Planning Commission Development Plan Review Info Sheet

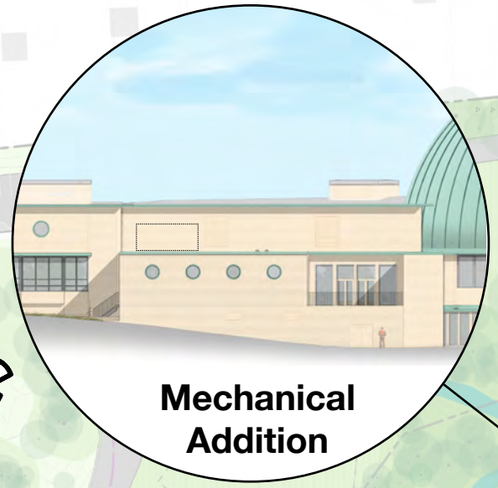
Printed Date: June 23, 2025

Property Address:	3300 MAYFIELD RD CLEVELAND HEIGHTS, OH 44118
Brief Summary of the Proposal	Phase 1 development of the Park Synagogue property including the following scope: Preservation and Adaptive Reuse of the Historic Synagogue & School Wing, Demolition of Ancillary Structures (Boiler House and Kangesser Hall), Site Improvements around the Synaogue including utilities, roadways, walks, and landscaping, and new construction of the C1 Multifamily Residential buildings.

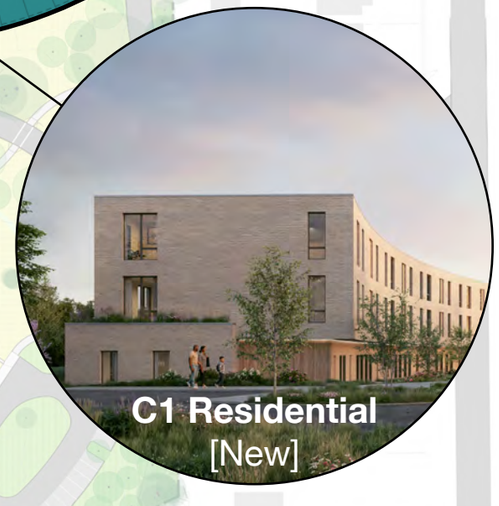
not to scale



Mikvah
[Not In Scope]



Mechanical Addition



C1 Residential
[New]



Bridge Addition
[Renovation]



Temple Wing
[Renovation]



Education Wing
[Renovation]



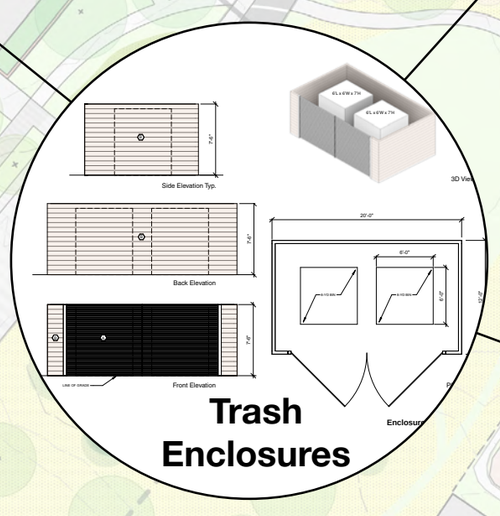
Daycare
[Not In Scope]

Park Synagogue
Mendelsohn Restoration

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Principal Buildings

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not to scale

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Accessory Buildings (Structures)

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Park Synagogue

Phase 1 Development

Site Improvement Scope

9/02/2025

The site improvements for the Phase 1 development of the Park Synagogue property are concentrated around the restoration of the historic Synagogue, the new C1 multifamily buildings, and the existing daycare building, with utilities and drive improvements stretching to the far north and south of the site. The scope of these improvements is as follows:

- Demolition of the Boiler House, Gas House, and Kangesser Hall.
- New and reconfigured underground utilities will be installed, including the following:
    - Removal of all existing water lines and fire lines for a new private main line running between Euclid Heights and Mayfield Road, with connections to all existing and new buildings.
    - New fire hydrants will be located near the Phase 1 buildings, and two (2) new fire department connections will be added at the main entries of the Synagogue.
    - Reconfiguration of the sanitary connection to the synagogue near the mechanical addition, and a new sanitary branch for the C1 multifamily that both tie into the existing.
    - New stormwater infrastructure will be installed around the Synagogue and the C1 multifamily buildings, which have a combination of underground and on-grade conveyance into the existing stormwater systems into the Dugway Brook and into the culvert in the northwest corner of the site.
    - A new section of gas line will be installed between the Mikvah and the Synagogue, and to the daycare building from Euclid Heights, but the C1 multifamily will not have gas lines.
    - New electrical service will be installed in all buildings fed underground from the high-voltage lines running along the east side of the property.
- A reconfiguration of vehicular drives around the Phase 1 buildings that will tie into the existing drives on the north half of the site.
- New parking stall layouts will be included along the new drives around the Phase 1 buildings, and all existing lots will be restriped.
- New accessible walks will be provided from Euclid Heights Boulevard to the historic Synagogue and the C1 multifamily buildings, and from all Phase 1 building entries to the accessible parking spaces, including the new entrance from the bridge down to the Mayfield Road parking lot.
- New bike racks will be included near the entries to the Phase 1 buildings with indoor bike storage at the historic Synagogue and the C1 multifamily buildings.
- New dual-port electric vehicle charging stations will be located near the entrances of the historic Synagogue and the C1 multifamily buildings.
- Removal of 40 trees in poor health or due to other site improvements, with the replanting of 133 trees, resulting in a net gain of 93 trees.
- Landscape improvements around the Phase 1 buildings, including a variety of ground covers and low plantings that enhance the screening of parking lots to adjacent properties.
- New site lighting will be installed around the Phase 1 buildings, with existing lighting remaining on the north half of the site.
- New irrigation will be installed around the historic Synagogue and C1 multifamily buildings in limited areas that include raised planters and enhanced planting beds.

Please see the submitted drawings for more details on the site improvement scope of Phase 1.

Cleveland Planning Advisors, LLC
Owner Representative Services

david@clevelandplanning.com
mobile +1 216 466 1972

Park Synagogue
Phase 1 Development

C1 Multifamily Residential

scale: 1” = 50’-0”



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C1 Enlarged Site Plan

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scale: 1” = 50’-0”



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C1 Historic Viewshed Plan

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35 PARKING SPACES
19 ADA

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C1 Existing Site Overlay

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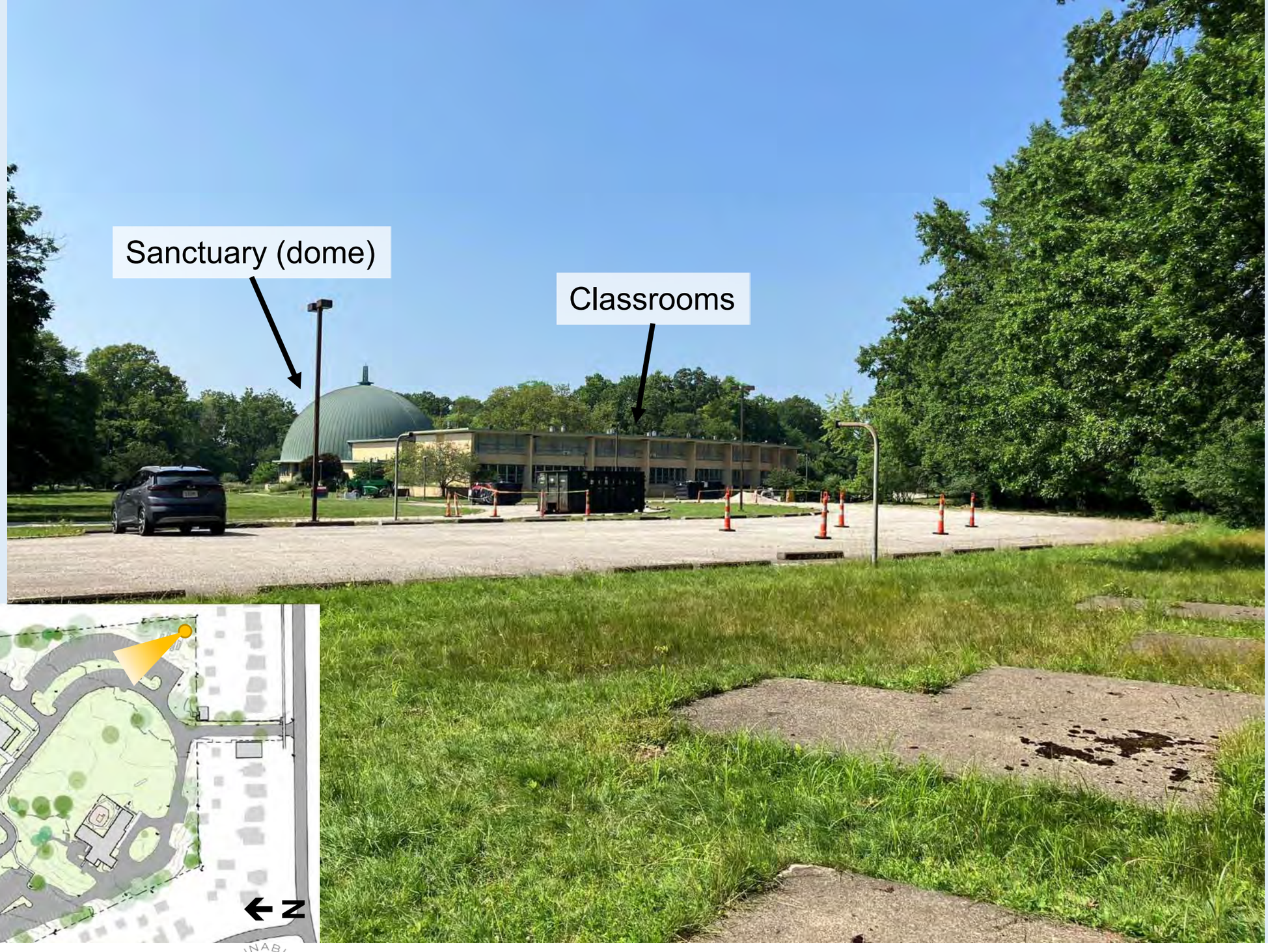


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Euclid Heights Blvd Entry View N

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Sanctuary (dome)
Classrooms


N

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Neighboring Backyard View NE

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Synagogue Main Entry Photo SE

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Synagogue Main Entry View SE

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N





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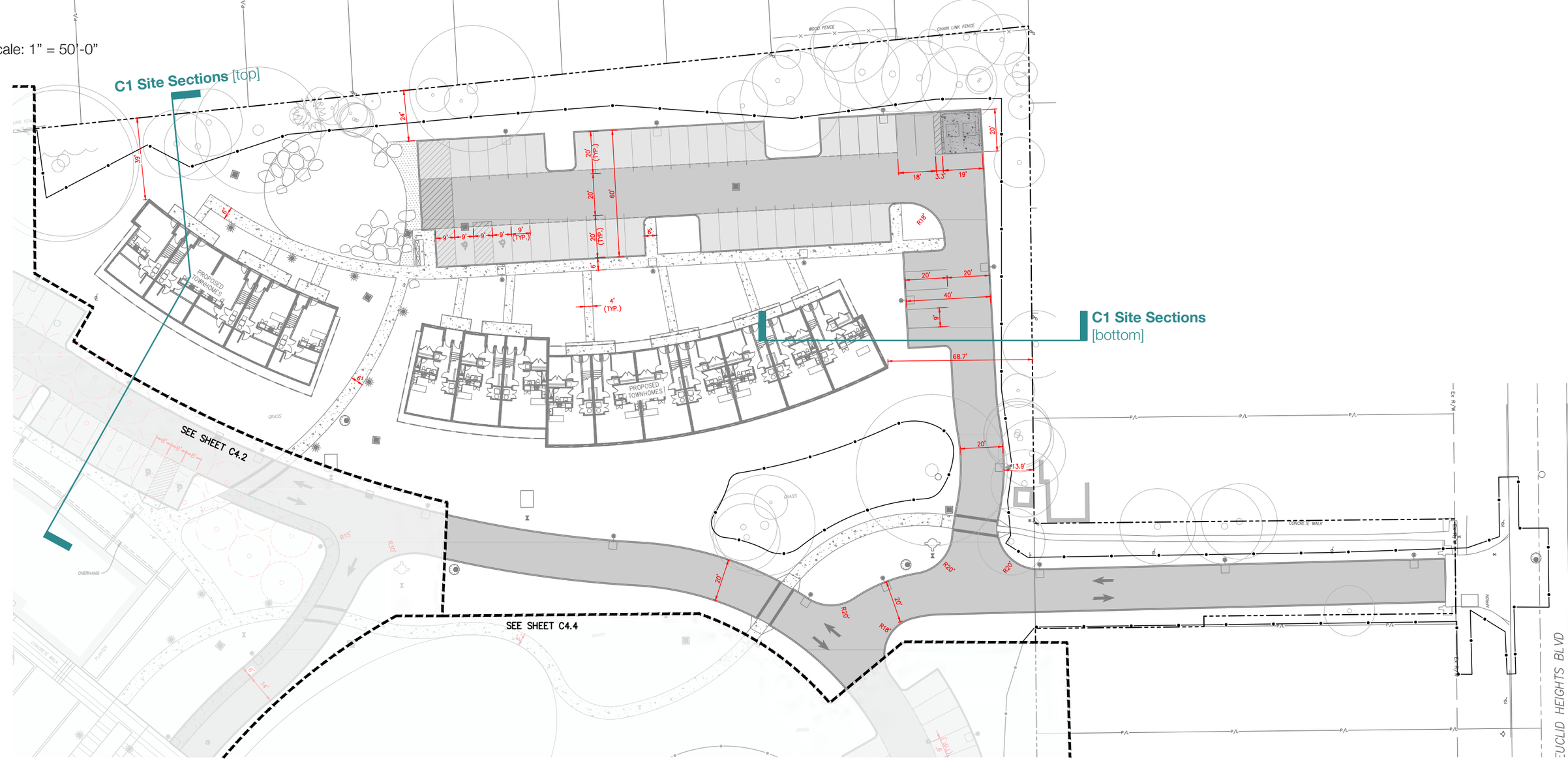
Synagogue School Entry View S

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scale: 1” = 50'-0”

C1 Site Sections [top]

C1 Site Sections [bottom]

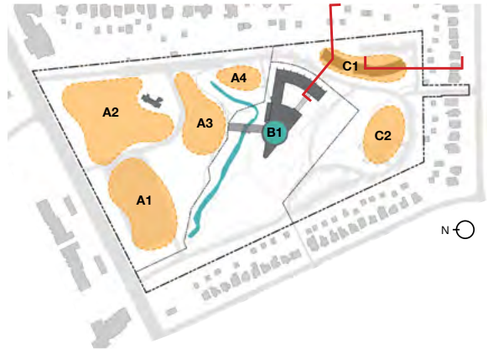


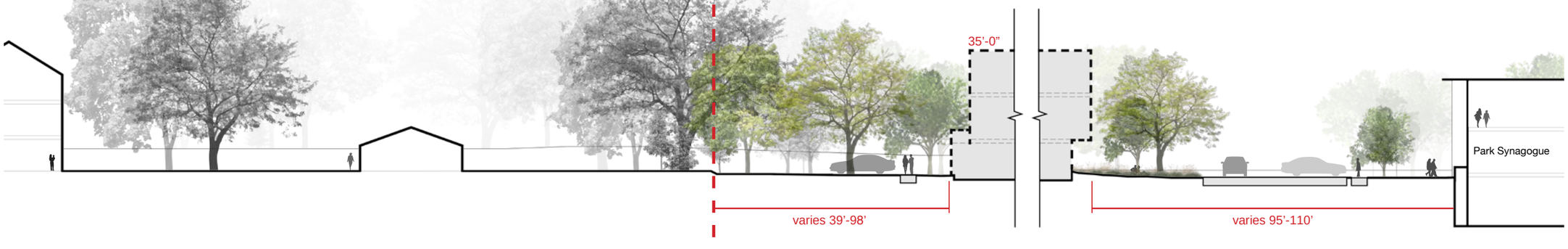
Park Synagogue
Mendelsohn Restoration

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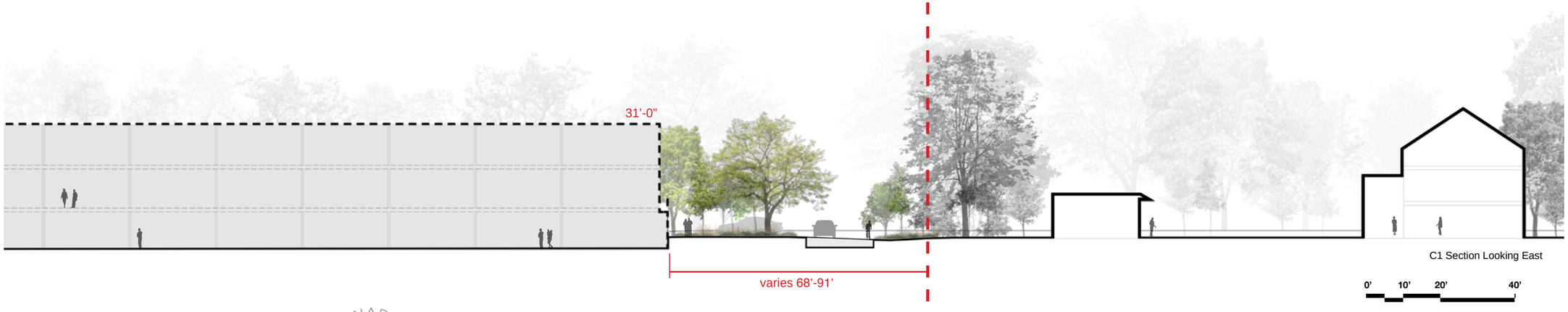
C1 Technical Layout Plan

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C1 Section Looking South



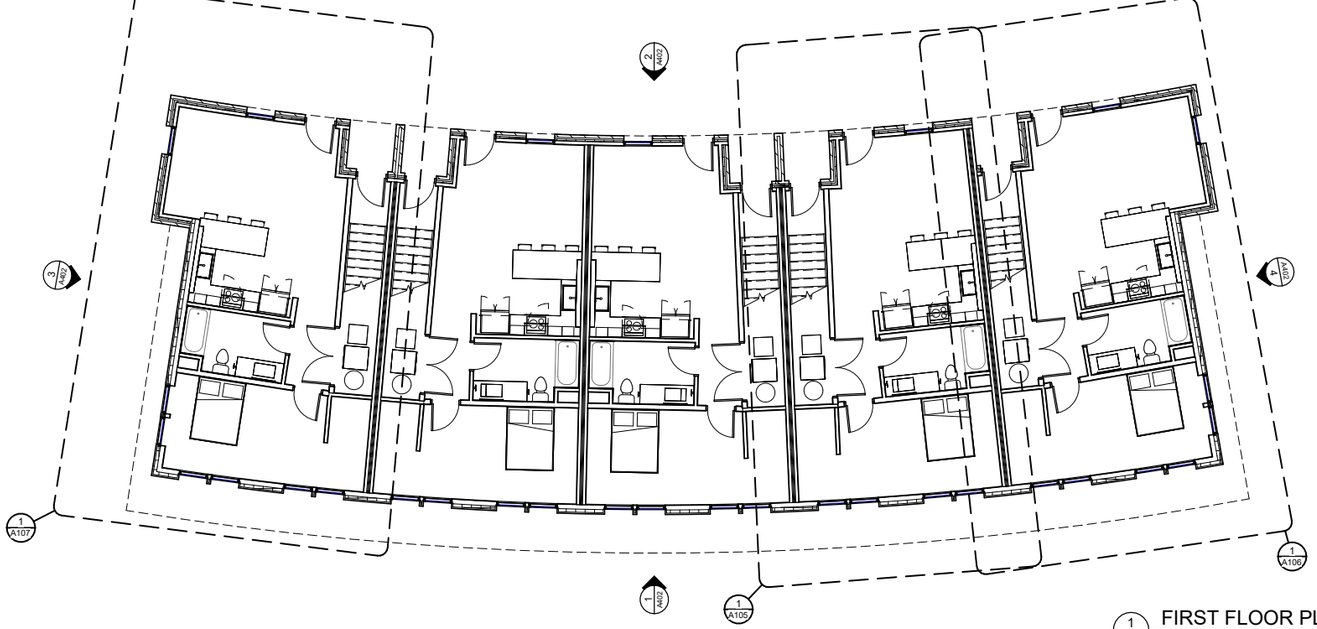
C1 Section Looking East

Park Synagogue
Mendelsohn Restoration

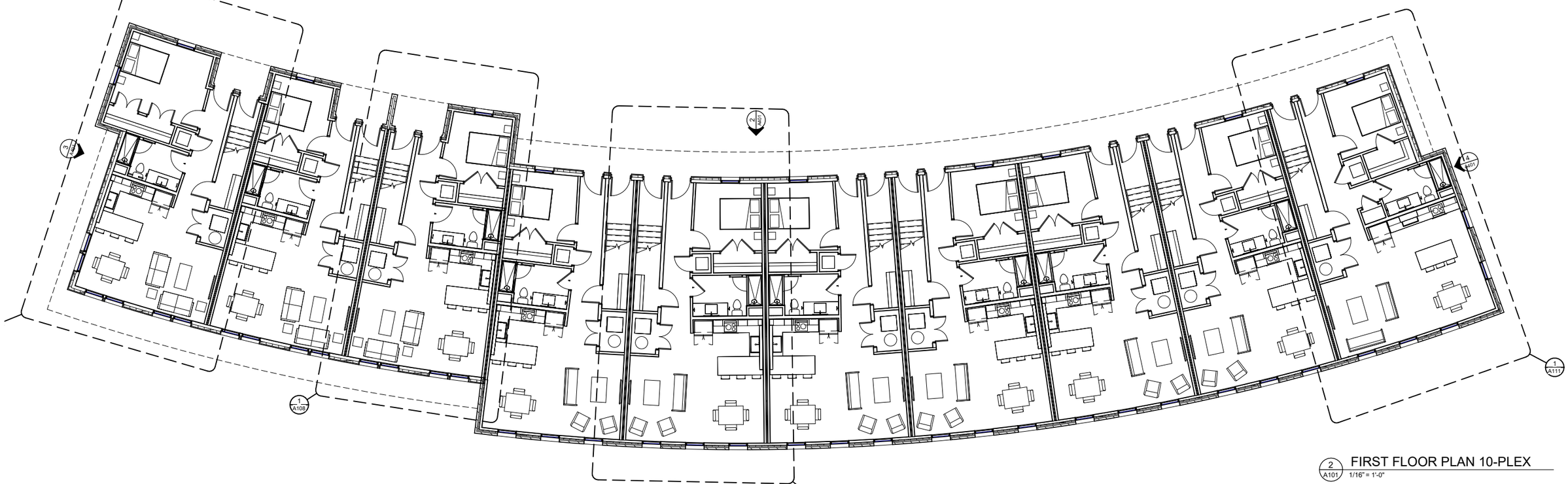
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C1 Site Sections

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1 A101 FIRST FLOOR PLAN 5-PLEX
1/16" = 1'-0"



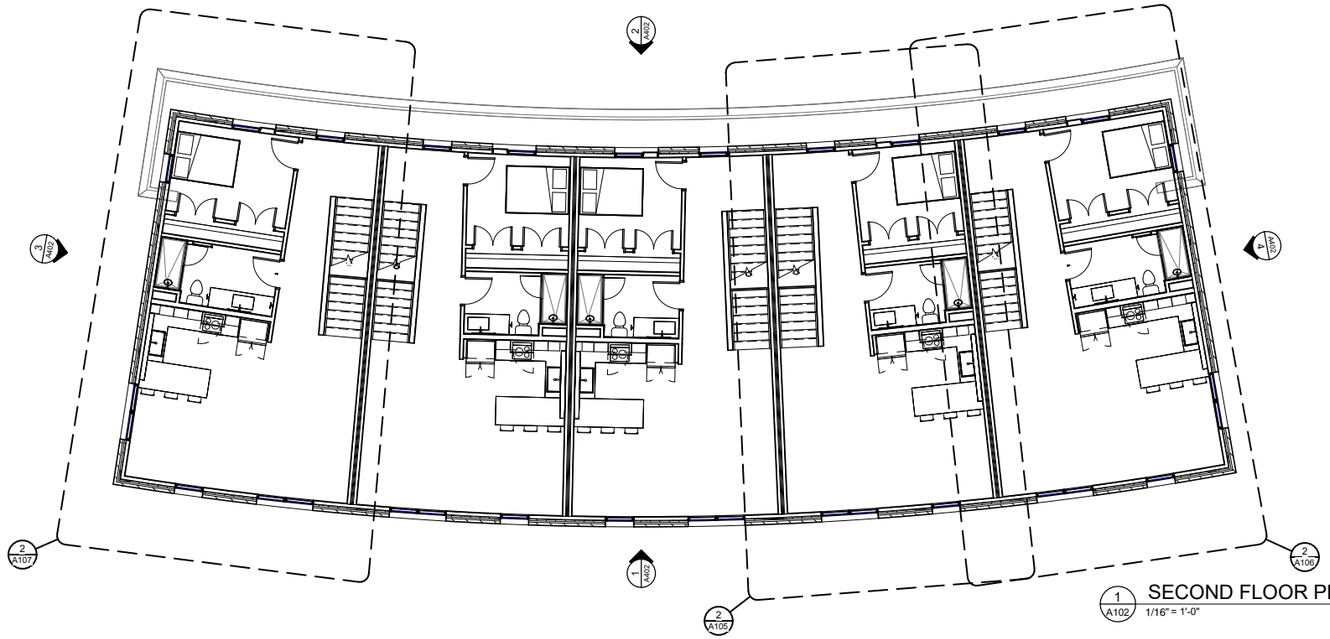
2 A101 FIRST FLOOR PLAN 10-PLEX
1/16" = 1'-0"

Park Synagogue
Mendelsohn Restoration

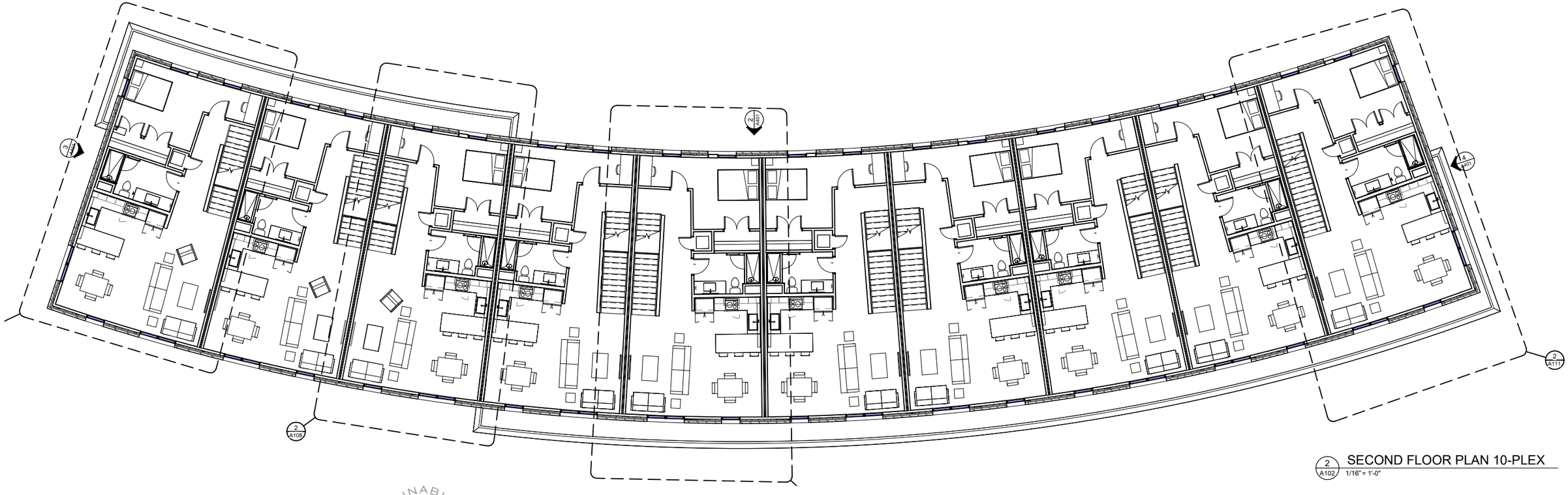
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C1 First Floor Plan

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1 A102 SECOND FLOOR PLAN 5-PLEX
1/16" = 1'-0"



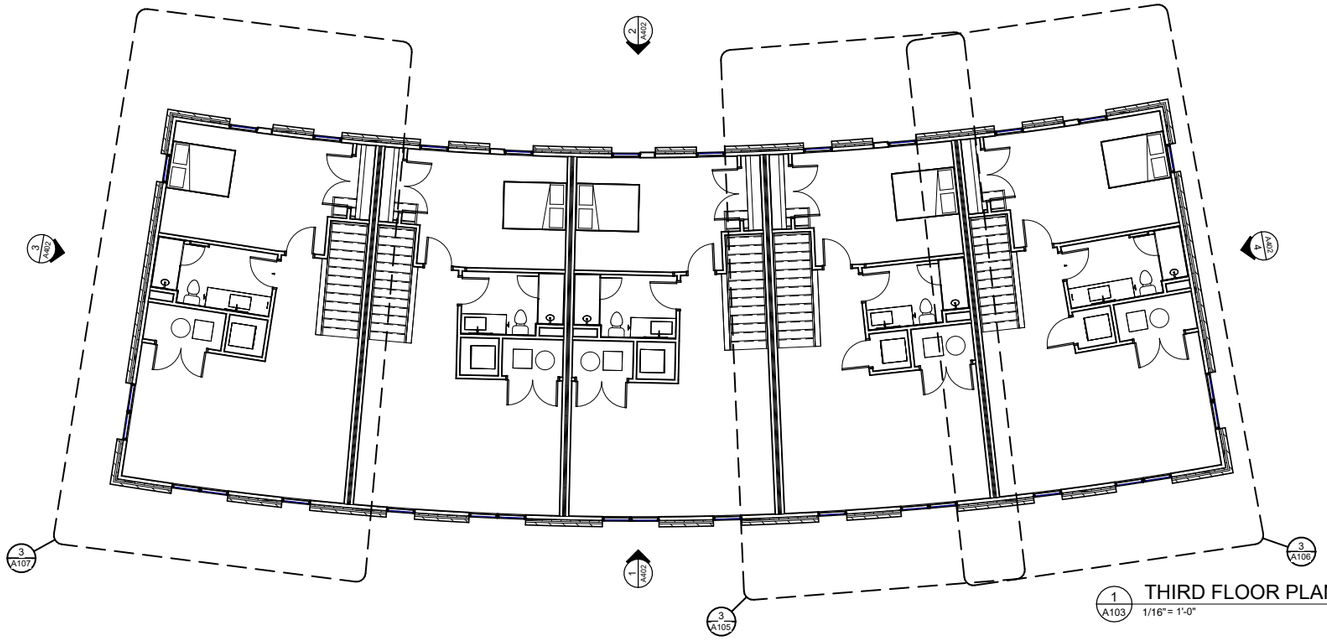
2 A102 SECOND FLOOR PLAN 10-PLEX
1/16" = 1'-0"

Park Synagogue
Mendelsohn Restoration

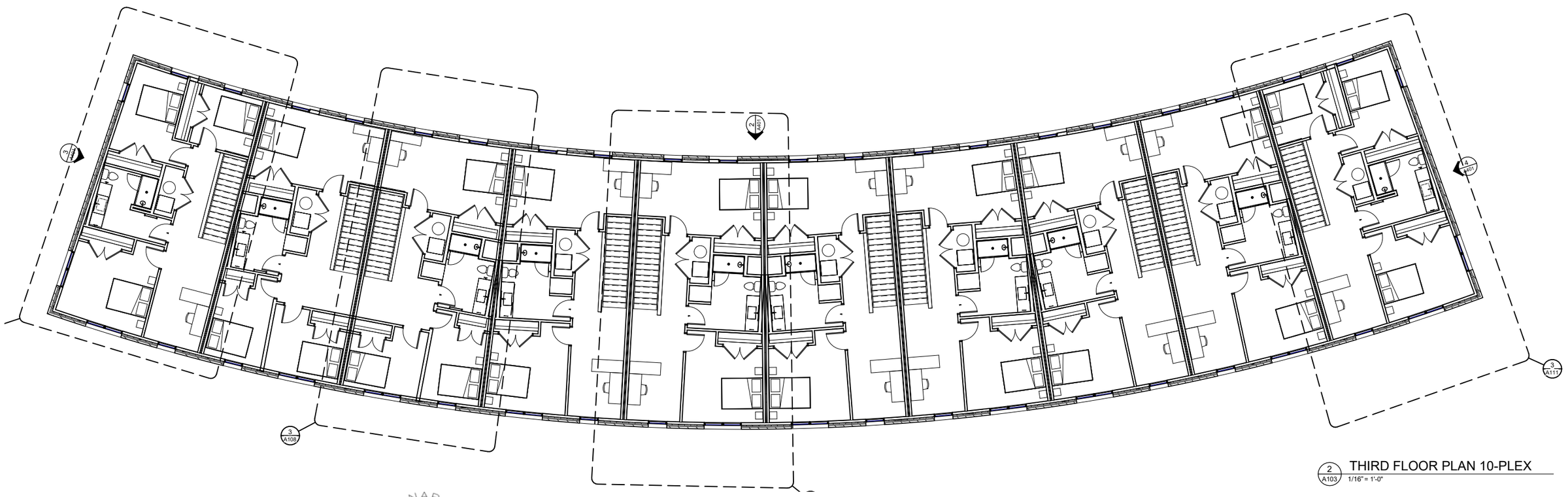
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C1 Second Floor Plan

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1 A103 THIRD FLOOR PLAN 5-PLEX
1/16" = 1'-0"



2 A103 THIRD FLOOR PLAN 10-PLEX
1/16" = 1'-0"

Park Synagogue
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C1 Third Floor Plan

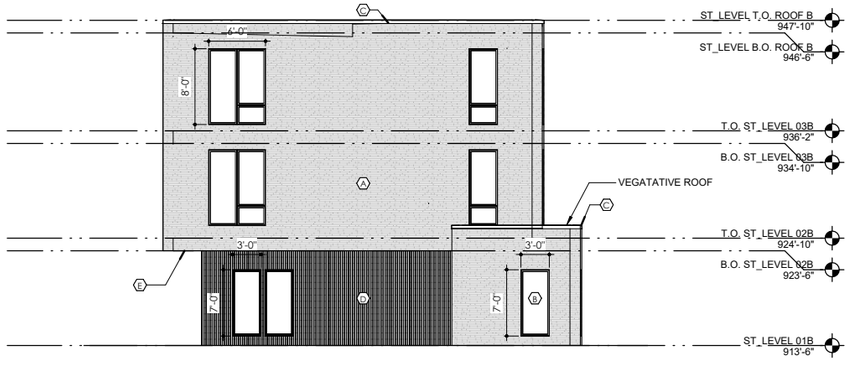
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EXTERIOR FINISH LEGEND

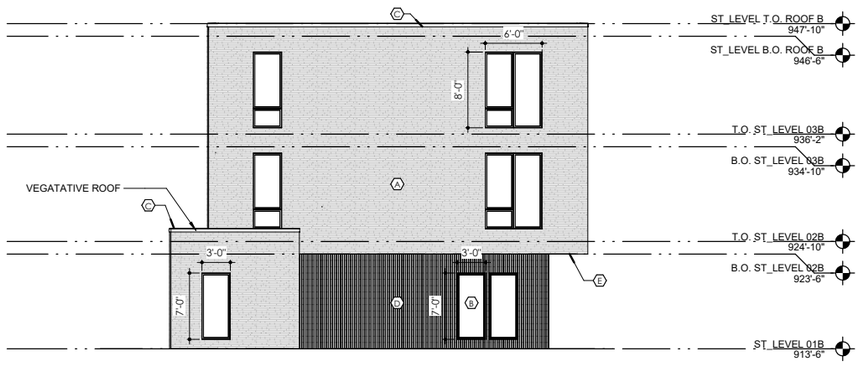
KEY	ITEM/MATERIAL	SIZE/TYPE/COLOR	MANUFACTURER
A	LINEAR BRICK	TBD	TBD
B	E-SERIES WINDOW	TBD	TBD
C	4" PRE-FINISHED ALUMINUM COPING	TBD	TBD
D	WOOD-LIKE VERTICAL PANEL	TBD	TBD
E	WOOD-LIKE HORIZONTAL SOFFIT	TBD	TBD

*ALL TYPICAL GLAZING TO BE INSULATED GLAZING SYSTEM

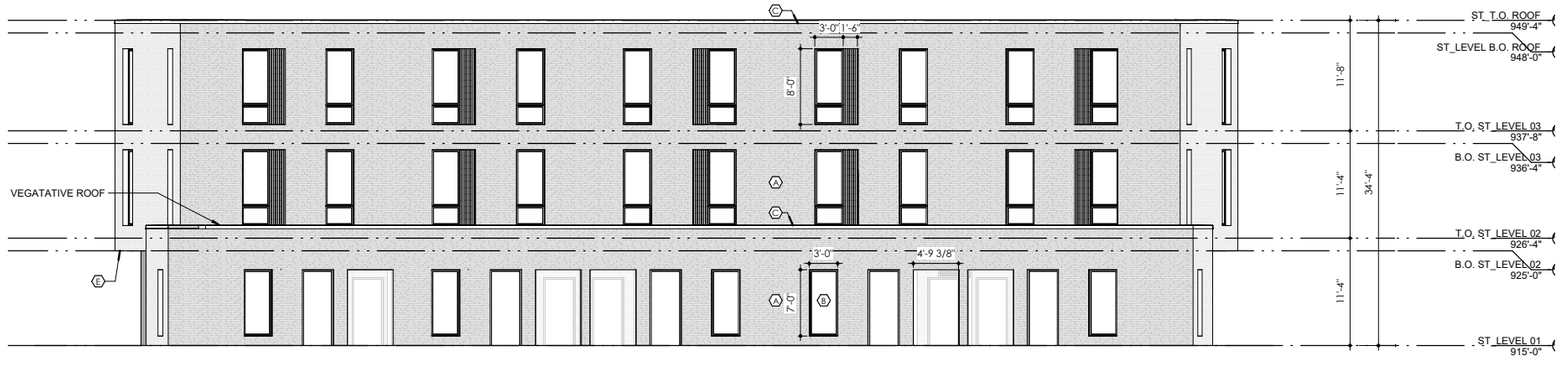
(L) = LAMINATED GLASS



4 A402 SHORT ELEVATION - SOUTH
1/16" = 1'-0"



3 A402 SHORT ELEVATION - NORTH
1/16" = 1'-0"



2 A402 SHORT REAR ELEVATION - EAST
1/16" = 1'-0"



1 A402 SHORT FRONT ELEVATION - WEST
1/16" = 1'-0"

5 Plex Elevations

Park Synagogue
Mendelsohn Restoration

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C1 Exterior Elevations

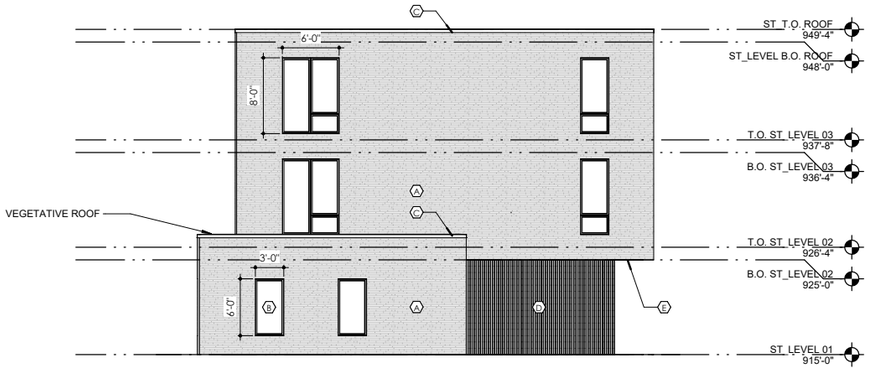
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EXTERIOR FINISH LEGEND

KEY	ITEM/MATERIAL	SIZE/TYPE/COLOR	MANUFACTURER
A	LINEAR BRICK	TBD	TBD
B	E-SERIES WINDOW	TBD	TBD
C	4" PRE-FINISHED ALUMINUM COPING	TBD	TBD
D	WOOD-LIKE VERTICAL PANEL	TBD	TBD
E	WOOD-LIKE HORIZONTAL SOFFIT	TBD	TBD

*ALL TYPICAL GLAZING TO BE INSULATED GLAZING SYSTEM

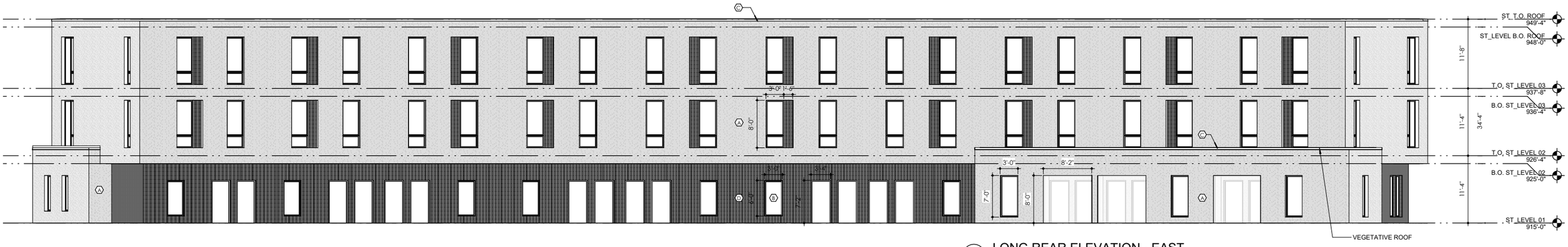
(L) = LAMINATED GLASS



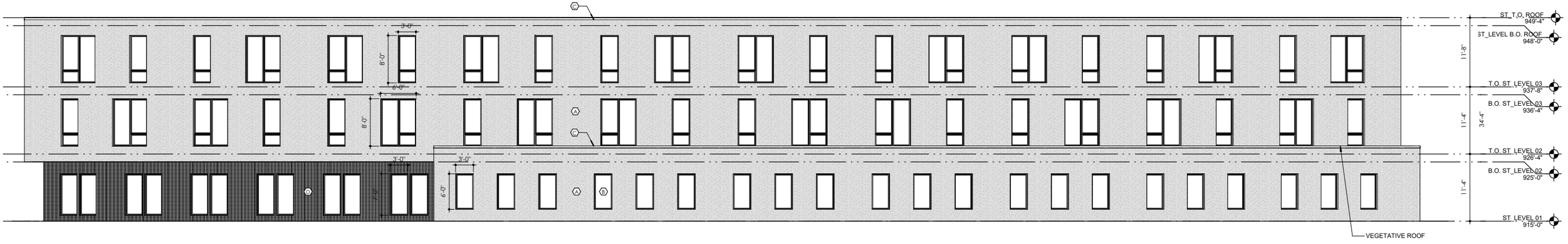
4 A401 LONG ELEVATION - SOUTH
1/16" = 1'-0"



3 A401 LONG ELEVATION - NORTH
1/16" = 1'-0"



2 A401 LONG REAR ELEVATION - EAST
1/16"= 1'-0"



1 A401 LONG FRONT ELEVATION - WEST
1/16"= 1'-0"

10 Plex Elevations

Park Synagogue
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C1 Exterior Elevations

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Large Native Shrubs (typ.)
Low Level Screening

Evergreen Tree (typ.)
Year Round Screening

Existing Tree (typ.)

10' Landscape
Buffer

Ornamental Tree (typ.)
Mid Level Screening and
Seasonal Interest

Deciduous Tree (typ.)
Shade and Seasonal Interest

Dumpster Enclosure

10' Landscape
Buffer

Tree Island
Plantings (typ.)

Foundation
Plantings (typ.)

Townhouses

Townhouses

Park Synagogue

Euclid Heights Blvd

0 20 40
GRAPHIC SCALE IN FEET

Park Synagogue
Mendelsohn Restoration

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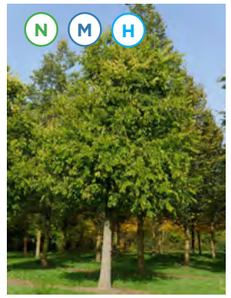
Proposed Landscape Screening

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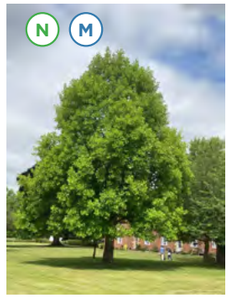
Canopy Trees



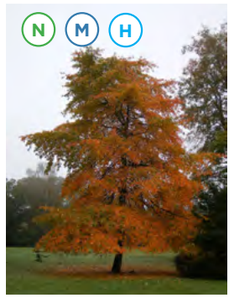
Acer rubrum 'Brandywine'
Brandywine Red Maple
Mature Height: 35'-50'
Mature Width: 25'-40'



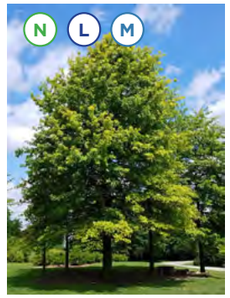
Celtis occidentalis
Hackberry
Mature Height: 40'-60'
Mature Width: 40'-60'



Liriodendron tulipifera
Tuliptree
Mature Height: 60'-90'
Mature Width: 30'-50'



Nyssa sylvatica
Black Gum
Mature Height: 30'-50'
Mature Width: 20'-30'



Quercus palustris
Northern Pin Oak
Mature Height: 50'-70'
Mature Width: 40'-60'

Evergreen Trees



Juniperus virginiana
Eastern Red Cedar
Mature Height: 30'-50'
Mature Width: 8'-20'



Tsuga canadensis
Canadian Hemlock
Mature Height: 35'-65'
Mature Width: 20'-30'

Ornamental Trees



Amelanchier laevis
Allegheny Serviceberry
Mature Height: 15'-40'
Mature Width: 15'-40'



Cercis canadensis
Eastern Redbud
Mature Height: 20'-30'
Mature Width: 25'-30'

Shrubs



Ceanothus americanus
New Jersey Tea
Mature Height: 3'-4'
Mature Width: 3'-5'



Hamamelis virginiana
Virginia Witch Hazel
Mature Height: 15'-20'
Mature Width: 15'-20'



Hydrangea arborescens
Smooth Hydrangea
Mature Height: 3'-5'
Mature Width: 3'-5'



Hydrangea quercifolia
Oakleaf Hydrangea
Mature Height: 6'-8'
Mature Width: 6'-8'



Lindera benzoin
Spicebush
Mature Height: 6'-12'
Mature Width: 6'-12'



Physocarpus opulifolius 'Summer Wine'
Summer Wine Ninebark
Mature Height: 4'-6'
Mature Width: 4'-6'



Thuja occidentalis 'Golden Globe'
Golden Globe Arborvitae
Mature Height: 2'-4'
Mature Width: 2'-4'

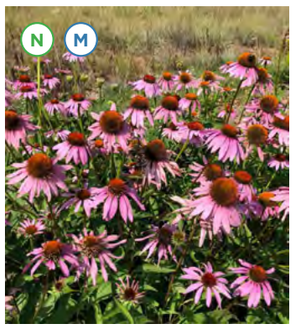
Perennials/Ornamental Grasses



Aruncus dioicus
Goat's Beard
Mature Height: 4'-6'
Mature Width: 2'-4'



Asclepias tuberosa
Butterfly Weed
Mature Height: 12"-30"
Mature Width: 12"-18"



Echinacea purpurea
Purple Coneflower
Mature Height: 3'-4'
Mature Width: 2'



Geranium maculatum
Wild Geranium
Mature Height: 18"-24"
Mature Width: 12"-18"



Panicum virgatum 'Rotstrahlbusch'
Red Rays Switch Grass
Mature Height: 3'-5'
Mature Width: 24"-30"



Phlox, various colors
Moss Phlox
Mature Height: 3"-6"
Mature Width: 24"



Schizachyrium scoparium 'The Blues'
The Blues Little Bluestem
Mature Height: 2'-4'
Mature Width: 2'



Rudbeckia fulgida
Black-Eyed Susans
Mature Height: 2'-3'
Mature Width: 24"-30"

Park Synagogue
Mendelsohn Restoration

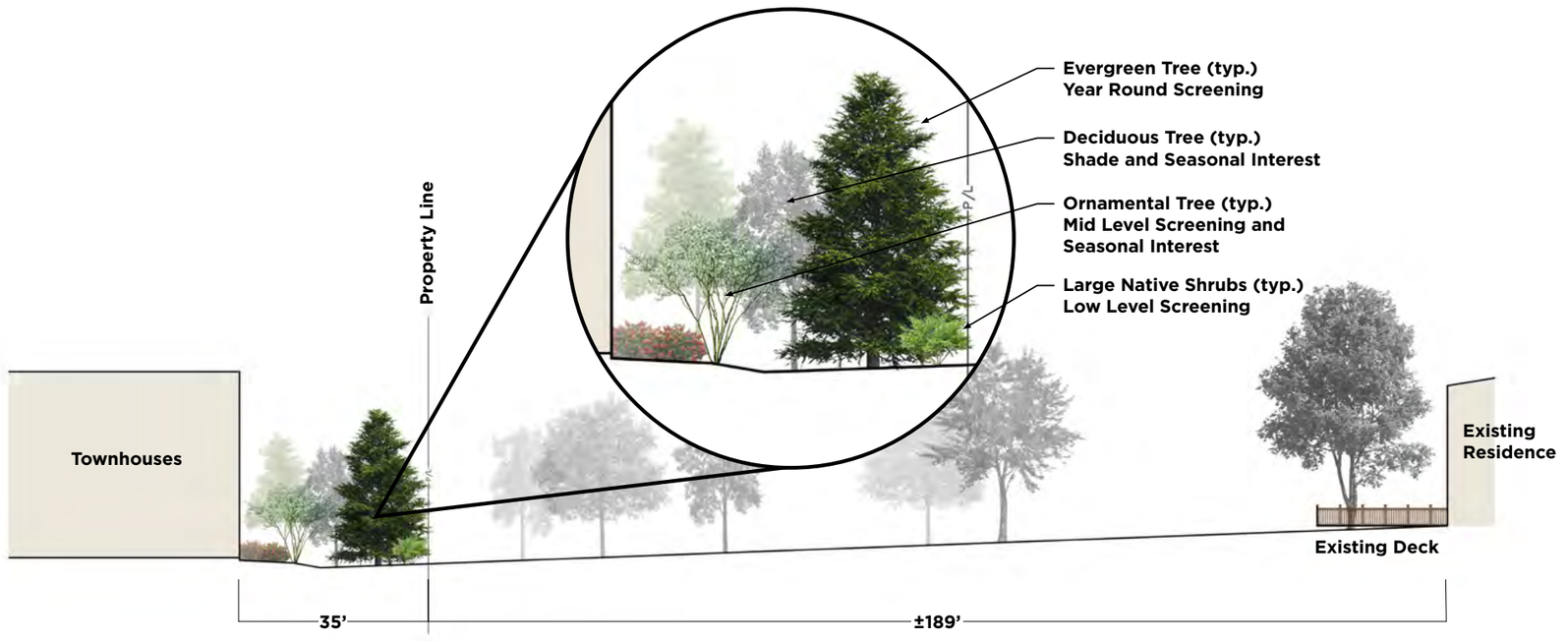
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Proposed Planting Palette

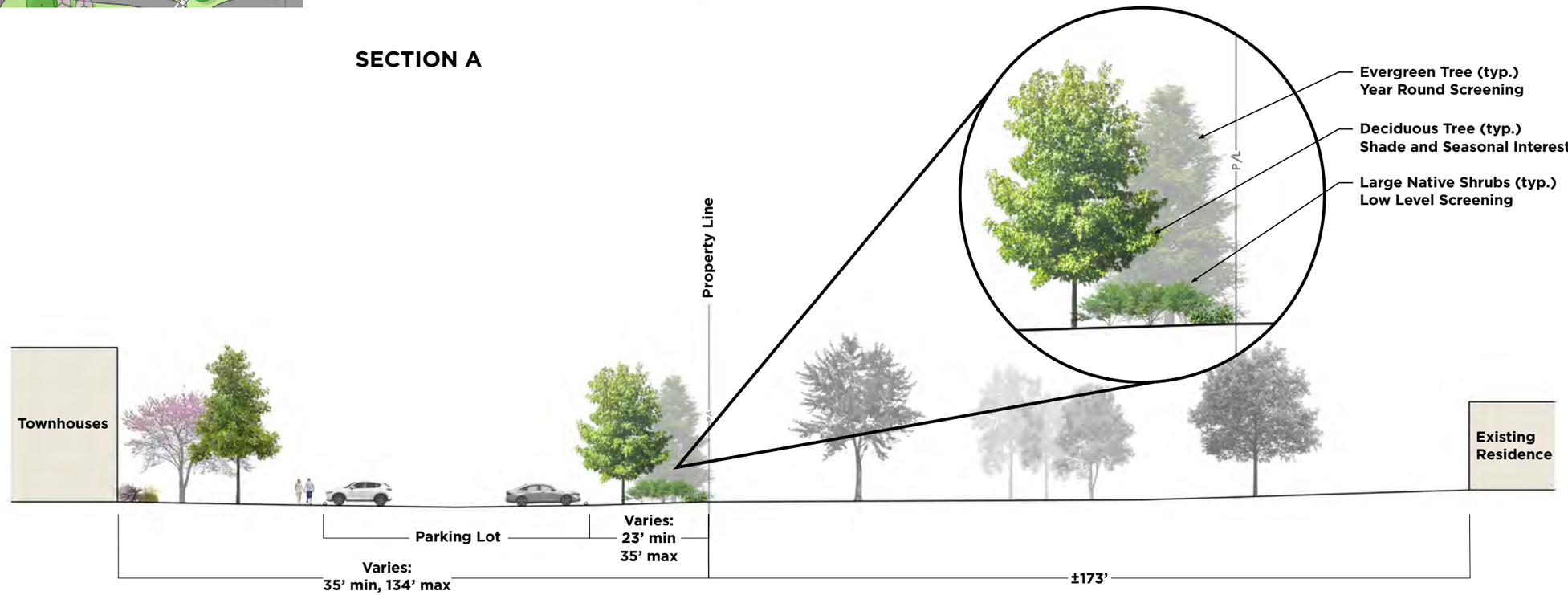
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KEY MAP



SECTION A



SECTION B

Park Synagogue
Mendelsohn Restoration

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Proposed Landscape Sections

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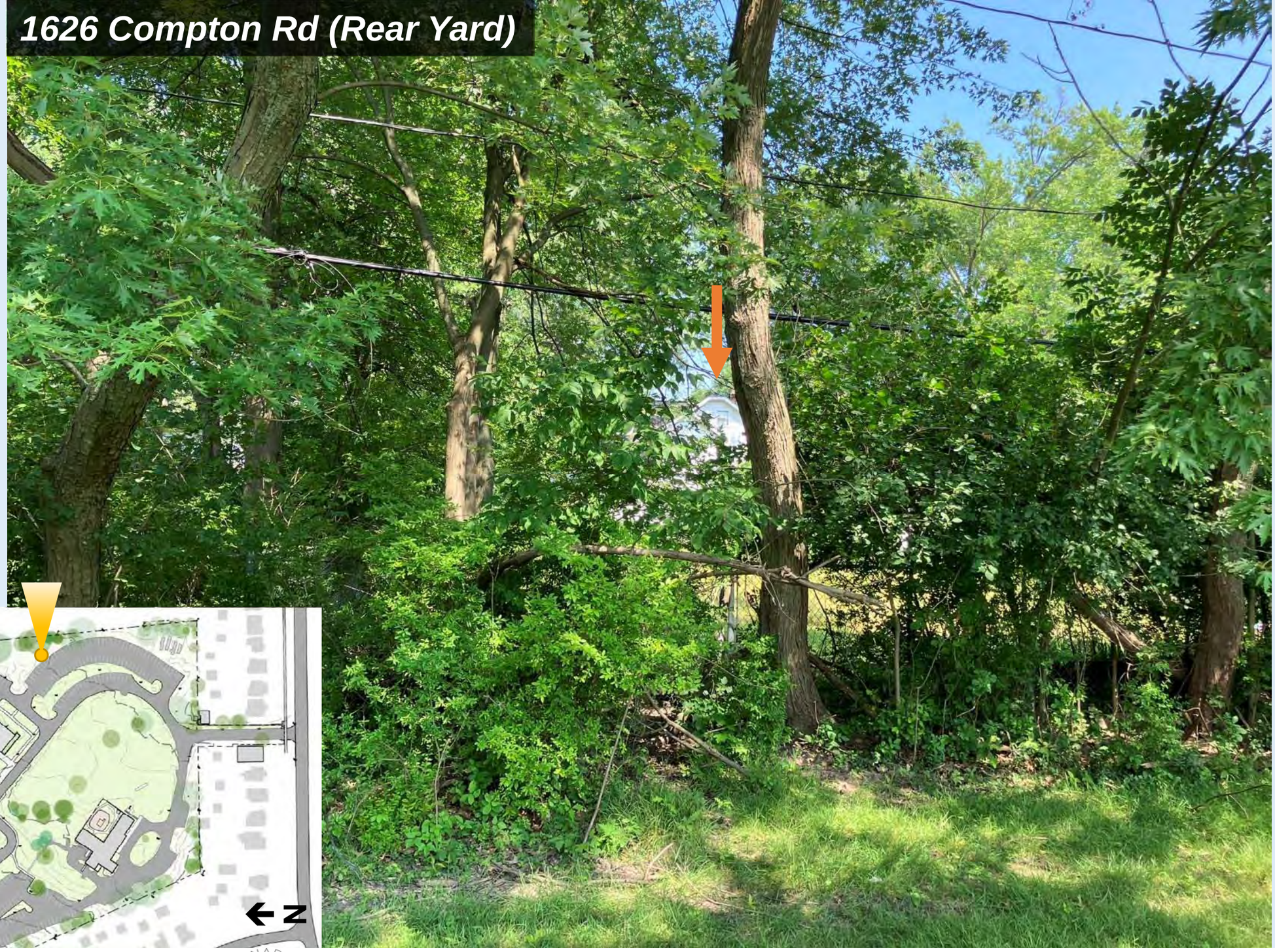


Park Synagogue
Mendelsohn Restoration

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View East to 1624 Compton

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Park Synagogue
Mendelsohn Restoration

Sustainable Community Associates | studio BCC | Environmental Design Group | Reed Hilder Brand | Naylor Wellman LLC Historic Preservation Consulting

View East to 1626 Compton

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Park Synagogue
Mendelsohn Restoration

Sustainable Community Associates | studio BCC | Environmental Design Group | Reed Hilder Brand | Naylor Wellman LLC Historic Preservation Consulting

View East to 1634 Compton

CHPC Final Review | 9 10 2025



Park Synagogue
Mendelsohn Restoration

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View East to 1648 Compton

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LANDSCAPE PLAN LEGEND

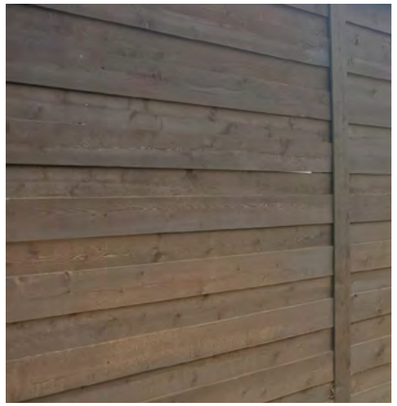
- EXISTING TREE
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- DECIDUOUS SHRUB
- EVERGREEN SHRUB
- ORNAMENTAL GRASS
- PERENNIALS/BULBS

TS-CA
JU-VI
LI-TU
CE-CA
10' LANDSCAPE BUFFER
DUMPSTER ENCLOSURE
AM-LA
NY-SY
QU-PA
AC-RU
CE-OC
PROPOSED TOWNHOMES
OVERHANG
WORK LIMITS
SEE SHEET C9.2
SEE SHEET C9.4
25.2'
35'
18.7'
P/L

Park Synagogue
Mendelsohn Restoration

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Detailed Landscape Plan
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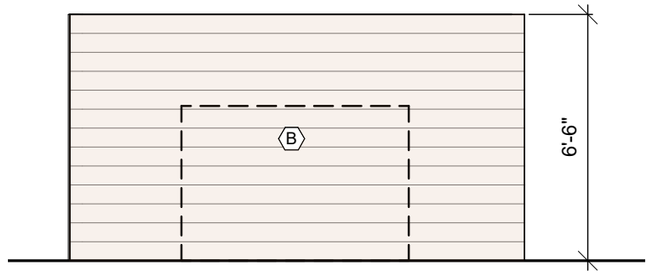
B

6” horizontal stained cedar fence

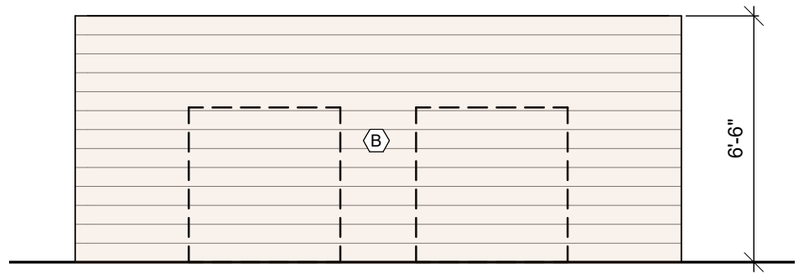


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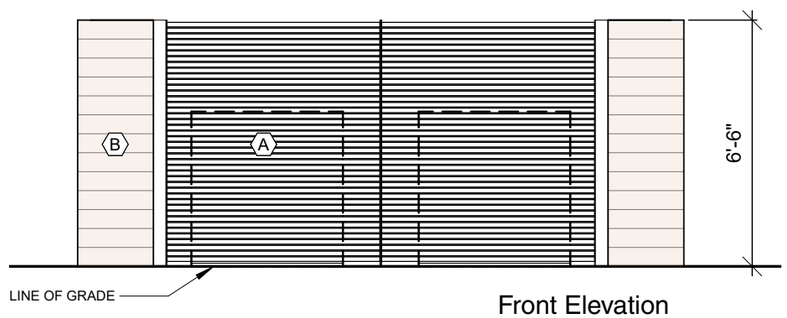
‘Orsogril’ Talia horizontal metal gate
Color: Charcoal grey powder-coat



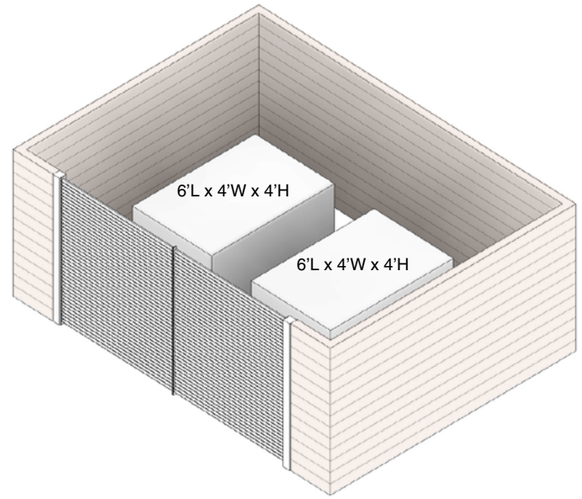
Side Elevation Typ.



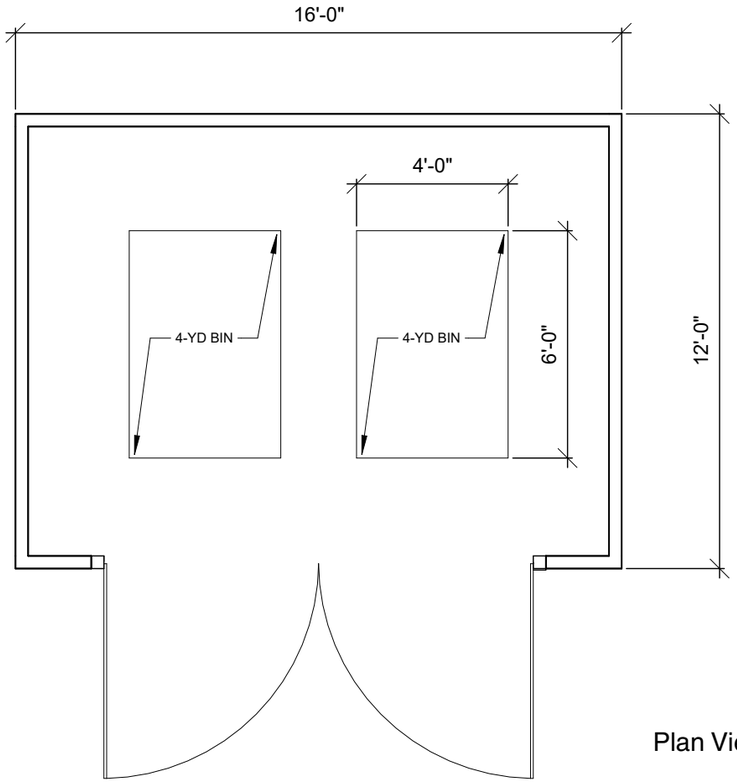
Back Elevation



Front Elevation



3D View



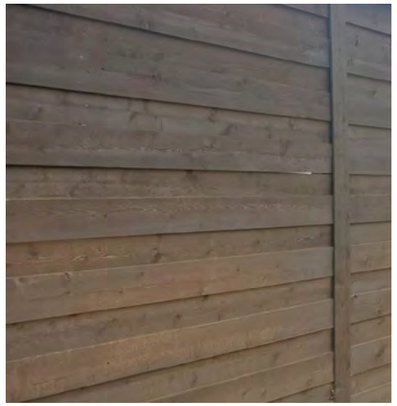
Plan View

Scale 1/4” = 1’0”

Park Synagogue
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Enclosure at Multifamily
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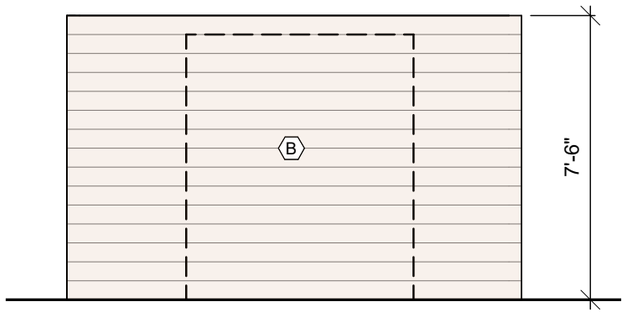
B

6” horizontal stained cedar fence

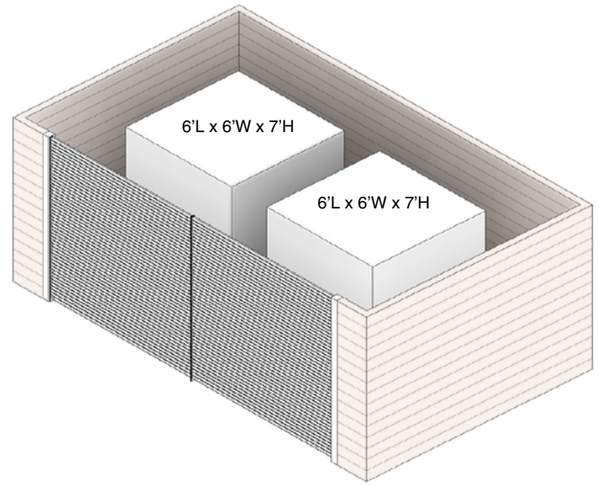


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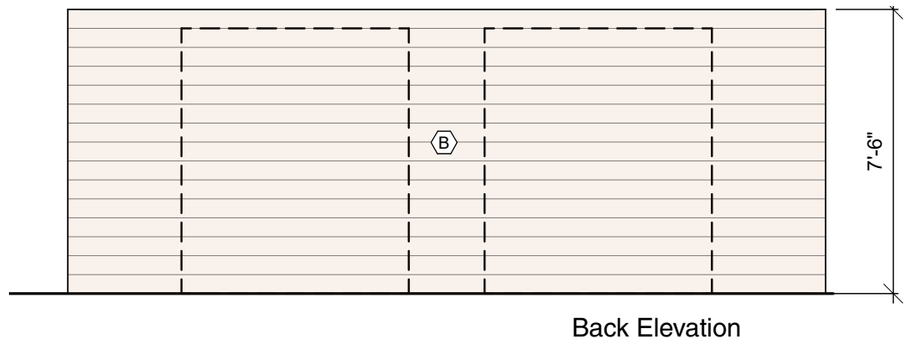
‘Orsogril’ Talia horizontal metal gate
Color: Charcoal grey powder-coat



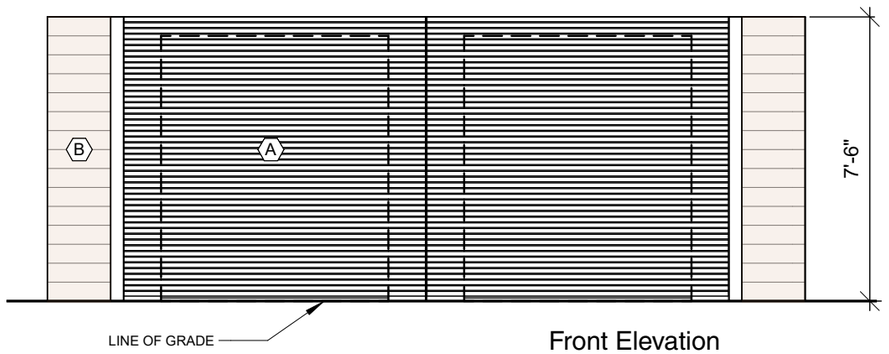
Side Elevation Typ.



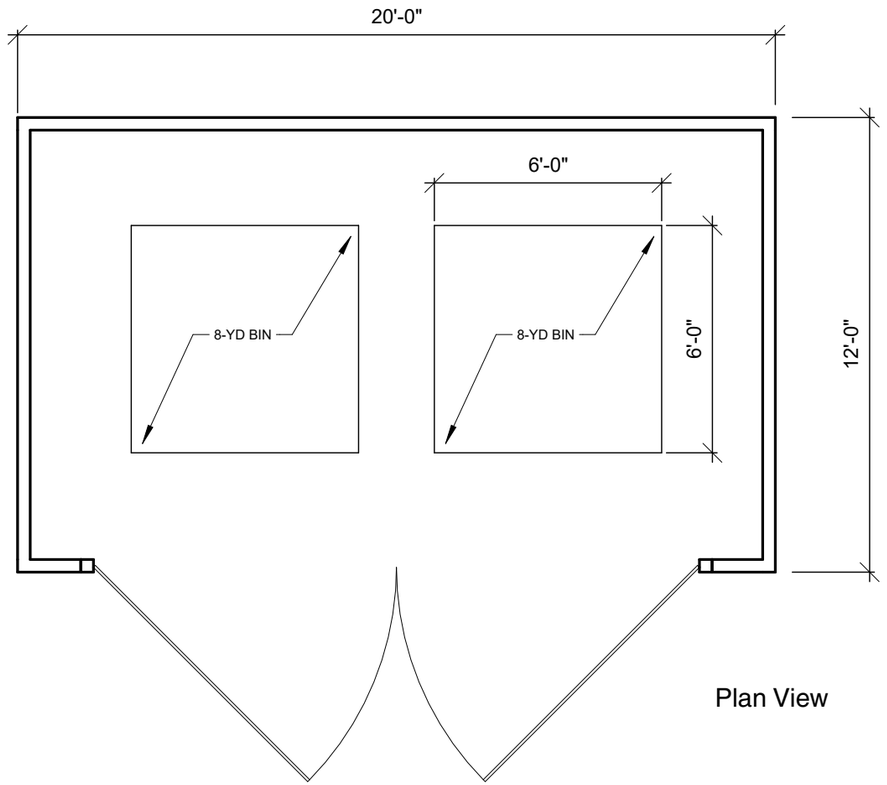
3D View



Back Elevation



Front Elevation



Plan View

Scale 1/4” = 1’0”

Park Synagogue
Mendelsohn Restoration

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Enclosure at Education Wing

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NO
DUMPING
PERMITTED
If item does not
fit in dumpster it
must be disposed
of elsewhere
Thanks for your
cooperation

Park Synagogue

Phase 1 Development

SUSTAINABILITY GUIDELINES ZONING CODE SECTION 1165.06

The following design characteristics and amenities are provided as a non-exclusive guide of items to be considered for all development plans. Additional design characteristics and public benefits and amenities not listed may also be considered.

