RADNOR TOWNSHIP BOARD OF COMMISSIONERS

CONDITIONAL USE HEARING - 60 WEST GP - WEST AVENUE

WEDNESDAY, OCTOBER 18, 2023

EXHIBITS

- A-1 CONDITIONAL USE APPLICATION
- A-2 PROOF OF STANDING (DEED AND AGREEMENT OF SALE)
- A-3 CONDITIONAL USE PLAN
- A-4 RENDERINGS
- A-5 PLANTING PLAN PARCEL B
- A-6 SITE PLAN PARCEL B
- A-7 PARKING PLAN
- A-8 FISCAL IMPACT ANALYSIS DATED JULY 31, 2023
- A-9 TRAFFIC IMPACT STUDY DATED AUGUST, 2023
- A-10 TRAFFIC EVALUATION MEMORANDUM DATED SEPTEMBER 28, 2023
- A-11 FIRE MARSHALL REVIEW MEMORANDUM DATED SEPTEMBER 21, 2023
- A-12 C.V. OF ROBERT LAMBERT, P.E.
- A-13 C.V. OF STEPHEN VARENHORST
- A-14 C.V. OF MARK A. ROTH, P.E.



David J. Falcone

Phone: (610) 251-5752

Fax: (610) 722-3270

David.Falcone@saul.com

www.saul.com

August 14, 2023

VIA HAND DELIVERY

Board of Commissioners Radnor Township 301 Iven Avenue Wayne, PA 19087

Re: APPLICATION FOR CONDITIONAL USE APPROVAL OF A MIXED USE DEVELOPMENT FOR THE PROPERTY LOCATED AT 60 WEST AVENUE, WAYNE, PA ("PROPERTY") IN THE SPECIAL USE AREA IDENTIFIED BY SECTION 280-53.17 OF THE RADNOR TOWNSHIP ZONING CODE

Dear Commissioners:

60 West GP ("Applicant"), equitable owner of the above-referenced Property located at 60 West Avenue in Wayne, in conjunction with the owner of the Property, AT&T CORP. ("ATT"), hereby applies for conditional use approval of a mixed use building within the Township's Wayne Business Overlay District (Special Use Area) pursuant to Section 280-53.17 of the Radnor Township Code. The required conditional use application fee of \$1,500.00 will be delivered under separate cover.

Enclosed herewith and forming a part of this Conditional Use Application are the following plans and studies (the "Plans and Studies"):

- 1. Eighteen (18) full sized copies of the conditional use plan set entitled "60 West Avenue Conditional Use Plan" prepared by Site Engineering Concepts, LLC each consisting of eight (8) sheets.
- 2. Eighteen (18) copies of the Renderings for the Conditional Use Application prepared by Varenhorst dated July 27, 2023 consisting of four (4) sheets.



610) 251-5050 • Fax: (610) 651-5930

- 3. Eighteen (18) copies of the Planting Plan "Parcel B" and the Site Plan "Parcel B" each prepared by Jonathan Alderson Landscape and Architects dated July 21, 2023 and each consisting of one (1) sheet.
- 4. Eighteen (18) copies of the Fiscal Impact Analysis prepared by Erik W. Hetzel dated July 31, 2023 consisting of six (6) pages.
- 5. Eighteen (18) copies of the Parking Exhibit prepared by Site Engineering Concepts consisting of one (1) sheet.

As noted in the initial paragraph above, the subject Property (the AT&T Parking Lot) is identified as a "Special Use Area" by Section 280-53.17 of the Township's Zoning Code. As such, the Township has identified the Property as an area that is "close to public transit, dining and retail opportunities." Further, the Township has specifically identified the Special Use Areas as "offering the potential for unique urban residential and nonresidential projects to meet the growing and future demand for different uses within the WBOD."

Consistent with Section 280-53.17 of the Township Zoning Code, Applicant intends to purchase the Property and to develop the same as a mixed use development consisting of 52 residential condominium units, ground floor retail/commercial space, and 126 parking spaces, 109 of which will be located in a partially below grade parking structure (the "Project").

The residential units will include a wide variety of units (15 one-Bedroom Units, 17 two-Bedroom Units and 20 three-Bedroom Units) with sizes ranging from 1,100 square feet to 3,100 square feet. Other features proposed for the Project include several landscaped courtyards, significant stormwater management and maintenance of the existing street trees fronting Lancaster Avenue.

The approximate location of the proposed building and related parking is shown on the Plans. The proposed building will comply with the height, setback, coverage and parking regulations established by Section 280-53.17(D) of the Township Code.

It should be noted that the tract and the immediate area is currently served by public utilities and the proposed density is permitted under Article XIX of the Zoning Ordinance, therefore these impacts are already considered under the Zoning Ordinance. No adverse impacts on public utilities are anticipated. The nature of the stormwater management proposals for the Project are shown on the Plans. Traffic impact analysis is being performed and will be submitted to the Township upon completion.

60 West GP Conditional Use Application August 14, 2023 Page 3

Applicant hereby requests that this application be forwarded to the Planning Commission for review and comment and that a hearing for the consideration of this application be set by the Board.

Please contact the undersigned with any questions or comments and direct any notices or correspondence there as well. We look forward to working with the Township on this project.

Very thily yours

David J. Fylcone

Enclosures

cc:

Mr. William Collins Mr. Ken Kearns Mr. Devin Tuohey

Robert Lambert, P.E.

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Wayne C.O./Radnor Twp., Delaware Co. Loc. Nos. 21470 & 21910

DEED

THIS INDENTURE, made the 15th day of December, 1983, between THE BELL TELEPHONE COMPANY OF PENNSYLVANIA, a corporation created and existing under the laws of the Commonwealth of Pennsylvania, having its principal office at One Parkway, Philadelphia, Pennsylvania, party of the first part, and AT&T COMMUNICATIONS OF PENNSYLVANIA, INC., a corporation created and existing under the laws of the Commonwealth of Pennsylvania, having its principal office at 295 North Maple Avenue, Basking Ridge, New Jersey 07920, party of the second part.

WITNESSETHI

IN CONSIDERATION OF One Dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, and pursuant to the Modification of Final Judgment entered by the United States District Court for the District of Columbia in United States v. Western Electric Co. et al, Civil Action No. 82-0192, and the Plan of Reorganization approved by the District Court on August 5, 1983, the party of the first part does hereby remise, release and quit claim unto the party of the second part, its successors and assigns forever, all of the party of the first part's undivided 41/100 fractional interest as tenant in common in the following described parcel of real estate:

ALL THAT CERTAIN lot or piece of ground, with the buildings and improvements erected thereon, situate in the Township of Radnor, County of Delaware, Commonwealth of Pennsylvania, as shown on plan of property for American Telephone & Telegraph Company, prepared by Howard W. Doran, Registered Land Surveyor, Newtown Square, Pennsylvania, dated September 26, 1978, being bounded and described as follows:

BEGINNING at a point marking the intersection of the centerline of Bellevue Avenue (50 feet wide) with the centerline of West Avenue (50 feet wide); THENCE FROM SAID POINT OF BEGINNING along the centerline of Bellevue Avenue extended North 0 degrees 01 minutes 25 seconds East 145.75 feet to a point; THENCE leaving said centerline of Bellevue Avenue extended, North 89 degrees 58 minutes 35 seconds West 74.00 feet to a point; THENCE North 0 degrees 01 minutes 25 seconds East 136.62 feet to a point on the southerly right-of-way line now or late of the Pennsylvania Railroad Company; THENCE along said

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right-of-way the following four courses and distances: (1) South 66 degrees 49 minutes East 17.96 feet to a point; (2) THENCE South 64 degrees 53 minutes 50 seconds East 351.03 feet to a point; (3) THENCE North 58 degrees 51 minutes 10 seconds East 12.40 feet to a point; (4) THENCE on the arc of a circle curving to the left having a radius of 4362 feet an arc distance of 140.38 feet to a point; THENCE, leaving said right-of-way line, South 2 degrees 13 minutes 25 seconds West 212.59 feet to a point in the said centerline of West Avenue; THENCE by same, on the arc of a circle curving to the right having a radius of 450 feet an arc distance of 54.37 feet to a point; THENCE leaving said centerline, South 2 degrees 13 minutes 25 seconds West 529.58 feet to a point on the Northerly side of Lancaster Avenue and THENCE, extending along same, the following courses and distances: (1) North 87 degrees 49 minutes 35 seconds West 273.95 feet to a point, an angle, and (2) North 89 degrees 58 minutes 35 seconds West 51.05 feet to a point in the said centerline of Bellevue Avenue; THENCE by same, North 0 degrees 01 minute 25 seconds East 624.25 feet to the point and place of beginning.

CONTAINING an area of 6.6772 Acres more or less.

BEING the same premises which American Telephone and Telegraph Company, a New York corporation, by deed dated August 16, 1979 and recorded on October 1, 1979 in the Office of the Recorder of Deeds in and for Delaware County, Pennsylvania in Deed Book 2712, page 1043, conveyed unto The Bell Telephone Company of Pennsylvania.

UNDER AND SUBJECT, without limitation, to PART B of a certain Agreement of February 1, 1979, as amonded February 2, 1979, between the parties hereto, said Part B being entitled "OWNERSHIP APPORTIONMENT OF LAND AND BUILDINGS OWNED AND USED AS TENANTS IN COMMON", and to the payment and performance of the covenants and obligations contained therein.

ALSO UNDER AND SUBJECT, without limitation, to rights of the public and others entitled thereto in and to those portions of the property lying within the bounds of Bellevue, West and Lancaster Avenues, and the aforesaid railroad right-of-way.

ALSO UNDER AND SUBJECT, without limitation, to all other easements, restrictions, covenants, agreements and conditions of record, and to the payment and performance thereof.

AND the party of the first part does covenant with the party of the second part that it will, upon the reasonable request of the party of the second part, its successors and assigns, execute, acknowledge, and deliver such further instruments as may reasonably be required to make effective and confirm this conveyance and to aid and assist the party of the second part, its successors and assigns, in obtaining possession of the premises and in establishing the right, title and interest to the premises herein conveyed.

IN WITNESS WHEREOF, the party of the first part has caused this instrument to be executed by its duly authorized officers as of the date first set forth above.

THE BELL TELEPHONE COMPANY OF PENNSYLVANIA

OF FEMILIALITY AND

(Corporate Seal)

Assistant Vice President

Attest:

st: Mene (). L

I hereby certify that the address of the within named grantee is 295 North Maple Avenue, Basking Ridge, New Jersey 07920

On behalf of the graftee

Wayme C.O./Padhor Twp., Delatare County Loc. Nos. 21470 & 21910

COMMONWEALTH OF PEHNSYL VANIA DEPARTMENT OF REVENUE BUREAU OF PIELD OPERATIONS

REALTY TRANSFER TAX

AFFIDAVIT OF VALUE

FOR RECORDER'S USE ONLY
BOOK HUMBER
PAGE NUMBER
DATE RECORDED

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COMMONWEALTH OF PENNSYLVANIA

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COUNTY OF PHILADELPHIA

Asst. Vice President .

ON THIS, the $\frac{15 \, \mathrm{th}}{\mathrm{December}}$, 1983, before me, a Notary Public in and for the said Commonwealth and County, the undersigned officer, personally appeared
R. E. Young who acknowledged himself (MYXXXXXXXX) to be the
Asst. Vice President of THE BELL TELEPHONE COMPANY OF
PENNSYLVANIA, a corporation, and that he as such Assistant
Vice President, being authorized to do so, executed the
foregoing instrument for the purposes therein contained by
signing the name of the corporation by himself (MXXXXXXXXXXXX) as
Asst. Vice President.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

(Official Scal)

My Commission Expires:

JANE M. FOWLER Notary Public, Philadelphia, Philadelphia Co. My Commission Expires February 16, 1984

Redacted

CONTRACT OF SALE

Between

AT&T CORP.

And

WEST AVENUE GP, LLC

Portion of 60 West Avenue, Radnor Township, Delaware County, PA

The mailing, delivery or negotiation of this Contract by Seller or Purchaser or their respective agent or attorney shall not be deemed an offer by Seller or Purchaser to enter into this Contract or to enter into any other relationship with the other, whether on the terms contained herein or on any other terms. This Contract shall not be binding upon Seller or Purchaser, and neither Seller nor Purchaser shall have any obligations or liabilities or any rights with respect thereto, or with respect to the Property, unless and until Purchaser and Seller have executed and delivered this Contract. Until such execution and delivery of this Contract, Seller or Purchaser may terminate all negotiation and discussion of the subject matter hereof, without cause and for any reason, without recourse or liability.

* * *

CONTRACT OF SALE

THIS CONTRACT OF SALE ("Contract"), effective as of the 27 day of January, 2023 ("Contract Date"), by and between AT&T Corp., a New York corporation, successor by merger to AT&T Communications of Pennsylvania, LLC, in turn successor by merger to AT&T Communications of Pennsylvania, Inc., having a mailing address for the purposes hereof at c/o AT&T Services, Inc., One AT&T Way, Bedminster, NJ 07921, Attention: Ms. Whitney Meyer ("Seller") and West Avenue GP, LLC, a Pennsylvania limited liability company, having a mailing address for the purposes hereof at 20 Louella Court, Suite 200, Wayne, Pennsylvania 19087, Attention: Devin Tuohey ("Purchaser").

WITNESSETH:

WHEREAS, Seller owns certain real property having a street address at 60 West Avenue, Radnor Township, Delaware Country, Pennsylvania consisting of approximately 5.29 acres, and being Delaware County Tax Parcel No. 360100677801 ("Seller's Existing Property"); and

WHEREAS, Seller's Existing Property lends itself to being subdivided into three (3) separate lots consisting of (i) a northern lot consisting of approximately 1.05 acres and commonly known as the "West Parcel", (ii) a middle lot consisting of approximately 2.6 acres upon which is located an existing building and other improvements used by Seller and commonly known as the "Building Parcel", and (iii) a southern lot consisting of approximately 1.64 acres fronting on Lancaster Avenue and commonly known as the "Bellevue Parcel"; and

WHEREAS, Seller desires to sell and Purchaser desires to purchase the Bellevue Parcel, as said lot is more particularly depicted on **Exhibit A** attached hereto and made a part hereof; and

WHEREAS, the West Parcel and the Building Parcel are sometimes referred to collectively as "Seller's Retained Property"; and

WHEREAS, Purchaser is willing to purchase and Seller is willing to sell the Bellevue Parcel on the terms and conditions set forth below.

NOW, THEREFORE, for and in consideration of the covenants contained herein and other good and valuable considerations, the receipt and sufficiency whereof are hereby acknowledged by each of the parties hereto, it is hereby agreed that, upon all the terms and conditions hereinafter set forth, Seller shall sell and Purchaser shall purchase the Bellevue Parcel.

1. <u>PURCHASE PRICE</u>. The purchase price to be paid by Purchaser to Seller for the Bellevue Parcel is agreed to be Price"). Said Purchase Price, as adjusted by the credits and prorations described herein, shall be paid by Purchaser to Seller at Closing (as hereinafter defined in paragraph 6) at the election of

Purchaser in certified funds or by wire transfer pursuant to wire transfer instructions provided by Seller.

3. <u>INSPECTION AND SUBDIVISION</u>.

Commencing on the Contract Date, subject to the rights of Radnor Township under (a) its lease dated December 13, 1999, with Seller and AT&T Communications of Pennsylvania, Inc., as landlord (the "Radnor Township Lease"), the Purchaser and its employees and agents shall have the right to enter upon the Bellevue Parcel upon at least twenty-four (24) hours' prior notice to Seller for the purpose of investigating the physical condition of the Bellevue Parcel. Purchaser shall and does hereby indemnify and hold harmless Seller from and against any claim, loss, damage, or obligation arising out of or incurred in connection with the exercise of the rights of Purchaser under this paragraph 3(a) (and said indemnity obligation shall survive the Closing or earlier termination of this Contract). For avoidance of doubt, the foregoing indemnity obligations shall not extend to, and Seller hereby releases Purchaser from liability for, any claims, damages or other liability resulting from or related to any existing environmental contamination with respect to the Bellevue Parcel, or other environmental deficiencies in the Bellevue Parcel or Seller's Retained Parcel, that may be discovered by Purchaser as a result of its investigations, unless Purchaser exacerbates an existing environmental contamination, in which case Purchaser shall be liable to the extent the environmental condition is exacerbated. Additionally, prior to entry upon the Bellevue Parcel, Purchaser shall present Seller with a certificate in form and content reasonably satisfactory to Seller, evidencing a commercial general liability insurance policy covering Purchaser's performance of its rights under this paragraph, which policy shall remain in effect during the term of this Contract, the limits of which shall not be less than \$5,000,000 per occurrence and which shall include a contractual liability endorsement covering Purchaser's indemnity obligation under this paragraph. Seller shall be listed on such policy as an additional insured. Further, Purchaser shall diligently and in good faith investigate and pursue the satisfaction of Purchaser's development criteria relating to the Bellevue Parcel (which criteria include, without limitation, matters relating to soil conditions, environmental hazards, utilities, zoning, demographics, and governmental permits). Purchaser shall use commercially reasonable efforts to conduct such right of entry with a minimum of interference of Radnor Township's use of the Bellevue Parcel and if Purchaser or any of its employees or agents cause any damage to the Bellevue Parcel, Purchaser shall promptly restore the Bellevue Parcel to the same condition as existed prior to any such entry.

(b) Purchaser shall in good faith and using commercially reasonable efforts, seek final, unappealed and unappealable approval from Radnor Township and Delaware County, to subdivide Seller's Existing Property into three separate tax parcels constituting the Bellevue Parcel, the Building Parcel and the West Parcel (the "Subdivision"), in accordance with all applicable laws, statutes and ordinances and any rules and regulations enacted thereunder (collectively, "Legal Requirements"), subject to (i) such terms and conditions as are acceptable to Purchaser, in its sole and absolute discretion; and (ii) that each of the Bellevue Parcel, the Building Parcel and the West Parcel individually, on a stand-alone basis, complies "as-of-right" with all Legal Requirements including any Legal Requirements of the Township of Radnor, without any variances.

Seller shall cooperate with Purchaser in its efforts to obtain the Subdivision, including, without limitation, Seller's signing a subdivision plan and an application for the Subdivision as the record owner; the execution of all documents, petitions and other instruments that may from time to time be required and joining Purchaser as a petitioner or co-applicant; provided however, that (i) before making any submissions to governmental agencies having jurisdiction over the Subdivision, including, but not limited to submissions to applicable agencies of the Township of Radnor, Purchaser shall first provide Seller with an opportunity to reasonably approve any submission (which approval shall not be unreasonably withheld, conditioned or delayed) and it shall be reasonable for Seller to object to any submission if it involves any variance or other condition unacceptable to Seller in its sole discretion with respect to the Seller Retained Property; provided that if Seller shall fail to affirmatively approve any such submission or fail to issue written notice of any rejection within seven (7) business days of receipt by Seller of such submission for review, Seller shall be deemed to have approved the submission; (ii) Purchaser shall reimburse Seller for any reasonable third party expense incurred by Seller in connection with such cooperation, including, without limitation, reasonable legal fees, within thirty (30) days after Seller's delivery to Purchaser of third party invoices, and (iii) no documents or plans effectuating the Subdivision shall be recorded prior to the completion of Closing.

If Purchaser does not obtain the final and unappealable Subdivision (with no appeal therefrom having been taken) (the "Subdivision Approval"), on or before the one hundred eightieth (180th) day after the Contract Date (the "Subdivision Approval Period") or if Purchaser's application for the Subdivision is denied on or before the end of the Subdivision Approval Period, this Contract shall automatically terminate and upon any such termination Purchaser shall be entitled to a return of the Earnest Money and except as may otherwise be expressly provided for herein nether party shall have any further rights or obligations under this Contract.

Notwithstanding the foregoing, if Purchaser has not received the Subdivision Approval by the end of the Subdivision Approval Period, Purchaser shall have the right to extend the Subdivision Approval Period for two additional periods of ninety (90) days each, by giving

IN WITNESS WHEREOF, Seller and Purchaser have executed this Contract to be effective as of the Contract Date.

	SELLER;
	AT&T CORP
	By: //// Name: Title:
	PURCHASER:
	WEST AVENUE GP, LLC
	Ву:
	Name:
	Title:
	JOINDER:
Company, relating to the foregoing Cosole purpose of acknowledging and ag in Section 5(a) of the Contract for Sal	Frow Agent and agent for Fidelity National Title Insurance ontract of Sale, hereby joins the Contract of Sale for the greeing that the Seller Corporate Lien Indemnity as defined e is sufficient for Escrow Agent and Fidelity National Title E Lien from Purchaser's and its mortgagee's title insurance
	EOF, Escrow Agent, intending to be legally bound hereby,
has caused this document to be duly e	xecuted this day of, 2023.
CRESCENT ABSTRACT LLC	
Ву:	
Name:	
Title:	
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IN WITNESS WHEREOF, Seller and Purchaser have executed this Contract to be effective as of the Contract Date.

SELLER:

AT&T CORP

By:

Name:

Title:

PURCHASER:

WEST AVENUE OP LEC 3

Name: William J. Collins

Title: Manager

JOINDER:

Crescent Abstract LLC, being the Escrow Agent and agent for Fidelity National Title Insurance Company, relating to the foregoing Contract of Sale, hereby joins the Contract of Sale for the sole purpose of acknowledging and agreeing that the Seller Corporate Lien Indemnity as defined in Section 5(a) of the Contract for Sale is sufficient for Escrow Agent and Fidelity National Title Company to omit the Seller Corporate Lien from Purchaser's and its mortgagee's title insurance policies for the Bellevue Parcel.

IN WITNESS WHEREOF, Escrow Agent, intending to be legally bound hereby, has caused this document to be duly executed this _____ day of ______, 2023.

CRESCENT ABSTRACT LLC

By: ______
Name:

Title:

IN WITNESS WHEREOF, Seller and Purchaser have executed this Contract to be effective as of the Contract Date.

SELLER:
AT&T CORP
Ву:
Name:
Title:
PURCHASER:
WEST AVENUE GP, LLC
By: Name: Title:

JOINDER:

Crescent Abstract LLC, being the Escrow Agent and agent for Fidelity National Title Insurance Company, relating to the foregoing Contract of Sale, hereby joins the Contract of Sale for the sole purpose of acknowledging and agreeing that the Seller Corporate Lien Indemnity as defined in Section 5(a) of the Contract for Sale is sufficient for Escrow Agent and Fidelity National Title Company to omit the Seller Corporate Lien from Purchaser's and its mortgagee's title insurance policies for the Bellevue Parcel.

IN WITNESS WHEREOF, Escrow Agent, intending to be legally bound hereby, has caused this document to be duly executed this 27 day of ________, 2023.

CRESCENT ABSTRACT LLC

Name:

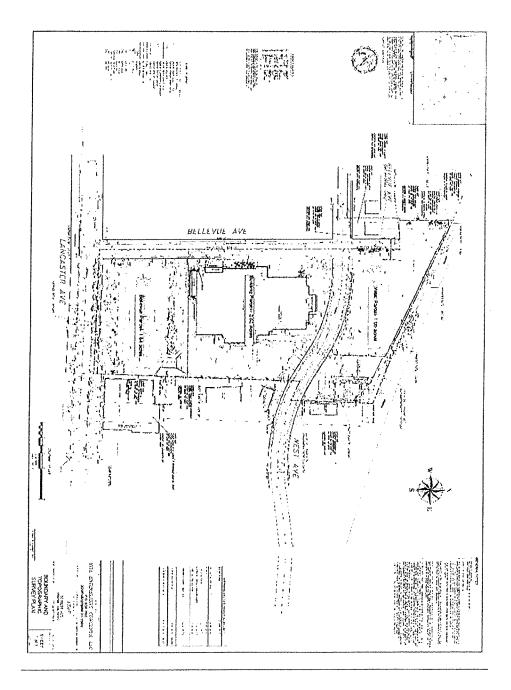
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Title:

NGD

EXHIBIT "A"

SUBDIVISION SKETCH



60 WEST AVENUE CONDITIONAL USE PLAN



ADJOINING PROPERTIES (LANOS N/F)

- RADNOR SCHOOL DISTRICT 103 LOUELLA AVENUE
- 2. EASTERN CONTROLS LLC 57 WEST AVENUE
- EADEH FAMILY LIMITED PARTNERSHIP 34 WEST AVENUE
- 4. LESLIE W. EADEH 16J W. LANCASTER AVENUE
- 5. GEORGE & JACKIE GLADSTONE 128 W. LANCASTER AVENUE
- 6. LUMBERMENS MERCHANDISING CORP 130 W. LANCASTER AVENUE
- 7. WAYNE TOWN CENTER LP 132 136 W. LANCASTER AVENUE
- 8. WAYNE TOWN CENTER LP 132 136 W. LANCASTER AVENUE
- 9. 201 WEST GP LLC 201 W. LANCASTER AVENUE
- 10. CAESAR L & DEBRAH NAZARSKI 114 BELLEVUE AVENUE
- 11. JOHN C. AIKEN 116 BELLEVUE AVENUE
- 12. MELANIE GILMOUR 118 BELLEVUE AVENUE
- 13. ANGUS R. MACGILLIVRAY 120 BELLEVUE AVENUE
- 14 DANIEL L. PRIMA & SANDRA BAUER 112 S. BELLEVUE AVENUE
- 15. DANIEL L. PRIMA & SANDRA BAUE
- 16. THOMAS J. LIEB 124 S. BELLEVUE AVENUE
- 17. DAVID W. MORRIS
- 126 BELLEVUE AVENUE
- 18. SETH A. BAKES 201 WEST AVENUE
- 19. HEATHER A BREYER 203 WEST AVENUE
- 20. MICHARL R. MCFEE
- 21. KARA HANLON ARNOLI
- 22. BRIAN J. SACKSTEDER 2 MARLYN CIRCLE
- 23. PRISCILLA A. THOROUGHGOOD 3 MARYLN CIRCLE



<u>VICINITY MAP</u> INCLUDES STRUCTURES WITHIN 200' OF THE SITE IMAGERY OBTAINED FROM 2023 GOOGLE EARTH

CIVIL ENGINEER:

SITE ENGINEERING CONCEPTS, LLC ATTN: MICHAEL T. ROKOSNY, P.E. P.O. BOX 1992 SOUTHEASTERN, PA 19399 P: 610-523-9002 E: MROKOSNY@SITE-ENGINEERS.COM

ARCHITECT:

VARENHORST
ATTN: STEPHEN VARENHORST
230 N 21ST ST. PHILADELPHIA, PA 19103
P: 215-940-1128
E: STEPHEN@VARENHORST.COM

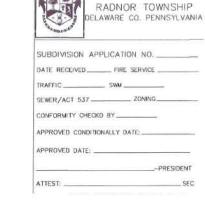
LANDSCAPE ARCHITECT:

JONATHAN ALDERSON LANDSCAPE ARCHITECTS, INC. ATTN: JONATHAN ALDERSON P.O. BOX 661 WAYNE, PA 19087 P: 610-341-9925 E: JONATHAN@JONATHANALDERSON.COM

OWNER / APPLICANT:

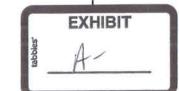
WEST AVENUE GP ATTN: DEVIN TUOHEY 20 LOUELLA COURT, SUITE 200 WAYNE, PA 19087 P: 347-330-0048 E: DTUOHEY@CONCORDIAGROUP.BIZ





DRAWING SCHEDULE

- 1. COVER SHEET
- 2. EXISTING CONDITIONS
- 3. SUBDIVISION PLAN
- 4. SITE PLAN
- 5. RECORD PLAN
- 6. POST CONSTRUCTION STORMWATER
- 7. EROSION AND SEDIMENTATION CONTROL PLAN
- 8. EROSION AND SEDIMENTATION CONTROL DETAILS



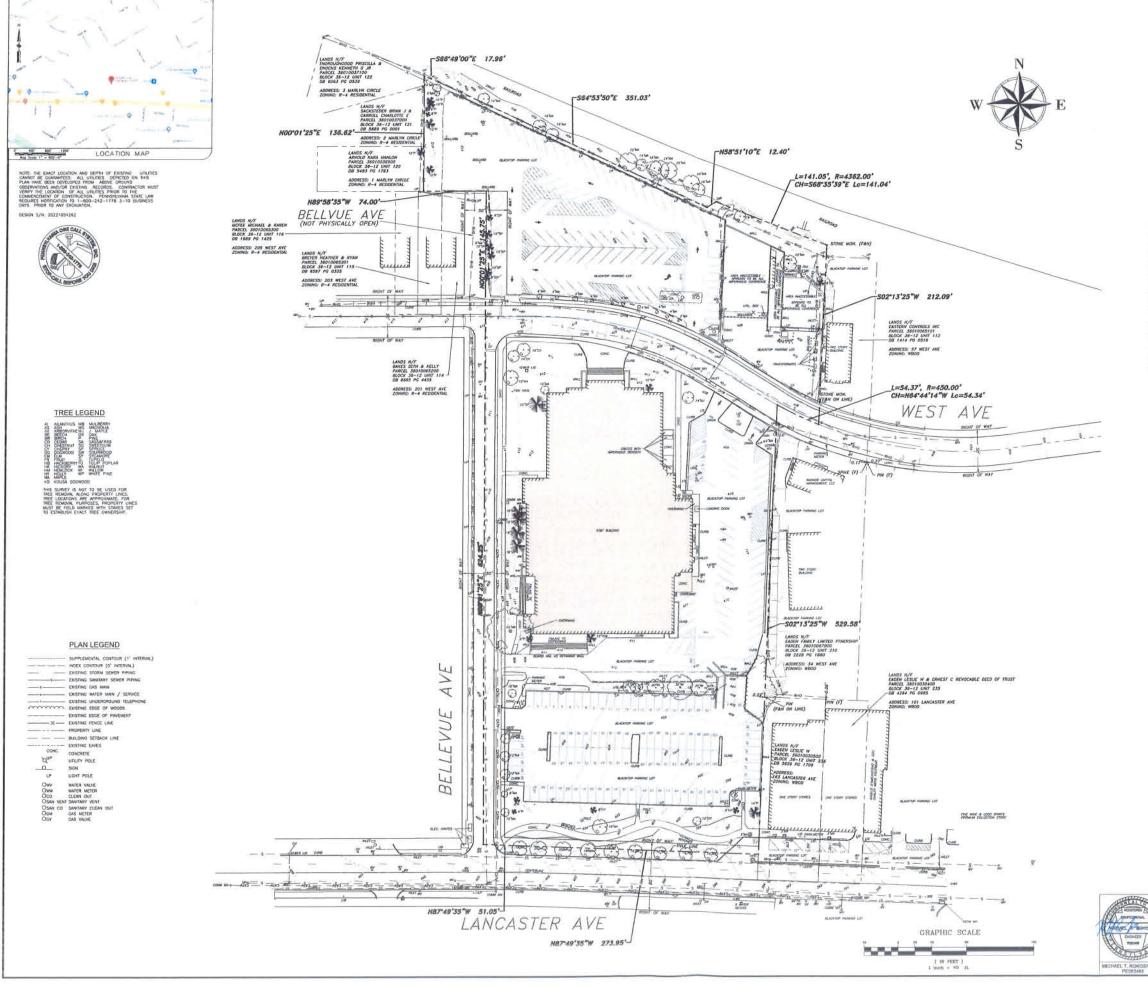
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IM.	DATE	REVISION
		PLAN PREPARED BY
SIT	E E N	GINEERING CONCEPTS, LLC
		P.O. BOX 1992
		SOUTHEASTERN, PA 19399
610-24	10-0450	F: 610-240-0451 E:NFO@SITE-ENGINEERS.COM
		PLAN PREPARED FOR
		WEST AVENUE GP

60 WEST AVE WAYNE, PA 19087

HIP DELAWARE COUNTY PENNSY
AUGUST

COVER SHEET

SHEET 1 of 8



GENERAL NOTES

- PARCEL, INFORMATION: FOUR NUMBER: 36-010-0678-01 Block 36-12 UNIL 113 DEED BOOK 8574 PACE 0184
- 2. GROSS LOT AREA: 291,448 Sq. Ft.

