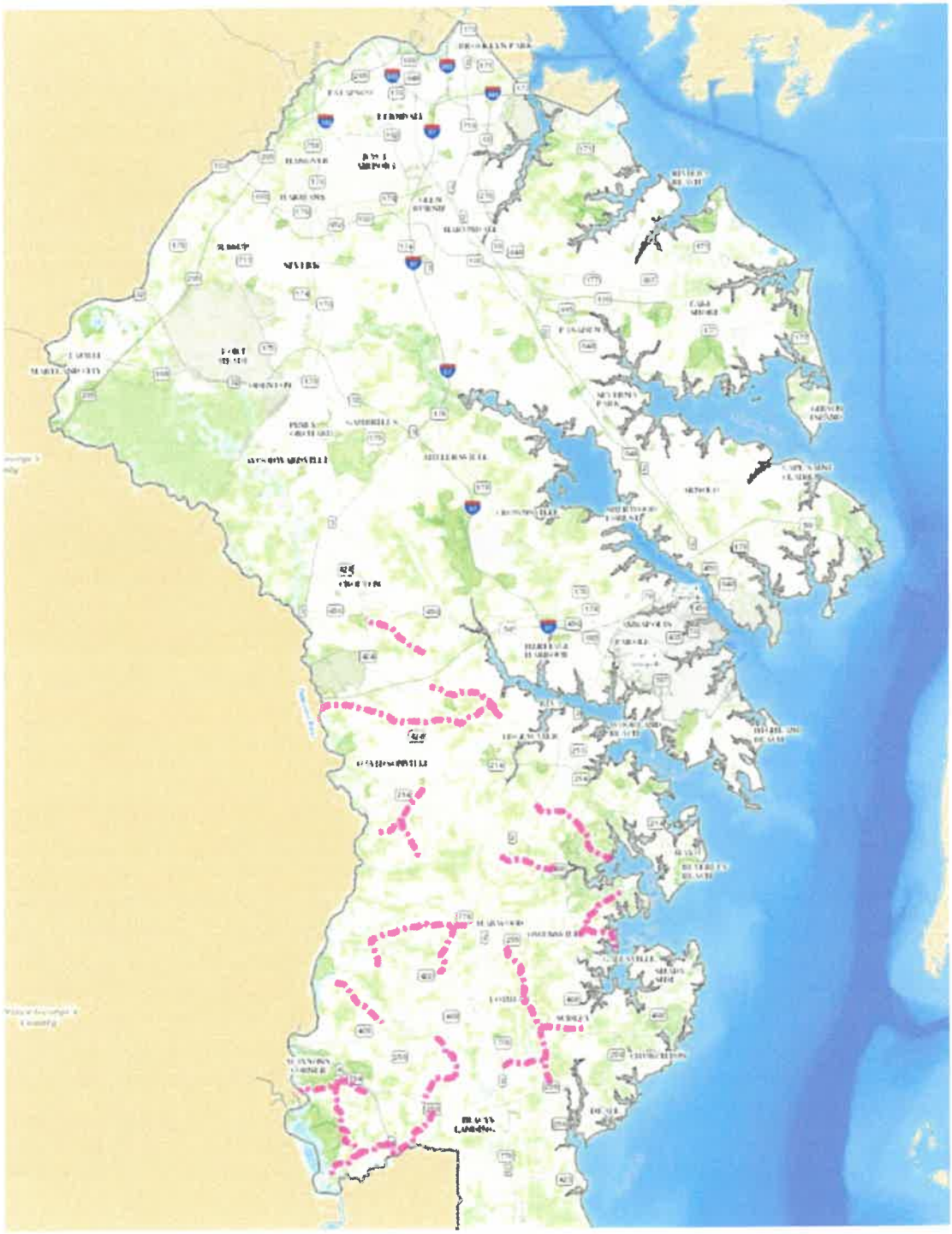
(14) the design shall include select materials for guardrails and bridges that are compatible with the surrounding character.