1) Historic preservation and adaptive reuse of existing structures.

   Yes, the historic Park Synagogue will be preserved and adaptively reused, including the non-historic bridge addition. The restoration will follow the NPS guidelines.

2) The use of sustainable design and architecture, such as the use and/or incorporation of green roofs or white roofs, solar panels, wind turbines and other alternative energy efficient systems, and LEED (Leadership in Energy and Environmental Design) or LEED-equivalent structures.

   Yes, the Phase 1 buildings, including the historic Synagogue and new C1 multifamily buildings, will share a geothermal system that will provide a clean and efficient ground-sourced water loop for passively heating and cooling the buildings. While the Synagogue restoration is not following a specific rating system, such as LEED, the engineers are utilizing an energy model to direct the design decisions, such as the envelope efficiency and energy use reduction. The C1 multifamily buildings will be sustainably designed using the Enterprise Green Communities rating system or the equivalent.

3) Incorporation of passive solar building and site design, where the design of the structure and the layout of the lots within the development collect solar energy in the form of heat in the winter and minimize heat in the summer.

   No, the historic Synagogue cannot be reconfigured, and the new C1 multifamily site planning was dictated by the historic viewshed required by the NPS. That said, great effort has gone into retaining existing trees throughout the site, which provide shade to the buildings and parking surfaces.

4) Where the development requires the demolition of existing structures, recycling and reuse of building materials from demolished structures.

   Yes, we will endeavor to salvage brick for patching the historic Synagogue, recycle steel components, and grind up concrete for paving underlayment.

5) Site design that incorporates public safety initiatives, such as strategies advocated by Transportation Demand Management, Crime Prevention Through Environmental Design (CPTED) and Safe Routes to School.

   Yes, we have provided accessible walks from the public right of way at Euclid Heights Boulevard to the historic Synagogue and the C1 multifamily buildings, as well as from all Phase 1 building entries to accessible parking spots. We are also incorporating

narrow drives (20'), which have been proven to slow cars down for a safer pedestrian experience.

6) Preservation of natural features where the design of the site provides more usable and suitably located open space and natural amenities. The use of conservation easements is encouraged.

   Yes, we are preserving as much of the natural setting of the property as possible with the Phase 1 development by locating drives, parking, and walks around existing trees. We are transforming the open lawn between the historic Synagogue and daycare building into a naturalized meadow and are providing enhanced plantings around the buildings and parking lots to build on the existing character of the site. New walks to the buildings and parking will allow visitors to experience the variety of natural settings the site has to offer.

7) Innovative storm water management techniques that exceed the performance standards required by the Ordinance and the City Code, and reduce the amount of impervious surface on the site.

   Yes, in addition to the required underground conveyance of stormwater from the historic Synagogue and C1 multifamily buildings into the existing stormwater systems on site, we are including surface conveyance using the natural topography along the synagogue building. The exposed stormwater design will include enhanced plantings in bioswales, spreading zones over lawns, and a wetland extended detention basin.

8) Additional public infrastructure improvements in addition to the minimum required by the planned development overlay, such as new or repaved streets, provision of bicycle paths, installation of gutters and sewers, new public transit stations, and traffic control devices to improve traffic flow.

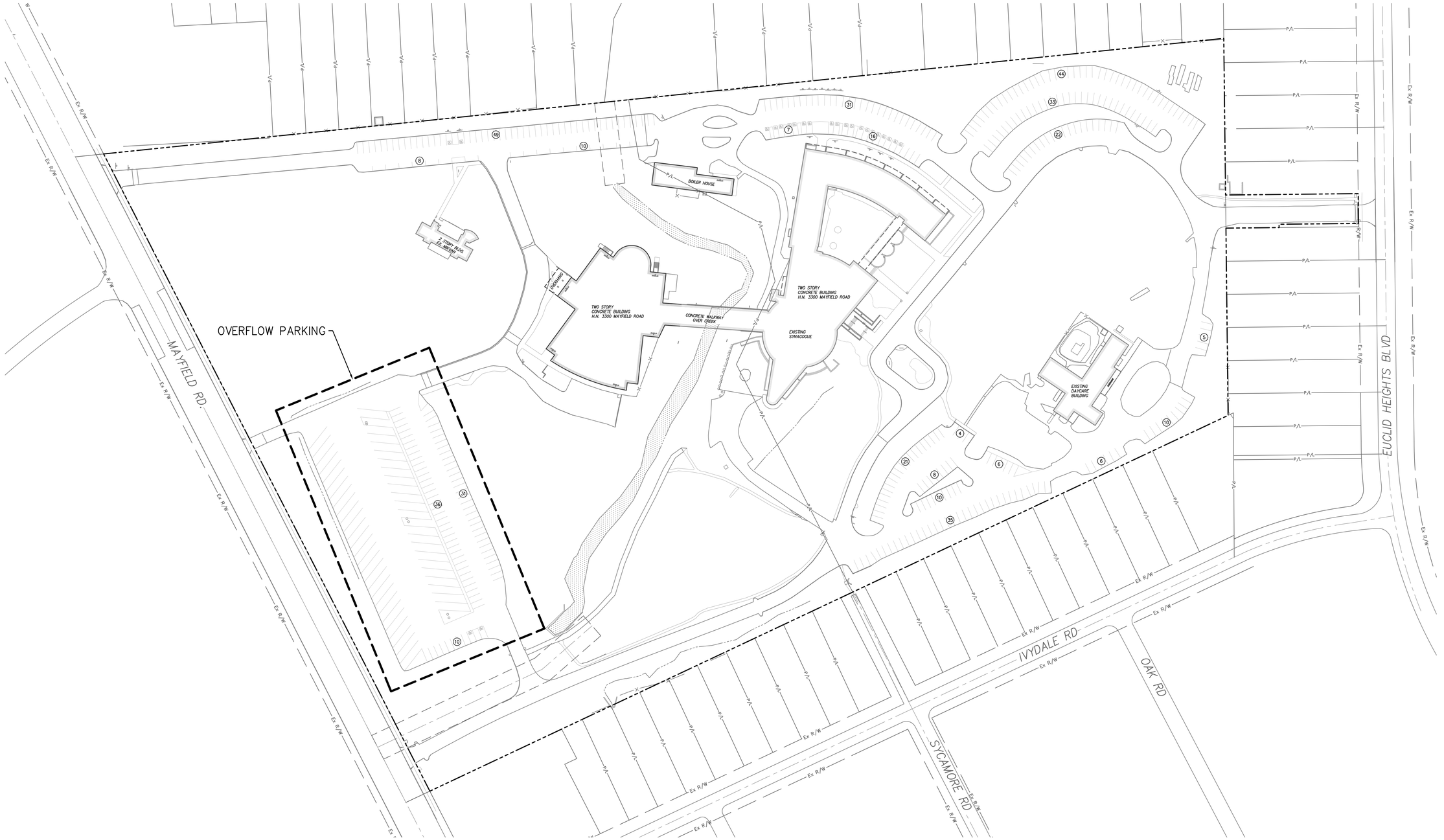
   Yes, the inclusion of two (2) dual-port electric vehicle charging stations near the entrances to the historic Synagogue and the C1 multifamily buildings.

9) Community amenities such as public art, places to congregate such as plazas, malls, gardens, outdoor seating, and pedestrian and transit facilities.

   Yes, the site design includes two paved outdoor gathering spaces in the courtyard of the historic Synagogue and in the lower chapel plaza near the ravine, as well as an event lawn with seating on the hill between the main entrance and the lower chapel.

10) Additional open space and recreational amenities such as recreational open space and playgrounds, including athletic fields, dog parks, and natural water features and conservation areas above that required by the Ordinance.

    No, while we hope to include public trails for an enhanced experience of the natural features of the site, and could imagine natural play structures along those trails, the Phase 1 development does not yet include these features due to funding.



EXISTING PARKING SCHEDULE

	STANDARD	ACCESSIBLE	TOTAL
GENERAL SITE	306	21	327
OVERFLOW	75	2	77
TOTAL	381	23	404

0 60 120
GRAPHIC SCALE IN FEET

Environmental Design Group
AKRON / CLEVELAND / COLUMBUS
110 45D GRANT ST., AKRON, OH 44311
P 330.375.1890 / TF 800.655.1890
W ENVDESIGNGROUP.COM

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PARK SYNAGOGUE
FRIENDS OF MENDELSOHN, LLC.
CITY OF CLEVELAND HEIGHTS

PC SUBMITTAL

DATE:

REVISIONS

	DATE	DESCRIPTION
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-	-	-
-	-	-

PROJECT NO.:	----
DRAWN BY:	EDG
CHECKED BY:	BMU
DATE ISSUED:	2025-06-13

EXISTING PARKING INVENTORY

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PROPOSED PARKING SCHEDULE

	STANDARD	ACCESSIBLE	TOTAL
GENERAL SITE	214	10	224
OVERFLOW	216	0	216
TOWNHOMES	43	2	45
TOTAL	473	12	485

BIKE PARKING

	GENERAL SITE	LONG TERM	TOTAL
BIKE RACKS	10	5	15

0 60 120
GRAPHIC SCALE IN FEET

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PC SUBMITTAL

DATE: _____

REVISIONS

⚠	DATE	DESCRIPTION
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PROJECT NO.:	----
DRAWN BY:	EDG
CHECKED BY:	BMU
DATE ISSUED:	2025-06-13

PROPOSED PARKING PLAN

7 OF 10

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Dual-Port EV Charging Stations

Park Synagogue
Mendelsohn Restoration

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EV Charging Stations
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Exterior (Standard) Bike Racks

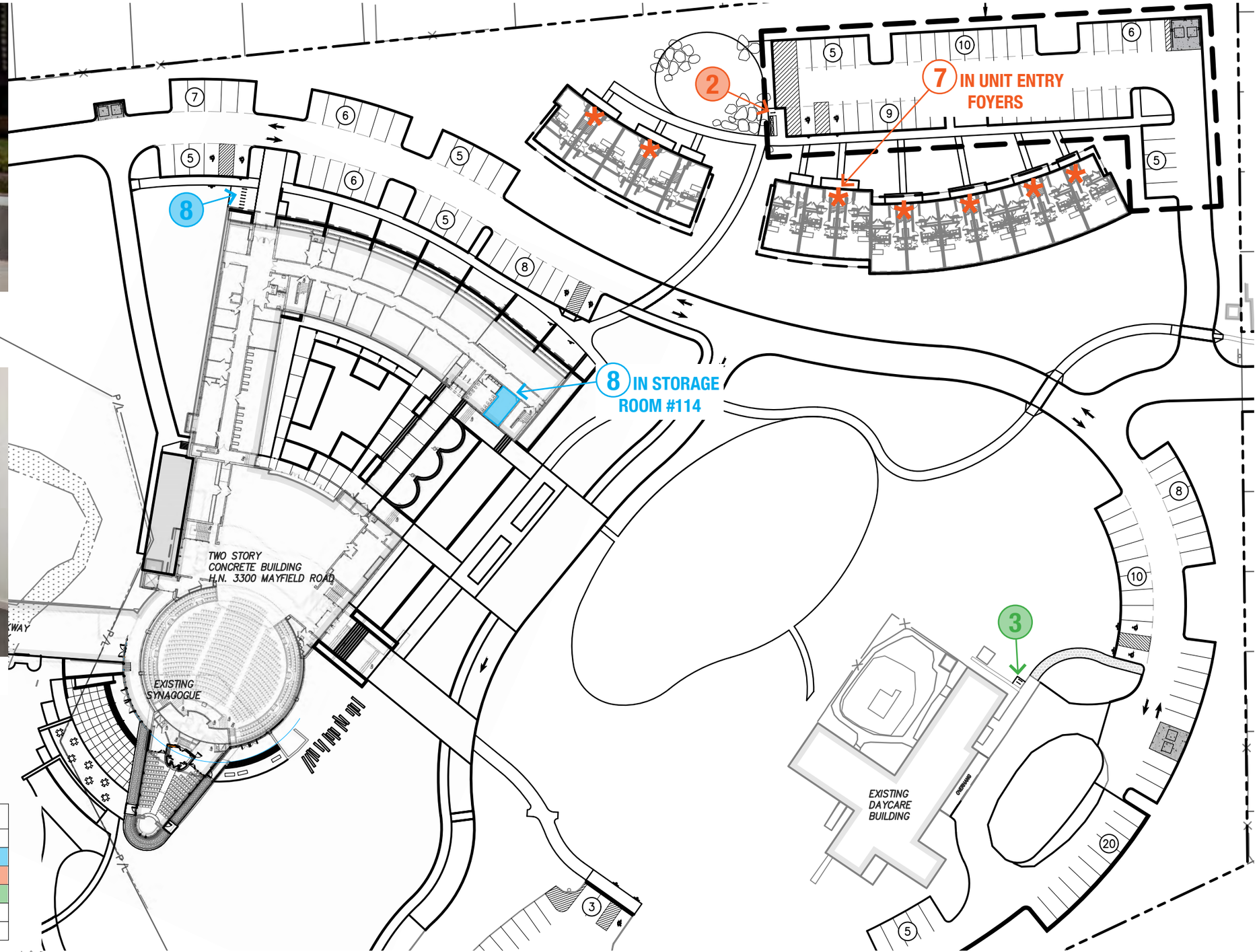




Interior (Long Term) Bike Hangers



BIKE PARKING			
	STANDARD	LONG TERM	TOTAL
SYNAGOGUE	8	8	16
RESIDENTIAL	2	7	9
DAYCARE	3	0	3
TOTAL	13	15	28

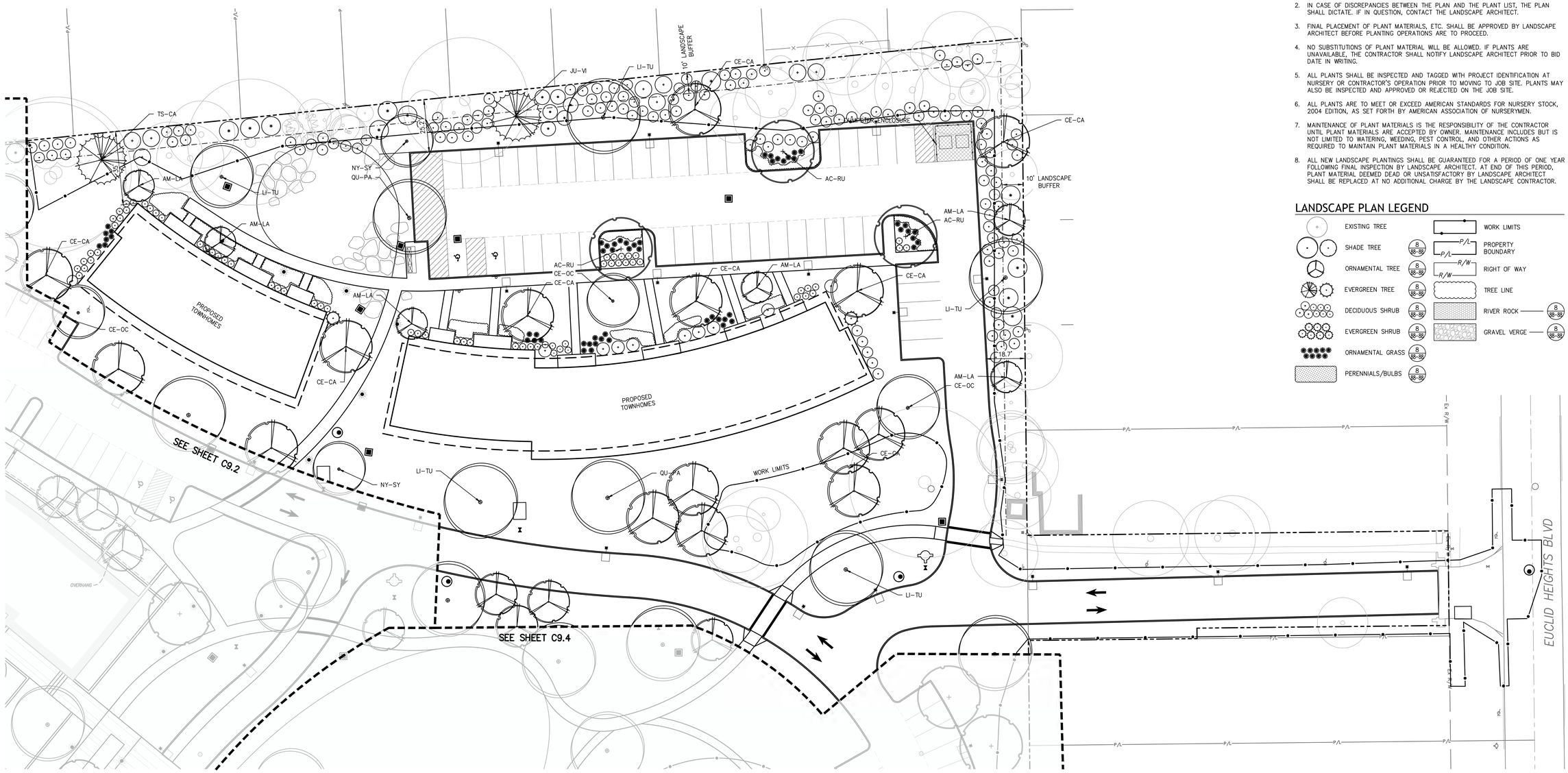


Park Synagogue
Mendelsohn Restoration

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Bike Parking & Storage

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LANDSCAPE PLAN NOTES

1. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS IN THE FIELD PRIOR TO BEGINNING WORK. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES ASSOCIATED WITH WORK. UTILITIES SHALL BE REPAIRED TO SATISFACTION OF THE UTILITY OWNER AND/OR OPERATING AUTHORITY AT NO ADDITIONAL COST.
2. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE. IF IN QUESTION, CONTACT THE LANDSCAPE ARCHITECT.
3. FINAL PLACEMENT OF PLANT MATERIALS, ETC. SHALL BE APPROVED BY LANDSCAPE ARCHITECT BEFORE PLANTING OPERATIONS ARE TO PROCEED.
4. NO SUBSTITUTIONS OF PLANT MATERIAL WILL BE ALLOWED. IF PLANTS ARE UNAVAILABLE, THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO BID DATE IN WRITING.
5. ALL PLANTS SHALL BE INSPECTED AND TAGGED WITH PROJECT IDENTIFICATION AT NURSERY OR CONTRACTOR'S OPERATION PRIOR TO MOVING TO JOB SITE. PLANTS MAY ALSO BE INSPECTED AND APPROVED OR REJECTED ON THE JOB SITE.
6. ALL PLANTS ARE TO MEET OR EXCEED AMERICAN STANDARDS FOR NURSERY STOCK, 2004 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
7. MAINTENANCE OF PLANT MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL PLANT MATERIALS ARE ACCEPTED BY OWNER. MAINTENANCE INCLUDES BUT IS NOT LIMITED TO WATERING, WEEDING, PEST CONTROL, AND OTHER ACTIONS AS REQUIRED TO MAINTAIN PLANT MATERIALS IN A HEALTHY CONDITION.
8. ALL NEW LANDSCAPE PLANTINGS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING FINAL INSPECTION BY LANDSCAPE ARCHITECT. AT END OF THIS PERIOD, PLANT MATERIAL DEEMED DEAD OR UNSATISFACTORY BY LANDSCAPE ARCHITECT SHALL BE REPLACED AT NO ADDITIONAL CHARGE BY THE LANDSCAPE CONTRACTOR.

LANDSCAPE PLAN LEGEND

- EXISTING TREE
- SHADE TREE (8 88-88)
- ORNAMENTAL TREE (8 88-88)
- EVERGREEN TREE (8 88-88)
- DECIDUOUS SHRUB (8 88-88)
- EVERGREEN SHRUB (8 88-88)
- ORNAMENTAL GRASS (8 88-88)
- PERENNIALS/BULBS (8 88-88)
- WORK LIMITS
- PROPERTY BOUNDARY (P/L)
- RIGHT OF WAY (R/W)
- TREE LINE
- RIVER ROCK (8 88-88)
- GRAVEL VERGE (8 88-88)

PLANT MATERIAL LIST

QTY.	ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	NATIVE	WATER USAGE
DECIDUOUS TREES							
	AC-RU	ACER RUBRUM 'BRANDYWINE'	BRANDYWNE RED MAPLE	2.5" CAL.	B&B	NATIVE	MEDIUM - HIGH
	CE-OC	CELTIS OCCIDENTALIS	COMMON HACKBERRY	2.5" CAL.	B&B	NATIVE	MEDIUM - HIGH
	LI-TU	LIRIODENDRON TULIPIFERA	TULIPTREE	2.5" CAL.	B&B	NATIVE	MEDIUM
	NY-SY	NYSSA SYLVATICA	BLACK GUM	2.5" CAL.	B&B	NATIVE	MEDIUM - HIGH
	QU-PA	QUERCUS PALUSTRIS	NORTHERN PIN OAK	2.5" CAL.	B&B	NATIVE	LOW - MEDIUM
EVERGREEN TREES							
	JU-VI	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	6' HT.	B&B	NATIVE	LOW
	TS-CA	TSUGA CANADENSIS	CANADIAN HEMLOCK	8' HT.	B&B	NATIVE	MEDIUM
ORNAMENTAL TREES							
	AM-LA	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY	8' HT.	B&B	NATIVE	MEDIUM
	CE-CA	CERCIS CANADENSIS	EASTERN REDBUD	8' HT.	B&B	NATIVE	MEDIUM
SHRUBS							
	CA-FL	CALYCANTHUS FLORIDUS	SWEETSHRUB	NO. 5	CONT.	NATIVE	MEDIUM
	CE-AM	CEANOTHUS AMERICANUS	NEW JERSEY TEA	NO. 3	CONT.	NATIVE	LOW
	HA-VI	HAMAMELIS VIRGINIANA	VIRGINIA WITCH HAZEL	NO. 5	CONT.	NATIVE	MEDIUM
	HY-AR	HYDRANGEA ARBORESCENS	SMOOTH HYDRANGEA	NO. 3	CONT.	NATIVE	MEDIUM
	HY-QU	HYDRANGEA QUERCIFOLIA 'RUBY SLIPPER'	RUBY SLIPPER OAKLEAF HYDRANGEA	NO. 5	CONT.	NATIVE	MEDIUM
	LI-BE	LINDERA BENZOIN	SPICEBUSH	NO. 5	CONT.	NATIVE	MEDIUM
	PH-OP	PHYSOCARPUS OPULIFOLIUS 'SUMMER WINE'	SUMMER WINE NINEBARK	NO. 3	CONT.	NATIVE	LOW
	TH-OC	THUJA OCCIDENTALIS 'GOLDEN GLOBE'	GOLDEN GLOBE ARBORVITAE	24"	B&B	NATIVE	MEDIUM
PERENNIALS/ORNAMENTAL GRASS							
	AR-DI	ARUNCUS DIOICUS	GOAT'S BEARD	NO. 2	CONT.	NATIVE	MEDIUM - HIGH
	AS-TU	ASCLEPIAS TUBEROSA	BUTTERFLY WEED	NO. 2	CONT.	NATIVE	LOW
	EC-PU	ECHINACEA PURPUREA	PURPLE CONEFLOWER	NO. 2	CONT.	NATIVE	MEDIUM
	GE-MA	GERANIUM MACULATUM	WILD GERANIUM	NO. 2	CONT.	NATIVE	MEDIUM
	PA-VI	PANICUM VIRGATUM 'ROTSTRAHLBUSCH'	RED RAYS SWITCH GRASS	NO. 2	CONT.	NATIVE	LOW
	PH-SU	PHLOX SUBULATA	MOSS PHLOX	8"	CONT.	NATIVE	LOW
	SC-SC	SCHIZACHYRIUM SCOPARIUM 'THE BLUES'	THE BLUES LITTLE BLUESTEM	NO. 2	CONT.	NATIVE	LOW
	RU-FU	RUDBECKIA FULGIA VAR. SULLIVANTII 'GOLDSTURM'	BLACK-EYED SUSAN	NO. 2	CONT.	NATIVE	LOW - MEDIUM

CLEVELAND HEIGHTS CODIFIED ORDINANCES

SECTION	TOPIC	REQUIRED	PROVIDED
1166.03 (c)	PLANT SELECTION - NATIVE	MIN. 30% OF NATIVE TREES, SHRUBS, AND GRASSES	> 30% (FINAL TBD)
1166.03 (d)	PLANT SELECTION - DROUGHT TOLERANT	LOW, MEDIUM, AND HIGH WATER USAGE CLASSIFICATION	SEE PLANT MATERIAL LIST
1166.04 (c)	SHADE TREE - PLANTING SIZE	MIN. 2.5" CALIPER, 6' HEIGHT	SEE PLANT MATERIAL LIST
1166.04 (d)	EVERGREEN TREE - PLANTING SIZE	MIN. 6' HEIGHT	SEE PLANT MATERIAL LIST
1166.04 (e)	ORNAMENTAL TREE - PLANTING SIZE	SINGLE STEM - MIN. 2" CALIPER; MULTI STEM - MIN 8' HEIGHT, MIN. 3 TRUNKS	SEE PLANT MATERIAL LIST
1166.04 (f)	SHRUBS - PLANTING SIZE	PER SCHEDULE 1166.04 (f)	SEE PLANT MATERIAL LIST
1166.04 (g)	PERENNIALS AND GROUNDCOVER - PLANTING SIZE	MIN. 4" CONTAINER STOCK, SPACED MAX. 12" O.C.	SEE PLANT MATERIAL LIST, SPACING TBD
1166.06 (a)(6)	PARKING LOT LANDSCAPING - PROTECTION	LANDSCAPE TO BE PROTECTED FROM PARKED CARS	CURBS - TBD
1166.06 (b)	PARKING LOT LANDSCAPING - PERIMETER	REQUIRED ALONG PUBLIC STREETS	N/A - PRIVATE STREET
1166.06 (c)(1)	PARKING LOT LANDSCAPING - INTERIOR	FOR LOTS OF 10 OR MORE SPACES	PROVIDED, SEE PLAN
1166.06 (c)(2)	PARKING LOT LANDSCAPING - INTERIOR	1 ISLAND BETWEEN 10 CONTIGUOUS SPACES	PROVIDED, VARIES BASED ON SITE REQUIREMENTS, SEE PLAN
1166.06 (c)(3)	PARKING LOT LANDSCAPING - MINIMUM INTERIOR LANDSCAPE AREA	10% OF PARKING LOT AREA	TBD
1166.06 (c)(4)	PARKING LOT LANDSCAPING - MINIMUM PARKING ISLAND AREA	MIN. 125 SF	VARIES XXX SF - XXX SF - TBD
1166.06 (c)(5)	PARKING LOT LANDSCAPING - CURBS	MIN. 6" ABOVE SURFACE GRADE (CONCRETE CURBING)	TBD
1166.06 (c)(6)(A)	PARKING LOT LANDSCAPING - INTERIOR ISLAND PLANTINGS - SHADE TREE	1 PER ISLAND	PROVIDED
1166.06 (c)(6)(B)	PARKING LOT LANDSCAPING - INTERIOR ISLAND PLANTINGS - SHRUB, GROUNDCOVER	PLANT WITH SHRUBS, GROUNDCOVER, PERENNIALS, ORNAMENTAL GRASSES	PROVIDED, SEE PLAN
1166.07 (a)	BUFFER YARDS - PARKING LOT	10' SIDE AND REAR PROPERTY LINE	18' - 35'
1166.07 (b)(1)	BUFFER YARDS - SCREEN FENCE	SOLID SCREEN FENCE OR WALL 6' HT.	NOT PROVIDED
1166.07 (b)(2)	BUFFER YARDS - HEDGE ROW SPACING	1 SHRUB EVERY 36", SPACED LINEARLY	133 REQUIRED;120 PROVIDED - INSTALLED IN A NATURALISTIC ARRANGEMENT
1166.07 (b)(2)	BUFFER YARDS - HEDGE ROW PLANTING HEIGHT	MIN. 24" INCHES	PROVIDED
1166.07 (b)(2)	BUFFER YARDS - HEDGE ROW MATURE HEIGHT	MIN. 36", MAX. 48"	PROVIDED
1166.07 (b)(3)	BUFFER YARDS - SHADE TREE	1 SHADE TREE FOR EVERY 25' LINEAR FEET OF ADJACENT PROPERTY LINE	16 REQUIRED; 7 PROVIDED; SPACE FOR PROPOSED TREES IS LIMITED BY 22 EXISTING TREES TO REMAIN
1166.10 (a)	SCREENING - REFUSE DISPOSAL DUMPSTERS, MATERIAL	FULLY ENCLOSED 3 SIDES (WOOD, SIMULATED WOOD, MASONRY WALL)	WOOD
1166.10 (a)	SCREENING - REFUSE DISPOSAL DUMPSTERS, HEIGHT	6' HT. MAX.	6'

0 20 40
GRAPHIC SCALE IN FEET

Environmental Design Group
AKRON / CLEVELAND / COLUMBUS
110 45D GRANT ST., AKRON, OH 44311
P. 330.375.1390 / TF. 800.685.1390
W. ENVDESIGNGROUP.COM

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PARK SYNAGOGUE

FRIENDS OF MENDELSOHN, LLC.
CITY OF CLEVELAND HEIGHTS

DD SUBMITTAL

DATE: _____

REVISIONS

1	DATE	DESCRIPTION
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
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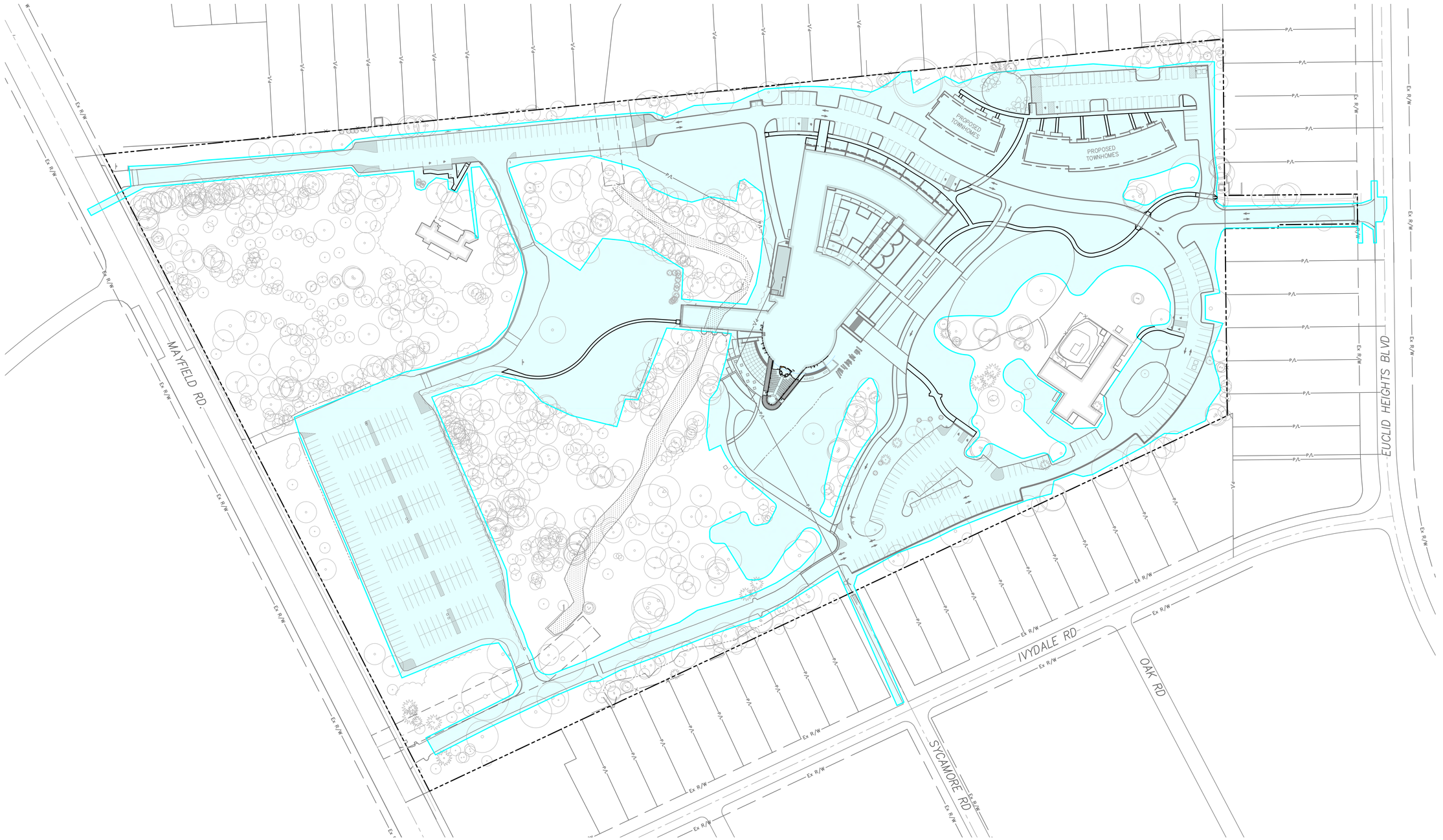
PROJECT NO.:	24-00227-010
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LANDSCAPE PLAN - ZONE C

C9.3

NOT FOR CONSTRUCTION

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LEGEND

PHASE 1 WORK LIMITS

0 60 120
GRAPHIC SCALE IN FEET

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CITY OF CLEVELAND HEIGHTS

PC SUBMITTAL

DATE:

REVISIONS

⚠	DATE	DESCRIPTION
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CHECKED BY:	BMU
DATE ISSUED:	2025-06-13

SITE PHASING DIAGRAM

1 OF 10

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Park Synagogue

Phase 1 Development

Phasing & Sequencing

8/22/2025

The Phase 1 Development, including the restoration of the historic synagogue, new residential buildings, and site improvements, will start construction in the summer of 2025 and will be completed in the summer of 2027. The daycare and Mikvah will continue in operation throughout the entire construction duration of Phase 1. The construction manager and owners will work with the operators of those buildings to ensure safe and convenient access to their facilities and minimal disruption of utilities during construction.

Restoration of the synagogue and education wing is already underway with selective demolition and hazardous material abatement. Below is the current construction schedule:

- Jul-Sep'25 — Abatement of Education Wing
- Oct-Dec'25 — Abatement of Temple Wing, Demolition of Boiler House, and Start of Site Utilities
- Jan-May'26 — Completion of Mechanical Addition of Synagogue and Completion of Site Utilities
- Jun-Dec'26 — Ongoing Synagogue Restoration and Start of Residential Construction
- Jan-Jun'27 — Completion of Synagogue Restoration, Residential Construction, Accessory Structures, and Site Landscaping

The restored synagogue and new residential will be occupied in the summer of 2027, along with all completed site improvements.

Cleveland Planning Advisors, LLC
Owner Representative Services

david@clevelandplanning.com
mobile +1 216 466 1972

STANDARDS FOR CONDITIONAL USES

A conditional use, and uses accessory to such conditional use, shall be permitted in a residential, commercial or special district only when specified as a permitted conditional use in such district, or when such use is determined by the Planning Commission to be a similar use, and only if such use conforms to the following standards in addition to any specific conditions, standards and regulations for such category of use set forth in Chapter 1151 of the Zoning Code. Furthermore, the Planning Commission shall find:

a) That the conditional use will be in general accord with the purpose, intent and basic planning objectives of this Zoning Code, and with the objectives for the district in which located;

The proposed C-1 multi-family residential buildings are located in the rear portion of the S-2 Development of the Park Synagogue property, which allows for any combination of principal or conditional uses and related accessory uses permitted in the MF-2 Multiple-Family district. The proposed twenty-six (26) multi-family apartments range from one, two, and three-bedroom units and also include four (4) "Rooming House" apartments with four bedrooms that comply with the intent of the "Lodging House" as defined in 1103.03.65, for a total of thirty (30) proposed units.

b) That the establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare;

The proposed C-1 multi-family and rooming house apartments will be established, maintained, and operated by Sustainable Community Associates, which has successfully developed, leased, operated, and maintained similar properties throughout the area.

c) That the conditional use will be designed, constructed, operated and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity, and that such use will not essentially change the character of the same area;

The uses proposed will improve a currently vacant parcel of land and establish like uses surrounded by single-family dwellings

d) That the conditional use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood;

As noted in response to "C" above, the proposed residential development will improve a vacant property, which was previously used as a parking lot. Developing an underutilized property with new market-rate housing options will help to improve the health, safety, and welfare of the Boulevard Neighborhood and the community of Cleveland Heights.

e) That the establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district;

The proposed multi-family and rooming house apartments are in accordance with the approved S-2 Development plan for this property.

f) That adequate utilities, access roads, drainage and/or necessary facilities have been or are being provided;

The Phase 1 Development Plan includes improvements on the south half of the property for all utilities, drives, grading, trash enclosures, etc.

g) That adequate measures have been or will be taken to provide ingress and egress designed as to minimize traffic congestion in the public streets;

A traffic impact study was submitted during the review and approval of the S-2 Development plan that anticipated an even higher density of units in the C-1 location than are being proposed.

h) That the establishment of the conditional use should not be detrimental to the economic welfare of the community by creating excessive additional requirements at public cost for public facilities such as police, fire and schools;

This is a private development on private land, so it is unlikely that any functions will take advantage of public services. The plans have been and will continue to be reviewed by the local authorities, including the police and fire departments, which we assume will notify us of any concerns they might have in this matter.

i) That there is minimal potential for future hardship on the conditional use that could result from the proposed use being surrounded by uses permitted by right that are incompatible;

The S-2 Development plan should assure this in the future.

j) That the conditional use shall address the sustainability guidelines of Section 1165.06

The proposed development endeavors to meet nearly all of the sustainable guidelines, as discussed during the S-2 Development review and approval. We can provide a list of complying guidelines specific to the proposed C-1 development upon request.

The sustainability guidelines are reviewed below.

k) That the conditional use shall, in all other respects, conform to the applicable regulations of the district in which it is located as well as the specific supplemental conditions set forth in Chapter 1153.

Similar to our response in "I", the S-2 Development plan should assure this.

SUSTAINABILITY GUIDELINES ZONING CODE SECTION 1165.06

The following design characteristics and amenities are provided as a non-exclusive guide of items to be considered for all development plans. Additional design characteristics and public benefits and amenities not listed may also be considered.

1) Historic preservation and adaptive reuse of existing structures.

2) The use of sustainable design and architecture, such as the use and/or incorporation of green roofs or white roofs, solar panels, wind turbines and other alternative energy efficient systems, and LEED (Leadership in Energy and Environmental Design) or LEED-equivalent structures.

3) Incorporation of passive solar building and site design, where the design of the structure and the layout of the lots within the development collect solar energy in the form of heat in the winter and minimize heat in the summer.

4) Where the development requires the demolition of existing structures, recycling and reuse of building materials from demolished structures.

5) Site design that incorporates public safety initiatives, such as strategies advocated by Transportation Demand Management, Crime Prevention Through Environmental Design (CPTED) and Safe Routes to School.

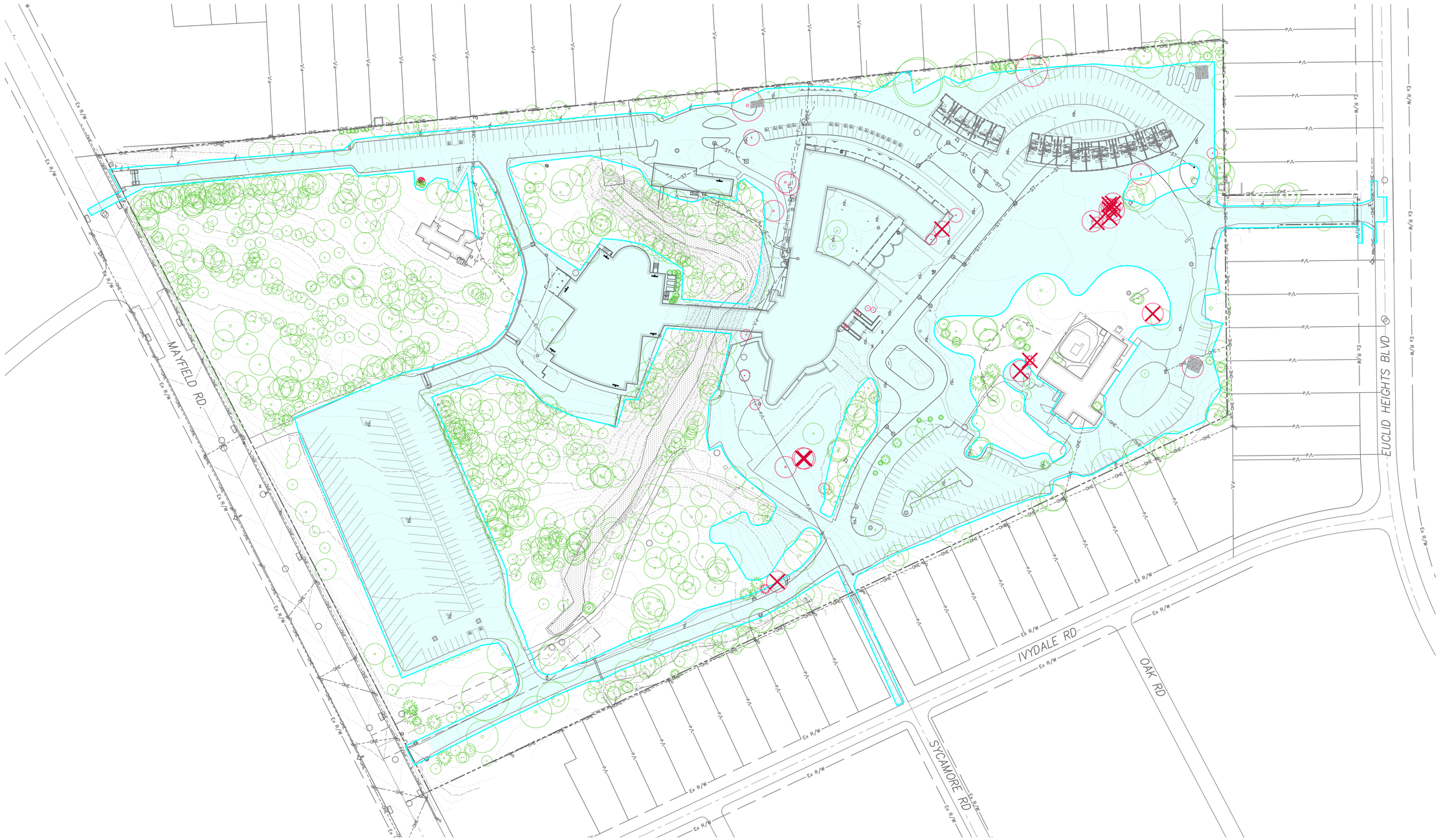
6) Preservation of natural features where the design of the site provides more usable and suitably located open space and natural amenities. The use of conservation easements is encouraged.

7) Innovative storm water management techniques that exceed the performance standards required by the Ordinance and the City Code, and reduce the amount of impervious surface on the site.

8) Additional public infrastructure improvements in addition to the minimum required by the planned development overlay, such as new or repaved streets, provision of bicycle paths, installation of gutters and sewers, new public transit stations, and traffic control devices to improve traffic flow.

9) Community amenities such as public art, places to congregate such as plazas, malls, gardens, outdoor seating, and pedestrian and transit facilities.

10) Additional open space and recreational amenities such as recreational open space and playgrounds, including athletic fields, dog parks, and natural water features and conservation areas above that required by the Ordinance.



LEGEND

	PHASE 1 WORK LIMITS	995	EXISTING TREE TO REMAIN
66%	27		EXISTING TREE TO BE REMOVED DUE TO CONSTRUCTION
33%	13		EXISTING TREE TO BE REMOVED WITHIN CONSTRUCTION LIMITS DUE TO POOR CONDITION
	40		TOTAL TREES REMOVED

0 60 120
GRAPHIC SCALE IN FEET

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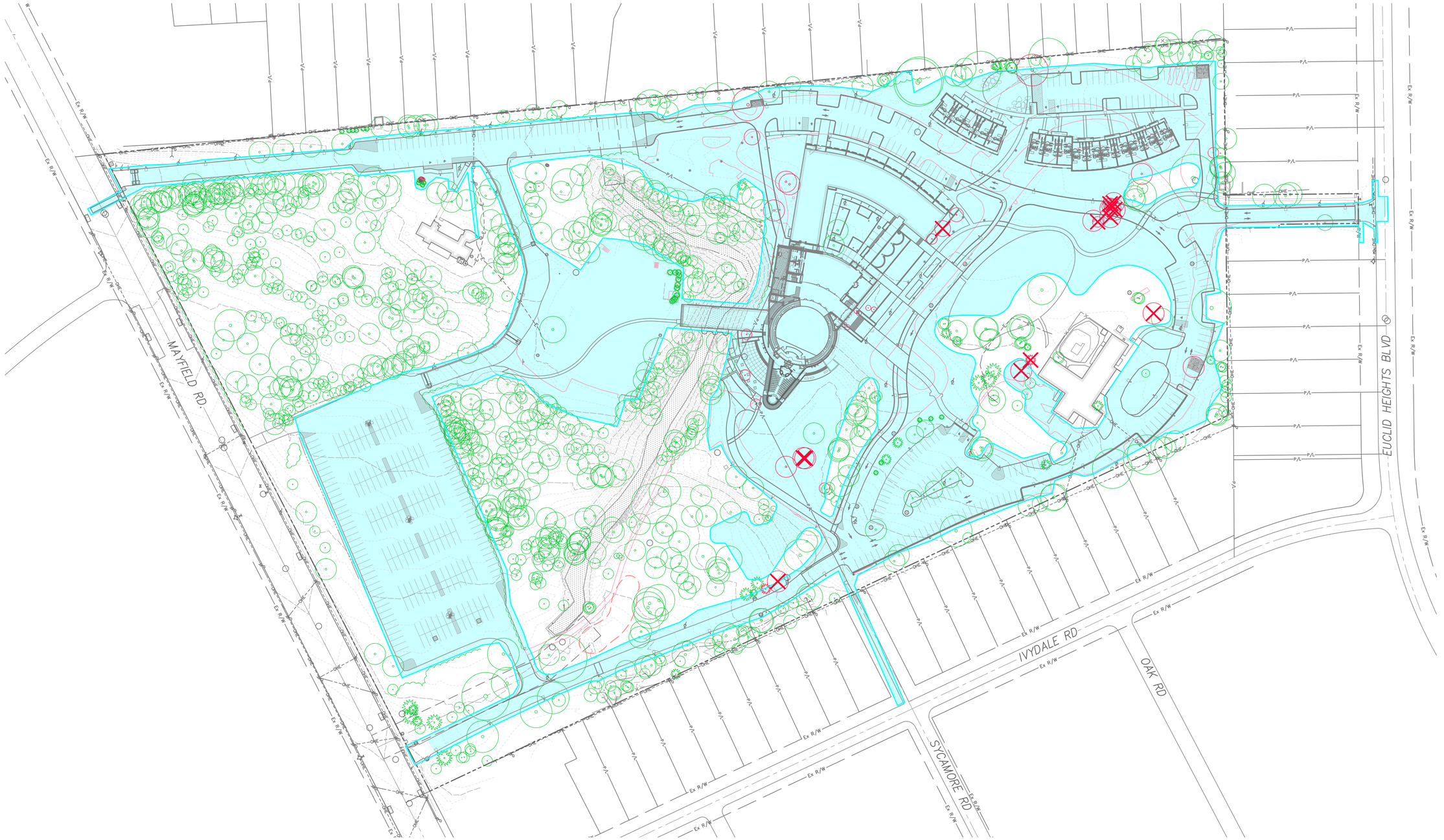
REVISIONS

	DATE	DESCRIPTION
1	06/30/2025	CITY COMMENTS

PROJECT NO.:	....
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CHECKED BY:	BMU
DATE ISSUED:	2025-06-13

TREE REPLANTING PLAN - REMOVALS

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LEGEND

	PHASE 1 WORK LIMITS		
	995	○	EXISTING TREE TO REMAIN
66%	27	○	EXISTING TREE TO BE REMOVED DUE TO CONSTRUCTION
33%	13	✕	EXISTING TREE TO BE REMOVED WITHIN CONSTRUCTION LIMITS DUE TO POOR CONDITION
	40		TOTAL TREES REMOVED
	133		TREES PLANTED (3.4 TREES PLANTED PER 1 TREE REMOVED)

0 60 120
GRAPHIC SCALE IN FEET

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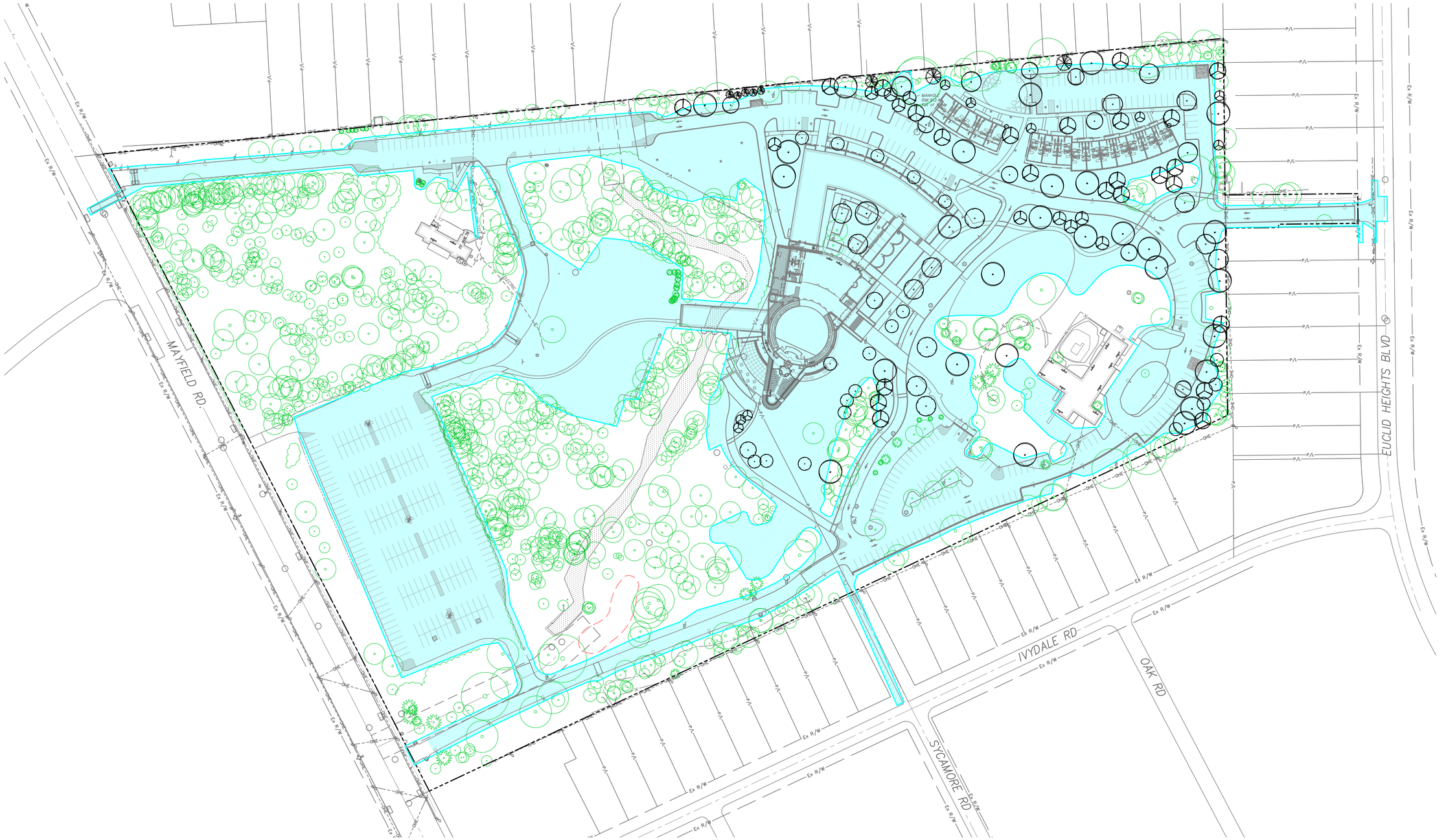
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	DATE	DESCRIPTION
1	06/30/2025	CITY COMMENTS

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TREE REPLANTING PLAN - REMOVALS OVERLAY

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LEGEND

PHASE 1 WORK LIMITS

73	PROPOSED SHADE TREE	40 EXISTING TREES REMOVED
50	PROPOSED ORNAMENTAL TREE	40 REPLACEMENT TREES REQUIRED PER 1166.11, (c) (1 TREE PLANTED PER 1 TREE REMOVED)
10	PROPOSED EVERGREEN TREE	133 TREES PROPOSED (3.4 TREES PLANTED FOR EVERY 1 TREE REMOVED)
133	TOTAL TREES PROPOSED	93 NET ADDITION OF TREES TO SITE

0 60 120
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TREE REPLANTING PLAN - PROPOSED

5 OF 10

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LEGEND

PHASE 1 - PEDESTRIAN CONNECTIVITY

PHASE 1 - PEDESTRIAN BUILDING ENTRY

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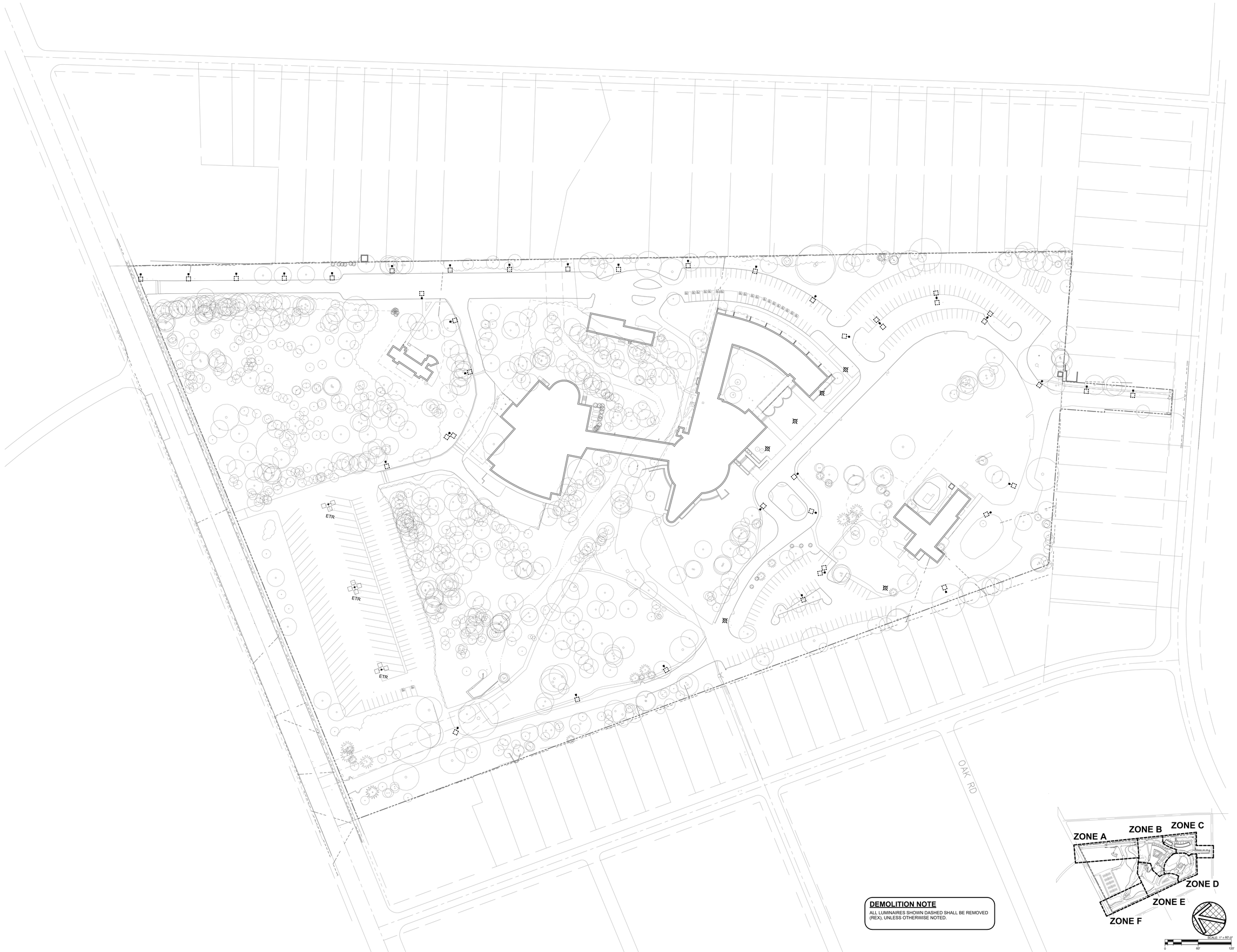
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OPEN SPACE AND TRAIL NETWORK

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DEMOLITION NOTE

ALL LUMINAIRES SHOWN DASHED SHALL BE REMOVED (REX), UNLESS OTHERWISE NOTED.

SCALE: 1" = 60'-0"

0 60' 120'

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ELECTRICAL DEMOLITION SITE PLAN

SCALE: As indicated

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ELECTRICAL SITE PLAN OVERALL

SCALE: 1" = 60'-0"

SCALE: 1" = 60'-0"
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LUMINAIRE SCHEDULE - EXTERIOR

SYMBOL	TYPE	MOUNTING	LUMENS	CCT	CRI	BUG RATING	DRIVER(S)		WATTAGE	VOLTAGE	LUMINAIRE DESCRIPTION	ACCEPTABLE MANUFACTURERS	NOTES
							TYPE	QTY					
☼	SB2	BOLLARD	3169	3000	80	B1-U0-G1	0-10V	1	29 W	UNIV	12.6" LONG, 7.87" WIDE, 40" HIGH ALUMINUM BOLLARD WITH TYPE II DISTRIBUTION AND BLACK FINISH.	LIGMAN ULI-10021	
☼	SB4	BOLLARD	3169	3000	80	B1-U0-G1	0-10V	1	29 W	UNIV	12.6" LONG, 7.87" WIDE, 40" HIGH ALUMINUM BOLLARD WITH TYPE IV DISTRIBUTION AND BLACK FINISH.	LIGMAN ULI-10021	
□	SLP1-2	POLE	7169	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE II DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-2HS	POLE	7169	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE II DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, HOUSE SIDE SHIELD, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-3	POLE	7069	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE III DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-3HS	POLE	7069	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE III DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, HOUSE SIDE SHIELD, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-4	POLE	7113	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-4HS	POLE	7113	3000	70	B2-U0-G3	0-10V	1	65 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, HOUSE SIDE SHIELD, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-34-2	POLE	7069/7113	3000	70	B2-U0-G3	0-10V	1	130 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, 2 HEADS AT 180 DEGREES, (1) TYPE III DISTRIBUTION, (1) TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP1-44-2	POLE	7113/7113	3000	70	B2-U0-G3	0-10V	1	130 W	UNIV	16"Wx22"Lx3-3/4" DEEP LUMINAIRE WITH ALUMINUM HOUSING, 2 HEADS AT 180 DEGREES, (2) TYPE IV FORWARD THROW DISTRIBUTION, SPILL LIGHT OPTICAL CONTROL, 1200mA DRIVE CURRENT, INTEGRAL PHOTOCELL, MOTION SENSOR WITH DIMMING, AND BLACK FINISH. POLE SHALL BE 15' IN HEIGHT, SQUARE ALUMINUM WITH MATCHING FINISH.	MC-GRAW EDISON GALN POLE: MC-GRAW EDISON SSA, HAPCO, OR EQUIVALENT	1
□	SLP2-2	POLE	6193	3000	80	B1-U0-G1	0-10V	1	54 W	UNIV	39.3" LONG, 3.5" DEEP LUMINAIRE WITH ALUMINUM HOUSING, TYPE II DISTRIBUTION, BLACK FINISH AND 15' POLE HEIGHT.	LIGMAN ULI-21171	1
⊗	SPT	POST TOP	2997	3000	80		0-10V	1	41 W	UNIV	10" DIAMETER ROUND POST TOP WITH 26" DIAMETER REFLECTOR, 20.8" HIGH, ALUMINUM CONSTRUCTION AND BLACK FINISH.	LIGMAN UAD-20001	

GENERAL LUMINAIRE NOTES

A. FIRST MANUFACTURER'S NAME LISTED IN ACCEPTABLE MANUFACTURERS COLUMN IS BASIS OF THE DESIGN. ALTERNATE MANUFACTURERS LISTED SHALL HAVE SIMILAR LUMEN OUTPUT, DIMMING COMPATIBILITY, BEAM DISTRIBUTION, LED COLOR, ETC., AND IS THE RESPONSIBILITY OF THE EC TO SUBMIT EQUIVALENT PRODUCTS.

B. ALL 0-10V LED DRIVERS SHALL BE 1% DIMMING TYPE, UON.

C. ALTERNATES FOR LUMINAIRES WITHOUT EQUALS MUST BE PRE-APPROVED BY ENGINEER AND ARCHITECT PRIOR TO BID.

D. CATALOG SERIES ONLY INDICATED IN ACCEPTABLE MANUFACTURERS COLUMN. SUBMITTAL SHALL INCLUDE FULL MODEL NUMBER INCLUSIVE OF OPTIONS SPECIFIED. WHERE FULL CATALOG NUMBER IS PROVIDED IN ACCEPTABLE MANUFACTURERS COLUMN, AND IS IN CONFLICT WITH WRITTEN DESCRIPTION, THE WRITTEN DESCRIPTION SHALL TAKE PRECEDENCE.

E. REFER TO LIGHTING SPECIFICATION SECTION FOR ADDITIONAL DRIVER AND/OR LED LAMP REQUIREMENTS. LED LAMP MANUFACTURERS LISTED SHALL BE PROVIDED. PROVIDE SHOP DRAWINGS AS REQUIRED BY ELECTRICAL GENERAL PROVISIONS SPECIFICATION SECTION.

LUMINAIRE SCHEDULE NOTES:

1. REFER TO BASE DETAILS ON DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL ELECTRICAL NOTES:

A. ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, OR SHAFTS SHALL BE SEALED IN ACCORDANCE WITH ELECTRICAL FIRESTOPPING SPECIFICATIONS.

B. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL LUMINAIRES AND CEILING MOUNTED DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS, SECTIONS AND DETAILS. CONTRACTOR SHALL ALSO COORDINATE LOCATIONS OF RECEPTACLES AND OTHER WALL MOUNTED DEVICES WITH THE ARCHITECTURAL WALL ELEVATIONS AND FINISHES.

C. THE ROUTING OF ALL SURFACE MOUNTED/EXPOSED CONDUIT IN UNFINISHED AREAS (OR WHERE NOTED ON THE DRAWINGS) SHALL BE COORDINATED WITH, AND SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.

D. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR. EXACT ELECTRICAL REQUIREMENTS SHALL BE VERIFIED IN THE FIELD WITH THE EQUIPMENT'S NAMEPLATE DATA. THE CONTRACTOR SHALL MAKE APPROPRIATE ADJUSTMENTS TO WIRE AND FUSE SIZES IN ACCORDANCE WITH THE NAMEPLATE DATA.

E. THE ELECTRICAL WIRING, CONNECTION AND PROTECTION REQUIREMENTS FOR OWNER FURNISHED EQUIPMENT SHALL BE VERIFIED IN THE FIELD WITH THE OWNER'S EQUIPMENT SUPPLIER, AND WITH THE NAMEPLATE DATA. CONTRACTOR SHALL FURNISH THE PROPER NEMA RECEPTACLE CONFIGURATIONS, CONNECTIONS, CORDS AND PLUGS, AND CIRCUITS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

F. ALL BRANCH CIRCUITS AND FEEDERS SHALL CONTAIN AN INSULATED GROUNDING CONDUCTOR IN ACCORDANCE WITH ELECTRICAL SERVICE AND POWER DISTRIBUTION SPECIFICATIONS. NEUTRAL CONDUCTORS SHALL NOT BE SHARED IN ACCORDANCE WITH ELECTRICAL BASIC MATERIALS AND METHODS SPECIFICATIONS.

G. THE DISCONNECTING MEANS FOR ALL MOTORS AND EQUIPMENT SHALL BE INSTALLED IN A "READILY ACCESSIBLE" LOCATION AND SHALL HAVE PROPER WORKING SPACE AS DEFINED IN NEC ARTICLE 100 AND 110.

H. UTILIZATION OF THE PHRASE "PROVIDED BY" WITHIN THE CONTEXT OF THESE DOCUMENTS SHALL EXPLICITLY REPRESENT "FURNISHED AND INSTALLED BY".

I. THE ELECTRICAL CONTRACTOR SHALL ASSUME REMOVING EXISTING CEILING TILES TO INSTALL NEW WORK AND REPLACING WITH EXISTING OR NEW CEILING TILES AS REQUIRED FOR THE INSTALLATION OF ALL WORK. THE AREAS INCLUDE SPACES IN THE NEW WORK AS INDICATED ON THE DRAWINGS AND AREAS NOT SHOWN WHERE THE CONTRACTOR IS REQUIRED TO INSTALL NEW WORK. DAMAGED TILES BY ELECTRICAL CONTRACTOR SHALL BE REPLACED TO MATCH EXISTING TILES AT ELECTRICAL CONTRACTOR'S EXPENSE.

J. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR INSTALLATION OF NEW WORK. CUTTING OF A STRUCTURAL MEMBER IS PROHIBITED WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE ARCHITECT.

GENERAL ELECTRICAL DEMOLITION NOTES:

A. ALL LUMINAIRES, DEVICES, AND MISCELLANEOUS EXISTING CONDITIONS SHOWN ON THE DEMOLITION PLANS ARE THE RESULT OF FIELD INSPECTIONS AND ARE NOT INTENDED TO REPRESENT EXACT FIELD CONDITIONS, BUT RATHER THE EXTENT OF ELECTRICAL DEMOLITION. THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THE EXTENT OF DEMOLITION PRIOR TO SUBMITTING BID.

B. REMOVE AND/OR RELOCATE EXISTING ELECTRICAL DEVICES ON WALLS OR CEILINGS BEING REMOVED. COORDINATE SUCH CONDITIONS WITH ARCHITECTURAL DRAWINGS. SEE NEW FLOOR PLANS FOR NEW LOCATIONS OF EXISTING DEVICES BEING RELOCATED.

C. EXISTING CONDUITS, CIRCUITS OR SYSTEMS IN WALLS OR CEILINGS BEING REMOVED WHICH SERVE SURROUNDING UNREMODELED AREAS SHALL BE REWORKED AND MAINTAINED.

D. EXISTING CONDUITS, CIRCUITS OR SYSTEMS PASSING THROUGH THE REMODELED AREAS WHICH SERVE UNREMODELED AREAS SHALL REMAIN AND BE PROTECTED DURING DEMOLITION AND REMODELING. RELOCATE AND REROUTE IF REQUIRED.

E. CONTINUITY OF CIRCUITS INTERRUPTED BY REMOVAL OF ELECTRICAL DEVICES SHALL BE MAINTAINED. PROVIDE JUNCTION BOXES, CONDUIT, AND WIRING EXTENSIONS FOR RELOCATION TO ABOVE ACCESSIBLE CEILINGS.

F. EXISTING LUMINAIRES BEING RE-USEDSHALL BE CLEANED AND RE-LAMPED.

G. RE-SUPPORT EXISTING CONDUIT AND CABLES WHICH REMAIN ABOVE CEILINGS PER NATIONAL, STATE, AND LOCAL CODES.

H. MAINTAIN CONTINUITY OF BRANCH CIRCUITS AND COMMUNICATION CIRCUITS TO ALL DEVICES AND LUMINAIRES SHOWN TO REMAIN (ETR). EXTEND AND MODIFY AS REQUIRED.

I. ALL NEW AND RELOCATED CONDUIT AND WIRING IN REMODELED AREAS SHALL BE CONCEALED UNLESS OTHERWISE NOTED. COORDINATE WITH ARCHITECT IN FIELD.

J. FOR ALL DEVICES AND LUMINAIRES BEING REMOVED (REX), REMOVE RELATED CONDUIT AND WIRING TO SOURCE. RE-LABEL EXISTING CIRCUIT BREAKERS AS "SPARE" WHEN LOAD IS COMPLETELY REMOVED OR REVISE LABEL ON PANEL DIRECTORY APPROPRIATELY.

K. EXISTING INTERIM LIFE SAFETY SYSTEMS, INCLUDING BUT NOT LIMITED TO, EMERGENCY EGRESS LIGHTING AND FIRE ALARM SYSTEMS SHALL BE MAINTAINED AND UNINTERRUPTED IN UN-REMODELED AREAS. MODIFICATIONS TO SUCH SYSTEMS SHALL BE CLOSELY COORDINATED WITH OWNER AS TO NOT DISRUPT CONTINUITY OF LIFE SAFETY FUNCTIONS TO OTHER FLOOR AND PHASED AREAS DURING BUILDING OCCUPANCY HOURS.

DRAWING LIST - ELECTRICAL

NUMBER	NAME
E0-1	ELECTRICAL SYMBOL LEGEND, GENERAL NOTES AND LUMINAIRE SCHEDULE
E1.0	ELECTRICAL SITE PLAN OVERALL
E1.1	ELECTRICAL SITE PLAN OVERALL - ISOFOOTCANDLE PLOTS
E6-1	ELECTRICAL DETAILS AND DIAGRAMS
EDS.1	ELECTRICAL DEMOLITION SITE PLAN
EPS.1	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE A
EPS.2	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE B
EPS.3	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE C
EPS.4	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE D
EPS.5	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE E
EPS.6	ELECTRICAL PHOTOMETRIC SITE PLAN - ZONE F
ES.1	ELECTRICAL SITE PLAN - ZONE A
ES.2	ELECTRICAL SITE PLAN - ZONE B
ES.3	ELECTRICAL SITE PLAN - ZONE C
ES.4	ELECTRICAL SITE PLAN - ZONE D
ES.5	ELECTRICAL SITE PLAN - ZONE E
ES.6	ELECTRICAL SITE PLAN - ZONE F

GENERAL ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A	AMPERES
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMP FUSED
AFCI	ARC-FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AS	AMP SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
CB	CIRCUIT BREAKER
CATV	COMMUNITY ANTENNA TELEVISION (CABLE TELEVISION)
CCT	CORRELATED COLOR TEMPERATURE
CL	CENTER LINE
CM	CONSTRUCTION MANAGER
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ETR	EXISTING ELECTRICAL DEVICE TO REMAIN
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER - PERSON PROTECTION
GFP	GROUND FAULT PROTECTION
IG	ISOLATED GROUND
KWC	KILOWATTS CONNECTED
KWD	KILOWATTS DEMAND
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
OBC	OHIO BUILDING CODE
OFE	OWNER FURNISHED EQUIPMENT
ø	PHASE
RD	NEW LOCATION OF RELOCATED ELECTRICAL DEVICE
REX	REMOVE EXISTING ELECTRICAL DEVICE ALONG WITH RELATED CONDUIT AND WIRING, UON
TCC	TEMPERATURE CONTROL CONTRACTOR
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS
W	WIRE
WP	WEATHERPROOF

POWER CIRCUITING GUIDE

SYMBOL — DESCRIPTION

XXX (X:1 / x#)
- X: PANEL NAME
- 1: CIRCUIT NUMBER
- z#: ZONE CONTROLLER CONTROL - LOW VOLTAGE LIGHTING CONTROL SYSTEM
  - #: INDIVIDUAL ZONE CONTROL
  - x: LOCAL ROOM ZONE CONTROL
- r#: RELAY CONTROL - LOW VOLTAGE LIGHTING CONTROL SYSTEM
  - #: INDIVIDUAL RELAY NUMBER

DEVICE, JUNCTION BOX, FLOOR BOX, ETC.