IMPERVIOUS COVERA	AGE SUMM	ARY	
GROSS LOT AREA	291,448	Sq.Ft.	
BUILDING (NC. OVERHANGS > 2)	49,684	Sq. Ft.	
ASPHALT	128,167	Sq. Ft.	
CONCRETE & WALKS	10,510	Sq. Pt.	
CURBS (INC. PARKING BLOCKS/CAR STOPS)	1,362	Sq. Ft,	
WALLS, TIES, WINDOW WELLS	1,650	Sq. Ft,	
INACCESSIBLE AREAS - IMPERVIOUS	9,240	\$q.Ft.	
TOTAL BUILDING COVERAGE	49,684	Sq. Ft.	17.05%
TOTAL SITE IMPERVIOUS COVERAGE	200,613	Sq. Ft.	68,83%

SITE ENGINEERING CONCEPTS, LLC

P.O. BOX 1992 SOUTHEASTERN, PA 19399

F: 610-240-0451 E-INFO@SITE-ENGINEERS

WEST AVENUE GP

60 WEST AVE WAYNE, PA 19087

EXISTING CONDITIONS

SHEET 2 of 8

AUGUST 1 3003



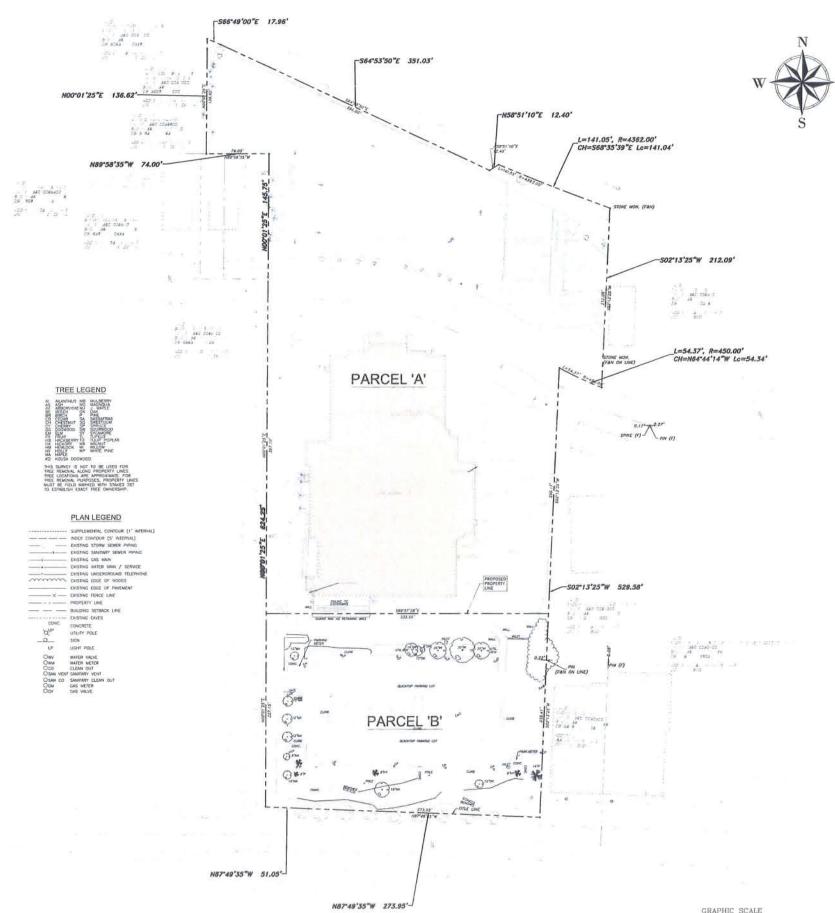
DESIGN S/N: 20221051262



GROSS LOT AREA	291,448	Sq. Pt.	
BUILDING (INC. OVERHANGS > 2')	49,664	5q. Ft.	
ASPHALT	128,167	5q. Ft.	
CONCRETE & WALKS	10.510	Sq. Ft.	
CURBS (INC. PARKING BLOCKS/CAR STOPS)	1,362	Sq. Ft.	
WALLS, TIES, WINDOW WELLS	1,650	Sq. Ft.	
INACCESSIBLE AREAS - IMPERVIOUS	9,240	Sq. Fl.	
TOTAL BUILDING COVERAGE	49,684	Sq. Ft.	17,06%
TOTAL SITE IMPERVIOUS COVERAGE	200,613	Sq.Ft.	68.53%

PROPOSED PA	1000	ARY	
GROSS LOT AREA	214,614	Sq. FL	
BUILDING (INC. OVERHANGS > 2)	49,684	Sq. Ft.	
ASPHALT	83,309	Sq. Ft.	
CONCRETE & WALKS	7,434	Sq.FL	
CURBS (INC. PARKING BLOCKS/CAR STOPS)	795	Sq. Ft	
WALLS, TIES, WINDOW WELLS	1,194	Sq. Fl.	
INACCESSIBLE AREAS - IMPERVIOUS	9,240	Sq. Fl.	
TOTAL BUILDING COVERAGE	49,684	Sq. Ft.	23.151
TOTAL SITE IMPERVIOUS COVERAGE	151,656	5q. Ft.	70.66

			$\overline{}$
GROSS LOT AREA	76,834	Sq. Ft.	-
BUILDING (INC. OVERHANGS > 2)	0	Sq. Ft.	
ASPHALT	44,858	Sq. Ft.	
CONCRETE & WALKS	3,076	Sq. Ft.	
CURBS (INC. PARKING BLOCKS/CAR STOPS)	567	Sq. Ft,	
WALLS, TIES, WINDOW WELLS	456	\$q. Ft.	
INACCESSIBLE AREAS - IMPERVIOUS	9,240	Sq. Ft.	
TOTAL BUILDING COVERAGE	0	Sq. Ft.	0.00%
TOTAL SITE IMPERVIOUS COVERAGE	58,197	Sq. Ft.	75.74%



GENERAL NOTES

- PARCEL INFORMATION: FOLIO NUMBER: 36-015-0678-01 Block 36-12 Unit 113 DEED BOOK 6574 PACE 0184
- 2. GROSS LOT AREA: 291,448 Sq. Ft.
- CONTOURS PLOTTED FROM FIELD RUN SURVEY, APPROXIMATE ELEVATION BENCHMARK IS BASED ON WORRA

PROPERTY OWNER

COMMONWEALTH OF PENNSYLVANIA

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RADNOR TOWNSHIP:

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BOARD DE	SUPERVISORS	SGNED THIS	DAY	or	20
			27.20		
NUMBER					

DELAWARE COUNTY PLANNING COMMISSION:

SECRETARY

RECORDER OF DEEDS

RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF DELAWARE COUNTY AT WEBIA CHESTER, PENNSTLYANS IN THE

-	The restriction				
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MECORDER OF DEEDS



SITE ENGINEERING CONCEPTS, LLC P.O. BOX 1992 SOUTHEASTERN, PA 19399

P: 610-240-0450 F: 810-240-0451 E INFO@SITE-ENGINE

WEST AVENUE GP

60 WEST AVE WAYNE, PA 19087

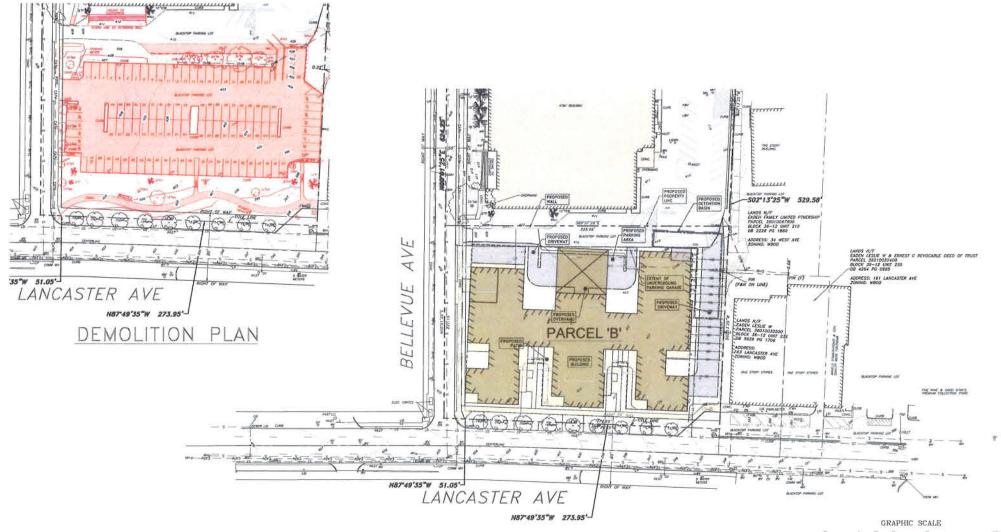
SHEET SUBDIVISION PLAN 3 of 8

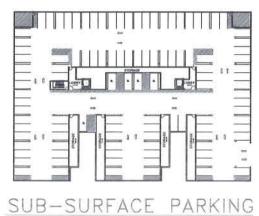




WAYNE BUSINESS OVERLAY DI USE AREA	STRICT - SPECIAL		
GROSS LOT AREA		76,834 58	
ORDINANCE ITEM	REQUIREMENT	PROPOSEC	
IMPERVIOUS COVERAGE	90% MAX.	67%	
MIN. SETUACKS	A CONTRACTOR OF THE PARTY OF TH		
FRONT	GUILD-TO UNE (25 FT FROM LANCASTER AVE CENTER UNE)	40 FT	
308	15 fT	25 FT	
REAR	15 71	57 FT	
PRINCIPAL BUILDING HEIGHT	MIN. 30 FT; MAX. 55 FT.	44 FT	







PROPOSED PLAN



- PARCEL BATORWATION: FOLIO NUMBER: 36-010-0678-01 Block 36-12 Unit 113 DEED BOOK 6574 PAGE 0164



PLAN LEGEND

	FLAN LEGEND
	SUPPLEMENTAL CONTOUR (1' INTERN
	INDEX CONTOUR (5' INTERVAL)
	EXISTING STORM SEWER PIPING
	EXISTING SANITARY SEWER PIPING
	EXISTING GAS MAIN
	EXISTING WATER MAIN / SERVICE
	EXISTING UNDERGROUND TELEPHONE
mm	EXISTING EDGE OF WOODS
	EXISTING EDGE OF PAYEMENT
x_	DOSTING FENCE LINE
	PROPERTY LINE
	BUILDING SETBACK LINE
	EXISTING EAVES
CONC	CONCRETE
Dr.	UTILITY POLE
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Owv	WATER VALVE
	WATER WETER
	CLEAN OUT SANITARY VENT
	SANITARY CLEAN OUT
	GAS METER
Ony	CAS VALVE

GROSS LOT AREA	76.834	Sq. Ft.		
	EXISTING	REMOVE	ADD	PROPOSED
BUILDING (INC. OVERHANGS > 2' AND GARAGE)	:0	0	46,525	46,525
ASPHALT	44,858	-38,784	4,970	11,044
CONCRETE & WALKS	3,076	-3,075	4,930	4,930
CURBS (INC. PARKING BLOCKS/CAR STOPS)	567	-567	0	0
WALLS, TIES, WINDOW WELLS	456	-465	556	547
TOTAL BUILDING COVERAGE	0			46,525
TOTAL SITE IMPERVIOUS COVERAGE	48,957	-42,892	56,981	63,046



SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399

WEST AVENUE GP

60 WEST AVE WAYNE, PA 19087

DEMOLITION PLAN AND PROPOSED PLAN

SHEET

4 of 8



DESGN 5/N: 20221051262



ZONING	SUMMARY	
WAYNE BUSINESS OVERLAY D	STRICT - SPECIAL	
GROSS LOT AREA		78,834 SF
ORDINANCE ITEM	REQUIREMENT	PROPOSED
IMPERVIOUS COVERAGE	90% MAX.	67%
MIN. SETSACKS	STATE OF STREET	
FRONT	GUILD-TO LINE (25 FT FROM LANCASTER AVE CENTER LINE)	40 FT
SIDE	15 FT	25 FT
REAR	15 77	37 FT
PRINCIPAL BUILDING HEIGHT	MIN. 30 FT; MAX. 55 FT.	A4 FT

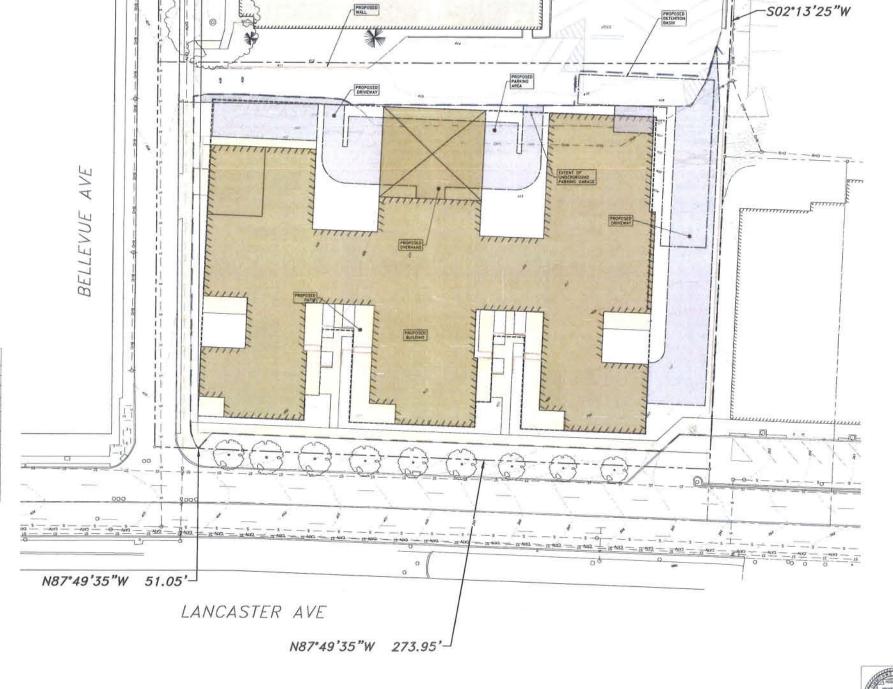




PLAN LEGEND

	PLAN LEGEND
************	SUPPLEMENTAL CONTOUR (1" INTERNA
	INDEX CONTOUR (5' INTERVAL)
	EXISTING STORM SEWER PIPING
	EXISTING SANITARY SEWER PIPING
	EXISTING GAS MAIN
	EXISTING WATER WAIN / SERVICE
- 1	EXISTING UNDERGROUND TELEPHONE
www	EXISTING EDGE OF WOODS
-	EXISTING EDGE OF PAVENENT
x-	EXISTING FENCE LINE
	PROPERTY LINE
	BUILDING SETBACK LINE
	EXISTING EAVES
DONG	CONCRETE
Øn⊾.	UTILITY POLE
_ Q	SICN
LP	LIGHT POLE
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IMPERVIOUS	COVERAGE	SUMMA	44	
GROSS LOT AREA	76,834	Sq. Ft.		
	EXISTING	REMOVE	ADD	PROPOSED
BUILDING (INC. OVERHANGS > 2' AND GARAGE)	0	0	46,525	46,525
ASPHALT	44,858	-38,784	4,970	11,044
CONCRETE & WALKS	3,078	-3.076	4,930	4,930
CURBS (INC. PARKING BLOCKS/CAR STOPS)	567	-567	0	0
WALLS, TIES, WINDOW WELLS	456	-465	556	547
TOTAL BUILDING COVERAGE	0			46,525
TOTAL SITE IMPERVIOUS COVERAGE	48,957	-42.892	56,981	83,046



GENERAL NOTES

- PARCEL INFORMATION: FOLID NUMBER: 38-013-0678-01 Block 36-12 Unit 113 DEED BOOK 6574 PAGE 0184
- 2. CROSS LOT AREA: 291,448 Sq. Ft.

PROPERTY OWNER

- OUTLINE DESCRIPTION AND LOCATIONS SHORN IN ACCORDINGE WITH AN ACTUAL, FIR. INSTITUTION STREET, CONDUCTED BY THE OFFICE, SUMMEY PREPARAGE FROM OLDS AS SUPPLIED BY CLIENT AND VARIOUS DEEP SHOP PLANS OF RECORD. THE SHIPPY WE PERFORMED WHITEIN THE SHIPPY OF A CURRENT THE, REPORT, WHICH WOULD.
- 4. CONTOURS PLOTTED FROM FIELD RUN SURVEY, APPROXIMATE ELEVATION BENCHMARK
- 5. THIS SURVEY IS NOT TO BE USED FOR TREE REMOVAL ALONG PROPERTY LINES. THE LOCATIONS ARE APPROXIMATE. PROPERTY LINES MUST BE FIELD MARKED WITH STAKES BUT IT FETAMEN SYZET LINES COMPREHING.
- IN THESE IS NO DENIFORMS FEMA FLOOD PLAIN AREAS WITHIN THE PROJECT SITE AS A SUSTRATES ON COMMUNITY PRACE, NUMBER A 2022B-10017 - OF THE FLOOD INSUR-RATE WAR AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT ACCINCY FOR TH CONSUMER OF REMOVE, PRINCEYOR.
- 7 DISTING SUBSUREZCE UTLATY ASTORATION INCORED IS BASED UNDO VISIAL, FELD INSCRICTION IT ALTERED TO UNDOES, THE SUB-CONTRIBUTION OF CONCERNING THE SEZ LAO NAS BEEN GENARD AS A SUPPLIMENT TO THE SITE SUBNEY. THE METAWARD PROVIDED IS INPRESIDENT OF SUBSUREZCE CONCRISION ONLY. AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION OF DISTINGT OF SUBSUREZCE CONCRISION ONLY. AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION OF DISTINCT OF SUBSUREZCE CONCRISION ONLY. AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION OF SUBSUREZCE CONCRISION OF SUBSUREZCE CONTRACTORS FROM TO AND CONSTRUCTOR SUBMITTED.

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CHAIRMAN	
NEWHER	
TOWNSHIP ER	-GMEER
ATTEST	
MILES!	MANAGER
DELAWA	RE COUNTY PLANNING COMMISSION:
REVIEWED BY	THE DELAWARE COUNTY PLANNING COMMISSION THIS DAY OF 20
SECRETARY	
accont	DER OF DEEDS
RECORDED IN CHESTER, PE	I THE OFFICE OF THE HECORDER OF DEEDS OF DELAMARE COUNTY AT MI NNSYLVANIA IN THE
PLAN BOOK	PAGE ON THE DAY OF
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SITE ENGINEERING CONCEPTS, LLC
P.O. BOX 1992
SOUTHEASTERN, PA 19399

PLANTREPARED FOR

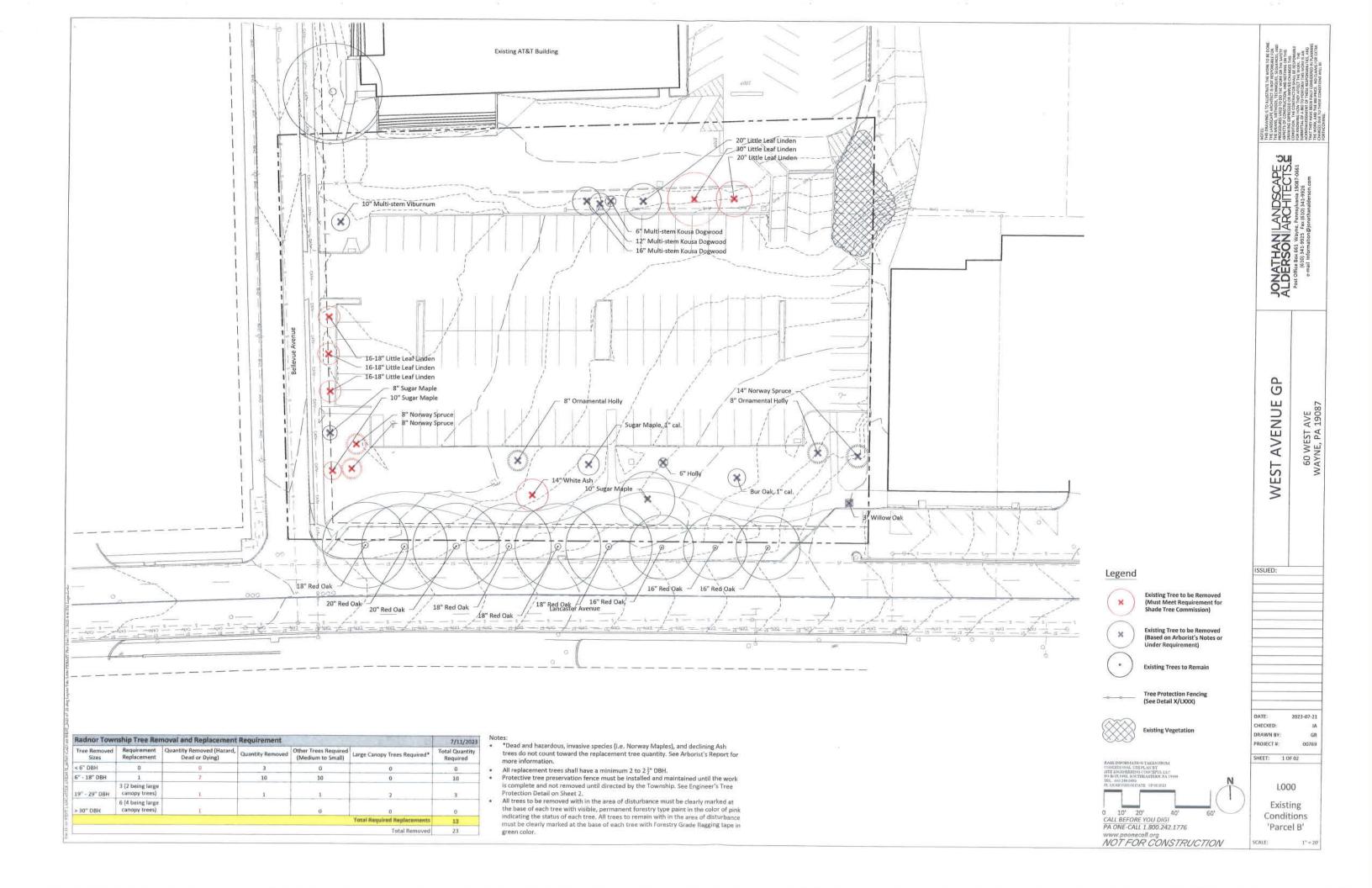
WEST AVENUE GP

60 WEST AVE WAYNE, PA 19087

R TOWNSHIP: DELAWARE COUNT

RECORD PLAN

SHEET 5 of 8



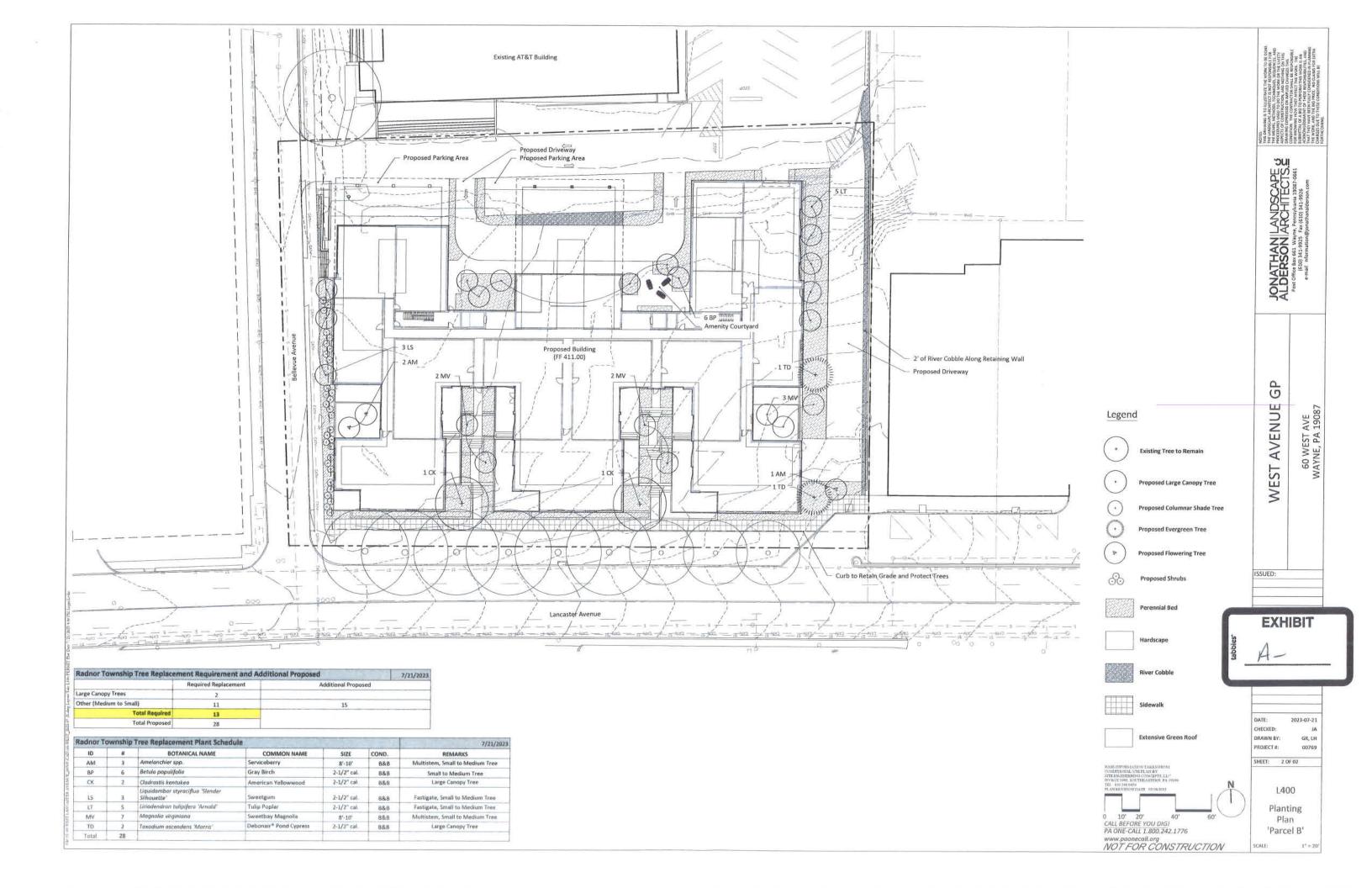






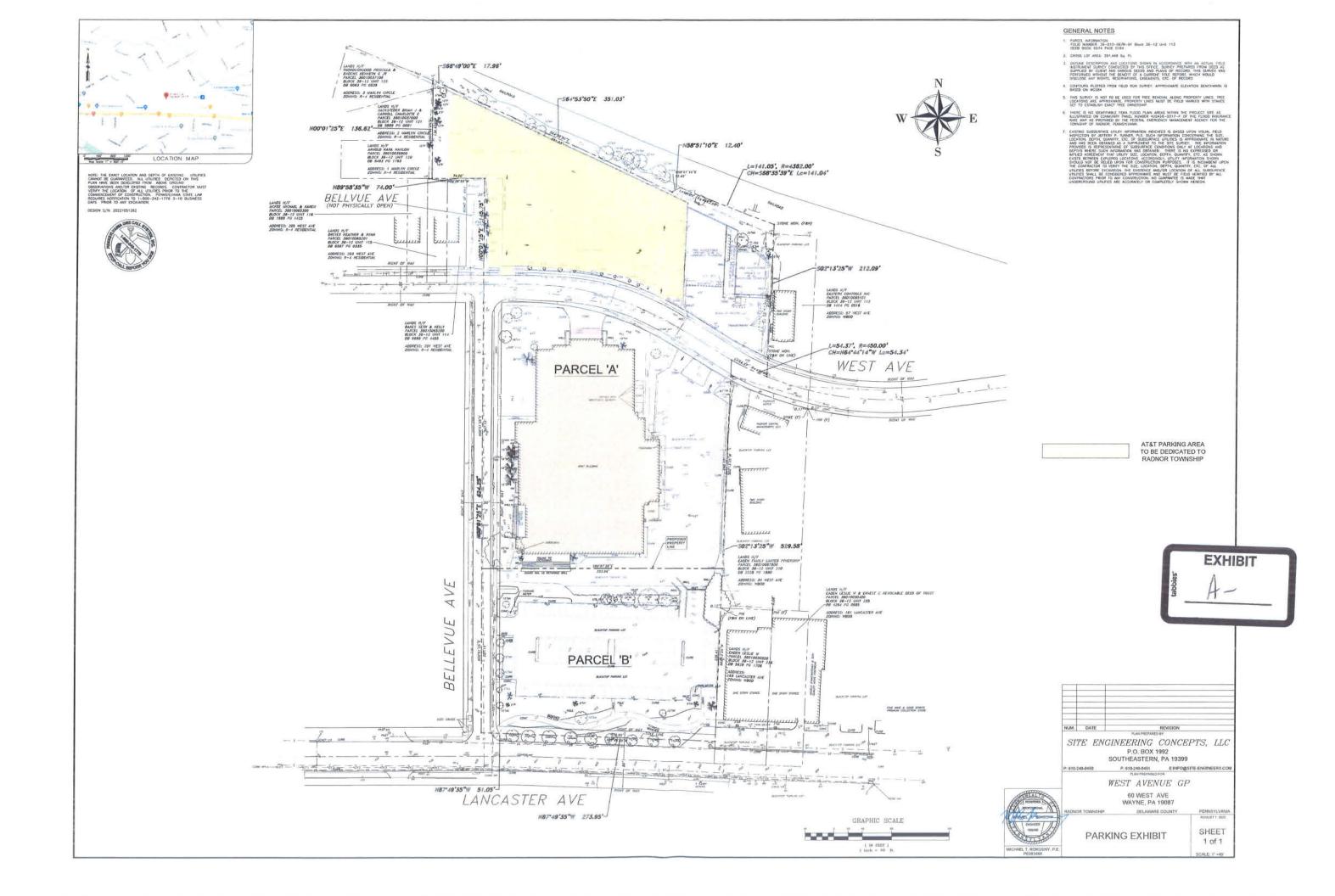








A-7



A-8

ERIK W. HETZEL, AICP/PP, LEED AP 16 MANOR ROAD PAOLI, PA 19301 610.322.7154 erik@erikhetzel.com

Memorandum

To: William J. Collins, The Concordia Group

From: Erik Hetzel, AICP/PP, LEED AP

Date: July 31, 2023

Re: Fiscal Impact Analysis - Mixed Use Residential/Retail Development, Radnor

Township

The Concordia Group is proposing a mixed use building on the site of the property located at 60 West Avenue in Radnor Township, Delaware County. Fifty-two (52) single-family attached condominium units and 1,302 square feet of first floor retail space are planned. This memorandum describes the anticipated future annual fiscal impacts related to the proposed development. A concise summary of fiscal impacts is presented in a table on the last page of this memorandum.