(Bill No. 3-05)

APPENDIX C: Map Showing all Scenic and Historic Roads (Bill #21-06)



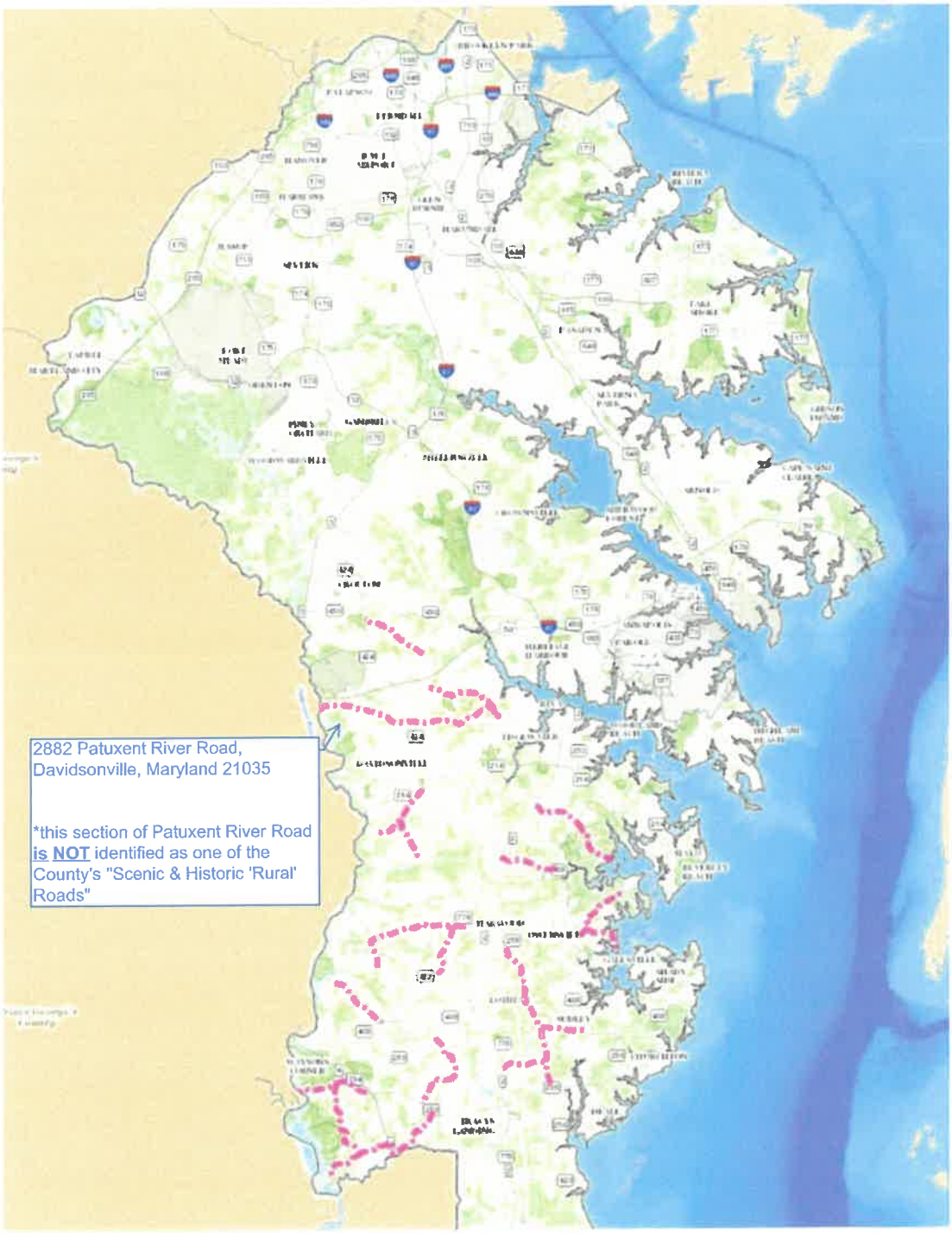
APPENDIX D: Map Showing Rural Scenic & Historic Roads (Bill #04-06)



APP. EXHIBIT# 16
CASE: 2023-0221-S
DATE: 2/29/24

*text boxes on this page have been added by the Applicant

APPENDIX D: Map Showing Rural Scenic & Historic Roads (Bill #04-06)