EQUIPMENT ABBREVIATION, REFER TO EQUIPMENT ABBREVIATION SCHEDULE FOR ADDITIONAL INFORMATION

LIGHTING CIRCUITING GUIDE

SYMBOL — DESCRIPTION

B (X:1)
- X: PANEL NAME
- 1: CIRCUIT NUMBER
- a,b: LIGHTING CONTROL ZONE - STAND ALONE LIGHTING CONTROL
- z#: ZONE CONTROLLER CONTROL - LOW VOLTAGE LIGHTING CONTROL SYSTEM
  - #: INDIVIDUAL ZONE CONTROL
  - x: LOCAL ROOM ZONE CONTROL
- r#: RELAY CONTROL - LOW VOLTAGE LIGHTING CONTROL SYSTEM
  - #: INDIVIDUAL RELAY NUMBER

LIGHTING DESIGNATION REFER TO LUMINAIRE SCHEDULE

CONDUIT SYMBOL LEGEND

SYMBOL	DESCRIPTION
———	CONDUIT STUB
———●	CONDUIT TURNED DOWN
———○	CONDUIT TURNED UP
– – – – – – –	CONDUIT INSTALLED BELOW GRADE OR BELOW FINISHED FLOOR
E-1 ● / E-1	ELECTRICAL CONNECTION TO EQUIPMENT ITEM 'E-1' (LETTER DESIGNATION AS APPLICABLE) - SEE CORRESPONDING EQUIPMENT CONNECTION SCHEDULE

LEGEND - ELECTRICAL DISTRIBUTION

SYMBOL	DESCRIPTION

LEGEND - LIGHTING DEVICES

SYMBOL	DESCRIPTION

LEGEND - ELECTRICAL DEVICES

SYMBOL	DESCRIPTION

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PLANNING COMMISSION SUBMISSION

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ELECTRICAL SYMBOL LEGEND, GENERAL NOTES AND LUMINAIRE SCHEDULE

SCALE: NONE

E0-1

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LEGEND

- PHASE 1 WORK LIMITS
- EXISTING STORM SEWER
- EXISTING STORM INLET
- EXISTING SANITARY SEWER
- EXISTING SANITY MANHOLE
- EXISTING ELECTRIC
- EXISTING NATURAL GAS
- EXISTING WATER LINE
- EXISTING WATER STRUCTURE

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EXISTING UTILITY PLAN

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LEGEND

- PHASE 1 WORK LIMITS
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM INLET
- EXISTING ELECTRIC
- PROPOSED ELECTRIC
- EXISTING NATURAL GAS
- PROPOSED NATURAL GAS
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING SANITY MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING WATER STRUCTURE
- PROPOSED WATER STRUCTURE

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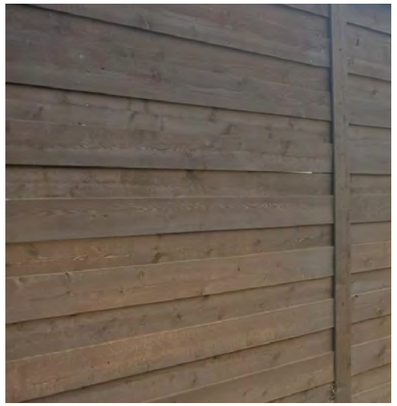
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PROPOSED UTILITY PLAN

10 OF 10

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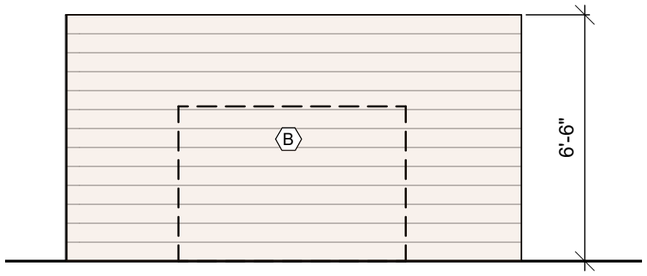
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6” horizontal stained cedar fence

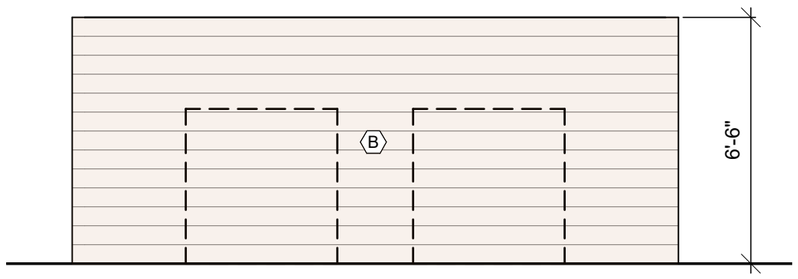


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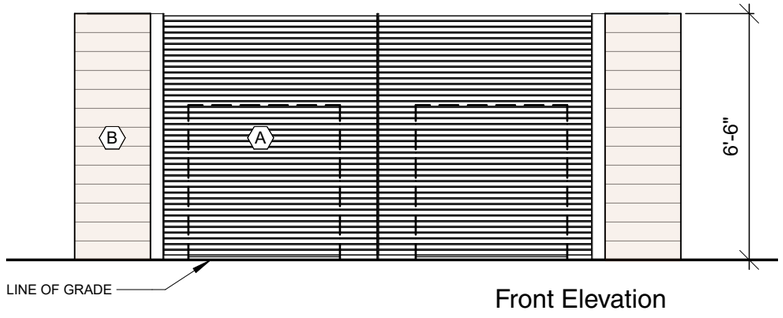
‘Orsogril’ Talia horizontal metal gate
Color: Charcoal grey powder-coat



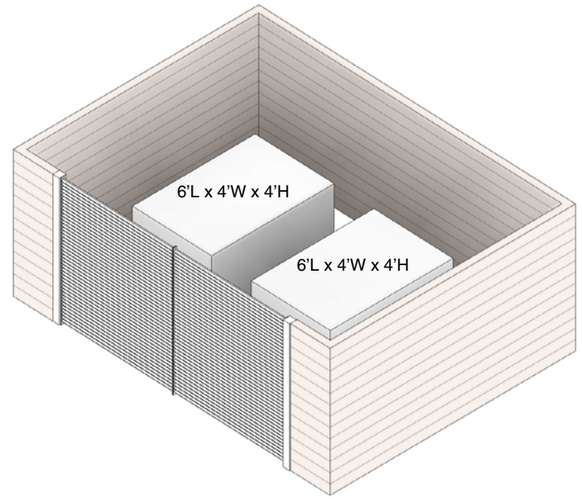
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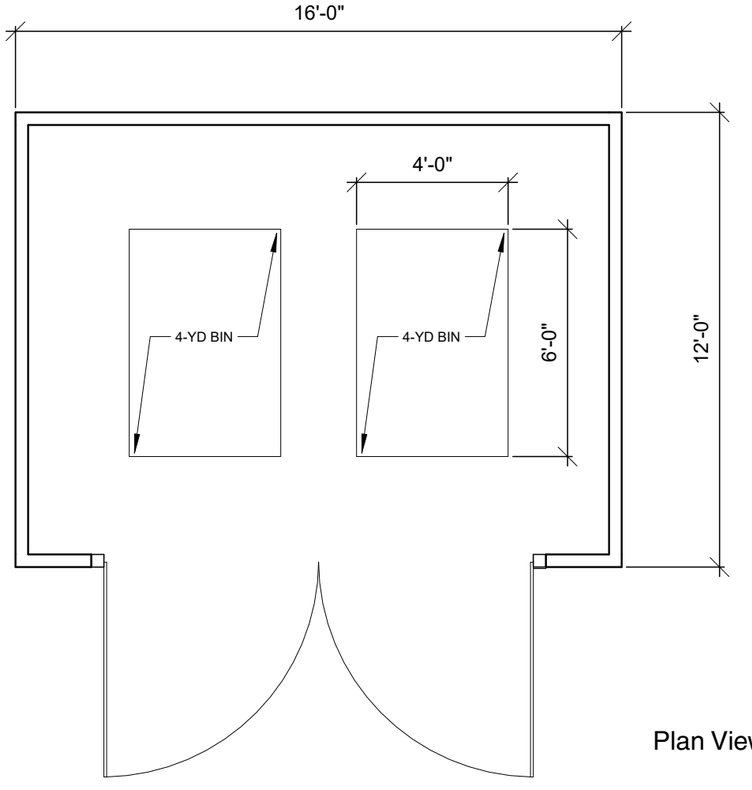
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Front Elevation



3D View



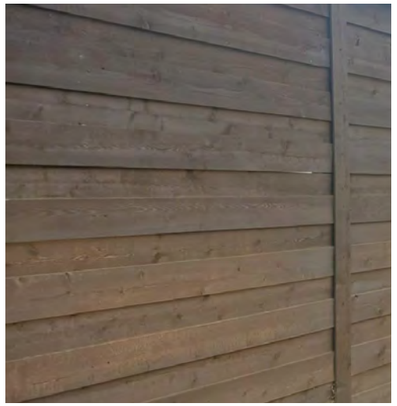
Plan View

Scale 1/4” = 1’0”

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Enclosure At South Townhomes

April 21, 2025



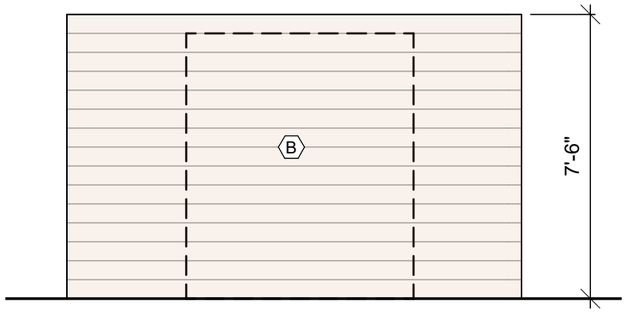
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6” horizontal stained cedar fence

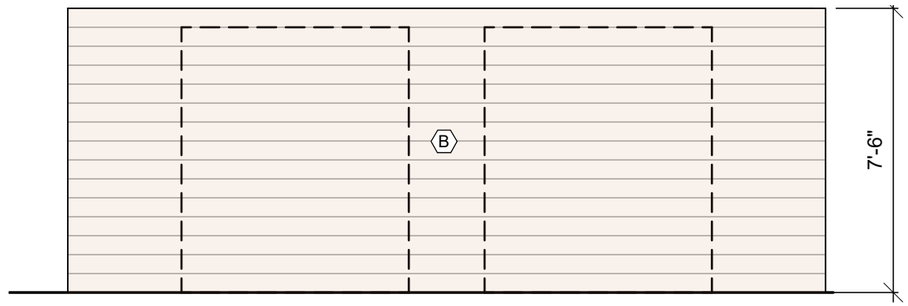


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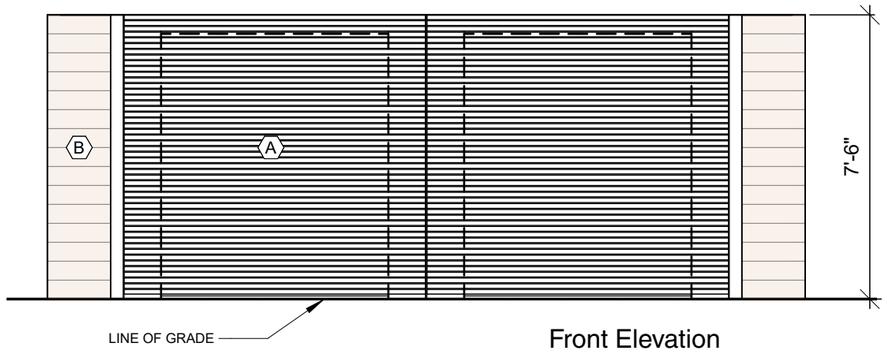
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Color: Charcoal grey powder-coat



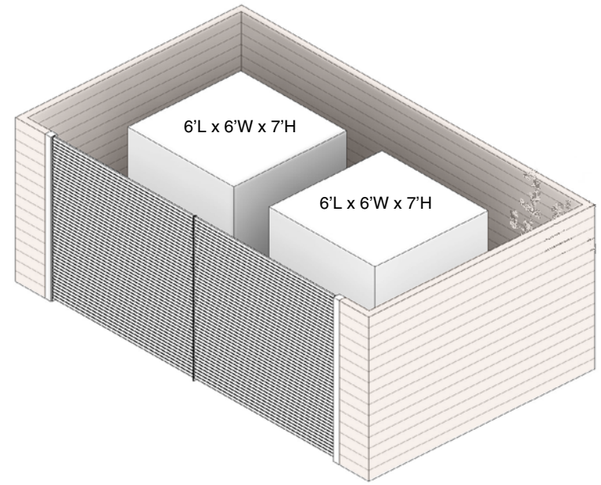
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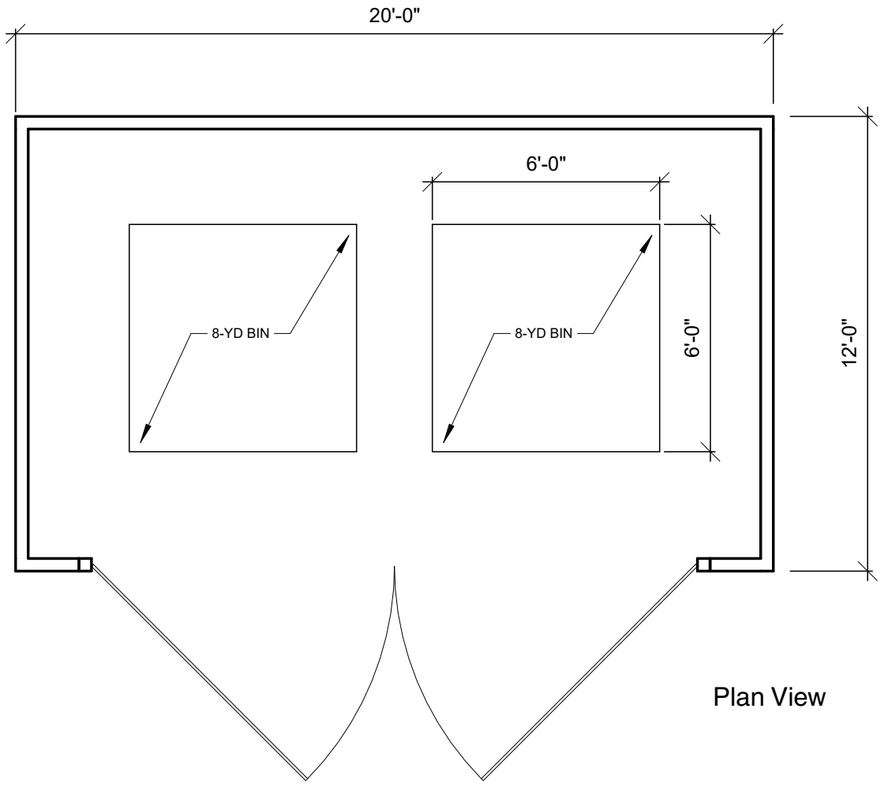
Back Elevation



Front Elevation



3D View



Plan View

Scale 1/4” = 1’0”

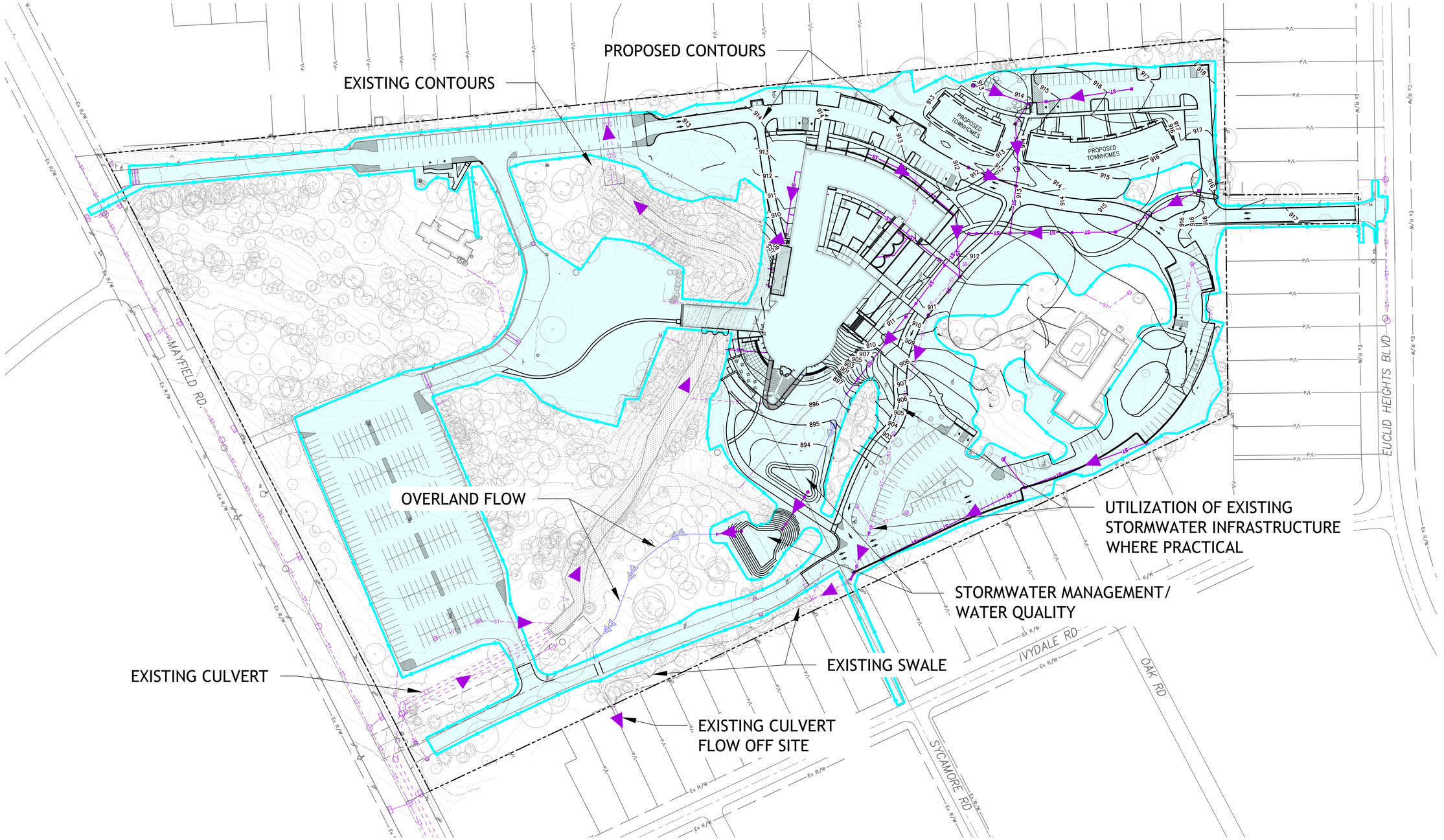
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Enclosure At School Wing
April 21, 2025



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Enclosure Example for (2) 8-yd bins
April 21, 2025



LEGEND

- PHASE 1 WORK LIMITS
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM INLET
- STORMWATER FLOW DIRECTION

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PROPOSED TOPOGRAPHY AND STORMWATER MANAGEMENT

2 OF 10

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Park Synagogue

Phase 1 Development

Public Engagement

8/22/2025

Sustainable Community Associates (SCA) initiated their public engagement in the winter of 2021 by meeting with stakeholders in Cleveland Heights and throughout Northeast Ohio to gather people's past experiences and their vision for the historic building and wooded site. Many of those key stakeholders, including past members of the synagogue and the leadership of the current synagogue in Pepper Pike, continued to be engaged in the three years of site planning and financial applications that followed. By the summer of 2024, the community arts center program was established for the restoration of the synagogue, and the need for housing on the site became clear. SCA then began to meet with the local block club, the Boulevard Neighbors, in multiple Zoom meetings and two building tours from the fall of 2024 to the spring of 2025. SCA collaborated with the city to create a Park Synagogue Development web page, providing updates on public meetings to keep the entire community informed about the project. They have continued to engage the neighborhood group by inviting them to the public meetings and seeking their feedback on the site planning of the new residential buildings.

TMS Engineers, Inc.



Traffic Impact Study

Park Synagogue
Cleveland Heights, Ohio

February 18, 2025

Prepared for:

Friends of Mendelsohn
2306 West 17TH Street
Suite 6
Cleveland, Ohio 44113

TRAFFIC IMPACT STUDY

Park Synagogue

Cleveland Heights, Ohio

February 18, 2025

Prepared For:

Friends of Mendelsohn
2306 West 17TH Street
Suite 6
Cleveland, Ohio 44113

Prepared By:

TMS Engineers, Inc.
2112 Case Parkway South
Unit #7
Twinsburg, Ohio 44087



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Table of Contents

Executive Summary ..... x-xiv

Chapter 1 Introduction 1-8

1.1 Purpose of the Report 1

1.2 Study Objectives 3

1.3 Intersection Capacity & Levels-of-Services 4

1.4 Intersection Turn Lanes 6

1.5 References 8

Chapter 2 Area Conditions 9-26

2.1 Transportation Network Study Area 9

2.2 Traffic. 22

Chapter 3 Projected Traffic Conditions 27-47

3.1 Site Traffic 27

3.2 Non-Site Traffic 38

3.3 Future Traffic 45

Chapter 4 Traffic Analysis. 48-124

4.1 Capacity & LOS at Study Area Intersections 48

4.2 Traffic Signal Warrant Analysis 111

4.3 Pedestrian Crossing Analysis 114

4.4 Auxiliary Turn Lane Warrant Analysis 121

4.5 Turn Lane Length Analysis 124

4.6 Improvements to Accommodate Study Area Traffic 126

Chapter 5 Conclusions 128-132

Appendices

Appendix A - Traffic Volume Figures

Appendix B - ODOT Turn Lane Design Criteria

Appendix C - Traffic Count Data

Appendix D - Trip Generation Data

Appendix E - NOACA Growth Rates

Appendix F - Growth Rate Calculations

Appendix G - ODOT Peak Hour to Design Hour Charts

Appendix H - Background Growth Spreadsheet

Appendix I - Intersection Capacity Analysis Worksheets - No-Build - 2027

Appendix J - Intersection Capacity Analysis Worksheets - Build - 2027

Appendix K - Intersection Capacity Analysis Worksheets - No-Build - 2030

Appendix L - Intersection Capacity Analysis Worksheets - Build - 2030

Appendix M - Intersection Capacity Analysis Worksheets - No-Build - 2047

Appendix N - Intersection Capacity Analysis Worksheets - Build - 2047

Appendix O -Alternative Intersection Capacity Analysis Worksheets - Build - 2030

Appendix P - Alternative Intersection Capacity Analysis Worksheets - Build - 2047

Appendix Q - Traffic Signal Warrant Analysis

Appendix R - Pedestrian Treatment Analysis

Appendix S - ODOT Turn Lane Warrant Graphs

Appendix T - ODOT Turn Lane Warrant Graphs

List of Figures

Appendix

Figure 1.1 Location Map ..... A

Figure 1.2 Site Plan - Existing Conditions ..... A

Figure 1.3 Site Plan - Full Build 2030 ..... A

Figure 2.1 Aerial View ..... A

Figure 2.2 Existing Lane Use & Traffic Control ..... A

Figure 2.3 Functional Classification ..... A

Figure 2.4 2024 Existing Weekday Peak Hour Traffic Volumes ..... A

Figure 3.1 2027 Phase 1 Non-Pass-by Traffic Directional Distribution ..... A

Figure 3.2 2030 Phase 2 Non-Pass-by Traffic Directional Distribution ..... A

Figure 3.3 2027 Phase 1 Site Generated Non-Pass-by Trips ..... A

Figure 3.4 2030 Phase 2 Site Generated Non-Pass-by Trips ..... A

Figure 3.5 Total Site Generated Non-Pass-by Trips. ..... A

Figure 3.6 Alternative Non-Pass-by Traffic Directional Distribution ..... A

Figure 3.7 Alternative Total Site Generated Non-Pass-by Trips ..... A

Figure 3.8 NOACA Automobile AM Growth Rates ..... A

Figure 3.9 NOACA Automobile PM Growth Rates ..... A

Figure 3.10 NOACA Truck AM Growth Rates ..... A

Figure 3.11 NOACA Truck PM Growth Rates ..... A

Figure 3.12 2027 No-Build Weekday Peak Hour Traffic Volumes ..... A

List of Figures (Continued)

Appendix

Figure 3.13 2030 No-Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.14 2047 No-Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.15 2027 Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.16 2030 Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.17 2047 Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.18 Alternative 2030 Build Weekday Peak Hour Traffic Volumes ..... A

Figure 3.19 Alternative 2047 Build Weekday Peak Hour Traffic Volumes ..... A

Figure 4.1Recommended Lane Use and Traffic Control ..... A

List of Tables

Table-1.1 Intersection Levels-of-Service 4
Table-1.2 Intersection Operational Goals 5
Table-2.1 Roadway Characteristics - Mayfield Road Intersections 17
Table-2.2 Roadway Characteristics - Euclid Heights Boulevard Intersections 18
Table-2.3 Roadway Characteristics - Site Access Intersections 19
Table-2.4 Functional Classification 21
Table-2.5 AM Peak Hour Traffic Volumes 24
Table-2.6 PM Peak Hour Traffic Volumes 25
Table-3.1 ITE Land Use Codes 28
Table-3.2 Phase 1 Trip Generation 29
Table-3.3 Phase 2 Trip Generation 30
Table-3.4 Phase 1 AM Non-Pass-By Trip Origins and Destinations. 31
Table-3.5 Phase 1 PM Non-Pass-By Trip Origins and Destinations. 32
Table-3.6 Phase 2 AM Non-Pass-By Trip Origins and Destinations. 33
Table-3.7 Phase 2 PM Non-Pass-By Trip Origins and Destinations. 34
Table-3.8 Peak Hour to Design Hour Factors - Study Area Intersections 40
Table-3.9 Peak Hour to Design Hour Factors - Site Access Intersections 41
Table-3.10 Intersection Peak Hour Factors - Study Area Intersections. 43
Table-3.11 Intersection Peak Hour Factors - Site Access Intersections. 44
Table-4.1 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #1) 49
Table-4.2 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #1). 49
Table-4.3 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #2) 51
Table-4.4 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #2). 51

List of Tables (Continued)

Table-4.5 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #3) 52

Table-4.6 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #3)..... 52

Table-4.7 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #4) 53

Table-4.8 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #4)..... 54

Table-4.9 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #5) 55

Table-4.10 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #5) 55

Table-4.11 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #6)..... 57

Table-4.12 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #6) 57

Table-4.13 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #7)..... 59

Table-4.14 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #7) 59

Table-4.15 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #8)..... 60

Table-4.16 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #8) 61

Table-4.17 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #A)..... 63

Table-4.18 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #A) 63

Table-4.19 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #C)..... 64

Table-4.20 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #C) 64

Table-4.21 2027 AM Peak Hour Levels-of-Service Comparison - (Intersection #D)..... 65

Table-4.22 2027 PM Peak Hour Levels-of-Service Comparison - (Intersection #D) 65

Table-4.23 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #1)..... 67

Table-4.24 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #1) 67

List of Tables (Continued)

Table-4.25 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #2) 69

Table-4.26 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #2) 69

Table-4.27 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #3) 70

Table-4.28 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #3) 70

Table-4.29 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #4)) 71

Table-4.30 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #4) 72

Table-4.31 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #5) 73

Table-4.32 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #5) 73

Table-4.33 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #6) 75

Table-4.34 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #6) 75

Table-4.35 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #7) 77

Table-4.36 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #7) 77

Table-4.37 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #8) 78

Table-4.38 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #8) 79

Table-4.39 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #A) 81

Table-4.40 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #A) 81

Table-4.41 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #C) 82

Table-4.42 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #C) 82

Table-4.43 2030 AM Peak Hour Levels-of-Service Comparison - (Intersection #D) 83

Table-4.44 2030 PM Peak Hour Levels-of-Service Comparison - (Intersection #D) 83

List of Tables (Continued)

Table-4.45 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #1) 85
Table-4.46 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #1) 85
Table-4.47 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #2) 87
Table-4.48 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #2) 87
Table-4.49 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #3) 88
Table-4.50 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #3) 88
Table-4.51 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #4) 89
Table-4.52 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #4) 90
Table-4.53 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #5) 91
Table-4.54 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #5) 91
Table-4.55 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #6) 93
Table-4.56 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #6) 93
Table-4.57 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #7) 95
Table-4.58 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #7) 95
Table-4.59 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #8) 96
Table-4.60 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #8) 97
Table-4.61 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #A) 99
Table-4.62 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #A) 99
Table-4.63 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #C) 100
Table-4.64 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #C) 100

List of Tables (Continued)

Table-4.65 2047 AM Peak Hour Levels-of-Service Comparison - (Intersection #D). 101

Table-4.66 2047 PM Peak Hour Levels-of-Service Comparison - (Intersection #D) 101

Table-4.67 2030 AM / PM Peak Hour Levels-of-Service Results - (Alt. Intersection #3). 103

Table-4.68 2030 AM / PM Peak Hour Levels-of-Service Results - (Intersection #A) 104

Table-4.69 2030 AM / PM Peak Hour Levels-of-Service Results - (Intersection #A) 105

Table-4.70 2030 AM / PM Peak Hour Levels-of-Service Results - (Alt. Intersection #3). 107

Table-4.71 2030 AM / PM Peak Hour Levels-of-Service Results - (Intersection #A) 108

Table-4.72 2030 AM / PM Peak Hour Levels-of-Service Results - (Intersection #A) 109

Table-4.73 Traffic Signal Warrant Analysis 113

Table-4.74 Turn Lane Warrants 122

Table-4.75 Turn Lane Warrants (Alternate Build) 123

Table-4.76 Turn Lane Length Analysis (Intersection #6) 124

Table-4.77 Turn Lane Length Analysis (Intersection #8) 125

Executive Summary

This Traffic Impact Study (TIS) has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The redevelopment project is intended to transform Park into an intergenerational campus, serving a broad civic purpose with multi-family and age in-place housing, a public park, and a new home for arts and cultural institutions.

Synagogue Park is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. **Figure 1.1, Appendix A** shows the location of the development. **Figure 1.2, Appendix A** shows the existing conditions at the development site.

The redevelopment of the site is expected to occur in two phases. Phase 1 of the redevelopment is expected to occur by the year 2027 and full build of the redevelopment is expected to occur by the year 2030. The design year for the proposed project was therefore considered 2047 in order to provide a twenty year condition from the opening year of 2027.

The site plan for the full build conditions is shown in **Figure 1.3, Appendix**..

Phase 1 of the project was analyzed based on the following program description:

- Kangesser Hall and Boiler House demolished.
- Park Synagogue restored for K-12 and Higher Education Art Instruction (B1).
- 15 townhouse apartments (30 units) added to the south of the synagogue (C1).
- Daycare and Mikvah continue with current use.
- Entry drive B removed.

Phase 1 is expected to occur in the year 2027, the opening year.

The site plan for the development shows that the three existing driveways will remain as site access driveways under the future 2027 conditions with entry drive B being removed. Entry drive B may be retained or relocated dependent on the building footprints for A1 and A2 shown in **Figure 1.3, Appendix A** .There are two site access driveways along the south side of Mayfield Road and one access driveway on the north side of Euclid Heights Boulevard. All driveways are full access locations that permit all ingress and egress turn movements.

Phase 2 of the project was analyzed based on the following program description:

- Northwest multifamily building with new daycare at 4 stories, 100k, 150 units (A1).
- Northeast multifamily building at 5 stories, 100k, 150 units (A2).
- 30 multifamily units added north of the synagogue (A3).
- 20 multifamily units added north of the synagogue (A4).
- 30 multifamily units added southwest of the synagogue (C2).
- Daycare demolished and relocated to commercial space below northwest multifamily building.

Phase 2 is expected to open in the year 2030, the full build year.

A alternative access scenario will also consider the relocation of the east most driveway (C) along Mayfield Road to align with Burlington Road and a third driveway along Mayfield Road between driveway A and driveway C. The driveway location will be dependent on the final location of the A1 and A2 building footprints.

The weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM. The weekday PM peak hour of traffic was found to be 4:30 PM to 5:30 PM. These periods were used to forecast expected and future traffic volumes since they reflect the period of the highest volume of vehicular traffic flow for the study area roadways.

The development is expected to generate the following hourly traffic volumes during the peak periods for each phase of the development as shown in the tables below:

ITE TRIP GENERATION			PHASE 1TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
550	College / University	50 Students	6	2	3	5
TOTAL NON-PASS-BY TRIPS			**8**	**10**	**11**	**11**
			18		**22**	

ITE TRIP GENERATION			PHASE 2 TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
215	Single Family Attached Housing	20 Units	1	4	5	3
215	Single Family Attached Housing	30 Units	2	8	8	6
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
TOTAL NON-PASS-BY TRIPS			**31**	**102**	**93**	**61**
			133		**154**	

Recommended Improvements to Serve Future Conditions without the Development

The following improvements were recommended to accommodate the site generated traffic under the forecasted No-Build conditions at the study area intersections.

Lee Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend eastbound left turn lane to a length of 325 feet.

South Taylor Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend westbound left turn lane to a length of 250 feet.
- Extend northbound left turn lane to a length of 325 feet.

Recommended Improvements to Mitigate the Traffic Associated with the Development

The results of the turn lane analyses indicate that a left turn lane is warranted on Mayfield Road at the East Driveway (Access C) under the expected 2030 and 2047 Build conditions. The construction of a left turn lane is not necessary because there is an existing two-way left turn lane on Mayfield Road.

The proposed re-location of the east access driveway (C) to across from Burlington Road promotes good access management of the corridor through the consolidation of two intersections into one intersection. It is our recommendation that access driveway (C) be relocated across from Burlington Road as part of the Park Synagogue master plan. It should be noted that traffic signal control was not found to be warranted at the intersection and therefore is not recommended.

The **NCHRP Report 562** [11] pedestrian treatment analysis worksheet determined that the **"No Treatment"** level category was recommended at the intersection of Mayfield Road and Burlington Road. The analysis worksheet determined that the **"Red"** level category would be recommended if the location was found to have 20 or more pedestrian crossings on the Mayfield Road approaches.

Based on the existing conditions and the results of the analyses**,** we do not recommend providing a marked crosswalk on Mayfield Road at Burlington Road or a mid-block location for the Park Synagogue site.

It is recommended that an additional count and study be performed after completion of the residential component of the redevelopment and when the time of the year and weather conditions are suitable to outdoor activities which may increase pedestrian crossing activity enough to warrant pedestrian safety measures. Until the pedestrian count reaches at least 20 pedestrians in a one hour period, the results of this analysis would be expected to remain the same.

The Center Driveway (B) should be located at least 250 feet east of the West Driveway (A) and 250 feet west of the East Driveway (C).

The following improvements were recommended to accommodate the site generated traffic under the forecasted Build conditions at the study area intersections.

Lee Road & Euclid Heights Boulevard (2030 and 2047)

- Extend westbound left turn lane to a length of 400 feet.

No additional improvements were recommended to accommodate the forecasted 2027, 2030, and 2047 Build conditions.

The recommended lane use and traffic control for the study area to accommodate expected traffic volumes can be seen in **Figure 4.1, Appendix A**.

Conclusion

Based upon the results of the analysis in this study and the corresponding recommendations, it can be seen that the redevelopment traffic can be accommodated without adversely impacting the area roadway network.

Chapter 1
Introduction

1.1 Purpose of Report

This Traffic Impact Study (TIS) has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The redevelopment project is intended to transform Park into an intergenerational campus, serving a broad civic purpose with multi-family and age in-place housing, a public park, and a new home for arts and cultural institutions.

Synagogue Park is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. **Figure 1.1, Appendix A** shows the location of the development. **Figure 1.2, Appendix A** shows the existing conditions at the development site.

The redevelopment of the site is expected to occur in two phases. Phase 1 of the redevelopment is expected to occur by the year 2027 and full build of the redevelopment is expected to occur by the year 2030. The design year for the proposed project was therefore considered 2047 in order to provide a twenty year condition from the opening year of 2027.

The site plan for the full build conditions is shown in **Figure 1.3, Appendix**..

Phase 1 of the project was analyzed based on the following program description:

- Kangesser Hall and Boiler House demolished.
- Park Synagogue restored for K-12 and Higher Education Art Instruction (B1).
- 15 townhouse apartments (30 units) added to the south of the synagogue (C1).
- Daycare and Mikvah continue with current use.
- Entry drive B removed.

Phase 1 is expected to occur in the year 2027, the opening year.

The site plan for the development shows that the three existing driveways will remain as site access driveways under the future 2027 conditions with entry drive B being removed. Entry drive B may be retained or relocated dependent on the building footprints for A1 and A2 shown in **Figure 1.3, Appendix A** .There are two site access driveways along the south side of Mayfield Road and one access driveway on the north side of Euclid Heights Boulevard. All driveways are full access locations that permit all ingress and egress turn movements.

Phase 2 of the project was analyzed based on the following program description:

- Northwest multifamily building with new daycare at 4 stories, 100k, 150 units (A1).
- Northeast multifamily building at 5 stories, 100k, 150 units (A2).
- 30 multifamily units added north of the synagogue (A3).
- 20 multifamily units added north of the synagogue (A4).
- 30 multifamily units added southwest of the synagogue (C2).
- Daycare demolished and relocated to commercial space below northwest multifamily building.

Phase 2 is expected to open in the year 2030, the full build year.

A alternative access scenario will also consider the relocation of the east most driveway (C) along Mayfield Road to align with Burlington Road and a third driveway along Mayfield Road between driveway A and driveway C. The driveway location will be dependent on the final location of the A1 and A2 building footprints.

1.2 Study Objectives

This study is structured for the following purposes;

- to adequately assess the traffic impacts associated with the proposed redevelopment, and identify the level of off-site access and traffic,
- to provide a comprehensive study which evaluates and documents the traffic impacts and off-site improvements, where warranted,
- and to provide a technically sound basis to identify mitigation requirements to off-site traffic impacts.

This study documents the methodologies, findings and conclusions of the analysis, including the basis for all assumptions, traffic parameters utilized and conclusions reached.

The development of future traffic volumes will be based on the forecasting guidelines and methodology found in the Ohio Department of Transportation's **Ohio Traffic Forecasting Manual, Volume 1 [4] & Volume 2 [5]**.

The traffic impacts will be determined by comparing the existing intersection levels-of-service, delay or density, volume to capacity ratio and queue storage ratio before the construction of the proposed development to the anticipated measures after the development is completed. Traffic analyses for the study area and access intersections will be calculated using the computerized version of the Transportation Research Board's **Highway Capacity Manual 7TH Edition [1], (HCS2024, Release 8.3)**. Data inputs for the HCS software program will be based on the guidance found in the Ohio Department of Transportation's **Analysis & Traffic Simulation Manual (OATS) [6]**.

The justification for any changes in the intersections will be determined by comparing data collected of the existing traffic conditions to the criteria established by the **Ohio Manual of Uniform Traffic Control Devices [2]** and professional engineering judgment from an on-site field review.

Intersection geometric design guidelines will be based in the information and procedures found in the Ohio Department of Transportation's **Location & Design Manual, Volume 1 [3]**.

1.3 Intersection Capacity & Levels-of-Service

Intersection capacity analyses will be performed at the development access intersection using the procedures outlined in the computerized version of the Transportation Research Board's **Highway Capacity Manual** [(1)].

The **HCM** [(1)] is the most widely used document in the transportation industry. It contains a set of methodologies and application procedures for evaluating the capacity and quality of service of various transportation facilities. The **HCM** [(1)] is built from more than 60 years or research work and represents a body of expert transportation consensus.

The capacity analysis procedures provide a calculated "average vehicle delay", which is based on traffic volumes, number of lanes, type of traffic control, channelization, grade, and percentage of large vehicles in the traffic stream at each intersection. The average delay calculated at an intersection is then assigned a "grade" or level of service (LOS) ranging from LOS A, the best, to LOS F, the worst based upon driver expectation. The intersection LOS "grades" as defined by the Transportation Research Board are as follows:

Table 1.1 Intersection Levels-of-Service

LOS	UNSIGNALIZED AVERAGE DELAY PER VEHICLE (sec)	SIGNALIZED AVERAGE DELAY PER VEHICLE (sec)
A	≤ 10.0	≤ 10.0
B	10.1 to 15.0	10.1 to 20.0
C	15.1 to 25.0	20.1 to 35.0
D	25.1 to 35.0	35.1 to 55.0
E	35.1 to 50.0	55.1 to 80.0
F	> 50	> 80

Intersection capacity analyses will be performed in order to estimate the maximum amount of traffic that can be accommodated by the intersection while maintaining recommended operational qualities. No-Build and Build peak hour traffic volumes will be analyzed to determine the level-of-service (LOS) at the study area intersections.

The selection of the design level-of-service is most frequently chosen from Section 5.9 of the Ohio Department of Transportation's **OATS Manual** [6]. In most cases, a level-of-service E is considered the maximum delay threshold for movements and approaches after which improvements should be investigated to determine if the delay can be reduced to a level of E or better. For the intersection as a whole, level of service D is normally considered the maximum threshold. The following table from *Section 5.9* details the operation goals for intersection analyses (All-Way Stop Control, Two-Way Stop Control, Signalized, & Roundabout).

Table 1.2 Intersection Operational Goals

RESULT	INSIDE AN MPO	OUTSIDE AN MPO
Intersection LOS	D or BETTER	C or BETTER
Approach LOS	E or BETTER	
Control LOS	E or BETTER	
v/c	All movements < 1.0 (<= 0.93 preferred)	
QSR	All movements <1.0 from HCS analysis, TransModeler may be needed to determine if queuing impacts upstream intersections.	

MPO = Metropolitan Planning Organization
v/c = Volume to Capacity Ratio
QSR = Queue Storage Ratio

Cleveland Heights is located within the boundaries for the Northeast Ohio Areawide Coordinating Agency (NOACA) metropolitan planning organization (MPO). The capacity analyses will determine if there are any locations, approaches or movements in which the delay, v/c, and/or QSR exceed the operational goals shown in *Table 1.2* for a location inside an MPO.

All intersections will be analyzed using the computerized version of the Transportation Research Board's **Highway Capacity Manual 7TH Edition [1], (HCS2025, Release 8.4).** The capacity analyses for signalized intersections will be based on the process detailed in *Section 6.2.2.1* of the ODOT **OATS Manual** [6]. The optimization of any traffic signal timing will be based on the delay minimization function with the objective of Balanced Delay.

It should be noted that any values for queue length, shown in the HCS analysis summary sheets that are displayed in red, indicate that the movement is expected to experience a "spillback" condition where the queue may exceed the existing length of the turn lane and extend into the adjacent through lane. These instances, if they occur, will be investigated for mitigation.

1.4 Intersection Turn Lanes

Turn Lane Warrants

The ODOT **Location and Design Manual, Volume 1** [3] and the **State Highway Access Management Manual** [7] describes the need for auxiliary turn lanes at unsignalized intersections. *Section 401.6.3* of the ODOT **Location and Design Manual** [4] states that:

"To determine the number and use of left (right) turn lanes, intersection capacity analysis procedures of the current edition of the Highway Capacity Manual should be used. For unsignalized intersections, left (right) turn lanes may also be needed if they meet warrants provided in Figures 401-5(6)a, b, c and d. The warrants apply only to the free-flow approach of the unsignalized intersection."

The Auxiliary Lane Graphs found in *Section 401-6* of the **Location and Design Manual, Volume 1** [4] are used for this determination. This applies to the free-flow approaches at unsignalized intersections.

Section 401-6 of the **Location and Design Manual, Volume 1** [4] specifies the current edition of the **Highway Capacity Manual** [1] should be used for signalized intersections.

It is the intent of this report to evaluate the need for exclusive deceleration and turn lanes at the development access locations on Mayfield Road and Euclid Heights Boulevard.

Turn Lane Length

Existing turn lanes found to be deficient per the QSR results from the capacity analysis and any recommended turn lanes will be analyzed to determine the necessary storage length in accordance with the procedure found in the Ohio Department of Transportation's **Location and Design Manual, Volume 1** [3], *Section 401*. The ODOT criteria and procedures are furnished in **Appendix B**.

The ODOT **Location and Design Manual** [4] provides the following guidance regarding maximum and minimum turn lane lengths:

- *"It is recommended that left turn lanes be at least 100 feet long, and the maximum storage length be no more than 600 feet."*
- *"The recommended maximum length of right turn lanes at signalized intersections is 800 feet, with 100 feet being the minimum length."*

Design Speed

The procedure for determining the necessary turn lane storage length with the procedure found in the Ohio Department of Transportation's **Location and Design Manual, Volume 1** [3], *Section 401* is in part based on the design speed of the roadway. The AASHTO publication, **A Policy on Geometric Design of Highway Streets (Green Book)** [11], defines design speed as a selected speed used to determine the various geometric design features of the roadway. The assumed design speed should be a logical one with respect to the topography, anticipated operating speed, the adjacent land use and the functional classification of highway.

The ODOT **Location and Design Manual, Volume 1** [3] provides guidance for determining the design speed of a roadway. *Section 104.2* of the ODOT **Location and Design Manual** [3] states that:

"The design speed should match the legal speed for facilities with a legal speed of 35 mph or less. For facilities with a legal speed of 40 or 45 mph the design speed shall either match the legal speed, or be 5 mph greater than the legal speed, depending on the context of the area. For facilities with a legal speed 50 mph or greater, the design speed shall be 5 mph greater than the legal speed."

1.5 References

The following list of references will be utilized for this report and the analysis contained within it:

1. *Highway Capacity Manual,* 7th Edition. Transportation Research Board of the National Academies, Washington, D.C.

2. *Ohio Manual of Uniform Traffic Control Devices for Streets and Highways,* 2012 Edition. Ohio Department of Transportation, Office of Traffic Engineering, Columbus, Ohio.

3. *Location and Design Manual,* Volume 1, Roadway Design. Ohio Department of Transportation, Office of Roadway Engineering, Columbus, Ohio.

4. *Ohio Traffic Forecasting Manual,* Volume 1, Traffic Forecasting Background. Ohio Department of Transportation, Office of Statewide Planning & Research, Columbus, Ohio.

5. *Ohio Traffic Forecasting Manual,* Volume 2, Traffic Forecasting Methodologies. Ohio Department of Transportation, Office of Statewide Planning & Research, Columbus, Ohio.

6. *ODOT Analysis and Traffic Simulation Manual (OATS),* Ohio Department of Transportation, Office of Roadway Engineering, Columbus, Ohio.

7. *State Highway Access Management Manual,* Ohio Department of Transportation, Office of Roadway Engineering, Columbus, Ohio.

8. *Trip Generation Manual,* 11th Edition, September 2021, Institute of Transportation Engineers, (ITE), Washington, D.C.

9. *Trip Generation Handbook,* 3rd Edition, September 2017, Institute of Transportation Engineers, (ITE), Washington, D.C.

10. *Traffic Engineering Manual,* October 23, 2002 Edition (Revised January 15, 2021), Ohio Department of Transportation, Office of Roadway Engineering, Columbus, Ohio.

11. *Improving Pedestrian Safety at Unsignalized Crossings - NCHRP Report 562*, 2006. Transportation Research Board, Washington D.C.

Chapter 2
Area Conditions

2.1 Transportation Network Study Area

The study area that will be analyzed for the proposed redevelopment includes the following intersections:

1. **Mayfield Road and Lee Road**
2. **Mayfield Road and Ivydale Road**
3. **Mayfield Road and Burlington Road**
4. **Mayfield Road and Rydalmount Road**
5. **Mayfield Road and S. Taylor Road**
6. **Lee Road and Euclid Heights Boulevard**
7. **Euclid Heights Boulevard and Ivydale Road**
8. **South Taylor Road and Euclid Heights Boulevard**

The intersections will be enumerated and referred to as listed above throughout this report and the analysis contained within it.

The study area that will be analyzed also includes the following existing site access locations:

A. **Mayfield Road and West Driveway**
B. **Mayfield Road and Center Driveway**
C. **Mayfield Road and East Driveway**
D. **Euclid Heights Boulevard and South Driveway**

The site access driveways will be labeled and referred to as listed above throughout this report and the analysis contained within it.

An aerial view of the of the study area can be seen in **Figure 2.1 Appendix A.**

Roadway & Intersection Characteristics

The following section details the lane use and traffic control for the intersections under study for this report.

1. MAYFIELD ROAD & LEE ROAD

Mayfield Road West Approach
- 1 Exclusive Left Turn Lane
- 1 Exclusive Through Lane
- 1 Shared Through / Right Turn Lane

Mayfield Road East Approach
- 1 Exclusive Left Turn Lane
- 1 Exclusive Through Lane
- 1 Shared Through / Right Turn Lane

Lee Road North Approach
- 1 Shared Through / Left Turn Lane
- 1 Shared Through / Right Turn Lane

Lee Road South Approach
- 1 Shared Through /Left / Right Turn Lane

The intersection is controlled by a traffic signal. The signal sequence can operate with six (6) "phases" which assign the right-of-way to specific movements and displays yellow and all-red clearances. The first two phases include the eastbound and westbound left turn movements that are made during a green arrow indication (protected movement). The next two phases include the eastbound and westbound movements that are made during a green ball indication (permissive movement). The last two phases include the northbound and southbound movements that are made during a green ball indication (permissive movement).

2. MAYFIELD ROAD & IVYDALE ROAD

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes

Ivydale Road South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in traffic to turn left into Ivydale Road.

3. MAYFIELD ROAD & BURLINGTON ROAD

Mayfield Road West Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes

Mayfield Road East Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Burlington Road North Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the north approach. Traffic on the north approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however eastbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto Burlington Road.

4. MAYFIELD ROAD & FOREST HILLS BOULEVARD/RYDALMOUNT ROAD

Mayfield Road West Approach
- 1 Exclusive Left Turn Lane
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes
- 1 Exclusive Right Turn Lane

Forest Hills Boulevard North Approach
- 1 Exclusive Left Turn Lane
- 1 Shared Left/Through/Right Turn Lane

Rydalmount Road South Approach
- 1 Shared Left/Through/Right Turn Lane

The intersection is controlled by a traffic signal. The signal sequence can operate with six (6) "phases" which assign the right-of-way to specific movements and displays yellow and all-red clearances. The first two phases include the eastbound and westbound movements that are made during a green ball indication (permissive movement). The next two phases include the northbound movements that are made during a green arrow indication (protected movement). The last two phases include the southbound movements that are made during a green arrow indication (protected movement). The signal phasing includes a right turn overlap that permits the westbound right turn movement during the protected southbound movements.

5. MAYFIELD ROAD & SOUTH TAYLOR ROAD

Mayfield Road West Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes
- 1 Shared Through/Right Turn Lane

South Taylor Road North Approach
- 1 Exclusive Left Turn Lane
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

South Taylor Road South Approach
- 1 Exclusive Left Turn Lane
- 2 Exclusive Through Lanes
- 1 Exclusive Turn Lane

The intersection is controlled by a traffic signal. The signal sequence can operate with eight (8) "phases" which assign the right-of-way to specific movements and displays yellow and all-red clearances.

The first two phases include the eastbound and westbound left turn movements that are made during a green arrow indication (protected movement). The next two phases includes the eastbound and westbound movements that are made during a green ball indication (permissive movement). The next two phases include the northbound and southbound left turn movements that are made during a green arrow indication (protected movement). The last two phase include the northbound and southbound movements that are made during a green ball indication (permissive movement). The signal phasing includes a right turn overlap that permits the northbound right turn movement during the protected westbound left turn movement.

6. LEE ROAD & EUCLID HEIGHTS BOULEVARD

Euclid Heights Boulevard West Approach
- 1 Exclusive Left Turn Lane
- 1 Shared Through/Right Turn Lane

Euclid Heights Boulevard East Approach
- 1 Exclusive Left Turn Lane
- 1 Shared Through/Right Turn Lane

Lee Road North Approach
- 1 Shared Left/Through/Right Turn Lane

Lee Road South Approach
- 1 Shared Through/Left Turn Lane
- 1 Exclusive Right Turn Lane

The intersection is controlled by a traffic signal. The signal sequence can operate with two (2) "phases" which assign the right-of-way to specific movements and displays yellow and all-red clearances. The first phase includes the eastbound and westbound movements that are made during a green ball indication (permissive movement). The second phase includes the northbound and southbound movements that are made during a green ball indication (permissive movement).

7. EUCLID HEIGHTS BOULEVARD & IVYDALE ROAD

Euclid Heights Boulevard West Approach
- 1 Shared Through/Left Turn Lane

Euclid Heights Boulevard East Approach
- 1 Shared Through Right Turn Lane

Ivydale Road North Approach
- 1 Shared Left/ Right Turn Lane

The intersection is controlled by a stop sign on the north approach. Traffic on the north approach is required to stop prior to proceeding to turn onto Euclid Heights Boulevard. Traffic traveling on Euclid Heights Boulevard is not required to stop at the intersection, however eastbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto Ivydale Road.

8. SOUTH TAYLOR ROAD & EUCLID HEIGHTS BOULEVARD/SEVERANCE CIRCLE

Euclid Heights Boulevard West Approach
- 1 Shared Through/Left Turn Lane
- 1 Shared Through/Right Turn Lane

Severance Circle East Approach
- 1 Exclusive Left Turn Lane
- 1 Shared Through/Right Turn Lane

South Taylor Road North Approach
- 1 Exclusive Left Turn Lane
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

South Taylor Road South Approach
- 1 Shared Through/Left Turn Lane
- 1 Exclusive Through Lane
- 1 Exclusive Right Turn Lane

The intersection is controlled by a traffic signal. The signal sequence can operate with four (4) "phases" which assign the right-of-way to specific movements and displays yellow and all-red clearances. The first two phases include the northbound and southbound movements that are made during a green ball indication (permissive movement). The next phase includes the westbound movements that are made during a green arrow indication (protected movement). The last phase includes the eastbound movements that are made during a green arrow indication (protected movement). The signal phasing includes a right turn overlap that permits the northbound right turn movement during the protected westbound movements.

The following section details the lane use and traffic control for the site access intersections under study for this report.

A. MAYFIELD ROAD & WEST DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lane**s**

West Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the West Driveway.

B. MAYFIELD ROAD & CENTER DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lane**s**

Center Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the Center Driveway.

C. MAYFIELD ROAD & EAST DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lane**s**

East Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the East Driveway.

D. EUCLID HEIGHTS BOULEVARD & SOUTH DRIVEWAY

Euclid Heights Boulevard West Approach
- 1 Shared Through/Left Turn Lane

Euclid Heights Boulevard East Approach
- 1 Shared Through/Right Turn Lane

South Driveway North Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the north approach. Traffic on the north approach is required to stop prior to proceeding to turn onto Euclid Heights Boulevard. Traffic traveling on Euclid Heights Boulevard is not required to stop at the intersection, however eastbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the South Driveway.

Roadway & Intersection Characteristics

The following table details the primary characteristics of the study area roadways for the intersections under study:

Table 2.1 Roadway Characteristics
Mayfield Road Intersections

INTERSECTION		APPROACH	LANE USE		SPEED LIMIT	TRAFFIC CONTROL
#	ROADWAYS		THROUGH/ SHARED LANES	TURN LANES		
1	Mayfield Road	East	2	1 LT	35	Traffic Signal
	Mayfield Road	West	2	1 LT	35	
	Lee Road	North	2	-	35	
	Lee Road	South	1	-	35	
2	Mayfield Road	East	2	-	35	Stop Controlled
	Mayfield Road	West	2	1 LT	35	
	Ivydale Road	North	1	-	25	
3	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	Burlington Road	South	1	-	NP	
4	Mayfield Road	East	2	1 LT &1 RT	35	Traffic Signal
	Mayfield Road	West	2	1 LT	35	
	Forrest Hills Boulevard	North	1	1 LT	35	
	Rydalmount Road	South	1	-	25	
5	Mayfield Road	East	3	1 LT	35	Traffic Signal
	Mayfield Road	West	3	1 LT	35	
	S. Taylor Road	North	2	1 LT	35	
	S. Taylor Road	South	2	1 LT & 1 RT	35	

NP-Not Posted

Table 2.2 Roadway Characteristics
Euclid Heights Boulevard Intersections

INTERSECTION		APPROACH	LANE USE		SPEED LIMIT	TRAFFIC CONTROL
#	ROADWAYS		THROUGH/ SHARED LANES	TURN LANES		
6	Euclid Heights Boulevard	East	1	1 LT	35	Traffic Signal
	Euclid Heights Boulevard	West	1	1 LT	35	
	Lee Road	North	1	-	35	
	Lee Road	South	1	1 RT	35	
7	Euclid Heights Boulevard	East	1	-	35	Stop Controlled
	Euclid Heights Boulevard	West	1	-	35	
	Ivydale Road	North	1	-	25	
8	Euclid Heights Boulevard	East	1	1 LT	35	Traffic Signal
	Euclid Heights Boulevard	West	2	-	35	
	S. Taylor Road	North	2	1 RT	35	
	S. Taylor Road	South	2	1 LT	35	

The following table details the primary characteristics of the study area roadways for the site access locations under study:

Table 2.3 Roadway Characteristics
Site Access Locations

INTERSECTION		APPROACH	LANE USE		SPEED LIMIT	TRAFFIC CONTROL
#	ROADWAYS		THROUGH/ SHARED LANES	TURN LANES		
A	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	West Driveway	South	1	-	NP	
B	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	Center Driveway	South	1	-	NP	
C	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	East Driveway	South	1	-	NP	
D	Euclid Heights Boulevard	East	1	-	35	Stop Controlled
	Euclid Heights Boulevard	West	1	-	35	
	South Driveway	North	1	-	NP	

NP-Not Posted

Figure 2.2, Appendix A shows the lane use and traffic control conditions based upon our field investigation in the study area. These will be considered the existing base conditions for this report.

Functional Classification

The Ohio Department of Transportation functionally classifies roadways to help define a roadway's characteristics as well as identify roadways that are eligible for federal funds. Functional classification is the grouping of roads, streets, and highways in a hierarchy based on the type of highway service they provide. Generally, streets and highways perform two types of service. They provide either traffic mobility or land access and can be ranked in terms of the proportion of service they provide.

The functional classification as determined by ODOT will be used in this report to apply growth and design hour factors to the study area roadways for use in forecasting the future traffic volumes in the study area. These factors are determined using data, guidelines, and methodology supplied by ODOT. The methods and the corresponding data are based on the roadways assigned functional classification. The ODOT methods for forecasting future traffic volumes are a recognized traffic engineering standard in the State of Ohio.

Roadways that are not listed as having a functional classification can be assigned into one of two categories. The first category is a local roadway and the second category is that of an access drive.

The roadway functional classifications are assigned either an urban or rural designation.

The ODOT the urban/rural designation and functional classification of the roadways in the study area can currently be found using the ODOT Transportation Information Mapping System (TIMS). TIMS is ODOT's web-mapping portal where information about Ohio's transportation system can be found.

The urban and rural designation for the study area roadways can be found under the Boundaries tab and the selection of the "Census Urban Areas" layer.

The roadway functional classification can be found under the Roadway Information tab and the selection of the "Functional Classification" layer.

The following table lists the study area roadways that have an assigned functional classification as determined by ODOT and local government entities.

Table 2.4 Functional Classification

ROADWAY	AREA	FC #	CLASSIFICATION
MayField Road	Urban	3	Principle Arterial
Lee Road	Urban	3	Principle Arterial
Ivydale Road	Urban	7	Local Roadway
Burlington Road	Urban	7	Local Roadway
Forrest Hills Road	Urban	7	Local Roadway
Rydalmount Road	Urban	7	Local Roadway
S. Taylor Road	Urban	5	Major Collector
West Driveway	Urban	7	Local Driveway
Center Driveway	Urban	7	Local Driveway
East Driveway	Urban	7	Local Driveway
South Driveway	Urban	7	Local Driveway
Euclid Heights Boulevard	Urban	5	Major Collector

Figure 2.3, Appendix A illustrates the section of the functional classification map for the study area.

2.2 Traffic

Weekday Peak Hours

Weekday nine hour turning movement counts were performed at the following locations on the following dates:

1. **Mayfield Road and Lee Road (02-27-2024)**
2. **Mayfield Road and Ivydale Road (03-05-2024)**
3. **Mayfield Road and Burlington Road (02- 29-2024)**
4. **Mayfield Road and Rydalmount Road (02- 27-2024)**
5. **Mayfield Road and S. Taylor Road (02-29-2024)**
6. **Lee Road and Euclid Heights Boulevard (02-27-2024)**
7. **Euclid Heights Boulevard and Ivydale Road (02-27-2024)**
8. **S. Taylor Road and Euclid Heights Boulevard (02-21-2024)**

A. **Mayfield Road and West Driveway (09-17-2024)**
B. **Mayfield Road and Center Driveway (09-17-2024)**
C. **Mayfield Road and East Driveway (09-17-2024)**
D. **Euclid Heights Boulevard and South Driveway (09-17-2024)**

The weekday traffic counts were conducted in fifteen (15) minute intervals between the hours of 7 AM - 10 AM, 11 AM - 2 PM, and 3 PM - 6 PM, then hourly totals were calculated. Average daily traffic was calculated for the roadways using expansion factors to account for daily and seasonal variations according to the recommendations and latest data from the Ohio Department of Transportation. Copies of the intersection turn movement counts are included in **Appendix C**.

The AM and PM intersection peak hours are selected by reviewing data in 15-minute intervals. When there is more than one intersection within the study area, a consistent time period should be used for all intersections within the study area in order to develop an existing conditions traffic volume set, the system peak hour.

The following questions should be considered when choosing the peak hours for a study area with multiple intersections:

- What are the individual intersection peak hours?
- Are the individual peak hours the same time or close to each other?
- Would it result in significantly fewer vehicles to use a different peak hour for intersections that are not the same?
- What is the peak hour for intersections with the highest overall volume?
- What peak hour contributes the highest volume to the entire system?

Summaries tables which illustrate the entering traffic volumes during the AM and PM time periods are used to evaluate the previously discussed questions, to identify the peak hours for each intersection, and to determine the peak hour of the system.

The following tables detail a breakdown of the hourly volumes during the AM and PM hours that were determined to experience the highest traffic volumes at the study area intersections. The data shown in the tables will be used in the determination of the AM and PM peak hours for the study area. It should be noted that the site access locations (A, B, C ,D) were not included in the system peak hour calculations.

Table 2.5 AM Peak Hour Traffic Volumes
(Total Entering Volume - Vehicles/Hour)

INT. #	HOUR BEGINS								
	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00
1	1509	1667	1766	1790	1717	1664	1529	1432	1386
2	1211	1323	1390	1367	1352	1238	1151	1056	950
3	1156	1279	1371	1359	1328	1304	1200	1139	1157
4	1349	1353	1374	1283	1223	1252	1105	944	736
5	1903	2184	2391	2367	2298	2152	1960	1839	1675
6	847	972	1063	1097	1104	1098	1042	1024	976
7	291	334	363	364	348	346	333	330	333
8	882	1085	1232	1234	1186	1138	1060	1037	1037
TOTALS	9148	10197	10950	10861	10556	10192	9380	8801	8250

Table 2.6 PM Peak Hour Traffic Volumes
(Total Entering Volume - Vehicles/Hour)

INT. #	HOUR BEGINS								
	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00
1	1624	1608	1667	1676	1633	1727	1729	1725	1643
2	852	889	919	1099	1308	1326	1351	1340	1267
3	1358	1349	1404	1466	1488	1559	1555	1514	1506
4	1382	1439	1479	1582	1628	1715	1692	1728	1724
5	2406	2430	2463	2437	2421	2474	2461	2413	2325
6	1303	1295	1237	1203	1236	1287	1332	1352	1295
7	432	419	392	379	402	405	418	423	390
8	1458	1430	1403	1433	1397	1477	1484	1386	1330
TOTALS	10815	10859	10964	11275	11513	11970	12022	11881	11480

The peak hours for the study area were determined based on the AM and PM hour experiencing the highest total volumes. The weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM. The weekday PM peak hour of traffic was found to be 4:30 PM to 5:30 PM. These periods will be used to forecast expected and future traffic volumes since they reflect the period of the highest volume of vehicular traffic flow for the study area roadways.

The existing peak hour traffic volumes detailed in **Appendix C** were determined to have variations between the adjacent count locations. The volumes on Mayfield Road between Forrest Hills Road and South Taylor Road should be equal where there are no intersecting roadways or driveways between the approaches. The volume difference between intersections at Forrest Hills Road and South Taylor Road are inconsistent with the amount and type of access points located between them.

Balancing traffic volumes is a process by which the differences between traffic volume data at adjacent traffic count locations is eliminated. The volumes along Mayfield Road were balanced using the "Higher Volume Through" method described in *Section 2.6.3* of ODOT's **Ohio Traffic Forecasting Manual, Volume 2** [(5)] in order to provide a conservative estimate of study area traffic volumes. The "Higher Volume Through" method uses the highest volume and carries it through the adjacent locations adding the excess traffic to only the through movements.

The existing "balanced" weekday AM and PM peak hour traffic volumes are shown in **Figure 2.4, Appendix A.**

Chapter 3
Projected Traffic Conditions

3.1 Site Traffic

Trip Generation

The redevelopment of Park. will be analyzed based on the following sizes and land uses as detailed in **Figure 1.3, Appendix A**:

Phase 1

- Park Synagogue restored for K-12 and Higher Education Art Instruction (B1).
- 15 townhouse apartments (30 units) added to the south of the synagogue (C1).

Phase 2

- Northwest multifamily building with new daycare at 4 stories, 100k, 150 units (A1).
- Northeast multifamily building at 5 stories, 100k, 150 units (A2).
- 30 multifamily units added north of the synagogue (A3).
- 20 multifamily units added north of the synagogue (A4).
- 30 multifamily units added southwest of the synagogue (C2).

Calculating future total driveway trips requires an estimate of the traffic generated by the proposed development. The most widely accepted method of determining the amount of traffic that the development will generate is to compare the proposed land use with existing facilities of the same use. The Institute of Transportation Engineers (ITE) has prepared a manual titled "**Trip Generation Manual**" [8], which is a compilation of similar traffic generation studies to aide in making such a comparison. The most recent update of this manual is the 11TH edition and was utilized for this study.

The table on the following page details the development land uses from the site plan **(Figure 1.3, Appendix A)** and the corresponding **Trip Generation Manual** [8] land uses that will be used to forecast the site generated traffic volumes for the Build conditions:

Table 3.1 ITE Land Use Codes

SITE PLAN DESCRIPTION	SIZE	ITE CODE	ITE DESCRIPTION
Northwest Multifamily Building (A1)	150 Units	221	Multifamily Housing (Mid-Rise)
Northeast Multifamily Building (A2)	150 Units	221	Multifamily Housing (Mid-Rise)
North Townhomes (A3)	30 Units	215	Single Family Attached Housing
North Townhomes (A4)	20 Units	215	Single Family Attached Housing
Park Synagogue Restoration (B1)	50 Students	550	University / College
South Townhomes (C1)	30 Units	215	Single Family Attached Housing
Southwest Townhomes (C2)	30 Units	215	Single Family Attached Housing

The Institute of Transportation Engineers (ITE) provides a web-based application (**ITETripGen**) that will be used to calculate the expected future driveway trips using the data from the **Trip Generation Manual** [8]. The **ITETripGen** web-based app can be accessed through a subscription at the following address:

https://itetripgen.org/

Vehicle trips generated by a site can be separated into two major categories: non pass-by trips and pass-by trips. Non-pass-by trips can be further subdivided into primary trips and diverted trips. Pass-by and diverted trips may be part of a multiple-stop chain of trips.

A ***pass-by trip*** is made as an intermediate stop on the way from an origin to a primary trip destination. Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator (i.e. motorists who are already on the road and stop to get dinner on their way home from work).

A ***non-pass-by trip*** is simply any trip generated by a site that is not a pass-by trip. Non-pass-by trips are sometimes used when diverted trips are not calculated separately from primary trips in the analysis process.

The expected site generated traffic from the redevelopment will be assumed to consist of non-pass-by trips in order to provide a conservative estimate of future traffic volumes.

Trip Generation Summary

Trip generation calculations for the development were performed utilizing data contained in the **Trip Generation Manual** [8] and the methods outlined in the **Trip Generation Handbook** [9]. The following tables detail the expected generated weekday peak hour traffic volumes for each phase of the redevelopment. Copies of the trip generation worksheets can be found in **Appendix D**.

Table 3.2 Phase 1 Trip Generation

ITE TRIP GENERATION			PHASE 1 TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
550	College / University	50 Students	6	2	3	5
TOTAL NON-PASS-BY TRIPS			**8**	**10**	**11**	**11**
			18		**22**	

Phase 1 of the redevelopment is expected to generate a total of 18 driveway trips in the AM peak hour and a total of 22 driveway trips in the PM peak hour.

Table 3.3 Phase 2 Trip Generation

ITE TRIP GENERATION			PHASE 2 TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
215	Single Family Attached Housing	20 Units	1	4	5	3
215	Single Family Attached Housing	30 Units	2	8	8	6
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
TOTAL NON-PASS-BY TRIPS			**31**	**102**	**93**	**61**
			133		**154**	

The Phase 2 of the redevelopment is expected to generate a total of 133 driveway trips in the AM peak hour and a total of 154 driveway trips in the PM peak hour.

Distribution of Generated Traffic

The directional distribution for the new generated traffic is a function of the prevailing operating conditions on the existing roadways. The distribution pattern that was assumed is shown in the tables that follow and is based upon the existing traffic volumes at the study area intersections during the AM and PM peak hours shown in **Figure 2.4, Appendix A**.

The following tables detail the distribution of the non-pass-by generated trips for the proposed development under the Phase 1 conditions.

Table 3.4 Phase 1 AM Peak Hour Origins and Destinations

ORIGIN/ DESTINATION	ROUTE	FROM (ENTER)	% TOTAL	TRIPS	TO (EXIT)	% TOTAL	TRIPS
East	Mayfield Rd.	1158	35.2%	3	626	20.5%	2
North	S. Taylor Rd.	428	13.0%	1	301	9.8%	1
North	Forrest Hills Blvd.	77	2.3%	0	102	3.3%	0
North	Burlington Rd.	25	0.8%	0	5	0.2%	0
North	Lee Rd.	269	8.2%	1	197	6.4%	1
West	Mayfield Rd.	362	11.0%	1	818	26.8%	3
West	Euclid Heights Blvd.	176	5.3%	0	245	8.0%	1
South	Lee Rd.	342	10.4%	1	332	10.9%	1
South	S. Taylor Rd.	454	13.8%	1	430	14.1%	1
TOTALS		**3291**	**100.0%**	**8**	**3056**	**100.0%**	**10**

Table 3.5 Phase 1 PM Peak Hour Origins and Destinations

ORIGIN/ DESTINATION	ROUTE	FROM (ENTER)	% TOTAL	TRIPS	TO (EXIT)	% TOTAL	TRIPS
East	Mayfield Rd.	783	22.5%	3	1021	30.0%	3
North	S. Taylor Rd.	357	10.3%	1	371	10.9%	1
North	Forrest Hills Blvd.	117	3.4%	0	167	4.9%	1
North	Burlington Rd.	14	0.4%	0	23	0.7%	0
North	Lee Rd.	216	6.2%	1	308	9.0%	1
West	Mayfield Rd.	696	20.0%	2	421	12.3%	1
West	Euclid Heights Blvd.	363	10.4%	1	213	6.2%	1
South	Lee Rd.	381	10.9%	1	398	11.7%	1
South	S. Taylor Rd.	555	15.9%	2	487	14.3%	2
TOTALS		**3482**	**100.0%**	**11**	**3409**	**100.0%**	**11**

The following tables detail the distribution of the non-pass-by generated trips for the proposed development under the Phase 2 conditions.