Fiscal impacts presented in this analysis were estimated using a methodology developed by the Rutgers University Center for Urban Policy Research, as originally described in The New Practitioner's Guild to Fiscal Analysis¹ and further developed in a later publication by the same authors entitled <u>Development Impact Assessment Handbook</u>². It is projected that, in total, the proposed development will result in beneficial, net-positive annual fiscal impacts to both Radnor Township and the Radnor Township School District.

Revenue Impacts

Real Estate Property Tax - At full build-out under the proposed concept, the development will have a total market value of approximately \$78.39 million, which translates to an assessed value of approximately \$51.57 million. This assessment calculation is based on the current (2022-2023) Delaware County common-level ratio of

¹ Burchell, Robert W., David Listokin, et al. *The New Practitioner's Guide to Fiscal Impact Analysis*, New Brunswick, NJ: Rutgers, The State University of New Jersey, 1985.

² Burchell, Robert W., David Listokin, et al. *Development Impact Assessment Handbook*. Washington, D.C.: ULI-the Urban Land Institute, 1994.

1.52, which estimates assessed value at approximately 65.78% of market value. The proposed development will generate ongoing real estate tax revenue to the local taxing authorities, with an estimated \$123,078 going to the Township and \$754,659 going to the School District annually.

Real Estate Transfer Tax — The Township levies the Real Estate Transfer Tax at the rate of 1.0% of sale price, and the School District levies the Real Estate Transfer Tax at 0.5%. This analysis anticipates that an average of approximately 5% of the residential units in the proposed development will transfer ownership (be sold) in any given year, which equates to annual Transfer Tax Revenues from the residential portion of the building totaling \$39,000 to the Township and \$19,500 to the School District. In addition to the annual Transfer Tax revenues estimated here, it is also important to note that the Township and School District will also receive significant Transfer Tax revenues from the initial sales of every residential unit from the builder to the first homeowners. With a total market value of \$78 million in 2023, this equates to an estimated \$780,000 in initial-sales transfer taxes to the Township (\$78 million market value x 1.0% transfer tax rate = \$780,000). For the School District, initial home sales would generate transfer taxes totaling \$390,000 (\$78 million market value x 0.5% transfer tax rate = \$390,000).

In calculating transfer tax revenues from the non-residential portion of the development, it is assumed that ownership would transfer less frequently than the residential units, approximately once every ten years. Viewed as an annualized figure, this results in transfer tax revenues to the Township totaling \$391 and \$195 to the School District each year.

Other Revenues - In addition to the aforementioned tax revenues, the proposed development is expected to generate approximately \$56,800 in Township revenues from other sources, as reported in the Radnor Township 2023 General Fund Budget. These sources include licenses & permits, fines & costs, and departmental earnings. Similarly, the School District will realize additional revenues totaling approximately \$33,415 in revenues from non-tax sources (LEA activities and rentals) and intergovernmental sources (State and Federal funding) as identified in the Radnor Township School District 2023-2024 Final General Fund Budget.

Population Impacts

An estimated 90 residents will be living in the proposed development, including 6 school-aged children. These population estimates are based on demographic

multipliers published by the Rutgers University Center for Urban Policy Research (2006)³. This source uses information from the U.S. Census to derive population multipliers specific to the Commonwealth of Pennsylvania, categorized by household structure type (i.e., single-family detached, single-family attached, apartments, etc.), and by the number of bedrooms per household. The single-family attached residential bedroom mix considered in this analysis includes 15 1-bedroom units, 17 2-bedroom units, and 30 3-bedroom units.

Economic Impacts

The proposed development will have a beneficial economic "ripple effect" in the local economy, as the new residents and employees use goods and services in and around Radnor Township. In addition, the development phase of the project will provide construction jobs and result in construction-related consumption expenditures in the local and regional economies. These impacts are not reflected in the summary table included in this memorandum but will provide economic benefits over and above the annual revenues described therein.

Cost Analysis

Annual Township and School District expenditures attributable to the proposed development were projected using the Per Capita Multiplier Method described in the <u>Development Impact Assessment Handbook</u>. In calculating the per capita expenditure value for the Township, the methodology uses information from the current (2023) Township budget and accounts for the fact that costs are divided differently among serving both residential and non-residential portions of the Township, based on the actual mix of land uses provided by the County Board of Assessment. Overall, it is estimated that the proposed development will result in Township costs totaling approximately \$84,990 annually, which is more than offset by revenues totaling \$219,269 annually from the tax and non-tax sources described previously.

A similar per capita cost calculation is used for the Radnor Township School District. Based on current (2023) enrollment and budget information published by the School District, the estimated annual total cost-per-student in the Radnor Township School District used in this analysis is approximately \$32,179. With 6 school-aged

³ Burchell, Robert W., David Listokin, et al. *Residential Demographic Multipliers (Pennsylvania)*. New Brunswick, New Jersey: Center for Urban Policy Research, Edward J. Bloustein School of Planning and Public Policy - Rutgers, the State University of New Jersey (2006).

children projected to reside in the proposed development, this results in projected annual costs of \$193,076 to the School District, which is more than offset by revenues from taxes and other sources totaling \$807,769. This estimate assumes that all 6 school-aged children will be attending public schools; however, it is likely that some will attend private schools, which would result in lower costs to the Radnor Township School District than estimated here, and a higher net-positive fiscal impact.

Impacts to Public Safety Services and Facilities

Overall, impacts on public safety services and facilities from the proposed development are expected to be minimal and can be offset by the projected net positive fiscal impact. Demands for Police, Fire, and Emergency Management Services (EMS) personnel, vehicles, and facilities are presented in the following table, using planning standards published in the Development Impact Assessment Handbook. Personnel, vehicles, and facilities for Police and Fire are based on the noted planning standards per 1,000 population. EMS standards for personnel and vehicles are per 30,000 population, and EMS calls are per 1,000 population per year.

Public Safety Demand Factors and Projected Demand from Proposed Development

	Residential Planning Standard	Non- Residential Planning Standard	Projected Demand
<u>Police</u>			
Personnel	1.50	0.50	0.14
Vehicles	0.45	0.15	0.04
Facilities (square feet)	150	50	13.65
<u>Fire</u>			
Personnel	1.24	0.41	0.11
Vehicles	0.15	0.05	0.01
Facilities (square feet)	187.5	62.5	17.06
<u>EMS</u>			
Personnel	3.08	1.03	0.01
Vehicles	0.75	0.25	0.0023
Calls per year per 1,000 population	27.4	9.1	2.49

Conclusions and Summary

In conclusion, the net positive fiscal impact in terms of projected revenues over costs for Radnor Township is expected to be over \$134,000 annually at project completion. The projected net positive fiscal impact to the Radnor Township School District is projected to be over \$600,000 per year. The combined net positive fiscal impact for both taxing authorities is estimated at nearly \$750,000 annually. Not included in these annual estimates are significant real estate transfer fees that will be paid on the initial sales of every unit from the builder to the first homeowners. The table on the next page summarizes the fiscal impacts to the Township and School District.

Fiscal Impact Summary

	C	ondominium			(m	
		Units		Retail		TOTAL
Residential Units		52		0		52
Non-Residential Square Feet		0		1,302		1,302
Value per Unit		\$1,500,000		\$300		\$1,500,300
Market Value of Proposed Development	,	\$78,000,000		\$390,600	• ;	\$78,390,600
Assessed Value (approx. 65.78% of market value)	,	\$51,315,789		\$256,974	,	\$51,572,763
New Employee Population		0		3		3
New Residential Population		90		0		90
New School-Aged Children		6		0		6
Radnor Township						
Real Estate Tax Revenue (2.3865 mills)	\$	122,465	\$	613	\$	123,078
Non-Property Tax Revenue	\$	56,560	\$	241	\$	56,800
Real Estate Transfer Tax (1.0%)	\$	39,000	\$	391	\$	39,391
Total Township Revenues	\$	218,025	\$	1,244	\$	219,269
Total Township Expenditures	\$	(84,123)	\$	(867)	\$	(84,990)
Net Township Fiscal Impact	\$	133,902	\$	378	\$	134,280
Radnor Township School District						
Real Estate Tax Revenue (14.6329 mills)	\$	750,899	\$	3,760	\$	754,659
Non-Property Tax Revenue	\$	1,837	\$	-	\$	1,837
Intergovernmental Revenue	\$	31,578	\$	-	\$	31,578
Real Estate Transfer Tax (0.5%)	\$	19,500	\$	195	\$	19,695
Total School District Revenues	\$	803,814	\$	3,956	\$	807,769
Total School District Expenditures	\$	(193,076)	\$	-	\$	(193,076)
Net School District Fiscal Impact	\$	610,738	\$	3,956	\$	614,693
Total Development-Generated Revenues	\$	1,021,839	\$	5,200	\$	1,027,039
(Township + School District)	٦	1,021,633	۶	3,200	٦	1,027,039
Total Development-Generated Expenditures	\$	(277,199)	\$	(867)	\$	(278,065)
(Township + School District)	<u> </u>	(2,,,133)	·	(007)	~	(270,003)
Total Net Annual Fiscal Impact	\$	744,640	\$	4,333	\$	748,973

A-9



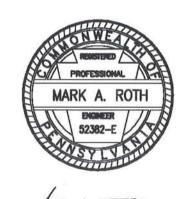
Traffic Impact Assessment for the Proposed Mixed-Use Development – Lancaster Avenue

Radnor Township, Delaware County, PA





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Prepared for The Concordia Group

August 2023 McMahon Project 310903-01-001



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Executive Summary

The Concordia Group proposes to develop the mixed-use development to be located on the north side of Lancaster Avenue (S.R. 0030), between Bellevue Avenue and Wayne Avenue in Radnor Township, Delaware County, Pennsylvania (**Figure 1**). The proposed mixed-use development consists of 52 multifamily apartment units (midrise) and 1,302 s.f. of commercial retail space (**Figure 2**). The project also proposes to provide 119 parking spaces for the residential portion and 9 parking spaces for the retail portion on site. Access to the site is proposed to be provided via one (1) full-movement driveway along Bellevue Avenue. The property to be redeveloped by the proposed mixed-use development is currently occupied by a municipal parking lot. The existing municipal parking lot will be relocated along West Avenue adjacent to the train tracks.

The scope of this Traffic Impact Assessment is based on PennDOT's guidelines, per the Department's *Publication 282*, Appendix A *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, dated September 2022, and the requirements of the Township Ordinance.

The purpose of this traffic impact assessment is to evaluate the traffic impacts of the proposed development. The scope of this study includes an evaluation of the existing weekday morning and weekday afternoon peak hours, as well as the future 2025 build-out year, both without and with the development at the following study intersections:

- Lancaster Avenue (S.R. 0030) and Bellevue Avenue
- Bellevue Avenue and Proposed Driveway

Based on trip generation data compiled for Multifamily Housing (Mid-Rise) (ITE Land Use Code 221) and Strip Retail Plaza (<40k) (ITE Land Use Code 822) contained in the Institute of Transportation Engineers (ITE) publication entitled, *Trip Generation Manual, 11th Edition,* and assumed mass transit and pedestrian reductions, the proposed development will generate a total of approximately 15 "new" trips during the weekday morning peak hour and 26 "new" trips during the weekday afternoon peak hour. Due to the location of the development in Wayne within close proximity to a SEPTA Regional Rail Line, there will be less dependency on vehicles. A large portion of trips will be supplemented by transit (SEPTA) and pedestrians.

For residential modal reductions, McMahon referenced data from the United States Census Bureau titled "Commuting Characteristics by Sex, 2017-2021 American Community Survey 5-Year Estimates" (**Appendix L**). Based on this data, the Wayne area of Radnor Township (19087 Zip Code) has a mode of transport to work breakdown of 69% car, 7% transit, 4% walk, 0% bike, 19% home, and 1% other. For the residential uses, McMahon assumed approximately 69% car, 7% transit, and 24% pedestrians/other.

Additionally, trip reduction for internalization was applied and calculated based on PennDOT approved methodology (**Appendix K**). These deductions take into account trips by residents to the retail space within the site, whereby residents do not need to leave the overall site and create a typical vehicular trip. As a conservative approach, pass-by traffic percentages for the retail use were not applied to the trip generation.



Per the traffic evaluation, the following on-site and off-site traffic improvements are recommended to mitigate the proposed development impacts:

Site Access

Bellevue Avenue and Proposed Driveway

- Classified as a low volume driveway based on the anticipated daily traffic volumes.
- · Provide one ingress lane and one egress lane for the access.
- Provide appropriate corner radius length, which will be verified based on the largest vehicle anticipated to utilize the driveway.
- Provide stop-control on the egress approach.
- Based on warrants, turn lanes are not warranted or recommended.

Off-Site Traffic Improvements

Lancaster Avenue (S.R. 0030) and Bellevue Avenue

No improvements are required or recommended.

The traffic analyses contained herein reveal that efficient access to and from the proposed development can be provided, and furthermore, site-generated traffic can be accommodated at the study area intersections. Detailed results of the level-of-service and queuing analysis are contained in the matrices provided in **Tables 1 and 2**.

Table 1 - Level of Service Matrices

1. Lancaster Avenue (S.R. 0030) and Bellevue Avenue

Tir	ne Period	Wee	ekday Morn	ing Peak H	lour
	Year	2023	2025 Build-Out Year		
	velopment ondition	Existing	w/o Dev	w/Dev Base	w/Dev Imps
S.R.	Left	А	А	Α	
venue (EB Thru	0.8	0.8	0.8	***
Lancaster Avenue (S.R. 0030)	Thru WB Right	(1)	(1)	(1)	55.50
vue		В	В	В	25/21
Bellevue Avenue	SB Right	11.0	11.0	11.1	
	Overall	А	А	Α	
	Overall	0.6	0.6	0.6	

2023	Ві	2025 Build-Out Year			
Existing	w/o Dev	w/Dev Base	w/Dev Imps		
Α	А	Α			
0.9	0.9	1.1			
(1)	(1)	(1)	120.0		
В	В	В			
11.2	11.2	11.3			
Α	А	Α			
0.7	0.7	0.9			

⁽¹⁾ Movement operates at free-flow conditions.

Table 1 - Level of Service Matrices

2. Bellevue Avenue and Proposed Driveway

Tit	me Period	Weekday More	ning Peak Hour
	Year		025 Out Year
	velopment ondition	w/Dev Base	w/Dev Imps
Proposed Driveway	Left WB	А	
Proposed Driveway	Right	8.5	F-8-80
a a	Thru NB	71)	
Bellevue Avenue	Right	(1)	5.5.5
ellevue	Left	А	
ď	SB Thru	0.0	H. H. H.
	Overall	Α	
		0.9	HO-FIELD

Weekudy Aiter	noon Peak Hour	
)25	
Build-Out Year		
w/Dev Base	w/Dev Imps	
Α		
8.7	sees	
(1)	74.44	
A		
0.0	(diese	
Α	(WEID	
0.6	14.44	

⁽¹⁾ Movement operates at free-flow conditions.

Table 2 - 95th Percentile Queue Matrices

1. Lancaster Avenue (S.R. 0030) and Bellevue Avenue

Tir	ne Period	1 To 1 1	B/ER	Weekday Morning Peak Hour			lour
	Year Current Future Storage (1) Storage (2)		2023	Ві	2025 uild-Out Ye	ar	
Development Condition			Existing	w/o Dev	w/Dev Base	w/Dev Imps	
venue (S.R. 0)	Left EB Thru	465		25	25	25	
Lancaster Avenue (S.R. 0030)	Thru WB Right	(3)		(3)	(3)	(3)	
Bellevue Avenue	SB Right	580		25	25	25	

2023	В	2025 ıild-Out Ye	ar
Existing	w/o Dev	w/Dev Base	w/Dev Imps
25	25	25	
(3)	(3)	(3)	
25	25	25	

⁽¹⁾ Distance to adjacent intersections shown in italics.

⁽²⁾ Future storage/distance to adjacent intersections shown if different/improved from existing conditions.

⁽³⁾ Movement operates at free-flow conditions.

Table 2 - 95th Percentile Queue Matrices 2. Bellevue Avenue and Proposed Driveway

Year Development Condition				Weekday Mon	Weekday Morning Peak Hour		
		Year Current Future Storage (1) Storage (2)		2025 Build-Out Year			
				w/Dev Base	w/Dev Imps		
Proposed Driveway	Left WB Right		100	25			
Avenue	Thru NB Right		(3)	(3)			
Bellevue Avenue	Left SB Thru		360	0			

	025 Out Year
w/Dev Base	w/Dev Imps
25	
(3)	
0	

⁽¹⁾ Distance to adjacent intersections shown in italics.

⁽²⁾ Future storage/distance to adjacent intersections shown if different/improved from existing conditions,

⁽³⁾ Movement operates at free-flow conditions.



Existing Transportation Settings and Conditions

The proposed development will be located on the north side of Lancaster Avenue (S.R. 0030), between Bellevue Avenue and Wayne Avenue in Radnor Township, Delaware County, Pennsylvania (**Figure 1**). The existing roadways and intersections in the vicinity of the site, which comprise the study area roadway network, are described in this section.

Roadway Characteristics

The study area roadway network and characteristics are summarized below in Table 3.

Table 3. Existing Roadway Characteristics

	Average Daily	Roadway Cl	assification		Posted	
Roadway Name (Jurisdiction)	Traffic Volumes (vehicles per day)	PennDOT Roadway PennDOT/ Typologies (1) Township (2)		(per direction)	Speed Limit (mph)	
Lancaster Avenue (S.R. 0030)	18,915 ⁽³⁾	Regional Arterial	Urban – Principal Arterial	2	25	
Bellevue Avenue	n/a	Local	Local	1	25	

- (1) Based on Table 1.2 Roadway Typologies in the PennDOT Publication 13M, Design Manual Part 2.
- (2) Based on the roadway classifications provided on PennDOT's Traffic Information Repository (TIRe) website.
- (3) Based on traffic data from PennDOT's Traffic Information Repository (TIRe) website.

The following key intersections in the vicinity of the site comprise the study area:

- Lancaster Avenue (S.R. 0030) and Bellevue Avenue
- Bellevue Avenue and Proposed Driveway

The existing characteristics of the study intersections, including field sketches and photographs are provided in **Appendix A**.



Land Use Context

The proposed development is located in Radnor Township, within WBOD (Wayne Business Overlay District) as seen in the Radnor Township Zoning Map below.



Source: Radnor Township Zoning Map

Area Transit Services

Transit services are currently provided by bus and train services within the vicinity of the proposed site. SEPTA Train Line – Paoli/Thorndale Line is located at Wayne Station which is approximately 0.2 miles from the proposed site. SEPTA Bus Route 106 is located at the intersection of Lancaster Avenue (S.R. 0030) and Banbury Way/Bloomingdale Avenue.

Pedestrian-Bicycle Facilities

Currently, there are sidewalks located along the study intersections. There are no bicycle lanes located along the study intersections.



Traffic Count Data

Daily traffic counts were obtained from PennDOT's Traffic Information Repository (TIRe) website.

Turning movement traffic counts were conducted in April 2022 during the weekday morning (7:00 AM - 9:00 AM) and weekday afternoon (4:00 PM - 6:00 PM) peak periods. The results of these traffic counts are tabulated by 15-minute intervals in **Appendix B**. The four highest consecutive 15-minute peak intervals during these traffic count periods constitute the peak hours that are the basis of this traffic analysis.

Existing Traffic Volumes

The 2022 traffic volumes were projected to the existing year of 2023. McMahon utilized the following methodology in order to project the 2023 existing base volumes utilized in the study. The growth rate in Delaware County is 0.00%, so there were no adjustments to the 2022 traffic volumes due to regional traffic growth. Traffic volume figures depicting the 2023 Existing Volume Development are provided in **Appendix C**.

- 1. Figure C1 depicts the 2022 traffic volumes without adjustments.
- Figure C2 depicts the balancing adjustments between the intersections.
- 3. **Figure C3** depicts the trip assignment for the retail store located at 201 W Lancaster Avenue which exists in 2023 and will be included in the 2023 traffic volumes.
- 4. Figure C4 depicts the 2023 existing peak hour traffic volumes with adjustments that are utilized in the TIA.

The resultant peak hour traffic volumes are depicted in **Figure 3A** for the weekday morning (7:00 AM - 9:00 AM) and weekday afternoon (4:00 PM - 6:00 PM) peak periods. The traffic volumes in Figure 3A were then analyzed to determine the existing operating conditions, and the results of this analysis are shown in **Figure 3B**. Specific details regarding the analysis results and traffic operations are provided later in this report.



Site Characteristics

This section presents the details regarding the proposed site, including the incremental increase in traffic volumes generated by the development during the peak hours and the distribution of site traffic to the study area roadways, as well as the proposed site access configuration, traffic control, and sight distance requirements.

Existing Site Trips Relocated

Due to the development of the site, existing trips associated with the existing municipal parking lot located along Bellevue Avenue were removed from the site, and then redistributed throughout the study area. The existing municipal parking lot trips were relocated to West Avenue. An assignment figure depicting the redistribution of existing site trips is provided in **Appendix D**.

Trip Generation

Traffic volumes generated by the proposed development were prepared based on trip generation data compiled from numerous studies contained in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11th Edition,* and assumed mass transit and pedestrian reductions. Due to the location of the development in Wayne within close proximity to a SEPTA Regional Rail Line, there will be less dependency on vehicles. A large portion of trips will be supplemented by transit (SEPTA) and pedestrians. There are multiple SEPTA services located within the vicinity of the site. These SEPTA services include a bus route and a train line.

For residential modal reductions, McMahon referenced data from the United States Census Bureau titled "Commuting Characteristics by Sex, 2017-2021 American Community Survey 5-Year Estimates" (**Appendix L**). Based on this data, the Wayne area of Radnor Township (19087 Zip Code) has a mode of transport to work breakdown of 69% car, 7% transit, 4% walk, 0% bike, 19% home, and 1% other. For the residential uses, McMahon assumed approximately 69% car, 7% transit, and 24% pedestrians/other.

Additionally, trip reduction for internalization was applied and calculated based on PennDOT approved methodology (**Appendix K**). These deductions take into account trips by residents to the retail space within the site, whereby residents do not need to leave the overall site and create a typical vehicular trip. As a conservative approach, pass-by traffic percentages for the retail use were not applied to the trip generation.



Table 4 presents the anticipated vehicular trip generation for the proposed development.

Table 4. Vehicular Trip Generation

			Weekday Morning Peak Hour		Weekday Afternoon Peak Hour			
Land Use	Size	Daily	In	Out	Total	In	Out	Total
Proposed Residential (1)	52 Units	202	3	8	11	13	8	21
Transit/Pedestrian Reductions ⁽³⁾		-63	-1	-2	-3	-4	-3	-7
Internalization (4)			-0	-0	-0	-2	-1	-3
"New" Residential Trips		139	2	6	8	7	4	11
Proposed Retail ⁽²⁾	1,302 s.f.	285	4	3	7	9	9	18
Internalization (4)			-0	-0	-0	-1	-2	-3
"New" Retail Trips		285	4	3	7	8	7	15
Total "New" Trips		424	6	9	15	15	11	26

- (1) ITE Land Use Code 221 for Multifamily Housing (Mid-Rise).
- (2) ITE Land Use Code 822 for Strip Retail Plaza (<40k).
- (3) Assumed to be 69% car and 31% transit/pedestrians.
- (4) Based on NCHRP 684 Internal Trip Capture Estimation for the proposed residential and proposed retail.

Trip Distribution and Assignment

Site-generated traffic will approach and depart the site via different routes depending on factors such as the existing traffic patterns, location of major roadways, and the location of the development's site access. The distribution percentages for the anticipated directions of approach and departure and traffic assignment percentages are illustrated in Figure 4A. Application of the percentages illustrated in Figure 4A to the new peak hour trips contained in Table 4, provides an estimate of site traffic to be added to the study area. The site-generated traffic is also shown in Figure 4B for the weekday morning and weekday afternoon peak hours.

Site Access Configuration and Traffic Control

Access to the site is proposed to be provided via one (1) full-movement driveway along Bellevue Avenue. The recommendations for the proposed access designs, including auxiliary turn lanes, traffic control, and geometric design, were based on industry accepted criteria and guidelines. Specifically, the need for left- and right-turn deceleration lanes was based on the current PennDOT guidelines in accordance with *Publication 46, Chapter 11 – Traffic Studies*. The turn lane warrant/guideline analysis worksheets are contained in **Appendix J**.



Table 5 summarizes the results of the auxiliary turn lane warrants for the site access intersection along Bellevue Avenue.

Table 5. Turn Lane Warrant Summary

Intersection	Auxiliary Lane Warrant	Warrant Satisfied? (1)	Required Lane Length ⁽¹⁾	Proposed Lane Length
Bellevue Avenue and	Northbound Right	NO	Not Required	-
Proposed Driveway	Southbound Left	NO	Not Required	-

⁽¹⁾ Based on PennDOT Publication 46, Traffic Engineering Manual, Chapter 11.16

Additionally, the geometric design of the proposed site access was preliminarily evaluated based on guidelines contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*, as well as local PennDOT District policies.

Based on the results of this evaluation, the following access configurations and traffic controls are recommended, subject to the detailed engineering of the site access:

Site Access

Bellevue Avenue and Proposed Driveway

- Classified as a low volume driveway based on the anticipated daily traffic volumes.
- Provide one ingress lane and one egress lane for the access.
- Provide appropriate corner radius length, which will be verified based on the largest vehicle anticipated to utilize the driveway.
- Provide stop-control on the egress approach.
- Based on warrants, turn lanes are not warranted or recommended.

Sight Distance

Sight distance field measurements and an evaluation were performed at the proposed access intersection along Bellevue Avenue. Generally, the prevailing (85th percentile) travel speed, roadway grades and profiles, and the number of travel lanes play a role in determining if safe sight distances are available for egress and ingress at the proposed access. The existing sight distances at the proposed access intersection were measured and compared to PennDOT's sight distance requirements. These sight distance requirements are contained in *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*.



Table 6 summarizes the available sight distance measurements, as well as PennDOT's sight distance requirements at the proposed access location.