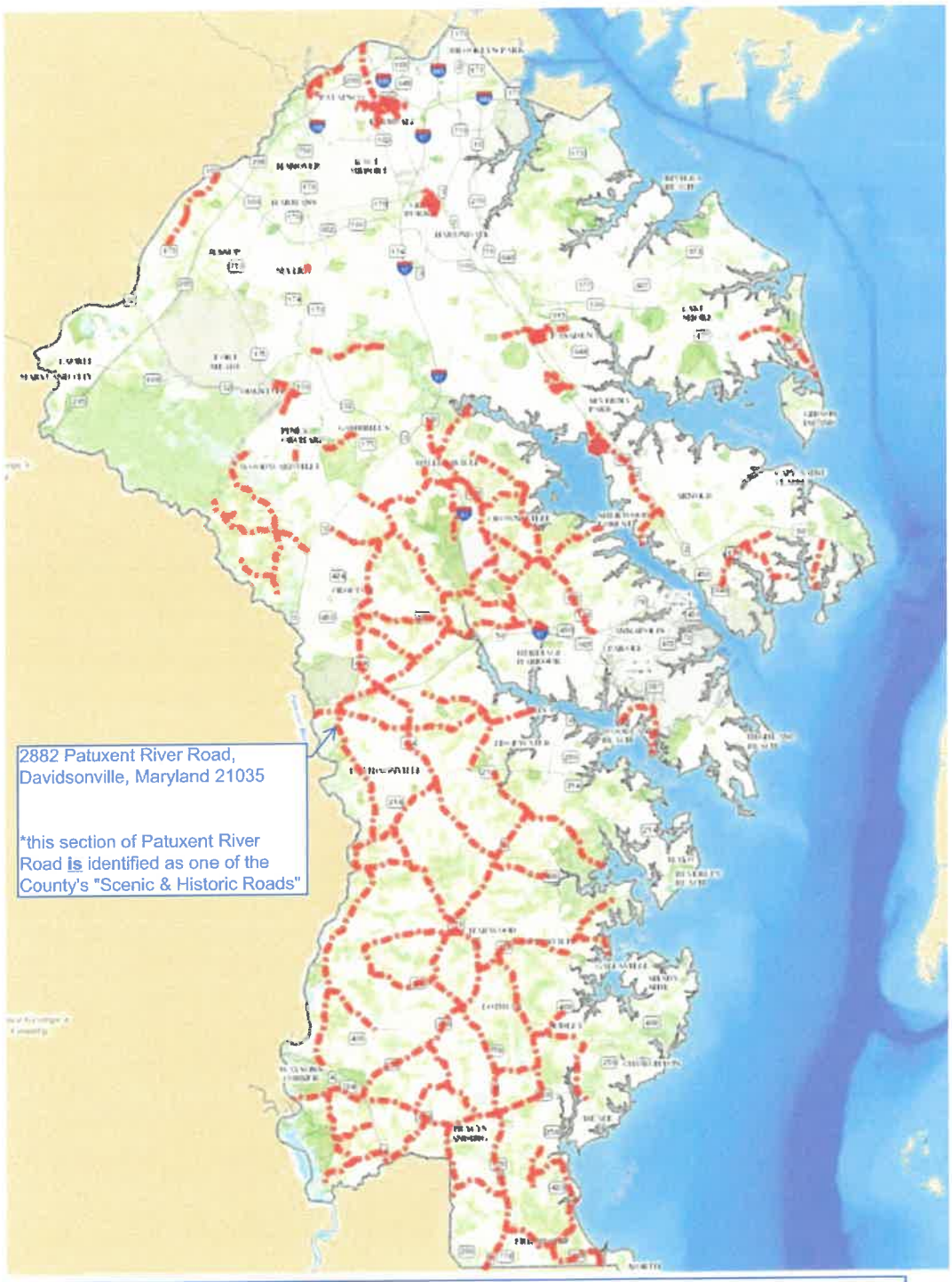
from Page 1:

"2) Scenic & Historic 'Rural' Roads (n=24) are further protected under Article 18 -Zoning provisions...

'**Rural Roads**' refer to the 24 collector roads called out in Bill#4-06 which are located in South County, adjacent to RA zoned property, which have exceptional integrity or historic/scenic character. That bill defines those roads for zoning purposes only, and restricts the location of certain conditional and special exception uses on those roads... the subset of 24 'Rural Roads' are subject to additional zoning requirements."

*text boxes on this page have been added by the Applicant

APPENDIX C: Map Showing all Scenic and Historic Roads (Bill #21-06)



2882 Patuxent River Road,
Davidsonville, Maryland 21035

*this section of Patuxent River Road **is** identified as one of the County's "Scenic & Historic Roads"

from Page 1:

"1) Scenic & Historic Roads (n=135) are protected under Article 17 - Development provisions...

The final inventory of all Scenic and Historic Roads subject to Site Development Plan Review under Article 17...

ALL 153 Scenic and Historic Roads are subject to Article 17-6-504 regulations..."

APP. EXHIBIT# 17
CASE: 2023-0221-S
DATE: 2/29/24

APP. EXHIBIT# 18
CASE: 2023-0221-S
DATE: 2/29/24

APP. EXHIBIT# 19
CASE: 2023-0221-S
DATE: 2/29/24