Table 3.6 Phase 2 AM Peak Hour Origins and Destinations

ORIGIN/ DESTINATION	ROUTE	FROM (ENTER)	% TOTAL	TRIPS	TO (EXIT)	% TOTAL	TRIPS
East	Mayfield Rd.	1158	35.2%	11	626	20.5%	21
North	S. Taylor Rd.	428	13.0%	4	301	9.8%	10
North	Forrest Hills Blvd.	77	2.3%	1	102	3.3%	4
North	Burlington Rd.	25	0.8%	0	5	0.2%	0
North	Lee Rd.	269	8.2%	3	197	6.4%	7
West	Mayfield Rd.	362	11.0%	3	818	26.8%	27
West	Euclid Heights Blvd.	176	5.3%	2	245	8.0%	8
South	Lee Rd.	342	10.4%	3	332	10.9%	11
South	S. Taylor Rd.	454	13.8%	4	430	14.1%	14
TOTALS		**3291**	**100.0%**	**31**	**3056**	**100.0%**	**102**

Table 3.7 Phase 2 PM Peak Hour Origins and Destinations

ORIGIN/ DESTINATION	ROUTE	FROM (ENTER)	% TOTAL	NEW TRIPS	TO (EXIT)	% TOTAL	NEW TRIPS
East	Mayfield Rd.	783	22.5%	21	1021	30.0%	18
North	S. Taylor Rd.	357	10.3%	9	371	10.9%	7
North	Forrest Hills Blvd.	117	3.4%	3	167	4.9%	3
North	Burlington Rd.	14	0.4%	0	23	0.7%	0
North	Lee Rd.	216	6.2%	6	308	9.0%	5
West	Mayfield Rd.	696	20.0%	19	421	12.3%	8
West	Euclid Heights Blvd.	363	10.4%	10	213	6.2%	4
South	Lee Rd.	381	10.9%	10	398	11.7%	7
South	S. Taylor Rd.	555	15.9%	15	487	14.3%	9
TOTALS		**3482**	**100.0%**	**93**	**3409**	**100.0%**	**61**

The site generated traffic will be distributed to the proposed driveways based on our engineering judgement with the following considerations:

- Driveway locations relative to origins and destinations within the site.
- First driveway encountered for entering traffic.
- Driveway closest to direction of travel for exiting traffic.
- Minimizing exposure to unsignalized exiting left turn movements.

Directional Distribution of Phase 1 Site Generated Non-Pass-By Traffic

The non-pass-by site generated traffic was distributed to the study area intersections based on the following assumptions:

- All entering and exiting traffic from the east will use the east driveway.
- All entering and exiting traffic from the west will use the west driveway.
- All entering and exiting traffic from the north from S. Taylor Road, Forest Hills Boulevard, and Burlington Road will use the east driveway.
- All entering and exiting traffic from the north from Lee Road will use the west driveway.
- All entering and exiting traffic from the south will use the south driveway

The Phase 1 directional distribution for the non-pass-by AM and PM peak hour generated traffic is shown graphically in **Figure 3.1, Appendix A**.

Directional Distribution of Phase 2 Site Generated Non-Pass-By Traffic

The non-pass-by site generated traffic was distributed to the study area intersections based on the following assumptions:

- All entering and exiting traffic from the east will use the east driveway.
- All entering and exiting traffic from the west will use the west driveway.
- All entering and exiting traffic from the north from S. Taylor Road, Forest Hills Boulevard, and Burlington Road will use the east driveway.
- All entering and exiting traffic from the north from Lee Road will use the west driveway.
- All entering and exiting traffic from the south will use the south driveway

The Phase 2 directional distribution for the non-pass-by AM and PM peak hour generated traffic is shown graphically in **Figure 3.2, Appendix A**.

Phase 1 Assignment of Non-Pass-By Site Generated Traffic

Based upon the distribution pattern shown in **Figure 3.1**, **Appendix A,** the non-pass-by AM and PM peak site generated traffic was assigned to the study intersections. The assignment of the estimated site generated non-pass-by traffic for the proposed development under the expected Phase 1conditions is shown graphically in **Figure 3.3, Appendix A**.

Phase 2 Assignment of Non-Pass-By Site Generated Traffic

Based upon the distribution pattern shown in **Figure 3.2, Appendix A,** the non-pass-by AM and PM peak site generated traffic was assigned to the study intersections. The assignment of the estimated site generated non-pass-by traffic for the proposed development under the expected Phase 2 conditions is shown graphically in **Figure 3.4, Appendix A**.

Total Site Generated Traffic

The assignments shown in **Figures 3.3 and 3.4, Appendix A** were added together to arrive at the total site generated traffic for the proposed development under the expected full Build conditions is shown graphically in **Figure 3.5, Appendix A**.

Alternative Directional Distribution of Site Generated Non-Pass-By Traffic

An alternative access scenario was developed for the expected full build conditions based on the following considerations:

- Retain or relocate Center Driveway (B).
- Realignment of East Driveway (C) with Burlington Road.

The non-pass-by site generated traffic was distributed to the study area intersections based on the following assumptions:

- 75% of entering and exiting traffic from the east will use the east driveway with the remaining 25% using the center driveway.
- 75% of entering and exiting traffic from the west will use the west driveway with the remaining 25% using the center driveway.
- 75% of entering and exiting traffic from the north from S. Taylor Road, Forest Hills Boulevard will use the east driveway with the remaining 25% using the center driveway.
- All entering and exiting Burlington Road traffic will use the east driveway.
- 75 % All entering and exiting traffic from the north from Lee Road will use the west driveway.
- All entering and exiting traffic from the south will use the south driveway

The Alternative directional distribution for the non-pass-by AM and PM peak hour generated traffic is shown graphically in **Figure 3.6, Appendix A**.

Alternative Assignment of Total Non-Pass-By Site Generated Traffic

Based upon the distribution pattern shown in **Figure 3.6, Appendix A,** the non-pass-by AM and PM peak site generated traffic was assigned to the study intersections. The assignment of the estimated site generated non-pass-by traffic for the proposed development under the full Build conditions with the alternative access scheme is shown graphically in **Figure 3.7, Appendix A**.

3.2 Non-Site Traffic

Background Traffic Growth

Design of new roadways or improvements to existing roadways should not usually be based on current traffic volumes alone, but should consider future traffic volumes expected to make use of the facilities. Roadways should be designed to accommodate the traffic volume that is likely to occur within the design life of the facility. In a practical sense, this design volume should be a value that can be estimated with reasonable accuracy. It is believed that the maximum design period is in the range of 15 to 24 years. Therefore, a period of twenty years is widely used as a basis for design for large projects. A period of ten years is currently specified by the Ohio Department of Transportation for smaller projects. Traffic cannot usually be forecasted accurately beyond this period on a specific facility because of probable changes in the general regional economy, population, and land development along the roadway.

Roadways, like those found in the study area, carry a significant amount of through traffic due to their functional characteristics. This through traffic component generally increases as regional growth occurs. Therefore, it is anticipated that existing traffic in the study area will increase in future years.

The years 2027 (Opening Year) and 2030 (Full Build Year) and 2047 (Design Year) will be analyzed for the study area. Therefore, it is necessary to estimate historical growth rates in order to establish the future traffic on the study area roadways.

A growth rate for the study area was developed using data supplied by the Northeast Area wide Coordinating Agency (NOACA). NOACA provided 2020 and 2040 traffic data from the NOACA Travel Forecasting Model for the study area. A copy of the NOACA supplied data can be found in **Appendix E**.

A linear growth rates were calculated to estimate the AM and PM peak hour traffic growth based on the growth from the 2020 data to the 2040 data that was supplied. These growth rate were calculated for both automobile and truck growth for the 2027, 2030, and 2047 years. A copy of the growth rate calculations can be seen in **Appendix F**.

The NOACA growth rates are shown in the following figures, the AM and PM automobile growth rates are in **Figures 3.8 and 3.9, Appendix A** and the AM and PM Truck growth rates are in **Figures 3.10 and 3.11 Appendix A**.

Design Hour Traffic

The traffic patterns on any roadway typically show considerable variation in the traffic volumes experienced during the various hours of the day and in the hourly volumes experienced throughout the year. A key decision in the design process involves determining which of these hourly traffic volumes should be used as the basis for the design.

It would be wasteful to predicate a design on the maximum peak hour traffic that occurs during the year and the use of the average hourly traffic would result in an inadequate design. The hourly traffic volumes used in a design should not be exceeded very often or by very much. However, the hourly traffic volumes should not be so high that traffic would rarely be sufficient to make full use of the designed facility.

Normal design policy in the State of Ohio is based upon a review of curves that depict the variation in hourly traffic volumes during the year. The Ohio Department of Transportation recommends using the 30^{TH} highest hour as a design control for rural streets. There is typically very little difference between the volumes in this range. The Ohio Department of Transportation provides factors or a methodology to determine factors that are applied to counted daily traffic volumes to determine appropriate design hour traffic volumes.

Following guidelines set forth in the ODOT **State Highway Access Management Manual** [7], all analyses are required to examine the design hour volume for the adjacent roadway and peak hour traffic volume of the proposed development. The **Ohio Traffic Forecasting Manual** [4 & 5] will be used to determined peak hour factors for the study area roadways. The design hour volumes are determined by multiplying the AM and PM peak hour volumes by the appropriate factors from the ODOT Peak Hour to Design Hour Factor Report based on the functional classification of the roadway, the day of the week and the month that the traffic data was collected. A copy of the ODOT's Peak Hour to Design Hour Factor Report can be seen in **Appendix G**.

The following tables details the peak hour to design hour factors for the study area roadways.

Table 3.8 - Peak Hour to Design Hour Factors
Study Area Intersections

INT #	ROADWAYS	MONTH	DAY	CLASSIFICATION	DHV FACTOR
1	Mayfield Road	Feb.	Tue.	Principle Arterial	1.23
	Lee Road	Feb.	Tue.	Principle Arterial	1.23
2	Mayfield Road	Mar.	Tue.	Principle Arterial	1.18
	Ivydale Road	Mar.	Tue.	Local Roadway	1.18
3	Mayfield Road	Feb.	Thu.	Principle Arterial	1.19
	Burlington Road	Feb.	Thu.	Local Roadway	1.19
4	Mayfield Road	Feb.	Tue.	Principle Arterial	1.23
	Forest Hills Boulevard Rydalmount Road	Feb.	Tue.	Local Roadway	1.23
5	Mayfield Road	Feb.	Thu.	Principle Arterial	1.19
	S. Taylor Road	Feb.	Thu.	Major Collector	1.19
6	Lee Road	Feb.	Tue.	Principle Arterial	1.23
	Euclid Heights Boulevard	Feb.	Tue.	Major Collector	1.23
7	Euclid Heights Boulevard	Feb.	Tue.	Major Collector	1.23
	Ivydale Road	Feb.	Tue.	Local Roadway	1.23
8	S. Taylor Road	Feb.	Wed.	Major Collector	1.23
	Euclid Heights Boulevard	Feb.	Wed.	Local Roadway	1.23

Table 3.9 - Peak Hour to Design Hour Factors
Study Area Access Locations

INT #	ROADWAYS	MONTH	DAY	CLASSIFICATION	DHV FACTOR
A	Mayfield Road	Sep.	Tue.	Principle Arterial	1.13
	West Driveway	Sep.	Tue.	Local Driveway	1.13
B	Mayfield Road	Sep.	Tue.	Principle Arterial	1.13
	Center Driveway	Sep.	Tue.	Local Driveway	1.13
C	Mayfield Road	Sep.	Tue.	Principle Arterial	1.13
	East Driveway	Sep.	Tue.	Local Driveway	1.13
D	Euclid Heights Boulevard	Sep.	Tue.	Major Collector	1.13
	South Driveway	Sep.	Tue.	Local Driveway	1.13

The peak hour to design hour factors detailed in *Tables 3.8 & 3.9* will be used in the forthcoming future traffic volume calculations in **Chapter 3, Section 3.3** of this report.

Peak Hour Factors

The intersection peak hour factor (PHF) is used to convert the hourly traffic volume into the flow rate that represents the busiest 15 minutes of the peak hour. The PHF is the sum of the traffic entering the intersection during the peak hour divided by four times the highest 15 minute volume during the peak hour. A PHF of 1 indicates that the traffic volume in each 15 minute volume is the same and therefore traffic flow is consistent throughout the hour. A lower PHF indicates a more variable traffic flow and that traffic volume has a spike during the peak 15 minute interval. PHF's under 0.80 occur in locations with highly peaked demand, such as at schools and factories during shift changes.

The ODOT **Analysis and Traffic Simulation Manual, (OATS)**[6] provides guidance to use the existing year PHF for all intersections from traffic counts collected for the project. The PHF is calculated for the intersection as a whole and not individual approaches or movements. A minimum of 0.80 for the PHF is required to be utilized unless justified by highly peaked demands such as for schools and factories noted above. If project specific counts are not available, a default value of 0.92 is to be utilized.

It is assumed for this report that the PHF for the design year analysis are the same as the calculated PHF from the collected existing year traffic counts. The intersection PHF's are included in **Appendix C**.

The following tables show the PHF's calculated for the study area intersections during the AM and PM peak hours:

Table 3.10 - Intersection Peak Hour Factors
Study Area Intersections

#	ROADWAY/INTERSECTION	AM PHF	PM PHF
1	Mayfield Road & Lee Road	0.96	0.91
2	Mayfield Road & Ivydale Road	0.98	0.95
3	Mayfield Road & Burlington Road	0.91	0.98
4	Mayfield Road & Forest Hills Boulevard/Rydalmount Road	0.86	0.93
5	Mayfield Road & S. Taylor Road	0.97	0.98
6	Lee Road & Euclid Heights Boulevard	0.92	0.95
7	Euclid Heights Boulevard& Ivydale Road	0.97	0.88
8	S. Taylor Road & Euclid Heights Boulevard	0.95	0.92

The following tables show the PHF's calculated for the study area access locations during the AM and PM peak hours:

Table 3.11 - Intersection Peak Hour Factors
Study Area Access Locations

#	ROADWAY/INTERSECTION	AM PHF	PM PHF
A	Mayfield Road & West Driveway	0.96	0.90
B	Mayfield Road & Center Driveway	0.92	0.92
C	Mayfield Road & East Driveway	0.94	0.90
D	Euclid Heights Boulevard & South Driveway	0.96	0.91

The peak hour factors detailed in *Tables 3.10 & 3.11* will be used in the forthcoming intersection capacity calculations in Chapter 4 of this report.

3.3 Future Traffic

No-Build Conditions

The previously discussed calculation of design hour factors and growth rates for each movement were applied to the existing 2024 traffic volumes shown in **Figure 2.4** in order to estimate the future traffic considering non-project traffic conditions.

Printouts of our Excel spreadsheets detailing the use of the design hour factors, growth rates and the resulting 2027, 2030, and 2047 No-Build traffic volumes can be found in **Appendix H**. The No-Build traffic volumes were rounded to the nearest ten to adhere to ODOT specifications.

The application of the factors and rounding were determined to create variations between the adjacent count locations. The volumes along Mayfield Road between Burlington Road and Forest Hills Boulevard should be equal as there are no intersecting roadways or driveways between the intersections where traffic data was collected to gain or lose vehicles.

The volumes along Mayfield Road between Burlington Road and Forest Hills Boulevard were balanced using the "Higher Volume Through" method described in *Section 2.6.3* of ODOT's **Ohio Traffic Forecasting Manual, Volume 2** [5] in order to provide a conservative estimate of study area traffic volumes.

The estimated 2027, 2030, and 2047 No-Build traffic volumes for the study area are shown graphically in **Figures 3.12, 3.13, and 3.14, Appendix A**. This traffic is the expected traffic if proposed development **is not** constructed. This will be referred to as the "**No Build**" condition.

2027 Build Condition

In order to estimate the future opening year traffic considering project traffic conditions, the sum of the 2027 shown in **Figure 3.12, Appendix A**, were added to the Phase 1 site generated traffic **(Figure 3.3, Appendix A)** to equal the future Build peak hour volumes. The estimated 2027 Build traffic volumes for the study area are shown graphically in **Figure 3.15, Appendix A** for the proposed development. These traffic volumes are the expected volumes if phase 1 of the proposed redevelopment **is** constructed, or the **"Build"** condition.

2030 Build Condition

In order to estimate the future full build traffic considering project traffic conditions, the sum of the 2030 shown in **Figure 3.13, Appendix A**, were added to the new total site generated traffic **(Figure 3.5, Appendix A)** to equal the future Build peak hour volumes. The estimated 2030 Build traffic volumes for the study area are shown graphically in **Figure 3.16 Appendix A** for the proposed development. These traffic volumes are the expected volumes if the proposed redevelopment **is** constructed, or the **"Build"** condition.

2047 Build Condition

In order to estimate the future design year traffic considering project traffic conditions, the sum of the 2047 shown in **Figure 3.14, Appendix A**, were added to the new total site generated traffic **(Figure 3.5, Appendix A)** to equal the future Build peak hour volumes. The estimated 2047 Build traffic volumes for the study area are shown graphically in **Figure 3.17, Appendix A** for the proposed development. These traffic volumes are the expected volumes if the proposed redevelopment **is** constructed, or the **"Build"** condition.

Alternate 2030 Build Condition

In order to estimate the future full build traffic considering project traffic conditions, the sum of the 2030 shown in **Figure 3.13, Appendix A**, were added to the new total site generated traffic **(Figure 3.7, Appendix A)** to equal the future Build peak hour volumes. The estimated 2030 Build traffic volumes for the study area are shown graphically in **Figure 3.18, Appendix A** for the proposed development with the alternative access scheme. These traffic volumes are the expected volumes if the proposed redevelopment **is** constructed with the alternative access scheme, or the **"Alternative Build"** condition.

Alternate 2047 Build Condition

In order to estimate the future design year traffic considering project traffic conditions, the sum of the 2047 shown in **Figure 3.14, Appendix A**, were added to the new total site generated traffic **(Figure 3.7, Appendix A)** to equal the future Build peak hour volumes. The estimated 2047 Build traffic volumes for the study area are shown graphically in **Figure 3.19, Appendix A** for the proposed development with the alternative access scheme. These traffic volumes are the expected volumes if the proposed redevelopment **is** constructed with the alternative access scheme, or the **" Alternative Build"** condition.

Chapter 4
Traffic Analysis

4.1 Capacity & LOS at Study Area Intersection

Traffic analyses were performed for the projected 2027 conditions under the No-Build and Build scenarios so:

1. any existing roadway/intersection deficiencies can be identified in the No-Build scenario which would not be attributable to the redevelopment, and;

2. a comparison can be made to determine the changes in the traffic operations which may be attributed to the redevelopment.

The traffic volumes used in the 2027 No-Build analyses can be seen in **Figure 3.12, Appendix A**. Copies of the capacity worksheets for the 2027 No-Build analyses are included in **Appendix I.**

The traffic volumes used in the 2027 Build analyses can be seen in **Figure 3.15, Appendix A**. Copies of the capacity worksheets for the 2027 Build analyses are included in **Appendix J.**

1. Mayfield Road & Lee Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Lee Road is shown in the following tables:

Table 4.1 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2027 AM (Signal, 105s) No-Build					Int # 1	2027 AM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	13.5	0.066	0.06	11	EBL	B	13.6	0.066	0.06	11
EBT	B	16.1	0.248	0.15	147	EBT	B	16.2	0.249	0.15	147
EBR	B	16.2	0.250	0.14	145	EBR	B	16.2	0.251	0.15	145
EB Approach	B	16.0	-	-	-	EB Approach	B	16.1	-	-	-
WBL	B	11.4	0.182	0.51	51	WBL	B	11.5	0.182	0.51	51
WBT	B	17.9	0.499	0.31	309	WBT	B	18.0	0.502	0.31	312
WBR	B	17.9	0.499	0.31	308	WBR	B	18.0	0.502	0.31	310
WB Approach	B	17.3	-	-	-	WB Approach	B	17.4	-	-	-
NBT	D	38.7	0.830	0.38	375	NBT	D	38.7	0.829	0.38	375
NB Approach	D	38.7	-	-	-	NB Approach	D	38.7	-	-	-
SBL	C	31.5	0.396	0.16	159	SBL	C	31.4	0.399	0.16	159
SBR	C	32.0	0.404	0.16	164	SBR	C	32.0	0.406	0.16	165
SB Approach	C	31.7	-	-	-	SB Approach	C	31.7	-	-	-
Intersection	**C**	**22.9**	-	-	-	**Intersection**	**C**	**22.9**	-	-	-

Table 4.2 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2027 PM (Signal, 105s) No-Build					Int # 1	2027 PM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	12.5	0.135	0.18	33	EBL	B	12.5	0.135	0.18	33
EBT	C	21.0	0.503	0.31	310	EBT	C	21.0	0.504	0.31	311
EBR	C	21.0	0.503	0.31	306	EBR	C	21.0	0.504	0.31	306
EB Approach	C	20.4	-	-	-	EB Approach	C	20.4	-	-	-
WBL	B	13.8	0.320	0.62	62	WBL	B	13.8	0.320	0.62	62
WBT	B	17.3	0.308	0.19	189	WBT	B	17.3	0.310	0.19	190
WBR	B	17.3	0.310	0.19	186	WBR	B	17.4	0.311	0.19	187
WB Approach	B	16.7	-	-	-	WB Approach	B	16.7	-	-	-
NBT	D	38.1	0.849	0.42	417	NBT	D	38.1	0.849	0.42	417
NB Approach	D	38.1	-	-	-	NB Approach	D	38.1	-	-	-
SBL	C	29.8	0.309	0.13	128	SBL	C	29.8	0.314	0.13	128
SBR	C	30.1	0.309	0.13	129	SBR	C	30.1	0.312	0.13	130
SB Approach	C	29.9	-	-	-	SB Approach	C	30.0	-	-	-
Intersection	**C**	**23.8**	-	-	-	**Intersection**	**C**	**23.8**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Lee Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Lee Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and Lee Road.

2. Mayfield Road & Ivydale Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Ivydale Road is shown in the following tables:

Table 4.3 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2027 No Build AM Peak		One-Way Stop		Int # 2	2027 Build AM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.04	0.1	WBL	A	8.5	0.04	0.1
WB Approach	A	0.3	-	-	WB Approach	A	0.3	-	-
NBT	C	16.9	0.14	0.5	NBT	C	17.0	0.15	0.5
NB Approach	C	16.9	-	-	NB Approach	C	17.0	-	-

Table 4.4 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2027 No Build PM Peak		One-Way Stop		Int # 2	2027 Build PM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.4	0.05	0.1	WBL	B	10.4	0.05	0.1
WB Approach	A	0.5	-	-	WB Approach	A	0.5	-	-
NBT	D	28.1	0.29	1.2	NBT	D	28.3	0.29	1.2
NB Approach	D	28.1	-	-	NB Approach	D	28.3	-	-

Conditions at the stop controlled intersection of Mayfield Road and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Ivydale Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and Ivydale Road.

3. Mayfield Road & Burlington Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Burlington Road is shown in the following tables:

Table 4.5 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2027 No Build AM Peak		One-Way Stop		Int # 3	2027 Build AM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	B	11.9	0.02	0.1	EBL	B	11.9	0.02	0.1
EB Approach	A	0.3	-	-	EB Approach	A	0.3	-	-
SBT	C	24.0	0.19	0.7	SBT	C	24.0	0.19	0.7
SB Approach	C	24.0	-	-	SB Approach	C	24.0	-	-

Table 4.6 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2027 No Build PM Peak		One-Way Stop		Int # 3	2027 Build PM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	9.2	0.02	0.1	EBL	A	9.2	0.02	0.1
EB Approach	A	0.2	-	-	EB Approach	A	0.2	-	-
SBT	C	21.9	0.09	0.3	SBT	C	21.9	0.09	0.3
SB Approach	C	21.9	-	-	SB Approach	C	21.9	-	-

Conditions at the stop controlled intersection of Mayfield Road and Burlington Road during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Burlington Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and Burlington Road.

4. Mayfield Road & Forest Hills Boulevard/Rydalmount Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road is shown in the following tables:

Table 4.7 - 2027 AM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2027 AM (Signal, 105s) No-Build					Int # 4	2027 AM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	14.4	0.041	0.06	8	EBL	B	14.4	0.042	0.06	8
EBT	A	6.9	0.201	0.09	92	EBT	A	6.9	0.203	0.09	93
EBR	A	6.9	0.202	0.09	92	EBR	A	7.0	0.203	0.09	93
EB Approach	A	7.1	-	-	-	EB Approach	A	7.1	-	-	-
WBL	A	7.8	0.019	0.05	5	WBL	A	7.8	0.019	0.05	5
WBT	A	9.7	0.530	0.28	277	WBT	A	9.7	0.532	0.28	278
WBR	A	6.5	0.131	0.16	49	WBR	A	6.5	0.131	0.16	49
WB Approach	A	9.3	-	-	-	WB Approach	A	9.4	-	-	-
NBT	D	47.9	0.328	0.04	40	NBT	D	47.9	0.328	0.04	40
NB Approach	D	47.9	-	-	-	NB Approach	D	47.9	-	-	-
SBL	D	46.2	0.496	0.52	93	SBL	D	46.2	0.496	0.52	93
SBT	D	44.5	0.227	0.04	39	SBT	D	44.5	0.227	0.04	39
SB Approach	D	45.7	-	-	-	SB Approach	D	45.7	-	-	-
Intersection	**B**	**11.5**	-	-	-	**Intersection**	**B**	**11.5**	-	-	-

Table 4.8 - 2027 PM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2027 PM (Signal, 105s) No-Build					Int # 4	2027 PM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	A	9.4	0.022	0.04	5	EBL	A	9.5	0.025	0.05	6
EBT	A	9.3	0.439	0.24	237	EBT	A	9.3	0.441	0.24	238
EBR	A	9.3	0.439	0.24	236	EBR	A	9.3	0.441	0.24	237
EB Approach	A	9.3	-	-	-	EB Approach	A	9.3	-	-	-
WBL	B	12.0	0.031	0.06	6	WBL	B	12.0	0.031	0.06	6
WBT	A	7.6	0.312	0.15	146	WBT	A	7.6	0.313	0.15	146
WBR	A	7.0	0.193	0.25	76	WBR	A	7.0	0.193	0.25	76
WB Approach	A	7.5	-	-	-	WB Approach	A	7.6	-	-	-
NBT	D	48.1	0.317	0.04	37	NBT	D	48.1	0.317	0.04	37
NB Approach	D	48.1	-	-	-	NB Approach	D	48.1	-	-	-
SBL	D	49.8	0.808	0.94	168	SBL	D	49.8	0.808	0.94	168
SBT	D	43.5	0.129	0.02	23	SBT	D	43.5	0.129	0.02	23
SB Approach	D	49.0	-	-	-	SB Approach	D	49.0	-	-	-
Intersection	**B**	**12.0**	-	-	-	**Intersection**	**B**	**12.0**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road.

5. Mayfield Road & South Taylor Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the signalized intersection of Mayfield Road and South Taylor Road is shown in the following tables:

Table 4.9 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2027 AM (Signal, 105s) No-Build					Int # 5	2027 AM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	18.7	0.089	0.11	13	EBL	B	19.0	0.094	0.12	14
EBT	B	16.2	0.188	0.10	105	EBT	B	16.5	0.190	0.11	106
EBR	B	16.5	0.192	0.11	106	EBR	B	16.8	0.194	0.11	108
EB Approach	B	16.4	-	-	-	EB Approach	B	16.7	-	-	-
WBL	C	21.7	0.361	0.86	146	WBL	C	22.1	0.365	0.87	148
WBT	B	16.9	0.435	0.26	259	WBT	B	17.3	0.440	0.26	263
WBR	B	17.7	0.435	0.26	260	WBR	B	18.1	0.441	0.26	264
WB Approach	B	17.8	-	-	-	WB Approach	B	18.2	-	-	-
NBL	D	37.7	0.355	0.17	83	NBL	D	37.4	0.349	0.17	82
NBT	D	44.5	0.609	0.14	144	NBT	D	44.2	0.594	0.14	143
NBR	B	10.0	0.766	0.33	159	NBR	C	22.9	0.747	0.34	162
NB Approach	C	33.1	-	-	-	NB Approach	D	36.7	-	-	-
SBL	D	35.7	0.566	0.58	175	SBL	D	35.2	0.556	0.58	173
SBT	D	41.5	0.588	0.19	194	SBT	D	41.0	0.575	0.19	193
SBR	D	41.6	0.598	0.19	190	SBR	D	41.2	0.585	0.19	189
SB Approach	D	39.6	-	-	-	SB Approach	D	39.1	-	-	-
Intersection	**C**	**24.0**	-	-	-	**Intersection**	**C**	**24.7**	-	-	-

Table 4.10 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2027 PM (Signal, 105s) No-Build					Int # 5	2027 PM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	19.6	0.166	0.28	34	EBL	B	19.6	0.169	0.29	35
EBT	C	20.2	0.437	0.26	259	EBT	C	20.3	0.438	0.26	260
EBR	C	21.1	0.438	0.26	259	EBR	C	21.2	0.439	0.26	260
EB Approach	C	20.5	-	-	-	EB Approach	C	20.5	-	-	-
WBL	C	26.7	0.304	0.53	91	WBL	C	26.8	0.305	0.54	91
WBT	B	18.4	0.350	0.21	209	WBT	B	18.4	0.351	0.21	209
WBR	B	19.0	0.353	0.20	206	WBR	B	19.1	0.355	0.20	206
WB Approach	B	19.4	-	-	-	WB Approach	B	19.5	-	-	-
NBL	C	34.8	0.361	0.20	98	NBL	C	34.8	0.362	0.20	98
NBT	D	41.2	0.508	0.15	147	NBT	D	41.2	0.508	0.15	147
NBR	C	23.2	0.803	0.31	148	NBR	C	23.2	0.803	0.31	148
NB Approach	C	34.0	-	-	-	NB Approach	C	34.0	-	-	-
SBL	C	33.6	0.477	0.49	147	SBL	C	33.6	0.477	0.49	147
SBT	D	38.7	0.432	0.15	150	SBT	D	38.7	0.434	0.15	151
SBR	D	38.8	0.440	0.15	148	SBR	D	38.8	0.442	0.15	148
SB Approach	D	37.0	-	-	-	SB Approach	D	37.0	-	-	-
Intersection	**C**	**24.9**	-	-	-	**Intersection**	**C**	**24.9**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and S. Taylor Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged with the exception of the northbound right turn movement and the northbound approach during the AM peak hour. The northbound right turn movement was determined to degrade from LOS B to LOS C and the northbound approach degraded from LOS C to LOS D.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and South Taylor Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and South Taylor Road.

6. Lee Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the signalized intersection of Lee Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.11 - 2027 AM Peak Hour Traffic Analysis Comparison
(Lee Road and Euclid Heights Boulevard)

Int # 6	2027 AM (Signal, 105s) No-Build					Int # 6	2027 AM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	46.9	0.219	0.41	37	EBL	D	46.9	0.219	0.41	37
EBT	D	38.8	0.570	0.21	212	EBT	D	38.7	0.568	0.21	212
EB Approach	D	39.9	-	-	-	EB Approach	D	39.8	-	-	-
WBL	D	46.5	0.422	0.88	88	WBL	D	46.5	0.425	0.89	89
WBT	D	40.2	0.689	0.25	253	WBT	D	40.1	0.689	0.25	254
WB Approach	D	41.6	-	-	-	WB Approach	D	41.6	-	-	-
NBT	A	6.5	0.301	0.13	132	NBT	A	6.6	0.301	0.13	132
NBR	A	5.2	0.080	0.33	26	NBR	A	5.2	0.081	0.33	27
NB Approach	A	6.3	-	-	-	NB Approach	A	6.3	-	-	-
SBT	A	6.7	0.310	0.14	145	SBT	A	6.7	0.310	0.15	146
SB Approach	A	6.7	-	-	-	SB Approach	A	6.7	-	-	-
Intersection	**C**	**20.1**	-	-	-	**Intersection**	**C**	**20.2**	-	-	-

Table 4.12 - 2027 PM Peak Hour Traffic Analysis Comparison
(Lee Road and Euclid Heights Boulevard)

Int # 6	2027 PM (Signal, 105s) No-Build					Int # 6	2027 PM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	36.7	0.312	1.07	96	EBL	D	36.6	0.311	1.07	96
EBT	C	34.2	0.717	0.34	338	EBT	C	34.1	0.716	0.34	339
EB Approach	C	34.7	-	-	-	EB Approach	C	34.6	-	-	-
WBL	D	45.8	0.419	0.85	85	WBL	D	45.7	0.422	0.86	86
WBT	C	30.2	0.394	0.19	193	WBT	C	30.1	0.394	0.19	193
WB Approach	C	34.2	-	-	-	WB Approach	C	34.2	-	-	-
NBT	B	11.3	0.365	0.21	213	NBT	B	11.4	0.366	0.21	213
NBR	A	8.8	0.089	0.46	37	NBR	A	8.8	0.090	0.47	37
NB Approach	B	10.9	-	-	-	NB Approach	B	11.0	-	-	-
SBT	B	12.1	0.423	0.25	246	SBT	B	12.2	0.424	0.25	247
SB Approach	B	12.1	-	-	-	SB Approach	B	12.2	-	-	-
Intersection	**C**	**21.6**	-	-	-	**Intersection**	**C**	**21.6**	-	-	-

Conditions at the signal controlled intersection of Lee Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Lee Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio for the eastbound left turn lane during the PM peak hour No-Build and Build conditions was found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**. A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for the eastbound left turn lane.

7. Euclid Heights Boulevard & Ivydale Road

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and Ivydale Road is shown in the following tables:

Table 4.13 - 2027 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2027 No Build AM Peak		One-Way Stop		Int # 7	2027 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.6	0.01	0.0	EBL	A	7.6	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.4	-	-
SBT	B	10.8	0.05	0.2	SBT	B	10.9	0.05	0.2
SB Approach	B	10.8	-	-	SB Approach	B	10.9	-	-

Table 4.14 - 2027 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2027 No Build PM Peak		One-Way Stop		Int # 7	2027 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.4	-	-
SBT	B	11.7	0.06	0.2	SBT	B	11.8	0.06	0.2
SB Approach	B	11.7	-	-	SB Approach	B	11.8	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and Ivydale Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Euclid Heights Boulevard and Ivydale Road.

8. South Taylor Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the signalized intersection of South Taylor Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.15 - 2027 AM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2027 AM (Signal, 105s) No-Build					Int # 8	2027 AM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	31.5	0.295	0.13	128	EBL	C	31.5	0.297	0.13	128
EBR	C	31.3	0.271	0.11	113	EBR	C	31.3	0.273	0.12	113
EB Approach	C	31.4	-	-	-	EB Approach	C	31.4	-	-	-
WBL	C	30.6	0.185	0.76	76	WBL	C	30.6	0.185	0.76	76
WBT	C	30.8	0.206	0.09	86	WBT	C	30.8	0.206	0.09	86
WB Approach	C	30.7	-	-	-	WB Approach	C	30.7	-	-	-
NBL	C	28.2	0.348	0.19	192	NBL	C	28.2	0.350	0.20	192
NBT	C	28.6	0.365	0.19	188	NBT	C	28.7	0.367	0.19	189
NBR	B	10.5	0.181	1.03	82	NBR	B	10.5	0.181	1.03	82
NB Approach	C	23.3	-	-	-	NB Approach	C	23.3	-	-	-
SBL	C	31.6	0.069	0.00	20	SBL	C	31.6	0.069	0.00	20
SBT	C	30.2	0.456	0.25	250	SBT	C	30.2	0.456	0.25	250
SBR	C	30.4	0.462	0.24	236	SBR	C	30.4	0.462	0.24	236
SB Approach	C	30.3	-	-	-	SB Approach	C	30.3	-	-	-
Intersection	**C**	**28.0**	-	-	-	**Intersection**	**C**	**28.0**	-	-	-

Table 4.16 - 2027 PM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2027 PM (Signal, 105s) No-Build					Int # 8	2027 PM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	32.4	0.394	0.17	174	EBL	C	32.5	0.397	0.18	175
EBR	C	32.1	0.360	0.16	153	EBR	C	32.1	0.363	0.16	154
EB Approach	C	32.3	-	-	-	EB Approach	C	32.3	-	-	-
WBL	C	32.8	0.427	1.88	188	WBL	C	32.8	0.427	1.88	188
WBT	C	32.5	0.400	0.18	176	WBT	C	32.5	0.400	0.18	176
WB Approach	C	32.6	-	-	-	WB Approach	C	32.6	-	-	-
NBL	C	31.7	0.463	0.22	217	NBL	C	32.0	0.469	0.22	218
NBT	C	31.3	0.492	0.25	250	NBT	C	31.5	0.498	0.25	254
NBR	B	11.4	0.269	1.63	130	NBR	B	11.4	0.269	1.63	130
NB Approach	C	24.8	-	-	-	NB Approach	C	25.0	-	-	-
SBL	D	35.1	0.084	0.00	22	SBL	D	35.3	0.084	0.00	22
SBT	C	29.3	0.406	0.22	223	SBT	C	29.3	0.406	0.22	223
SBR	C	29.5	0.412	0.22	213	SBR	C	29.5	0.412	0.22	213
SB Approach	C	29.7	-	-	-	SB Approach	C	29.7	-	-	-
Intersection	**C**	**28.8**	-	-	-	**Intersection**	**C**	**28.9**	-	-	-

Conditions at the signal controlled intersection of South. Taylor Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of S. Taylor Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio of the following turn lanes was found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual** under the forecasted No-Build and Build conditions.

- Westbound Left Turn Lane - PM Peak Hour
- Northbound Right Turn Lane - AM & PM Peak Hour

A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for these turn lanes.

A. Mayfield Road & West Driveway

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and West Driveway is shown in the following tables:

Table 4.17 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2027 No Build AM Peak		One-Way Stop		Int # A	2027 Build AM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.01	0.0	WBL	A	8.5	0.01	0.0
WB Approach	A	0.1	-	-	WB Approach	A	0.1	-	-
NBT	C	16.9	0.06	0.2	NBT	C	18.3	0.08	0.3
NB Approach	C	16.9	-	-	NB Approach	C	18.3	-	-

Table 4.18 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2027 No Build PM Peak		One-Way Stop		Int # A	2027 Build PM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.5	0.02	0.1	WBL	B	10.5	0.02	0.1
WB Approach	A	0.2	-	-	WB Approach	A	0.2	-	-
NBT	B	12.2	0.02	0.1	NBT	C	15.8	0.04	0.1
NB Approach	B	12.2	-	-	NB Approach	C	15.8	-	-

Conditions at the stop controlled intersection of Mayfield Road and West Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged with the exception of the northbound through movement and approach which degrades from a LOS B to a LOS of C in the PM peak hour.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and West Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and West Driveway.

C. Mayfield Road & East Driveway

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and East Driveway is shown in the following tables:

Table 4.19 - 2027 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2027 No Build AM Peak		One-Way Stop		Int # C	2027 Build AM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.4	0.00	0.0	WBL	A	8.4	0.00	0.0
WB Approach	A	0.0	-	-	WB Approach	A	0.0	-	-
NBT	C	16.1	0.01	0.0	NBT	B	13.0	0.01	0.0
NB Approach	C	16.1	-	-	NB Approach	B	13.0	-	-

Table 4.20 - 2027 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2027 No Build PM Peak		One-Way Stop		Int # C	2027 Build PM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	11.6	0.00	0.0	WBL	B	11.7	0.01	0.0
WB Approach	A	0.0	-	-	WB Approach	A	0.1	-	-
NBT	D	28.9	0.01	0.0	NBT	C	18.9	0.03	0.1
NB Approach	D	28.9	-	-	NB Approach	C	18.9	-	-

Conditions at the stop controlled intersection of Mayfield Road and East Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged or better from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Mayfield Road and East Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Mayfield Road and East Driveway.

D. Euclid Heights Boulevard & South Driveway

The peak hour traffic analysis results of the 2027 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and South Driveway is shown in the following tables:

Table 4.21 - 2027 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2027 No Build AM Peak		One-Way Stop		Int # D	2027 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.5	-	-	EB Approach	A	0.5	-	-
SBT	B	11.3	0.02	0.1	SBT	B	11.1	0.02	0.1
SB Approach	B	11.3	-	-	SB Approach	B	11.1	-	-

Table 4.22 - 2027 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2027 No Build PM Peak		One-Way Stop		Int # D	2027 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.8	0.01	0.0	EBL	A	7.8	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.5	-	-
SBT	B	11.4	0.04	0.1	SBT	B	11.5	0.05	0.1
SB Approach	B	11.4	-	-	SB Approach	B	11.5	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and South Driveway during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2027 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged or better from the No-Build to the Build conditions.

The 2027 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and South Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2027 conditions at the intersection of Euclid Heights Boulevard and South Driveway.

2030 Traffic Analysis - No-Build & Build Conditions

Traffic analyses were performed for the projected 2030 conditions under the No-Build and Build scenarios so:

1. any existing roadway/intersection deficiencies can be identified in the No-Build scenario which would not be attributable to the redevelopment, and;

2. a comparison can be made to determine the changes in the traffic operations which may be attributed to the redevelopment.

The traffic volumes used in the No-Build analyses can be seen in **Figure 3.13, Appendix A**. Copies of the capacity worksheets for the No-Build analyses are included in **Appendix K.**

The traffic volumes used in the Build analyses can be seen in **Figure 3.16, Appendix A**. Copies of the capacity worksheets for the Build analyses are included in **Appendix L**.

1. Mayfield Road & Lee Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Lee Road is shown in the following tables:

Table 4.23 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2030 AM (Signal, 105s) No-Build					Int # 1	2030 AM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	13.5	0.066	0.06	11	EBL	B	13.8	0.069	0.06	11
EBT	B	16.1	0.248	0.15	147	EBT	B	16.3	0.251	0.15	149
EBR	B	16.2	0.250	0.14	145	EBR	B	16.3	0.253	0.15	147
EB Approach	B	16.0	-	-	-	EB Approach	B	16.2	-	-	-
WBL	B	11.4	0.182	0.51	51	WBL	B	11.5	0.183	0.51	51
WBT	B	17.9	0.499	0.31	309	WBT	B	18.5	0.522	0.33	326
WBR	B	17.9	0.499	0.31	308	WBR	B	18.5	0.522	0.32	324
WB Approach	B	17.3	-	-	-	WB Approach	B	17.9	-	-	-
NBT	D	38.7	0.830	0.38	375	NBT	D	38.6	0.829	0.38	375
NB Approach	D	38.7	-	-	-	NB Approach	D	38.6	-	-	-
SBL	C	31.5	0.396	0.16	159	SBL	C	31.3	0.410	0.16	157
SBR	C	32.0	0.404	0.16	164	SBR	C	32.0	0.414	0.17	169
SB Approach	C	31.7	-	-	-	SB Approach	C	31.6	-	-	-
Intersection	**C**	**22.9**	-	-	-	**Intersection**	**C**	**23.0**	-	-	-

Table 4.24 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2030 PM (Signal, 105s) No-Build					Int # 1	2030 PM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	12.5	0.135	0.18	33	EBL	B	12.6	0.137	0.18	33
EBT	C	21.0	0.503	0.31	310	EBT	C	21.2	0.516	0.32	319
EBR	C	21.0	0.503	0.31	306	EBR	C	21.3	0.516	0.31	314
EB Approach	C	20.4	-	-	-	EB Approach	C	20.7	-	-	-
WBL	B	13.8	0.320	0.62	62	WBL	B	14.0	0.327	0.62	62
WBT	B	17.3	0.308	0.19	189	WBT	B	17.4	0.318	0.20	196
WBR	B	17.3	0.310	0.19	186	WBR	B	17.5	0.320	0.19	193
WB Approach	B	16.7	-	-	-	WB Approach	B	16.9	-	-	-
NBT	D	38.1	0.849	0.42	417	NBT	D	38.0	0.848	0.42	417
NB Approach	D	38.1	-	-	-	NB Approach	D	38.0	-	-	-
SBL	C	29.8	0.309	0.13	128	SBL	C	29.8	0.341	0.13	126
SBR	C	30.1	0.309	0.13	129	SBR	C	30.3	0.331	0.14	139
SB Approach	C	29.9	-	-	-	SB Approach	C	30.0	-	-	-
Intersection	**C**	**23.8**	-	-	-	**Intersection**	**C**	**23.9**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Lee Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Lee Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Lee Road.

2. Mayfield Road & Ivydale Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Ivydale Road is shown in the following tables:

Table 4.25 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2030 No Build AM Peak		One-Way Stop		Int # 2	2030 Build AM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.04	0.1	WBL	A	8.5	0.04	0.1
WB Approach	A	0.3	-	-	WB Approach	A	0.3	-	-
NBT	C	16.9	0.14	0.5	NBT	C	17.4	0.15	0.5
NB Approach	C	16.9	-	-	NB Approach	C	17.4	-	-

Table 4.26 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2030 No Build PM Peak		One-Way Stop		Int # 2	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.4	0.05	0.1	WBL	B	10.5	0.05	0.1
WB Approach	A	0.5	-	-	WB Approach	A	0.5	-	-
NBT	D	28.1	0.29	1.2	NBT	D	29.8	0.30	1.2
NB Approach	D	28.1	-	-	NB Approach	D	29.8	-	-

Conditions at the stop controlled intersection of Mayfield Road and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Ivydale Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Ivydale Road.

3. Mayfield Road & Burlington Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Burlington Road is shown in the following tables:

Table 4.27 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2030 No Build AM Peak		One-Way Stop		Int # 3	2030 Build AM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	B	11.9	0.02	0.1	EBL	B	11.9	0.02	0.1
EB Approach	A	0.3	-	-	EB Approach	A	0.3	-	-
SBT	C	24.0	0.19	0.7	SBT	C	24.0	0.19	0.7
SB Approach	C	24.0	-	-	SB Approach	C	24.0	-	-

Table 4.28 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2030 No Build PM Peak		One-Way Stop		Int # 3	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	9.2	0.02	0.1	EBL	A	9.2	0.02	0.1
EB Approach	A	0.2	-	-	EB Approach	A	0.2	-	-
SBT	C	21.9	0.09	0.3	SBT	C	21.9	0.09	0.3
SB Approach	C	21.9	-	-	SB Approach	C	21.9	-	-

Conditions at the stop controlled intersection of Mayfield Road and Burlington Road during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Burlington Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Burlington Road.

4. Mayfield Road & Forest Hills Boulevard/Rydalmount Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road is shown in the following tables:

Table 4.29 - 2030 AM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2030 AM (Signal, 105s) No-Build					Int # 4	2030 AM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	14.4	0.041	0.06	8	EBL	B	15.0	0.059	0.09	11
EBT	A	6.9	0.201	0.09	92	EBT	A	7.1	0.217	0.10	101
EBR	A	6.9	0.202	0.09	92	EBR	A	7.1	0.218	0.10	101
EB Approach	A	7.1	-	-	-	EB Approach	A	7.3	-	-	-
WBL	A	7.8	0.019	0.05	5	WBL	A	8.0	0.019	0.05	5
WBT	A	9.7	0.530	0.28	277	WBT	A	9.8	0.540	0.28	283
WBR	A	6.5	0.131	0.16	49	WBR	A	6.5	0.131	0.16	49
WB Approach	A	9.3	-	-	-	WB Approach	A	9.5	-	-	-
NBT	D	47.9	0.328	0.04	40	NBT	D	47.9	0.328	0.04	40
NB Approach	D	47.9	-	-	-	NB Approach	D	47.9	-	-	-
SBL	D	46.2	0.496	0.52	93	SBL	D	46.2	0.496	0.52	93
SBT	D	44.5	0.227	0.04	39	SBT	D	44.5	0.235	0.04	40
SB Approach	D	45.7	-	-	-	SB Approach	D	45.7	-	-	-
Intersection	**B**	**11.5**	-	-	-	**Intersection**	**B**	**11.5**	-	-	-

Table 4.30 - 2030 PM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2030 PM (Signal, 105s) No-Build					Int # 4	2030 PM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	A	9.4	0.022	0.04	5	EBL	A	9.8	0.032	0.06	7
EBT	A	9.3	0.439	0.24	237	EBT	A	9.5	0.452	0.25	246
EBR	A	9.3	0.439	0.24	236	EBR	A	9.5	0.452	0.24	244
EB Approach	A	9.3	-	-	-	EB Approach	A	9.5	-	-	-
WBL	B	12.0	0.031	0.06	6	WBL	B	12.3	0.032	0.06	6
WBT	A	7.6	0.312	0.15	146	WBT	A	7.8	0.327	0.16	155
WBR	A	7.0	0.193	0.25	76	WBR	A	7.0	0.193	0.25	76
WB Approach	A	7.5	-	-	-	WB Approach	A	7.7	-	-	-
NBT	D	48.1	0.317	0.04	37	NBT	D	48.1	0.317	0.04	37
NB Approach	D	48.1	-	-	-	NB Approach	D	48.1	-	-	-
SBL	D	49.8	0.808	0.94	168	SBL	D	49.8	0.807	0.94	168
SBT	D	43.5	0.129	0.02	23	SBT	D	43.6	0.150	0.03	27
SB Approach	D	49.0	-	-	-	SB Approach	D	48.8	-	-	-
Intersection	**B**	**12.0**	-	-	-	**Intersection**	**B**	**12.0**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Forest Hills Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road.

5. Mayfield Road & South Taylor Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the signalized intersection of Mayfield Road and South Taylor Road is shown in the following tables:

Table 4.31 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2030 AM (Signal, 105s) No-Build					Int # 5	2030 AM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	18.7	0.089	0.11	13	EBL	B	19.2	0.133	0.17	20
EBT	B	16.2	0.188	0.10	105	EBT	B	16.6	0.199	0.11	112
EBR	B	16.5	0.192	0.11	106	EBR	B	16.9	0.202	0.11	113
EB Approach	B	16.4	-	-	-	EB Approach	B	16.8	-	-	-
WBL	C	21.7	0.361	0.86	146	WBL	C	23.0	0.376	0.89	152
WBT	B	16.9	0.435	0.26	259	WBT	B	18.0	0.452	0.27	270
WBR	B	17.7	0.435	0.26	260	WBR	B	18.9	0.453	0.27	271
WB Approach	B	17.8	-	-	-	WB Approach	B	18.9	-	-	-
NBL	D	37.7	0.355	0.17	83	NBL	D	37.4	0.351	0.17	82
NBT	D	44.5	0.609	0.14	144	NBT	D	44.2	0.593	0.14	143
NBR	B	10.0	0.766	0.33	159	NBR	C	22.9	0.746	0.34	162
NB Approach	C	33.1	-	-	-	NB Approach	D	36.7	-	-	-
SBL	D	35.7	0.566	0.58	175	SBL	D	35.2	0.556	0.58	173
SBT	D	41.5	0.588	0.19	194	SBT	D	41.1	0.583	0.20	195
SBR	D	41.6	0.598	0.19	190	SBR	D	41.3	0.593	0.19	192
SB Approach	D	39.6	-	-	-	SB Approach	D	39.2	-	-	-
Intersection	**C**	**24.0**	-	-	-	**Intersection**	**C**	**25.0**	-	-	-

Table 4.32 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2030 PM (Signal, 105s) No-Build					Int # 5	2030 PM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	19.6	0.166	0.28	34	EBL	B	19.8	0.194	0.33	40
EBT	C	20.2	0.437	0.26	259	EBT	C	20.4	0.446	0.26	264
EBR	C	21.1	0.438	0.26	259	EBR	C	21.3	0.447	0.26	264
EB Approach	C	20.5	-	-	-	EB Approach	C	20.6	-	-	-
WBL	C	26.7	0.304	0.53	91	WBL	C	27.1	0.309	0.54	92
WBT	B	18.4	0.350	0.21	209	WBT	B	18.7	0.362	0.22	215
WBR	B	19.0	0.353	0.20	206	WBR	B	19.4	0.365	0.21	212
WB Approach	B	19.4	-	-	-	WB Approach	B	19.8	-	-	-
NBL	C	34.8	0.361	0.20	98	NBL	C	34.8	0.367	0.20	98
NBT	D	41.2	0.508	0.15	147	NBT	D	41.2	0.507	0.15	147
NBR	C	23.2	0.803	0.31	148	NBR	C	23.2	0.802	0.31	148
NB Approach	C	34.0	-	-	-	NB Approach	C	34.0	-	-	-
SBL	C	33.6	0.477	0.49	147	SBL	C	33.6	0.477	0.49	147
SBT	D	38.7	0.432	0.15	150	SBT	D	38.9	0.449	0.16	157
SBR	D	38.8	0.440	0.15	148	SBR	D	39.0	0.459	0.15	153
SB Approach	D	37.0	-	-	-	SB Approach	D	37.1	-	-	-
Intersection	**C**	**24.9**	-	-	-	**Intersection**	**C**	**25.0**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and South Taylor Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged with the exception of the northbound right turn movement and the northbound approach during the AM peak hour. The northbound right turn movement was determined to degrade from LOS B to LOS C and the northbound approach degraded from LOS C to LOS D.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and South Taylor Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and South Taylor Road.

6. Lee Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the signalized intersection of Lee Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.33 - 2030 AM Peak Hour Traffic Analysis Comparison
(Lee Road and Euclid Heights Boulevard)

Int # 6	2030 AM (Signal, 105s) No-Build					Int # 6	2030 AM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	46.9	0.219	0.41	37	EBL	D	46.2	0.208	0.41	37
EBT	D	38.8	0.570	0.21	212	EBT	D	37.7	0.546	0.21	212
EB Approach	D	39.9	-	-	-	EB Approach	D	38.9	-	-	-
WBL	D	46.5	0.422	0.88	88	WBL	D	46.0	0.460	1.03	103
WBT	D	40.2	0.689	0.25	253	WBT	D	39.2	0.678	0.26	259
WB Approach	D	41.6	-	-	-	WB Approach	D	41.0	-	-	-
NBT	A	6.5	0.301	0.13	132	NBT	A	7.0	0.305	0.14	138
NBR	A	5.2	0.080	0.33	26	NBR	A	5.6	0.085	0.36	29
NB Approach	A	6.3	-	-	-	NB Approach	A	6.7	-	-	-
SBT	A	6.7	0.310	0.14	145	SBT	A	7.2	0.314	0.15	152
SB Approach	A	6.7	-	-	-	SB Approach	A	7.2	-	-	-
Intersection	**C**	**20.1**	-	-	-	**Intersection**	**C**	**20.4**	-	-	-

Table 4.34 - 2030 PM Peak Hour Traffic Analysis Comparison
(Lee Road and Euclid Heights Boulevard)

Int # 6	2030 PM (Signal, 105s) No-Build					Int # 6	2030 PM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	36.7	0.312	1.07	96	EBL	D	35.6	0.300	1.05	94
EBT	C	34.2	0.717	0.34	338	EBT	C	33.2	0.708	0.34	343
EB Approach	C	34.7	-	-	-	EB Approach	C	33.7	-	-	-
WBL	D	45.8	0.419	0.85	85	WBL	D	45.3	0.446	0.94	94
WBT	C	30.2	0.394	0.19	193	WBT	C	29.2	0.387	0.19	194
WB Approach	C	34.2	-	-	-	WB Approach	C	33.7	-	-	-
NBT	B	11.3	0.365	0.21	213	NBT	B	12.1	0.372	0.22	220
NBR	A	8.8	0.089	0.46	37	NBR	A	9.4	0.103	0.55	44
NB Approach	B	10.9	-	-	-	NB Approach	B	11.6	-	-	-
SBT	B	12.1	0.423	0.25	246	SBT	B	12.9	0.432	0.26	255
SB Approach	B	12.1	-	-	-	SB Approach	B	12.9	-	-	-
Intersection	**C**	**21.6**	-	-	-	**Intersection**	**C**	**21.8**	-	-	-

Conditions at the signal controlled intersection of Lee Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Lee Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio for the westbound left turn lane during the AM Peak hour Build condition and the eastbound left turn lane during the PM peak hour No-Build and Build conditions were found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**. A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for the westbound and eastbound left turn lanes.

7. Euclid Heights Boulevard & Ivydale Road

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and Ivydale Road is shown in the following tables:

Table 4.35 - 2030 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2030 No Build AM Peak		One-Way Stop		Int # 7	2030 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.6	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.4	-	-
SBT	B	10.8	0.05	0.2	SBT	B	11.1	0.05	0.2
SB Approach	B	10.8	-	-	SB Approach	B	11.1	-	-

Table 4.36 - 2030 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2030 No Build PM Peak		One-Way Stop		Int # 7	2030 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.8	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.3	-	-
SBT	B	11.7	0.06	0.2	SBT	B	12.1	0.06	0.2
SB Approach	B	11.7	-	-	SB Approach	B	12.1	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and Ivydale Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Euclid Heights Boulevard and Ivydale Road.

8. South Taylor Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the signalized intersection of South Taylor Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.37 - 2030 AM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2030 AM (Signal, 105s) No-Build					Int # 8	2030 AM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	31.5	0.295	0.13	128	EBL	C	31.7	0.314	0.14	137
EBR	C	31.3	0.271	0.11	113	EBR	C	31.5	0.291	0.12	120
EB Approach	C	31.4	-	-	-	EB Approach	C	31.6	-	-	-
WBL	C	30.6	0.185	0.76	76	WBL	C	30.6	0.185	0.76	76
WBT	C	30.9	0.228	0.10	96	WBT	C	30.9	0.228	0.10	96
WB Approach	C	30.8	-	-	-	WB Approach	C	30.8	-	-	-
NBL	C	28.2	0.349	0.19	192	NBL	C	28.3	0.357	0.20	193
NBT	C	28.7	0.366	0.19	188	NBT	C	28.8	0.374	0.19	193
NBR	B	10.5	0.181	1.03	82	NBR	B	10.5	0.181	1.03	82
NB Approach	C	23.3	-	-	-	NB Approach	C	23.4	-	-	-
SBL	C	31.6	0.069	0.00	20	SBL	C	31.8	0.069	0.00	20
SBT	C	30.2	0.456	0.25	250	SBT	C	30.2	0.456	0.25	250
SBR	C	30.5	0.462	0.24	236	SBR	C	30.5	0.462	0.24	236
SB Approach	C	30.4	-	-	-	SB Approach	C	30.4	-	-	-
Intersection	**C**	**28.0**	-	-	-	**Intersection**	**C**	**28.1**	-	-	-

Table 4.38 - 2030 PM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2030 PM (Signal, 105s) No-Build					Int # 8	2030 PM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	32.4	0.394	0.17	174	EBL	C	32.6	0.409	0.18	181
EBR	C	32.1	0.360	0.16	153	EBR	C	32.3	0.375	0.16	159
EB Approach	C	32.3	-	-	-	EB Approach	C	32.4	-	-	-
WBL	C	32.8	0.427	1.88	188	WBL	C	32.8	0.427	1.88	188
WBT	C	32.5	0.400	0.18	176	WBT	C	32.5	0.400	0.18	176
WB Approach	C	32.6	-	-	-	WB Approach	C	32.6	-	-	-
NBL	C	31.7	0.463	0.22	217	NBL	D	35.0	0.508	0.22	220
NBT	C	31.3	0.492	0.25	250	NBT	C	32.6	0.543	0.28	277
NBR	B	11.4	0.269	1.63	130	NBR	B	11.4	0.269	1.63	130
NB Approach	C	24.8	-	-	-	NB Approach	C	26.4	-	-	-
SBL	D	35.1	0.084	0.00	22	SBL	D	36.6	0.089	0.00	23
SBT	C	29.3	0.406	0.22	223	SBT	C	29.3	0.406	0.22	223
SBR	C	29.5	0.412	0.22	213	SBR	C	29.5	0.412	0.22	213
SB Approach	C	29.7	-	-	-	SB Approach	C	29.7	-	-	-
Intersection	**C**	**28.8**	-	-	-	**Intersection**	**C**	**29.5**	-	-	-

Conditions at the signal controlled intersection of South Taylor Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions with the exception of the northbound left turn movement which degrades from a LOS C to a LOS D in the PM peak hour Build condition.

The 2030 AM and PM peak hour comparison tables for the intersection of South Taylor Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio of the following turn lanes was found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual** under the forecasted No-Build and Build conditions.

- Westbound Left Turn Lane - PM Peak Hour
- Northbound Right Turn Lane - AM & PM Peak Hour

A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for these turn lanes.

A. Mayfield Road & West Driveway

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and West Driveway is shown in the following tables:

Table 4.39 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2030 No Build AM Peak		One-Way Stop		Int # A	2030 Build AM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.01	0.0	WBL	A	8.5	0.01	0.0
WB Approach	A	0.1	-	-	WB Approach	A	0.1	-	-
NBT	C	16.9	0.06	0.2	NBT	D	25.6	0.26	1.0
NB Approach	C	16.9	-	-	NB Approach	D	25.6	-	-

Table 4.40 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2030 No Build PM Peak		One-Way Stop		Int # A	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.5	0.02	0.1	WBL	B	10.6	0.02	0.1
WB Approach	A	0.2	-	-	WB Approach	A	0.2	-	-
NBT	B	12.2	0.02	0.1	NBT	D	27.8	0.15	0.5
NB Approach	B	12.2	-	-	NB Approach	D	27.8	-	-

Conditions at the stop controlled intersection of Mayfield Road and West Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions with the exception of the northbound through movement and northbound approach, which degrade from a LOS C to a LOS D in the AM Peak and from a LOS B to a LOS D in the PM peak of the Build condition.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and West Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and West Driveway.

C. Mayfield Road & East Driveway

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and East Driveway is shown in the following tables:

Table 4.41 - 2030 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2030 No Build AM Peak		One-Way Stop		Int # C	2030 Build AM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.4	0.00	0.0	WBL	A	8.5	0.02	0.1
WB Approach	A	0.0	-	-	WB Approach	A	0.1	-	-
NBT	C	16.1	0.01	0.0	NBT	B	10.4	0.06	0.2
NB Approach	C	16.1	-	-	NB Approach	B	10.4	-	-

Table 4.42 - 2030 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2030 No Build PM Peak		One-Way Stop		Int # C	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	11.6	0.00	0.0	WBL	B	12.2	0.08	0.2
WB Approach	A	0.0	-	-	WB Approach	A	0.6	-	-
NBT	C	28.9	0.01	0.0	NBT	C	15.6	0.10	0.3
NB Approach	C	28.9	-	-	NB Approach	C	15.6	-	-

Conditions at the stop controlled intersection of Mayfield Road and East Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged or better from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Mayfield Road and East Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and East Driveway.

D. Euclid Heights Boulevard & East Driveway

The peak hour traffic analysis results of the 2030 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and South Driveway is shown in the following tables:

Table 4.43 - 2030 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2030 No Build AM Peak		One-Way Stop		Int # D	2030 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.5	-	-	EB Approach	A	0.8	-	-
SBT	B	11.3	0.02	0.1	SBT	B	10.9	0.07	0.2
SB Approach	B	11.3	-	-	SB Approach	B	10.9	-	-

Table 4.44 - 2030 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2030 No Build PM Peak		One-Way Stop		Int # D	2030 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.8	0.01	0.0	EBL	A	7.9	0.03	0.1
EB Approach	A	0.4	-	-	EB Approach	A	1.1	-	-
SBT	B	11.4	0.04	0.1	SBT	B	12.1	0.09	0.3
SB Approach	B	11.4	-	-	SB Approach	B	12.1	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and South Driveway during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2030 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2030 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and South Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Euclid Heights Boulevard and South Driveway.

2047 Traffic Analysis - No-Build & Build Conditions

Traffic analyses were performed for the projected 2047 conditions under the No-Build and Build scenarios so:

1. any existing roadway/intersection deficiencies can be identified in the No-Build scenario which would not be attributable to the redevelopment, and;

2. a comparison can be made to determine the changes in the traffic operations which may be attributed to the redevelopment.

The traffic volumes used in the No-Build analyses can be seen in **Figure 3.14, Appendix A**. Copies of the capacity worksheets for the No-Build analyses are included in **Appendix M.**

The traffic volumes used in the Build analyses can be seen in **Figure 3.17, Appendix A**. Copies of the capacity worksheets for the Build analyses are included in **Appendix N**.

1. Mayfield Road & Lee Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Lee Road is shown in the following tables:

Table 4.45 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2047 AM (Signal, 105s) No-Build					Int # 1	2047 AM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	13.5	0.066	0.06	11	EBL	B	13.8	0.069	0.06	11
EBT	B	16.1	0.248	0.15	147	EBT	B	16.3	0.251	0.15	149
EBR	B	16.2	0.250	0.14	145	EBR	B	16.3	0.253	0.15	147
EB Approach	B	16.0	-	-	-	EB Approach	B	16.2	-	-	-
WBL	B	11.4	0.182	0.51	51	WBL	B	11.5	0.183	0.51	51
WBT	B	17.9	0.499	0.31	309	WBT	B	18.5	0.522	0.33	326
WBR	B	17.9	0.499	0.31	308	WBR	B	18.5	0.522	0.32	324
WB Approach	B	17.3	-	-	-	WB Approach	B	17.9	-	-	-
NBT	D	38.7	0.830	0.38	375	NBT	D	38.6	0.829	0.38	375
NB Approach	D	38.7	-	-	-	NB Approach	D	38.6	-	-	-
SBL	C	31.5	0.396	0.16	159	SBL	C	31.3	0.410	0.16	157
SBR	C	32.0	0.404	0.16	164	SBR	C	32.0	0.414	0.17	169
SB Approach	C	31.7	-	-	-	SB Approach	C	31.6	-	-	-
Intersection	**C**	**22.9**	-	-	-	**Intersection**	**C**	**23.0**	-	-	-

Table 4.46 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Lee Road)

Int # 1	2047 PM (Signal, 105s) No-Build					Int # 1	2047 PM (Signal, 105s) Build				
Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	12.5	0.179	0.23	44	EBL	B	12.6	0.182	0.23	44
EBT	C	21.0	0.503	0.31	310	EBT	C	21.2	0.516	0.32	319
EBR	C	21.0	0.503	0.31	306	EBR	C	21.3	0.516	0.31	314
EB Approach	C	20.2	-	-	-	EB Approach	C	20.5	-	-	-
WBL	B	13.8	0.320	0.62	62	WBL	B	14.0	0.327	0.62	62
WBT	B	17.6	0.311	0.19	192	WBT	B	17.8	0.321	0.20	198
WBR	B	17.7	0.313	0.19	189	WBR	B	17.8	0.323	0.20	195
WB Approach	B	16.9	-	-	-	WB Approach	B	17.1	-	-	-
NBT	D	38.1	0.849	0.42	417	NBT	D	38.0	0.848	0.42	417
NB Approach	D	38.1	-	-	-	NB Approach	D	38.0	-	-	-
SBL	C	29.8	0.309	0.13	128	SBL	C	29.8	0.341	0.13	126
SBR	C	30.1	0.309	0.13	129	SBR	C	30.3	0.331	0.14	139
SB Approach	C	29.9	-	-	-	SB Approach	C	30.0	-	-	-
Intersection	**C**	**23.8**	-	-	-	**Intersection**	**C**	**23.9**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Lee Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Lee Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Lee Road.

2. Mayfield Road & Ivydale Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Ivydale Road is shown in the following tables:

Table 4.47 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2047 No Build AM Peak		One-Way Stop		Int # 2	2047 Build AM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.04	0.1	WBL	A	8.5	0.04	0.1
WB Approach	A	0.3	-	-	WB Approach	A	0.3	-	-
NBT	C	16.9	0.14	0.5	NBT	C	17.4	0.15	0.5
NB Approach	C	16.9	-	-	NB Approach	C	17.4	-	-

Table 4.48 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Ivydale Road)

Int # 2	2047 No Build PM Peak		One-Way Stop		Int # 2	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.4	0.05	0.1	WBL	B	10.5	0.05	0.1
WB Approach	A	0.5	-	-	WB Approach	A	0.5	-	-
NBT	D	28.1	0.29	1.2	NBT	D	29.8	0.30	1.2
NB Approach	D	28.1	-	-	NB Approach	D	29.8	-	-

Conditions at the stop controlled intersection of Mayfield Road and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Ivydale Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Ivydale Road.

3. Mayfield Road & Burlington Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and Burlington Road is shown in the following tables:

Table 4.49 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2047 No Build AM Peak		One-Way Stop		Int # 3	2047 Build AM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	B	11.9	0.02	0.1	EBL	B	11.9	0.02	0.1
EB Approach	A	0.3	-	-	EB Approach	A	0.3	-	-
SBT	C	24.0	0.19	0.7	SBT	C	24.0	0.19	0.7
SB Approach	C	24.0	-	-	SB Approach	C	24.0	-	-

Table 4.50 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and Burlington Road)

Int # 3	2047 No Build PM Peak		One-Way Stop		Int # 3	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	9.2	0.02	0.1	EBL	A	9.2	0.02	0.1
EB Approach	A	0.2	-	-	EB Approach	A	0.2	-	-
SBT	C	21.9	0.09	0.3	SBT	C	21.9	0.09	0.3
SB Approach	C	21.9	-	-	SB Approach	C	21.9	-	-

Conditions at the stop controlled intersection of Mayfield Road and Burlington Road during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Burlington Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Burlington Road.

4. Mayfield Road & Forest Hills Boulevard/Rydalmount Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the signalized intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road is shown in the following tables:

Table 4.51 - 2047 AM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2047 AM (Signal, 105s) No-Build					Int # 4	2047 AM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	14.4	0.041	0.06	8	EBL	B	15.0	0.059	0.09	11
EBT	A	6.9	0.201	0.09	92	EBT	A	7.1	0.217	0.10	101
EBR	A	6.9	0.202	0.09	92	EBR	A	7.1	0.218	0.10	101
EB Approach	A	7.1	-	-	-	EB Approach	A	7.3	-	-	-
WBL	A	7.8	0.019	0.05	5	WBL	A	8.0	0.019	0.05	5
WBT	A	9.7	0.530	0.28	277	WBT	A	9.8	0.540	0.28	283
WBR	A	6.5	0.131	0.16	49	WBR	A	6.5	0.131	0.16	49
WB Approach	A	9.3	-	-	-	WB Approach	A	9.5	-	-	-
NBT	D	47.9	0.328	0.04	40	NBT	D	47.9	0.328	0.04	40
NB Approach	D	47.9	-	-	-	NB Approach	D	47.9	-	-	-
SBL	D	46.2	0.496	0.52	93	SBL	D	46.2	0.496	0.52	93
SBT	D	44.5	0.227	0.04	39	SBT	D	44.5	0.235	0.04	40
SB Approach	D	45.7	-	-	-	SB Approach	D	45.7	-	-	-
Intersection	**B**	**11.5**	-	-	-	**Intersection**	**B**	**11.5**	-	-	-

Table 4.52 - 2047 PM Peak Hour Traffic Analysis Comparison
(Mayfield Road and Forest Hills Boulevard/Rydalmount Road)

Int # 4	2047 PM (Signal, 105s) No-Build					Int # 4	2047 PM (Signal, 105s) Build				
Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & Forest Hills Blvd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	A	9.4	0.022	0.04	5	EBL	A	9.8	0.032	0.06	7
EBT	A	9.3	0.439	0.24	237	EBT	A	9.5	0.452	0.25	246
EBR	A	9.3	0.439	0.24	236	EBR	A	9.5	0.452	0.24	244
EB Approach	A	9.3	-	-	-	EB Approach	A	9.5	-	-	-
WBL	B	12.0	0.031	0.06	6	WBL	B	12.3	0.032	0.06	6
WBT	A	7.6	0.312	0.15	146	WBT	A	7.8	0.327	0.16	155
WBR	A	7.0	0.193	0.25	76	WBR	A	7.0	0.193	0.25	76
WB Approach	A	7.5	-	-	-	WB Approach	A	7.7	-	-	-
NBT	D	48.1	0.317	0.04	37	NBT	D	48.1	0.317	0.04	37
NB Approach	D	48.1	-	-	-	NB Approach	D	48.1	-	-	-
SBL	D	49.8	0.808	0.94	168	SBL	D	49.8	0.807	0.94	168
SBT	D	43.5	0.129	0.02	23	SBT	D	43.6	0.150	0.03	27
SB Approach	D	49.0	-	-	-	SB Approach	D	48.8	-	-	-
Intersection	**B**	**12.0**	-	-	-	**Intersection**	**B**	**12.0**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Forest Hills Boulevard/Rydalmount Road.