Table 6. Sight Distance Evaluation
Bellevue Avenue and Proposed Driveway

		Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Available Sight Distance
Movement	Direction			Desirable ⁽¹⁾	Minimum ⁽²⁾	(feet)
F 111	Looking Left	25	+2%	250	144	250+
Exiting	Looking Right	25	-1%	195	148	250+
Left turn	Looking Ahead	25	+2%	190	144	250+
Entering	From the Rear	25	-1%	N/A	148	250+

- (1) Based on the desirable sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and the posted speed limit, unless otherwise noted.
- (2) Based on the safe stopping sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and the posted speed limit, unless otherwise noted.

As shown in Table 6, all of the existing available sight distances at the site access intersection meet PennDOT's desirable sight distance criteria. The actual available sight distances should be verified during detailed engineering of the site access. The PennDOT M-950S form is completed and provided in **Appendix E** for the site access intersection.



Future Traffic Conditions

This section presents the future build-out year (2025) traffic conditions, both without and with the proposed development, which is anticipated to be completed and occupied by 2025. The future 2025 build-out year without-development traffic volumes were estimated by increasing the existing 2023 traffic volumes to account for regional growth, as described below. The incremental increase due to the anticipated trip generation for the site was then added, resulting in the future 2025 build-out year with-development traffic volumes.

Regional Traffic Growth

To account for regional traffic growth, the existing traffic volumes were increased by an annual traffic growth rate of 0.00 percent per year compounded for two years to 2025. This growth rate is consistent with the traffic growth rate recommended by the PennDOT Bureau of Planning and Research *Growth Factors for August 2022 to July 2023* for similar, Urban Non-Interstate roadways in Delaware County.

Local Traffic Growth

It is our understanding that there are no nearby planned developments that would affect the intersections within the study area.

Planned Roadway Improvements

It is our understanding that there are no roadway projects planned by the Radnor Township, PennDOT, or other area development projects that would have an impact on any of the study intersections.

Future Traffic Conditions

The total background growth was then added to the existing 2023 traffic volumes, resulting in the future 2025 without-development traffic volumes. Next, the site generated traffic volumes, as shown in Figure 4B, were added to the future 2025 without-development traffic volumes, resulting in the future 2025 with-development traffic volumes.

The resultant future 2025 peak hour traffic volumes without development are illustrated in **Figure 5A**, and the future 2025 with-development peak hour traffic volumes are illustrated in **Figure 5B** for the weekday morning and weekday afternoon peak hours. These traffic volumes were then analyzed to determine the future 2025 without and with development traffic operating conditions, and the results of this analysis are shown in **Figures 5C and 5D**.



Capacity/Level-of-Service Results

The peak hour traffic volumes were analyzed to determine the existing and future traffic operating conditions, both without and with the proposed development, in accordance with the standard techniques contained in the current *Highway Capacity Manual (6th Edition)* for both signalized and unsignalized intersections. The HCM 6th Edition Methodology within Synchro 11.1 (build 2, rev. 9) traffic analysis software was utilized in the traffic analyses.

These standard capacity/level-of-service analysis techniques, which calculate total control delay, are described in **Appendix F** for both signalized and unsignalized intersections, as well as the correlation between average total control delay and the respective level-of-service (LOS) criteria for each intersection type.

According to PennDOT's Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permit Plans, the following procedures and assumptions were utilized:

- For unsignalized intersections, the base critical headways at TWSC intersections (Exhibit 10-11) and base follow-up headways at TWSC intersections (Exhibit 10-12) outlined in PennDOT's Publication 46, Traffic Engineering Manual, were used.
- If the evaluation of without-development to with-development conditions indicates that the overall
 intersection level-of-service has dropped, mitigation will be required if the increase in delay is greater
 than 10 seconds. If the overall intersection delay increase is less than or equal to 10 seconds, mitigation
 of the intersection will not be required.

The existing, future build-out year (2025) traffic conditions, both without and with the proposed development, are summarized in **Figures 3B**, **5C**, **and 5D**, respectively while the detailed capacity/level-of-service analysis worksheets are provided in **Appendices G**, **H**, **and I**. As stated in the executive summary, the level-of-service and queue matrices are provided in **Tables 1 and 2**.

As illustrated in **Figures 3B**, **5C**, **and 5D**, with the proposed site and with the site related improvement recommendations, all study intersections will satisfy PennDOT's level-of-service criteria. **Table 7** below summarizes the overall levels of service for the study, and the detailed results of the level-of-service analysis are contained in the matrices provided in **Table 1**.



Table 7. Overall Intersection Levels-of-Service Weekday Morning Peak Hour

Intersection		el-of-Service n Seconds)	Delay	Requires Mitigation ⁽²⁾
	Without Development	With Development ⁽¹⁾	Increase	
Lancaster Ave & Bellevue Ave	A (0.6)	A (0.6)	+0.0	NO
Bellevue Ave & N/A Proposed Dwy		A (0.9)	N/A	N/A

Weekday Afternoon Peak Hour

Intersection		rel-of-Service n Seconds)	Delay	Requires	
	Without Development	With Development(1)	Increase	Mitigation ⁽²⁾	
Lancaster Ave & Bellevue Ave	A (0.7)	A (0.9)	+0.2	NO	
Bellevue Ave & Proposed Dwy	N/A	A (0.6)	N/A	N/A	

- (1) With-development base conditions without improvements.
- (2) Based on the difference in delay from without-development to with-development conditions, in accordance with PennDOT's level of service requirements.

Queuing Analysis

A queuing analysis was completed at the study intersections based on the HCM 6th Edition methodology. The queue lengths will not extend into adjacent intersections at any of the study intersections.

Matrices summarizing the results of the queuing analysis are provided in Table 2.



Conclusions and Recommendations

The following improvements are proposed in conjunction with the proposed development:

Site Access

Bellevue Avenue and Proposed Driveway

- Classified as a low volume driveway based on the anticipated daily traffic volumes.
- Provide one ingress lane and one egress lane for the access.
- Provide appropriate corner radius length, which will be verified based on the largest vehicle anticipated to utilize the driveway.
- Provide stop-control on the egress approach.
- Based on warrants, turn lanes are not warranted or recommended.

Off-Site Traffic Improvements

Lancaster Avenue (S.R. 0030) and Bellevue Avenue

No improvements are required or recommended.

The traffic analyses contained herein reveal that efficient access to and from the proposed development can be provided, and furthermore, site-generated traffic can be accommodated at the study area intersections.

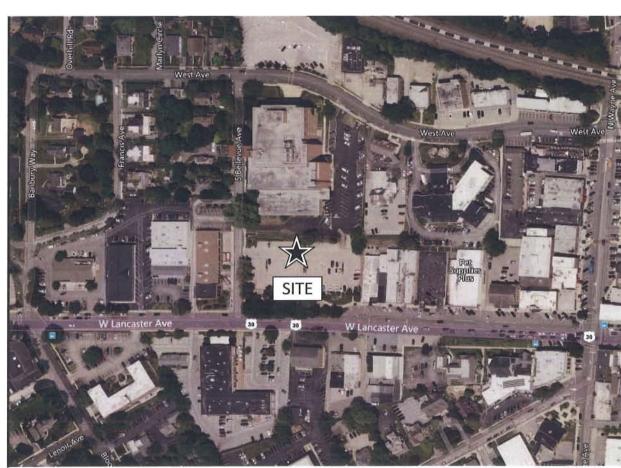




FIGURE 1 Site Location

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA



 $AREAL \cdot ORFIGUESA \cdot Living (CORCOGREYREEERS 12 \cdot AREES be \cdot Traffic and Parking (Traffic Graphics) Figure 1 \cdot Magnifer (Area) - Area (Area)$



FIGURE 2 Site Plan

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA



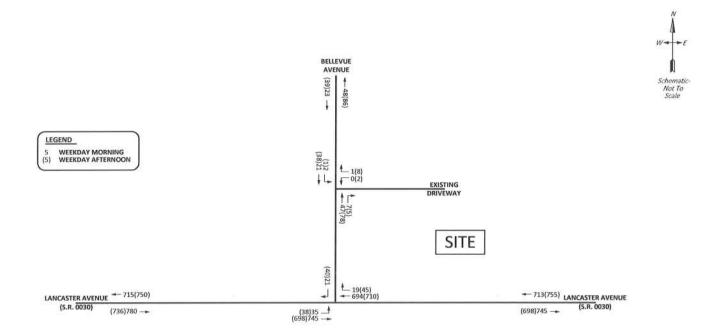


FIGURE 3A
2023 Existing Peak Hour Traffic Volumes
PROPOSED MIXED-USE DEVELOPMENT -LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA



AREAL - 08/11/2023 - FlenglCONCOGRISE2396-12 - ATRITISM - Traffic and Parking Traffic Graphics Straine 3A dwg

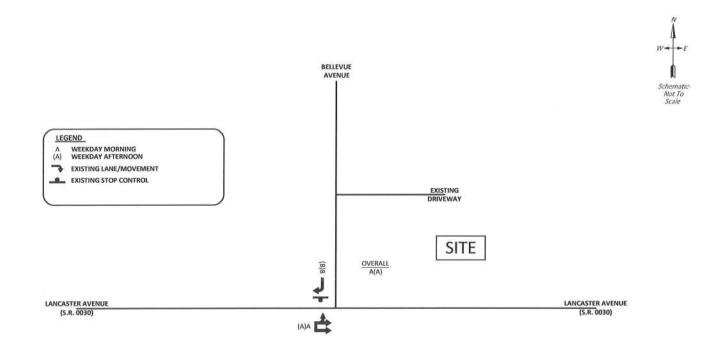
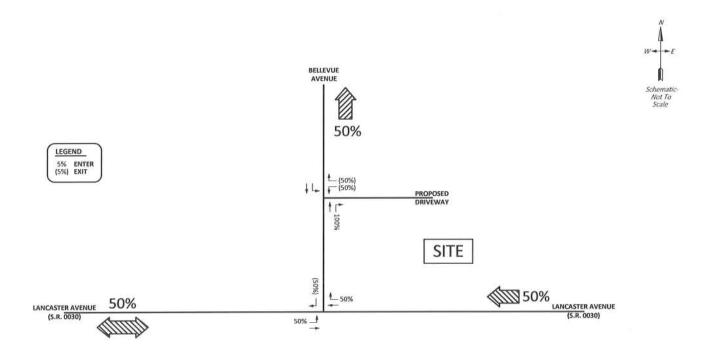


FIGURE 3B 2023 Existing Levels of Service

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA





PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



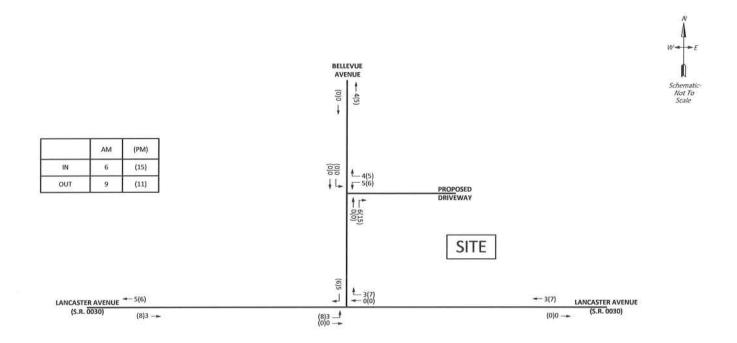


FIGURE 4B New Trip Assignment

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA



AREAL ON/11/2023 - Livrogic ONCOGR1(R22366-12 - ATAT Site - Traffic and Parking) Traffic Graphics (Vigore 48-9kg

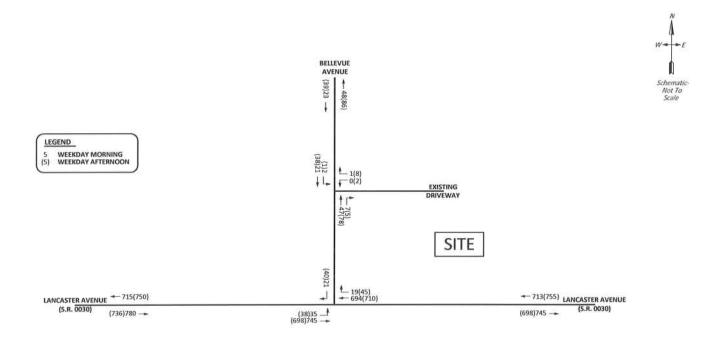
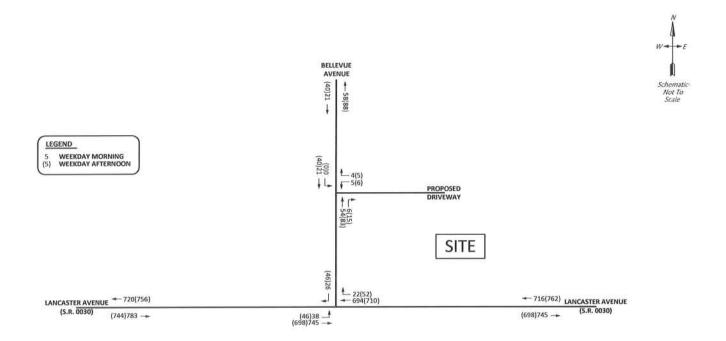


FIGURE 5A
2025 Future without Development Peak Hour Traffic Volumes
PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA





PROPOSED MIXED-USE DEVELOPMENT
LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



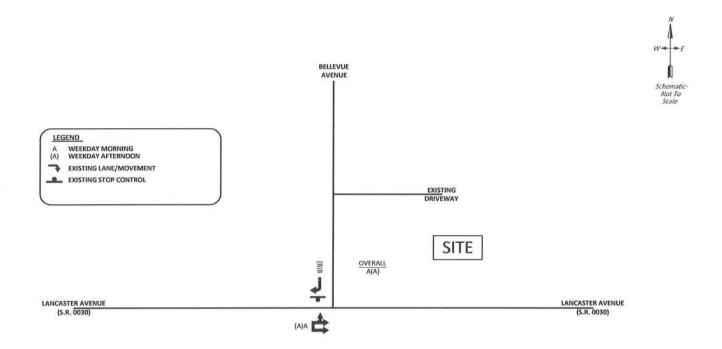


FIGURE 5C
2025 Future without Development Levels of Service
PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



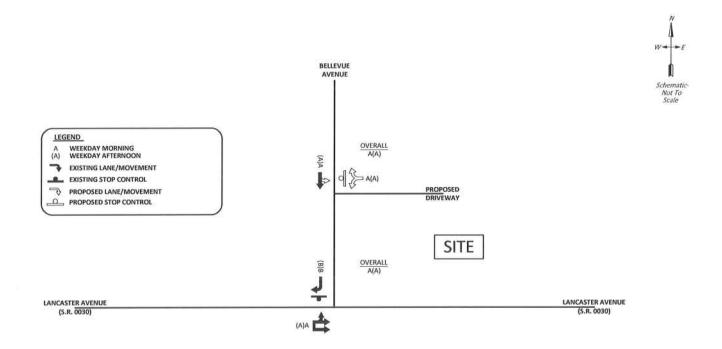


FIGURE 5D 2025 Future with Development Levels of Service

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA

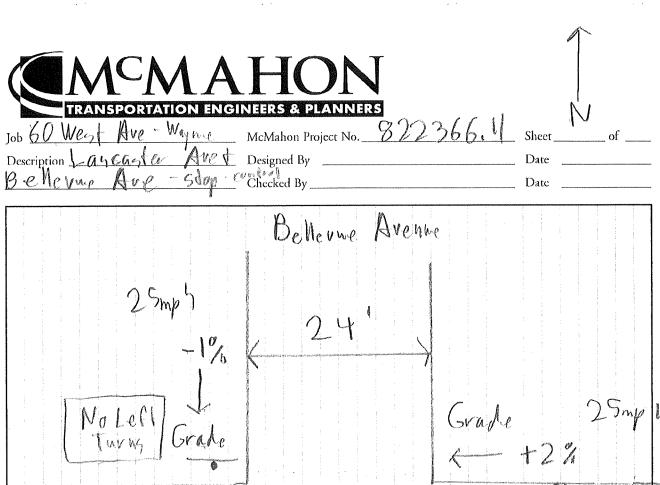




Appendix A

Intersection Sketches and Photographs

ν ⁻	φ. Ψ	• •	• •	



(GR

25mph -1% Volefil Grade	2.4	Grade	25mp 1
Laurasta Astronomicasta OUSO) 10			
25mph Grade			



Study Area: Radnor Township, Delaware County, Pennsylvania





Lancaster Avenue (S.R. 0030) and Bellevue Avenue – SB

Lancaster Avenue (S.R. 0030) and Bellevue Avenue – WB

Radnor Township, Delaware County, Pennsylvania







Lancaster Avenue (S.R. 0030) and Bellevue Avenue – EB

Radnor Township, Delaware County, Pennsylvania

v *	• •	•	



Appendix B

Turning Movement Traffic Counts

* * *	A Comment of the Comm	• •	•	



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609-706-6100 Iklein@imperialtdc.com

Count Name: 1, Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 1

	ř		Lancaster Avenu	20	1	Turr		vement I		1			Bellevue Avenue			f
		2	Eastbound	···			1/2	Westbound					Southbound	9		
Start Time	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. To
7:00 AM	0	2	95	0	97	0	120	2	0	122	0	0	2	3.	2	221
7:15 AM	0	4	131	0	135	0	133	1	17	134	0	0	0	- 1	0	269
7:30 AM	0	5	178	0	183	0	159	0	0.	159	0	0	2	- 0	2	344
7:45 AM	0	6	176	- 1	182	0	186	2	0	188	0	0	0	36	0	370
Hourly Total	0	17	580	- 29	597	0	598	5	0	603	0	0	4	Ŧ	4	120
8:00 AM	0	8	224	0	232	0	170	2	0	172	0	0	2	1.	- 2	406
8:15 AM	0	5	167	0	172	0	179	5	0	184	0	0	4	1	4	360
8:30 AM	0	- 4	126	ō.	130	0	174	3	0	177	0	0	5	- 0	5	312
8.45 AM	0	5	140	D	145	0	173	3	.0	176	0	0	4	0	4	325
Hourly Total	0	22	657	- 0	679	0	696	13	- 0	709	0	0	15	8	15	140
*** BREAK ***			(9)		34	-								- 4		
4:00 PM	0	3	164	D	167	0	174	4	0	178	0	.1	2	11	3	348
4:15 PM	0	4	192	10	196	0	175	7	O.	182	0	0	6	7	6	384
4:30 PM	0	1	186	-0	187	0	194	4	(7	198	0	0	7	U	7	39
4:45 PM	0	5	156	0	161	0	167	3	0	170	0	0	3	4	3	33
Hourly Total	0	13	698	Ď	711	0	710	18	0	728	0	1	18	12	19	145
5:00 PM	0	5	161	0	166	0	156	2	0	158	0	0	6	14	6	330
5:15 PM	0	4	196	0	200	0	142	- 11	0	153	0	0	2	5	2	358
5:30 PM	0	4	152	0	156	0	185	7	1	192	0	1	8	0	9	35
5:45 PM	0	2	164	- 0	166	0	171	6	0	177	0	0	3	- 3	3	34
Hourly Total	0	15	673	. 0	688	0	654	26	1	680	0	- 1	19	12	20	138
*** BREAK ***					1	+	+	\$3			(4		4	-	£2	
11:00 AM	0	8	190	.0	198	0	169	2	(00)	171	0	0	34	3.	4	37
11:15 AM	0	4	164	0	168	0	165	3	0	168	0	0	6	- 1	6	34
11:30 AM	0	9	180		189	0	155	4	0	159	0	0	9	- 5	9	35
11:45 AM	0	4	182	0	186	0	190	2	1	192	0	1	5	- 1	6	38
Hourly Total	0	25	716	1	741	0	679	11	1	690	0	1	24	10	25	145
12:00 PM	0	7.	183	0	190	0	165	9	1	174	0	0	6		6	37
12:15 PM	0	2	168	0	170	0	174	7	0	181	0	.1	4	3.	5	35
12:30 PM	0	6	170	D	176	0	158	5	0	163	0	0	1	1	1	34
12.45 PM	0	8	169	-0	177	0	197	7	0	204	0	0	3	Ä	3	38
Hourly Total	0	23	690		713	0	694	28	1	722	0	1	14	8	15	145
1:00 PM	0	0	1	0	1	0	0	0	. 0	0	0	0	0	0	0	- 31
Grand Total	0	115	4015	2	4130	0	4031	101	- 3	4132	0	4	94	67	98	836
Approach %	0.0	2.8	97.2	- 1		0.0	97.6	2.4	-	1+1	0.0	4.1	95.9	=	*3	14
Total %	0.0	1.4	48.0		49.4	0.0	48.2	1.2		49.4	0.0	0.0	1.1	-	1.2	

Lights	0	114	3934		4048	0	3938	101		4039	0	4	92		96	8183
% Lights	•	99.1	98.0		98.0	-	97.7	100.0		97.7		100.0	97.9		98.0	97.9
Buses	0	0	17		17	0	18	0		18	0	0	0		0	35
% Buses	-	0.0	0.4		0.4	-	0.4	0.0		0.4		0.0	0.0		0.0	0.4
Trucks	0	1	64	.,	65	0	75	0		75	0	0	2	-	2	142
% Trucks	-	0.9	1.6		1.6	-	1.9	0.0		1.8		0.0	2.1		2.0	1.7
Bicycles on Crosswalk	-	-	•	0	-			-	Ü	-		-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	6.0	-	-		-	0.0		-			1.8		-
Pedestrians		-	-	3		-		-	3	-	-	-	-	ö6	-	-
% Pedestrians	•			10-0.0	-	-	•	-	100.0	*		•	•	98.2		

Imperial
Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 lklein@imperialtdc.com

Project: Lancaster & Bellevue Municipality: Wayne, Delaware County, PA Setup: DR Location: 40.044171, -75.391275

Count Name: 1. Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 3

Turning Movement Data Plot

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609-706-6100 lklein@imperialtdc.com

Count Name: 1. Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 4

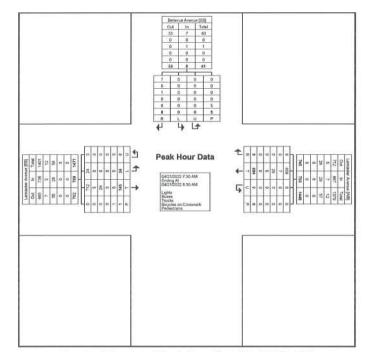
Turning Movement Peak Hour Data (7:30 AM)

					Larring	MICACI	ICHT L C	an i loui	Data (1	. JU MIVI)						27
		1	Lancaster Avenu Eastbound	ia				Lancaster Avenu Westbound	е				Bellevue Avenue Southbound	9		
Start Time	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:30 AM	0	5	178	13	183	0	159	0	0	159	0	.0	2	0	2	344
7:45 AM	0	6	176	- 4	182	0	186	2	- (1)	188	0	0	0	- 3	0	370
8:00 AM	0	8	224		232	0	170	2		172	0	0	2		2	406
8:15 AM	0	5	167		172	0	179	5		184	0	0	4	1	4	360
Total	0	24	745	3.	769	0	694	9	0.0	703	0	0	8	6.	8	1480
Approach %	0.0	3.1	96.9			0.0	98.7	1.3		14	0.0	0.0	100.0	-	100	-
Total %	0.0	1.6	50.3		52.0	0.0	46.9	0.6		47.5	0.0	0.0	0.5	-	0.5	
PHF	0.000	0.750	0.831		0.829	0,000	0.933	0.450		0.935	0.000	0.000	0.500	-	0.500	0.911
Lights	0	24	712		736	0	658	9		667	0	0	7		7	1410
% Lights	327	100.0	95.6		95.7	*	94.8	100.0		94.9	- 12	+	87.5		87.5	95.3
Buses	0	0	5		5	0	7	0		7	0	.0	0		0	12
% Buses		0.0	0.7		0.7	-	1.0	0.0		1.0			0.0		0.0	0.8
Trucks	0	0	28		28	0	29	0		29	0	0	1		1	58
% Trucks	125	0.0	3.8		3.6	<u> </u>	4.2	0.0		4.1	- 2	- 2	12.5		12.5	3.9
Bicycles on Crosswalk	1.47	a a	4	10		*	20	1.0	0	- 1	94	-	43	0	1.67	
% Bicycles on Crosswalk	245	-	19	0.0		23	衰	1.65	-	19	8:	*		0.0	Réc	194
Pedestrians	(+):	-	1.6			*	¥7		0	-		146	-	5	(+)	
% Pedestrians	8 300			100.0	-							1+1	-	100.0	3+2 B	

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Count Name: 1, Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 5

Project: Lancaster & Bellevue Municipality: Wayne, Delaware County, PA Setup: DR Location: 40.044171, -75.391275



Turning Movement Peak Hour Data Plot (7:30 AM)

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Count Name: 1, Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 6

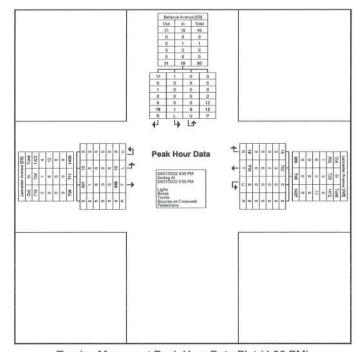
Turning Movement Peak Hour Data (4:00 PM)

	72				1 641 1 111 15	J INIONOIL	TOTAL OF	art i ioui i	Dutte (T	.00 1 181)						
		9	Lancaster Avenu Eastbound	in	4.0000.0000			Lancaster Avenu Westbound	Ð	*			Bellevue Avenue Southbound	9		
Start Time	U-Tum	Left	Thru	Peds	App. Total	U-Tum	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:00 PM	0	3	164	- 0	167	0	174	4	0	178	0	- 1	2	1	3	348
4:15 PM	0	4	192	.0	196	0	175	7	-41	182	0	0	6	T	6	384
4:30 PM	0	1	186	- 0	187	0	194	4	0	198	0	0	7	- 0:	7	392
4:45 PM	0	5	156	ò	161	0	167	3	10	170	0	0	3	ă.	3	334
Total	0	13	698	- 0	711	0	710	18	.0:	728	0	1	18	12	19	1458
Approach %	0.0	1.8	98.2	-	-	0.0	97.5	2.5			0.0	5.3	94.7	-		- 4
Total %	0.0	0.9	47.9		48.8	0.0	48.7	1.2	-	49.9	0.0	0.1	1.2		1.3	
PHF	0.000	0.650	0.909		0.907	0.000	0.915	0.643		0.919	0.000	0.250	0.643	-	0.679	0.930
Lights	0	13	691		704	0	702	18		720	0	1	17	2	18	1442
% Lights	7.0	100.0	99.0		99.0	1	98.9	100.0		98.9	52	100.0	94.4		94.7	98.9
Buses	0	0	.1		3	0	3	0		3	0	0	0		0	4
% Buses	0.00	0.0	0.1		0.1		0.4	0.0		0.4		0.0	0.0		0.0	0.3
Trucks	0	0	6		6	0	5	0		5	0	0	1		1	12
% Trucks	720	0.0	0.9		0.8		0.7	0.0		0.7		0.0	5.6		5.3	0.8
Bicycles on Crosswalk		-	9	- 0		2.	+		0	4	- 4		1	0	7.5	
% Bicycles on Crosswalk	-:+:-	54	99		(A)		£(4	19	34)		141	0.0	1+1	- 4
Pedestrians	1000	-		- 0		*	+5		0			×	14.0	12		74
% Pedestrians	(- 5±5					-	+1	100		- D+ 1	-	-		100.0		

Imperial TRAFFICE BOATA COLLECTION

Project: Lancaster & Bellevue Municipality: Wayne, Delaware County, PA Setup: DR Location: 40.044171, -75.391275 Imperial Traffic & Data Collection www.imperialtdc.com PO BOX 4637
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Count Name: 1. Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 7



Turning Movement Peak Hour Data Plot (4:00 PM)

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ITAFFIC BANA OCCIDENTON
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609-706-6100 Iklein@imperialtdc.com

Count Name: 1, Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 8

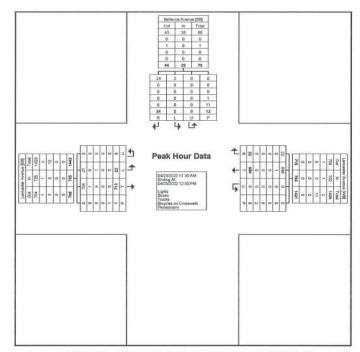
Turning Movement Peak Hour Data (11:30 AM)

19	1				rurning	Movem				.SU AIVI)			ALION NEW SACRETOR			1
			Lancaster Avenu Eastbound	0				Lancaster Avenu Westbound	0				Bellevus Avenue			
Start Time	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Southbound Right	Peds	App. Total	Int. Total
11:30 AM	0	9	180	1:000	189	D.	155	4	1.606	159	0	0	9	5	App. Total	357
11:45 AM	0	4	182		186	0	190	2	- 1	192	0	1	5	à:	6	384
12:00 PM	0	7	183	0	190	0	165	9		174	0	0	6	1	6	370
12:15 PM	0	2	168	Ü	170	0	174	7		181	0	1	4		5	356
Total	0	22	713	14	735	0	684	22	2	706	0	2	24	12	26	1467
Approach %	0.0	3.0	97.0	-	4.	0.0	96.9	3.1	54	18	0.0	7.7	92.3		741	
Total %	0.0	1.5	48.6	A	50.1	0.0	46.6	1.5		48.1	0.0	0.1	1.6	100	1.8	
PHF	0.000	0.611	0.974		0.967	0.000	0.900	0.611		0.919	0.000	0.500	0.667	-	0.722	0.955
Lights	0	21	704		725	0	680	22	4	702	0	2	24		26	1453
% Lights	20	95.5	98.7		98,6	4	99.4	100.0		99.4	- 8	100.0	100.0		100.0	99.0
Buses	0	0	1		1	0	1	0	- 5	1	0	0	0		0	2
% Buses	240	0.0	0.1		0.1	+:	0.1	0.0		0.1	+	0.0	0.0	100	0.0	0.1
Trucks	0	1	8		9	0	3	0	3	3	0	0	0		0	12
% Trucks		4,5	1.1		1.2		0.4	0.0		0.4		0.0	0.0		0.0	0.8
Bicycles on Crosswalk	5 L	72	12	0	- 27	20	7.5	- 25	0	- 2			*	1		- 1
% Bicycles on Crosswalk	341	19	12	0.0	100	40	160	Ge C	0.0	72	- 0	4	¥1	8.5	49	- 52
Pedestrians	240	9	- 8	1	8	+3	5.65	79.1	2	*			- 20	11	545	9
% Pedestrians	. 4			100.0					700.0		· ·	**	+1	91.7	(+)	14