5. Mayfield Road & South Taylor Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the signalized intersection of Mayfield Road and South Taylor Road is shown in the following tables:

Table 4.53 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2047 AM (Signal, 105s) No-Build					Int # 5	2047 AM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	18.7	0.089	0.11	13	EBL	B	19.2	0.133	0.17	20
EBT	B	16.2	0.188	0.10	105	EBT	B	16.6	0.199	0.11	112
EBR	B	16.5	0.192	0.11	106	EBR	B	16.9	0.202	0.11	113
EB Approach	B	16.4	-	-	-	EB Approach	B	16.8	-	-	-
WBL	C	21.7	0.361	0.86	146	WBL	C	23.0	0.376	0.89	152
WBT	B	16.9	0.435	0.26	259	WBT	B	18.0	0.452	0.27	270
WBR	B	17.7	0.435	0.26	260	WBR	B	18.9	0.453	0.27	271
WB Approach	B	17.8	-	-	-	WB Approach	B	18.9	-	-	-
NBL	D	37.7	0.355	0.17	83	NBL	D	37.4	0.351	0.17	82
NBT	D	44.5	0.609	0.14	144	NBT	D	44.2	0.593	0.14	143
NBR	B	10.0	0.766	0.33	159	NBR	C	22.9	0.746	0.34	162
NB Approach	C	33.1	-	-	-	NB Approach	D	36.7	-	-	-
SBL	D	35.7	0.566	0.58	175	SBL	D	35.2	0.556	0.58	173
SBT	D	41.5	0.588	0.19	194	SBT	D	41.1	0.583	0.20	195
SBR	D	41.6	0.598	0.19	190	SBR	D	41.3	0.593	0.19	192
SB Approach	D	39.6	-	-	-	SB Approach	D	39.2	-	-	-
Intersection	**C**	**24.0**	-	-	-	**Intersection**	**C**	**25.0**	-	-	-

Table 4.54 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and South Taylor Road)

Int # 5	2047 PM (Signal, 105s) No-Build					Int # 5	2047 PM (Signal, 105s) Build				
Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Mayfield Rd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	B	19.6	0.166	0.28	34	EBL	B	19.8	0.194	0.33	40
EBT	C	20.2	0.437	0.26	259	EBT	C	20.4	0.446	0.26	264
EBR	C	21.1	0.438	0.26	259	EBR	C	21.3	0.447	0.26	264
EB Approach	C	20.5	-	-	-	EB Approach	C	20.6	-	-	-
WBL	C	26.7	0.304	0.53	91	WBL	C	27.1	0.309	0.54	92
WBT	B	18.4	0.350	0.21	209	WBT	B	18.7	0.362	0.22	215
WBR	B	19.0	0.353	0.20	206	WBR	B	19.4	0.365	0.21	212
WB Approach	B	19.4	-	-	-	WB Approach	B	19.8	-	-	-
NBL	C	34.8	0.361	0.20	98	NBL	C	34.8	0.367	0.20	98
NBT	D	41.2	0.508	0.15	147	NBT	D	41.2	0.507	0.15	147
NBR	C	23.2	0.803	0.31	148	NBR	C	23.2	0.802	0.31	148
NB Approach	C	34.0	-	-	-	NB Approach	C	34.0	-	-	-
SBL	C	33.6	0.477	0.49	147	SBL	C	33.6	0.477	0.49	147
SBT	D	38.7	0.432	0.15	150	SBT	D	38.9	0.449	0.16	157
SBR	D	38.8	0.440	0.15	148	SBR	D	39.0	0.459	0.15	153
SB Approach	D	37.0	-	-	-	SB Approach	D	37.1	-	-	-
Intersection	**C**	**24.9**	-	-	-	**Intersection**	**C**	**25.0**	-	-	-

Conditions at the signal controlled intersection of Mayfield Road and South Taylor Road during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged with the exception of the northbound through movement and approach which degrade from a LOS B to a LOS C and from a LOS C to a LOS D respectively in the AM peak hour.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and South Taylor Road shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and South Taylor Road.

6. Lee Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the signalized intersection of Lee Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.55 - 2047 AM Peak Hour Traffic Analysis Comparison (Lee Road and Euclid Heights Boulevard)

Int # 6	2047 AM (Signal, 105s) No-Build					Int # 6	2047 AM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	46.9	0.219	0.41	37	EBL	D	46.2	0.208	0.41	37
EBT	D	38.8	0.570	0.21	212	EBT	D	37.7	0.546	0.21	212
EB Approach	D	39.9	-	-	-	EB Approach	D	38.9	-	-	-
WBL	D	46.5	0.422	0.88	88	WBL	D	46.0	0.460	1.03	103
WBT	D	40.2	0.689	0.25	253	WBT	D	39.2	0.678	0.26	259
WB Approach	D	41.6	-	-	-	WB Approach	D	41.0	-	-	-
NBT	A	6.7	0.315	0.14	137	NBT	A	7.1	0.320	0.14	144
NBR	A	5.2	0.080	0.33	26	NBR	A	5.6	0.085	0.36	29
NB Approach	A	6.4	-	-	-	NB Approach	A	6.8	-	-	-
SBT	A	6.7	0.310	0.14	145	SBT	A	7.2	0.314	0.15	152
SB Approach	A	6.7	-	-	-	SB Approach	A	7.2	-	-	-
Intersection	**C**	**20.1**	-	-	-	**Intersection**	**C**	**20.3**	-	-	-

Table 4.56 - 2047 PM Peak Hour Traffic Analysis Comparison (Lee Road and Euclid Heights Boulevard)

Int # 6	2047 PM (Signal, 105s) No-Build					Int # 6	2047 PM (Signal, 105s) Build				
Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & Lee Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	D	36.7	0.312	1.07	96	EBL	D	35.6	0.300	1.05	94
EBT	C	34.2	0.717	0.34	338	EBT	C	33.2	0.708	0.34	343
EB Approach	C	34.7	-	-	-	EB Approach	C	33.7	-	-	-
WBL	D	45.8	0.419	0.85	85	WBL	D	45.3	0.446	0.94	94
WBT	C	30.2	0.394	0.19	193	WBT	C	29.2	0.387	0.19	194
WB Approach	C	34.2	-	-	-	WB Approach	C	33.7	-	-	-
NBT	B	11.3	0.365	0.21	213	NBT	B	12.1	0.372	0.22	220
NBR	A	8.8	0.089	0.46	37	NBR	A	9.4	0.103	0.55	44
NB Approach	B	10.9	-	-	-	NB Approach	B	11.6	-	-	-
SBT	B	12.1	0.423	0.25	246	SBT	B	12.9	0.432	0.26	255
SB Approach	B	12.1	-	-	-	SB Approach	B	12.9	-	-	-
Intersection	**C**	**21.6**	-	-	-	**Intersection**	**C**	**21.8**	-	-	-

Conditions at the signal controlled intersection of Lee Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Lee Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio for the westbound left turn lane during the AM peak and the eastbound left turn lane during the PM peak hour No-Build and Build conditions was found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**. A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for the westbound left turn lane and eastbound left turn lane.

7. Euclid Heights Boulevard & Ivydale Road

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and Ivydale Road is shown in the following tables:

Table 4.57 - 2047 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2047 No Build AM Peak		One-Way Stop		Int # 7	2047 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.6	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.4	-	-
SBT	B	10.8	0.05	0.2	SBT	B	11.1	0.05	0.2
SB Approach	B	10.8	-	-	SB Approach	B	11.1	-	-

Table 4.58 - 2047 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and Ivydale Road)

Int # 7	2047 No Build PM Peak		One-Way Stop		Int # 7	2047 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & Ivydale Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.8	0.01	0.0
EB Approach	A	0.4	-	-	EB Approach	A	0.3	-	-
SBT	B	11.7	0.06	0.2	SBT	B	12.1	0.06	0.2
SB Approach	B	11.7	-	-	SB Approach	B	12.1	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and Ivydale Road during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and Ivydale Road shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Euclid Heights Boulevard and Ivydale Road.

8. South Taylor Road & Euclid Heights Boulevard

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the signalized intersection of South Taylor Road and Euclid Heights Boulevard is shown in the following tables:

Table 4.59 - 2047 AM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2047 AM (Signal, 105s) No-Build					Int # 8	2047 AM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	31.5	0.295	0.13	128	EBL	C	31.7	0.314	0.14	137
EBR	C	31.3	0.271	0.11	113	EBR	C	31.5	0.291	0.12	120
EB Approach	C	31.4	-	-	-	EB Approach	C	31.6	-	-	-
WBL	C	30.5	0.184	0.75	76	WBL	C	30.5	0.184	0.75	76
WBT	C	31.1	0.249	0.11	106	WBT	C	31.1	0.249	0.11	106
WB Approach	C	30.9	-	-	-	WB Approach	C	30.9	-	-	-
NBL	C	28.5	0.375	0.19	189	NBL	C	28.8	0.394	0.19	185
NBT	C	29.2	0.394	0.20	203	NBT	C	29.6	0.414	0.21	212
NBR	B	10.5	0.181	1.03	82	NBR	B	10.5	0.181	1.03	82
NB Approach	C	23.7	-	-	-	NB Approach	C	24.0	-	-	-
SBL	C	32.3	0.071	0.00	20	SBL	C	32.8	0.072	0.00	21
SBT	C	30.2	0.457	0.25	250	SBT	C	30.2	0.457	0.25	250
SBR	C	30.5	0.462	0.24	237	SBR	C	30.5	0.463	0.24	237
SB Approach	C	30.4	-	-	-	SB Approach	C	30.5	-	-	-
Intersection	**C**	**28.2**	-	-	-	**Intersection**	**C**	**28.3**	-	-	-

Table 4.60 - 2047 AM Peak Hour Traffic Analysis Comparison
(South Taylor Road and Euclid Heights Boulevard)

Int # 8	2047 PM (Signal, 105s) No-Build					Int # 8	2047 PM (Signal, 105s) Build				
Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)	Euclid Heights Blvd. & S. Taylor Rd.	LOS	Delay (sec/veh)	v/c	QSR	95th %tile Queue (ft)
EBL	C	32.4	0.394	0.17	174	EBL	C	32.6	0.409	0.18	181
EBR	C	32.1	0.360	0.16	153	EBR	C	32.3	0.375	0.16	159
EB Approach	C	32.3	-	-	-	EB Approach	C	32.4	-	-	-
WBL	C	32.8	0.427	1.88	188	WBL	C	32.8	0.427	1.88	188
WBT	C	32.5	0.400	0.18	176	WBT	C	32.5	0.400	0.18	176
WB Approach	C	32.6	-	-	-	WB Approach	C	32.6	-	-	-
NBL	C	31.7	0.463	0.22	217	NBL	D	35.0	0.508	0.22	220
NBT	C	31.3	0.492	0.25	250	NBT	C	32.6	0.543	0.28	277
NBR	B	11.4	0.269	1.63	130	NBR	B	11.4	0.269	1.63	130
NB Approach	C	24.8	-	-	-	NB Approach	C	26.4	-	-	-
SBL	D	35.1	0.084	0.00	22	SBL	D	36.6	0.089	0.00	23
SBT	C	29.3	0.406	0.22	223	SBT	C	29.3	0.406	0.22	223
SBR	C	29.5	0.412	0.22	213	SBR	C	29.5	0.412	0.22	213
SB Approach	C	29.7	-	-	-	SB Approach	C	29.7	-	-	-
Intersection	**C**	**28.8**	-	-	-	**Intersection**	**C**	**29.5**	-	-	-

Conditions at the signal controlled intersection of South Taylor Road and Euclid Heights Boulevard during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement, approach, and intersection LOS remain unchanged from the No-Build to the Build conditions with the exception of the northbound left turn movement which degrades from a LOS C to a LOS D in the PM peak hour Build condition.

The 2047 AM and PM peak hour comparison tables for the intersection of South Taylor Road and Euclid Heights Boulevard shown previously, indicate that the level-of-services are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

The queue storage ratio of the following turn lanes was found to exceed the recommended maximum threshold shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual** under the forecasted No-Build and Build conditions.

- Westbound Left Turn Lane - PM Peak Hour
- Northbound Right Turn Lane - AM & PM Peak Hour

A QSR greater than 1.0 indicates the storage length of the lane may not be adequate for the forecasted conditions.

An analysis will be performed in a later section of this report to determine the queue length needed to mitigate the effect or any other improvement that could reduce the queue storage length for these turn lanes.

A. Mayfield Road & West Driveway

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and West Driveway is shown in the following tables:

Table 4.61 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2047 No Build AM Peak		One-Way Stop		Int # A	2047 Build AM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.01	0.0	WBL	A	8.5	0.01	0.0
WB Approach	A	0.1	-	-	WB Approach	A	0.1	-	-
NBT	C	16.9	0.06	0.2	NBT	D	25.6	0.26	1.0
NB Approach	C	16.9	-	-	NB Approach	D	25.6	-	-

Table 4.62 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and West Driveway)

Int # A	2047 No Build PM Peak		One-Way Stop		Int # A	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	10.5	0.02	0.1	WBL	B	10.6	0.02	0.1
WB Approach	A	0.2	-	-	WB Approach	A	0.2	-	-
NBT	B	12.2	0.02	0.1	NBT	D	27.8	0.15	0.5
NB Approach	B	12.2	-	-	NB Approach	D	27.8	-	-

Conditions at the stop controlled intersection of Mayfield Road and West Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions with the exception of the northbound through movement and northbound approach which degrades from a LOS C to a LOS D in the AM peak hour and degrades from a LOS B to a LOS D in the PM peak hour.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and West Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and West Driveway.

C. Mayfield Road & East Driveway

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Mayfield Road and East Driveway is shown in the following tables:

Table 4.63 - 2047 AM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2047 No Build AM Peak		One-Way Stop		Int # C	2047 Build AM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.4	0.00	0.0	WBL	A	8.5	0.02	0.1
WB Approach	A	0.0	-	-	WB Approach	A	0.1	-	-
NBT	C	16.1	0.01	0.0	NBT	B	10.4	0.06	0.2
NB Approach	C	16.1	-	-	NB Approach	B	10.4	-	-

Table 4.64 - 2047 PM Peak Hour Traffic Analysis Comparison (Mayfield Road and East Driveway)

Int # C	2047 No Build PM Peak		One-Way Stop		Int # C	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & East Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	B	11.6	0.00	0.0	WBL	B	12.2	0.08	0.2
WB Approach	A	0.0	-	-	WB Approach	A	0.6	-	-
NBT	D	28.9	0.01	0.0	NBT	C	15.6	0.10	0.3
NB Approach	D	28.9	-	-	NB Approach	C	15.6	-	-

Conditions at the stop controlled intersection of Mayfield Road and East Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged or better from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Mayfield Road and East Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and East Driveway.

D. Euclid Heights Boulevard & South Driveway

The peak hour traffic analysis results of the 2047 No-Build versus Build conditions for the unsignalized intersection of Euclid Heights Boulevard and South Driveway is shown in the following tables:

Table 4.65 - 2047 AM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2047 No Build AM Peak		One-Way Stop		Int # D	2047 Build AM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.7	0.01	0.0	EBL	A	7.7	0.01	0.0
EB Approach	A	0.5	-	-	EB Approach	A	0.8	-	-
SBT	B	11.3	0.02	0.1	SBT	B	10.9	0.07	0.2
SB Approach	B	11.3	-	-	SB Approach	B	10.9	-	-

Table 4.66 - 2047 PM Peak Hour Traffic Analysis Comparison (Euclid Heights Boulevard and South Driveway)

Int # D	2047 No Build PM Peak		One-Way Stop		Int # D	2047 Build PM Peak		One-Way Stop	
Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Euclid Heights Blvd. & South Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	A	7.8	0.01	0.0	EBL	A	7.9	0.03	0.1
EB Approach	A	0.4	-	-	EB Approach	A	1.1	-	-
SBT	B	11.4	0.04	0.1	SBT	B	12.1	0.09	0.3
SB Approach	B	11.4	-	-	SB Approach	B	12.1	-	-

Conditions at the stop controlled intersection of Euclid Heights Boulevard and South Driveway during the AM and PM peak hours were determined to operate with level-of-service B or better under the forecasted 2047 No-Build and Build conditions.

The AM and PM peak hour comparison tables indicate that the movement and approach LOS remain unchanged from the No-Build to the Build conditions.

The 2047 AM and PM peak hour comparison tables for the intersection of Euclid Heights Boulevard and South Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Euclid Heights Boulevard and South Driveway.

2030 Build Traffic Analysis - Alternate Access

Traffic analyses were performed for the projected 2030 conditions under the Build scenario.

The alternate access only applies to the East Driveway combining with the Mayfield Road and Burlington Road intersection and all of the remaining driveways located on Mayfield Road (A and B). All remaining intersections are unchanged by the alternative scenario.

No-Build conditions will not be included in the alternative access analysis because it will only occur if the proposed development is constructed.

The traffic volumes used in the Build analyses can be seen in **Figure 3.18, Appendix A**. Copies of the capacity worksheets for the Build analyses are included in **Appendix O**.

3. Alternative Mayfield Road & Burlington Road / East Driveway

The peak hour traffic analysis results of the 2030 Build condition for the unsignalized intersection of Mayfield Road and Burlington Road / East Driveway is shown in the following tables:

Table 4.67 - 2030 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and Burlington Road / East Driveway)

Int # 3 ALT	2030 Build AM Peak		Two-Way Stop		Int # 3 ALT	2030 Build PM Peak		Two-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	B	12.0	0.02	0.1	EBL	A	9.2	0.02	0.1
EB Approach	A	0.3	-	-	EB Approach	A	0.2	-	-
WBL	A	8.5	0.02	0.0	WBL	B	11.3	0.05	0.2
WB Approach	A	0.3	-	-	WB Approach	A	1.0	-	-
NBT	B	10.1	0.04	0.1	NBT	B	13.4	0.06	0.2
NB Approach	B	10.1	-	-	NB Approach	B	13.4	-	-
SBT	D	32.1	0.25	0.9	SBT	D	32.1	0.13	0.4
SB Approach	D	32.1	-	-	SB Approach	D	32.1	-	-

Conditions at the stop controlled intersection of Mayfield Road and Burlington Road / East Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 Build conditions.

The 2030 AM and PM peak hour tables for the intersection of Mayfield Road and Burlington Road / East Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Burlington Road / East Driveway.

A. Alternative Mayfield Road & West Driveway

The peak hour traffic analysis results of the 2030 Build condition for the unsignalized intersection of Mayfield Road and West Driveway is shown in the following tables:

Table 4.68 - 2030 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and West Driveway)

Int # A ALT	2030 Build AM Peak		One-Way Stop		Int # A ALT	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.01	0.0	WBL	B	10.6	0.02	0.1
WB Approach	A	0.1	-	-	WB Approach	A	0.2	-	-
NBT	C	23.9	0.21	0.8	NBT	D	25.4	0.12	0.4
NB Approach	C	23.9	-	-	NB Approach	D	25.4	-	-

Conditions at the stop controlled intersection of Mayfield Road and West Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2030 Build conditions.

The 2030 AM and PM peak hour tables for the intersection of Mayfield Road and West Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and West Driveway.

B. Alternative Mayfield Road & Center Driveway

The peak hour traffic analysis results of the 2030 Build condition for the unsignalized intersection of Mayfield Road and Center Driveway is shown in the following tables:

Table 4.69 - 2030 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and Center Driveway)

Int # B ALT	2030 Build AM Peak		One-Way Stop		Int # B ALT	2030 Build PM Peak		One-Way Stop	
Mayfield Rd. & Center Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Center Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.4	0.01	0.0	WBL	B	11.6	0.02	0.1
WB Approach	A	0.0	-	-	WB Approach	A	0.1	-	-
NBT	C	17.6	0.07	0.2	NBT	C	25.0	0.07	0.2
NB Approach	C	17.6	-	-	NB Approach	C	25.0	-	-

Conditions at the stop controlled intersection of Mayfield Road and Center Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2030 Build conditions.

The 2030 AM and PM peak hour tables for the intersection of Mayfield Road and Center Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2030 conditions at the intersection of Mayfield Road and Center Driveway.

2047 Build Traffic Analysis - Alternative Access

Traffic analyses were performed for the projected 2047 conditions under the Build scenario.

The alternate access only applies to the East Driveway combining with the Mayfield Road and Burlington Road intersection and all of the remaining driveways located on Mayfield Road (A and B). All remaining intersections are unchanged by the alternative scenario.

No-Build conditions will not be included in the alternative access analysis because it will only occur if the proposed development is constructed.

The traffic volumes used in the Build analyses can be seen in **Figure 3.19, Appendix A**. Copies of the capacity worksheets for the Build analyses are included in **Appendix P**.

3. Alternative Mayfield Road & Burlington Road / East Driveway

The peak hour traffic analysis results of the 2047 Build condition for the unsignalized intersection of Mayfield Road and Burlington Road / East Driveway is shown in the following tables:

Table 4.70 - 2047 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and Burlington Road / East Driveway)

Int # 3 ALT	2047 Build AM Peak		Two-Way Stop		Int # 3 ALT	2047 Build PM Peak		Two-Way Stop	
Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Burlington Rd.	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
EBL	B	12.0	0.02	0.1	EBL	A	9.2	0.02	0.1
EB Approach	A	0.3	-	-	EB Approach	A	0.2	-	-
WBL	A	8.5	0.02	0.0	WBL	B	11.3	0.05	0.2
WB Approach	A	0.3	-	-	WB Approach	A	1.0	-	-
NBT	B	10.1	0.04	0.1	NBT	B	13.4	0.06	2.0
NB Approach	B	10.1	-	-	NB Approach	B	13.4	-	-
SBT	D	32.1	0.25	0.9	SBT	D	32.1	0.13	0.4
SB Approach	D	32.1	-	-	SB Approach	D	32.1	-	-

Conditions at the stop controlled intersection of Mayfield Road and Burlington Road / East Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 Build conditions.

The 2047 AM and PM peak hour tables for the intersection of Mayfield Road and Burlington Road / East Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Burlington Road / East Driveway.

A. Alternative Mayfield Road & West Driveway

The peak hour traffic analysis results of the 2047 Build condition for the unsignalized intersection of Mayfield Road and West Driveway is shown in the following tables:

Table 4.71 - 2030 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and West Driveway)

Int # A ALT	2047 Build AM Peak		One-Way Stop		Int # A ALT	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & West Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.5	0.01	0.0	WBL	B	10.6	0.02	0.1
WB Approach	A	0.1	-	-	WB Approach	A	0.2	-	-
NBT	C	23.9	0.21	0.8	NBT	D	25.4	0.12	0.4
NB Approach	C	23.9	-	-	NB Approach	D	25.4	-	-

Conditions at the stop controlled intersection of Mayfield Road and West Driveway during the AM and PM peak hours were determined to operate with level-of-service D or better under the forecasted 2047 Build conditions.

The 2047 AM and PM peak hour tables for the intersection of Mayfield Road and West Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and West Driveway.

B. Alternative Mayfield Road & Center Driveway

The peak hour traffic analysis results of the 2047 Build condition for the unsignalized intersection of Mayfield Road and Center Driveway is shown in the following tables:

Table 4.72 - 2047 AM /PM Peak Hour Traffic Analysis
(Alternative Mayfield Road and Center Driveway)

Int # B ALT	2047 Build AM Peak		One-Way Stop		Int # B ALT	2047 Build PM Peak		One-Way Stop	
Mayfield Rd. & Center Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)	Mayfield Rd. & Center Driveway	LOS	Delay (sec/veh)	v/c	95th %tile Queue (Vehicles)
WBL	A	8.4	0.01	0.0	WBL	B	11.6	0.02	0.1
WB Approach	A	0.0	-	-	WB Approach	A	0.1	-	-
NBT	C	17.6	0.07	0.2	NBT	C	25.0	0.07	0.2
NB Approach	C	17.6	-	-	NB Approach	C	25.0	-	-

Conditions at the stop controlled intersection of Mayfield Road and Center Driveway during the AM and PM peak hours were determined to operate with level-of-service C or better under the forecasted 2047 Build conditions.

The 2047 AM and PM peak hour tables for the intersection of Mayfield Road and Center Driveway shown previously, indicate that the levels-of-service are within the acceptable range shown in *Table 1.2, Page 5* as stated in the ODOT **OATS Manual**.

No improvements were found to be necessary to accommodate the site generated traffic volumes under the forecasted 2047 conditions at the intersection of Mayfield Road and Center Driveway.

A corridor where no minor-street conflicts exist allows traffic to flow freely while only influenced by density, weather, and the integrity of the roadway. When minor-street conflicts in the form of driveways and streets are introduced, the mainline flow must adjust speeds and sometimes lanes to avoid all manner of delay and conflicts introduced by the combination of slowing, turning, merging, entering, and stopped vehicles.

The area around an intersection is affected by the numerous conflicts that can occur within and near the intersection. Therefore, the design and control of access features, geometric, and operations in vicinity of the intersections should be carefully considered. The use of access management principles is typically used to accomplish these goals.

The Transportation Research Board (TRB) **Access Management Manual, 2ND Edition** defines "access management" as:

"... the coordinated planning, regulation, and design of access between roadways and land development. It encompasses a range of methods that promote efficient and safe movement of people and goods by reducing conflicts on the roadway system and at its interface with other modes of travel."

The use of access management principles promotes the safe and efficient use of the transportation network. The management of access driveways along a roadway promotes a more orderly merging and diverging of traffic and presents fewer challenges to drivers by minimizing or managing the number of conflict points in a corridor.

It is our opinion that re-location of the east access driveway (C) to across from Burlington Road promotes good access management of the corridor through the consolidation of two intersections into one intersection. It is our recommendation that access driveway (C) be relocated across from Burlington Road as part of the Park Synagogue master plan.

The location of the Center Driveway (B) should adhere to the guidelines in the **State Highway Access *Management Manual*[7] *(SHAMM)***. The **SHAMM**[7] provides the minimum spacing requirements for driveways in *Table 4-2*. The Center Driveway (B) should be located at least 250 feet east of the West Driveway (A) and 250 feet west of the East Driveway (C) based on *Table 4-2* and the posted speed limit of 35 MPH.

4.2 Traffic Signal Warrant Analysis

Traffic signal warrants were reviewed to determine if traffic signal control is justified as a viable traffic control method at the intersection of Mayfield Road and Burlington Road/East Driveway intersection under the alternative scenario where the minor streets are aligned.

The 2047 Build traffic conditions at the intersection will be analyzed and compared to the criteria established by the **Ohio Manual of Uniform Traffic Control Devices** [2] and professional engineering judgement to determine if traffic signal control is warranted at the intersection. If the 2047 Build conditions are found to warrant traffic signal control additional analyses will be prepared to determine if the 2027 or 2030 conditions also warrant signal control.

The **OMUTCD** [2] provides nine (9) sets of criteria, called warrants for the justification of traffic signal control. The warrants are;

- Warrant 1 - Eight Hour Vehicular Volume
- Warrant 2 - Four Hour Vehicular Volume
- Warrant 3 - Peak Hour Vehicular Volume
- Warrant 4 - Pedestrian Volume
- Warrant 5 - School Crossing
- Warrant 6 - Coordinated Signal System
- Warrant 7 - Crash Experience
- Warrant 8 - Roadway Network
- Warrant 9 - Intersection Near a Grade Crossing

All of the collected data and forecasted traffic volumes were analyzed and compared to the thresholds established by the criteria from the **OMUTCD** [2]. Warrant #9 will not be analyzed as there is no railroad grade crossing in vicinity of the intersection. The ODOT Signal Warrant Spreadsheet will be used to perform the analyses.

The **OMUTCD** [2] provides an "Option" that if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, or the speed limit exceeds 40 miles per hour the minimum thresholds may be reduced to 70% levels.

The **TEM** [10] *Section 402-3.2* provides the following additional guidance regarding the use of the 100 percent and 70 percent values in signal warrants 1 -3:

*"For new ODOT signals, Warrants 1, 2 and 3 shall be based on the 100 percent values (**OMUTCD** [2] Chapter 4C) and right-turn reduction factors except in the following circumstance. If there are five or more crashes in one year that can be corrected with the addition of a signal, and the speed exceeds 40 miles per hour on the major street, Warrants 1, 2 and 3 may be based on the 70 percent values combined with engineering judgment and right-turn reduction factors."*

Crash reports were reviewed using the Ohio Department of Transportation GIS Crash Analysis Tool (GCAT). The ODOT GIS Crash Analysis Tool can currently be found at the following web address:

https://gis.dot.state.oh.us/tims/

The available crash data for the years 2021 through 2024 at the intersection was reviewed. It was determined that there were no crashes of types susceptible to correction by a traffic control signal.

The signal warrant analysis will review the conditions for the 100% levels as the Mayfield Road speed limit does not exceed 40 miles per hour and the City of Cleveland Heights is not considered an isolated community having a population of less than 10,000.

In order to determine the anticipated Build conditions, the forecasted No-Build traffic volumes were added to the expected site generated traffic. The previously discussed growth rate (*Section 3.2*) was applied to the collected nine hour traffic count data for the intersection in order to determine the No-Build traffic volumes. The design hour factors were not applied to hourly volumes to determine the No-Build volumes for use in the traffic signal warrant analysis.

The volume of site generated traffic at the intersection was determined using the hourly percentages from the time-of-day distribution chart from the **ITE Trip Generation Manual** [8] for land uses #215, #221 and #550. The turn movements shown in **Figure 3.1** and their corresponding percentage of the daily traffic were used to determine the hourly volume for each movement. Excel spreadsheets detailing the calculated hourly site generated traffic and the resulting expected 2047 Build traffic volumes can be found in **Appendix Q**.

The following table details the results of the traffic signal warrant analysis for the 2047 Build conditions. Copies of the signal warrant analysis worksheets can be found **Appendix Q**.

Table 4.73 Traffic Signal Warrant Analysis
(Mayfield Road & Burlington Road/East Driveway)

CONDITIONS	WARRANTS							
	1	2	3	4	5	6	7	8
2047 Build	NO	NO	NO	NO	NO	NO	NO	NO

It was determined from the evaluation of the warrants established by the **OMUTCD** [(2)], that a traffic signal ***is not*** expected to be justified as required by the **Ohio Revised Code** based upon the forecasted 2047 Build conditions at the intersection of Mayfield Road and Burlington Road/East Driveway. Traffic signal control will not be considered a viable method for traffic control at the intersection.

4.3 Pedestrian Crossing Analysis

It is expected that local residents and visitors to the area will use the Park Synagogue site for walking and recreation. Mayfield Road has controlled pedestrian crossings at the signalized intersections with Lee Road to the west of the site and at Forest Hills Boulevard to the east of the site. These locations are approximately 3,500 feet apart with multiple residential streets located in between. It is unrealistic to assume pedestrians crossing Mayfield Road will walk to the signalized crossing locations of Mayfield Road at Lee Road or Forest Hills Boulevard based on the distances from the Park Synagoue site.

The ITE **Design and Safety of Pedestrian Facilities** states that, *"It is reasonable to expect pedestrians to walk a block (300 to 600 feet) out of their way to a better crossing location."* The 300 foot distance is supported through its use as the minimum allowable spacing between crossing locations required for satisfaction of the **OMUTCD** [(2)] traffic signal warrant #4 - Pedestrian Volume criteria.

Pedestrian crossings are intended to increase pedestrian safety and facilitate the flow of vehicular traffic. They are vital in maintaining order in the streets and protecting both motorists and pedestrians.

Although numerous treatments exist at unsignalized crossings, there is growing concern about their effectiveness and just what should be used in any given location. A recent research project jointly sponsored by the National Cooperative Highway Research Program was initiated to address this particular need. The research was conducted by the Texas Transportation Institute (TTI). The project resulted in the publication of **NCHRP Report 562 - Improving Pedestrian Safety at Unsignalized Crossings** [(11)].

The research team developed guidelines for selecting pedestrian crossing treatments for unsignalized intersections and mid-block locations. Quantitative procedures in the guidelines use key input variables (such as, pedestrian volume, street crossing width, and traffic volume) to recommend one of four possible crossing treatment categories:

- Marked crosswalk;
- Enhanced, high-visibility, or "active when present" traffic control device;
- Red signal or beacon device; or
- Conventional traffic control signal

It should be noted that"levels" of pedestrian treatments are based in part on the volume of pedestrians crossing the uncontrolled approach of the intersection. Compliance with the Americans with Disabilities Act (ADA) requirements, however, is not dependant on the volume of pedestrians crossing and compliance is required at any location where pedestrian accommodations are being provided.

The Federal Highway Administration issued a final report and recommended guidelines in September of 2005 titled **Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations**. The study notes that:

"When considering marked crosswalks at uncontrolled locations, the question should not simply be: 'Should I provide a marked crosswalk or not?' Instead, the questions should be, 'Is this an appropriate tool for getting pedestrians across the street?' Regardless of whether crosswalks are used, there remains the fundamental obligation to get pedestrians safely across the street."

The purpose of the study was to determine whether marked crosswalks at uncontrolled locations are safer than unmarked crosswalks under various traffic and roadway conditions. Another objective of the FHWA report was to provide recommendations on how to provide safer crossings for pedestrians. This included providing assistance on make decisions regarding:

- Where marked crosswalks may be installed.
- Where an existing marked crosswalk, by itself, is acceptable.
- Where an existing marked crosswalk should be supplemented with additional improvements.
- Where one or more other engineering treatments should be considered instead of having only a marked crosswalk.
- Where marked crosswalks are not appropriate.

The report puts forth the following guidelines for crosswalk installation:

Marked pedestrian crosswalks may be used to delineate preferred pedestrian paths across roadways at non-signalized locations where engineering judgment dictates that the number of motor vehicle lanes, pedestrian exposure, average daily traffic (ADT), posted speed limit, and geometry of the location would make the use of specially designated crosswalks desirable for traffic/pedestrian safety and mobility.

Marked crosswalks alone (i.e., without traffic-calming treatments, traffic signals and pedestrian signals when warranted, or other substantial crossing improvement) are insufficient and should not be used where the speed limit exceeds 40 MPH and on a roadway with four or more lanes without a raised median or crossing island that has (or will soon have) an ADT of 12,000 or greater.

The report presented several key findings related to the number of lanes on the roadway, the median treatment, and the Average Daily Traffic. These findings are summarized below:

- No significant difference between marked and unmarked crosswalks on a multi-lane roadway with an ADT less than 12,000 vehicles per day.

- Marked crosswalks were found to have a significantly higher pedestrian crash rate than unmarked crosswalks on multi-lane roadways with an ADT greater than 12,000 vehicles per day and no raised median.

- Marked crosswalks were found to have a significantly higher pedestrian crash rate than unmarked crosswalks on multi-lane roadways with an ADT greater than 15,000 vehicles per day and with a raised median.

It should be noted that the report found that area type, mid-block versus intersection, speed limit, one-way versus two-way, crosswalk condition, and crosswalk pavement markings had no effect on the occurrence of pedestrian crashes.

Gap Analysis

Pedestrians need to wait for a gap in the traffic stream that is of sufficient duration to permit a reasonably safe crossing. Alternate gaps and blockades are inherent in the traffic stream and are different at each crossing location. When the delay between the occurrence of adequate gaps becomes excessive, pedestrians may become impatient and endanger themselves by attempting to the cross the roadway during inadequate gaps in the traffic stream.

The Institute of Transportation Engineers **School Trip Safety Program Guidelines** [13] states that on average, at least one adequate gap should occur each minute to allow for children to cross without undue delay or risk. The analysis of crossing the uncontrolled approaches at the intersections under study will be based on providing one gap per minute.

An intersection Gap Analysis was performed for Mayfield Road at Burlington Road. Data included in the gap analysis includes roadway width, speed, and volumes. A gap (N) value greater than 15 is considered desirable. A N value of 15 or higher would indicate that over a 15 minute period there is at least one suitable gap per minute to cross the uncontrolled approach of a roadway**.** The gap analyses were based upon highest 15 minute traffic volume experienced during the AM or PM peak hours. A copy of the gap analysis worksheet can be seen in **Appendix R**.

The results of the Gap Analysis are as follows:

- Mayfield Road @ Burington Road = 0.15 gaps per 15 minute peak period

The analysis indicates that there are not enough adequate gaps in the through traffic stream of the uncontrolled approaches at Burlington Road for the safe crossing of the roadway. An alternative method to control and/or interrupt the through traffic at the study area intersection may be necessary based on the results of the gap analysis.

NCHRP Report 562 Analysis

The **National Cooperative Highway Research Program (NCHRP) Report 562 Improving Pedestrian Safety at Unsignalized Crossings**[11] will be used to justify proposed crosswalk treatments at the study area intersections. **NCHRP Report 562** [11] was developed with two main objectives. The first objective was to recommend selected engineering treatments to improve safety for pedestrian crossings and the second was to recommend modifications to the **Manual on Uniform Traffic Control Devices**[2] pedestrian signal warrant.

As part of the report, guidelines were provided for general recommendations on pedestrian crossing treatments at unsignalized intersections. The first step of the procedure is to select the necessary worksheet based on the roadway speed and the community size. The worksheet then assists in determining base conditions, and analyzing pedestrian signal warrants and pedestrian delay. Data included in the gap analysis includes roadway width, speed, and volumes. Based on the results of the worksheet a treatment category is recommended for the unsignalized crossing location.

The guidelines found in **NCHRP Report 562** [11] are divided into broad classes of elements and devices. Elements are used either uniquely or to supplement a device. A device represents the primary component of a pedestrian treatment.

Elements can further be grouped into two categories. The first is supplemental signs and markings. This category is composed of applications of signs and markings beyond the standard crosswalk markings and pedestrian crossing signs discussed in the "crosswalk" category of treatments. Items in this category can include advance stop lines and advance signing.

The second element is geometric elements. This pertains to crosswalk elements that are permanent installations but are not signs, markings, or devices. These elements are installed based on engineering judgement rather than warrants and can include items such as median refuge islands and curb extensions.

Devices have been divided into the following categories:

- **No Treatment**: "Do Nothing"
- **Crosswalk**: The category includes standard crosswalk markings and pedestrian crossing signs, as opposed to unmarked crossings.
- **Enhanced**: An enhanced treatment includes devices that enhance the visibility of the crossing location and pedestrians waiting to cross. Warning signs, markings, or beacons in this category are present and active at the crossing location at all times.
- **Active**: An active treatment, also called "active when present" includes devices designed to display a warning only when pedestrians are present or crossing the street.
- **Red**: This category includes those devices that display a circular red indication (signal or beacon) to motorists at the crossing location.
- **Signal**: This category pertains to traffic control signals.

The **NCHRP Report 562** [11] worksheets were completed for the peak pedestrian volume period. Copies of the **NCHRP Report 562** [11] worksheets can be found in **Appendix R**.

The pedestrian treatment analysis worksheet determined that the **"No Treatment"** level category was recommended at the intersection of Mayfield Road and Burlington Road.

It should be noted that this treatment "level" is based in part on the volume of pedestrians crossing the uncontrolled approach of the intersection. Until the pedestrian count reaches at least 20 pedestrians in a one hour period, the results of these analyses would be expected to remain the same.

The pedestrian treatment analysis worksheet determined that the **"Red"** level category would be recommended if the location was found to have 20 or more pedestrian crossings on the uncontrolled intersection approaches. Based on the "red" level treatment, additional treatments like flashing beacons or a pedestrian hyrbid beacons should be considered.

Based on the existing conditions and the results of the analyses**,** we do not recommend providing a marked crosswalk on Mayfield Road at mid-block location at the Park Synagogue site.

It is recommended that an additional count and study be performed after completion of the residential component of the redevelopment and when the time of the year and weather conditions are suitable to outdoor activities which may increase pedestrian crossing activity enough to warrant pedestrian safety measures. Until the pedestrian count reaches at least 20 pedestrians in a one hour period, the results of this analysis would be expected to remain the same.

4.4 Auxiliary Turning Lane Warrant Analysis

It is the intent of this section of the report is to evaluate the need for exclusive deceleration and turning lanes at the proposed access driveways based on the following conditions:

Mayfield Road and West Driveway

- 4-Lane roadway
- Posted speed limit of 35 miles per hour

Mayfield Road and Center Driveway

- 4-Lane roadway
- Posted speed limit of 35 miles per hour

Mayfield Road and East Driveway

- 4-Lane roadway
- Posted speed limit of 35 miles per hour

Euclid Heights Boulevard and South Driveway

- 2-Lane roadway
- Posted speed limit of 35 miles per hour

The following table shows the results of the analysis for the need of exclusive deceleration and turn lanes under the forecasted Build conditions. Copies of the ODOT turn lane warrant graphs can be seen in **Appendix S**.

Table 4.74 Turn Lane Warrants

LOCATION (TURN LANE)	2027		2030		2047	
	AM	PM	AM	PM	AM	PM
Mayfield Road & West Driveway (A) (Westbound Left)	NO	NO	NO	NO	NO	NO
Mayfield Road & West Driveway (A) (Eastbound Right)	NO	NO	NO	NO	NO	NO
Mayfield Road & East Driveway (C) (Westbound Left)	NO	NO	**YES**	**YES**	**YES**	**YES**
Mayfield Road & East Driveway (C) (Eastbound Right)	NO	NO	NO	NO	NO	NO
Euclid Heights Blvd. & South Driveway (D) (Eastbound Left)	NO	NO	NO	NO	NO	NO
Euclid Heights Blvd. & South Driveway (D) (Westbound Right)	NO	NO	NO	NO	NO	NO

The results of the turn lane analyses indicate that an exclusive left turn lanes are not warranted at any of the sites driveways except for the East Driveway. A left turn lane is warranted at the East Driveway **IS** warranted under the expected 2030 and 2047 Build conditions.

A turn lane length calculation is not necessary in this instance because there is an existing two-way left turn lane on Mayfield Road.

The results of the turn lane analyses indicate that exclusive right turn lanes are not warranted at any of the sites driveways under the expected 2027, 2030 and 2047 Build conditions.

The following table shows the results of the analysis for the need of exclusive deceleration and turn lanes under the forecasted alternative Build conditions. Copies of the ODOT turn lane warrant graphs can be seen in **Appendix T**.

Table 4.75 Turn Lane Warrants (Alternative Build)

LOCATION (TURN LANE)	2030		2047	
	AM	PM	AM	PM
Mayfield Road & West Driveway (A) (Westbound Left)	NO	NO	NO	NO
Mayfield Road & West Driveway (A) (Eastbound Right)	NO	NO	NO	NO
Mayfield Road & Center Driveway (B) (Westbound Left)	NO	NO	NO	NO
Mayfield Road & Center Driveway (B) (Eastbound Right)	NO	NO	NO	NO
Mayfield Road & Alt. East Driveway (C) (Westbound Left)	NO	**YES**	NO	**YES**
Mayfield Road & Alt. East Driveway (C) (Eastbound Right)	NO	NO	NO	NO

The results of the turn lane analyses indicate that an exclusive left turn lanes are not warranted at any of the sites driveways except for the East Driveway. A left turn lane is warranted at the East Driveway **IS** warranted under the expected 2030 and 2047 alternative Build conditions.

A turn lane length calculation is not necessary in this instance because there is an existing two-way left turn lane on Mayfield Road.

The results of the turn lane analyses indicate that exclusive right turn lanes are not warranted at any of the sites driveways under the expected 2030 and 2047 alternative Build conditions.

4.5 Turn Lane Length Analysis

Analyses were performed to determine the necessary turn lane storage length in order to accommodate the turn lanes that were found to have a deficient QSR value in **Section 4.1** analyses.

The turn lane calculations for the eastbound left turn lane at the intersection of Lee Road and Euclid Heights Boulevard will be based on the following conditions:

- Signalized
- Design Speed = 35 Miles Per Hour
  - Condition A
- 2047 Build Traffic Volumes

The following tables details the results of the turn lane length analysis based upon the highest anticipated turn volumes at the intersection under the expected 2047 Build peak hour conditions.

Table 4.76 Turn Lane Length Analysis
(Lee Road & Euclid Heights Boulevard)

Movement Direction	DHV	No. of Lanes	Cycles/ Hour	Average Veh/ Cycle/ Lane	Design Speed (mph)	Fig. 401-10 Queue Length (ft)	Fig. 401-9 Condition A	Backup Length (ft)	Turn Lane Length (ft)
EB LT	78	1	34	2.29	35	150	150		325
EB T/RT	239	1	34	7.03	35	325		325	
WB LT	90	1	34	2.65	35	150	150		400
WB T/RT	371	1	34	10.91	35	400		400	

The turn lane calculations for the westbound left turn, and northbound right turn lane at the intersection of South Taylor Road and Euclid Heights Boulevard will be based on the following conditions:

- Signalized
- Design Speed = 35 Miles Per Hour
  - Condition A
- 2047 Build Traffic Volumes

The following tables details the results of the turn lane length analysis based upon the highest anticipated turn volumes at the intersection under the expected 2047 Build peak hour conditions.

Table 4.77 Turn Lane Length Analysis
(South Taylor Road & Euclid Heights Boulevard)

Movement Direction	DHV	No. of Lanes	Cycles/ Hour	Average Veh/ Cycle/ Lane	Design Speed (mph)	Fig. 401-10 Queue Length (ft)	Fig. 401-9 Condition A	Backup Length (ft)	Turn Lane Length (ft)
WB LT	180	1	34	5.29	35	250	250		250
WB T/RT	170	1	34	5.00	35	200		200	
NB RT	230	1	34	6.76	35	275	275		325
NB T/LT	477	2	34	7.01	35	325		325	

4.6 Improvements to Accommodate Study Area Traffic

Recommended Improvements to Serve Future Conditions without the Development
The following improvements were recommended to accommodate the site generated traffic under the forecasted No-Build conditions at the study area intersections.

Lee Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend eastbound left turn lane to a length of 325 feet.

South Taylor Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend westbound left turn lane to a length of 250 feet.
- Extend northbound left turn lane to a length of 325 feet.

Recommended Improvements to Mitigate the Traffic Associated with the Development
The results of the turn lane analyses indicate that a left turn lane is warranted on Mayfield Road at the East Driveway (Access C) under the expected 2030 and 2047 Build conditions. The construction of a left turn lane is not necessary because there is an existing two-way left turn lane on Mayfield Road.

The proposed re-location of the east access driveway (C) to across from Burlington Road promotes good access management of the corridor through the consolidation of two intersections into one intersection. It is our recommendation that access driveway (C) be relocated across from Burlington Road as part of the Park Synagogue master plan. It should be noted that traffic signal control was not found to be warranted at the intersection and therefore is not recommended.

The **NCHRP Report 562** [11] pedestrian treatment analysis worksheet determined that the **"No Treatment"** level category was recommended at the intersection of Mayfield Road and Burlington Road. The analysis worksheet determined that the **"Red"** level category would be recommended if the location was found to have 20 or more pedestrian crossings on the Mayfield Road approaches.

Based on the existing conditions and the results of the analyses**,** we do not recommend providing a marked crosswalk on Mayfield Road at Burlington Road or a mid-block location for the Park Synagogue site.

It is recommended that an additional count and study be performed after completion of the residential component of the redevelopment and when the time of the year and weather conditions are suitable to outdoor activities which may increase pedestrian crossing activity enough to warrant pedestrian safety measures. Until the pedestrian count reaches at least 20 pedestrians in a one hour period, the results of this analysis would be expected to remain the same.

The Center Driveway (B) should be located at least 250 feet east of the West Driveway (A) and 250 feet west of the East Driveway (C).

The following improvements were recommended to accommodate the site generated traffic under the forecasted Build conditions at the study area intersections.

Lee Road & Euclid Heights Boulevard (2030 and 2047)

- Extend westbound left turn lane to a length of 400 feet.

No additional improvements were recommended to accommodate the forecasted 2027, 2030, and 2047 Build conditions.

The recommended lane use and traffic control for the study area to accommodate expected traffic volumes can be seen in **Figure 4.1, Appendix A**.

Chapter 5
Conclusions

Based on the results of the analyses, we offer the following conclusions and recommendations:

5.1 This Traffic Impact Study (TIS) has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The redevelopment project is intended to transform Park into an intergenerational campus, serving a broad civic purpose with multi-family and age in-place housing, a public park, and a new home for arts and cultural institutions.

5.2 Synagogue Park is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. **Figure 1.1, Appendix A** shows the location of the development. **Figure 1.2, Appendix A** shows the existing conditions at the development site.

5.3 The redevelopment of the site is expected to occur in two phases. Phase 1 of the redevelopment is expected to occur by the year 2027 and full build of the redevelopment is expected to occur by the year 2030. The design year for the proposed project was therefore considered 2047 in order to provide a twenty year condition from the opening year of 2027.

5.4 The site plan for the full build conditions is shown in **Figure 1.3, Appendix**..

5.5 Phase 1 of the project was analyzed based on the following program description:

- Kangesser Hall and Boiler House demolished.
- Park Synagogue restored for K-12 and Higher Education Art Instruction (B1).
- 15 townhouse apartments (30 units) added to the south of the synagogue (C1).
- Daycare and Mikvah continue with current use.
- Entry drive B removed.

Phase 1 is expected to occur in the year 2027, the opening year.

5.6 The site plan for the development shows that the three existing driveways will remain as site access driveways under the future 2027 conditions with entry drive B being removed. Entry drive B may be retained or relocated dependent on the building footprints for A1 and A2 shown in **Figure 1.3, Appendix A** .There are two site access driveways along the south side of Mayfield Road and one access driveway on the north side of Euclid Heights Boulevard. All driveways are full access locations that permit all ingress and egress turn movements.

5.7 Phase 2 of the project was analyzed based on the following program description:

- Northwest multifamily building with new daycare at 4 stories, 100k, 150 units (A1).
- Northeast multifamily building at 5 stories, 100k, 150 units (A2).
- 30 multifamily units added north of the synagogue (A3).
- 20 multifamily units added north of the synagogue (A4).
- 30 multifamily units added southwest of the synagogue (C2).
- Daycare demolished and relocated to commercial space below northwest multifamily building.

Phase 2 is expected to open in the year 2030, the full build year.

5.8 A alternative access scenario will also consider the relocation of the east most driveway (C) along Mayfield Road to align with Burlington Road and a third driveway along Mayfield Road between driveway A and driveway C. The driveway location will be dependent on the final location of the A1 and A2 building footprints.

5.9 The weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM. The weekday PM peak hour of traffic was found to be 4:30 PM to 5:30 PM. These periods were used to forecast expected and future traffic volumes since they reflect the period of the highest volume of vehicular traffic flow for the study area roadways.

5.10 The development is expected to generate the following hourly traffic volumes during the peak periods for phase 1 of the redevelopment:

ITE TRIP GENERATION			PHASE 1 TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
550	College / University	50 Students	6	2	3	5
TOTAL NON-PASS-BY TRIPS			**8**	**10**	**11**	**11**
			18		**22**	

5.11 The Phase 2 of the redevelopment are expected to generate the following hourly traffic volumes during the peak periods:

ITE TRIP GENERATION			PHASE 2 TRIP ENDS			
ITE CODE	DESCRIPTION	SIZE	Weekday AM Peak Hour (Enter/Exit)		Weekday PM Peak Hour (Enter/Exit)	
215	Single Family Attached Housing	30 Units	2	8	8	6
215	Single Family Attached Housing	20 Units	1	4	5	3
215	Single Family Attached Housing	30 Units	2	8	8	6
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
221	Multifamily Housing (Mid-Rise)	150 Units	13	41	36	23
TOTAL NON-PASS-BY TRIPS			**31**	**102**	**93**	**61**
			133		**154**	

5.12 The following improvements were recommended to accommodate the site generated traffic under the forecasted No-Build conditions at the study area intersections.

Lee Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend eastbound left turn lane to a length of 325 feet.

South Taylor Road & Euclid Heights Boulevard (2027, 2030, and 2047)

- Extend westbound left turn lane to a length of 250 feet.
- Extend northbound left turn lane to a length of 325 feet.

5.13 The results of the turn lane analyses indicate that a left turn lane is warranted on Mayfield Road at the East Driveway (Access C) under the expected 2030 and 2047 Build conditions. The construction of a left turn lane is not necessary because there is an existing two-way left turn lane on Mayfield Road.

5.14 The proposed re-location of the east access driveway (C) to across from Burlington Road promotes good access management of the corridor through the consolidation of two intersections into one intersection. It is our recommendation that access driveway (C) be relocated across from Burlington Road as part of the Park Synagogue master plan. It should be noted that traffic signal control was not found to be warranted at the intersection and therefore is not recommended.

5.15 The **NCHRP Report 562** [11] pedestrian treatment analysis worksheet determined that the **"No Treatment"** level category was recommended at the intersection of Mayfield Road and Burlington Road. The analysis worksheet determined that the **"Red"** level category would be recommended if the location was found to have 20 or more pedestrian crossings on the Mayfield Road approaches.

5.16 It is recommended that an additional count and study be performed after completion of the residential component of the redevelopment and when the time of the year and weather conditions are suitable to outdoor activities which may increase pedestrian crossing activity enough to warrant pedestrian safety measures. Until the pedestrian count reaches at least 20 pedestrians in a one hour period, the results of this analysis would be expected to remain the same.

5.17 The Center Driveway (B) should be located at least 250 feet east of the West Driveway (A) and 250 feet west of the East Driveway (C).

5.17 The following improvements were recommended to accommodate the site generated traffic under the forecasted Build conditions at the study area intersections.

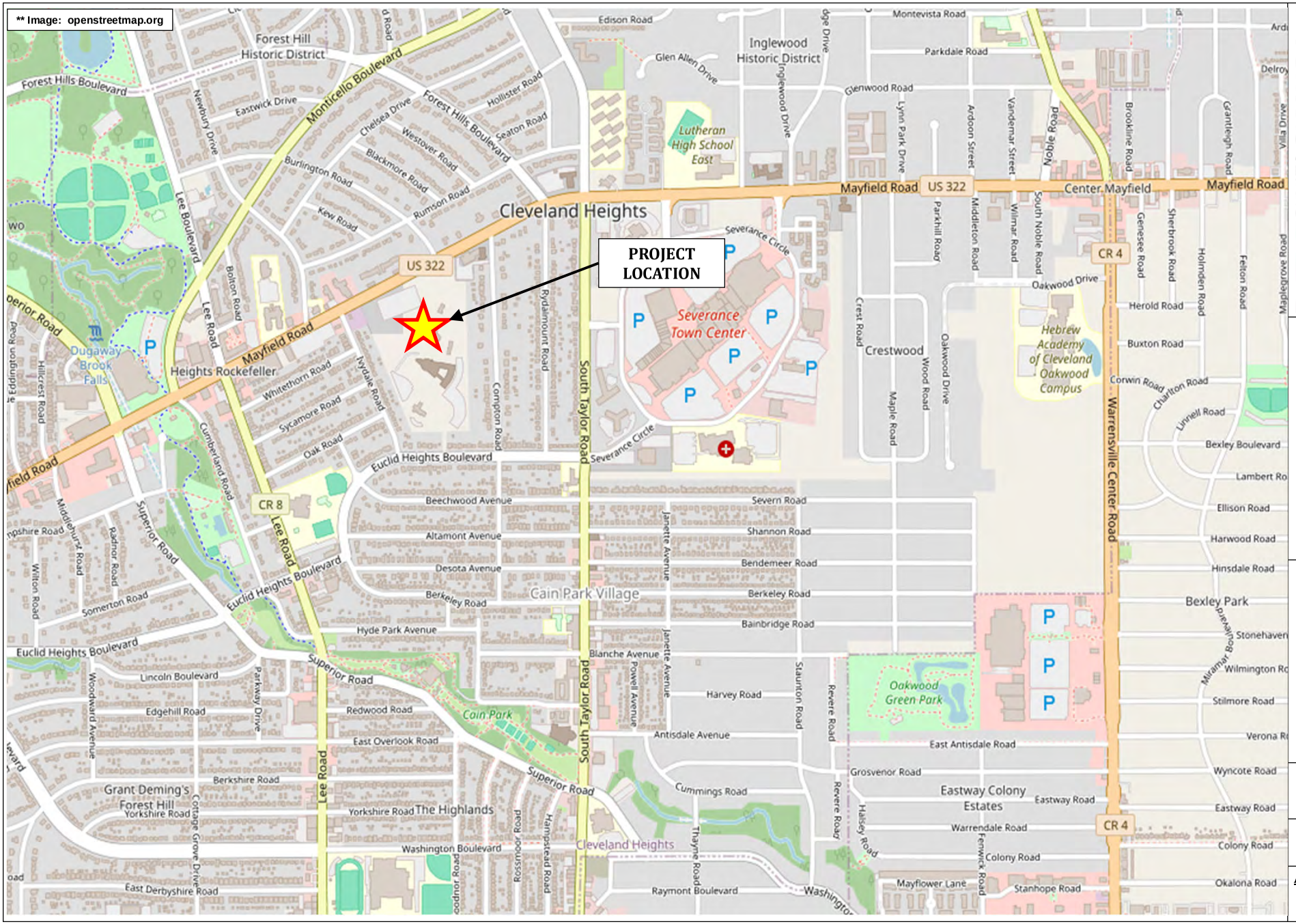
Lee Road & Euclid Heights Boulevard (2030 and 2047)

- Extend westbound left turn lane to a length of 400 feet.

5.18 No additional improvements were recommended to accommodate the forecasted 2027, 2030, and 2047 Build conditions.

5.19 Based upon the results of the analysis in this study and the corresponding recommendations, it can be seen that the redevelopment traffic can be accommodated without adversely impacting the area roadway network.

Appendix A
Figures



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Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Location Map

NORTH
NOT TO SCALE

FIGURE
1.1

APPENDIX
A



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Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Site Plan
Existing Conditions

NORTH
NOT TO SCALE

FIGURE
1.2

APPENDIX
A



PARK SYNAGOGUE DEVELOPMENT SUMMARY

Parcel 'A' [along Mayfield Rd]	PPN 684-34-014	13.375 Acres	582,769 Sq.Ft.
Parcel 'B' [historic synagogue]	PPN 684-34-015	8.1069 Acres	353,138 Sq.Ft.
Parcel 'C' [Euclid Heights Blvd]	PPN 684-35-025	7.3267 Acres	319,150 Sq.Ft.
		28.8026 Acres	**1,255,057 Sq.Ft.**

Building/Block	Program	Area	Units	Height
A1 - NW Mayfield	Mixed-Use Multifamily	150,000 Sq.Ft.	150	72'
A2 - NE Mayfield	Mixed-Use Multifamily	150,000 Sq.Ft.	150	72'
A3 - Former Kangesser	Amenity / Multifamily	37,500 Sq.Ft.	30	35'
A4 - Former BoilerHouse	Multifamily	25,000 Sq.Ft.	20	35'
B1 - Existing Synagogue	Community Arts Center	75,000 Sq.Ft.	n/a	Varies
C1 - SE Euclid Heights	Townhouse Apartments	37,500 Sq.Ft.	30	35'
C2 - SW Euclid Heights	Multifamily	37,500 Sq.Ft.	30	35'
Total		**512,500 Sq.Ft.**	**410**	

Parcel 'A'	582,769 Sq.Ft. / 750 per unit =	777 units allowable	330 proposed
Parcel 'C'	319,150 Sq.Ft. / 750 per unit =	424 units allowable	60 proposed

Preliminary Development Plan
S-2 Mixed Use Zoning | 2 12 2025

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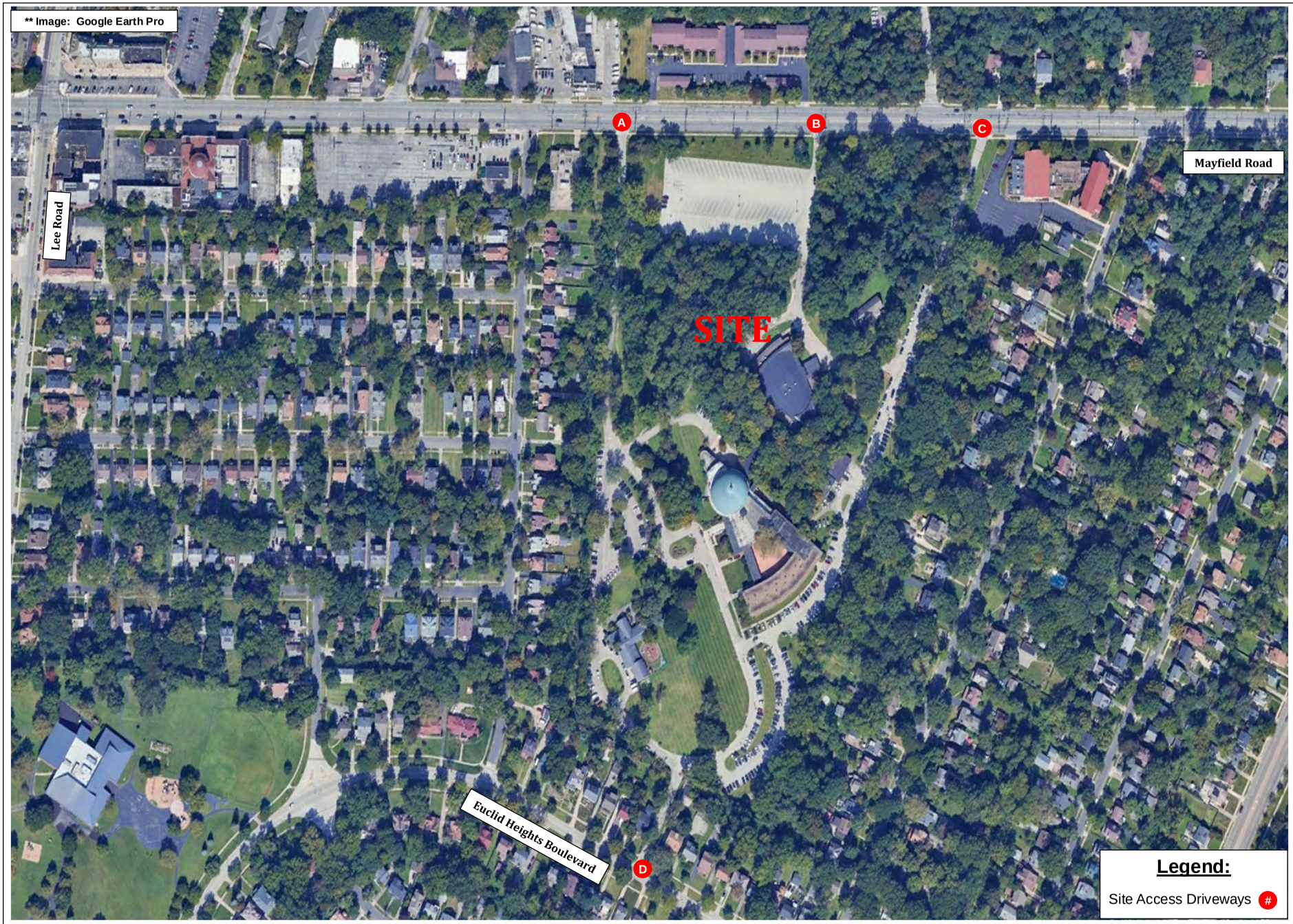
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Site Plan
Full Build - 2030

NORTH
NOT TO SCALE

FIGURE
1.3

APPENDIX
A



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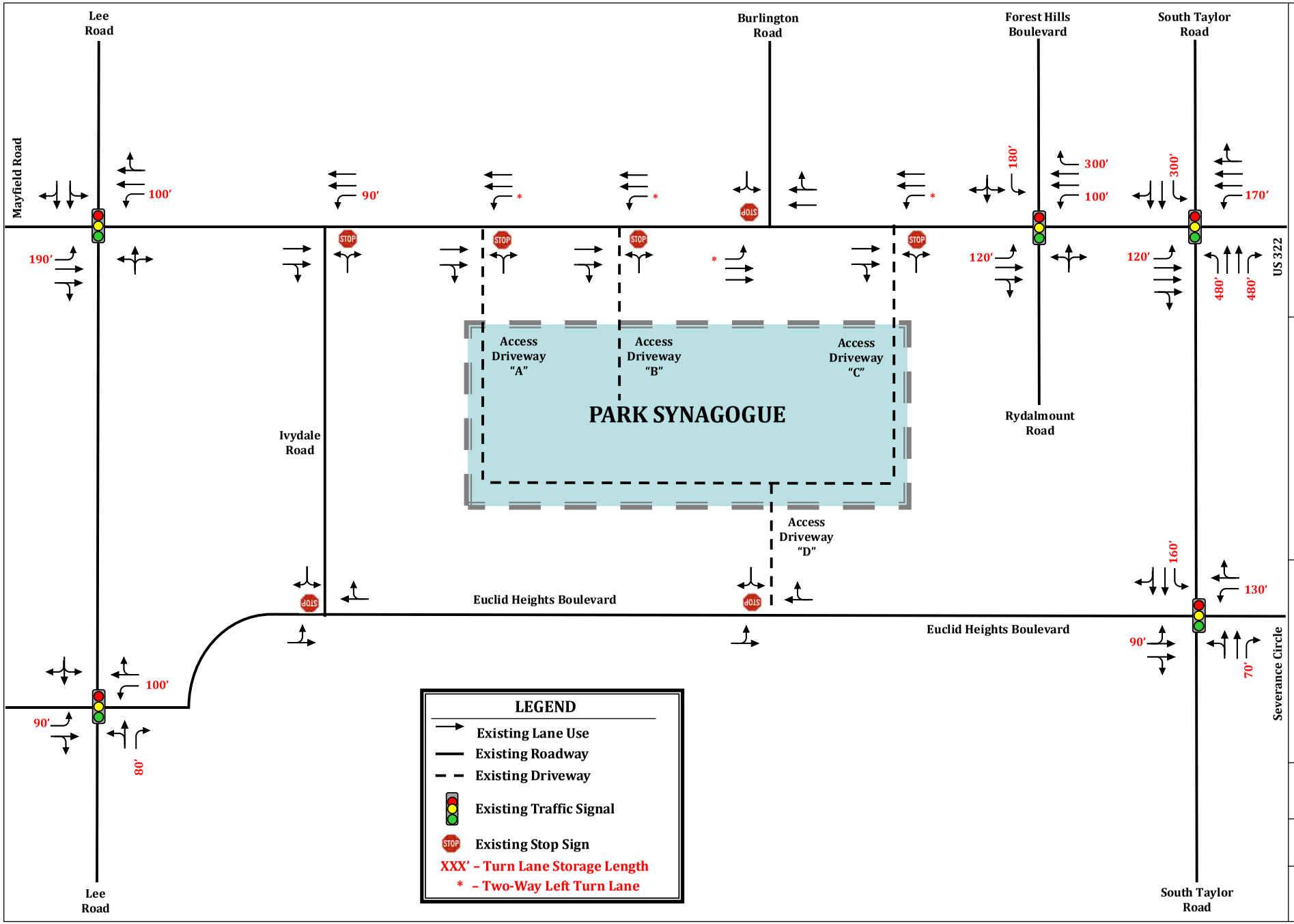
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Aerial View

NORTH
NOT TO SCALE

FIGURE
2.1

APPENDIX
A



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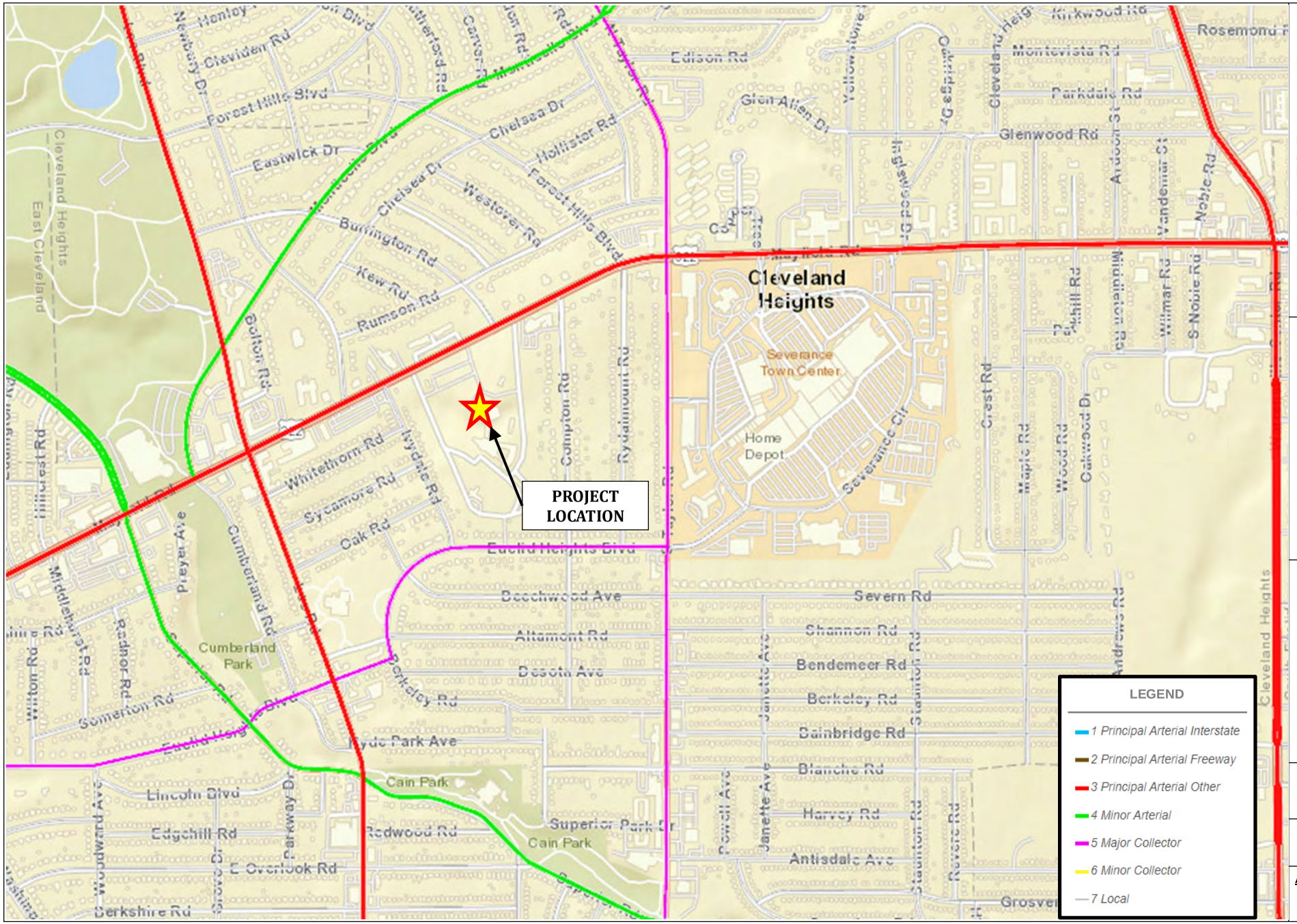
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Cleveland Heights, Ohio

Base Conditions
Lane Use & Traffic Control

NORTH
NOT TO SCALE

FIGURE
2.2

APPENDIX
A



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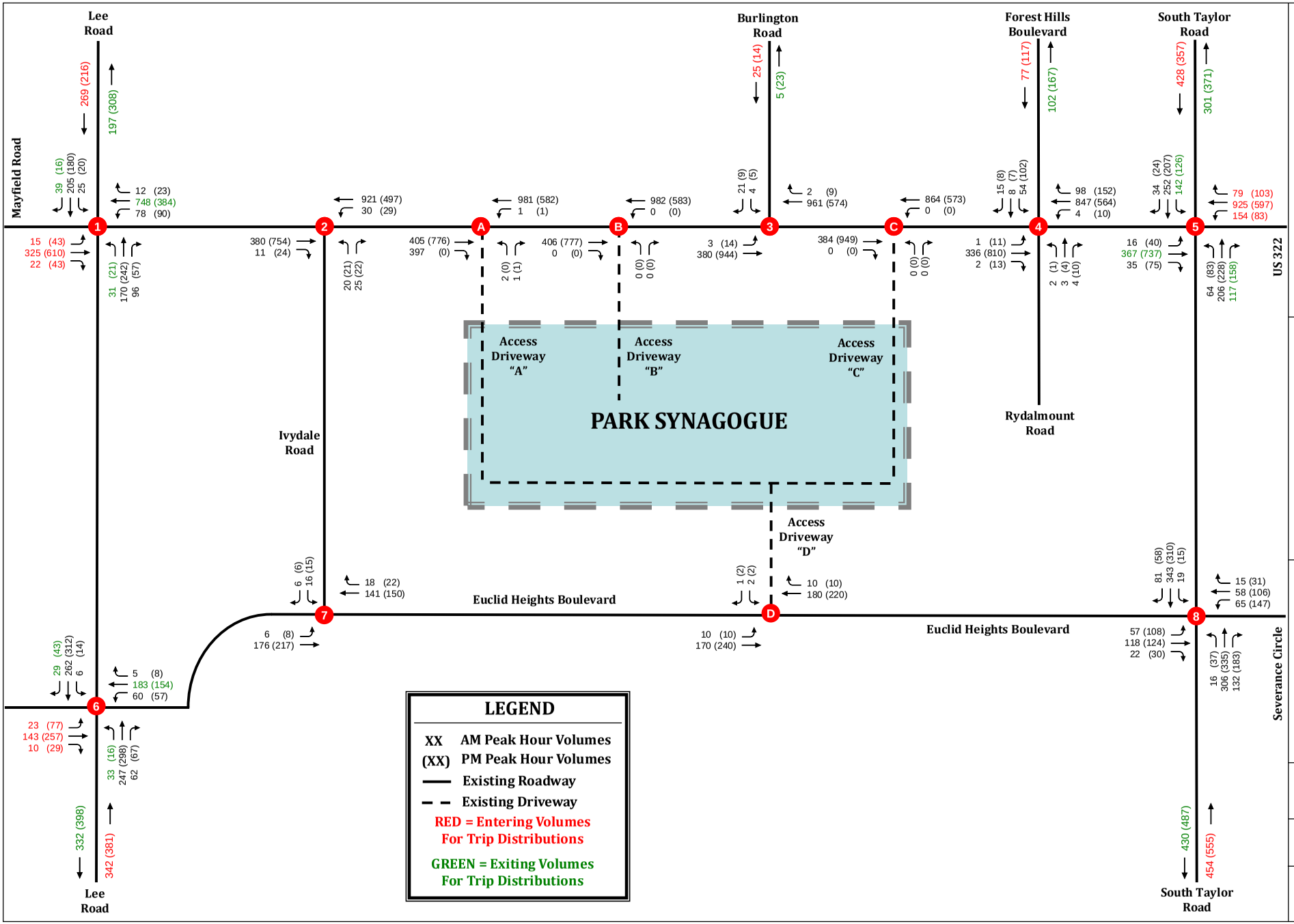
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Functional Classification
(ODOT TIMS)

NORTH
NOT TO SCALE

FIGURE
2.3

APPENDIX
A



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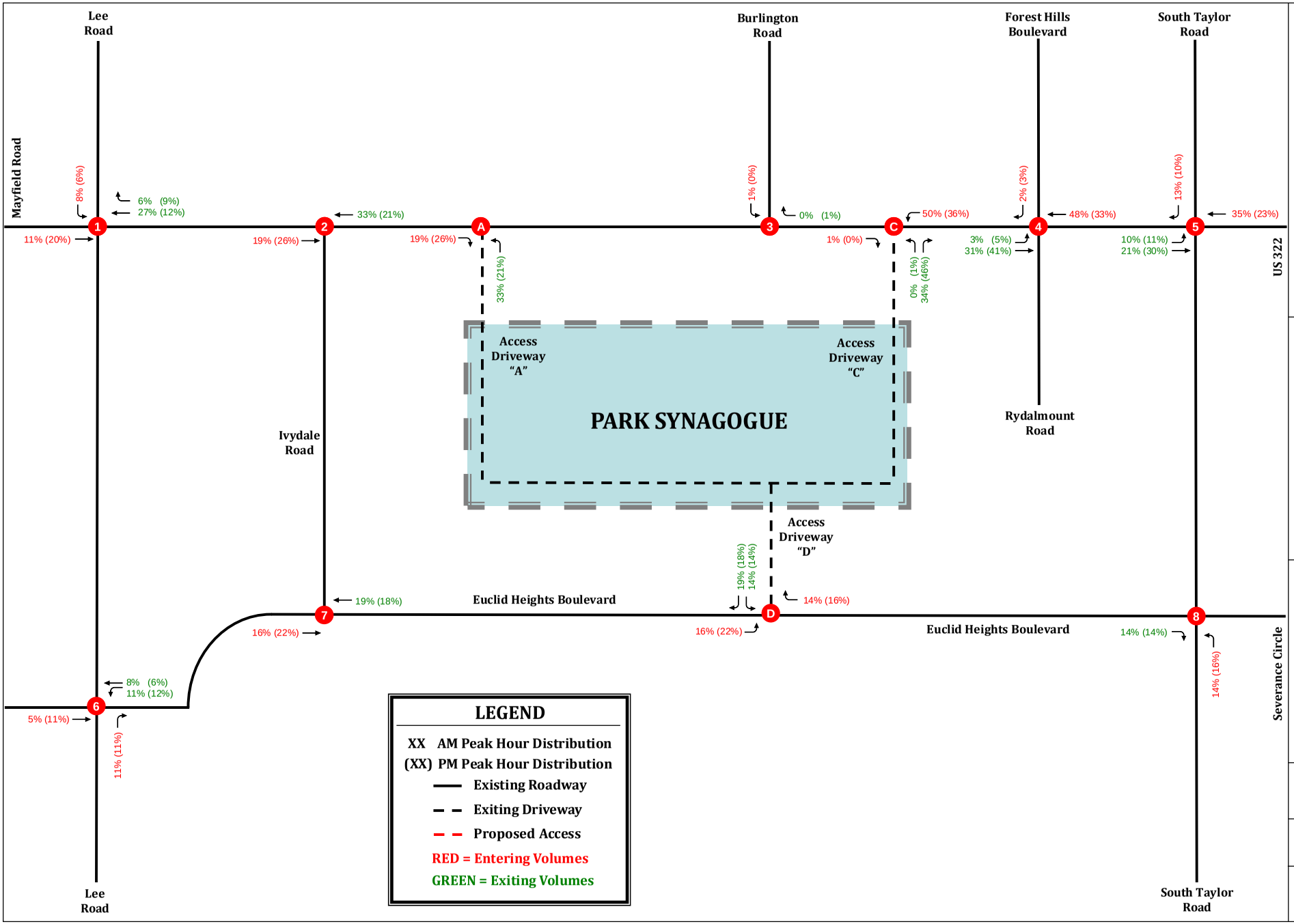
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2024 Existing Weekday
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
2.4

APPENDIX
A



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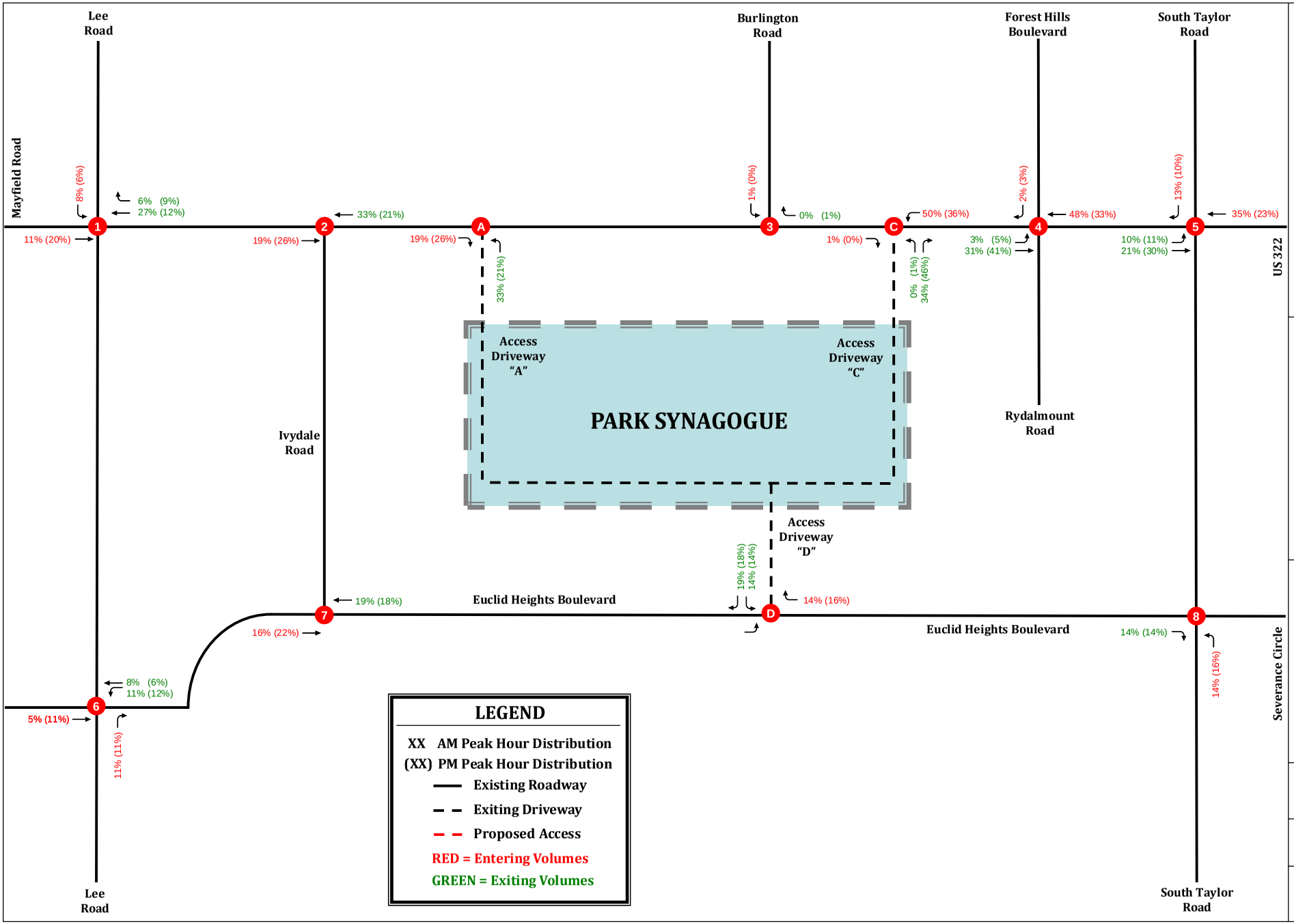
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2027 Phase 1
Non-Pass-By Traffic
Directional Distribution

NORTH
NOT TO SCALE

FIGURE
3.1

APPENDIX
A



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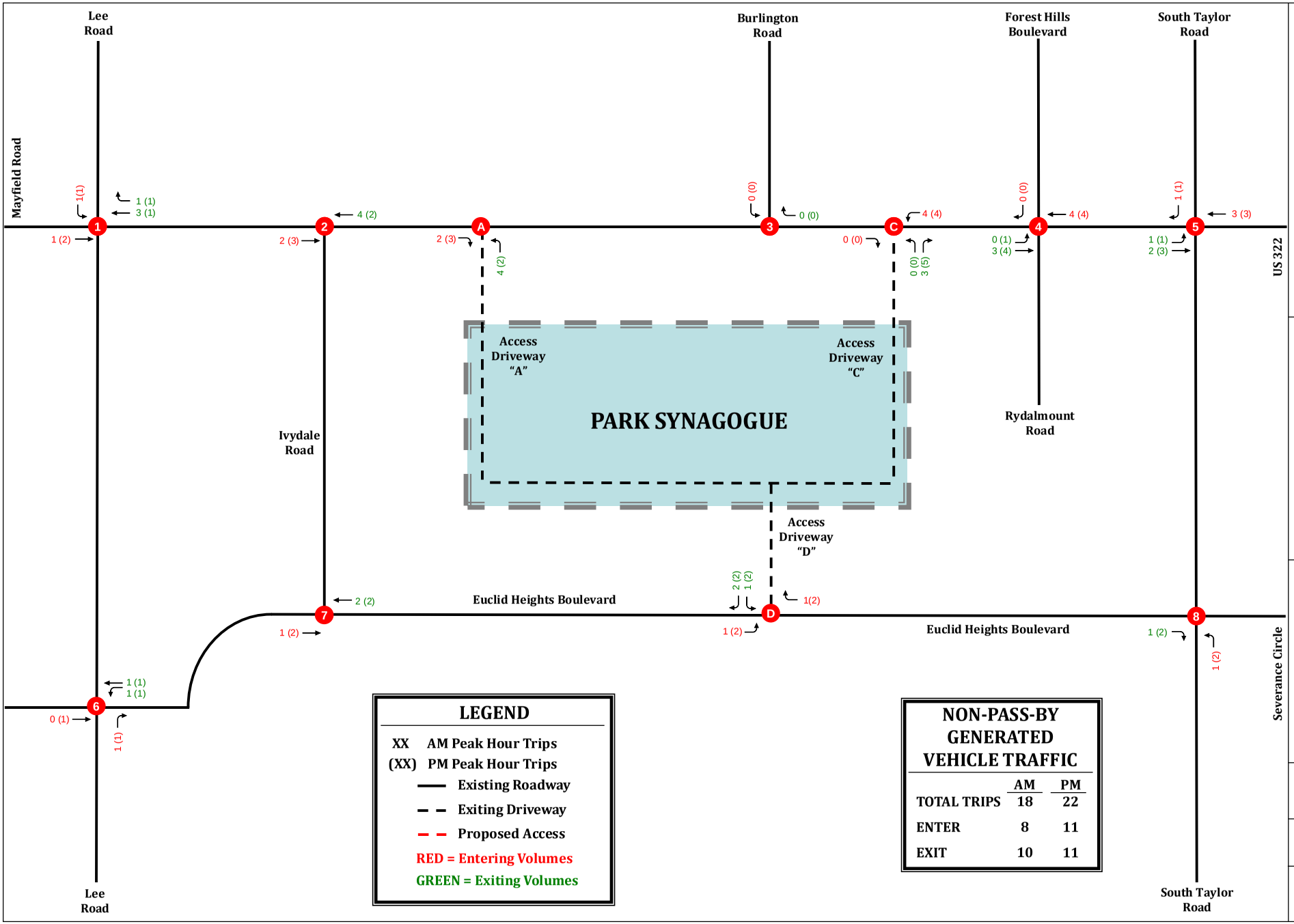
Park Synagogue
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Cleveland Heights, Ohio

2030 Phase 2
Non-Pass-By Traffic
Directional Distribution

NORTH
NOT TO SCALE

FIGURE
3.2

APPENDIX
A



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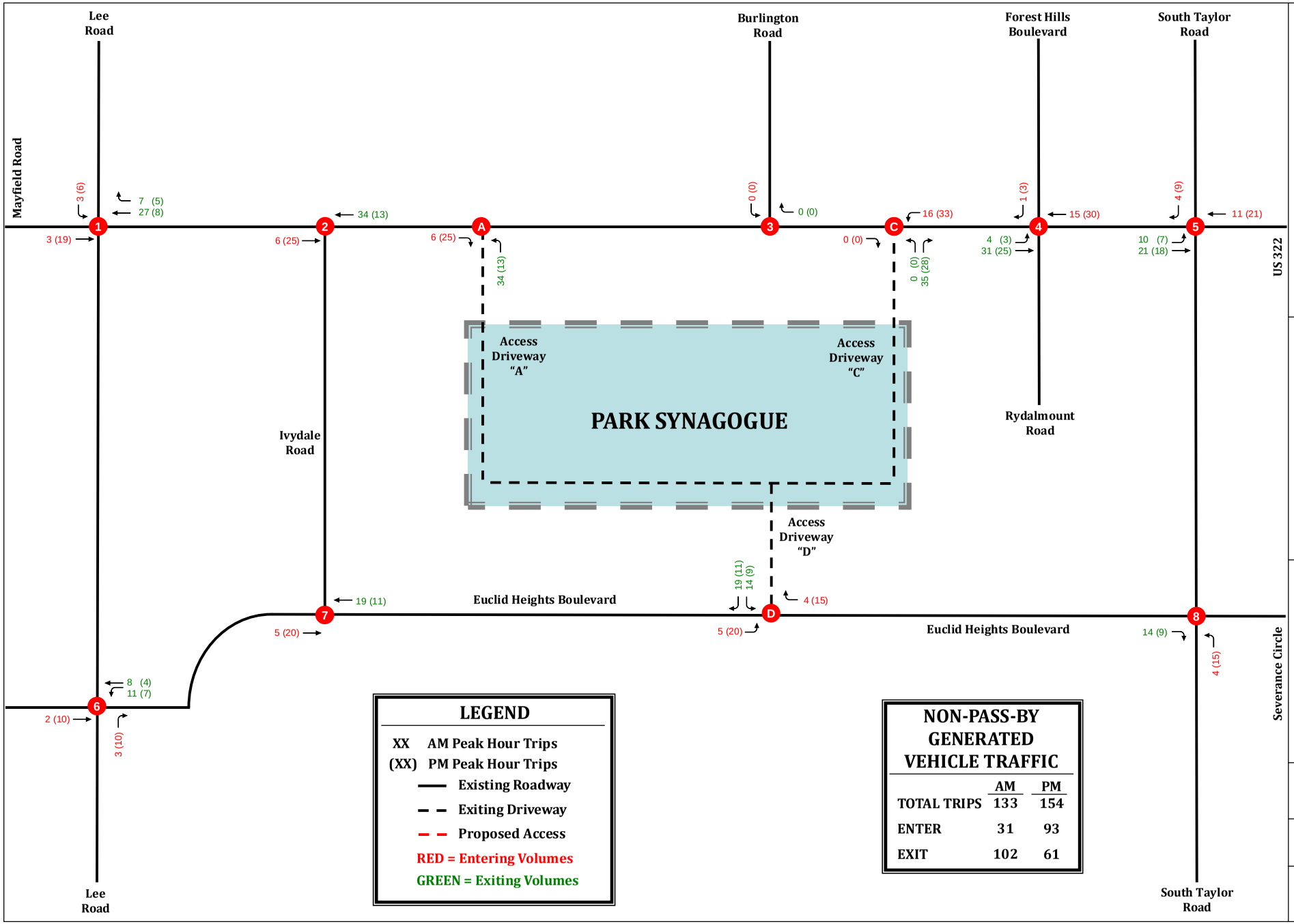
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Traffic Impact Study
Cleveland Heights, Ohio

2027 Phase 1
Site Generated
Non-Pass-By Trips

NORTH
NOT TO SCALE

FIGURE
3.3

APPENDIX
A



LEGEND

XX AM Peak Hour Trips
(XX) PM Peak Hour Trips
Existing Roadway
Exiting Driveway
Proposed Access
RED = Entering Volumes
GREEN = Exiting Volumes

NON-PASS-BY GENERATED VEHICLE TRAFFIC

	AM	PM
TOTAL TRIPS	133	154
ENTER	31	93
EXIT	102	61

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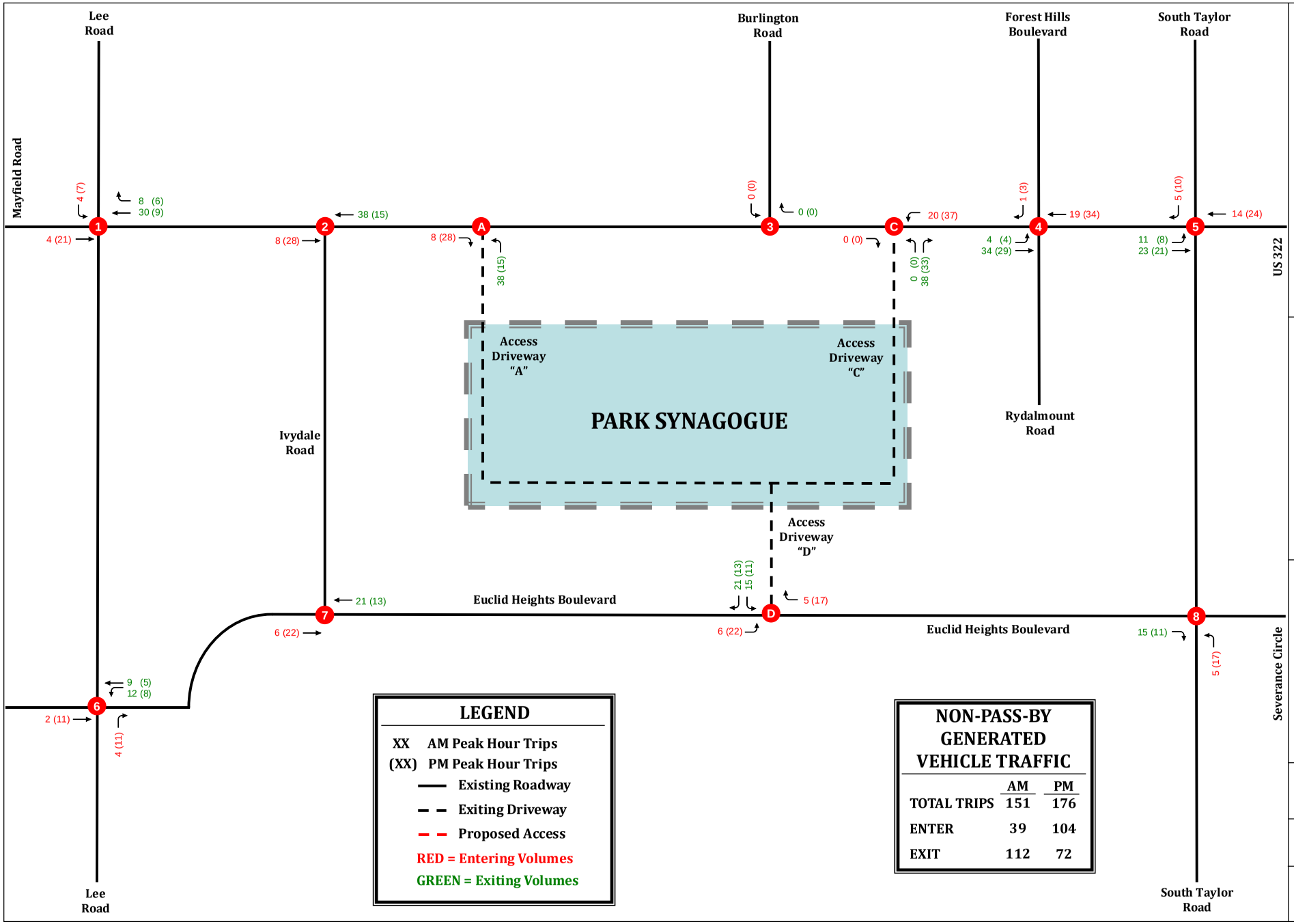
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2030 Phase 2
Site Generated
Non-Pass-By Trips

NORTH
NOT TO SCALE

FIGURE
3.4

APPENDIX
A



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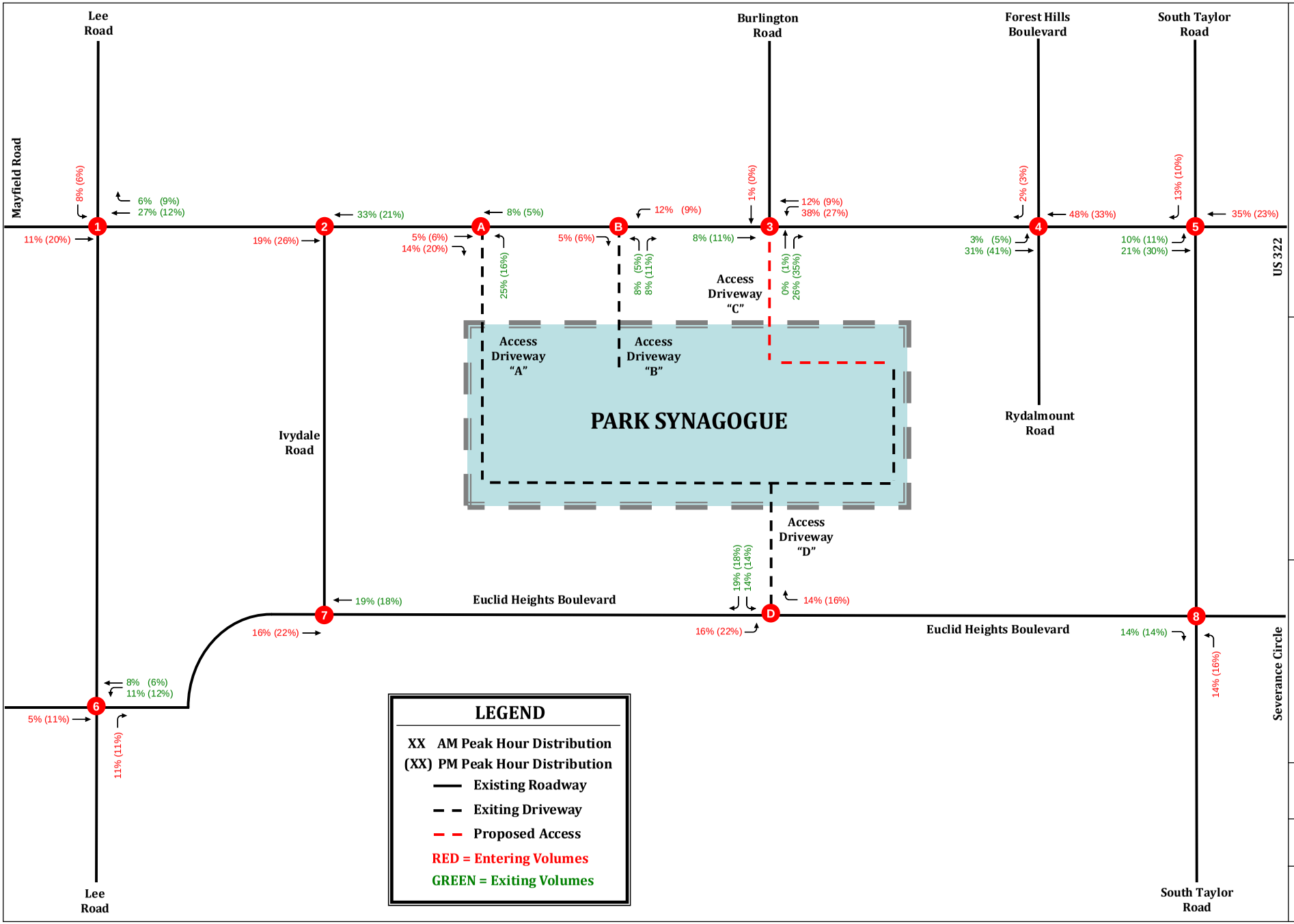
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Total
Site Generated
Non-Pass-By Trips

NORTH
NOT TO SCALE

FIGURE
3.5

APPENDIX
A



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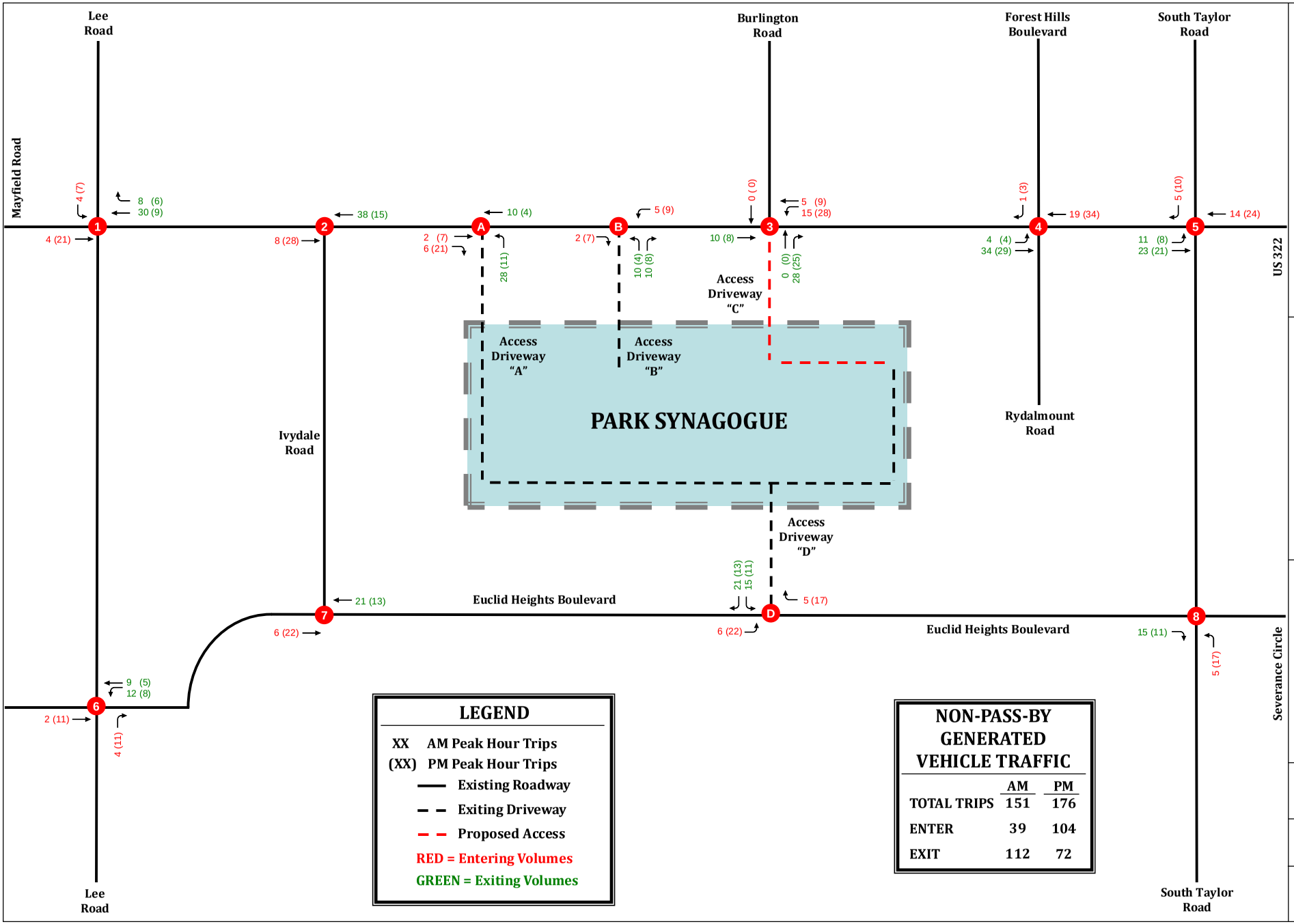
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Alternative
Non-Pass-By Traffic
Directional Distribution

NORTH
NOT TO SCALE

FIGURE
3.6

APPENDIX
A



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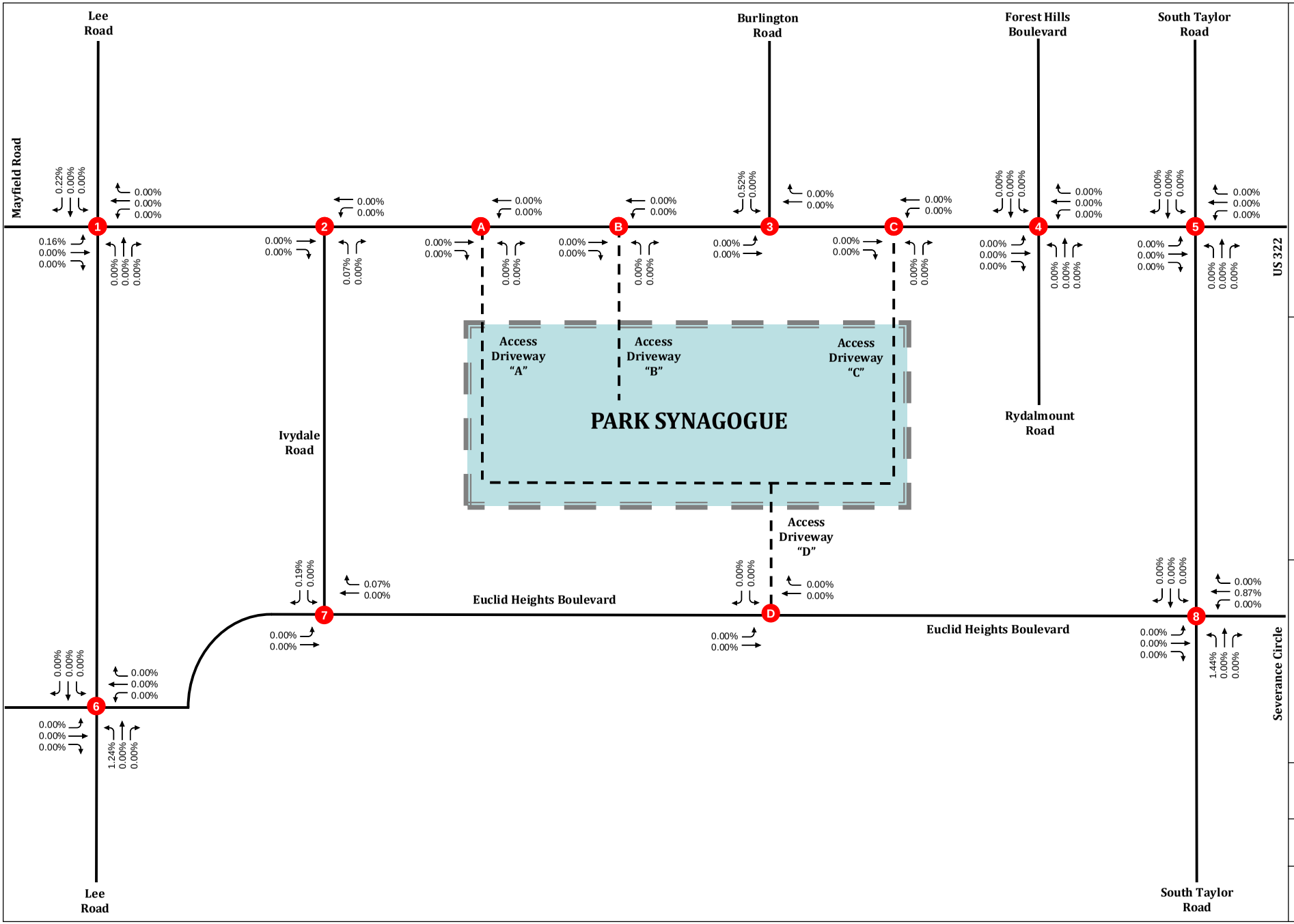
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Alternative Total
Site Generated
Non-Pass-By Trips

NORTH
NOT TO SCALE

FIGURE
3.7

APPENDIX
A



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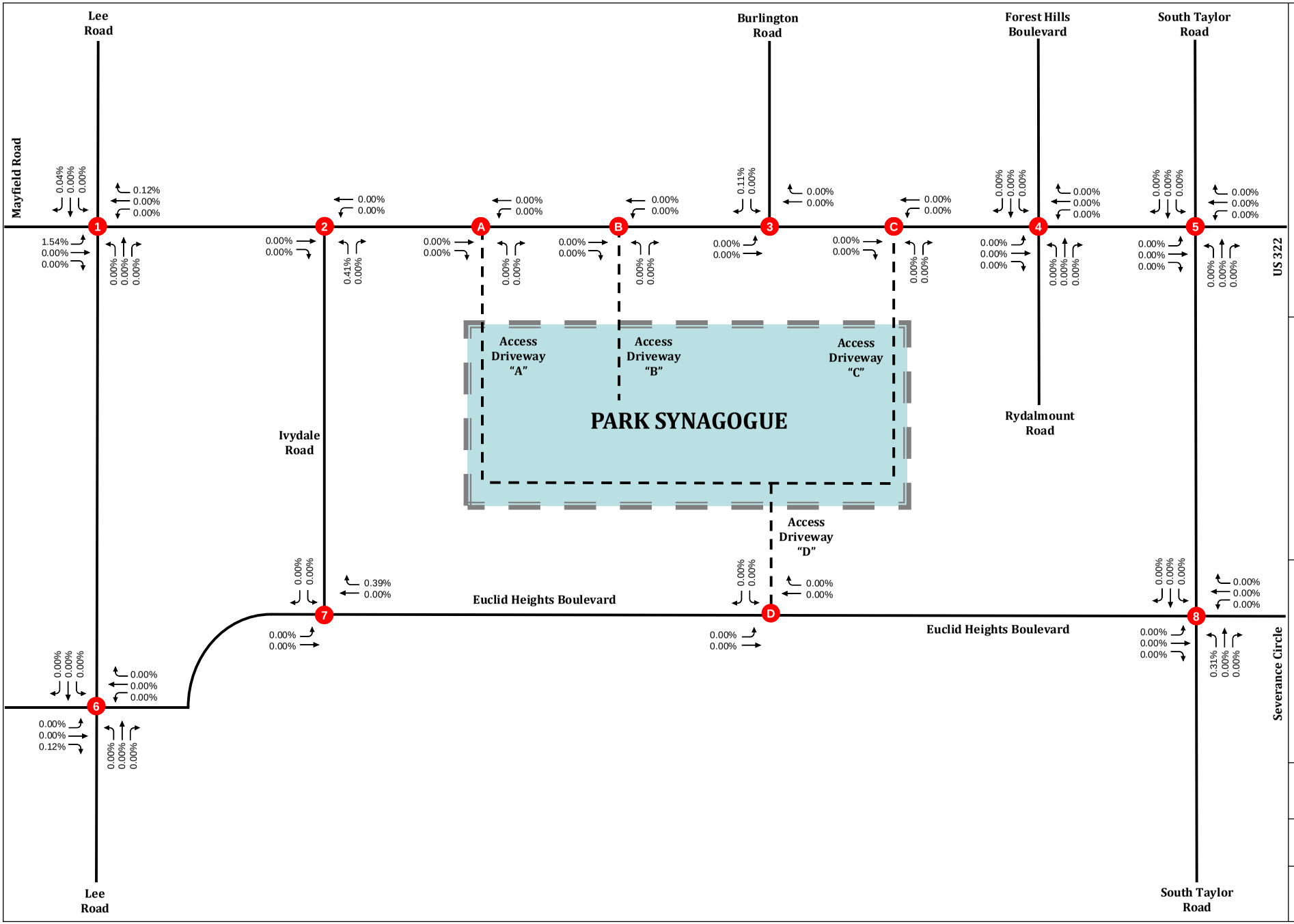
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

NOACA Growth Rates
Automobiles AM

NORTH
NOT TO SCALE

FIGURE
3.8

APPENDIX
A



TMS Engineers, Inc.
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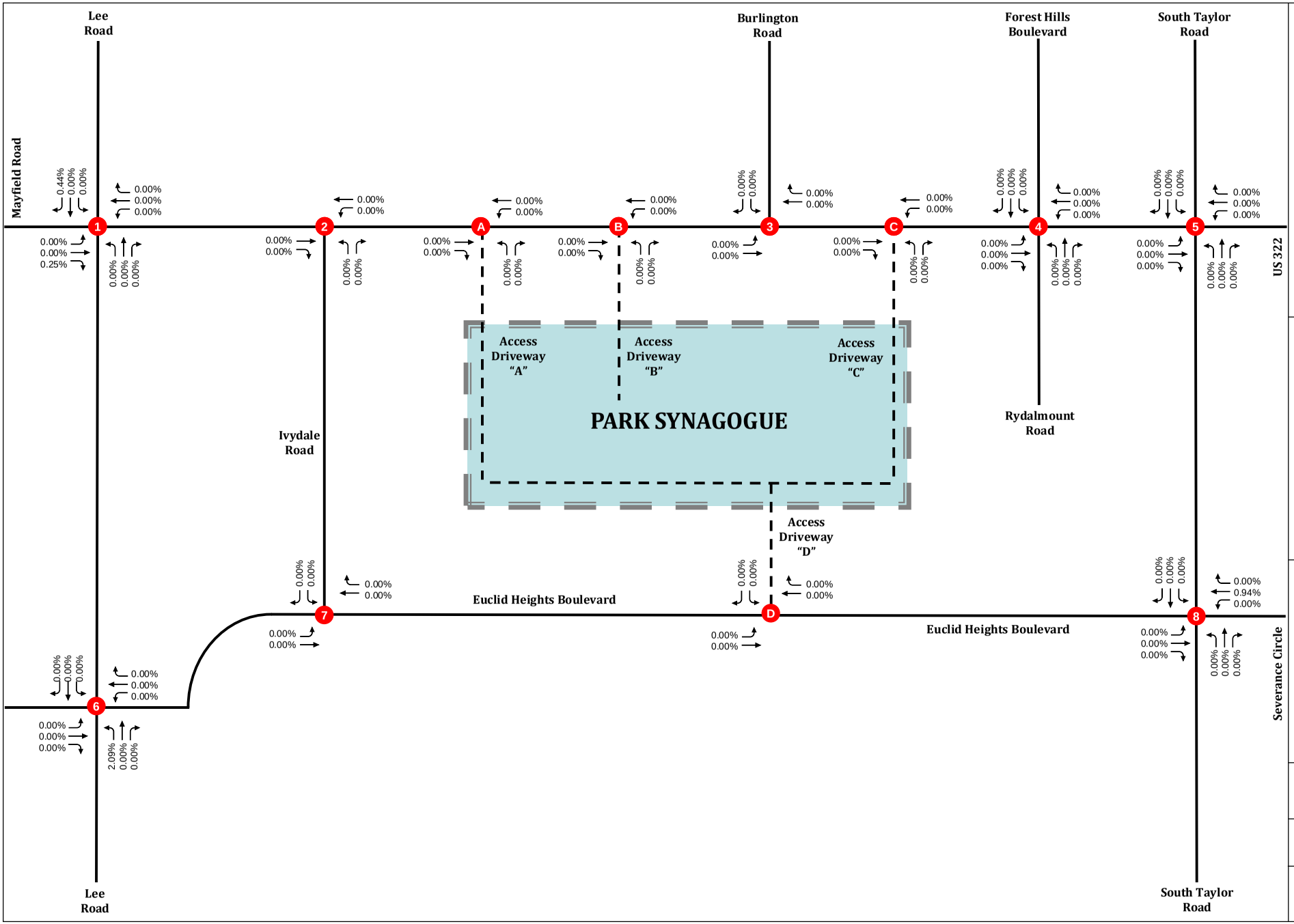
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

NOACA Growth Rates
Automobiles PM

NORTH
NOT TO SCALE

FIGURE
3.9

APPENDIX
A



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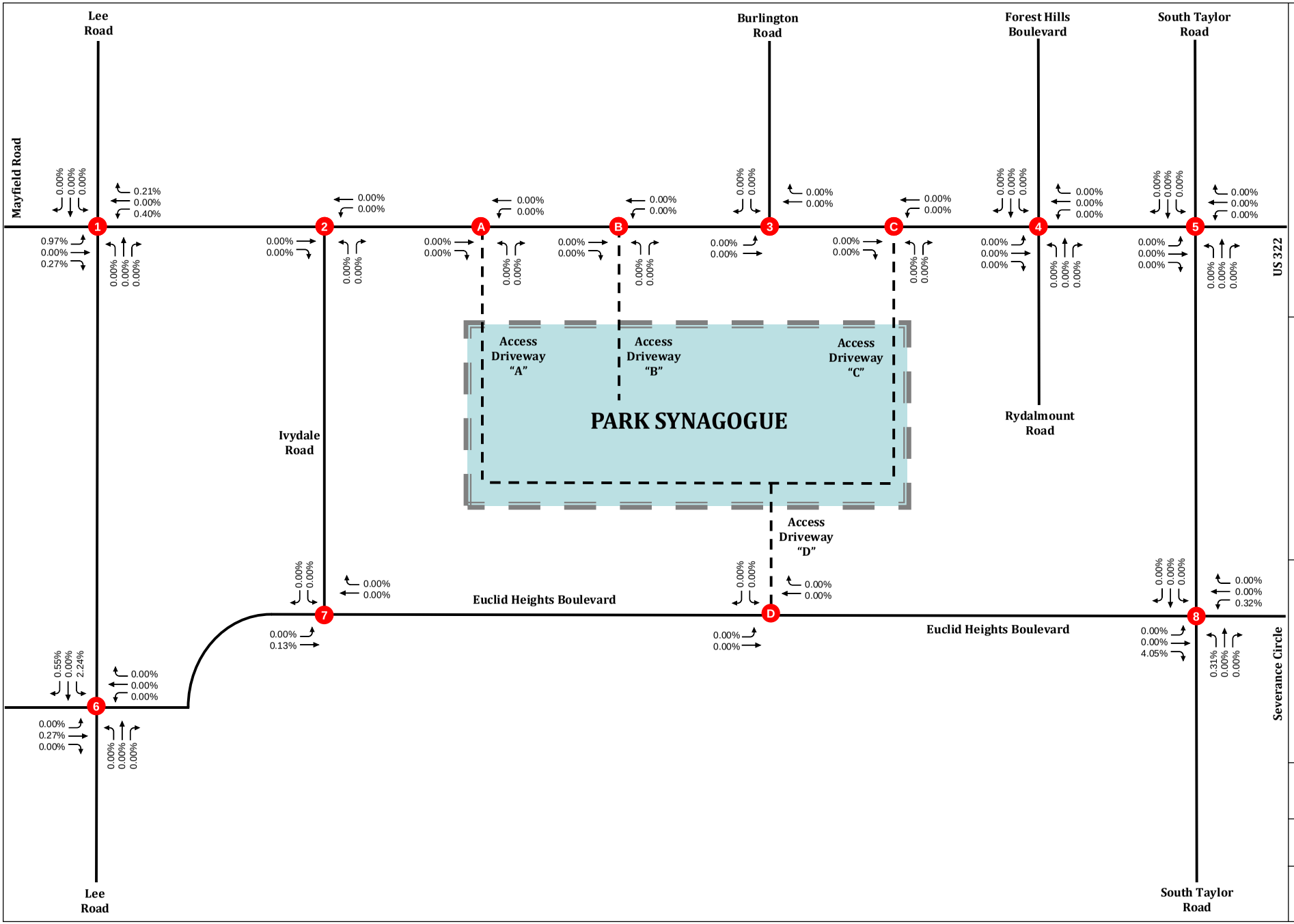
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

NOACA Growth Rates
Trucks AM

NORTH
NOT TO SCALE

FIGURE
3.10

APPENDIX
A



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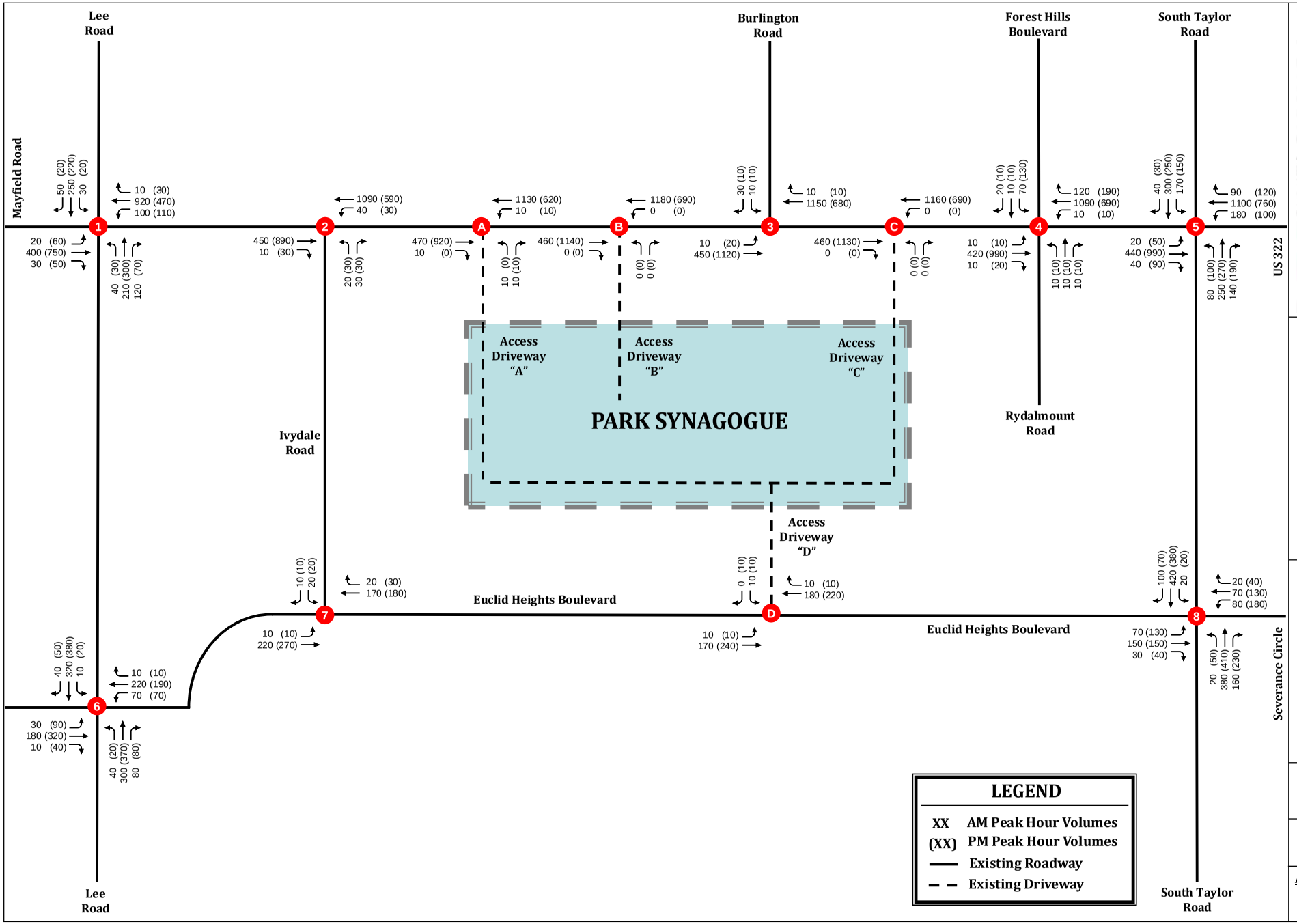
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

NOACA Growth Rates
Trucks PM

NORTH
NOT TO SCALE

FIGURE
3.11

APPENDIX
A



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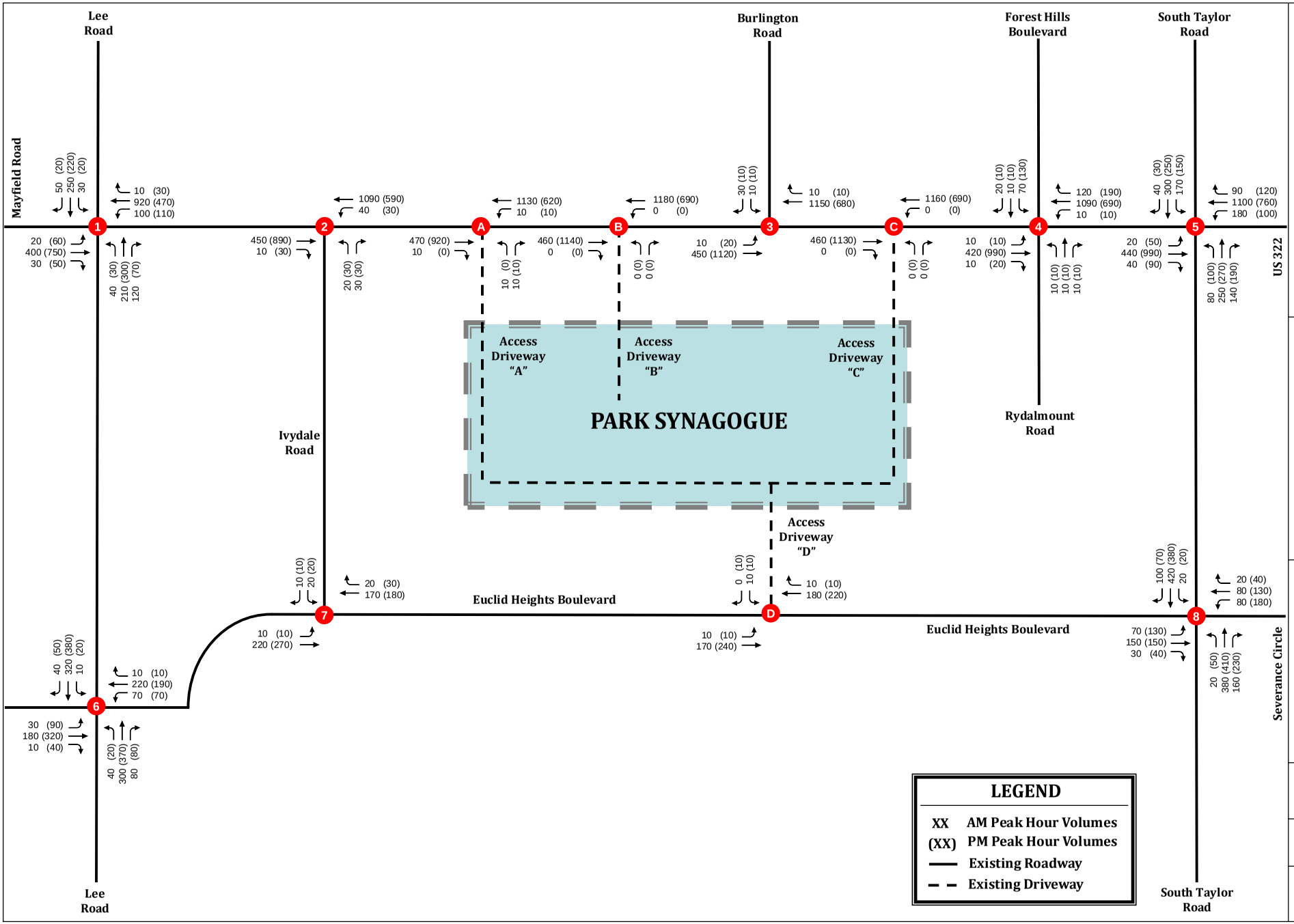
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2027 Weekday No-Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.12

APPENDIX
A



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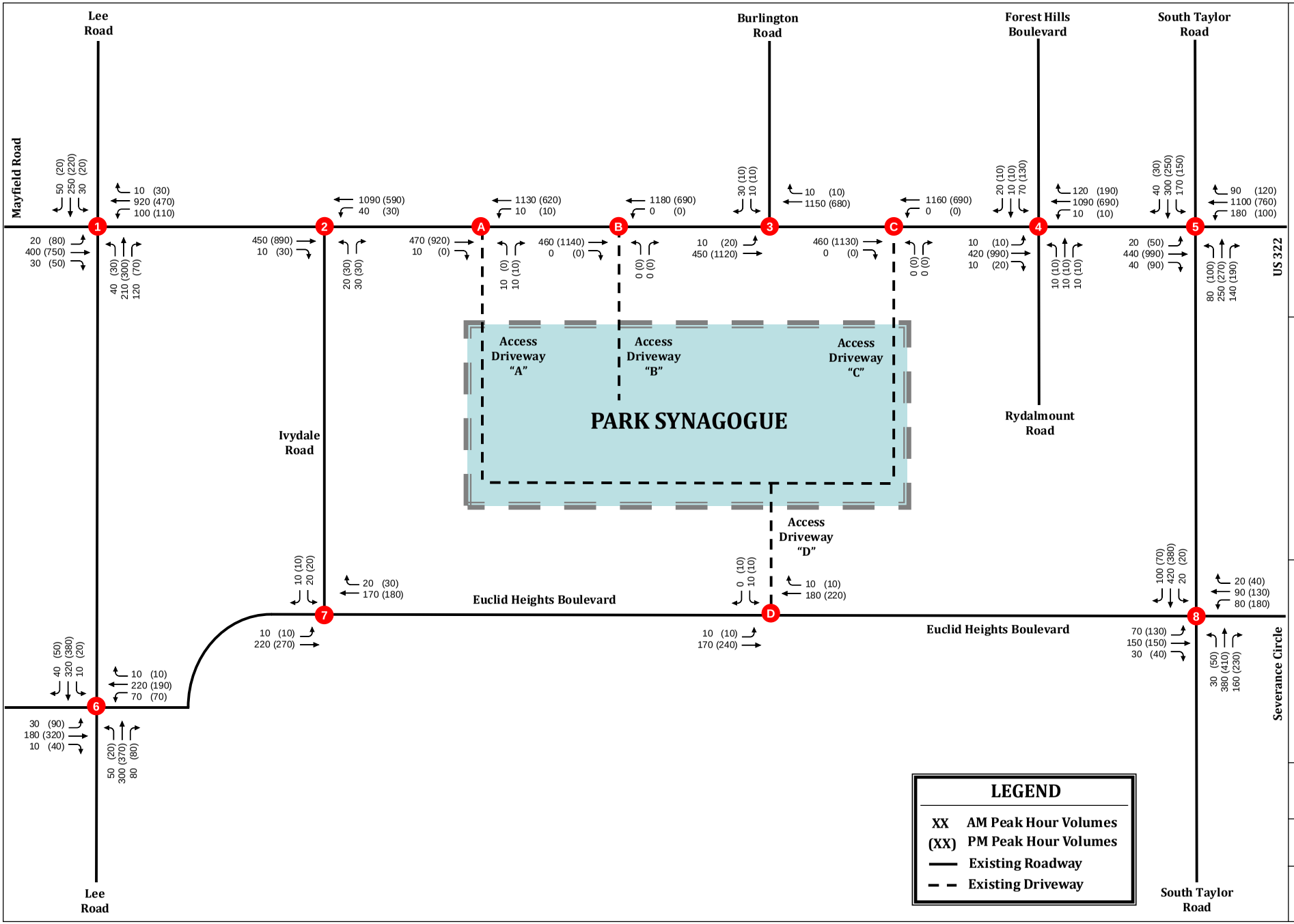
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2030 Weekday No-Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.13

APPENDIX
A



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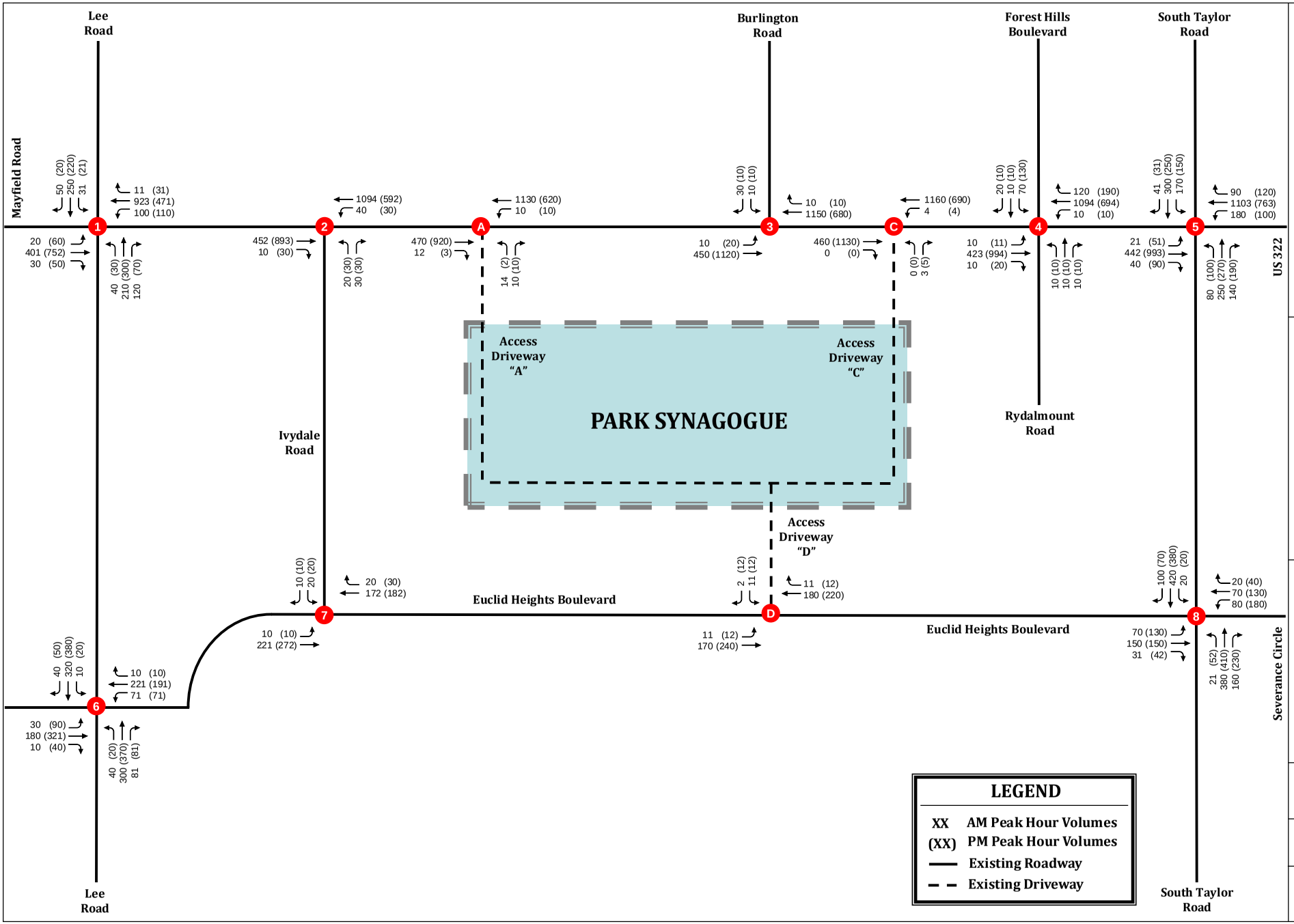
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2047 Weekday No-Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.14

APPENDIX
A



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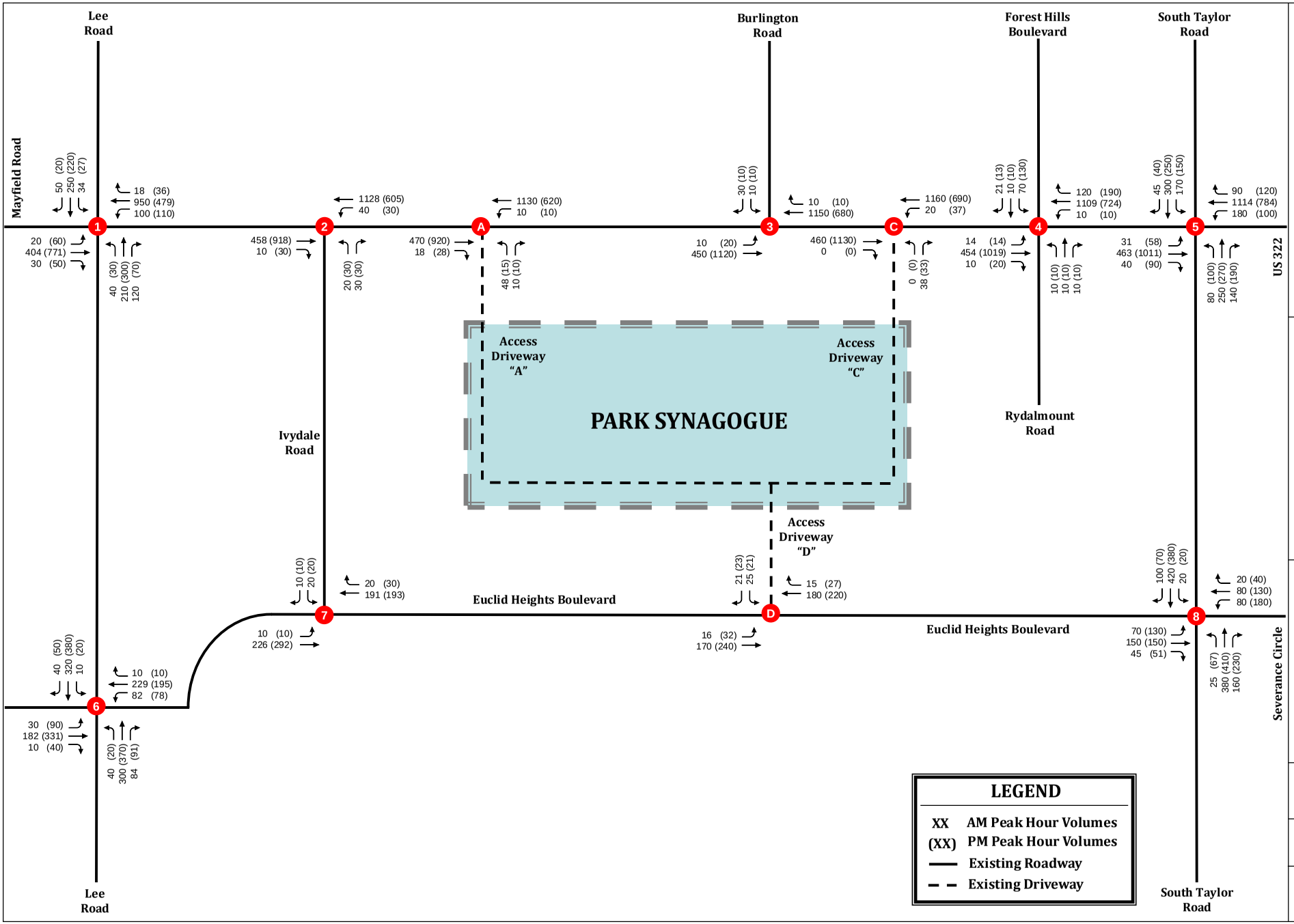
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2027 Weekday Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.15

APPENDIX
A



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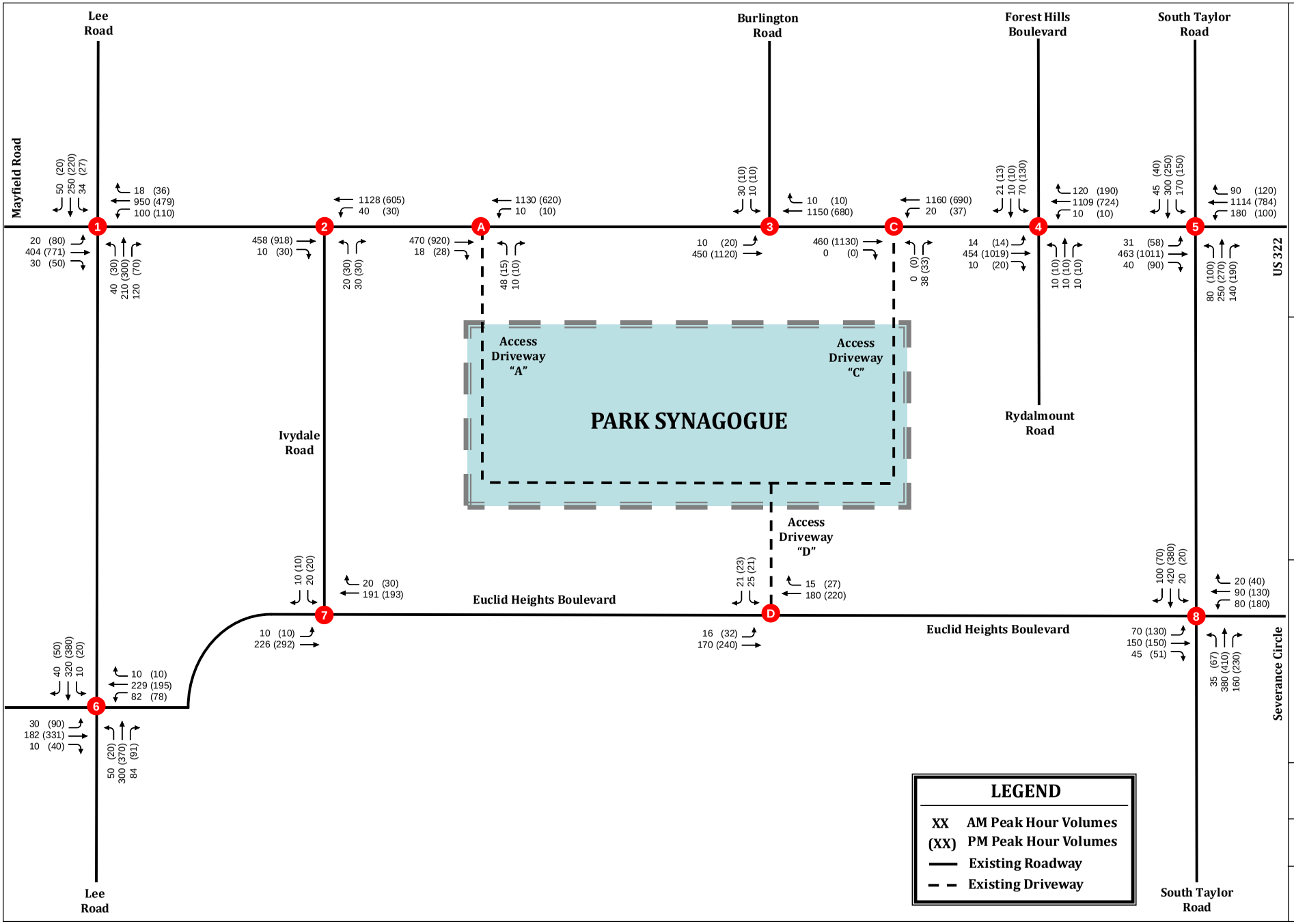
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2030 Weekday Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.16

APPENDIX
A



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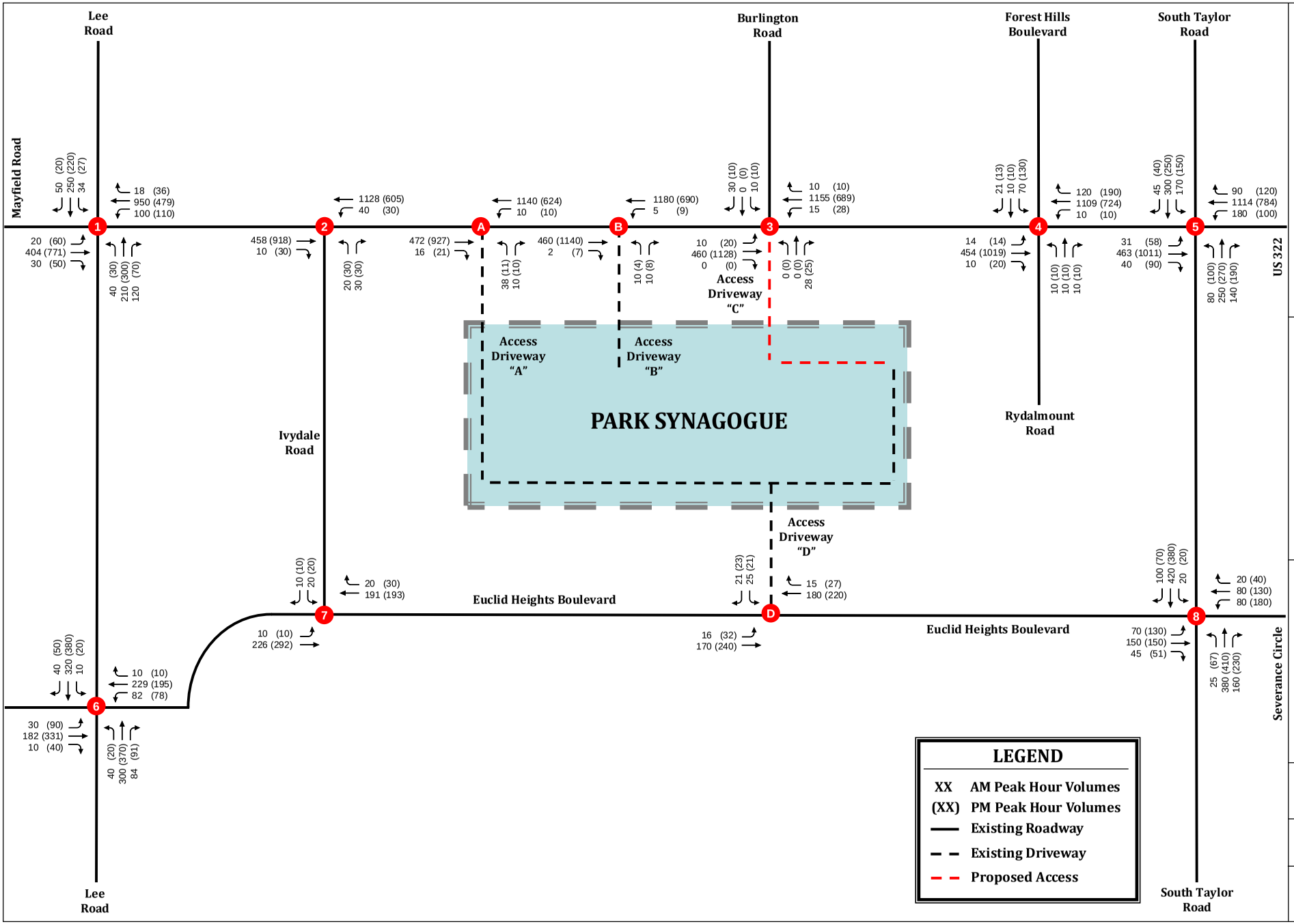
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