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609-706-6100 lklein@imperialtdc.com

Project: Lancaster & Bellevue Municipality: Wayne, Delaware County, PA Setup: DR Location: 40.044171, -75.391275 Count Name: 1. Lancaster Avenue and Bellevue Avenue Site Code: 1 Start Date: 04/21/2022 Page No: 9



Turning Movement Peak Hour Data Plot (11:30 AM)



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609-706-6100 Iklein@imperialtdc.com

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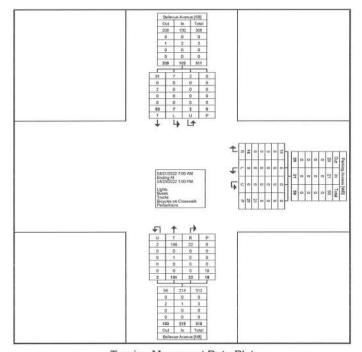
Start Time			Parking Access Westbound			Turr		Bellevue Avenus Northbound			25.51.75		Ballevue Avenue Southbound	i.		
Start Time	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
7:00 AM	0	0	0	- 1	0	0	4	0	- 0	4	0	0	2	0	2	6
7:15 AM	0	0	0	- 1	0	0	4	1	0.	5	0	0	0	tt:	0	5
7:30 AM	0	0	0	U	0	0	4	1	.0	5	0	0	2	0	2	7
7:45 AM	0	0	0	74	0	0	7	1	. 0	8	0	1	0	0	1	9
Hourly Total	0	0	0	.5	0	0	19	3	0	22	0	.1	4	0.	5	27
8:00 AM	0	0	0	.0	0	.0	9	1	0	10	0		2		3	13
8:15 AM	0	0	0	- 0	0	0	8	2	1	10	0	0	4		4	14
8:30 AM	0	0	0		0	0	4	3		7	0	0	5	0	5	12
8:45 AM	0	0	.1	2	1	0	7	1	0	8	0	1	4	0	5	14
Hourly Total	0	0	1	2	1	0	28	7	6	35	0	2	15	1.	17	53
*** BREAK ***	-	Des	< 4		· · ·	*	9	88		390	194	98		- X	-	393
4:00 PM	0	- 1	2	n	3	0	6	1	1	7	0	0	2	0	2	12
4:15 PM	0	0	1	- 1	1	0	11	0	- 5	- 11	0	0	8	- 0	8	20
4:30 PM	0	0	.1	1.0	1	0	5	0	7	5	0	0	5	Ü	5	11
4:45 PM	0	0	0	73	0	0	7	0	3	7	0	0	3	2	3	10
Hourly Total	0	1	4	3	5	0	29	1	10	30	0	0	18	2	18	53
5:00 PM	0	0	4	0	4	0	7	0	0.	7	0	0	6	0:	6	17
5:15 PM	0	1	3	.0-	4	0	- 11	4	0.	15	0	1	1	0:	2	21
5:30 PM	0	1	0	1	1	1	10	0	0	11	0	0	6	0	6	18
5:45 PM	0	0	1	0	1	0	7	1	0.	8	1	0	3	U.	4	13
Hourly Total	0	2	8	1	10	1	35	5	0.	41	1	1	16	0	18	69
*** BREAK ***	-	100			- 1		(4)	91		(9)	15	96	· ·	7	90	190
11:00 AM	0	0	1	- 1	- 1	1	9	0	0	10	1	1	4	- 0	6	17
11:15 AM	0	0	0	7	0	0	6	1	- 0	7	0	0	5	0	5	12
11:30 AM	0	0	1	- 1	1	0	12	- 1	10	13	0	1	9	1	10	24
11:45 AM	0	0	0	1	0	0	6	0	0:	6	0	0	6	0.	6	12
Hourly Total	0	0	2	:ê	2	1	33	2	Ü	36	1	2	24	T	27	65
12:00 PM	0	0	0	.0	0	0	13	3	0	16	0	0	6	0	6	22
12.15 PM	. 0	1	0	- 1	1	0	9	0	- 1	9	0	1	4	13.	5	15
12:30 PM	0	0	0	4	0	0	11	0	- 4	11	0	0	3	9	3	14
12:45 PM	0	1	1	6	2	0	14	1	1.	15	0	0	3	- 0	3	20
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Grand Total	0	5	16	21	21	2	191	22	10	215	2	7	93	6	102	338
Approach %	0.0	23.8	76.2		-	0.9	88.8	10.2			2.0	6.9	91.2		102	500
Total %	0.0	1.5	4.7		6.2	0.6	58.5	6.5		63.6	0.6	2.1	27.5		30.2	
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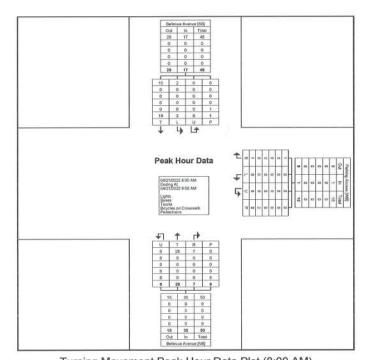
Turning Movement Data Plot

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Start Time			Parking Access Westbound		200000000000000000000000000000000000000			Bellevue Avenu Northbound					Ballevua Avanu Southbound	í		
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8:15 AM	0	0	0		0	0	8	2	T.	10	0	0	4	T	4	14
8:30 AM	0	0	0	NO.	0	0	4	3	6.	7	0	0	5	()	5	12
8:45 AM	0	0	1		1	0	7	1	- 12	8	0	1	4	Ω	5	14
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Lights	0	0	1		1	0	28	7	-	35	0	2	15		17	53
% Lights			100.0		100.0	- 2	100.0	100.0		100.0	-	100.0	100.0		100.0	100.0
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0
% Buses			0.0		0.0	-	0.0	0.0		0.0	-	0.0	0.0		0.0	0.0
Trucks	0	0	0		0	0	0	0		.0	0	0	0		0	0
% Trucks			0.0		0.0	19	0.0	0.0		0.0		0.0	0.0		0.0	0.0
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Turning Movement Peak Hour Data Plot (8:00 AM)

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

				Latinity	INIOVELL				.00 1 101)						ű
		Parking Access Westbound					Bellevue Avenue Northbound					Bellevue Avenue Southbound			
U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
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0	1	0	1	- 1	1	10	0	D.	- 11	0	0	6	D.	6	18
0	0	1	0.	1	0	7	1	0	8	1	0	3	0.	4	13
0	2	8	15	10	4	35	5	0	41	1	1	16	0	18	69
0.0	20.0	80.0		E1	2.4	85.4	12.2	-	8	5.6	5.6	88.9	-	9	+
0.0	2.9	11.6	- t-	14.5	1.4	50.7	7.2		59.4	1.4	1.4	23.2	- 1	26.1	*
0.000	0.500	0.500	T.	0.625	0.250	0.795	0.313	+	0.683	0.250	0.250	0.667		0.750	0.821
0	2	8		10	1	35	5		41	1	1	16		18	69
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0	0	0		0	0	0	0		0	0	0	0		0	0
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Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 8

Turning Movement Peak Hour Data (11:30 AM)

			Parking Access Westbound		ranning	Wovem		Bellevus Avenus Northbound		.SU AIVI)			Ballevue Avenu Southbound	•		
Start Time	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
11:30 AM	0	0	1		1	0	12	-1	10	13	0	10	9	1	10	24
11:45 AM	0	0	0	1	0	0	6	0	n	6	0	0	6	0	6	12
12:00 PM	0	0	0	0.	0	0	13	3		16	0	0	6	D.	6	22
12:15 PM	0	1	0	1	- 1	0	9	0	- 1	9	0	1	4	- 0	5	15
Total	0	1	1	35	2	0	40	4	W.	44	0	2	25	- 1	27	73
Approach %	0.0	50.0	50.0			0.0	90.9	9.1	Ų	*	0.0	7.4	92.6	-		-
Total %	0.0	1.4	1.4	-	2.7	0.0	54.8	5.5	7.	60.3	0.0	2.7	34.2		37.0	
PHF	0.000	0.250	0.250	+	0.500	0.000	0.769	0.333	100	0.688	0.000	0.500	0.694		0.675	0.760
Lights	0	1	1_		2	0	39	4		43	0	2	25		27	72
% Lights	22	100.0	100.0		100.0	127	97.5	100.0		97.7	20	100.0	100.0		100.0	98.6
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0
% Buses	78	0.0	0.0		0.0	(4)	0.0	0.0	7.	0.0	12	0.0	0.0		0.0	0.0
Trucks	0	0	0		0	0	1	0		1	0	0	0		0	1.
% Trucks		0.0	0.0		0.0	371	2.5	0.0		2.3		0.0	0.0		0.0	1.4
Bicycles on Crosswalk	- 2	2	<u> </u>	0			-		- 0				-	0		
6 Bicycles on Crosswalk	19	-	The second	0.0	j	24	14	- 12	0.0	\$3	23		320	0.0	- 12	
Pedestrians	(8)	*	*	9	1.60	241	j.	14	4	¥1	- 27	4.5		1		- 4
% Pedestrians				100.0			12		100.0	4:	47	-	- 01	100.0	- A	.51

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Turning Movement Peak Hour Data Plot (11:30 AM)



Appendix C

2023 Existing Volume Development

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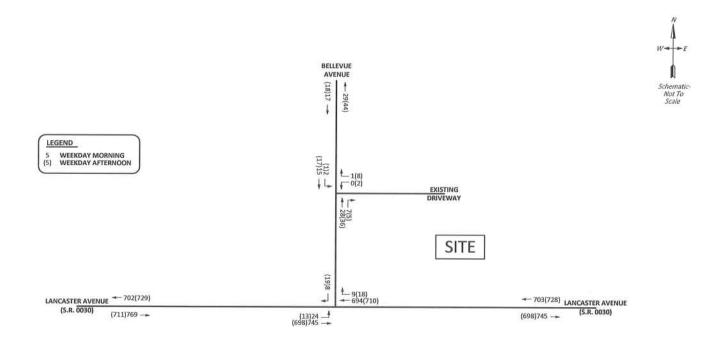


FIGURE C1
2022 Peak Hour Traffic Volumes
PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



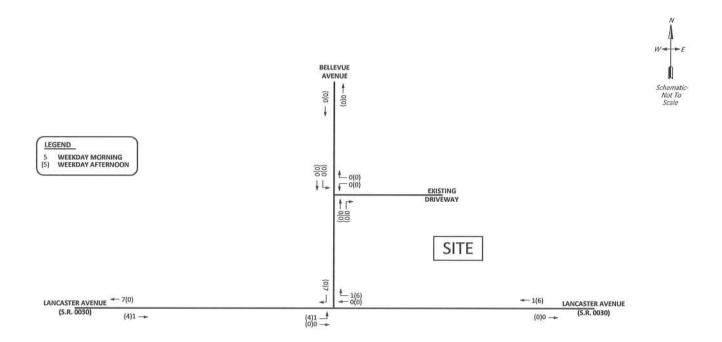


FIGURE C2 Balancing Adjustments

PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



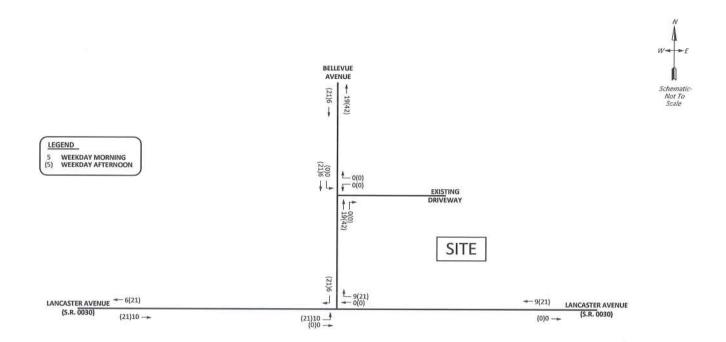


FIGURE C3 201 W Lancaster Avenue Trip Assignment

PROPOSED MIXED-USE DEVELOPMENT - LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA



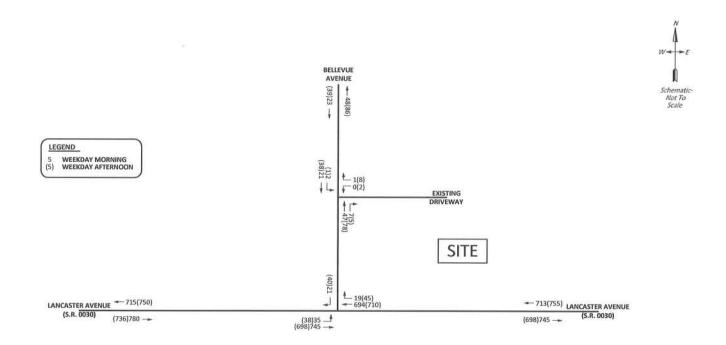


FIGURE C4
2023 Existing Peak Hour Traffic Volumes with Adjustments
PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA





Appendix D

Existing Site Trips Relocated

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7		

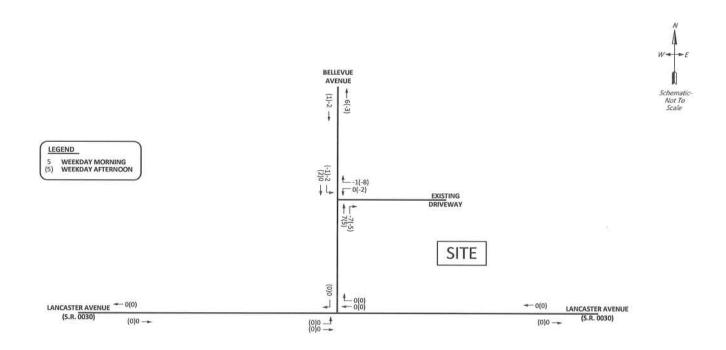


FIGURE D1
2025 Future with Development - Existing Site Trips Relocated
PROPOSED MIXED-USE DEVELOPMENT LANCASTER AVENUE
RADNOR TOWNSHIP, DELAWARE COUNTY, PA



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Appendix E

PennDOT M-950S Form

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M-950S (3-04) PENNDOT

Bellevne Avenue + Proposed Driveway

DRIVEWAY SIGHT DISTANCE MEASUREMENTS
(FOR LOCAL ROADS, USE PENNDOT PUB 70)

APPLICANT			APPLICATION NO.
	SEG.	OFFSET	LEGAL SPEED LIMIT 25 mp4 DATE 4/11/22
FOR DEPARTA	MENT USE ONLY: Sat	fe-Running Speed	85th Percentile Speed
A			
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DISTANCI FSD=	E REQUIRED Requive Decrive THE MAXIMUM LENGTINUOUS	H OF ROADWAY ALONG WI	DRIVER'S EYE 10' EDGE OF TRAVEL LANE DISTANCE REQUIRED Required 148 FSD= Deglered 195 HICH A DRIVER AT A DRIVEWAY LOCATION E APPROACHING ON THE ROADWAY.
		=======================================	250t GRADE — 1 % 3.50' 3.50'
CON	TINUOUSLY SEE THE F	REAR OF A VEHICLE WHICH	DISTANCE REQUIRED Required - 148' FSD= Required - 148' WHICH A DRIVER ON THE ROADWAY CAN H IS LOCATED IN THE DRIVER'S TRAVEL LANE A LEFT TURN INTO A DRIVEWAY.
(3.50 ¹)	950 GRADE	Sight Line	3.50°
		Ì	DISTANCE REQUIRED Required - 14 FSD= Verical - 19

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

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Appendix F

Capacity/Level-of-Service Methodology

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CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

The detailed capacity/level-of-service analysis contained in this transportation impact study was performed in accordance with the standard techniques contained in the *Highway Capacity Manual 6th Edition*. By definition, capacity represents "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions." The level at which an intersection or a uniform section of a lane or roadway function can be expressed in terms of a level of service. Level of service (LOS) is defined as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."

Stop-Controlled Intersections

At unsignalized stop-controlled intersections, such as two-way stop-controlled (TWSC) or all-way stop-controlled (AWSC), a methodology for evaluating the relative functioning of these intersections is based upon the control delay. For these types of unsignalized intersections, the analysis of the control delay is based upon the following data:

- Number and configuration of lanes on each approach;
- Percentage of heavy vehicles on each approach;
- Demand flow rate for each entering vehicular movement and pedestrian crossing movement;
- Unique geometric factors such as, channelization aspects; two-way left-turn lanes, raised or striped median storage; approach grades, flared approaches on the minor street; and upstream signals within 0.25 miles.

At TWSC intersections, only drivers on the minor street approaches are required to stop before proceeding into the intersection and left-turning drivers from the major street may have to yield to on-coming major street through or right-turning traffic, but are not required to stop in the absence of on-coming traffic. The capacity at stop-controlled legs is based primarily on three factors: the distribution of gaps in the major stream, driver judgment in selecting the gaps, and the follow-up headways required by each driver in a queue.

At AWSC intersections, every vehicle is required to stop at the intersection before proceeding, and as a result, the decision to proceed is a function of the traffic conditions on the other approaches. Each driver proceeds only after determining that no vehicles are currently in the intersection and that it is the driver's turn to proceed. Capacity at an AWSC intersection is described by the saturation headway or time between departures of successive vehicles on a given approach for a particular case assuming a continuous queue; departure headway or the average time between departures of successive vehicles on a given approach accounting for the probability of each possible case; and service time or the average time sent by a vehicle in first position waiting to depart.

At both TWSC and AWSC intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. For TWSC intersections, the level of service is not calculated for major-street approaches or for the intersection as a whole; however, the intersection-wide level of service is calculated for AWSC intersections. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for TWSC and AWSC intersections.

Control Delay	LOS by Volume-	to-Capacity Ratio
(Sec/Veh)	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 15	В	F
> 15 – 25	С	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

Signalized Intersections

At three or four-legged signalized intersections, a methodology for evaluating the capacity and quality of service provided to road users traveling through the signalized intersection. For signalized intersections, the level of service can be characterized for the entire intersection, each approach, and each lane group. The level of service is based upon the control delay and volume-to-capacity ratio. The delay quantifies the increase in travel time due to the traffic signal control and is a surrogate measure of driver discomfort and fuel consumption, while the volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group. Input data in determining the delay and volume-to-capacity ratio include:

- Demand flow rate for each entering vehicular movement and pedestrian crossing movement, including right-turn on red volumes and percent of heavy vehicles;
- Initial queue for each lane group;
- Number and configuration of lanes on each approach;
- Type of signal control and phase sequence;
- Allocation of minimum/maximum green times and clearance intervals (Yellow plus All Red phases); and
- Phase recall.

At signalized intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for signalized intersections.

Control Delay	LOS by Volume-	to-Capacity Ratio
(Sec/Veh)	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 20	В	F
> 20 – 35	С	F
> 35 – 55	D	F
> 55 – 80	Е	F
> 80	F	F



Appendix G

Existing

Capacity/Level-of-Service

Analysis Worksheets

• •	• •	. *	•

	1	→	+	4	1	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		414	ተ ጉ			7
Traffic Volume (vph)	35	745	694	19	0	21
Future Volume (vph)	35	745	694	19	0	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	12	12
Grade (%)		-1%	2%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25			170	25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor		0.505050	7.57	104011	18.55	1000
Frt			0.996			0.865
Flt Protected		0.998				0,000
Satd. Flow (prot)	0	3084	3001	0	0	1385
Flt Permitted		0.998				
Satd. Flow (perm)	0	3084	3001	0	0	1385
Link Speed (mph)		25	25	7.6	25	1000
Link Distance (ft)		930	942		649	
Travel Time (s)		25.4	25.7		17.7	
Confl. Peds. (#/hr)	5		2011	5	33.46	1
Confl. Bikes (#/hr)				,		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	5%	0%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)		,		U	U	U
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	38	819	763	21	0	23
Shared Lane Traffic (%)	00	010	100	21	U	20
Lane Group Flow (vph)	0	857	784	0	0	23
Sign Control	U	Free	Free	U	Stop	20
11.00		1100	1100		Otop	
Intersection Summary	Charle at				CE COL	HOUSE.
Area Type:	Other					

Area Type:

Other

Control Type: Unsignalized

	4 5 8	E1 151	111	750.00	5150
0.6					
ERI	ERT	WRT	MED	CDI	SBR
LDL			VVDK	ODL	SBR
25			10	Λ	21
					21
					1
					Stop
					None
			None		
		0	3. 8		0
					- 04
					91
_					13
38	819	763	21	0	23
lajor1	N	Najor2	1	Ainor2	
789	0	-	0	18	398
	-	-			
-			-		-
3.9					7.4
_	-	-	-	-	-
		577	_		3
					622
	150				022
	-				-
- 5				U	
917					610
					619
				100	95.0
		-			-
(0)	1,50	-		1.5	-
EB		WB	Train !	SB	100
0.8		0		11	
1,000					
				HIN	
		100 00000		W MINISTER OF	auto a co
		EBT	WBT	WBR S	
	817	-	-		619
	0.047	-	-	-	0.037
	9.6	0.4	1	-	11
				70	11 B 0.1
	# 91 0 38 14ajor1 789 3.9 - 2.4 821 817 EB 0.8	# - 01 91 91 0 4 38 819 Major1 N 789 0 3.9 2.4 - 821 817 EB 0.8	EBL EBT WBT 35 745 694 35 745 694 5 0 0 Free Free Free - None 1 2 91 91 91 0 4 5 38 819 763 Major1 Major2 789 0 3.9 2.4 821 817	EBL EBT WBT WBR 35 745 694 19 35 745 694 19 5 0 0 5 Free Free Free Free - None - None 1 2 - 91 91 91 91 0 4 5 0 38 819 763 21 Major1 Major2 M 789 0 - 0 3.9 2.4 821 817 817	## Company Com

	1	→	←	1	1	1
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ተ ጉ	ተቡ			7"
Traffic Volume (vph)	38	698	710	45	0	40
Future Volume (vph)	38	698	710	45	0	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	12	12
Grade (%)		-1%	2%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25			-	25	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor				(4.6-4)		1100
Frt			0.991			0.865
Flt Protected		0.997				0,000
Satd. Flow (prot)	0	3168	3102	0	0	1490
Flt Permitted	1,70	0.997	20111112			
Satd. Flow (perm)	0	3168	3102	0	0	1490
Link Speed (mph)	Andrea	25	25		25	
Link Distance (ft)		930	942		649	
Travel Time (s)		25.4	25.7		17.7	
Confl. Peds. (#/hr)	12			12		
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	1%	1%	0%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						Maria C
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	41	751	763	48	0	43
Shared Lane Traffic (%)			,,,,,			10
Lane Group Flow (vph)	0	792	811	0	0	43
Sign Control		Free	Free		Stop	10
		1000000			Otop	
Intersection Summary		Sec. 10.				120
Area Type:	Other					

Area Type: Of Control Type: Unsignalized

Intersection			-vieti			
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LOL	414	↑ ↑	WOR	ODL	JOEK 1
	38			45	0	40
Traffic Vol, veh/h	38	698 698	710 710		0	
Future Vol, veh/h	12		710	45	0	40
Conflicting Peds, #/hr		0		12	O Cton	O
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		None	7	*10.000	-	None
Storage Length	-	-	-	7.	-	0
Veh in Median Storage,		0	0		0	
Grade, %	-	-1	2	-	-1	150
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	1	1	0	0	5
Mvmt Flow	41	751	763	48	0	43
Major/Minor N	lajor1		Major2	ħ	Minor2	J 2 E
CALCULATION OF THE PARTY OF THE						//10
Conflicting Flow All	823	0	-	0		418
Stage 1	-	-	-	-	-	-
Stage 2	- 0.0	-	-	-		7.0
Critical Hdwy	3.9	-		- 3	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-			-	
Follow-up Hdwy	2.4	-	-	-	-	2.9
Pot Cap-1 Maneuver	799		-	-	0	634
Stage 1	2	-	-	4	0	•
Stage 2	-		4	-	0	
Platoon blocked, %		-	-	- 1		
Mov Cap-1 Maneuver	790	- 1		- 1	-	627
Mov Cap-2 Maneuver	7	-	-	-	-	-
Stage 1	-		4	-	-	-
Stage 2	2	-	-	-	-	-
American	CD.		VA/EX		CD.	
Approach	EB		WB	49.94	SB	
HCM Control Delay, s	0.9		0		11.2	
HCM LOS					В	
Minor Lane/Major Mvmt	18 21	EBL	EBT	WBT	WBR S	SBI n1
Capacity (veh/h)		790	-	4401	VVDIX	627
HCM Lane V/C Ratio		0.052				0.069
			- 0.4	2		
HCM Long LOS		9.8	0.4		-	11.2
HCM Lane LOS		A	Α	2	12	В
HCM 95th %tile Q(veh)		0.2	-		17 <u>4</u> 2	0.2



Appendix H

2025 Future without Development
Capacity/Level-of-Service
Analysis Worksheets



1: Lancaster Aven	ue & Be	llevue	Avenu	ie			Weekday Morning Peak Hour
	•	\rightarrow	+	1	1	4	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		414	1			7"	
Traffic Volume (vph)	35	745	694	19	0	21	
Future Volume (vph)	35	745	694	19	0	21	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	10	10	10	10	12	12	
Grade (%)		-1%	2%		-1%		
Storage Length (ft)	0			0	0	0	
Storage Lanes	0			0	0	1	
Taper Length (ft)	25				25		
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	
Ped Bike Factor		1803065					
Frt			0.996			0.865	
Flt Protected		0.998					
Satd. Flow (prot)	0	3084	3001	0	0	1385	
Flt Permitted		0.998					
Satd. Flow (perm)	0	3084	3001	0	0	1385	
Link Speed (mph)		25	25		25		
Link Distance (ft)		930	942		649		
Travel Time (s)		25.4	25.7		17.7		
Confl. Peds. (#/hr)	5			5		1	
Confl. Bikes (#/hr)							
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	0%	4%	5%	0%	0%	13%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	38	819	763	21	0	23	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	857	784	0	0	23	
Sign Control		Free	Free		Stop		
Intersection Summany			-				

Intersection Summary

Area Type: Other Control Type: Unsignalized

Intersection	E 180	15315	100			
Int Delay, s/veh	0.6					
-3.03		-	11/20	14400	651	000
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		41>	1			7
Traffic Vol, veh/h	35	745	694	19	0	21
Future Vol, veh/h	35	745	694	19	0	21
Conflicting Peds, #/hr	5	0	0	5	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None		None		
Storage Length		: -	: - :	进	75	0
Veh in Median Storage,	# -	0	0	-	0	-
Grade, %	-	-1	2	7.	-1	i Tali
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	4	5	0	0	13
Mvmt Flow	38	819	763	21	0	23
Main Miles	d and a suit		8-1-0		N	
The second secon	lajor1		Major2		Ainor2	
Conflicting Flow All	789	0		0	17	398
Stage 1		17.	-	- 7	15	7
Stage 2	7			π.		1.T.
Critical Hdwy	3.9		- 5		0.75	7.4
Critical Hdwy Stg 1	5	10.7	-	77.	77	170
Critical Hdwy Stg 2	7	371		1	127	-
Follow-up Hdwy	2.4		-	-	1.5	3
Pot Cap-1 Maneuver	821	-	-		0	622
Stage 1	-	-		-	0	175
Stage 2	-		-	-	0	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	817	-	-			619
Mov Cap-2 Maneuver	-	-	-			010
Stage 1					37.53	
					-	-
Stage 2	7.		17.1		-	
Approach	EB		WB		SB	
HCM Control Delay, s	0.8		0		11	
HCM LOS					В	
		-	1212	1774		
Minor Lane/Major Mvmt		EBL	EBT	WBT	WBR S	
Capacity (veh/h)		817		4		619
HCM Lane V/C Ratio		0.047	-	μ.	-	0.037
HCM Control Delay (s)		9.6	0.4	-		11
HCM Lane LOS		Α	Α	*	-	В
HCM 95th %tile Q(veh)		0.1	-	1 5	-	0.1