2047 Weekday Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.17

APPENDIX
A



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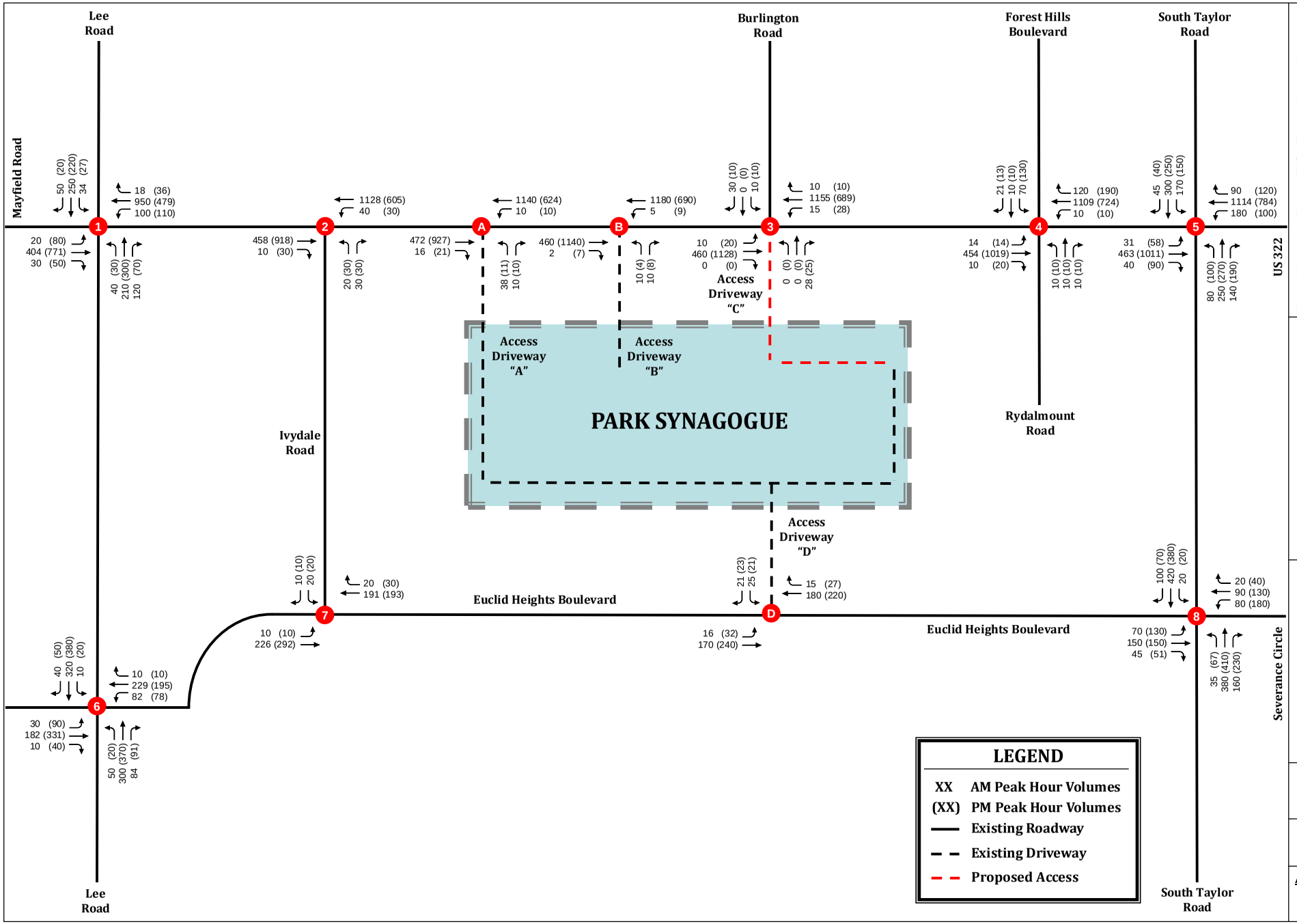
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Alternate 2030
Weekday Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.18

APPENDIX
A



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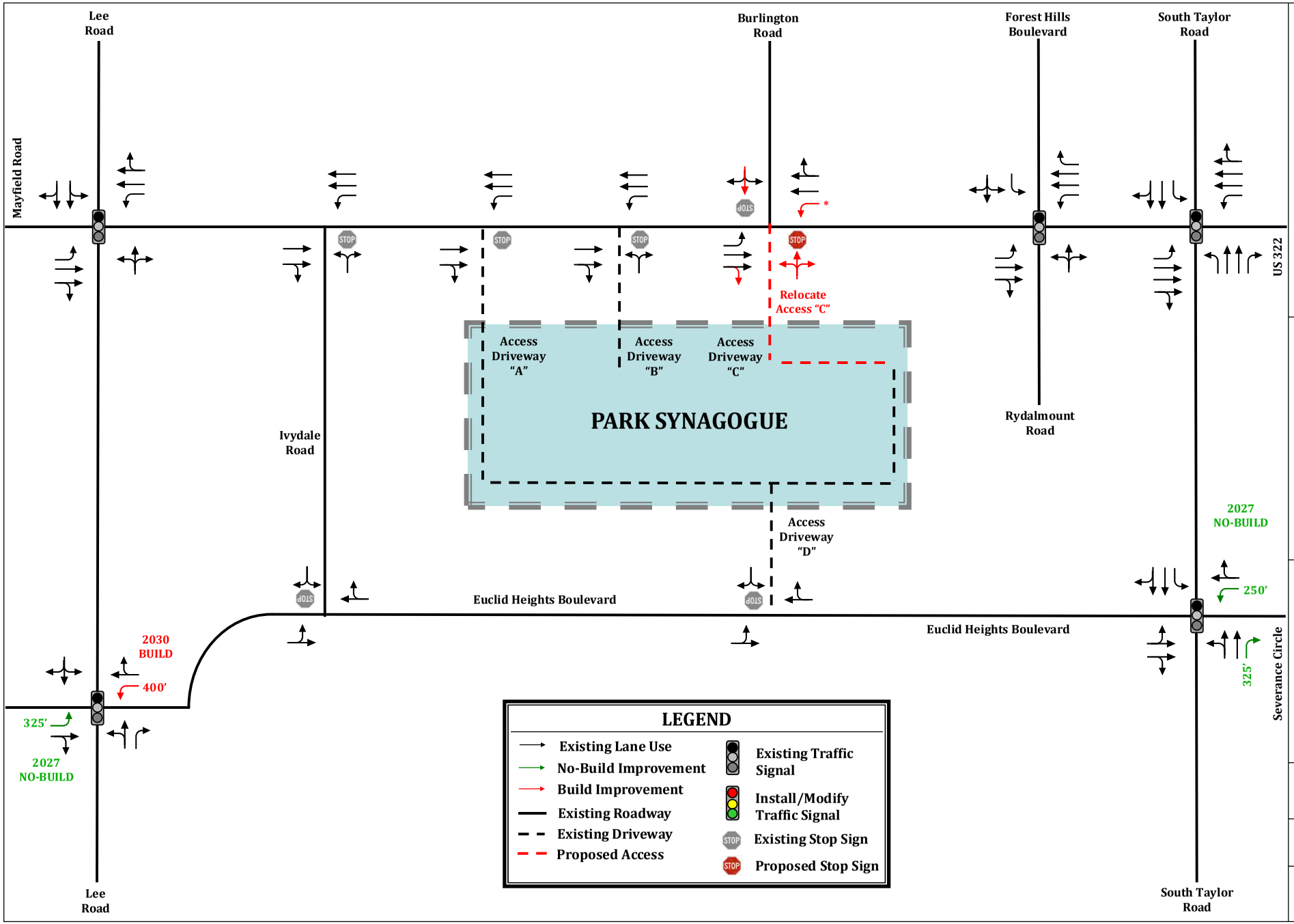
Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Alternate 2047
Weekday Build
Peak Hour Traffic Volumes

NORTH
NOT TO SCALE

FIGURE
3.19

APPENDIX
A



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Park Synagogue
Traffic Impact Study
Cleveland Heights, Ohio

Recommended
Lane Use & Traffic Control

NORTH
NOT TO SCALE

FIGURE
4.1

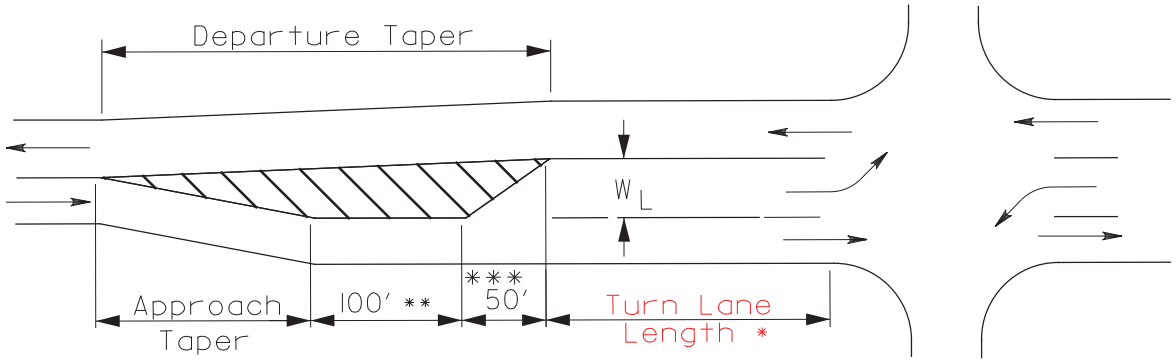
APPENDIX
A

Appendix B
ODOT Turn Lane Design Criteria

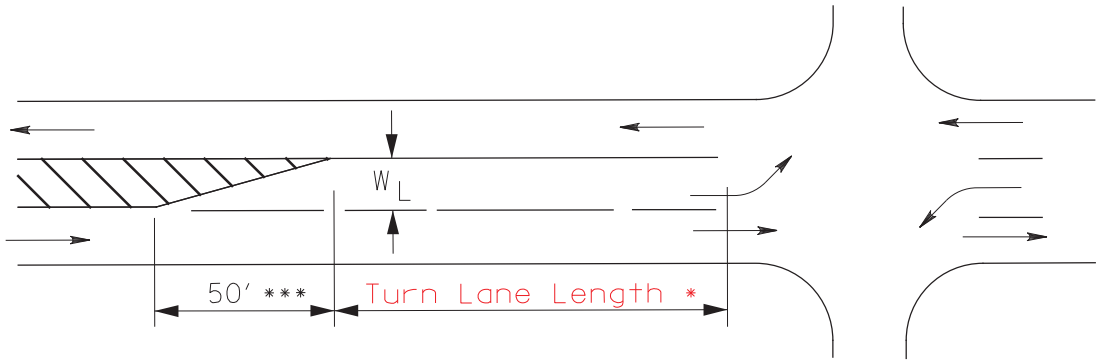
TURNING LANE DESIGN

401-7

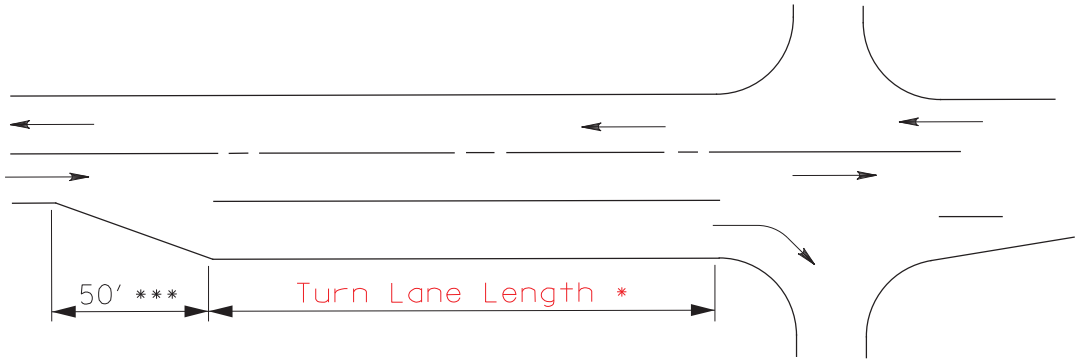
REFERENCE SECTIONS
401.6.1, 401.6.3



LEFT TURN LANE - NO MEDIAN OR MEDIAN WIDTH < W_L



LEFT TURN LANE - MEDIAN WIDTH >= W_L



RIGHT TURN LANE

* Turn Lane Length = Queue + Deceleration
See Figures 401-9 and 401-10 to compute turn lane length.

** May be reduced or eliminated in urban areas if intersection spacing or storage is constraining

*** Diverging taper

W_L = Turn Lane Width

BASIS FOR COMPUTING LENGTH OF TURN LANES

401-9

REFERENCE SECTIONS
401.6.1 & 401.6.3

Type of Traffic Control	Design Speed		
	30-35	40-65	
	Turn Demand Volume		
	All	Low*	High
Signalized	A	B or C**	B or C**
Unsignalized Stopped Crossroad	A	A	A
Unsignalized Through Road	A	B	B or C**

* Low is considered 10% or less of approach traffic volume

** Whichever is greater

CONDITION A	QUEUE ONLY
Length = Queue Length (Figure 401-10)	

CONDITION B	HIGH SPEED DECELERATION ONLY
Design Speed	Length (feet)
40	75
45	125
50	175
55	250
60	300
65	375

CONDITION C	MODERATE SPEED DECELERATION AND QUEUE
Design Speed	Length (feet)
40	75 + Queue Length (Figure 401-10)
45	75 "
50	100 "
55	125 "
60	150 "
65	175 "

For explanation, see Turn Lane Design Example

QUEUE LENGTH AT INTERSECTIONS

401-10

REFERENCE SECTIONS
401.6.1 & 401.6.3

*Average # of Vehicles/Cycle	Queue Length (feet)
1	50
2	100
3	150
4	175
5	200
6	250
7	275
8	325
9	350
10	375
11	400
12	450
13	475
14	500
15	525
16	550
17	600
18	625
19	650
20	675
21	725
22	750
23	775
24	800
25	825
26	875
27	900
28	925
29	950
30	975

*Average # of Vehicles/Cycle	Queue Length (feet)
31	1025
32	1050
33	1075
34	1100
35	1125
36	1150
37	1175
38	1200
39	1225
40	1250
41	1300
42	1325
43	1350
44	1375
45	1400
46	1450
47	1475
48	1500
49	1525
50	1550
51	1600
52	1625
53	1650
54	1675
55	1700
56	1750
57	1775
58	1800
59	1825
60	1850

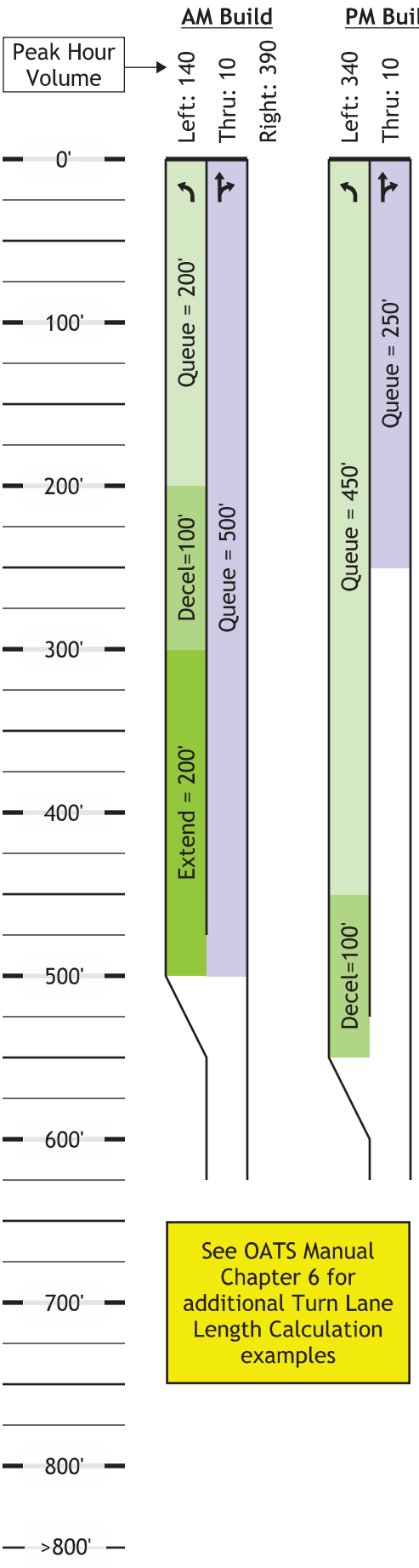
NOTE: ADDITIONAL TURN LANE STORAGE MAY BE REQUIRED WHEN THE AVERAGE VEHICLES PER CYCLE >= 10 AND THE HEAVY VEHICLES ARE >= 10%.

$$\text{* AVERAGE VEHICLES PER CYCLE} = \frac{\text{DHV (TURNING LANE)}}{\text{CYCLES/HOUR}}$$

IF CYCLES ARE UNKNOWN ASSUME:

UNSIGNALIZED OR
- 2 PHASE = 60 CYCLES/HOUR
- 3 PHASE = 40 CYCLES/HOUR
- 4 PHASE = 30 CYCLES/HOUR

Required Turn Lane Length Example Using Figures 401-9 and 401-10



See OATS Manual Chapter 6 for additional Turn Lane Length Calculation examples

Traffic Control: Signalized Design Speed: 50 mph

Cycle Length(s) = 120s (AM/PM)

Determine Required Turn Lane Length (Queue + Deceleration)

The required turn lane length is being calculated at a signalized intersection with a design speed of 50 mph; therefore, the storage will be based on Figure 401-9 Condition B or Condition C, whichever is greater.

Calculate Required Turn Lane Length for AM Peak Hour

1) Condition B = High speed deceleration only = 175 feet
2) Condition C = Queue Length (see calculations below) + Moderate Speed Deceleration = 200 feet + 100 feet = 300 feet.
3) Determine the left turn queue. Calculate the average number of vehicles per cycle for the turn lane. Round the answer up to the next whole number and determine the queue length per Figure 401-10. This length is shown in figure to the left in green. [(140 veh/hr)*(120 s/cyc)]/3600 s/hr = 4.7 veh/cyc > 5 veh/cyc > 200 feet.
4) Determine thru/adjacent lane queue. Calculate the average number of vehicles per cycle for the thru/adjacent lane. Round the answer up to the next whole number and determine the queue length per Figure 401-10. This length is shown in figure to the left in blue. [(400 veh/hr)*(120 s/cyc)]/3600 s/hr = 13.3 veh/cyc > 14 veh/cyc > 500 feet.
5) Compare the calculated lengths from Step 3 and Step 4. For this example the thru/adjacent lane queue (500 feet) is longer than the required left turn storage (300 feet); therefore, the left turn lane must be extended an additional 200 feet so left turning vehicles can enter the turn lane without being blocked by the thru/adjacent lane.
6) The required turn lane length of the left turn lane for the AM peak hour is **500 feet.**

Calculate Required Turn Lane Length for PM Peak Hour

1) Condition B = High speed deceleration only = 175 feet
2) Required turn lane storage for Condition C = Queue Length (see calculations below) + Moderate Speed Deceleration = 450 feet + 100 feet = 550 feet.
3) Determine the left turn queue. Calculate the average number of vehicles per cycle for the turn lane. Round the answer up to the next whole number and determine the queue length per Figure 401-10. This length is shown in figure to the left in green. [(340 veh/hr)*(120 s/cyc)]/3600 s/hr = 11.3 veh/cyc > 12 veh/cyc > 450 feet.
4) Determine thru/adjacent lane queue. Calculate the average number of vehicles per cycle for the thru/adjacent lane. Round the answer up to the next whole number and determine the queue length per Figure 401-10. This length is shown in figure to the left in blue. [(160 veh/hr)*(120 s/cyc)]/3600 s/hr = 5.3 veh/cyc > 6 veh/cyc > 250 feet.
5) Compare the calculated lengths from Step 3 and Step 4. For this example the thru/adjacent lane queue (250 feet) is shorter than the required left turn storage (550 feet); therefore, the left turn lane does not need to be extended so left turning vehicles can enter the turn lane without being blocked by the thru/adjacent lane.
6) The required turn lane length of the left turn lane for the PM peak hour is **550 feet.**

Determine Required Storage of Turn Lane

1) Per the AM and PM peak hour calculations the required turn lane length for the left turn lane is 500 feet and 550 feet, respectively.
2) The required turn lane length for the left turn lane is **550 feet**.
3) See PM Build figure to the left for the Final Design.

Appendix C
Traffic Count Data

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Lee Road

Date: 2/27/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Weather: Clear **Recorder(s):** KPB **Data entry by:** JJO **Date entered:** Feb. 28, 2024 Mayfield Rd & Lee Rd 022724

TIME BEGINS	Lee Rd. FROM NORTH						Lee Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	27	165	32	224	6	0	30	132	66	228	6	4	452	85	679	8	772	3	6	10	259	16	285	9	6	1057	1509	0.848	0.814	0.850	0.735
08:00	23	188	41	252	5	1	31	171	102	304	9	4	556	69	689	30	788	12	9	21	326	26	373	7	8	1161	1717	0.887	0.916	0.934	0.914
09:00	22	142	25	189	4	1	31	133	67	231	7	4	420	48	505	26	579	17	5	13	350	24	387	17	5	966	1386	0.788	0.931	0.940	0.913
10:00																														
11:00	25	121	23	169	6	1	25	125	78	228	9	2	397	46	289	29	364	13	3	19	320	25	364	7	8	728	1125	0.828	0.919	0.746	0.883
12:00	24	142	20	186	1	1	24	138	73	235	6	4	421	64	342	38	444	18	3	20	343	28	391	12	3	835	1256	0.861	0.864	0.828	0.905
1:00	27	117	19	163	5	2	26	137	66	229	7	4	392	53	352	24	429	13	5	31	395	31	457	11	5	886	1278	0.815	0.854	0.831	0.936
2:00																														
3:00	27	192	18	237	2	1	30	219	86	335	4	8	572	83	396	24	503	5	5	19	498	32	549	7	10	1052	1624	0.956	0.872	0.898	0.891
4:00	24	181	21	226	2	0	28	191	60	279	2	4	505	71	375	23	469	0	3	32	590	37	659	3	5	1128	1633	0.831	0.861	0.838	0.881
5:00	23	167	16	206	1	0	21	219	60	300	3	3	506	78	363	25	466	5	4	43	590	38	671	1	6	1137	1643	0.746	0.806	0.903	0.830
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	222	1415	215	1852	32	7	246	1465	658	2369	53	37	4221	597	3990	227	4814	86	43	208	3671	257	4136	74	56	8950	13171				
ADT	316	2013	306	2635	2.1%		350	2084	936	3370	3.8%		6005	849	5676	323	6848	2.7%		296	5222	366	5884	3.1%		12732	18737				

N Leg Hourly Factor:	1.61	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.61	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.88	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.88	W Leg Monthly Factor:	0.88

N Leg Combined Factor:	1.42	E Leg Combined Factor:	1.42
S Leg Combined Factor:	1.42	W Leg Combined Factor:	1.42

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Lee Rd
Counter: KPB
Day of the Week: Tuesday

File Name : 1. Lee and Mayfield 02-27-2024 KB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 1

Groups Printed- Cars - Trucks - Busses

	LEE ROAD From North					MAYFIELD ROAD From East					LEE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	39	5	1	51	0	128	11	2	141	13	22	4	1	40	1	42	4	0	47	279
07:15 AM	8	29	7	0	44	2	156	27	1	186	14	32	10	0	56	3	73	0	0	76	362
07:30 AM	10	47	9	0	66	5	201	21	1	228	12	42	9	0	63	4	61	0	0	65	422
07:45 AM	8	50	6	0	64	1	194	26	1	222	27	36	7	2	72	8	83	6	0	97	455
Total	32	165	27	1	225	8	679	85	5	777	66	132	30	3	231	16	259	10	0	285	1518
08:00 AM	12	53	6	0	71	1	170	12	1	184	27	45	9	0	81	7	88	3	0	98	434
08:15 AM	9	55	4	1	69	5	183	19	0	207	30	47	6	1	84	3	93	6	0	102	462
08:30 AM	13	40	8	2	63	16	177	18	0	211	22	42	7	0	71	11	84	7	0	102	447
08:45 AM	7	40	5	0	52	8	159	20	1	188	23	37	9	5	74	5	61	5	0	71	385
Total	41	188	23	3	255	30	689	69	2	790	102	171	31	6	310	26	326	21	0	373	1728
09:00 AM	9	40	11	0	60	4	132	18	0	154	17	38	5	0	60	10	91	5	0	106	380
09:15 AM	5	41	1	0	47	5	129	11	2	147	16	33	9	0	58	2	72	1	1	76	328
09:30 AM	8	31	3	1	43	7	122	10	2	141	18	36	8	1	63	7	96	2	0	105	352
09:45 AM	3	30	7	1	41	10	122	9	1	142	16	26	9	2	53	5	91	5	0	101	337
Total	25	142	22	2	191	26	505	48	5	584	67	133	31	3	234	24	350	13	1	388	1397
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 1. Lee and Mayfield 02-27-2024 KB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 2

Groups Printed- Cars - Trucks - Busses

	LEE ROAD From North					MAYFIELD ROAD From East					LEE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	6	34	11	2	53	7	53	7	0	67	12	30	5	0	47	7	60	5	0	72	239
11:15 AM	7	17	6	1	31	8	64	12	1	85	16	33	8	0	57	8	81	6	0	95	268
11:30 AM	3	35	5	0	43	9	103	10	2	124	28	28	6	1	63	9	90	4	1	104	334
11:45 AM	7	35	3	1	46	5	69	17	1	92	22	34	6	0	62	1	89	4	1	95	295
Total	23	121	25	4	173	29	289	46	4	368	78	125	25	1	229	25	320	19	2	366	1136
12:00 PM	3	30	5	1	39	9	83	15	1	108	18	21	6	0	45	10	84	5	0	99	291
12:15 PM	6	35	4	1	46	11	74	15	1	101	14	40	4	2	60	8	86	2	1	97	304
12:30 PM	5	41	8	0	54	7	109	18	2	136	24	35	5	2	66	7	99	2	2	110	366
12:45 PM	6	36	7	0	49	11	76	16	0	103	17	42	9	0	68	3	74	11	0	88	308
Total	20	142	24	2	188	38	342	64	4	448	73	138	24	4	239	28	343	20	3	394	1269
01:00 PM	4	35	4	0	43	3	84	7	1	95	9	33	5	1	48	10	92	4	1	107	293
01:15 PM	4	36	10	0	50	5	71	18	1	95	17	34	9	3	63	8	102	6	0	116	324
01:30 PM	3	22	3	1	29	6	94	12	2	114	25	38	4	1	68	9	104	9	1	123	334
01:45 PM	8	24	10	1	43	10	103	16	1	130	15	32	8	1	56	4	97	12	0	113	342
Total	19	117	27	2	165	24	352	53	5	434	66	137	26	6	235	31	395	31	2	459	1293
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	6	43	12	0	61	7	95	17	1	120	24	49	6	0	79	10	129	2	0	141	401

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 1. Lee and Mayfield 02-27-2024 KB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 3

Groups Printed- Cars - Trucks - Busses

	LEE ROAD From North					MAYFIELD ROAD From East					LEE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	5	51	6	1	63	5	100	23	0	128	20	52	7	0	79	5	111	5	3	124	394
03:30 PM	3	52	4	0	59	5	90	21	0	116	20	63	13	1	97	9	138	7	0	154	426
03:45 PM	4	46	5	1	56	7	111	22	0	140	22	55	4	0	81	8	120	5	0	133	410
Total	18	192	27	2	239	24	396	83	1	504	86	219	30	1	336	32	498	19	3	552	1631
04:00 PM	5	37	6	0	48	4	95	12	1	112	9	51	2	2	64	6	150	7	2	165	389
04:15 PM	6	54	7	0	67	7	93	16	0	116	25	40	16	1	82	12	164	9	0	185	450
04:30 PM	5	34	4	2	45	8	107	25	2	142	12	47	5	4	68	4	170	13	0	187	442
04:45 PM	5	56	7	0	68	4	80	18	2	104	14	53	5	0	72	15	106	3	0	124	368
Total	21	181	24	2	228	23	375	71	5	474	60	191	28	7	286	37	590	32	2	661	1649
05:00 PM	2	49	5	3	59	6	102	21	2	131	16	67	8	0	91	14	175	13	1	203	484
05:15 PM	4	41	4	1	50	5	95	26	7	133	15	75	3	1	94	10	159	14	2	185	462
05:30 PM	8	51	10	2	71	12	94	13	3	122	16	45	5	0	66	10	155	11	0	176	435
05:45 PM	2	26	4	0	32	2	72	18	0	92	13	32	5	3	53	4	101	5	0	110	287
Total	16	167	23	6	212	25	363	78	12	478	60	219	21	4	304	38	590	43	3	674	1668
Grand Total	215	1415	222	24	1876	227	3990	597	43	4857	658	1465	246	35	2404	257	3671	208	16	4152	13289
Apprch %	11.5	75.4	11.8	1.3		4.7	82.1	12.3	0.9		27.4	60.9	10.2	1.5		6.2	88.4	5	0.4		
Total %	1.6	10.6	1.7	0.2	14.1	1.7	30	4.5	0.3	36.5	5	11	1.9	0.3	18.1	1.9	27.6	1.6	0.1	31.2	
Cars	213	1381	219	24	1837	216	3892	577	43	4728	623	1432	224	35	2314	236	3565	205	16	4022	12901
% Cars	99.1	97.6	98.6	100	97.9	95.2	97.5	96.6	100	97.3	94.7	97.7	91.1	100	96.3	91.8	97.1	98.6	100	96.9	97.1
Trucks	2	28	2	0	32	10	58	18	0	86	20	23	10	0	53	5	66	3	0	74	245
% Trucks	0.9	2	0.9	0	1.7	4.4	1.5	3	0	1.8	3	1.6	4.1	0	2.2	1.9	1.8	1.4	0	1.8	1.8
Busses	0	6	1	0	7	1	40	2	0	43	15	10	12	0	37	16	40	0	0	56	143
% Busses	0	0.4	0.5	0	0.4	0.4	1	0.3	0	0.9	2.3	0.7	4.9	0	1.5	6.2	1.1	0	0	1.3	1.1

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 1. Lee and Mayfield 02-27-2024 KB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 4

	LEE ROAD From North					MAYFIELD ROAD From East					LEE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	10	47	**9**	0	66	**5**	**201**	21	**1**	**228**	12	42	**9**	0	63	4	61	0	0	65	422
07:45 AM	8	50	6	0	64	1	194	**26**	1	222	27	36	7	**2**	72	**8**	83	**6**	0	97	455
08:00 AM	**12**	53	6	0	**71**	1	170	12	1	184	27	45	9	0	81	7	88	3	0	98	434
08:15 AM	9	**55**	4	**1**	69	5	183	19	0	207	**30**	**47**	6	1	**84**	3	**93**	6	0	**102**	**462**
Total Volume	39	205	25	1	270	12	748	78	3	841	96	170	31	3	300	22	325	15	0	362	1773
% App. Total	14.4	75.9	9.3	0.4		1.4	88.9	9.3	0.4		32	56.7	10.3	1		6.1	89.8	4.1	0		
PHF	.813	.932	.694	.250	.951	.600	.930	.750	.750	.922	.800	.904	.861	.375	.893	.688	.874	.625	.000	.887	.959
Cars	39	198	25	1	263	12	736	76	3	827	90	168	29	3	290	17	313	15	0	345	1725
% Cars	100	96.6	100	100	97.4	100	98.4	97.4	100	98.3	93.8	98.8	93.5	100	96.7	77.3	96.3	100	0	95.3	97.3
Trucks	0	6	0	0	6	0	4	1	0	5	3	1	1	0	5	1	8	0	0	9	25
% Trucks	0	2.9	0	0	2.2	0	0.5	1.3	0	0.6	3.1	0.6	3.2	0	1.7	4.5	2.5	0	0	2.5	1.4
Busses	0	1	0	0	1	0	8	1	0	9	3	1	1	0	5	4	4	0	0	8	23
% Busses	0	0.5	0	0	0.4	0	1.1	1.3	0	1.1	3.1	0.6	3.2	0	1.7	18.2	1.2	0	0	2.2	1.3
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**5**	34	4	2	45	**8**	**107**	25	2	**142**	12	47	5	**4**	68	4	170	13	0	187	442
04:45 PM	5	**56**	**7**	0	**68**	4	80	18	2	104	14	53	5	0	72	**15**	106	3	0	124	368
05:00 PM	2	49	5	**3**	59	6	102	21	2	131	**16**	67	**8**	0	91	14	**175**	13	1	**203**	**484**
05:15 PM	4	41	4	1	50	5	95	**26**	**7**	133	15	**75**	3	1	**94**	10	159	**14**	**2**	185	462
Total Volume	16	180	20	6	222	23	384	90	13	510	57	242	21	5	325	43	610	43	3	699	1756
% App. Total	7.2	81.1	9	2.7		4.5	75.3	17.6	2.5		17.5	74.5	6.5	1.5		6.2	87.3	6.2	0.4		
PHF	.800	.804	.714	.500	.816	.719	.897	.865	.464	.898	.891	.807	.656	.313	.864	.717	.871	.768	.375	.861	.907
Cars	16	180	20	6	222	23	380	88	13	504	57	239	20	5	321	41	605	43	3	692	1739
% Cars	100	100	100	100	100	100	99.0	97.8	100	98.8	100	98.8	95.2	100	98.8	95.3	99.2	100	100	99.0	99.0
Trucks	0	0	0	0	0	0	1	2	0	3	0	2	0	0	2	0	2	0	0	2	7
% Trucks	0	0	0	0	0	0	0.3	2.2	0	0.6	0	0.8	0	0	0.6	0	0.3	0	0	0.3	0.4
Busses	0	0	0	0	0	0	3	0	0	3	0	1	1	0	2	2	3	0	0	5	10
% Busses	0	0	0	0	0	0	0.8	0	0	0.6	0	0.4	4.8	0	0.6	4.7	0.5	0	0	0.7	0.6

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Ivydale Road

Date: 3/5/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Weather: Rain **Recorder(s):** SLC **Data entry by:** JJO **Date entered:** Mar. 6, 2024 Mayfield Rd & Ivydale Rd 030524

TIME BEGINS	Car Repari Shop FROM NORTH						Ivydale Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	0	1	2	3	0	0	12	0	21	33	0	1	36	17	838	0	855	9	7	1	310	9	320	6	7	1175	1211	0.750	0.688	0.801	0.816
08:00	0	0	3	3	1	0	16	0	21	37	2	0	40	32	849	0	881	14	10	0	420	11	431	11	6	1312	1352	0.375	0.712	0.945	0.937
09:00	0	0	1	1	0	0	12	2	10	24	0	0	25	13	527	0	540	14	6	0	369	16	385	10	6	925	950	0.250	0.600	0.900	0.925
10:00																														
11:00	2	0	1	3	0	0	9	0	14	23	1	0	26	13	458	0	471	19	7	0	450	13	463	18	8	934	960	0.750	0.639	0.899	0.919
12:00	0	1	1	2	0	0	27	0	22	49	3	0	51	7	453	0	460	10	4	1	438	23	462	20	3	922	973	0.250	0.817	0.839	0.882
1:00	0	0	2	2	1	0	12	0	14	26	1	0	28	14	458	0	472	14	5	1	474	16	491	7	5	963	991	0.500	0.650	0.855	0.792
2:00																														
3:00	2	0	1	3	0	0	2	0	18	20	0	1	23	14	349	0	363	3	3	0	455	11	466	3	4	829	852	0.250	0.625	0.756	0.766
4:00	2	0	3	5	0	0	12	1	25	38	0	0	43	25	460	0	485	3	5	0	764	16	780	5	7	1265	1308	0.625	0.633	0.926	0.878
5:00	1	0	4	5	0	0	24	0	19	43	1	1	48	26	485	0	511	2	3	0	691	17	708	3	4	1219	1267	0.625	0.827	0.875	0.885
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	7	2	18	27	2	0	126	3	164	293	8	3	320	161	4877	0	5038	88	50	3	4371	132	4506	83	50	9544	9864				
ADT	12	3	30	44	7.4%		207	5	270	482	3.8%		526	281	8527	0	8808	2.7%		5	7642	231	7878	3.0%		16687	17213				

N Leg Hourly Factor:	1.57	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.57	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	1.05	E Leg Monthly Factor:	1.08
S Leg Monthly Factor:	1.05	W Leg Monthly Factor:	1.08

N Leg Combined Factor:	1.65	E Leg Combined Factor:	1.75
S Leg Combined Factor:	1.65	W Leg Combined Factor:	1.75

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Ivydale Rd
Counter: SLC
Day of the week: Tuesday

File Name : 2. Cleveland Hgts Traffic Count #4 Mayfield Road & Ivydale Road 030524 Sue
Site Code : 00000000
Start Date : 3/5/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	CAR REPAIR SHOP From North					MAYFIELD ROAD From East					IVYDALE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	0	167	1	0	168	4	0	0	0	4	1	68	0	0	69	242
07:15 AM	0	1	0	0	1	0	186	4	0	190	6	0	1	0	7	1	72	0	0	73	271
07:30 AM	0	0	0	0	0	0	262	5	0	267	4	0	6	0	10	2	77	1	1	81	358
07:45 AM	1	0	0	2	3	0	223	7	2	232	7	0	5	0	12	5	93	0	0	98	345
Total	2	1	0	2	5	0	838	17	2	857	21	0	12	0	33	9	310	1	1	321	1216
08:00 AM	0	0	0	0	0	0	224	9	0	233	8	0	2	0	10	3	108	0	0	111	354
08:15 AM	1	0	0	0	1	0	212	9	2	223	6	0	7	0	13	1	102	0	0	103	340
08:30 AM	2	0	0	0	2	0	202	10	1	213	2	0	3	0	5	6	109	0	2	117	337
08:45 AM	0	0	0	0	0	0	211	4	1	216	5	0	4	1	10	1	101	0	0	102	328
Total	3	0	0	0	3	0	849	32	4	885	21	0	16	1	38	11	420	0	2	433	1359
09:00 AM	0	0	0	0	0	0	138	3	1	142	2	0	2	0	4	4	91	0	1	96	242
09:15 AM	1	0	0	0	1	0	146	4	2	152	3	2	3	0	8	6	86	0	0	92	253
09:30 AM	0	0	0	0	0	0	132	3	3	138	3	0	7	0	10	3	91	0	0	94	242
09:45 AM	0	0	0	0	0	0	111	3	0	114	2	0	0	0	2	3	101	0	0	104	220
Total	1	0	0	0	1	0	527	13	6	546	10	2	12	0	24	16	369	0	1	386	957
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 2. Cleveland Hgts Traffic Count #4 Mayfield Road & Ivydale Road 030524 Sue
Site Code : 00000000
Start Date : 3/5/2024

Groups Printed- Cars - Trucks - Buses

	CAR REPAIR SHOP From North					MAYFIELD ROAD From East					IVYDALE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	86	1	0	87	4	0	2	0	6	3	92	0	0	95	188
11:15 AM	1	0	0	0	1	0	128	3	3	134	1	0	1	0	2	2	124	0	0	126	263
11:30 AM	0	0	1	0	1	0	122	0	6	128	3	0	3	0	6	7	119	0	0	126	261
11:45 AM	0	0	1	0	1	0	122	9	0	131	6	0	3	0	9	1	115	0	1	117	258
Total	1	0	2	0	3	0	458	13	9	480	14	0	9	0	23	13	450	0	1	464	970
12:00 PM	0	0	0	0	0	0	108	1	1	110	5	0	6	0	11	8	123	0	0	131	252
12:15 PM	1	1	0	0	2	0	95	1	0	96	8	0	7	0	15	5	94	0	0	99	212
12:30 PM	0	0	0	0	0	0	115	3	1	119	4	0	9	0	13	8	110	0	1	119	251
12:45 PM	0	0	0	1	1	0	135	2	2	139	5	0	5	0	10	2	111	1	0	114	264
Total	1	1	0	1	3	0	453	7	4	464	22	0	27	0	49	23	438	1	1	463	979
01:00 PM	1	0	0	0	1	0	104	3	2	109	4	0	4	0	8	7	120	1	2	130	248
01:15 PM	0	0	0	0	0	0	117	1	0	118	4	0	0	0	4	7	148	0	0	155	277
01:30 PM	0	0	0	0	0	0	133	5	0	138	4	0	6	0	10	1	104	0	0	105	253
01:45 PM	1	0	0	0	1	0	104	5	0	109	2	0	2	0	4	1	102	0	0	103	217
Total	2	0	0	0	2	0	458	14	2	474	14	0	12	0	26	16	474	1	2	493	995
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	1	0	2	0	3	0	115	4	0	119	5	0	1	0	6	7	144	0	0	151	279

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 2. Cleveland Hgts Traffic Count #4 Mayfield Road & Ivydale Road 030524 Sue
Site Code : 00000000
Start Date : 3/5/2024
Page No : 3

Groups Printed- Cars - Trucks - Buses

	CAR REPAIR SHOP From North					MAYFIELD ROAD From East					IVYDALE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	0	0	0	0	0	0	115	5	1	121	7	0	1	0	8	2	150	0	1	153	282
03:30 PM	0	0	0	0	0	0	58	5	0	63	5	0	0	0	5	2	76	0	0	78	146
03:45 PM	0	0	0	0	0	0	61	0	0	61	1	0	0	0	1	0	85	0	0	85	147
Total	1	0	2	0	3	0	349	14	1	364	18	0	2	0	20	11	455	0	1	467	854
04:00 PM	1	0	1	0	2	0	120	5	0	125	3	0	1	0	4	1	184	0	0	185	316
04:15 PM	1	0	1	0	2	0	107	3	0	110	9	1	2	0	12	2	184	0	1	187	311
04:30 PM	1	0	0	0	1	0	119	12	0	131	3	0	4	0	7	8	179	0	0	187	326
04:45 PM	0	0	0	0	0	0	114	5	0	119	10	0	5	0	15	5	217	0	0	222	356
Total	3	0	2	0	5	0	460	25	0	485	25	1	12	0	38	16	764	0	1	781	1309
05:00 PM	2	0	0	0	2	0	127	3	0	130	5	0	7	0	12	10	180	0	0	190	334
05:15 PM	1	0	0	0	1	0	137	9	3	149	4	0	5	0	9	1	178	0	0	179	338
05:30 PM	1	0	0	0	1	0	97	8	1	106	6	0	3	0	9	1	199	0	0	200	316
05:45 PM	0	0	1	0	1	0	124	6	1	131	4	0	9	0	13	5	134	0	0	139	284
Total	4	0	1	0	5	0	485	26	5	516	19	0	24	0	43	17	691	0	0	708	1272
Grand Total	18	2	7	3	30	0	4877	161	33	5071	164	3	126	1	294	132	4371	3	10	4516	9911
Apprch %	60	6.7	23.3	10		0	96.2	3.2	0.7		55.8	1	42.9	0.3		2.9	96.8	0.1	0.2		
Total %	0.2	0	0.1	0	0.3	0	49.2	1.6	0.3	51.2	1.7	0	1.3	0	3	1.3	44.1	0	0.1	45.6	
Cars	16	2	7	3	28	0	4744	156	27	4927	159	3	120	0	282	128	4242	3	9	4382	9619
% Cars	88.9	100	100	100	93.3	0	97.3	96.9	81.8	97.2	97	100	95.2	0	95.9	97	97	100	90	97	97.1
Trucks	2	0	0	0	2	0	84	4	6	94	3	0	5	1	9	1	82	0	1	84	189
% Trucks	11.1	0	0	0	6.7	0	1.7	2.5	18.2	1.9	1.8	0	4	100	3.1	0.8	1.9	0	10	1.9	1.9
Buses	0	0	0	0	0	0	49	1	0	50	2	0	1	0	3	3	47	0	0	50	103
% Buses	0	0	0	0	0	0	1	0.6	0	1	1.2	0	0.8	0	1	2.3	1.1	0	0	1.1	1

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 2. Cleveland Hgts Traffic Count #4 Mayfield Road & Ivydale Road 030524 Sue
Site Code : 00000000
Start Date : 3/5/2024
Page No : 4

	CAR REPAIR SHOP From North					MAYFIELD ROAD From East					IVYDALE ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**262**	5	0	**267**	4	0	6	0	10	2	77	**1**	**1**	81	**358**
07:45 AM	**1**	0	0	**2**	**3**	0	223	7	**2**	232	7	0	5	0	12	**5**	93	0	0	98	345
08:00 AM	0	0	0	0	0	0	224	**9**	0	233	**8**	0	2	0	10	3	**108**	0	0	**111**	354
08:15 AM	1	0	0	0	1	0	212	9	2	223	6	0	**7**	0	**13**	1	102	0	0	103	340
Total Volume	2	0	0	2	4	0	921	30	4	955	25	0	20	0	45	11	380	1	1	393	1397
% App. Total	50	0	0	50		0	96.4	3.1	0.4		55.6	0	44.4	0		2.8	96.7	0.3	0.3		
PHF	.500	.000	.000	.250	.333	.000	.879	.833	.500	.894	.781	.000	.714	.000	.865	.550	.880	.250	.250	.885	.976
Cars	2	0	0	2	4	0	900	28	3	931	23	0	20	0	43	10	365	1	1	377	1355
% Cars	100	0	0	100	100	0	97.7	93.3	75.0	97.5	92.0	0	100	0	95.6	90.9	96.1	100	100	95.9	97.0
Trucks	0	0	0	0	0	0	11	1	1	13	2	0	0	0	2	0	9	0	0	9	24
% Trucks	0	0	0	0	0	0	1.2	3.3	25.0	1.4	8.0	0	0	0	4.4	0	2.4	0	0	2.3	1.7
Buses	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	1	6	0	0	7	18
% Buses	0	0	0	0	0	0	1.1	3.3	0	1.2	0	0	0	0	0	9.1	1.6	0	0	1.8	1.3
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	0	0	0	1	0	119	**12**	0	131	3	0	4	0	7	8	179	0	0	187	326
04:45 PM	0	0	0	0	0	0	114	5	0	119	**10**	0	5	0	**15**	5	**217**	0	0	**222**	**356**
05:00 PM	**2**	0	0	0	**2**	0	127	3	0	130	5	0	**7**	0	12	**10**	180	0	0	190	334
05:15 PM	1	0	0	0	1	0	**137**	9	**3**	**149**	4	0	5	0	9	1	178	0	0	179	338
Total Volume	4	0	0	0	4	0	497	29	3	529	22	0	21	0	43	24	754	0	0	778	1354
% App. Total	100	0	0	0		0	94	5.5	0.6		51.2	0	48.8	0		3.1	96.9	0	0		
PHF	.500	.000	.000	.000	.500	.000	.907	.604	.250	.888	.550	.000	.750	.000	.717	.600	.869	.000	.000	.876	.951
Cars	4	0	0	0	4	0	492	28	3	523	22	0	19	0	41	24	747	0	0	771	1339
% Cars	100	0	0	0	100	0	99.0	96.6	100	98.9	100	0	90.5	0	95.3	100	99.1	0	0	99.1	98.9
Trucks	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	3	0	0	3	6
% Trucks	0	0	0	0	0	0	0.2	3.4	0	0.4	0	0	4.8	0	2.3	0	0.4	0	0	0.4	0.4
Buses	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	4	0	0	4	9
% Buses	0	0	0	0	0	0	0.8	0	0	0.8	0	0	4.8	0	2.3	0	0.5	0	0	0.5	0.7

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Burlington Road

Date: 2/29/2024 **Day:** Thu. **Comments:** **Project:** 24-032

Weather: Clear **Recorder(s):** DJS **Data entry by:** JJO **Date entered:** Mar. 1, 2024 Mayfield Rd & Burlington Rd 022924

TIME BEGINS	Burlington Rd. FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	5	0	13	18	0	0							18	0	818	3	821	10	7	0	317	0	317	16	6	1138	1156	0.500	0.000	0.796	0.817
08:00	3	0	19	22	0	1							22	0	890	3	893	10	11	5	408	0	413	11	7	1306	1328	0.786	0.000	0.842	0.947
09:00	4	0	13	17	1	0							17	0	710	8	718	14	6	3	413	6	422	23	8	1140	1157	0.607	0.000	0.911	0.865
10:00																														
11:00	6	0	4	10	1	0							10	1	432	4	437	21	4	6	474	0	480	22	6	917	927	0.625	0.000	0.881	0.882
12:00	3	0	6	9	0	1							9	0	455	4	459	11	8	4	503	0	507	14	3	966	975	0.563	0.000	0.904	0.932
1:00	4	0	10	14	0	0							14	0	475	3	478	12	8	4	499	0	503	23	10	981	995	0.700	0.000	0.934	0.945
2:00																														
3:00	6	0	13	19	1	1							19	0	585	20	605	7	7	12	722	0	734	12	16	1339	1358	0.679	0.000	0.831	0.951
4:00	6	0	6	12	0	0							12	0	600	10	610	11	6	18	848	0	866	14	4	1476	1488	0.600	0.000	0.947	0.929
5:00	3	0	9	12	0	0							12	0	544	8	552	4	4	6	936	0	942	5	5	1494	1506	0.600	0.000	0.945	0.927
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	40	0	93	133	3	3							133	1	5509	63	5573	100	61	58	5120	6	5184	140	65	10757	10890				
ADT	57	0	132	189	4.5%								189	1	7908	90	8000	2.9%		83	7350	9	7442	4.0%		15442	15630				

N Leg Hourly Factor:	1.57	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	0.00	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.90	E Leg Monthly Factor:	0.89
S Leg Monthly Factor:	0.00	W Leg Monthly Factor:	0.89

N Leg Combined Factor:	1.42	E Leg Combined Factor:	1.44
S Leg Combined Factor:		W Leg Combined Factor:	1.44

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Burlington Rd
Counter: DJS
Day of the Week: Thursday

File Name : 3. TC 3 Mayfield Rd and Burlington Rd 022924 DJS
Site Code : 00000000
Start Date : 2/29/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	BURLINGTON ROAD From North					MAYFIELD ROAD From East					From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	1	0	2	1	153	0	0	154	0	0	0	0	0	0	68	0	0	68	224
07:15 AM	2	0	1	0	3	1	201	0	0	202	0	0	0	0	0	0	80	0	0	80	285
07:30 AM	7	0	2	0	9	1	257	0	0	258	0	0	0	0	0	0	72	0	0	72	339
07:45 AM	3	0	1	2	6	0	207	0	2	209	0	0	0	0	0	0	97	0	0	97	312
Total	13	0	5	2	20	3	818	0	2	823	0	0	0	0	0	0	317	0	0	317	1160
08:00 AM	5	0	0	0	5	0	233	0	0	233	0	0	0	0	0	0	108	1	0	109	347
08:15 AM	6	0	1	0	7	1	264	0	0	265	0	0	0	0	0	0	103	2	0	105	377
08:30 AM	4	0	2	0	6	1	212	0	1	214	0	0	0	0	0	0	108	0	0	108	328
08:45 AM	4	0	0	0	4	1	181	0	0	182	0	0	0	0	0	0	89	2	0	91	277
Total	19	0	3	0	22	3	890	0	1	894	0	0	0	0	0	0	408	5	0	413	1329
09:00 AM	4	0	1	0	5	2	195	0	0	197	0	0	0	0	0	6	114	1	0	121	323
09:15 AM	0	0	0	0	0	3	180	0	0	183	0	0	0	0	0	0	90	0	0	90	273
09:30 AM	5	0	0	0	5	3	169	0	1	173	0	0	0	0	0	0	88	1	0	89	267
09:45 AM	4	0	3	0	7	0	166	0	0	166	0	0	0	0	0	0	121	1	0	122	295
Total	13	0	4	0	17	8	710	0	1	719	0	0	0	0	0	6	413	3	0	422	1158
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 3. TC 3 Mayfield Rd and Burlington Rd 022924 DJS
Site Code : 00000000
Start Date : 2/29/2024
Page No : 2

Groups Printed- Cars - Trucks - Buses

	BURLINGTON ROAD From North					MAYFIELD ROAD From East					From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	2	0	2	1	5	0	105	0	1	106	0	0	0	0	0	0	114	0	0	114	225
11:15 AM	1	0	0	0	1	3	116	0	1	120	0	0	0	0	0	0	135	1	0	136	257
11:30 AM	0	0	4	0	4	0	123	1	2	126	0	0	0	0	0	0	118	1	0	119	249
11:45 AM	1	0	0	0	1	1	88	0	0	89	0	0	0	0	0	0	107	4	0	111	201
Total	4	0	6	1	11	4	432	1	4	441	0	0	0	0	0	0	474	6	0	480	932
12:00 PM	2	0	1	0	3	1	116	0	0	117	0	0	0	0	0	0	135	1	0	136	256
12:15 PM	0	0	1	0	1	2	99	0	0	101	0	0	0	0	0	0	122	2	0	124	226
12:30 PM	4	0	0	0	4	1	126	0	0	127	0	0	0	0	0	0	130	0	0	130	261
12:45 PM	0	0	1	0	1	0	114	0	0	114	0	0	0	0	0	0	116	1	0	117	232
Total	6	0	3	0	9	4	455	0	0	459	0	0	0	0	0	0	503	4	0	507	975
01:00 PM	2	0	2	0	4	1	121	0	0	122	0	0	0	0	0	0	106	2	0	108	234
01:15 PM	4	0	1	0	5	0	119	0	1	120	0	0	0	0	0	0	133	0	0	133	258
01:30 PM	1	0	1	0	2	1	108	0	1	110	0	0	0	0	0	0	131	0	0	131	243
01:45 PM	3	0	0	0	3	1	127	0	1	129	0	0	0	0	0	0	129	2	0	131	263
Total	10	0	4	0	14	3	475	0	3	481	0	0	0	0	0	0	499	4	0	503	998
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	1	0	1	0	2	1	157	0	0	158	0	0	0	0	0	0	169	3	0	172	332

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 3. TC 3 Mayfield Rd and Burlington Rd 022924 DJS
Site Code : 00000000
Start Date : 2/29/2024
Page No : 3

Groups Printed- Cars - Trucks - Buses

	BURLINGTON ROAD From North					MAYFIELD ROAD From East					From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	3	0	2	1	6	3	127	0	2	132	0	0	0	0	0	0	186	3	0	189	327
03:30 PM	5	0	2	0	7	16	119	0	0	135	0	0	0	0	0	0	188	5	0	193	335
03:45 PM	4	0	1	0	5	0	182	0	0	182	0	0	0	0	0	0	179	1	0	180	367
Total	13	0	6	1	20	20	585	0	2	607	0	0	0	0	0	0	722	12	0	734	1361
04:00 PM	1	0	1	2	4	3	128	0	1	132	0	0	0	0	0	0	186	4	0	190	326
04:15 PM	2	0	2	0	4	1	158	0	0	159	0	0	0	0	0	0	212	4	0	216	379
04:30 PM	2	0	3	0	5	4	155	0	0	159	0	0	0	0	0	0	229	4	0	233	397
04:45 PM	1	0	0	0	1	2	159	0	0	161	0	0	0	0	0	0	221	6	0	227	389
Total	6	0	6	2	14	10	600	0	1	611	0	0	0	0	0	0	848	18	0	866	1491
05:00 PM	3	0	2	0	5	3	132	0	2	137	0	0	0	0	0	0	253	1	0	254	396
05:15 PM	3	0	0	0	3	0	128	0	0	128	0	0	0	0	0	0	241	3	0	244	375
05:30 PM	1	0	1	0	2	4	139	0	0	143	0	0	0	0	0	0	209	2	0	211	356
05:45 PM	2	0	0	0	2	1	145	0	2	148	0	0	0	0	0	0	233	0	0	233	383
Total	9	0	3	0	12	8	544	0	4	556	0	0	0	0	0	0	936	6	0	942	1510
Grand Total	93	0	40	6	139	63	5509	1	18	5591	0	0	0	0	0	6	5120	58	0	5184	10914
Apprch %	66.9	0	28.8	4.3		1.1	98.5	0	0.3		0	0	0	0		0.1	98.8	1.1	0		
Total %	0.9	0	0.4	0.1	1.3	0.6	50.5	0	0.2	51.2	0	0	0	0	0	0.1	46.9	0.5	0	47.5	
Cars	90	0	37	6	133	61	5351	0	17	5429	0	0	0	0	0	4	4921	54	0	4979	10541
% Cars	96.8	0	92.5	100	95.7	96.8	97.1	0	94.4	97.1	0	0	0	0	0	66.7	96.1	93.1	0	96	96.6
Trucks	2	0	1	0	3	2	98	0	1	101	0	0	0	0	0	2	137	1	0	140	244
% Trucks	2.2	0	2.5	0	2.2	3.2	1.8	0	5.6	1.8	0	0	0	0	0	33.3	2.7	1.7	0	2.7	2.2
Buses	1	0	2	0	3	0	60	1	0	61	0	0	0	0	0	0	62	3	0	65	129
% Buses	1.1	0	5	0	2.2	0	1.1	100	0	1.1	0	0	0	0	0	0	1.2	5.2	0	1.3	1.2

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 3. TC 3 Mayfield Rd and Burlington Rd 022924 DJS
Site Code : 00000000
Start Date : 2/29/2024
Page No : 4

	BURLINGTON ROAD From North					MAYFIELD ROAD From East					From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**7**	0	**2**	0	**9**	**1**	257	0	0	258	0	0	0	0	0	0	72	0	0	72	339
07:45 AM	3	0	1	**2**	6	0	207	0	**2**	209	0	0	0	0	0	0	97	0	0	97	312
08:00 AM	5	0	0	0	5	0	233	0	0	233	0	0	0	0	0	0	**108**	1	0	**109**	347
08:15 AM	6	0	1	0	7	1	**264**	0	0	**265**	0	0	0	0	0	0	103	**2**	0	105	**377**
Total Volume	21	0	4	2	27	2	961	0	2	965	0	0	0	0	0	0	380	3	0	383	1375
% App. Total	77.8	0	14.8	7.4		0.2	99.6	0	0.2		0	0	0	0		0	99.2	0.8	0		
PHF	.750	.000	.500	.250	.750	.500	.910	.000	.250	.910	.000	.000	.000	.000	.000	.000	.880	.375	.000	.878	.912
Cars	21	0	3	2	26	2	941	0	2	945	0	0	0	0	0	0	364	3	0	367	1338
% Cars	100	0	75.0	100	96.3	100	97.9	0	100	97.9	0	0	0	0	0	0	95.8	100	0	95.8	97.3
Trucks	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	12	0	0	12	21
% Trucks	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	3.2	0	0	3.1	1.5
Buses	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	0	4	0	0	4	16
% Buses	0	0	25.0	0	3.7	0	1.1	0	0	1.1	0	0	0	0	0	0	1.1	0	0	1.0	1.2
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	0	**3**	0	**5**	**4**	155	0	0	159	0	0	0	0	0	0	229	4	0	233	**397**
04:45 PM	1	0	0	0	1	2	**159**	0	0	**161**	0	0	0	0	0	0	221	**6**	0	227	389
05:00 PM	**3**	0	2	0	5	3	132	0	**2**	137	0	0	0	0	0	0	**253**	1	0	**254**	396
05:15 PM	3	0	0	0	3	0	128	0	0	128	0	0	0	0	0	0	241	3	0	244	375
Total Volume	9	0	5	0	14	9	574	0	2	585	0	0	0	0	0	0	944	14	0	958	1557
% App. Total	64.3	0	35.7	0		1.5	98.1	0	0.3		0	0	0	0		0	98.5	1.5	0		
PHF	.750	.000	.417	.000	.700	.563	.903	.000	.250	.908	.000	.000	.000	.000	.000	.000	.933	.583	.000	.943	.980
Cars	9	0	5	0	14	9	564	0	2	575	0	0	0	0	0	0	929	14	0	943	1532
% Cars	100	0	100	0	100	100	98.3	0	100	98.3	0	0	0	0	0	0	98.4	100	0	98.4	98.4
Trucks	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	18
% Trucks	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0	1.3	0	0	1.3	1.2
Buses	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
% Buses	0	0	0	0	0	0	0.7	0	0	0.7	0	0	0	0	0	0	0.3	0	0	0.3	0.4

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** est Hils Boulevard / Rydalmount R

Date: 2/27/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Mayfield Rd & Rydalmount Rd 022724

Weather: Clear **Recorder(s):** SLC **Data entry by:** JJO **Date entered:** Feb. 28, 2024

TIME BEGINS	Forest Hills Blvd. FROM NORTH						Rydalmount Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	45	3	14	62	0	1	2	1	7	10	0	0	72	3	854	93	950	3	6	2	325	0	327	8	6	1277	1349	0.620	0.500	0.836	0.879
08:00	68	9	7	84	0	2	4	4	7	15	0	0	99	4	712	89	805	12	10	2	315	2	319	8	7	1124	1223	0.750	0.469	0.853	0.917
09:00	43	4	1	48	0	3	1	3	3	7	0	0	55	1	388	51	440	6	4	4	235	2	241	17	1	681	736	0.667	0.583	0.632	0.753
10:00																														
11:00	54	0	7	61	1	2	3	1	5	9	0	0	70	4	441	118	563	14	6	8	466	3	477	17	6	1040	1110	0.663	0.563	0.891	0.917
12:00	88	2	4	94	2	0	3	3	5	11	0	0	105	5	495	129	629	13	5	2	464	3	469	14	7	1098	1203	0.758	0.917	0.904	0.916
1:00	68	6	10	84	0	0	0	1	5	6	0	0	90	7	460	105	572	15	7	8	491	0	499	15	8	1071	1161	0.724	0.750	0.941	0.854
2:00																														
3:00	98	5	9	112	1	2	3	2	12	17	0	1	129	8	521	103	632	7	5	10	601	10	621	10	16	1253	1382	0.737	0.607	0.836	0.882
4:00	117	7	9	133	1	0	1	3	8	12	0	0	145	10	530	148	688	2	6	12	777	6	795	3	9	1483	1628	0.811	0.429	0.935	0.908
5:00	88	7	9	104	1	1	1	2	15	18	0	0	122	7	588	157	752	7	4	9	829	12	850	0	4	1602	1724	0.839	0.750	0.926	0.889
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	669	43	70	782	6	11	18	20	67	105	0	1	887	49	4989	993	6031	79	53	57	4503	38	4598	92	64	10629	11516				
ADT	922	59	96	1078	2.2%		25	28	92	145	1.0%		1223	70	7097	1413	8580	2.2%		81	6406	54	6541	3.4%		15121	16343				

N Leg Hourly Factor:	1.57	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.57	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.88	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.88	W Leg Monthly Factor:	0.88

N Leg Combined Factor:	1.38	E Leg Combined Factor:	1.42
S Leg Combined Factor:	1.38	W Leg Combined Factor:	1.42

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Rydalmount Rd
Counter: SLC
Day of the week: Tuesday

File Name : 4. Cleveland Hgts Traffic Count #2 Mayfield Road & Rydalmount Rd 022724 Sue
Site Code : 00000000
Start Date : 2/27/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	FOREST HILLS BOULEVARD From North					MAYFIELD ROAD From East					RYDALMOUNT ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	3	0	4	11	153	0	0	164	4	0	1	0	5	0	69	0	0	69	242
07:15 AM	3	0	9	0	12	28	201	0	0	229	1	0	0	0	1	0	74	2	0	76	318
07:30 AM	3	0	18	0	21	23	261	0	0	284	1	1	1	0	3	0	93	0	0	93	401
07:45 AM	7	3	15	0	25	31	239	3	0	273	1	0	0	0	1	0	89	0	0	89	388
Total	14	3	45	0	62	93	854	3	0	950	7	1	2	0	10	0	325	2	0	327	1349
08:00 AM	3	2	10	2	17	17	139	0	0	156	1	1	0	0	2	0	72	1	0	73	248
08:15 AM	2	3	11	0	16	27	208	1	1	237	1	1	1	0	3	2	82	0	0	84	340
08:30 AM	2	3	20	0	25	24	178	0	0	202	4	2	2	0	8	0	74	1	2	77	312
08:45 AM	0	1	27	0	28	21	187	3	1	212	1	0	1	0	2	0	87	0	0	87	329
Total	7	9	68	2	86	89	712	4	2	807	7	4	4	0	15	2	315	2	2	321	1229
09:00 AM	1	0	17	0	18	19	155	0	0	174	2	1	0	0	3	1	78	1	1	81	276
09:15 AM	0	2	13	0	15	14	100	0	0	114	0	1	1	0	2	1	57	3	1	62	193
09:30 AM	0	1	7	0	8	5	70	0	0	75	0	1	0	0	1	0	65	0	0	65	149
09:45 AM	0	1	6	0	7	13	63	1	1	78	1	0	0	0	1	0	35	0	0	35	121
Total	1	4	43	0	48	51	388	1	1	441	3	3	1	0	7	2	235	4	2	243	739
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 4. Cleveland Hgts Traffic Count #2 Mayfield Road & Rydalmount Rd 022724 Sue
Site Code : 00000000
Start Date : 2/27/2024

Groups Printed- Cars - Trucks - Buses

	FOREST HILLS BOULEVARD From North					MAYFIELD ROAD From East					RYDALMOUNT ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	23	0	23	28	97	1	0	126	2	1	1	0	4	0	97	0	0	97	250
11:15 AM	4	0	10	0	14	25	105	2	1	133	1	0	1	0	2	0	119	3	1	123	272
11:30 AM	1	0	14	0	15	28	129	1	4	162	0	0	0	0	0	1	125	2	0	128	305
11:45 AM	2	0	7	0	9	37	110	0	0	147	2	0	1	0	3	2	125	3	0	130	289
Total	7	0	54	0	61	118	441	4	5	568	5	1	3	0	9	3	466	8	1	478	1116
12:00 PM	2	0	20	0	22	31	124	0	0	155	1	1	1	0	3	1	109	1	0	111	291
12:15 PM	0	1	18	0	19	27	114	2	1	144	2	0	1	0	3	0	128	0	1	129	295
12:30 PM	0	1	30	1	32	39	133	2	0	174	0	2	0	2	4	1	123	1	3	128	338
12:45 PM	2	0	20	0	22	32	124	1	1	158	2	0	1	0	3	1	104	0	1	106	289
Total	4	2	88	1	95	129	495	5	2	631	5	3	3	2	13	3	464	2	5	474	1213
01:00 PM	1	1	17	0	19	30	118	4	0	152	1	0	0	0	1	0	109	1	2	112	284
01:15 PM	1	1	14	0	16	32	110	2	0	144	1	1	0	0	2	0	129	1	3	133	295
01:30 PM	6	2	12	0	20	16	112	1	1	130	2	0	0	0	2	0	144	2	0	146	298
01:45 PM	2	2	25	0	29	27	120	0	4	151	1	0	0	0	1	0	109	4	0	113	294
Total	10	6	68	0	84	105	460	7	5	577	5	1	0	0	6	0	491	8	5	504	1171
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	1	0	33	0	34	26	105	5	0	136	3	1	0	0	4	3	131	4	0	138	312

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 4. Cleveland Hgts Traffic Count #2 Mayfield Road & Rydalmount Rd 022724 Sue
Site Code : 00000000
Start Date : 2/27/2024

Groups Printed- Cars - Trucks - Buses

	FOREST HILLS BOULEVARD From North					MAYFIELD ROAD From East					RYDALMOUNT ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	1	2	21	0	24	23	165	1	0	189	3	0	1	0	4	4	168	4	2	178	395
03:30 PM	5	2	31	0	38	28	89	2	0	119	1	0	1	0	2	0	152	2	0	154	313
03:45 PM	2	1	13	1	17	26	162	0	2	190	5	1	1	0	7	3	150	0	0	153	367
Total	9	5	98	1	113	103	521	8	2	634	12	2	3	0	17	10	601	10	2	623	1387
04:00 PM	2	1	34	0	37	39	105	1	1	146	3	0	0	0	3	0	180	4	2	186	372
04:15 PM	4	2	23	0	29	38	142	4	0	184	1	0	0	0	1	1	217	1	0	219	433
04:30 PM	1	3	37	2	43	36	135	5	2	178	0	1	0	0	1	0	194	4	1	199	421
04:45 PM	2	1	23	1	27	35	148	0	0	183	4	2	1	0	7	5	186	3	1	195	412
Total	9	7	117	3	136	148	530	10	3	691	8	3	1	0	12	6	777	12	4	799	1638
05:00 PM	1	1	17	2	21	42	151	3	0	196	2	0	0	0	2	3	234	2	3	242	461
05:15 PM	4	2	25	1	32	39	130	2	0	171	4	1	0	0	5	5	196	2	0	203	411
05:30 PM	2	2	20	4	28	38	163	2	0	203	3	1	1	0	5	2	214	4	1	221	457
05:45 PM	2	2	26	2	32	38	144	0	2	184	6	0	0	0	6	2	185	1	0	188	410
Total	9	7	88	9	113	157	588	7	2	754	15	2	1	0	18	12	829	9	4	854	1739
Grand Total	70	43	669	16	798	993	4989	49	22	6053	67	20	18	2	107	38	4503	57	25	4623	11581
Apprch %	8.8	5.4	83.8	2		16.4	82.4	0.8	0.4		62.6	18.7	16.8	1.9		0.8	97.4	1.2	0.5		
Total %	0.6	0.4	5.8	0.1	6.9	8.6	43.1	0.4	0.2	52.3	0.6	0.2	0.2	0	0.9	0.3	38.9	0.5	0.2	39.9	
Cars	68	43	654	13	778	979	4871	49	17	5916	67	19	18	2	106	36	4352	54	21	4463	11263
% Cars	97.1	100	97.8	81.2	97.5	98.6	97.6	100	77.3	97.7	100	95	100	100	99.1	94.7	96.6	94.7	84	96.5	97.3
Trucks	0	0	6	3	9	9	70	0	5	84	0	0	0	0	0	1	91	0	2	94	187
% Trucks	0	0	0.9	18.8	1.1	0.9	1.4	0	22.7	1.4	0	0	0	0	0	2.6	2	0	8	2	1.6
Buses	2	0	9	0	11	5	48	0	0	53	0	1	0	0	1	1	60	3	2	66	131
% Buses	2.9	0	1.3	0	1.4	0.5	1	0	0	0.9	0	5	0	0	0.9	2.6	1.3	5.3	8	1.4	1.1