Weekday Afternoon Peak Hour

•	\rightarrow	4		1	1
EBL	EBT	WBT	WBR	SBL	SBR
	41>	† 13-			7
38	698	710	45	0	40
38	698	710	45	0	40
1800	1800	1800	1800	1800	1800
10	10	10	10	12	12
	-1%	2%		-1%	
0			0	0	0
0			0	0	1
25				25	
0.95	0.95	0.95	0.95		1.00
		0.991			0.865
	0.997	non-Pittin			
0	3168	3102	0	0	1490
	0.997				
0	3168	3102	0	0	1490
	25	25		25	
	930	942		649	
	25.4	25.7			
12			12		
0.93	0.93	0.93	0.93	0.93	0.93
100%	100%	100%	100%	100%	100%
0%	1%	1%		0%	5%
					0
					THE ST
	0%	0%		0%	
41			48	0	43
	7.50.11				
0	792	811	0	0	43
-	Free	Free		Stop	
		25371			
Other					
	38 38 1800 10 0 0 25 0.95	38 698 38 698 1800 1800 10 10 -1% 0 0 25 0.95 0.95 0.997 0 3168 0.997 0 3168 25 930 25.4 12 0.93 0.93 100% 100% 0% 1% 0 0 0% 41 751 0 792 Free	38 698 710 38 698 710 38 698 710 1800 1800 1800 10 10 10 -1% 2% 0 0 0 25 0.95 0.95 0.95 0.997 0 3168 3102 0.997 0 3168 3102 25 25 930 942 25.4 25.7 12 0.93 0.93 0.93 100% 100% 0% 1% 1% 0 0 0 0% 41 751 763 0 792 811 Free Free	38 698 710 45 38 698 710 45 1800 1800 1800 1800 10 10 10 10 -1% 2% 0 0 0 0 0 25 0.95 0.95 0.95 0.95 0.997 0 3168 3102 0 0.997 0 3168 3102 0 0.997 0 3168 3102 0 25 25 930 942 25.4 25.7 12 12 0.93 0.93 0.93 0.93 100% 100% 100% 0% 1% 1% 0% 0 0 0 0 0% 0% 0% 41 751 763 48 0 792 811 0 Free Free	38 698 710 45 0 38 698 710 45 0 1800 1800 1800 1800 1800 10 10 10 10 10 12 -1% 2% -1% 0 0 0 0 0 0 0 0 0 0 25 25 0.95 0.95 0.95 0.95 1.00 0 0,997 0 3168 3102 0 0 0.997 0 3168 3102 0 0 0.997 0 3168 3102 0 0 0.997 0 3168 3102 0 0 0.997 1 12 12 0.93 0.93 0.93 0.93 0.93 100% 100% 100% 100% 100% 0% 1% 1% 0% 0% 0 0 0 0 0 0 792 811 0 0 Free Free Stop

Intersection	10		Circ S			
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LUL	414	1	AAISIA	ODL	7F
Traffic Vol, veh/h	38	698	710	45	0	40
Future Vol, veh/h	38	698	710	45	0	40
Conflicting Peds, #/hr	12	0	0	12	0	0
	Free	Free	Free	Free	Stop	Stop
RT Channelized	-		7.100		-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage,		0	0		0	
Grade, %	-	-1	2	-	-1	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	1	1	0	0	5
Mvmt Flow	41	751	763	48	0	43
	1,150		1.00			10
11 1 N. W. 14						
	ajor1		Major2		Minor2	110
Conflicting Flow All	823	0	-	0	-	418
Stage 1	-	-	-			
Stage 2	-	-	-		*	-
Critical Hdwy	3.9		-			7.2
Critical Hdwy Stg 1	-		-	-	-	
Critical Hdwy Stg 2	-				*	-
Follow-up Hdwy	2.4	-	-	Н	-	2.9
Pot Cap-1 Maneuver	799		-		0	634
Stage 1	+	-	-	-	0	
Stage 2	-	-	-		0	
Platoon blocked, %	******	-	-	-		
Mov Cap-1 Maneuver	790		7	-		627
Mov Cap-2 Maneuver	-	7.7	-	7	+	(5)
Stage 1	-	-	7.	3	-	9
Stage 2	-	-	*	-	+	(17)
Approach	EB		WB	-11/5	SB	
HCM Control Delay, s	0.9		0		11.2	
HCM LOS	0.0		U		В	
TIOM EGO						
		and the A	-		THE PARTY NAMED IN	
Minor Lane/Major Mvmt		EBL	EBT	WBT	WBR S	
Capacity (veh/h)		790	-	-	-	627
		0.052	122	2	-	0.069
HCM Lane V/C Ratio		Service .	12.11/2			
HCM Control Delay (s)		9.8	0.4	-	2	11.2
		9.8 A 0.2	0.4 A	2	-	11.2 B 0.2



Appendix I

2025 Future with Development
Capacity/Level-of-Service
Analysis Worksheets

	•	•

	1	-	←	1	1	1	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	STORY SALES AND THE REST
Lane Configurations		414	ተ ኈ			71	
Traffic Volume (vph)	38	745	694	22	0	26	
Future Volume (vph)	38	745	694	22	0	26	
deal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
ane Width (ft)	10	10	10	10	12	12	
Grade (%)		-1%	2%		-1%		
Storage Length (ft)	0			0	0	0	
Storage Lanes	0			0	0	1	
Γaper Length (ft)	25				25		
ane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	
Ped Bike Factor				1707070			
rt			0.995			0.865	
Flt Protected		0.998	717777				
Satd. Flow (prot)	0	3084	2999	0	0	1385	
Flt Permitted	- Pi	0.998		170			
Satd. Flow (perm)	0	3084	2999	0	0	1385	
ink Speed (mph)		25	25	1172	25		
ink Distance (ft)		930	942		248		
ravel Time (s)		25.4	25.7		6.8		
Confl. Peds. (#/hr)	5			5		1	
Confl. Bikes (#/hr)							
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	
Browth Factor	100%	100%	100%	100%	100%	100%	
leavy Vehicles (%)	0%	4%	5%	0%	0%	13%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
/lid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	42	819	763	24	0	29	
Shared Lane Traffic (%)							
ane Group Flow (vph)	0	861	787	0	0	29	
Gign Control		Free	Free		Stop	23011	
ntersection Summary		STATE OF THE PARTY.	MARK	(-0.3)	i day		
DATE OF THE STATE	Other						
Control Type: Unsignalized							

Intersection	8 10		-			
Int Delay, s/veh	0.6		11			
1200						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	-	41	1			7"
Traffic Vol, veh/h	38	745	694	22	0	26
Future Vol, veh/h	38	745	694	22	0	26
Conflicting Peds, #/hr	5	0	0	5	0	1
Sign Control	Free	Free	Free		Stop	Stop
RT Channelized	7	None	-	None		
Storage Length	7	-	: +:	-	-	0
Veh in Median Storage,	# -	0	0		0	
Grade, %		-1	2	12	-1	3#3
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	4	5	0	0	13
Mvmt Flow	42	819	763	24	0	29
Major/Minor N	lajor1	N	Major2		Minor2	
Conflicting Flow All	792	0	viajuiz -	0	VIIIOIZ	400
Stage 1	192					
			-			151
Stage 2	2.0	•	-		1.70	7.4
Critical Hdwy	3.9		7.		1.7	7.4
Critical Hdwy Stg 1	-		7.	(7)		
Critical Hdwy Stg 2	-	•	1	-		-
Follow-up Hdwy	2.4		-	5	-	3
Pot Cap-1 Maneuver	819			-	0	620
Stage 1	-	-	-	79	0	17.1
Stage 2	- 7		- 10	7	0	
Platoon blocked, %		(5)	77	7.		
Mov Cap-1 Maneuver	815	-	7		170	617
Mov Cap-2 Maneuver	77.57	7.70	-	7.	270	7
Stage 1	45	-		-	-	
Stage 2	1.7	(2)	-		150	17
Approach	EB	1411 13	WB	S. ASSET	SB	
HCM Control Delay, s	0.8		0		11.1	
HCM LOS	0.0		U			
TION LOS					В	
Minor Lane/Major Mvmt		EBL	EBT	WBT	WBR S	SBLn1
Capacity (veh/h)		815		16	-	617
HCM Lane V/C Ratio		0.051	-	-	-	0.046
HCM Control Delay (s)		9.7	0.4	-	-	11.1
HCM Lane LOS		Α	Α	-	-	В
HCM 95th %tile Q(veh)		0,2	-	-	-	0.1

	1	1	†	1	1	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		ß			4
Traffic Volume (vph)	5	4	54	6	0	21
Future Volume (vph)	5	4	54	6	0	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		2%			-1%
Storage Length (ft)	0	0	77.11	0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	10.70			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		100,000	10000	1,4-4		7.7072
Frt	0.946		0.986			
Flt Protected	0.971					
Satd. Flow (prot)	1621	0	1753	0	0	1601
Flt Permitted	0.971					
Satd. Flow (perm)	1621	0	1753	0	0	1601
Link Speed (mph)	25		25			25
Link Distance (ft)	251		248			401
Travel Time (s)	6.8		6.8			10.9
Confl. Peds. (#/hr)	6	1		2	2	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	2%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	6	4	60	7	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	67	0	0	23
Sign Control	Stop		Free			Free
Intersection Summary		*T-152			uio es	
Area Type:	Other					
Control Type: Unsignalized						

Lanes, Volumes, Timings 2025 with Development Conditions.syn

Intersection				A.H		0120
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	TIDIX	P	14011	ODL	4
Traffic Vol, veh/h	5	4	54	6	0	21
Future Vol, veh/h	5	4	54	6	0	21
Conflicting Peds, #/hr	6	1	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized		None				
	-		17.	None		None
Storage Length	0	-	-		70	-
Veh in Median Storage		1 2	0	7		0
Grade, %	0	-	2	-	-	-1
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	0	2	0	13
Mvmt Flow	6	4	60	7	0	23
Major/Minor N	Minor1		Major1		Vlajor2	
Conflicting Flow All	95	67	0	0	69	0
Stage 1	66	-	-		-	-
Stage 2	29				-	-
Critical Hdwy	6.42	6.22			4.3	
Critical Hdwy Stg 1	5.42	0.22	-			
Critical Hdwy Stg 2	5.42				-	-
		2.4	-		-	170
Follow-up Hdwy	3	3.1	-		3	7
Pot Cap-1 Maneuver	1054	1064		-	1137	-
Stage 1	1117	+	-			-
Stage 2	1163		-		- +	-
Platoon blocked, %			-	=		57.0
Mov Cap-1 Maneuver	1046	1061	-	-	1135	7.
Mov Cap-2 Maneuver	1046	-	7	7	-	170
Stage 1	1115	-	7		-	-
Stage 2	1156	-	7.	-	- 7	(-)
Approach	WB	-	NB	2.77	SB	
HCM Control Delay, s HCM LOS	8.5		0		0	
HCWI LOS	А					
Minor Lane/Major Mvmt	t	NBT	NBRV	VBLn1	SBL	SBT
Capacity (veh/h)		-	-	1053	1135	12
HCM Lane V/C Ratio		14	-	0.009	141	-
HCM Control Delay (s)		-	- 2	8.5	0	-
HCM Lane LOS			4	Α	A	-
HCM 95th %tile Q(veh)		-	-	0	0	-
2(1011)						

	1	-	-	1	1	1	
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		414	↑₽			7	
Traffic Volume (vph)	46	698	710	52	0	46	
Future Volume (vph)	46	698	710	52	0	46	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	10	10	10	10	12	12	
Grade (%)		-1%	2%		-1%		
Storage Length (ft)	0			0	0	0	
Storage Lanes	0			0	0	1	
Taper Length (ft)	25				25		
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00	
Ped Bike Factor							
Frt			0.990			0.865	
Flt Protected		0.997					
Satd. Flow (prot)	0	3169	3100	0	0	1490	
Flt Permitted		0.997					
Satd. Flow (perm)	0	3169	3100	0	0	1490	
Link Speed (mph)		25	25		25		
Link Distance (ft)		930	942		248		
Travel Time (s)		25.4	25.7		6.8		
Confl. Peds. (#/hr)	12			12			
Confl. Bikes (#/hr)							
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Growth Factor	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	0%	1%	1%	0%	0%	5%	
Bus Blockages (#/hr)	0	0	0	0	0	0	
Parking (#/hr)							
Mid-Block Traffic (%)		0%	0%		0%		
Adj. Flow (vph)	49	751	763	56	0	49	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	800	819	0	0	49	
Sign Control		Free	Free		Stop		
Intersection Summary		17-31	alle int	Lint.		4793	
State of the state	Other						
Control Type: Unsignalized							

Intersection	, in the	100		-041		
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	A STATE OF THE STA	41	作	I A CONTRACTOR		7
Traffic Vol, veh/h	46	698	710	52	0	46
Future Vol, veh/h	46	698	710	52	0	46
Conflicting Peds, #/hr	12	0	0	12	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		THE SHAPE		THE PARTY NAMED IN	-	None
Storage Length		-		-	-	0
Veh in Median Storage,	# -	0	0	(#)	0	-
Grade, %		-1	2	-	-1	
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	1	1	0	0	5
Mymt Flow	49	751	763	56	0	49
Major/Minor N	lajor1	1	Major2	N	Minor2	MARCE
Conflicting Flow All	831	0	viajoiz -	0	-	422
Stage 1	-	-		-		422
Stage 2	-	-	-	-		-
Critical Hdwy	3.9					7.2
Critical Hdwy Stg 1	0.0	-	-	-	-	1.2
Critical Hdwy Stg 2			19.12	17 T		
Follow-up Hdwy	2.4	-		-	-	2.9
Pot Cap-1 Maneuver	794			-	0	630
Stage 1	134		-		0	000
Stage 2	4119		-1.		0	-
Platoon blocked, %	7	-	-		U	
Mov Cap-1 Maneuver	785	-	-			623
Mov Cap-1 Maneuver		-	-	-	*	
Stage 1		_				-
Stage 2	-		-			-
Stage 2		/-/	1 = 2	_		-
Approach	EB		WB		SB	
HCM Control Delay, s	1.1		0		11.3	
HCM LOS					В	
Minor Lane/Major Mvmt		EBL	EBT	WBT	WBR S	SBLn1
Capacity (veh/h)		785	-	-		623
HCM Lane V/C Ratio		0.063	-	5		0.079
HCM Control Delay (s)		9.9	0.5			11.3
HCM Lane LOS		Α	Α	-	(#)	В
HCM 95th %tile Q(veh)		0.2			-	0.3
77.						

	1	1	1	1	1	†
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	A		7.			4
Traffic Volume (vph)	6	5	83	15	0	40
Future Volume (vph)	6	5	83	15	0	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		2%			-1%
Storage Length (ft)	0	0		0	0	1.00
Storage Lanes	1	0		0	0	
Taper Length (ft)	25	0.00			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.000		1100	1100	1100
Frt	0.938		0.979			
Flt Protected	0.974		0.010			
Satd. Flow (prot)	1612	0	1739	0	0	1723
Flt Permitted	0.974		11.00	,	<u> </u>	1720
Satd. Flow (perm)	1612	0	1739	0	0	1723
Link Speed (mph)	25		25			25
Link Distance (ft)	251		248			401
Travel Time (s)	6.8		6.8			10.9
Confl. Peds. (#/hr)	0.0		0.0	1	1	10.0
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	2%	0%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)		U		U	V	U
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	7	6	92	17	0	44
Shared Lane Traffic (%)	, t	0	JZ	1.1	U	44
Lane Group Flow (vph)	13	0	109	0	0	44
Sign Control	Stop	U	Free	U	U	Free
Sign Control	Stop		riee			riee
Intersection Summary	CERTAIN.		-	DOM:	4-1	1112
Area Type:	Other					
Control Type: Unsignalized	100000					
introl Type, Onsignalized						

Intersection	11 70 7		111111	Barrier.		Jaur
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	WOIN	7	NDI	ODL	
Traffic Vol, veh/h	6	5	83	15	0	40
Future Vol, veh/h	6	5	83	15		40
Conflicting Peds, #/hr	0	0	0	15	0	0
Sign Control						
RT Channelized	Stop	Stop	Free	Free	Free	Free
	-	None		None	-	None
Storage Length	0	73	-	ē	-	-
Veh in Median Storage		-	0	-	-	0
Grade, %	0	-	2	-	-	-1
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	0	2	0	5
Mvmt Flow	7	6	92	17	0	44
Major/Minor 1	Minor1		Major1		Major2	
Conflicting Flow All	146	102	0	0	110	0
Stage 1	102		-		-	-
Stage 2	44	+		2	-	-
Critical Hdwy	6.42	6.22			4.3	
Critical Hdwy Stg 1	5.42	0.22	-	2	7.0	-
Critical Hdwy Stg 2	5.42		7.0	-		
Follow-up Hdwy	3	3.1				- 7.
		1017	-		3	
Pot Cap-1 Maneuver	982			- 5	1101	- 5-
Stage 1	1074			-	17.	177,11
Stage 2	1144		- 7		17.	17.0
Platoon blocked, %			- 5	E-	- I - I	7.0
Mov Cap-1 Maneuver	981	1016			1100	-
Mov Cap-2 Maneuver	981	,=,	7	7.0	-	.#F
Stage 1	1073	-		-		-
Stage 2	1144	, =) (<i>a</i>	-	1 - 1	-
Approach	WB		NB		SB	- 90-
HCM Control Delay, s	8.7		0		0	
HCM LOS	Α		U		U	
I IOW LOS	^					
Minor Lane/Major Mvmt		NBT	NBRW	/BLn1	SBL	SBT
Capacity (veh/h)		-	-	997	1100	
HCM Lane V/C Ratio		-	-	0.012	-	-
HCM Control Delay (s)		-	-	8.7	0	-
HCM Lane LOS		-	-	Α	Α	-
HCM 95th %tile Q(veh)		-	-	0	0	
1						



Appendix J

Turn Lane Warrants

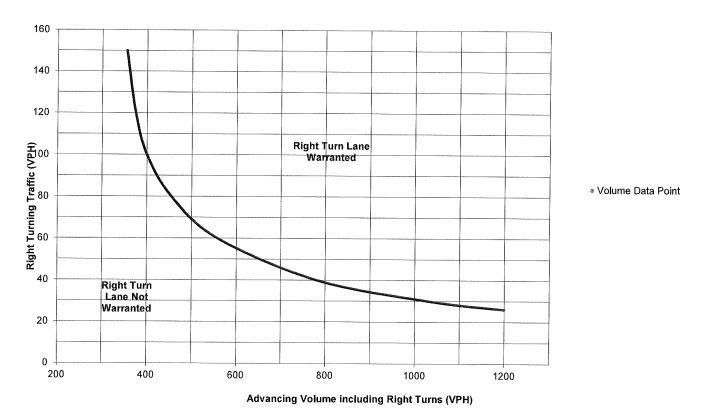
	v · · ·	v - *	

Turn Lane Warrant and Length Analysis Workbook

	1 de la	S	TUDY LOC	ATION A	VD ANAL	YSIS INFORMATION
	N.C.					
	iviu	County:		Township re County		Analysis Date: 8/15/2023 Conducted By:
PennDOT	Engineerin	ng District:		6		Checked By:
					A	gency/Company Name: McMahon, a Bowman Company
Intersection & Ap	unuanah Da	na antinata de la De	Marine Arrami	. 0 0		
intersection & Ap	proach De	scription: be	ellevue Avenue	e & Proposed	Driveway - Ni	58
	Analys	sis Period:	2025	Build		Number of Approach Lanes: 1
172		sign Hour:		ak Hour		Undivided or Divided Highway: Undivided
	ntersectio	-		nalized		SC 2 4 9 2 7 1
Posted	Speed Lin	of Terrain:		vel	_	Type of Analysis
	Туре с	n rerrain.	Le			Left or Right-Turn Lane Analysis?: Right Turn Lane
					CALCULA	1990 1-30E
			L	eft Turn Lan	e Volume C	alculations
Movemen		Include?	Volume	% Trucks	PCEV	
Advancing	Left	No	0	0.0%	N/A	Advancing Volume: N/A
Advancing	Through Right	No	0	0.0%	N/A	Opposing Volume: N/A
	Left	No	0	0.0%	N/A N/A	Left Turn Volume: N/A
Opposing	Through	- 140	0	0.0%	N/A	
	Right	No	0	0.0%	N/A	% Left Turns in Advancing Volume: N/A
			Ric	ght Turn Lar	ne Volume C	Calculations
Movemen		Include?				
Wovemen	Left	No	Volume 0	% Trucks 0.0%	PCEV N/A	
Advancing	Through	-	54	0.0%	54	Advancing Volume: 61
	Right	17/	6	2.0%	7	Right Turn Volume: 7
			THE	NIANEV	MADDANI	r FINDINGS
				IIA CHIAC A	VARRAINI	
Ler	t Turn La	ne Warrant	Findings			Right Turn Lane Warrant Findings
Applicable V	Warrant F	igure:	N/A			Applicable Warrant Figure: Figure 9
,	Warrant I	Met?:	N/A			Warrant Met?: No
	1 - 1 - 2		TURN	LIANELE	NGTH CAL	LCULATIONS
	anauserers V				WITH CA	ECOLATIONS
Design Hour Volun	itersection		Unsignalize 7	a		
	er Hour (A		60			
	er Hour (If	2000 TO 100 TO 1	60		Average	# of Vehicles/Cycle: N/A
		50.0	F	PennDOT Publ	lication 46. Ex	xhibit 11-6
						eed (MPH)
	Туре о	of Traffic Contr	ol	25-35		40-45 50-60
			High	Low	Turn De	Emand Volume Low High Low
		Signalized	A	A	B or C	BorC BorC BorC
	U	nsignalized	A	Α	С	B BorC B
				Right Turn L	ane Storage	Length, Condition A: N/A Feet
						Condition B: N/A Feet
						Condition C: N/A Feet
				Required	Right Ture	
				Required	Manufacturii	Lane Storage Length: N/A Feet
						Additional Findings:
Additional Comments	/ Justificati	ons:	-		U	N/A



Figure 9. Warrant for right turn lanes on two-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)

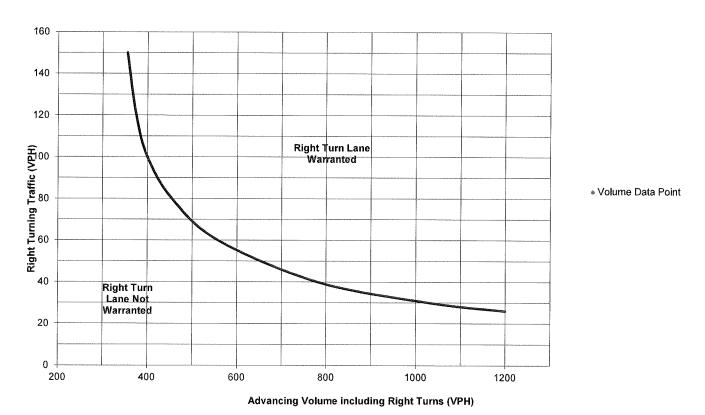


Turn Lane Warrant and Length Analysis Workbook

		S	TUDY LOC	ATION AN	ND ANALY	SIS INFORM	MATION		THE ST	4,010
	Mu	nicipality:	Radnor	Township		Analys	is Date:	8/15,	/2023	
		County:	Delawai	re County		Conduc				
PennDO1	Engineerin	ng District:		6		Chec	ked By:			
					A	gency/Company	Name: N	IcMahon, a Bo	wman Comp	any
Intersection & A	pproach De	escription: B	ellevue Avenue	e & Proposed	Driveway - NB	R				
	Analys	sis Period:	2025	Build		Numbe	r of Approac	h Lanes:	1	
		sign Hour:		ak Hour		Undivided	or Divided I	lighway:	Undivided	
P4-	Intersectio			nalized						
Poste	d Speed Lin Type o	of Terrain:		25 evel		Left or Right-	Turn Lane Δ		ype of Analy Right Turn Lar	
	10M Eng S			Chia (s		433300000 100 11 0 FC	1.01.11.000		ingire ruiti Lui	
<u> </u>				VOLUME	CALCULA	TIONS				
			L	eft Turn Lan	e Volume C	alculations			1 14 17	DATE:
Moveme	nt	Include?	Volume	% Trucks	PCEV					
	Left	No	0	0.0%	N/A			dvancing Volu		N/A
Advancing	Through	- No	0	0.0%	N/A			Opposing Volu		N/A
	Right Left	No No	0	0.0%	N/A N/A			Left Turn Volu	ıme:	N/A
Opposing	Through	-	0	0.0%	N/A					
	Right	No	0	0.0%	N/A	% Le	ft Turns in A	dvancing Volu	ıme:	N/A
			Ri	ght Turn Lar	ne Volume C	alculations			ELECTION I	
Moveme	nt	Include?	Volume	% Trucks	PCEV					
Moveme	Left	No	0	0.0%	N/A					
Advancing	Through	-	83	0.0%	83		Α	dvancing Volu	ıme:	99
	Right	*	15	2.0%	16		R	ight Turn Volu	ıme:	16
THE RESERVE	. 71		TUR	RN LANE V	VARRANT	FINDINGS	100		53/6	
	64 T	Me					let Terres I e			
Le	ent Turn La	ne Warran	trindings			Rig	nt Turn La	ne Warrant F	-indings	
Applicable	Warrant F	igure:	N/A			Applicable	Warrant Fig	gure: Fig	ure 9	
	Warrant	Met?:	N/A				Warrant IV	let?:	No	
and markets	Act.		TURN	LANE LE	NGTH CAI	CULATION	S	UTTO T	IN HE	HART I
	Intersection	Control	Unsignalize	d]			400			
Design Hour Vol		The purifying the second	16							
Cycles	Per Hour (A	ssumed):	60							
Cycles	Per Hour (I	f Known):	60		Average #	of Vehicles/Cy	cle:	N/A		
				PennDOT Pub	lication 46, Ex	hibit 11-6				
						ed (MPH)				
	Туре	of Traffic Cont	rol	25-35	Turn Da	40-45	5	50-60		
			High	Low	High	mand Volume Low	High	Low	-	
		Signalized	A	A	B or C	B or C	B or C	BorC		
		Insignalized	A	A	С	В	B or C	В		
				Right Turn L	ane Storage	Length, Condit	ion A:	N/A	Feet	
				250		Condit	ion B:	N/A	Feet	
						Condit	A Committee of	N/A	1000000	
				Dan-t-	l Diabet Tour				Feet	
				Required	a Kight Turn	Lane Storage L	ength:	N/A	Feet	
							Additi	onal Findings		
Additional Commen	ts / Justificat	ions:						N/A	4	
a de la constante de la consta	- / casement	x-XIIII								



Figure 9. Warrant for right turn lanes on two-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)



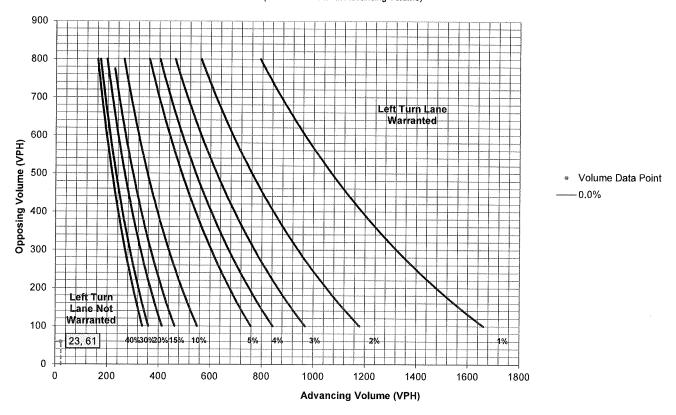
Turn Lane Warrant and Length Analysis Workbook

	SI SE	S	TUDY LOC	ATION A	ND ANALY	YSIS INFORMATION
	5000					
	Mu	inicipality:		Township		Analysis Date: 8/15/2023
120000000000000000000000000000000000000		County:		re County		Conducted By:
PennDOT	Engineerin	ng District:		6		Checked By:
					Α	Agency/Company Name: McMahon, a Bowman Company
Intersection & Ap	proach De	escription: E	ellevue Avenue	e & Proposed	Driveway - SB	31.
	SAN SOLVEN SOLVE	201-0111 8 12 7241/0111 8 29				
					_	
		sis Period:		Build		Number of Approach Lanes: 1
		sign Hour:		ak Hour		Undivided or Divided Highway: Undivided
	ntersectio	-		nalized		
Posted	Speed Lin			25		Type of Analysis
	Type	of Terrain:	Le	evel		Left or Right-Turn Lane Analysis?: Left Turn Lane
	W 14 1 1 1		RESIDEN	VOLUME	CALCULA	ATIONS
			10			
					e Volume C	acculations
Movemen		Include?	Volume	% Trucks	PCEV	532 A ~ .
A.4	Left	Yes	0	0.0%	0	Advancing Volume: 23
Advancing	Through		21	13.0%	23	Opposing Volume: 61
	Right	No	0	0.0%	N/A	Left Turn Volume: 0
0	Left	No	0	0.0%	N/A	
Opposing	Through Right	Yes	54	0.0%	54	
	Right	ies	0	2.0%	7	% Left Turns in Advancing Volume: 0.00%
			Rig	ght Turn Lar	ne Volume C	Calculations
Movemen	t	Include?	Volume	% Trucks	PCEV	
800 21 3	Left	No	0	0.0%	N/A	
Advancing	Through		0	0.0%	N/A	Advancing Volume: N/A
	Right	-	0	0.0%	N/A	Right Turn Volume: N/A
	170		TUR	NIANEV	VARRANT	T FINDINGS
1.7						
Ler	t Turn La	ne Warran	t Findings			Right Turn Lane Warrant Findings
Applicable V	Varrant Fi	igure: F	igure 1			Applicable Warrant Figure: N/A
,	Warrant f	M-42.	IDIV/OI			21/2
F	warranti	vietr:	DIV/0!			Warrant Met?: N/A
		No. of the	TURN	LANE LE	NGTH CAI	LCULATIONS
In	itersection	Control:	Unsignalize	d		
Design Hour Volum		-	0			
Cycles Po	er Hour (A	ssumed):	60			
Cycles P	er Hour (If	Known):	60		Average #	# of Vehicles/Cycle: #DIV/0!
			4	lanupar - · ·		The state of the s
			F	rennuo i Publ	lication 46, Ex	xhibit 11-6 eed (MPH)
	Time -	f Teaffle Co.	rol	25-35		40-45 50-60
	Type o	of Traffic Cont	101			emand Volume
	<u> </u>	et 11 :	High	Low	High	Low High Low
		Signalized nsignalized	A	A	B or C	BorC BorC BorC
		gnanzed		A	С	B B or C B
				Left Turn L	ane Storage	Length, Condition A: #DIV/0! Feet
						Condition B: #DIV/O! Feet
						Condition C: #DIV/0! Feet
				Require	ed Left Turn I	Lane Storage Length: #DIV/0! Feet
				quii t		
						Additional Findings:
Additional Comments	/ Justification	ons:				#DIV/0!



Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)

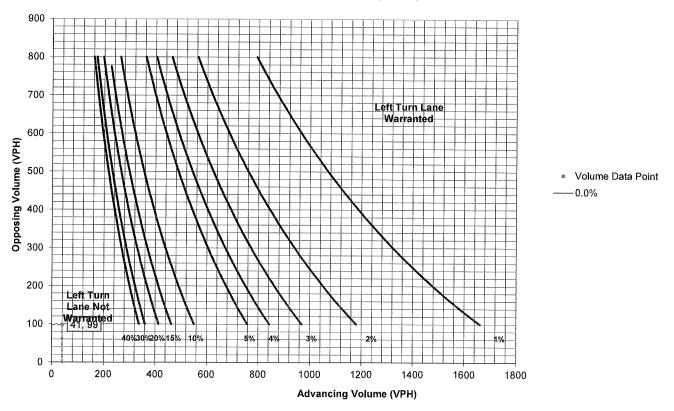


Turn Lane Warrant and Length Analysis Workbook

	0.0	DOWN NAME OF		ATION AN		
	iviui	nicipality: County:		Township e County		Analysis Date: 8/15/2023
PennDOT	Engineering			6 County	-	Conducted By: Checked By:
			3.1		Ag	ency/Company Name: McMahon, a Bowman Company
ntersection & Ap	proach De	scription: Be	ellevue Avenue	& Proposed D	Oriveway - SBL	
	Δnalvs	is Period:	2025	Build	7	Number of Approach Lanes: 1
		ign Hour:		ak Hour		Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided
j	ntersection			nalized		ondivided of Divided Ingliway.
Posted	Speed Lim	it (MPH):	2	.5	- V.	Type of Analysis
	Type o	f Terrain:	Le	vel		Left or Right-Turn Lane Analysis?: Left Turn Lane
			(HXIII)	VOLUME	CALCULA	TIONS
			Le	eft Turn Lane	Volume Ca	alculations
Movemen		Include?	Volume	% Trucks	PCEV	·
TWO BY COMPANY TO THE	Left	Yes	0	0.0%	0	Advancing Volume: 41
Advancing	Through	No.	40	5.0%	41	Opposing Volume: 99
	Right Left	No No	0	0.0%	N/A N/A	Left Turn Volume: 0
Opposing	Through	-	83	0.0%	83	
	Right	Yes	15	2.0%	16	% Left Turns in Advancing Volume: 0.00%
			Rig	ght Turn Lan	e Volume C	alculations
Movemen		Include?	Volume	% Trucks	PCEV	
	Left	No	0	0.0%	N/A	100702 00 00000
Advancing	Through		0	0.0%	N/A	Advancing Volume: N/A
	Right			0.0%	N/A	Right Turn Volume: N/A
			TUR	N LANE W	/ARRANT	FINDINGS
Lef	t Turn Lar	ne Warrant	Findings			Right Turn Lane Warrant Findings
Applicable V	Narrant Fi	gure: Fi	gure 1			Applicable Warrant Figure: N/A
	Warrant N	/let?: #	DIV/0!			Warrant Met?: N/A
			TURN	LANE LEN	IGTH CAL	CULATIONS
Ir	ntersection	Control:	Unsignalized	i		
esign Hour Volur	ne of Turni	ing Lane:	0			
Cycles P	er Hour (As		60		9	8 8/8 8 8
	er Hour (If	Known):	60		Average #	of Vehicles/Cycle: #DIV/0!
			P	ennDOT Publi	THE RESERVE OF THE PARTY OF THE	hibit 11-6 ed (MPH)
		f Traffic Canta	ol	25-35		40-45 50-60
	Type of		VI		_	50-60
	Type of	i manic contr				nand Volume
			High	Low	High	nand Volume Low High Low
	S	Signalized nsignalized	High A	Low A A		nand Volume
	S	Signalized	A	A	High B or C C	BorC BorC BorC BorC BorC BorC BorC BorC
	S	Signalized	A	A	High B or C C	BorC BorC BorC BorC BorC BorC BorC BorC
	S	Signalized	A	A	High B or C C	BorC BorC BorC BorC BorC BorC B BorC BorC
	S	Signalized	A	A	High B or C C	BorC BorC BorC BorC BorC BorC BorC BorC
	S	Signalized	A	A A Left Turn La	High B or C C	BorC BorC BorC BorC BorC BorC B BorC BorC
	S	Signalized	A	A A Left Turn La	High B or C C	Length, Condition B: Condition C: #DIV/O! Band Column Bor C Bor C Bor C B Bor C B Feet Feet Feet Feet
	S	Signalized nsignalized	A	A A Left Turn La	High B or C C	Low High Low BorC BorC BorC B BORC BORC Condition A: #DIV/O! Condition B: #DIV/O! Condition C: #DIV/O! Feet Feet Feet Feet Feet Feet



Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)





Appendix K

NCHRP 684 Internal Trip Capture

· ·		

	NCHRP 684 Internal Trip Cap	oture Estimation Tool	
Project Name:	Proposed Mixed-Use Development	Organization:	
Project Location:	Radnor Township	Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Land Use	Developme	Development Data (For Information Only)		Estimated Vehicle-Trips ³			
Land Use	ITE LUCs1	Quantity	Units	Total	Entering	Exiting	
Office				0			
Retail				7	4	3	
Restaurant				0			
Cinema/Entertainment				0			
Residential				8	2	6	
Hotel				0			
All Other Land Uses ²				0			
				15	6	9	

		Table 2-A:	Mode Split and Vehic	le Occupancy Estimates		
Land Hee		Entering Tr	ips		Exiting Trips	
Land Use	Veh. Occ.⁴	% Transit	% Non-Motorized	Veh. Occ.4	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

	Table	3-A: Average La	and Use Interchang	je Distances (Feet Walking	Distance)	
Oslain (Farms)				Destination (To)		
Origin (From)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

		Table 4-A: I	nternal Person-Tri	p Origin-Destination Matrix*						
Origin (Fram)	Destination (To)									
Origin (From)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel				
Office		0	0	0	0	0				
Retail	0	THE LEADING TO	0	0	0	0				
Restaurant	0	0		0	0	0				
Cinema/Entertainment	0	0	0		0	0				
Residential	0	0	0	0		0				
-lotel	0	0	0	0	0					

Table 5-A:	Computation	ns Summary	
	Total	Entering	Exiting
All Person-Trips	15	6	9
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips ⁵	15	6	9
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use							
Land Use	Entering Trips	Exiting Trips					
Office	N/A	N/A					
Retail	0%	0%					
Restaurant	N/A	N/A					
Cinema/Entertainment	N/A	N/A					
Residential	0%	0%					
Hotel	N/A	N/A					

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Proposed Mixed-Use Development
Analysis Period:	AM Street Peak Hour

		Table 7-A: Conv	ersion of Vehicle-Tri	p Ends to Person-Trip	Ends	
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
Edila 030	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	4	4	1.00	3	3
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1,00	0	0
Residential	1.00	2	2	1.00	6	6
Hotel	1.00	0	0	1,00	0	0

	Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)									
Origin (From)		Destination (To)								
Origin (Front)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel				
Office		0	0	0	0	0				
Retail	1		0	0	0	0				
Restaurant	0	0		0	0	0				
Cinema/Entertainment	0	0	0		0	0				
Residential	0	0	1	0		0				
Hotel	0	0	0	0	0					

	Table 8-A (D): Internal Pers	on-Trip Origin-De	stination Matrix (Compute	d at Destination)					
Origin (From)		Destination (To)								
Origin (From)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel				
Office		1	0	0	0	0				
Retail	0		0	0	0	0				
Restaurant	0	0		0	0	0				
Cinema/Entertainment	0	0	0		0	0				
Residential	0	1	0	0		0				
Hotel	0	0	0	0	0					

	Та	ble 9-A (D): Into	ernal and External	Trips Summary (Entering	Trips)		
Destination Land Use	Person-Trip Estimates				External Trips by Mode*		
Destriation Land Ose	Internal	External Total		Vehicles ¹	Transit ²	Non-Motorized ²	
Office	0	0	0	0	0	0	
Retail	0	4	4	4	0	0	
Restaurant	0	0	0	0	0	0	
Cinema/Entertainment	0	0	0	0	0	0	
Residential	0	2	2	2	0	0	
Hotel	0	0	0	0	0	0	
All Other Land Uses ³	0	0	0	0	0	1 0	

Origin Land Use	Person-Trip Estimates			External Trips by Mode*			
Origin Land 030	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²	
Office	0	0	0	0	0	0	
Retail	0	3	3	3	0	0	
Restaurant	0	0	0	0	0	0	
Cinema/Entertainment	0	0	0	0	0	0	
Residential	0	6	6	6	0	0	
Hotel	0	0	0	0	0	0	
All Other Land Uses ³	0	0	0	0	0	0	

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator *Indicates computation that has been rounded to the nearest whole number.

	NCHRP 684 Internal Trip Cap	ture Estimation Tool	
Project Name:	Proposed Mixed-Use Development	Organization:	
Project Location:	Radnor Township	Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Land Use	Developme	ent Data (For Info	rmation Only)		Estimated Vehicle-Trips3	
Lana 000	ITE LUCs1	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				18	9	9
Restaurant				0		
Cinema/Entertainment				0		
Residential				14	9	5
Hotel				0		
All Other Land Uses ²				0		
				32	18	14

Land Use		Entering Tr	ips	Exiting Trips		
	Veh. Occ.4	% Transit	% Non-Motorized	Veh. Occ.⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)									
Origin (From)	Destination (To)								
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel			
Office									
Retail									
Restaurant									
Cinema/Entertainment									
Residential									
Hotel		1000							

Table 4-P: Internal Person-Trip Origin-Destination Matrix*										
Origin (From)		Destination (To)								
Origin (From)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel				
Office		0	0	0	0	0				
Retail	0		0	0	2	0				
Restaurant	0	0		0	0	0				
Cinema/Entertainment	0	0	0		0	0				
Residential	0	1	0	0		0				
Hotel	0	0	0	0	0					

Table 5-P:	Computation	ons Summary	
	Total	Entering	Exiting
All Person-Trips	32	18	14
Internal Capture Percentage	19%	17%	21%
External Vehicle-Trips ⁵	26	15	11
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

rable 6-F. Internal	Trip Capture Percenta	ges by Land Use		
Land Use	Entering Trips	Exiting Trips		
Office	N/A	N/A		
Retail	11%	22%		
Restaurant	N/A	N/A		
Cinema/Entertainment	N/A	N/A		
Residential	22%	20%		
Hotel	N/A	N/A		

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Proposed Mixed-Use Development
Analysis Period:	PM Street Peak Hour

	Ţ	able 7-P: Conver	sion of Vehicle-Trip	Ends to Person-Trip En	ds	******************************	
Land Use	Tabl	e 7-P (D): Entering	Trips		Table 7-P (O): Exiting Trips		
Land Ose	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*	
Office	1.00	0	0	1.00	0	0	
Retail	1.00	9	9	1.00	9	9	
Restaurant	1.00	0 .	0	1.00	0	0	
Cinema/Entertainment	1.00	0	0	1.00	0	0	
Residential	1.00	9	9	1.00	5	5	
Hotel	1.00	0	0	1.00	0	0	

	Table 8-P (C	D): Internal Per	son-Trip Origin-De	stination Matrix (Compute	d at Origin)	
Origin (From)				Destination (To)		
Origin (Front)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		3	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	1	0		0
Hotel	0	0	0	0	0	

Origin (From)				nation Matrix (Computed an Destination (To)	· · · · · · · · · · · · · · · · · · ·	
Origin (From)	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		0	0	4	0
Restaurant	0	5		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Destination Land Use	Pe	Person-Trip Estimates			External Trips by Mode*	
Destination Land Osc	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	1	8	9	8	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	7	9	7	0	0
-lotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	1 0

Origin Land Use	Pe	erson-Trip Estimate	es	External Trips by Mode*			
Origin Land Osc	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²	
Office	0	0	0	0	0	0	
Retail	2	7	9	7	0	0	
Restaurant	0	0	0	0	0	0	
Cinema/Entertainment	0	0	0	0	0	0	
Residential	1	4	5	4	0	0	
Hotel	0	0	0	0	0	0	
All Other Land Uses ³	0	T 0	0	0	0	0	

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator *Indicates computation that has been rounded to the nearest whole number.



Appendix L

US Census Data

	v *			



	Total		Male		Female	
Label	Estimate	Margin of Error	Extimate	Margin of Error	Estimate	Margin of Error
▼ Worker No years and then	17.600	950%	. 9396	16602	-06	1944
✓ MEANS OF THANSPORTATION TO WORK						
> Dat York or ver	\$839	133	653	30	1104	100
Pulled transportation (excluding favorable)	149	:04	0.16	123	98	11.0
(Specifi	95	:471	107	.933		##II
Score	1775	\$4.6		10.0	0.00	10.6
faces manning, in one mayne.	0.64	9.00	52%	40/21	11.00	9.1
Whered from name.	19,6%	NI	2000	XXX	1596	144
> PLACE OF RESIDE						
> Workers Nilyawa and over which ad not work from name	16.52%	1984	1600	DIME	1331	1606
> vercus viscasu						

> PERCENTALLOCATES

A-10



MEMORANDUM

TO: Devin Tuohey, The Concordia Group

FROM: Mark A. Roth, P.E.

DATE: September 28, 2023

SUBJECT: Traffic Evaluation Memo – West Avenue

Proposed Mixed-Use Development – Lancaster Avenue

Radnor Township, Delaware County, PA

As requested, McMahon, a Bowman Company, has completed its Traffic Evaluation Memo for submission to the Project Team and Radnor Township for the proposed municipal parking lot to be located along West Avenue in Radnor Township, Delaware County, Pennsylvania (**Figure 1**). The existing municipal parking lot along Bellevue Avenue will be relocated along West Avenue adjacent to the train tracks.

The purpose of this Traffic Evaluation Memo is to provide a trip generation evaluation for the existing AT&T parking lot and the proposed municipal parking lot, as well as to evaluate the traffic impact of the proposed municipal parking lot on the traffic operations along West Avenue.

Trip Generation Data

In order to determine the peak hour trip generation of the existing municipal parking lot, McMahon performed counts at the existing driveway to the parking lot. Turning movement traffic counts were conducted in April 2022 during the weekday morning peak period (7:00 AM to 9:00 AM), weekday afternoon peak period (4:00 PM to 6:00 PM), and Saturday midday peak period (11:00 AM to 1:00 PM). The results of the trip generation traffic counts are tabulated by 15-minute intervals in **Attachment 1**.

Trip Generation Evaluation

Traffic volumes generated by the existing AT&T office building were prepared based on trip generation data compiled from numerous studies contained in the Institute of Transportation Engineers (ITE) publication, *Trip Generation*, 11th Edition.

Traffic volumes generated by the proposed municipal parking lot were based on trip generation traffic counts conducted at the existing municipal parking lot currently located along Bellevue Avenue. With the relocation of the municipal parking lot from Bellevue Avenue to West Avenue in future conditions, the proposed municipal parking along West Avenue will generate a similar amount of traffic as the existing municipal parking lot. The use of the parking lot and the surrounding area served by the parking lot will remain the same.





Existing AT&T Parking Lot

Table 1 presents the vehicular trip generation for the existing AT&T parking lot which is utilized by the 30,000 s.f. of office space within the existing AT&T building along West Avenue. Traffic volumes associated with the 30,000 s.f. of office space are currently being split between the two existing AT&T parking lots along West Avenue. In future conditions, the parking lot north of the existing AT&T building will be removed and replaced by the proposed municipal parking lot. All AT&T traffic will then only utilize the parking lot east of the existing AT&T building.

Table 1. Vehicular Trip Generation - Existing AT&T Office

		Weekday Morning Weekday Afternoon Peak Hour Peak Hour				Saturday Midday Peak Hour				
Land Use	Size	In	Out	Total	In	Out	Total	In	Out	Total
Existing Office (1)	30,000 s.f.	52	7	59	10	51	61	9	7	16

⁽¹⁾ ITE Land Use Code 710 for General Office Building.

Proposed Municipal Parking Lot

Table 2 presents the vehicular trip generation for the proposed municipal parking lot.

Table 2. Vehicular Trip Generation - Proposed Municipal Parking Lot

			kday Mo Peak Hou			day Afte Peak Hou		A DECEMBER	rday Mid Peak Hou	
Land Use	Size	In	Out	Total	In	Out	Total	In	Out	Total
Proposed Municipal Parking Lot (1)	103 spaces	9	1	10	6	10	16	6	2	8

⁽¹⁾ Based on traffic counts performed at the existing driveway for the existing municipal parking lot.

Anticipated Trip Distribution

Site-generated traffic will approach and depart the site via different routes depending on factors such as the existing traffic patterns, location of major roadways, and the location of the site accesses. The distribution percentages for the anticipated directions of approach and departure are provided in **Table 3**. The existing ADT volumes of the surrounding roadways were obtained from PennDOT's TIRe website.



Table 3. Anticipated Trip Distribution – Proposed Municipal Parking Lot

Roadway Name (Jurisdiction)	Average Daily Traffic Volumes (vehicles per day)	Trip Distribution Percentages	
Lancaster Avenue (S.R. 0030)	18,915 ⁽¹⁾	73%	
North Wayne Avenue (S.R. 1046)	4,821 ⁽¹⁾	19%	
Eagle Road	2,024 (1)	8%	

(1) Based on traffic data from PennDOT's Traffic Information Repository (TIRe) website.

Based on the existing ADT volumes of the surrounding roadways, the majority of traffic from the proposed municipal parking lot will approach and depart the site via Lancaster Avenue (S.R. 0030) or North Wayne Avenue (S.R. 1046). Therefore, only a small percentage of the traffic will utilize West Avenue to travel to/from Eagle Road.

Traffic Along West Avenue

Traffic volumes along West Avenue were obtained from the traffic volume diagram depicted on the traffic signal plan of North Wayne Avenue (S.R. 1046) and West Avenue provided in **Attachment 2**. The traffic volumes along West Avenue are summarized in **Table 4**.

Table 4. Traffic Volumes Along West Avenue (1)

	Direction - 1	Total Traffic		
Peak Hour	Eastbound	Westbound	Volume	
Weekday Morning	118	114	232	
Weekday Afternoon	128	81	209	

(1) Based on traffic data obtained from the traffic signal plan.

Based on low peak hour volumes along West Avenue, as well as low trip generation associated with the proposed municipal parking lot, it is our opinion the traffic operations along West Avenue will operate at acceptable conditions with low delays and queue lengths that will not extend into adjacent intersections. With the low peak hour volumes along West Avenue, as a conservative approach, even if the trip generation of the proposed municipal parking lot was doubled, the traffic operations along West Avenue would still operate at acceptable conditions.



West Avenue Traffic Calming Measures

As requested, McMahon evaluated potential traffic calming measures along the 200 and 300 blocks of West Avenue. Based on roadway observations and obtained data from PennDOT, this portion of West Avenue does not experience high traffic volumes, truck traffic is restricted, the surrounding land uses are residential, the posted speed limit is 25 mph, and all intersections are All-Way Stop Controlled. Based on these observations, it is our opinion that no traffic calming measures are required along this portion of West Avenue. However, one potential traffic calming measure that is appropriate for this roadway is the installation of speed humps. If speed humps are desirable, it is recommended to perform a speed study along this portion of West Avenue to determine the 85th percentile speed.

Conclusions and Recommendations

- The existing AT&T office building generates approximately 59 total trips during the weekday morning peak hour, 61 total trips during the weekday afternoon peak hour, and 16 total trips during the Saturday midday peak hour.
- The proposed municipal parking lot is anticipated to generate approximately 10 total trips during the weekday morning peak hour, 16 total trips during the weekday afternoon peak hour, and 8 total trips during the Saturday midday peak hour.
- Based on the existing ADT volumes of the surrounding roadways, the majority of traffic from the
 proposed municipal parking lot will approach and depart the site via Lancaster Avenue (S.R. 0030)
 or North Wayne Avenue (S.R. 1046). Therefore, only a small percentage of the traffic will utilize
 West Avenue to travel to/from Eagle Road.
- Based on low peak hour volumes along West Avenue, as well as low trip generation associated
 with the proposed municipal parking lot, it is our opinion the traffic operations along West
 Avenue will operate at acceptable conditions with low delays and queue lengths that will not
 extend into adjacent intersections.
- It is our opinion that no traffic calming measures are required along the 200 and 300 blocks of West Avenue. However, one potential traffic calming measure that is appropriate for this roadway is the installation of speed humps. If speed humps are desirable, it is recommended to perform a speed study along this portion of West Avenue to determine the 85th percentile speed.

We trust that this Traffic Evaluation Memo responds to your requests and satisfactorily addresses the traffic-related questions at this time that are related to the proposed municipal parking lot. If you have any questions, or require further clarification, please feel free to contact me.





Proposed Municipal Parking Lot
PROPOSED MIXED-USE DEVELOPMENT -LANCASTER AVENUE RADNOR TOWNSHIP, DELAWARE COUNTY, PA

		• •	



Attachment 1

Existing Municipal Parking Lot – Trip Generation Traffic Counts

* **			•	

Imperial

THEFICA BATA CULLETION

Imperial Traffic & Data Collection

www.imperialtdc.com

PO BOX 4637

Cherry Hill, New Jersey, United States 08034
609-706-6100 lklein@imperialtdc.com

Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 1

т	urnina	Movement	Data
- 1	urrina	MOVEMENT	Dala

	1		Parking Access			''.'	ing wo	Bellevue Avenu					Bellevue Avenue	,		
			Westbound					Northbound					Southbound			
Start Time	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Tota
7:00 AM	0	0	0	3	0	0	4	0	0	4	0	0	2	0	2	6
7:15 AM	0	0	0	11	0	0	4	1	0	5	0	0	0	0	0	5
7:30 AM	0	0	0	0	0	0	4	1	0	5	0	0	2	0	2	7
7:45 AM	0	0	0	1	0	0	7	11	0	8	0	11	00	0	11	9
Hourly Total	0	0	0	5	0	0	19	3	0	22	0	1	4	G	5	27
8:00 AM	0	0	0	0	0	0	9	11	0	10	0	11	2	0	3	13
8:15 AM	0	0	0	0	0	0	8	2	1	10	0	0	4	1	4	14
8:30 AM	0	0	0	0	0	0	4	3	5	7	0	0	5	0	5	12
8:45 AM	0	0	1	2	1	0	7	1	0	8	0	1	4	0	5	14
Hourly Total	0	0	1	2	1	0	28	7	6	35	0	2	15	1	17	53
··· BREAK ···	-					-				-	-			-	· · · · · · · · · · · · · · · · · · ·	-
4:00 PM	0	1	2	0	3	0	6	1	1	7	0	0	2	0	2	12
4:15 PM	0	0	1	1	1	0	11	0	5	11	0	0	8	0	8	20
4:30 PM	0	0	1	1	1	0	5	0	1	5	0	0	5	0	5	11
4:45 PM	0	0	0	1	0	0	7	0	3	7	0	0	3	2	3	10
Hourly Total	0	1	4	3	5	0	29	1	10	30	0	0	18	2	18	53
5:00 PM	0	0	4	0	4	0	7	0	0	7	0	0	6	0	6	17
5:15 PM	0	1	3	0	4	0	11	4	0	15	0	1	1	0	2	21
5:30 PM	0	1	0	1	1	1	10	0	0	11	0	0	6	0	6	18
5:45 PM	0	0	1	0	1	0	7	1	0	8	1	0	3	0	1	13
Hourly Total	0	2	8	1	10	1	35	5	0	41	1	1	16	0	18	69
··· BREAK ···	-		,			-		-							-	-
11:00 AM	0	0	1	4	1	1	9	0	0	10	1	1	4	0	6	17
11:15 AM	0	0	0	2	0	0	6	1	0	7	0	0	5	0	5	12
11:30 AM	0	0	1	1	1	0	12	1	0	13	0	1	9	1	10	24
11:45 AM	0	0	0	1	0	0	6	0	0	6	0	0	6	0	6	12
Hourly Total	0	0	2	8	2	1	33	2	0	36	1	2	24	1	27	65
12.00 PM	0	0	0	0	0	0	13	3	0	16	0	0	6	0	6	22
12.15 PM	0	1	0	1	1	0	9	0	1	9	0	1	4	0	5	15
12.30 PM	0	0	0	1	0	0	11	0	1	11	0	0	3	2	3	14
12.45 PM	0	1	1	Ü	2	0	14	1	1	15	0	0	3	0	3	20
Hourly Total	0	2	1	2	3	0	47	4	3	51	0	1	16	2	17	71
Grand Total	0	5	16	21	21	2	191	22	19	215	2	7	93	6	102	338
Approach %	0.0	23.6	76.2			0.9	88.8	10.2	-		2.0	6.9	91.2	-		
Total %	0.0	1.5	4.7		6.2	0.6	56.5	6.5	-	63.6	0.6	2.1	27.5		30.2	
Lights	0.0	5	16		21	2	190	22		214	2	7	91		100	335

% Lights		100.0	100.0		100.0	100.0	99.5	100.0	-	99.5	100.0	100.0	97.8		99.0	99.1
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0
% Buses		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	0	0	-	0	0	1	0	-	1	0	0	2	-	2	3
% Trucks		0.0	0.0		0.0	0.0	0.5	0.0	-	0.5	0.0	0.0	2.2	-	2.0	0.9
Bicycles on Crosswalk	-	-	~	0	-	-	-		0	-	-			0		
% Bicycles on Crosswalk		-	-	0.0	-	-			0.0					0.0	-	-
Pedestrians			-	21	-	-	-	-	19	-	-	-		6		
% Pedestrians	-			100.0			-		100.0	-	-			100.0	-	-

Imperial

TIMPICE DATA OULESTION

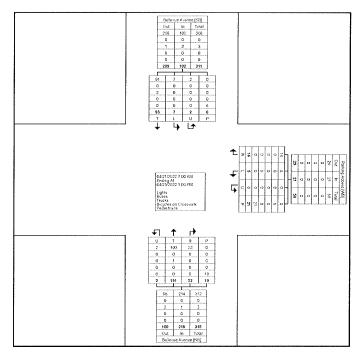
Imperial Traffice & Data Collection

www.imperialtdc.com

PO BOX 4637

Cherry Hill, New Jersey, United States 08034
609-706-6100 lklein@imperialtdc.com

Count Name: 2. Bellevue Avenue and Existing Parking Lot Dňveway Site Code: 2 Start Date: 04/21/2022 Page No: 3



Turning Movement Data Plot

Imperial

IMPERIADATA OULETION

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 4

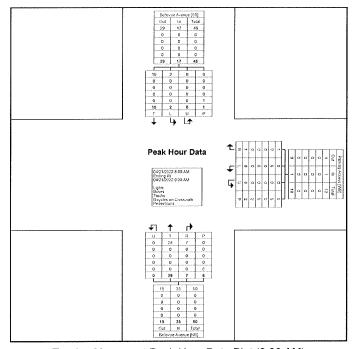
Turning Movement Peak Hour Data (8:00 AM)

					Tarring	3 1110 1011	IOTIC I O	an iloui i	Julia (O.	00 / 1111/						
			Parking Access					Bellevue Avenue					Bellevue Avenue			
Start Time			Westbound					Northbound					Southbound			
Start 1 me	U-Turn	L.eft	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
8:00 AM	0	0	0	0	0	0	9	11	0	10	0	1	2	0	3	13
8:15 AM	0	0	0	0	0	0	8	2	1	10	0	0	4	1	4	14
8:30 AM	0	0	0	0	0	0	4	3	5	7	0	0	5	0	5	12
8:45 AM	0	0	1	2	1	0	7	11	0	8	0	1	4	0	5	14
Total	0	0	1	2	1	0	28	7	6	35	0	2	15	1	17	53
Approach %	0.0	0.0	100.0	-	-	0.0	80.0	20.0		-	0.0	11.8	88.2		-	
Total %	0.0	0.0	1.9	-	1.9	0.0	52.8	13.2	-	66.0	0.0	38	28.3		32.1	
PHF	0.000	0.000	0.250		0.250	0.000	0.778	0.583	-	0.875	0.000	0.500	0.750		0.850	0.946
Lights	0	0	1	-	1	0	28	7	-	35	0	2	15	-	17	53
% Lights	-	-	100.0		100.0	-	100.0	100.0		100.0	-	100.0	100.0		100.0	100.0
Buses	0	0	0	-	0	0	0	0		0	0	0	0	•	0	0
% Buses	~	-	0.0	-	0.0		0.0	0.0		0.0		0.0	0.0		0.0	0.0
Trucks	0	0	0		0	0	0	0	-	0	0	0	0		0	0
% Trucks			0.0		0.0		0.0	0.0		0.0	-	0.0	0.0		0.0	0.0
Bicycles on Crosswalk	-		-	0		-		-	0		-			0	-	
% Bicycles on Crosswalk		-	-	0.0	-	-	-	-	0.0					0.0	-	-
Pedestrians	-	-	-	2		-	-	-	6	-	-		-	1	-	
% Pedestrians	-	-	-	100.0	-				100.0	-				100.0	-	

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Project: Lancaster & Bellevue Municipality: Wayne, Delaware County, PA Setup: DR Location: 40.044664, -75.391265 Imperial Traffic & Data Collection
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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 5



Turning Movement Peak Hour Data Plot (8:00 AM)

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 6

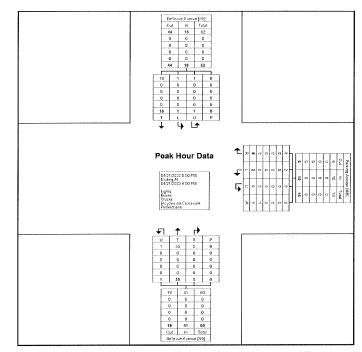
Turning Movement Peak Hour Data (5:00 PM)

					Turring	j Moven	EHL LE	ak Flour	Dala (J	OU FIVI)						
			Parking Access					Bellevue Avenue	}				Bellevue Avenue			
Start Time			Westbound					Northbound					Southbound			
Start Time	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	l,eft	Thru	Peds	App. Total	int. Totai
5:00 PM	0	0	4	0	4	D	7	0	0	7	0	0	6	0	6	17
5:15 PM	0	1	3	0	4	0	11	4	0	15	0	1	1	0	2	21
5:30 PM	0	1	0	1	1	. 1	10	0	0	11	0	0	6	0	6	18
5:45 PM	0	0	1	0	1	0	7	1	0	8	1	0	3	0	4	13
Total	0	2	8	1	10	1	35	5	0	41	1	1	16	0	18	69
Approach %	0.0	20.0	0.08	-	-	2.4	85.4	12,2	-	-	5.6	5,6	88.9	-	-	-
Total %	0.0	2.9	11.6		14.5	1.4	50.7	7.2	-	59.4	1.4	1.4	23.2	-	26.1	
PHF	0.000	0.500	0.500		0.625	0.250	0.795	0.313	-	0.683	0.250	0.250	0.667	-	0.750	0.821
Lights	0	2	8	-	10	1	35	5		41	1	1	16		18	69
% Lights		100.0	100.0	-	100.0	100.0	100.0	100.0		100.0	100.0	100.0	100.0	-	100.0	100.0
Buses	0	0	0		0	0	0	0	-	0	0	0	0		0	0
% Buses	-	0.0	0.0	-	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0
Trucks	0	0	0	-	0	0	0	0	,	0	0	0	0		0	0
% Trucks		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk		-	-	0				-	0		-			0		-
% Bicycles on Crosswalk	-			0.0	-	-	-	-								-
Pedestrians	~		-	1			-		0	-			-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-					-		

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 7



Turning Movement Peak Hour Data Plot (5:00 PM)

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609-706-6100 Iklein@imperialtdc.com

Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 8

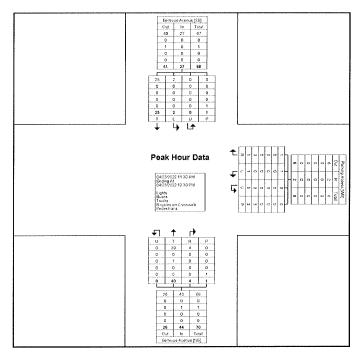
Turning Movement Peak Hour Data (11:30 AM)

					running	INIONELLI	CIII I Ca	KIIOUIL	Jala (I I	.ou Aivij						
			Parking Access					Bellevue Avenue	•		Bellevue Avenue					
			Westbound		· l			Northbound					Southbound			
Start Time	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
11:30 AM	0	0	1	1	1	0	12	1	0	13	0	11	9	1	10	24
11:45 AM	0	0	0	1	0	0	6	0	0	6	0	0	6	0	6	12
12:00 PM	0	0	0	0	0	0	13	3	0	16	0	0	6	0	6	22
12:15 PM	0	1	0	1	1	0	9	0	11	9	0	11	4	0	5	15
Total	0	1	1	3	2	0	40	4	1	44	0	2	25	1	27	73
Approach %	0.0	50.0	50.0	-	-	0.0	90.9	9.1		-	0.0	7.4	92.6		~	
Total %	0.0	1.4	1.4		2.7	0.0	54.8	5.5		60.3	0.0	2.7	34.2		37.0	-
PHF	0.000	0.250	0.250		0.500	0.000	0.769	0.333		0.688	0.000	0.500	0.694		0.675	0.760
Lights	0	1	1	-	2	0	39	4	-	43	0	2	25		27	72
% Lights	-	100.0	100.0		100.0	-	97.5	100.0		97.7	-	100.0	100.0		100.0	98.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0		0.0	0.0		0.0	0.0
Trucks	0	0	0		0	0	1	0		1	0	0	0		0	11
% Trucks		0.0	0.0	-	0.0	-	2.5	0.0	-	2.3		0.0	0.0	-	0.0	1.4
Bicycles on Crosswalk	-	-		0			-		0	-				0	-	-
% Bicycles on Crosswalk		-	-	0.0		-			0.0	-				0.0	-	-
Pedestrians	-	-	-	3	-				1					1	-	-
% Pedestrians	-	-	-	100.0		-		•	100.0				-	100.0		L

Imperial TRAFFIC & DATA COLLECTION

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Count Name: 2. Bellevue Avenue and Existing Parking Lot Driveway Site Code: 2 Start Date: 04/21/2022 Page No: 9



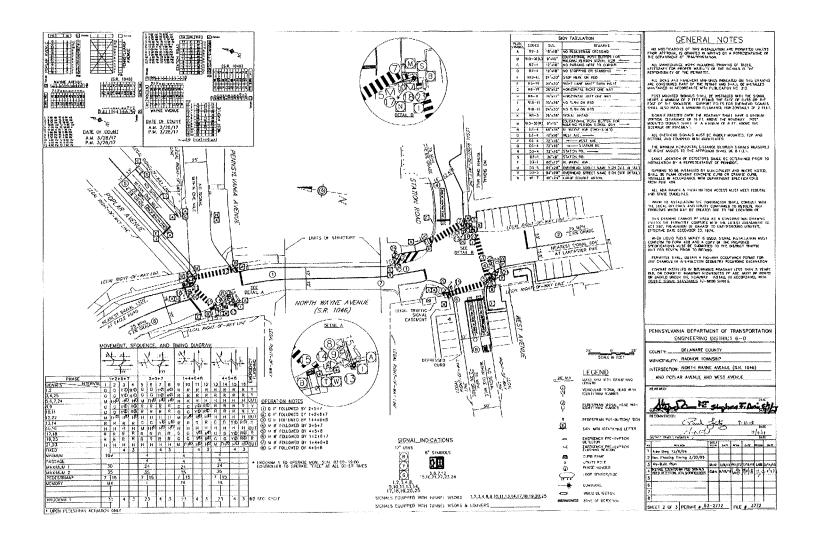
Turning Movement Peak Hour Data Plot (11:30 AM)

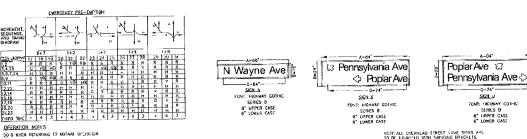


Attachment 2

Traffic Volumes along West Avenue –
North Wayne Avenue (S.R. 1046) &
West Avenue Signal Plan

	•	• •	• •	





NOTE: ALL OVERHEAD STREET NAME SIGHS ARE TO BE EQUIPMED WITH SWINGING BRACKETS.







CHERNO TO BE INSTALLED BY MUNICIPALITY AND MIGHE HOTER, SHALL BE, PLAY COMPAR CONCINTY CUTD OF CHARM CHARL PROVINCE WITH DEPARTMENT SECONDAYOR WHEN THE WORLD AND THE PROVINCE WHEN DEPARTMENT SECONDAY WHEN THE WORLD AND THE PROVINCE WHEN THE PROVI ALL ADA RAMPS & POSH BUTTON ACCUSS MUST MEET FFTTMA ART STATE CONDENNES. PHICK TO INSTALLATION THE CONTRACTOR SHALL CONSELL WITH BIRL LOCAL OFFICIALS AND JULYS COMPANIES TO REPORT ANY PROMEUS WHICH HAY BY CATARIO DUT TO THE LOCALION OF THIS CHARMO CAMANT OF USED AS A CONSTRUCTION DESIRAL LACESS THE COMMITTEE CHARMOST HIT IS LATEST AMERICANET TO ANALYSIS HITH THE LATEST AMERICANET TO ACT 1974. PRINTING OF UNALASE TO UNDERSTOUND UNDERSTOOD OF UND MAIN VIGUE FOR SHORT IS USE SCORE RESALATION WAS CONTRACT TO SHORT HE AND A CHEVE OF THE PREFIXED OFFICE ACTION THE USE THE PREFIXED OFFICE ACTION WAS CONTRACT OF THE USE THE WAS CONTRACT TO BOOME. POT THREE WALL COTARE A RECEDENCE OF THE SECRET OF WHITE OF THE SECRET O CONCURT INSTALLED BY BUTTHANDER POLITIMAY LESS THAN 6 THANS O.D. OR CONCRETE BOADWAY MECABOLISTS OF ACL, MINST BY BORKS OR ACCED OLDER FOR SOCIETY, MISTALL IN ACCOMMANCE WITH BRATTLE ENGLAL STANCES OF THE SOCIETY. PENNSYLVANIA DEPARTMENT OF TRANSPORTATION FNGINEERING DISTRICT 5-0 COUNTY: DELAWARE COUNTY HUN PROBLITY. RADINOR TOWNSHIP HITERSECTION: NORTH WAYNE AVENUE (S.R. 1046) AND POPLAR AMENUE AND KEST AVENUE STARWED: JEB WATER IN Cand Jets 2/1431 ALERT CUMMONN SEE ZONEZ.

SHEET 3 CF 3 PERM 1 # 83-2772 PRE # 2772

GENERAL NOTES NO HODICAROUS OF THIS INSTALLATION ARE PERMITTED UNIXES FROM APPROVAL IS GRANITIO IN WITHIN BY A REPRESENTATIVE OF TRANSPORTATION. ALL WAS TENANCE WORK INDICATED TRIBANG OF TREES, HECESSARY FOR PROPER VISIOUS OF THE SUNALS IS THE RESIDENCE OF THE SUNALS IS THE RESIDENCE OF THE PROPERTY. ALL SIGNS AND PANDWINT MARKINGS INCACATED ON THE URAWA ARE CONSCIENCE PART OF THE PERIOD WHILL BE INSTALLED MANITAMED IN ACCORDANCE WITH PURPLEATION HO. 212. POST MOUNTED SIGNALS THAT BE INSTALLED WITH THE SIGNAL LOGGE OF THE SIGNAL THAT SIGNAL SHALL BE INSTALLED WITH THE SIGNAL SHALL SIGNAL AND SHALL ALSO HAVE A MANAGEM CHARGING HOSTICATIVE OF THE SHALL ALSO HAVE A MANAGEM CHARGING HOSTICATIVE OF THE SHALL ALSO HAVE A MANAGEM CHARGING HOSTICATIVE OF THE SHALL AND SHALL ALSO HAVE A MANAGEM CHARGING HOSTICATIVE OF THE SHALL AND S

SOURCE RECEIPT DAYS THE PROPERTY STREET HAVE A MARKET VICTOR SERVICE OF THE FT. ADDRESS THE ROLL AND THE ROLL AND THE ROLL AND THE STREET, POST MOUNTED SOURCE OF PARTIEUT.

ALL CHERRIA) SCHALS WIST BE HOOSLY MOUNTED, TOP AND BOTTOM, AND LOURPED WITH MACHINERS.

THE MINIMUM HOWIZONER, ESTANCE BETWEEN SCHALS MEASURED AT MOST AMOUNT TO THE APPROACH SHALL BE DIFFET.

FRACT COCARON OF DETECTIONS SHALL BE DETERMINED OR OR TO ASSALLABOW BY A HEMIC SENTAINE OF PERMISON.

EMERGENCE PARTIER WITH THE STATE OF THE STAT

THIS FAIR SAFE DEMOE SHALL COMPINE OF A PLANNING WHITE PLOOD LIGHT, AND SHALL FLANN WHITE THE EMERGACY WHICE HAS COMPOSE OF THE WILL-RECOMM FOR THE APPROXIMENT APPROXIMEL LEXTHER OF EMERGENCY WHICE DEFECTOR WHICE OF THE DEMORPH OF WHICE DEFECTOR AND TO BE THEN DAY WARRING CHEARTON.

THE SOMALS, MINH ACTIVATIOD BY EMERGENCY VANIGES, SHALL BEARRATE ALL GREEN INDICATIONS INMEDIBITY FOLLOWED IN THE COMPLETE THILLOW AND RED CLEARANCE, HILLIANS, ACCORDINGLY THE CASH MIRROWAL FOR HE PRE-PUBLIC PLANTS BEAR SHALL TOLLING WITH FILED FRANCES FOR TOWARD A VILLOW TRAP CONCERNO MAY REMAIN DILLIA (PHASE 5 AND 8) META COMPRINE BY APPROACHED BY EMPROACHED THE PROPERTY OF THE

THE SIGNALS, WHEN ACTIVATED BY EVERGENCY VEHICLES, SHALL THE OUT ALL YELLOW AND RED HOLGARINS, FOLLOWER BY THE HITERVAL OF THE PIRE-LUPIDED PARSE GOVERNUD BY THE ACTIVATION OF THE APPROAGRANGE PHAZE GOVERNIST THE EMERCENCY VEHICLE.

IF THE OPENIAS HAVE EFFN ACTUATED BY PECESIBIAN HAVINGHITON, AND THE SEGNAL IS PRE-EMPTED DURING THE "MANY THANS. HE WAN FRASE STALL TENHANTS BUMEDATELY, FOLLOWS BY THE "FLASHING HAND" INSCRIBEN IN TECHNICAL FOLLOWS BY THE "FLASHING PROCESSING TO THE FREE EMPTION PHASE.

If the Schaes, when activated by Euprochev Middles, are Flashro, all signals shall behaviorables.

UPON COMPLETION OF PRE-EUPTION PHASE 1+2, 1+4, 5+7, 6+7, OR 1+8, IN RETURNING TO KORMAL OFFRATION, PHASE 1+216+7, INTROM. 1 SHALL FOLLOW.

IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL THAT OUT BY ONE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.

IN LULMGENCY FRET-FUTTON, NO ORIGINY SHALL BE ESTABLISHED, PRE-ENPITION SHALL BE A THANK COME, THIST SERVE OPERATION

THE FIGUL LOCATIONS OF THE PRE-LEVITION DETECTORS MAY DIFFER FROM THE LOCATONS DEFICITED ON THE COSINION DANGER, AS THE DETECTORS MAY WERD TO BE RELOCATED AMOVOR ADMISTIB TO PROVIDE ACCEPTABLE OF PLASFARM.



Radnor Township 301 Iven Avenue Wayne, Pa. 19087 610-688-5600 Fax # 610-971-0450 www.radnor.com

Memo

To: Steve Norcini
From: Michael Mesco
CC: Patti Kaufman

Date: 9/21/2023

Re: 60 West Avenue Land Development Review Comments

After reviewing the provided documents for 60 West Avenue, I have the following comments below.

- 1. The nearest fire hydrant(s) need to be identified on the plans as well as their distance(s) from the proposed building.
- 2. The proposed building construction type is to be provided for evaluation of the required fire flow can be conducted for the proposed building.
- 3. Most recent fire hydrant flow data within the last calendar year from the closest identified fire hydrants to be provided by AQUA for review.
- 4. Fire apparatus aerial access road needs to be identified and provided to be no less than 26 feet in width exclusive of shoulders and an unobstructed vertical clearance of no less than 13 feet 6 inches.
- 5. A Knox Box will need to be ordered and installed on the building.



SITE ENGINEERING CONCEPTS, LLC

Consulting Engineering and Land Development Services

Robert M. Lambert, Jr., P.E.

Civil Engineer and Project Manager

EDUCATION

Bachelor of Science in Civil Engineering, 1997 University of Notre Dame; Notre Dame, Indiana

Masters of Science in Civil Engineering, 1999 Villanova University; Villanova, Pennsylvania

RESPONSIBILITIES AND EXPERIENCE

Mr. Lambert is the founding principal of the firm. He is also the project manager for institutional, commercial and residential subdivision and land development projects. He was the primary designer for two Growing Greener Grant Projects featured within Villanova University's Best Management Practice Demonstration Park for water quality. In addition to subdivision and land development approvals, he has obtained local, county, state and federal permits for many clients. These permits include local and county erosion and sedimentation control, Pennsylvania Department of Transportation highway occupancy, Pennsylvania Department of Environmental Protection and Army Corps of Engineers permits. His responsibilities include site planning, layout, grading, hydraulic analysis, storm drainage and stormwater management design. Mr. Lambert routinely presents expert witness testimony before municipalities.

PROFESSIONAL REGISTRATIONS

Maryland New Jersey Pennsylvania

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers Environmental and Water Resource Institute National Society of Professional Engineers



REPRESENTATIVE PROJECTS

Mr. Lambert has been the project manager and/or primary designer for the following projects. His responsibilities have included Zoning, Subdivision and Land Development Approvals, local, county, state and federal permits (as required):

Institutional

Bryn Mawr College

Mr. Lambert continues to provide Civil Engineering consultation for numerous campus projects. In addition, SITE Engineering Concepts keeps an up-to-date topographic survey of the campus for the College.

Athletic Fields: Designed and obtained approvals for the replacement of a non-compliant grass field with a NCAA compliant synthetic turf field.

Goodhart Hall: Worked with a team of architects, engineers and historians to design and approve an addition to a Lower Merion Township Class I historic building.

Haffner Hall: Worked with a team to design and approve the replacement of an existing dormitory.

Cabrini College

Gateway Project: Working with a team of architects, landscape architects, planners and engineers to propose a 711 space parking structure, gym addition, new student center and modified surface parking and circulation. This project is contemplated as a multi-phase project.

Friends' Central School

Synthetic Track: Worked with a specialized track consultant to develop a plan to permit a synthetic track on the City Avenue Campus. In addition to civil engineering services, Mr. Lambert also acts as a liason with Lower Merion Township.

Mr. Lambert continues to provide Civil Engineering consultation for numerous campus projects. In addition, SITE Engineering Concepts keeps an up-to-date topographic survey of the campus for the School.

Liberty Lutheran

Artman: Provided survey, design and permitting services for a multi-phase renovation of an existing continuing care facility. The phasing of the improvements allow the facility to remain fully functional during the renovation.

Mary Drexel: Provided survey, design, approval, permitting and construction related services for the redevelopment of a continuing care facility. The property included a historic mansion and barn structure. This project required Township Land Development, Historic and permitting approvals and a NPDES permit.

Lower Providence Presbyterian Church

Provided design, approval and permitting services related to the construction of an addition to an existing church building.

Natural Lands Trust

Binky Lee: Provided design and permitting services for the partial removal of a building and construction of a parking facility.

Cheslen Preserve: Provided design, approval and permitting services for the construction of a preserve management center on a 20 acre portion of the 1200+ acre preserve. The management center includes an office and meeting space, outdoor pavilion, facilities yard and related improvements.

Green Hills: Provided design, land development approval and permitting services for the construction of a parking facility.

Sadsbury Woods: Provided design, approval and permitting services for the construction of a parking facility. This plan included PADOT permitting.

Rosemont School of the Holy Child

Campus Renovation: Construction of a 32,000 sf classroom addition, free-standing 11,000 sf gymnasium, new parking areas and athletic field. Mr. Lambert provided civil engineering consulting throughout the Lower Merion Township Zoning and Land Development processes and obtained Township, County and State permits. In addition, SEC provided survey stakeout and construction administration services.

The Shipley School

Upper Campus ReDevelopment: Designed and obtained approvals for a multi-phase re-development of the campus. Phase 1 of the project includes demolition of an apartment building and several houses to construct three new athletic fields, structured tennis courts above parking and a maintenance building, new driveway and campus pedestrian paths. Later phases of the project will include an academic building, gymnasium addition and renovations to Shipley's historic main building.

Lower Campus Field: A new all-weather field constructed on the Shipley School Lower Campus. In addition to layout and permitting services, Mr. Lambert assisted in evaluating various turf alternatives and coordinated designs with the manufacturer.

"Farm" Athletic Fields: Two new all-weather fields and a reconstructed grass field. Mr. Lambert provided permitting, layout and coordination.

The Timothy School

Amtrak: Worked with the Timothy School to acquire additional land through a lot line change with Amtrak.

999 Old Lancaster Road: Provided survey and approval services for the conversion of a single family residence to be utilized by the school.

1001 Old Lancaster Road: Provided survey and approval services for the conversion of a single family residence to be utilized by the school as classroom space.

Facilities Building: Provided survey, design and approval services for the demolition of a structure and construction of a new facilities building.

Valley View Community Church

Provided civil engineering services for the concept phase, Lower Providence Zoning and Land Development approval processes, construction documents and construction administration for a church addition and related improvements. In addition, SEC provided landscape architecture.

Westtown School

Athletic Facility: Mr. Lambert provided construction observation and consulting services.

Campus Monumentation: Under Mr. Lambert's direction, SITE Engineering Concepts, LLC has developed a campus monumentation network to facilitate management of their 600 acre campus.

Faculty Housing Project: Two twin house structures for faculty and staff. Mr. Lambert provided civil engineering design and consulting services. These services included: township land development consulting, site, stormwater and erosion and sediment control designs. SEC provided survey services.

Track and Field Project: Provided design, permitting and construction observation services for the construction of an all-weather track, field events, soccer field, parking lot and campus circulation driveway. This project required both Township and NPDES approvals.

Science Building: Provided design, land development and permitting services for the construction of an addition to an existing science building.

Commercial

BMW of the Main Line

Provided survey, design, approval and permitting services for the renovation and redevelopment of the existing automobile dealership.

Dunkin Donuts

Provided the civil engineering expert testimony and design services for a conditional use application. The project included the re-purposing of an automobile service building into a Dunkin Donuts.

Lexus of Chester Springs

60,000 sf sales and service building with 430 parking spaces on an undeveloped site in Upper Uwchlan Township, Chester County, Pennsylvania. This project included a unique stormwater management design that optimized the usable area of the property by incorporating 1.6 acres of porous pavement.

Mall Properties – St. David's Square

Provided design, permitting and approval services for the construction of a bank pad addition to an existing shopping center facility.

Marino Corporation

Provided design, permitting and approval services for the construction a construction company headquarters.

Penn Real Estate Group

Provide property research, sketch plans, zoning, land development, permitting and construction observation services. Penn Real Estate Group owns and manages over one million square feet of commercial real estate throughout the tri-state area.

Summerwood Corporation

Provided survey, design, approval and permitting services for the redevelopment of a polluted gas station. The project included restaurant and retail pads.

Wilkie Lexus

Provide on-going civil engineering support services for Wilkie Lexus and related companies. Projects include the repurposing of a former Wawa building into a pre-owned sales center, the repurposing of an office building to a detail center and various other consulting projects.

550 Lancaster Avenue: Concept, design, permitting and construction services for a 17,000 sf warehouse building to store 280+ vehicles.

Residential

Mr. Lambert provides the design and permitting services for innumerable single family residential projects. These projects range from simple pools and patios to large estate design projects.

VARENHORST

STEPHEN VARENHORST

Stephen's impressive architectural portfolio boasts a diverse array of top-tier commercial, residential, and institutional projects. Following the completion of his architectural degrees, Stephen embarked on a fruitful career with several prominent Philadelphia firms, contributing his expertise to high-profile, high-value structures and urban planning initiatives.

In 1987, Stephen Varenhorst founded Stephen Varenhorst Architects (SVA), marking the beginning of a successful journey marked by a series of remarkable commissions. Today, Stephen's namesake firm has evolved into VARENHORST, PC, a flourishing practice celebrated for its unwavering commitment to design excellence. Notably, Stephen remains intimately engaged with every project undertaken by the firm, ensuring a hands-on approach and a dedication to delivering outstanding results.

Beyond his professional endeavors, Stephen Varenhorst maintains an active presence in the architectural community and has made valuable contributions as an educator at Drexel University's Westphal College of Media Arts & Design.



Education

School of Design North Carolina State University

Raleigh, NC

Degree: Master of Architecture, 1980

Awards: Dietrich Fellowship Department of Architecture North Dakota State University

Fargo, ND

Degrees: Bachelor of Architecture, 1978 BA in Architectural Studies, 1977

Professional Experience

VARENHORST. PC

1987-present

Philadelphia, PA

Professional Associations & Organizations

American Institute of Architects National Association of Architectural Registration Boards (NCARB) The Athenaeum of Philadelphia Drexel University Adjunct Associate Professor (2005-2015)

Radnor Township Planning Commission

Architectural Registrations

Pennsylvania New Jersey
Massachusetts Connecticut
NewHampshire Maryland
Kansas Ohio

Award Winning Projects

Balch Institute for Ethnic Studies,
Philadelphia,PA
Lee Residence, Philadelphia, PA
Philadelphia Enterprise Center, Philadelphia, PA
Mixed-Use Building at Suburban Square,
Ardmore, PA
Silverman Residence, Allentown, PA
Suburban Square Master Planning, Ardmore, PA
Venice One, Philadelphia, PA
Covenant House 'Rights'
Philadelphia, PA

EXHIBIT



Mark A. Roth, P.E. Senior Project Manager/ Transportation Engineer

Education

Bachelor of Science Degree, Civil Engineering, Drexel University, 1992

Licensure

Professional Engineer – Pennsylvania and New Jersey

Association Membership

Institute of Transportation Engineers (ITE)
Mid-Atlantic Section Institute of Transportation Engineers (MASITE)

Testimony Experience

Recognized as an expert in Traffic Engineering by numerous Municipal Zoning Hearing Boards or Conditional Use Proceedings in Bucks, Lehigh, Montgomery, and Northampton Counties.

Experience Summary

Mark A. Roth, P.E., is a Transportation Engineer and Senior Project Manager with McMahon Associates, Inc. Since joining McMahon Associates, Inc. in 1997, Mr. Roth has been involved in a variety of transportation engineering and planning projects, including traffic impact studies, area-wide and corridor-wide traffic studies, and traffic signal operations analysis. Prior to joining McMahon Associates, Inc., Mr. Roth conducted area wide transportation and corridor traffic studies for the Delaware Valley Regional Planning Commission (DVRPC) in Philadelphia. Mr. Roth has performed engineering and planning services for municipalities, states, and other professionals regarding present and future traffic patterns, congestion management strategies and applications, corridor development improvements, improvement designs based on study area needs, and regional highway network modeling. Mr. Roth has also given presentations and provided expert witness testimony in front of various municipal Planning Commissions, Zoning Boards, and Supervisors, and has also assisted a number of local area municipalities providing traffic engineering review services.

Representative Projects

PA 113 Heritage Corridor Transportation/Land Use Study, Delaware Valley Regional Planning Commission, Bucks and Montgomery Counties, PA

<u>Project Manager:</u> Coordination of data collection services at 30 intersections. Performed an evaluation of existing, future no-build, and future build traffic conditions for various improvements based on the potential land uses and physical design constraints. Attended various public and municipal meetings, prepared meeting boards and presentations, summarized meeting minutes. Preparation of detailed report outlining the potential roadway cross-sections to preserve existing and proposed land uses along the corridor, developed implementation schedule and associated costs related to the proposed corridor and intersection improvements.



I-95/Bridge Street Point of Access Study, PENNDOT District 6-0, Philadelphia, PA

<u>Project Manager</u>: Point of Access study to address justification for the design of the Bridge Street interchange and ramp system on Interstate 95, with lane additions/drops modified to merge/diverge sections with acceleration/deceleration lanes. McMahon performed the preliminary and final design of the local roadway improvements that are identified by future travel forecasts, assist in coordination of traffic signal plans and approvals, utility and agency coordination, meetings, and assist in public involvement.

Township Traffic Engineering Services, Solebury Township, Bucks County, PA

<u>Project Manager</u>: Completed traffic engineering reviews of land development and roadway improvement plans, intersection capacity and queuing analyses, speed studies, and various other traffic engineering tasks.

Phoenixville Borough Streetscape Project, Phoenixville, PA

<u>Project Manager</u>: Corridor improvement study to develop a conceptual streetscape plan along Main Street in downtown Phoenixville. Our role in the project was to provide support to Simone Jaffe Collins, including capacity analysis to determine level of service for existing and future conditions, identify existing deficiencies in circulation patterns, and evaluate the effectiveness of the proposed future roadway/pedestrian/parking area concept plans for the area. Engineering and planning analysis were utilized to develop conceptual roadway and intersection designs to address study area needs and future growth patterns in the area.

Lafayette Street Corridor Study, Montgomery County Planning Commission, Norristown Borough, Montgomery County, PA

<u>Senior Project Engineer:</u> Evaluated alternatives to improve access to Norristown, increase the capacity of the current roadway network and introduce new access opportunities, while analysis/ considering the reality of potential right-of-way and environmental constraints to the provision of the necessary roadway infrastructure. Performed feasibility evaluation of the various improvement options focused on a variety of factors including the redevelopment options for the riverfront area, the potential land uses in the area, physical constraints of improvements, environmental issues, and design constraints.

Highway Occupancy Permit (HOP) Review Assistance Open-end Contract, PennDOT District 6-0

<u>Project Engineer</u>: Third consecutive 30-month open-end contract providing review assistance in Philadelphia, Montgomery, Bucks, Delaware, and Chester Counties, PA. Organizes and reviews other consultant highway occupancy permit plans for PennDOT District 6-0. Reviews include field visits, traffic impact studies, roadway construction plans, maintenance and protection of traffic, and drainage design. Construction plans include proposed driveway and local roads, roadway widening, pavement marking and signing, curb construction plans, grading, and signal plans.

S.R. 0061 Comprehensive Transportation Needs Analysis Study, *PennDOT District 5-0,* Muhlenberg Township, Berks County, PA

<u>Project Engineer:</u> Performing a Comprehensive Transportation Needs Analysis Study for S.R. 0061, Section MUH. Services include extensive traffic data collection, including Automatic Traffic Recorder and Manual Turning Movement counts, O-D surveys, future travel pattern and volume projections, computer modeling, develop needs report, public and agency involvement, and coordinate environmental overview.