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 4. Cleveland Hgts Traffic Count #2 Mayfield Road & Rydalmount Rd 022724 Sue
Site Code : 00000000
Start Date : 2/27/2024
Page No : 4

	FOREST HILLS BOULEVARD From North					MAYFIELD ROAD From East					RYDALMOUNT ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	0	**18**	0	21	23	**261**	0	0	**284**	**1**	**1**	**1**	0	**3**	0	**93**	0	0	**93**	**401**
07:45 AM	**7**	**3**	15	0	**25**	**31**	239	**3**	0	273	1	0	0	0	1	0	89	0	0	89	388
08:00 AM	3	2	10	**2**	17	17	139	0	0	156	1	1	0	0	2	0	72	**1**	0	73	248
08:15 AM	2	3	11	0	16	27	208	1	**1**	237	1	1	1	0	3	**2**	82	0	0	84	340
Total Volume	15	8	54	2	79	98	847	4	1	950	4	3	2	0	9	2	336	1	0	339	1377
% App. Total	19	10.1	68.4	2.5		10.3	89.2	0.4	0.1		44.4	33.3	22.2	0		0.6	99.1	0.3	0		
PHF	.536	.667	.750	.250	.790	.790	.811	.333	.250	.836	1.00	.750	.500	.000	.750	.250	.903	.250	.000	.911	.858
Cars	15	8	53	2	78	96	834	4	0	934	4	3	2	0	9	1	322	1	0	324	1345
% Cars	100	100	98.1	100	98.7	98.0	98.5	100	0	98.3	100	100	100	0	100	50.0	95.8	100	0	95.6	97.7
Trucks	0	0	0	0	0	2	5	0	1	8	0	0	0	0	0	0	9	0	0	9	17
% Trucks	0	0	0	0	0	2.0	0.6	0	100	0.8	0	0	0	0	0	0	2.7	0	0	2.7	1.2
Buses	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	1	5	0	0	6	15
% Buses	0	0	1.9	0	1.3	0	0.9	0	0	0.8	0	0	0	0	0	50.0	1.5	0	0	1.8	1.1
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	**3**	**37**	**2**	**43**	36	135	**5**	**2**	178	0	1	0	0	1	0	194	**4**	1	199	421
04:45 PM	2	1	23	1	27	35	148	0	0	183	**4**	**2**	**1**	0	**7**	**5**	186	3	1	195	412
05:00 PM	1	1	17	2	21	**42**	**151**	3	0	**196**	2	0	0	0	2	3	**234**	2	**3**	**242**	**461**
05:15 PM	**4**	2	25	1	32	39	130	2	0	171	4	1	0	0	5	5	196	2	0	203	411
Total Volume	8	7	102	6	123	152	564	10	2	728	10	4	1	0	15	13	810	11	5	839	1705
% App. Total	6.5	5.7	82.9	4.9		20.9	77.5	1.4	0.3		66.7	26.7	6.7	0		1.5	96.5	1.3	0.6		
PHF	.500	.583	.689	.750	.715	.905	.934	.500	.250	.929	.625	.500	.250	.000	.536	.650	.865	.688	.417	.867	.925
Cars	8	7	101	4	120	152	555	10	2	719	10	4	1	0	15	13	805	11	4	833	1687
% Cars	100	100	99.0	66.7	97.6	100	98.4	100	100	98.8	100	100	100	0	100	100	99.4	100	80.0	99.3	98.9
Trucks	0	0	1	2	3	0	5	0	0	5	0	0	0	0	0	0	1	0	1	2	10
% Trucks	0	0	1.0	33.3	2.4	0	0.9	0	0	0.7	0	0	0	0	0	0	0.1	0	20.0	0.2	0.6
Buses	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
% Buses	0	0	0	0	0	0	0.7	0	0	0.5	0	0	0	0	0	0	0.5	0	0	0.5	0.5

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Taylor Road

Date: 2/29/2024 **Day:** Thu. **Comments:** **Project:** 24-032

Weather: Clear **Recorder(s):** KPB & ALB **Data entry by:** JJO **Date entered:** Mar. 1, 2024 Mayfield Rd & S.Taylor Rd 022924

TIME BEGINS	S.Taylor Rd. FROM NORTH						S.Taylor Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	113	200	29	342	6	1	49	141	56	246	1	4	588	117	794	60	971	13	8	16	299	29	344	4	4	1315	1903	0.582	0.699	0.791	0.878
08:00	124	224	24	372	3	4	82	202	130	414	1	3	786	140	849	76	1065	10	13	15	389	43	447	8	3	1512	2298	0.894	0.908	0.870	0.963
09:00	93	133	16	242	5	6	76	160	79	315	5	1	557	88	554	71	713	23	2	20	349	36	405	9	1	1118	1675	0.852	0.905	0.865	0.844
10:00																														
11:00	100	140	19	259	8	4	79	154	86	319	7	0	578	64	443	68	575	23	4	10	394	57	461	14	0	1036	1614	0.966	0.949	0.927	0.867
12:00	92	148	16	256	4	4	76	180	92	348	1	1	604	70	426	65	561	11	4	25	406	54	485	7	0	1046	1650	0.853	0.845	0.935	0.905
1:00	109	151	17	277	5	3	68	162	90	320	1	1	597	64	457	84	605	13	7	23	412	41	476	12	2	1081	1678	0.866	0.889	0.939	0.902
2:00																														
3:00	159	183	25	367	3	2	88	233	150	471	0	2	838	126	563	126	815	5	6	32	640	81	753	4	6	1568	2406	0.891	0.935	0.871	0.970
4:00	135	210	25	370	4	0	84	215	131	430	0	3	800	88	628	119	835	6	8	37	680	69	786	2	3	1621	2421	0.833	0.896	0.962	0.897
5:00	96	200	23	319	1	0	68	235	138	441	2	2	760	80	519	102	701	5	2	25	763	76	864	2	2	1565	2325	0.927	0.904	0.894	0.874
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	1021	1589	194	2804	39	24	670	1682	952	3304	18	17	6108	837	5233	771	6841	109	54	203	4332	486	5021	62	21	11862	17970				
ADT	1418	2207	269	3894	2.2%		930	2336	1322	4588	1.1%		8482	1202	7512	1107	9820	2.4%		291	6219	698	7208	1.7%		17028	25509				

N Leg Hourly Factor:	1.54	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.54	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.90	E Leg Monthly Factor:	0.89
S Leg Monthly Factor:	0.90	W Leg Monthly Factor:	0.89

N Leg Combined Factor:	1.39	E Leg Combined Factor:	1.44
S Leg Combined Factor:	1.39	W Leg Combined Factor:	1.44

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & S.Taylor Rd
Counter: KPB & ALB
Day of the Week: Thursday

File Name : 5. Mayfield Rd & S.Taylor Rd 022924
Site Code : 00000000
Start Date : 2/29/2024
Page No : 1

Groups Printed- Cars - Trucks - Busses

	S.TAYLOR ROAD From North					MAYFIELD ROAD From East					S.TAYLOR ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	23	12	1	39	11	152	11	0	174	3	23	7	0	33	6	65	4	0	75	321
07:15 AM	5	32	21	0	58	13	186	21	0	220	13	25	14	0	52	7	67	5	0	79	409
07:30 AM	11	55	33	0	99	18	252	37	0	307	17	42	14	0	73	6	82	4	0	92	571
07:45 AM	10	90	47	0	147	18	204	48	1	271	23	51	14	1	89	10	85	3	5	103	610
Total	29	200	113	1	343	60	794	117	1	972	56	141	49	1	247	29	299	16	5	349	1911
08:00 AM	4	64	32	0	100	13	226	36	0	275	34	66	14	0	114	7	99	6	0	112	601
08:15 AM	9	43	30	1	83	30	243	33	0	306	43	47	22	0	112	12	101	3	0	116	617
08:30 AM	5	69	30	0	104	14	187	38	0	239	33	36	31	0	100	12	92	0	0	104	547
08:45 AM	6	48	32	0	86	19	193	33	0	245	20	53	15	0	88	12	97	6	0	115	534
Total	24	224	124	1	373	76	849	140	0	1065	130	202	82	0	414	43	389	15	0	447	2299
09:00 AM	5	42	24	0	71	8	157	25	0	190	19	52	16	0	87	10	96	1	0	107	455
09:15 AM	2	23	17	0	42	28	150	28	0	206	22	40	19	0	81	10	79	6	1	96	425
09:30 AM	4	40	27	0	71	17	151	19	0	187	29	36	20	1	86	5	75	3	0	83	427
09:45 AM	5	28	25	0	58	18	96	16	0	130	9	32	21	0	62	11	99	10	0	120	370
Total	16	133	93	0	242	71	554	88	0	713	79	160	76	1	316	36	349	20	1	406	1677
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	3	0	7	0	5	0	0	5	12
Total	0	0	0	0	0	0	0	0	0	0	4	0	3	0	7	0	5	0	0	5	12

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 5. Mayfield Rd & S.Taylor Rd 022924
Site Code : 00000000
Start Date : 2/29/2024
Page No : 2

Groups Printed- Cars - Trucks - Busses

	S.TAYLOR ROAD From North					MAYFIELD ROAD From East					S.TAYLOR ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	11	29	23	0	63	10	89	15	0	114	25	42	17	0	84	12	87	3	1	103	364
11:15 AM	1	39	25	0	65	14	119	22	1	156	16	37	19	0	72	23	93	0	0	116	409
11:30 AM	6	33	25	0	64	21	120	14	0	155	25	32	22	0	79	14	114	5	1	134	432
11:45 AM	1	39	27	0	67	23	115	13	0	151	20	43	21	2	86	8	100	2	0	110	414
Total	19	140	100	0	259	68	443	64	1	576	86	154	79	2	321	57	394	10	2	463	1619
12:00 PM	2	33	22	0	57	15	96	20	0	131	29	51	23	0	103	16	113	3	0	132	423
12:15 PM	7	37	31	0	75	18	106	14	0	138	26	56	17	0	99	9	78	7	0	94	406
12:30 PM	5	41	15	0	61	17	109	16	0	142	17	38	13	0	68	11	105	9	1	126	397
12:45 PM	2	37	24	0	63	15	115	20	0	150	20	35	23	1	79	18	110	6	0	134	426
Total	16	148	92	0	256	65	426	70	0	561	92	180	76	1	349	54	406	25	1	486	1652
01:00 PM	8	42	30	2	82	16	103	12	0	131	28	39	17	0	84	6	96	9	0	111	408
01:15 PM	4	37	21	0	62	23	118	19	0	160	20	51	19	0	90	9	119	4	0	132	444
01:30 PM	2	28	31	0	61	20	120	21	0	161	20	33	17	0	70	13	111	5	0	129	421
01:45 PM	3	44	27	3	77	25	116	12	0	153	22	39	15	0	76	13	86	5	0	104	410
Total	17	151	109	5	282	84	457	64	0	605	90	162	68	0	320	41	412	23	0	476	1683
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	5	8	2	0	15	0	0	0	0	0	15
Total	0	0	0	0	0	0	0	0	0	0	5	8	2	0	15	0	0	0	0	0	15
03:00 PM	7	50	36	0	93	24	125	26	0	175	37	50	14	0	101	25	150	10	1	186	555

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 5. Mayfield Rd & S.Taylor Rd 022924
Site Code : 00000000
Start Date : 2/29/2024
Page No : 3

Groups Printed- Cars - Trucks - Busses

	S.TAYLOR ROAD From North					MAYFIELD ROAD From East					S.TAYLOR ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	8	40	44	0	92	24	133	28	1	186	43	61	19	0	123	20	169	5	0	194	595
03:30 PM	5	42	32	1	80	51	144	39	1	235	37	58	26	1	122	15	155	12	1	183	620
03:45 PM	5	51	47	0	103	27	161	33	1	222	33	64	29	1	127	21	166	5	0	192	644
Total	25	183	159	1	368	126	563	126	3	818	150	233	88	2	473	81	640	32	2	755	2414
04:00 PM	8	52	40	0	100	38	150	22	2	212	12	56	17	0	85	21	160	2	0	183	580
04:15 PM	6	50	23	1	80	27	165	22	1	215	34	57	24	1	116	15	195	9	1	220	631
04:30 PM	4	38	38	0	80	25	139	30	2	196	40	61	19	0	120	17	171	8	0	196	592
04:45 PM	7	70	34	0	111	29	174	14	2	219	45	41	24	0	110	16	154	18	1	189	629
Total	25	210	135	1	371	119	628	88	7	842	131	215	84	1	431	69	680	37	2	788	2432
05:00 PM	6	53	27	0	86	28	130	18	0	176	30	73	19	0	122	21	221	5	3	250	634
05:15 PM	7	46	27	2	82	21	154	21	0	196	43	53	21	0	117	21	191	9	1	222	617
05:30 PM	5	53	18	0	76	29	114	20	2	165	30	53	13	0	96	20	182	5	0	207	544
05:45 PM	5	48	24	1	78	24	121	21	2	168	35	56	15	0	106	14	169	6	0	189	541
Total	23	200	96	3	322	102	519	80	4	705	138	235	68	0	441	76	763	25	4	868	2336
Grand Total	194	1589	1021	12	2816	771	5233	837	16	6857	961	1690	675	8	3334	486	4337	203	17	5043	18050
Apprch %	6.9	56.4	36.3	0.4		11.2	76.3	12.2	0.2		28.8	50.7	20.2	0.2		9.6	86	4	0.3		
Total %	1.1	8.8	5.7	0.1	15.6	4.3	29	4.6	0.1	38	5.3	9.4	3.7	0	18.5	2.7	24	1.1	0.1	27.9	
Cars	183	1560	998	12	2753	749	5112	817	16	6694	952	1679	660	8	3299	476	4270	197	17	4960	17706
% Cars	94.3	98.2	97.7	100	97.8	97.1	97.7	97.6	100	97.6	99.1	99.3	97.8	100	99	97.9	98.5	97	100	98.4	98.1
Trucks	9	18	12	0	39	16	81	12	0	109	4	7	7	0	18	3	54	5	0	62	228
% Trucks	4.6	1.1	1.2	0	1.4	2.1	1.5	1.4	0	1.6	0.4	0.4	1	0	0.5	0.6	1.2	2.5	0	1.2	1.3
Busses	2	11	11	0	24	6	40	8	0	54	5	4	8	0	17	7	13	1	0	21	116
% Busses	1	0.7	1.1	0	0.9	0.8	0.8	1	0	0.8	0.5	0.2	1.2	0	0.5	1.4	0.3	0.5	0	0.4	0.6

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 5. Mayfield Rd & S.Taylor Rd 022924
Site Code : 00000000
Start Date : 2/29/2024
Page No : 4

	S.TAYLOR ROAD From North					MAYFIELD ROAD From East					S.TAYLOR ROAD From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**11**	55	33	0	99	18	**252**	37	0	**307**	17	42	14	0	73	6	82	4	0	92	571
07:45 AM	10	**90**	**47**	0	**147**	18	204	**48**	**1**	271	23	51	14	**1**	89	10	85	3	**5**	103	610
08:00 AM	4	64	32	0	100	13	226	36	0	275	34	**66**	14	0	**114**	7	99	**6**	0	112	601
08:15 AM	9	43	30	**1**	83	**30**	243	33	0	306	**43**	47	**22**	0	112	**12**	**101**	3	0	**116**	**617**
Total Volume	34	252	142	1	429	79	925	154	1	1159	117	206	64	1	388	35	367	16	5	423	2399
% App. Total	7.9	58.7	33.1	0.2		6.8	79.8	13.3	0.1		30.2	53.1	16.5	0.3		8.3	86.8	3.8	1.2		
PHF	.773	.700	.755	.250	.730	.658	.918	.802	.250	.944	.680	.780	.727	.250	.851	.729	.908	.667	.250	.912	.972
Cars	34	247	136	1	418	74	909	153	1	1137	114	204	64	1	383	32	361	16	5	414	2352
% Cars	100	98.0	95.8	100	97.4	93.7	98.3	99.4	100	98.1	97.4	99.0	100	100	98.7	91.4	98.4	100	100	97.9	98.0
Trucks	0	4	3	0	7	4	9	0	0	13	0	0	0	0	0	1	6	0	0	7	27
% Trucks	0	1.6	2.1	0	1.6	5.1	1.0	0	0	1.1	0	0	0	0	0	2.9	1.6	0	0	1.7	1.1
Busses	0	1	3	0	4	1	7	1	0	9	3	2	0	0	5	2	0	0	0	2	20
% Busses	0	0.4	2.1	0	0.9	1.3	0.8	0.6	0	0.8	2.6	1.0	0	0	1.3	5.7	0	0	0	0.5	0.8
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	4	38	**38**	0	80	25	139	**30**	**2**	196	40	61	19	0	120	17	171	8	0	196	592
04:45 PM	**7**	**70**	34	0	**111**	**29**	**174**	14	2	**219**	**45**	41	**24**	0	110	16	154	**18**	1	189	629
05:00 PM	6	53	27	0	86	28	130	18	0	176	30	**73**	19	0	**122**	**21**	**221**	5	**3**	**250**	**634**
05:15 PM	7	46	27	**2**	82	21	154	21	0	196	43	53	21	0	117	21	191	9	1	222	617
Total Volume	24	207	126	2	359	103	597	83	4	787	158	228	83	0	469	75	737	40	5	857	2472
% App. Total	6.7	57.7	35.1	0.6		13.1	75.9	10.5	0.5		33.7	48.6	17.7	0		8.8	86	4.7	0.6		
PHF	.857	.739	.829	.250	.809	.888	.858	.692	.500	.898	.878	.781	.865	.000	.961	.893	.834	.556	.417	.857	.975
Cars	24	207	122	2	355	102	592	83	4	781	156	227	80	0	463	75	734	40	5	854	2453
% Cars	100	100	96.8	100	98.9	99.0	99.2	100	100	99.2	98.7	99.6	96.4	0	98.7	100	99.6	100	100	99.6	99.2
Trucks	0	0	4	0	4	1	4	0	0	5	1	1	0	0	2	0	3	0	0	3	14
% Trucks	0	0	3.2	0	1.1	1.0	0.7	0	0	0.6	0.6	0.4	0	0	0.4	0	0.4	0	0	0.4	0.6
Busses	0	0	0	0	0	0	1	0	0	1	1	0	3	0	4	0	0	0	0	0	5
% Busses	0	0	0	0	0	0	0.2	0	0	0.1	0.6	0	3.6	0	0.9	0	0	0	0	0	0.2

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Euclid Heights Boulevard **and** Lee Road

Date: 2/27/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Weather: Clear **Recorder(s):** DJS **Data entry by:** JJO **Date entered:** Feb. 28, 2024 Euclid Heights Blvd & Lee Rd 022724

TIME BEGINS	Lee Rd. FROM NORTH						Lee Rd. FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	1	213	31	245	5	5	19	187	34	240	5	4	485	48	177	2	227	0	4	24	101	10	135	1	0	362	847	0.756	0.811	0.822	0.703
08:00	7	258	38	303	4	5	31	252	62	345	8	7	648	63	177	10	250	2	2	42	153	11	206	3	0	456	1104	0.902	0.784	0.812	0.873
09:00	14	218	18	250	12	5	31	206	59	296	11	2	546	65	167	6	238	4	2	30	149	13	192	6	2	430	976	0.735	0.925	0.944	0.800
10:00																														
11:00	9	203	17	229	6	3	13	204	58	275	10	4	504	54	130	5	189	4	0	26	114	19	159	2	3	348	852	0.867	0.917	0.964	0.924
12:00	8	235	20	263	5	4	22	208	62	292	6	8	555	59	131	7	197	5	1	28	158	33	219	3	2	416	971	0.913	0.936	0.821	0.855
1:00	6	206	24	236	11	2	18	187	68	273	7	4	509	62	146	8	216	4	2	34	160	18	212	5	2	428	937	0.843	0.853	0.794	0.855
2:00																														
3:00	8	293	44	345	3	5	20	303	99	422	6	8	767	74	166	7	247	5	4	50	206	33	289	3	3	536	1303	0.927	0.925	0.908	0.881
4:00	16	290	38	344	1	3	19	262	79	360	3	3	704	60	144	4	208	0	0	62	227	35	324	1	1	532	1236	0.851	0.900	0.929	0.764
5:00	10	305	33	348	3	2	21	286	70	377	2	4	725	63	155	7	225	1	1	76	251	18	345	0	0	570	1295	0.870	0.962	0.852	0.889
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	79	2221	263	2563	50	34	194	2095	591	2880	58	44	5443	548	1393	56	1997	25	16	372	1519	190	2081	24	13	4078	9521				
ADT	112	3160	374	3646	3.3%		276	2980	841	4097	3.5%		7743	739	1879	76	2693	2.1%		502	2049	256	2807	1.8%		5500	13243				

N Leg Hourly Factor:	1.61	E Leg Hourly Factor:	1.54
S Leg Hourly Factor:	1.61	W leg Hourly Factor:	1.54
N Leg Monthly Factor:	0.88	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.88	W Leg Monthly Factor:	0.88

N Leg Combined Factor:	1.42	E Leg Combined Factor:	1.35
S Leg Combined Factor:	1.42	W Leg Combined Factor:	1.35

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Euclid Heights Blvd & Lee Rd
Counter: DJS
Day of the Week: Tuesday

File Name : 6. TC 5 Euclid Heights Blvd and Lee Rd 022724 DJS
Site Code : 00000000
Start Date : 2/27/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	LEE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					LEE ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	10	45	0	0	55	0	35	8	0	43	7	36	3	0	46	3	14	3	1	21	165
07:15 AM	6	44	0	0	50	1	47	6	0	54	8	47	4	0	59	1	16	14	0	31	194
07:30 AM	10	49	0	0	59	1	53	15	2	71	5	48	8	1	62	3	32	1	0	36	228
07:45 AM	5	75	1	0	81	0	42	19	0	61	14	56	4	2	76	3	39	6	1	49	267
Total	31	213	1	0	245	2	177	48	2	229	34	187	19	3	243	10	101	24	2	137	854
08:00 AM	5	77	2	2	86	3	38	15	0	56	23	77	10	2	112	2	34	3	0	39	293
08:15 AM	9	61	3	1	74	1	50	11	1	63	20	66	11	1	98	2	38	13	0	53	288
08:30 AM	9	63	1	0	73	1	34	20	1	56	8	60	4	2	74	3	43	13	1	60	263
08:45 AM	15	57	1	0	73	5	55	17	0	77	11	49	6	9	75	4	38	13	0	55	280
Total	38	258	7	3	306	10	177	63	2	252	62	252	31	14	359	11	153	42	1	207	1124
09:00 AM	8	72	5	0	85	3	39	18	0	60	16	53	9	4	82	4	47	9	1	61	288
09:15 AM	3	49	5	0	57	1	36	17	0	54	21	47	6	2	76	4	32	8	1	45	232
09:30 AM	5	50	2	0	57	1	42	18	0	61	10	59	11	0	80	3	34	6	1	44	242
09:45 AM	2	47	2	0	51	1	50	12	1	64	12	47	5	2	66	2	36	7	1	46	227
Total	18	218	14	0	250	6	167	65	1	239	59	206	31	8	304	13	149	30	4	196	989
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 6. TC 5 Euclid Heights Blvd and Lee Rd 022724 DJS
Site Code : 00000000
Start Date : 2/27/2024
Page No : 2

Groups Printed- Cars - Trucks - Buses

	LEE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					LEE ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	4	58	2	0	64	1	34	14	0	49	8	58	4	0	70	3	31	4	0	38	221
11:15 AM	3	42	4	0	49	2	32	15	1	50	20	45	3	3	71	6	27	10	0	43	213
11:30 AM	3	44	3	1	51	2	31	14	0	47	10	49	3	1	63	6	31	5	1	43	204
11:45 AM	7	59	0	0	66	0	33	11	0	44	20	52	3	0	75	4	25	7	1	37	222
Total	17	203	9	1	230	5	130	54	1	190	58	204	13	4	279	19	114	26	2	161	860
12:00 PM	7	61	3	0	71	2	31	13	0	46	17	54	7	1	79	7	37	8	0	52	248
12:15 PM	5	48	1	1	55	3	36	16	0	55	16	46	7	2	71	7	39	9	0	55	236
12:30 PM	4	65	3	0	72	1	19	16	0	36	17	57	4	0	78	15	43	6	0	64	250
12:45 PM	4	61	1	0	66	1	45	14	0	60	12	51	4	0	67	4	39	5	1	49	242
Total	20	235	8	1	264	7	131	59	0	197	62	208	22	3	295	33	158	28	1	220	976
01:00 PM	7	47	0	0	54	2	31	20	0	53	20	36	1	0	57	3	41	4	1	49	213
01:15 PM	9	59	2	0	70	2	29	15	0	46	15	47	6	1	69	8	47	7	1	63	248
01:30 PM	4	55	2	0	61	3	46	19	1	69	14	51	3	1	69	5	30	15	0	50	249
01:45 PM	4	45	2	0	51	1	40	8	0	49	19	53	8	4	84	2	42	8	1	53	237
Total	24	206	6	0	236	8	146	62	1	217	68	187	18	6	279	18	160	34	3	215	947
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	11	67	3	0	81	1	33	17	0	51	25	76	7	7	115	6	48	12	2	68	315

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 6. TC 5 Euclid Heights Blvd and Lee Rd 022724 DJS
Site Code : 00000000
Start Date : 2/27/2024
Page No : 3

Groups Printed- Cars - Trucks - Buses

	LEE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					LEE ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	10	80	3	5	98	2	47	18	1	68	31	77	6	25	139	8	50	15	0	73	378
03:30 PM	14	77	0	3	94	2	43	23	0	68	22	79	2	7	110	8	51	9	1	69	341
03:45 PM	9	69	2	3	83	2	43	16	2	63	21	71	5	7	104	11	57	14	0	82	332
Total	44	293	8	11	356	7	166	74	3	250	99	303	20	46	468	33	206	50	3	292	1366
04:00 PM	8	69	3	0	80	1	40	15	0	56	17	64	6	0	87	11	49	15	0	75	298
04:15 PM	5	69	6	0	80	1	36	16	0	53	25	57	6	1	89	7	47	14	0	68	290
04:30 PM	9	72	2	2	85	2	33	18	0	53	17	64	4	3	88	6	54	15	0	75	301
04:45 PM	16	80	5	0	101	0	35	11	0	46	20	77	3	0	100	11	77	18	3	109	356
Total	38	290	16	2	346	4	144	60	0	208	79	262	19	4	364	35	227	62	3	327	1245
05:00 PM	8	90	2	4	104	4	51	11	0	66	18	78	2	2	100	3	55	27	0	85	355
05:15 PM	10	70	5	1	86	2	35	17	0	54	12	79	7	2	100	9	71	17	0	97	337
05:30 PM	7	72	1	0	80	0	36	20	0	56	26	61	4	5	96	4	69	16	0	89	321
05:45 PM	8	73	2	1	84	1	33	15	2	51	14	68	8	3	93	2	56	16	1	75	303
Total	33	305	10	6	354	7	155	63	2	227	70	286	21	12	389	18	251	76	1	346	1316
Grand Total	263	2221	79	24	2587	56	1393	548	12	2009	591	2095	194	100	2980	190	1519	372	20	2101	9677
Apprch %	10.2	85.9	3.1	0.9		2.8	69.3	27.3	0.6		19.8	70.3	6.5	3.4		9	72.3	17.7	1		
Total %	2.7	23	0.8	0.2	26.7	0.6	14.4	5.7	0.1	20.8	6.1	21.6	2	1	30.8	2	15.7	3.8	0.2	21.7	
Cars	259	2146	74	21	2500	54	1365	537	8	1964	582	2010	186	93	2871	189	1489	366	15	2059	9394
% Cars	98.5	96.6	93.7	87.5	96.6	96.4	98	98	66.7	97.8	98.5	95.9	95.9	93	96.3	99.5	98	98.4	75	98	97.1
Trucks	4	44	2	3	53	1	17	7	4	29	5	47	6	7	65	1	18	5	5	29	176
% Trucks	1.5	2	2.5	12.5	2	1.8	1.2	1.3	33.3	1.4	0.8	2.2	3.1	7	2.2	0.5	1.2	1.3	25	1.4	1.8
Buses	0	31	3	0	34	1	11	4	0	16	4	38	2	0	44	0	12	1	0	13	107
% Buses	0	1.4	3.8	0	1.3	1.8	0.8	0.7	0	0.8	0.7	1.8	1	0	1.5	0	0.8	0.3	0	0.6	1.1

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 6. TC 5 Euclid Heights Blvd and Lee Rd 022724 DJS
Site Code : 00000000
Start Date : 2/27/2024
Page No : 4

	LEE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					LEE ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**10**	49	0	0	59	1	**53**	15	**2**	**71**	5	48	8	1	62	**3**	32	1	0	36	228
07:45 AM	5	75	1	0	81	0	42	**19**	0	61	14	56	4	**2**	76	3	**39**	6	**1**	49	267
08:00 AM	5	**77**	2	**2**	**86**	**3**	38	15	0	56	**23**	**77**	10	2	**112**	2	34	3	0	39	**293**
08:15 AM	9	61	**3**	1	74	1	50	11	1	63	20	66	**11**	1	98	2	38	**13**	0	**53**	288
Total Volume	29	262	6	3	300	5	183	60	3	251	62	247	33	6	348	10	143	23	1	177	1076
% App. Total	9.7	87.3	2	1		2	72.9	23.9	1.2		17.8	71	9.5	1.7		5.6	80.8	13	0.6		
PHF	.725	.851	.500	.375	.872	.417	.863	.789	.375	.884	.674	.802	.750	.750	.777	.833	.917	.442	.250	.835	.918
Cars	28	254	4	3	289	5	180	60	0	245	61	239	31	6	337	10	142	23	1	176	1047
% Cars	96.6	96.9	66.7	100	96.3	100	98.4	100	0	97.6	98.4	96.8	93.9	100	96.8	100	99.3	100	100	99.4	97.3
Trucks	1	3	0	0	4	0	1	0	3	4	0	3	1	0	4	0	1	0	0	1	13
% Trucks	3.4	1.1	0	0	1.3	0	0.5	0	100	1.6	0	1.2	3.0	0	1.1	0	0.7	0	0	0.6	1.2
Buses	0	5	2	0	7	0	2	0	0	2	1	5	1	0	7	0	0	0	0	0	16
% Buses	0	1.9	33.3	0	2.3	0	1.1	0	0	0.8	1.6	2.0	3.0	0	2.0	0	0	0	0	0	1.5
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	9	72	2	2	85	2	33	**18**	0	53	17	64	4	**3**	88	6	54	15	0	75	301
04:45 PM	**16**	80	**5**	0	101	0	35	11	0	46	**20**	77	3	0	**100**	**11**	**77**	18	**3**	**109**	**356**
05:00 PM	8	**90**	2	**4**	**104**	**4**	**51**	11	0	**66**	18	78	2	2	100	3	55	**27**	0	85	355
05:15 PM	10	70	5	1	86	2	35	17	0	54	12	**79**	**7**	2	100	9	71	17	0	97	337
Total Volume	43	312	14	7	376	8	154	57	0	219	67	298	16	7	388	29	257	77	3	366	1349
% App. Total	11.4	83	3.7	1.9		3.7	70.3	26	0		17.3	76.8	4.1	1.8		7.9	70.2	21	0.8		
PHF	.672	.867	.700	.438	.904	.500	.755	.792	.000	.830	.838	.943	.571	.583	.970	.659	.834	.713	.250	.839	.947
Cars	43	308	14	6	371	8	154	57	0	219	67	294	16	6	383	29	256	77	2	364	1337
% Cars	100	98.7	100	85.7	98.7	100	100	100	0	100	100	98.7	100	85.7	98.7	100	99.6	100	66.7	99.5	99.1
Trucks	0	2	0	1	3	0	0	0	0	0	0	1	0	1	2	0	0	0	1	1	6
% Trucks	0	0.6	0	14.3	0.8	0	0	0	0	0	0	0.3	0	14.3	0.5	0	0	0	33.3	0.3	0.4
Buses	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	6
% Buses	0	0.6	0	0	0.5	0	0	0	0	0	0	1.0	0	0	0.8	0	0.4	0	0	0.3	0.4

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Euclid Heights Boulevard **and** Ivydale Road

Date: 2/27/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Euclid Heights Blvd & Ivydale Rd 022724

Weather: Clear **Recorder(s):** ALB **Data entry by:** JJO **Date entered:** Feb. 28, 2024

TIME BEGINS	Ivydale Rd. FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	13	0	6	19	0	0							19	0	130	14	144	0	2	4	124	0	128	0	0	272	291	0.792	0.000	0.750	0.640
08:00	10	0	5	15	0	1							15	0	143	14	157	0	1	4	172	0	176	3	1	333	348	0.625	0.000	0.935	0.898
09:00	13	0	0	13	0	0							13	0	154	10	164	0	0	3	153	0	156	1	0	320	333	0.464	0.000	0.872	0.765
10:00																														
11:00	7	0	5	12	0	0							12	0	133	12	145	2	0	5	140	0	145	0	2	290	302	0.750	0.000	0.863	0.788
12:00	10	0	2	12	0	0							12	0	143	13	156	1	0	5	159	0	164	2	0	320	332	0.500	0.000	0.765	0.788
1:00	10	0	5	15	0	0							15	0	147	12	159	0	1	5	161	0	166	0	0	325	340	0.536	0.000	0.903	0.814
2:00																														
3:00	21	0	6	27	0	0							27	0	174	17	191	4	3	13	201	0	214	2	4	405	432	0.675	0.000	0.918	0.892
4:00	11	0	3	14	0	0							14	0	154	15	169	0	0	10	209	0	219	1	2	388	402	0.700	0.000	0.880	0.805
5:00	17	0	10	27	0	1							27	0	126	26	152	0	0	9	202	0	211	0	0	363	390	0.675	0.000	0.809	0.812
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	112	0	42	154	0	2							154	0	1304	133	1437	7	7	58	1521	0	1579	9	9	3016	3170				
ADT	154	0	58	212	1.3%								212	0	1759	179	1938	1.0%		78	2051	0	2130	1.1%		4068	4280				

N Leg Hourly Factor:	1.57	E Leg Hourly Factor:	1.54
S Leg Hourly Factor:	0.00	W leg Hourly Factor:	1.54
N Leg Monthly Factor:	0.88	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.00	W Leg Monthly Factor:	0.88

N Leg Combined Factor:	1.38	E Leg Combined Factor:	1.35
S Leg Combined Factor:		W Leg Combined Factor:	1.35

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Euclid Heights Blvd & Ivydale Rd
Counter: ALB
Day of Week: Tuesday

File Name : 7. EUCLID HTS BLVD AND IVYDALE RD 2-27-2024 ALB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	IVYDALE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	2	0	3	1	25	0	1	27	0	0	0	1	1	0	19	0	0	19	50
07:15 AM	2	0	2	0	4	4	30	0	0	34	0	0	0	0	0	0	21	1	0	22	60
07:30 AM	2	0	4	0	6	5	43	0	0	48	0	0	0	1	1	0	35	2	0	37	92
07:45 AM	1	0	5	1	7	4	32	0	0	36	0	0	0	1	1	0	49	1	1	51	95
Total	6	0	13	1	20	14	130	0	1	145	0	0	0	3	3	0	124	4	1	129	297
08:00 AM	2	0	4	0	6	5	33	0	0	38	0	0	0	1	1	0	45	2	0	47	92
08:15 AM	1	0	3	0	4	4	33	0	0	37	0	0	0	0	0	0	47	1	0	48	89
08:30 AM	0	0	1	0	1	3	39	0	0	42	0	0	0	5	5	0	48	1	1	50	98
08:45 AM	2	0	2	0	4	2	38	0	0	40	0	0	0	3	3	0	32	0	0	32	79
Total	5	0	10	0	15	14	143	0	0	157	0	0	0	9	9	0	172	4	1	177	358
09:00 AM	0	0	3	0	3	1	34	0	0	35	0	0	0	3	3	0	51	0	0	51	92
09:15 AM	0	0	2	1	3	2	36	0	0	38	0	0	0	0	0	0	35	1	1	37	78
09:30 AM	0	0	7	0	7	3	41	0	0	44	0	0	0	0	0	0	36	2	0	38	89
09:45 AM	0	0	1	1	2	4	43	0	0	47	0	0	0	0	0	0	31	0	0	31	80
Total	0	0	13	2	15	10	154	0	0	164	0	0	0	3	3	0	153	3	1	157	339
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 7. EUCLID HTS BLVD AND IVYDALE RD 2-27-2024 ALB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 2

Groups Printed- Cars - Trucks - Buses

	IVYDALE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	3	0	3	3	39	0	0	42	0	0	0	0	0	0	30	2	0	32	77
11:15 AM	2	0	2	0	4	3	26	0	0	29	0	0	0	1	1	0	33	2	1	36	70
11:30 AM	0	0	1	0	1	3	33	0	0	36	0	0	0	0	0	0	31	1	0	32	69
11:45 AM	3	0	1	0	4	3	35	0	0	38	0	0	0	1	1	0	46	0	1	47	90
Total	5	0	7	0	12	12	133	0	0	145	0	0	0	2	2	0	140	5	2	147	306
12:00 PM	0	0	0	0	0	1	31	0	0	32	0	0	0	1	1	0	31	1	0	32	65
12:15 PM	0	0	4	0	4	4	31	0	0	35	0	0	0	1	1	0	41	3	1	45	85
12:30 PM	1	0	5	0	6	3	35	0	0	38	0	0	0	1	1	0	51	1	0	52	97
12:45 PM	1	0	1	0	2	5	46	0	0	51	0	0	0	2	2	0	36	0	0	36	91
Total	2	0	10	0	12	13	143	0	0	156	0	0	0	5	5	0	159	5	1	165	338
01:00 PM	2	0	4	0	6	5	36	0	0	41	0	0	0	0	0	0	50	1	2	53	100
01:15 PM	3	0	4	0	7	3	41	0	0	44	0	0	0	1	1	0	45	1	0	46	98
01:30 PM	0	0	1	0	1	2	39	0	1	42	0	0	0	0	0	0	32	2	0	34	77
01:45 PM	0	0	1	1	2	2	31	0	0	33	0	0	0	0	0	0	34	1	1	36	71
Total	5	0	10	1	16	12	147	0	1	160	0	0	0	1	1	0	161	5	3	169	346
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	2	0	6	0	8	7	41	0	0	48	0	0	0	2	2	0	52	1	0	53	111

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 7. EUCLID HTS BLVD AND IVYDALE RD 2-27-2024 ALB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 3

Groups Printed- Cars - Trucks - Buses

	IVYDALE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	3	0	7	0	10	2	50	0	0	52	0	0	0	0	0	0	57	3	9	69	131
03:30 PM	0	0	1	0	1	2	49	0	0	51	0	0	0	0	0	0	45	6	1	52	104
03:45 PM	1	0	7	1	9	6	34	0	1	41	0	0	0	0	0	0	47	3	1	51	101
Total	6	0	21	1	28	17	174	0	1	192	0	0	0	2	2	0	201	13	11	225	447
04:00 PM	0	0	3	1	4	4	39	0	0	43	0	0	0	0	0	0	49	1	1	51	98
04:15 PM	2	0	3	0	5	4	35	0	0	39	0	0	0	0	0	0	45	6	0	51	95
04:30 PM	0	0	1	0	1	4	35	0	0	39	0	0	0	1	1	0	49	1	1	51	92
04:45 PM	1	0	4	1	6	3	45	0	0	48	0	0	0	0	0	0	66	2	2	70	124
Total	3	0	11	2	16	15	154	0	0	169	0	0	0	1	1	0	209	10	4	223	409
05:00 PM	2	0	8	0	10	6	41	0	1	48	0	0	0	2	2	0	40	2	3	45	105
05:15 PM	3	0	2	0	5	9	29	0	0	38	0	0	0	7	7	0	62	3	2	67	117
05:30 PM	0	0	3	0	3	5	26	0	0	31	0	0	0	1	1	0	59	2	4	65	100
05:45 PM	5	0	4	0	9	6	30	0	0	36	0	0	0	3	3	0	41	2	1	44	92
Total	10	0	17	0	27	26	126	0	1	153	0	0	0	13	13	0	202	9	10	221	414
Grand Total	42	0	112	7	161	133	1304	0	4	1441	0	0	0	39	39	0	1522	58	34	1614	3255
Apprch %	26.1	0	69.6	4.3		9.2	90.5	0	0.3		0	0	0	100		0	94.3	3.6	2.1		
Total %	1.3	0	3.4	0.2	4.9	4.1	40.1	0	0.1	44.3	0	0	0	1.2	1.2	0	46.8	1.8	1	49.6	
Cars	41	0	111	7	159	129	1294	0	4	1427	0	0	0	39	39	0	1509	53	34	1596	3221
% Cars	97.6	0	99.1	100	98.8	97	99.2	0	100	99	0	0	0	100	100	0	99.1	91.4	100	98.9	99
Trucks	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	9	0	0	9	16
% Trucks	0	0	0	0	0	0.8	0.5	0	0	0.5	0	0	0	0	0	0	0.6	0	0	0.6	0.5
Buses	1	0	1	0	2	3	4	0	0	7	0	0	0	0	0	0	4	5	0	9	18
% Buses	2.4	0	0.9	0	1.2	2.3	0.3	0	0	0.5	0	0	0	0	0	0	0.3	8.6	0	0.6	0.6

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 7. EUCLID HTS BLVD AND IVYDALE RD 2-27-2024 ALB
Site Code : 00000000
Start Date : 2/27/2024
Page No : 4

	IVYDALE ROAD From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**2**	0	4	0	6	**5**	**43**	0	0	**48**	0	0	0	**1**	**1**	0	35	**2**	0	37	92
07:45 AM	1	0	**5**	**1**	**7**	4	32	0	0	36	0	0	0	1	1	0	**49**	1	**1**	**51**	**95**
08:00 AM	2	0	4	0	6	5	33	0	0	38	0	0	0	1	1	0	45	2	0	47	92
08:15 AM	1	0	3	0	4	4	33	0	0	37	0	0	0	0	0	0	47	1	0	48	89
Total Volume	6	0	16	1	23	18	141	0	0	159	0	0	0	3	3	0	176	6	1	183	368
% App. Total	26.1	0	69.6	4.3		11.3	88.7	0	0		0	0	0	100		0	96.2	3.3	0.5		
PHF	.750	.000	.800	.250	.821	.900	.820	.000	.000	.828	.000	.000	.000	.750	.750	.000	.898	.750	.250	.897	.968
Cars	6	0	15	1	22	16	141	0	0	157	0	0	0	3	3	0	175	5	1	181	363
% Cars	100	0	93.8	100	95.7	88.9	100	0	0	98.7	0	0	0	100	100	0	99.4	83.3	100	98.9	98.6
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0.5	0.3
Buses	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	4
% Buses	0	0	6.3	0	4.3	11.1	0	0	0	1.3	0	0	0	0	0	0	0	16.7	0	0.5	1.1
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	1	0	1	4	35	0	0	39	0	0	0	1	1	0	49	1	1	51	92
04:45 PM	1	0	4	**1**	6	3	**45**	0	0	**48**	0	0	0	0	0	0	**66**	2	2	**70**	**124**
05:00 PM	2	0	**8**	0	**10**	6	41	0	**1**	48	0	0	0	2	2	0	40	2	**3**	45	105
05:15 PM	**3**	0	2	0	5	**9**	29	0	0	38	0	0	0	**7**	**7**	0	62	**3**	2	67	117
Total Volume	6	0	15	1	22	22	150	0	1	173	0	0	0	10	10	0	217	8	8	233	438
% App. Total	27.3	0	68.2	4.5		12.7	86.7	0	0.6		0	0	0	100		0	93.1	3.4	3.4		
PHF	.500	.000	.469	.250	.550	.611	.833	.000	.250	.901	.000	.000	.000	.357	.357	.000	.822	.667	.667	.832	.883
Cars	6	0	15	1	22	22	150	0	1	173	0	0	0	10	10	0	217	8	8	233	438
% Cars	100	0	100	100	100	100	100	0	100	100	0	0	0	100	100	0	100	100	100	100	100
Trucks	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	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
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Heights Boulevard / Severance **and** South Taylor Road

Date: 2/21/2024 **Day:** Wed. **Comments:** **Project:** 24-032

Euclid Heights Blvd & S. Taylor Rd 022124

Weather: Clear **Recorder(s):** DJS & KPB **Data entry by:** JJO **Date entered:** Feb. 22, 2024

TIME BEGINS	S. Taylor Rd. FROM NORTH						S. Taylor Rd. FROM SOUTH						TOTAL NORTH SOUTH	Severance Circle FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	14	255	63	332	4	4	7	202	90	299	4	5	631	53	43	10	106	1	0	28	91	26	145	1	1	251	882	0.615	0.719	0.646	0.697
08:00	24	284	62	370	2	5	21	302	159	482	2	5	852	59	71	18	148	1	3	68	96	22	186	0	2	334	1186	0.740	0.880	0.841	0.816
09:00	33	186	52	271	8	3	14	194	149	357	6	1	628	104	88	28	220	4	2	56	113	20	189	1	0	409	1037	0.880	0.850	0.833	0.775
10:00																														
11:00	19	143	20	182	3	3	16	188	178	382	7	2	564	118	103	35	256	3	1	38	102	17	157	5	0	413	977	0.910	0.876	0.901	0.853
12:00	18	137	44	199	2	3	25	204	180	409	3	2	608	132	99	24	255	3	4	44	100	20	164	0	2	419	1027	0.939	0.897	0.873	0.820
1:00	22	161	36	219	4	1	15	192	150	357	5	1	576	123	89	33	245	1	2	41	117	23	181	4	1	426	1002	0.771	0.893	0.785	0.808
2:00																														
3:00	23	263	44	330	3	5	22	367	185	574	9	3	904	157	88	34	279	3	3	92	146	37	275	1	5	554	1458	0.927	0.963	0.906	0.881
4:00	18	268	54	340	1	5	33	308	163	504	2	1	844	149	118	31	298	1	4	101	124	30	255	1	3	553	1397	0.833	0.887	0.801	0.850
5:00	14	254	47	315	1	3	39	297	182	518	2	3	833	135	101	22	258	2	4	104	102	33	239	1	2	497	1330	0.856	0.830	0.838	0.766
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	185	1951	422	2558	28	32	192	2254	1436	3882	40	23	6440	1030	800	235	2065	19	23	572	991	228	1791	14	16	3856	10296				
ADT	248	2610	565	3422	2.3%		257	3016	1921	5194	1.6%		8616	1408	1094	321	2824	2.0%		765	1326	305	2396	1.7%		5220	13836				

N Leg Hourly Factor:	1.54	E Leg Hourly Factor:	1.57
S Leg Hourly Factor:	1.54	W leg Hourly Factor:	1.54
N Leg Monthly Factor:	0.87	E Leg Monthly Factor:	0.87
S Leg Monthly Factor:	0.87	W Leg Monthly Factor:	0.87

N Leg Combined Factor:	1.34	E Leg Combined Factor:	1.37
S Leg Combined Factor:	1.34	W Leg Combined Factor:	1.34

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Euclid Heights Blvd & S.Taylor Rd
Counter: DJS & KPB
Day of the Week: Wednesday

File Name : 8. Euclid Heights Blvd & S. Taylor Rd 022124
Site Code : 00000000
Start Date : 2/21/2024
Page No : 1

Groups Printed- Cars - Trucks - Busses

	SOUTH TAYLOR ROAD From North					SEVERNECE CIRCLE From East					SOUTH TAYLOR ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	29	4	0	39	2	4	10	0	16	19	27	0	0	46	7	11	4	0	22	123
07:15 AM	18	37	2	1	58	2	8	6	0	16	14	47	4	1	66	6	15	3	0	24	164
07:30 AM	20	79	2	0	101	4	17	20	1	42	25	57	2	0	84	8	29	10	0	47	274
07:45 AM	19	110	6	1	136	2	14	17	0	33	32	71	1	0	104	5	36	11	2	54	327
Total	63	255	14	2	334	10	43	53	1	107	90	202	7	1	300	26	91	28	2	147	888
08:00 AM	25	92	8	0	125	3	10	10	0	23	42	89	6	1	138	3	25	13	0	41	327
08:15 AM	17	62	3	0	82	6	17	18	0	41	33	89	7	0	129	6	28	23	3	60	312
08:30 AM	8	61	7	0	76	4	22	14	2	42	43	68	4	0	115	6	22	16	1	45	278
08:45 AM	12	69	6	0	87	5	22	17	0	44	41	56	4	0	101	7	21	16	2	46	278
Total	62	284	24	0	370	18	71	59	2	150	159	302	21	1	483	22	96	68	6	192	1195
09:00 AM	17	50	10	0	77	8	17	24	0	49	32	51	8	0	91	6	30	25	5	66	283
09:15 AM	13	41	6	0	60	4	20	18	0	42	38	44	3	0	85	4	27	13	2	46	233
09:30 AM	11	43	7	0	61	10	28	28	0	66	31	42	3	0	76	7	32	10	5	54	257
09:45 AM	11	52	10	1	74	6	23	34	0	63	48	57	0	0	105	3	24	8	1	36	278
Total	52	186	33	1	272	28	88	104	0	220	149	194	14	0	357	20	113	56	13	202	1051
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 8. Euclid Heights Blvd & S. Taylor Rd 022124
Site Code : 00000000
Start Date : 2/21/2024
Page No : 2

Groups Printed- Cars - Trucks - Busses

	SOUTH TAYLOR ROAD From North					SEVERNECE CIRCLE From East					SOUTH TAYLOR ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	5	28	5	0	38	11	20	40	0	71	49	47	3	0	99	6	28	12	1	47	255
11:15 AM	5	41	4	0	50	9	26	21	0	56	39	44	6	0	89	0	24	7	0	31	226
11:30 AM	5	35	6	0	46	11	30	26	2	69	50	55	4	0	109	6	21	8	3	38	262
11:45 AM	5	39	4	0	48	4	27	31	0	62	40	42	3	0	85	5	29	11	1	46	241
Total	20	143	19	0	182	35	103	118	2	258	178	188	16	0	382	17	102	38	5	162	984
12:00 PM	10	41	2	0	53	6	23	34	0	63	46	47	14	0	107	4	24	11	1	40	263
12:15 PM	15	27	5	0	47	6	32	35	0	73	51	58	5	0	114	7	28	15	0	50	284
12:30 PM	6	35	8	0	49	3	17	26	1	47	38	49	3	0	90	6	22	10	2	40	226
12:45 PM	13	34	3	0	50	9	27	37	0	73	45	50	3	0	98	3	26	8	1	38	259
Total	44	137	18	0	199	24	99	132	1	256	180	204	25	0	409	20	100	44	4	168	1032
01:00 PM	10	51	10	0	71	12	25	41	2	80	37	43	5	0	85	7	41	8	3	59	295
01:15 PM	6	32	5	0	43	11	27	22	1	61	41	45	2	0	88	4	19	15	5	43	235
01:30 PM	16	44	1	1	62	8	20	35	2	65	33	47	4	1	85	8	22	9	3	42	254
01:45 PM	4	34	6	0	44	2	17	25	0	44	39	57	4	0	100	4	35	9	1	49	237
Total	36	161	22	1	220	33	89	123	5	250	150	192	15	1	358	23	117	41	12	193	1021
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	5	68	4	0	77	6	19	27	0	52	48	94	3	0	145	17	39	21	0	77	351

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 8. Euclid Heights Blvd & S. Taylor Rd 022124
Site Code : 00000000
Start Date : 2/21/2024
Page No : 3

Groups Printed- Cars - Trucks - Busses

	SOUTH TAYLOR ROAD From North					SEVERNECE CIRCLE From East					SOUTH TAYLOR ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:15 PM	16	66	7	1	90	11	18	46	0	75	40	94	5	0	139	7	32	25	0	64	368
03:30 PM	9	63	7	0	79	11	24	42	2	79	43	101	5	1	150	6	30	20	2	58	366
03:45 PM	14	66	5	0	85	6	27	42	5	80	54	78	9	0	141	7	45	26	0	78	384
Total	44	263	23	1	331	34	88	157	7	286	185	367	22	1	575	37	146	92	2	277	1469
04:00 PM	14	50	5	1	70	6	38	35	0	79	32	72	8	0	112	8	34	21	1	64	325
04:15 PM	10	56	4	1	71	8	32	38	0	78	47	69	13	0	129	9	31	23	0	63	341
04:30 PM	12	83	7	0	102	13	29	51	1	94	49	88	5	0	142	7	27	20	0	54	392
04:45 PM	18	79	2	0	99	4	19	25	0	48	35	79	7	0	121	6	32	37	0	75	343
Total	54	268	18	2	342	31	118	149	1	299	163	308	33	0	504	30	124	101	1	256	1401
05:00 PM	17	72	3	0	92	8	35	34	1	78	50	95	11	0	156	11	43	24	0	78	404
05:15 PM	11	76	3	0	90	6	23	37	1	67	49	73	14	0	136	6	22	27	0	55	348
05:30 PM	11	49	2	0	62	6	20	38	2	66	44	56	6	0	106	9	20	32	0	61	295
05:45 PM	8	57	6	0	71	2	23	26	0	51	39	73	8	0	120	7	17	21	0	45	287
Total	47	254	14	0	315	22	101	135	4	262	182	297	39	0	518	33	102	104	0	239	1334
Grand Total	422	1951	185	7	2565	235	800	1030	23	2088	1436	2254	192	4	3886	228	991	572	45	1836	10375
Apprch %	16.5	76.1	7.2	0.3		11.3	38.3	49.3	1.1		37	58	4.9	0.1		12.4	54	31.2	2.5		
Total %	4.1	18.8	1.8	0.1	24.7	2.3	7.7	9.9	0.2	20.1	13.8	21.7	1.9	0	37.5	2.2	9.6	5.5	0.4	17.7	
Cars	418	1915	165	7	2505	213	792	1018	23	2046	1410	2223	186	4	3823	218	981	562	39	1800	10174
% Cars	99.1	98.2	89.2	100	97.7	90.6	99	98.8	100	98	98.2	98.6	96.9	100	98.4	95.6	99	98.3	86.7	98	98.1
Trucks	1	23	4	0	28	5	4	10	0	19	18	20	2	0	40	4	5	5	6	20	107
% Trucks	0.2	1.2	2.2	0	1.1	2.1	0.5	1	0	0.9	1.3	0.9	1	0	1	1.8	0.5	0.9	13.3	1.1	1
Busses	3	13	16	0	32	17	4	2	0	23	8	11	4	0	23	6	5	5	0	16	94
% Busses	0.7	0.7	8.6	0	1.2	7.2	0.5	0.2	0	1.1	0.6	0.5	2.1	0	0.6	2.6	0.5	0.9	0	0.9	0.9

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 8. Euclid Heights Blvd & S. Taylor Rd 022124
Site Code : 00000000
Start Date : 2/21/2024
Page No : 4

	SOUTH TAYLOR ROAD From North					SEVERNECE CIRCLE From East					SOUTH TAYLOR ROAD From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	20	79	2	0	101	4	**17**	**20**	**1**	**42**	25	57	2	0	84	**8**	29	10	0	47	274
07:45 AM	19	**110**	6	**1**	**136**	2	14	17	0	33	32	71	1	0	104	5	**36**	11	2	54	**327**
08:00 AM	**25**	92	**8**	0	125	3	10	10	0	23	**42**	**89**	6	**1**	**138**	3	25	13	0	41	327
08:15 AM	17	62	3	0	82	**6**	17	18	0	41	33	89	**7**	0	129	6	28	**23**	**3**	**60**	312
Total Volume	81	343	19	1	444	15	58	65	1	139	132	306	16	1	455	22	118	57	5	202	1240
% App. Total	18.2	77.3	4.3	0.2		10.8	41.7	46.8	0.7		29	67.3	3.5	0.2		10.9	58.4	28.2	2.5		
PHF	.810	.780	.594	.250	.816	.625	.853	.813	.250	.827	.786	.860	.571	.250	.824	.688	.819	.620	.417	.842	.948
Cars	80	338	15	1	434	15	57	64	1	137	131	297	14	1	443	21	117	57	5	200	1214
% Cars	98.8	98.5	78.9	100	97.7	100	98.3	98.5	100	98.6	99.2	97.1	87.5	100	97.4	95.5	99.2	100	100	99.0	97.9
Trucks	0	2	2	0	4	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	10
% Trucks	0	0.6	10.5	0	0.9	0	0	0	0	0	0.8	1.6	0	0	1.3	0	0	0	0	0	0.8
Busses	1	3	2	0	6	0	1	1	0	2	0	4	2	0	6	1	1	0	0	2	16
% Busses	1.2	0.9	10.5	0	1.4	0	1.7	1.5	0	1.4	0	1.3	12.5	0	1.3	4.5	0.8	0	0	1.0	1.3
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	12	**83**	**7**	0	**102**	**13**	29	**51**	**1**	**94**	49	88	5	0	142	7	27	20	0	54	392
04:45 PM	**18**	79	2	0	99	4	19	25	0	48	35	79	7	0	121	6	32	**37**	0	75	343
05:00 PM	17	72	3	0	92	8	**35**	34	1	78	**50**	**95**	11	0	**156**	**11**	**43**	24	0	**78**	**404**
05:15 PM	11	76	3	0	90	6	23	37	1	67	49	73	**14**	0	136	6	22	27	0	55	348
Total Volume	58	310	15	0	383	31	106	147	3	287	183	335	37	0	555	30	124	108	0	262	1487
% App. Total	15.1	80.9	3.9	0		10.8	36.9	51.2	1		33	60.4	6.7	0		11.5	47.3	41.2	0		
PHF	.806	.934	.536	.000	.939	.596	.757	.721	.750	.763	.915	.882	.661	.000	.889	.682	.721	.730	.000	.840	.920
Cars	58	307	14	0	379	27	106	144	3	280	181	333	37	0	551	27	123	107	0	257	1467
% Cars	100	99.0	93.3	0	99.0	87.1	100	98.0	100	97.6	98.9	99.4	100	0	99.3	90.0	99.2	99.1	0	98.1	98.7
Trucks	0	1	0	0	1	0	0	3	0	3	1	1	0	0	2	2	0	0	0	2	8
% Trucks	0	0.3	0	0	0.3	0	0	2.0	0	1.0	0.5	0.3	0	0	0.4	6.7	0	0	0	0.8	0.5
Busses	0	2	1	0	3	4	0	0	0	4	1	1	0	0	2	1	1	1	0	3	12
% Busses	0	0.6	6.7	0	0.8	12.9	0	0	0	1.4	0.5	0.3	0	0	0.4	3.3	0.8	0.9	0	1.1	0.8

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Park Synagogue West Driveway

Date: 9/17/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Mayfield Rd & Park Synagogue West 091724

Weather: Clear **Recorder(s):** DJS **Data entry by:** JJO **Date entered:** Sep. 18, 2024

TIME BEGINS	Park Synagogue West FROM NORTH						Park Synagogue West FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00							1	0	1	2	0	0	2	1	875	0	876	9	7	0	361	0	361	8	9	1237	1239	0.000	0.250	0.823	0.799
08:00							1	0	0	1	0	0	1	1	835	0	836	8	9	0	413	8	421	14	13	1257	1258	0.000	0.250	0.829	0.931
09:00							0	0	0	0	0	0	0	2	620	0	622	20	4	0	408	0	408	18	8	1030	1030	0.000	0.000	0.884	0.927
10:00																														
11:00							2	0	0	2	0	0	2	1	510	0	511	14	4	0	453	1	454	11	6	965	967	0.000	0.500	0.857	0.841
12:00							0	0	1	1	0	0	1	1	518	0	519	17	7	0	517	0	517	15	6	1036	1037	0.000	0.250	0.889	0.904
1:00							0	0	0	0	0	0	0	2	439	0	441	16	7	0	492	0	492	8	6	933	933	0.000	0.000	0.896	0.939
2:00																														
3:00							0	0	1	1	0	0	1	1	479	0	480	10	6	0	698	0	698	11	10	1178	1179	0.000	0.250	0.889	0.954
4:00							0	0	0	0	0	0	0	1	508	2	511	5	5	0	821	0	821	8	7	1332	1332	0.000	0.000	0.893	0.908
5:00							0	0	2	2	0	0	2	1	535	7	543	0	3	0	837	0	837	7	5	1380	1382	0.000	0.500	0.911	0.890
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS							4	0	5	9	0	0	9	11	5319	9	5339	99	52	0	5000	9	5009	100	70	10348	10357				
ADT							5	0	7	12	0.0%		12	16	7584	13	7612	2.8%		0	7129	13	7142	3.4%		14754	14766				

N Leg Hourly Factor:	0.00	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.57	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.00	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.86	W Leg Monthly Factor:	0.88

N Leg Combined Factor:		E Leg Combined Factor:	1.43
S Leg Combined Factor:	1.34	W Leg Combined Factor:	1.43

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Park Synagogue West
Counter: DJS
Day of the Week: Tuesday

File Name : TC 1 Mayfield Rd and Park Synagogue West Dr 091724 DJS
Site Code : 00000000
Start Date : 9/17/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE WEST From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	178	0	0	178	0	0	0	0	0	0	70	0	0	70	248
07:15 AM	0	0	0	0	0	0	182	1	0	183	0	0	0	0	0	0	86	0	0	86	269
07:30 AM	0	0	0	0	0	0	266	0	0	266	1	0	1	0	2	0	92	0	2	94	362
07:45 AM	0	0	0	0	0	0	249	0	0	249	0	0	0	0	0	0	113	0	0	113	362
Total	0	0	0	0	0	0	875	1	0	876	1	0	1	0	2	0	361	0	2	363	1241
08:00 AM	0	0	0	0	0	0	252	0	0	252	0	0	0	0	0	0	113	0	0	113	365
08:15 AM	0	0	0	0	0	0	202	1	0	203	0	0	1	4	5	8	101	0	0	109	317
08:30 AM	0	0	0	0	0	0	186	0	0	186	0	0	0	0	0	0	110	0	0	110	296
08:45 AM	0	0	0	0	0	0	195	0	0	195	0	0	0	0	0	0	89	0	0	89	284
Total	0	0	0	0	0	0	835	1	0	836	0	0	1	4	5	8	413	0	0	421	1262
09:00 AM	0	0	0	0	0	0	176	0	0	176	0	0	0	1	1	0	100	0	0	100	277
09:15 AM	0	0	0	0	0	0	157	1	0	158	0	0	0	0	0	0	92	0	0	92	250
09:30 AM	0	0	0	0	0	0	154	0	0	154	0	0	0	0	0	0	106	0	0	106	260
09:45 AM	0	0	0	0	0	0	133	1	0	134	0	0	0	1	1	0	110	0	0	110	245
Total	0	0	0	0	0	0	620	2	0	622	0	0	0	2	2	0	408	0	0	408	1032
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 1 Mayfield Rd and Park Synagogue West Dr 091724 DJS
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE WEST From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	120	1	0	121	0	0	1	0	1	1	114	0	0	115	237
11:15 AM	0	0	0	0	0	0	118	0	0	118	0	0	0	0	0	0	109	0	1	110	228
11:30 AM	0	0	0	0	0	0	123	0	0	123	0	0	1	0	1	0	135	0	1	136	260
11:45 AM	0	0	0	0	0	0	149	0	0	149	0	0	0	1	1	0	95	0	0	95	245
Total	0	0	0	0	0	0	510	1	0	511	0	0	2	1	3	1	453	0	2	456	970
12:00 PM	0	0	0	0	0	0	121	0	0	121	0	0	0	0	0	0	143	0	0	143	264
12:15 PM	0	0	0	0	0	0	146	0	0	146	0	0	0	0	0	0	118	0	0	118	264
12:30 PM	0	0	0	0	0	0	127	0	0	127	0	0	0	0	0	0	142	0	0	142	269
12:45 PM	0	0	0	0	0	0	124	1	0	125	1	0	0	0	1	0	114	0	0	114	240
Total	0	0	0	0	0	0	518	1	0	519	1	0	0	0	1	0	517	0	0	517	1037
01:00 PM	0	0	0	0	0	0	108	0	0	108	0	0	0	0	0	0	125	0	0	125	233
01:15 PM	0	0	0	0	0	0	123	0	0	123	0	0	0	0	0	0	131	0	0	131	254
01:30 PM	0	0	0	0	0	0	114	1	0	115	0	0	0	0	0	0	126	0	0	126	241
01:45 PM	0	0	0	0	0	0	94	1	0	95	0	0	0	1	1	0	110	0	0	110	206
Total	0	0	0	0	0	0	439	2	0	441	0	0	0	1	1	0	492	0	0	492	934
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 1 Mayfield Rd and Park Synagogue West Dr 091724 DJS
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE WEST From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	115	1	0	116	0	0	0	0	0	0	150	0	0	150	266
03:15 PM	0	0	0	0	0	0	135	0	0	135	1	0	0	0	1	0	183	0	0	183	319
03:30 PM	0	0	0	0	0	0	106	0	0	106	0	0	0	0	0	0	182	0	0	182	288
03:45 PM	0	0	0	0	0	0	123	0	0	123	0	0	0	0	0	0	183	0	0	183	306
Total	0	0	0	0	0	0	479	1	0	480	1	0	0	0	1	0	698	0	0	698	1179
04:00 PM	0	0	0	0	0	0	136	0	0	136	0	0	0	0	0	0	172	0	0	172	308
04:15 PM	0	0	0	0	0	2	140	1	0	143	0	0	0	0	0	0	226	0	0	226	369
04:30 PM	0	0	0	0	0	0	117	0	0	117	0	0	0	0	0	0	219	0	0	219	336
04:45 PM	0	0	0	0	0	0	115	0	0	115	0	0	0	0	0	0	204	0	1	205	320
Total	0	0	0	0	0	2	508	1	0	511	0	0	0	0	0	0	821	0	1	822	1333
05:00 PM	0	0	0	0	0	0	135	1	0	136	1	0	0	1	2	0	208	0	0	208	346
05:15 PM	0	0	0	0	0	0	149	0	0	149	1	0	0	0	1	0	235	0	0	235	385
05:30 PM	0	0	0	0	0	7	111	0	0	118	0	0	0	0	0	0	206	0	0	206	324
05:45 PM	0	0	0	0	0	0	140	0	0	140	0	0	0	0	0	0	188	0	0	188	328
Total	0	0	0	0	0	7	535	1	0	543	2	0	0	1	3	0	837	0	0	837	1383
Grand Total	0	0	0	0	0	9	5319	11	0	5339	5	0	4	9	18	9	5000	0	5	5014	10371
Apprch %	0	0	0	0		0.2	99.6	0.2	0		27.8	0	22.2	50		0.2	99.7	0	0.1		
Total %	0	0	0	0	0	0.1	51.3	0.1	0	51.5	0	0	0	0.1	0.2	0.1	48.2	0	0	48.3	
Cars	0	0	0	0	0	9	5168	11	0	5188	5	0	4	4	13	8	4831	0	5	4844	10045
% Cars	0	0	0	0	0	100	97.2	100	0	97.2	100	0	100	44.4	72.2	88.9	96.6	0	100	96.6	96.9
Trucks	0	0	0	0	0	0	99	0	0	99	0	0	0	5	5	0	100	0	0	100	204
% Trucks	0	0	0	0	0	0	1.9	0	0	1.9	0	0	0	55.6	27.8	0	2	0	0	2	2
Buses	0	0	0	0	0	0	52	0	0	52	0	0	0	0	0	1	69	0	0	70	122

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

% Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	11.1	1.4	0	0	1.4	1.2

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE WEST From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**266**	0	0	**266**	**1**	0	**1**	0	2	0	92	0	**2**	94	362
07:45 AM	0	0	0	0	0	0	249	0	0	249	0	0	0	0	0	0	**113**	0	0	**113**	362
08:00 AM	0	0	0	0	0	0	252	0	0	252	0	0	0	0	0	0	113	0	0	113	**365**
08:15 AM	0	0	0	0	0	0	202	**1**	0	203	0	0	1	**4**	**5**	**8**	101	0	0	109	317
Total Volume	0	0	0	0	0	0	969	1	0	970	1	0	2	4	7	8	419	0	2	429	1406
% App. Total	0	0	0	0		0	99.9	0.1	0		14.3	0	28.6	57.1		1.9	97.7	0	0.5		
PHF	.000	.000	.000	.000	.000	.000	.911	.250	.000	.912	.250	.000	.500	.250	.350	.250	.927	.000	.250	.949	.963
Cars	0	0	0	0	0	0	953	1	0	954	1	0	2	3	6	7	399	0	2	408	1368
% Cars	0	0	0	0	0	0	98.3	100	0	98.4	100	0	100	75.0	85.7	87.5	95.2	0	100	95.1	97.3
Trucks	0	0	0	0	0	0	8	0	0	8	0	0	0	1	1	0	12	0	0	12	21
% Trucks	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	25.0	14.3	0	2.9	0	0	2.8	1.5
Buses	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	1	8	0	0	9	17
% Buses	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0	12.5	1.9	0	0	2.1	1.2
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	117	0	0	117	0	0	0	0	0	0	219	0	0	219	336
04:45 PM	0	0	0	0	0	0	115	0	0	115	0	0	0	0	0	0	204	0	**1**	205	320
05:00 PM	0	0	0	0	0	0	135	**1**	0	136	**1**	0	0	**1**	**2**	0	208	0	0	208	346
05:15 PM	0	0	0	0	0	0	**149**	0	0	**149**	1	0	0	0	1	0	**235**	0	0	**235**	**385**
Total Volume	0	0	0	0	0	0	516	1	0	517	2	0	0	1	3	0	866	0	1	867	1387
% App. Total	0	0	0	0		0	99.8	0.2	0		66.7	0	0	33.3		0	99.9	0	0.1		
PHF	.000	.000	.000	.000	.000	.000	.866	.250	.000	.867	.500	.000	.000	.250	.375	.000	.921	.000	.250	.922	.901
Cars	0	0	0	0	0	0	512	1	0	513	2	0	0	1	3	0	856	0	1	857	1373
% Cars	0	0	0	0	0	0	99.2	100	0	99.2	100	0	0	100	100	0	98.8	0	100	98.8	99.0
Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
% Trucks	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.5
Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
% Buses	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0	0.5	0	0	0.5	0.5

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Park Synagogue Center Driveway

Date: 9/17/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Mayfield Rd & Park Synagogue Center 091724

Weather: Clear **Recorder(s):** ALB **Data entry by:** JJO **Date entered:** Sep. 18, 2024

TIME BEGINS	Park Synagogue Center FROM NORTH						Park Synagogue Center FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00							0	0	0	0	0	0	0	0	850	0	850	7	8	0	369	0	369	8	8	1219	1219	0.000	0.000	0.817	0.854
08:00							0	0	0	0	0	0	0	0	767	0	767	5	13	0	387	0	387	6	9	1154	1154	0.000	0.000	0.816	0.880
09:00							0	0	0	0	0	0	0	0	613	0	613	15	4	0	399	0	399	11	3	1012	1012	0.000	0.000	0.815	0.907
10:00																														
11:00							0	0	0	0	0	0	0	0	502	0	502	10	5	3	476	0	479	5	4	981	981	0.000	0.000	0.937	0.855
12:00							0	0	0	0	0	0	0	0	490	0	490	11	5	0	503	0	503	4	2	993	993	0.000	0.000	0.921	0.918
1:00							0	0	0	0	0	0	0	0	470	0	470	8	4	0	512	0	512	5	1	982	982	0.000	0.000	0.948	0.914
2:00																														
3:00							0	0	0	0	0	0	0	0	463	0	463	7	4	0	645	0	645	4	9	1108	1108	0.000	0.000	0.919	0.906
4:00							0	0	0	0	0	0	0	0	514	0	514	2	4	0	862	1	863	4	4	1377	1377	0.000	0.000	0.862	0.866
5:00							0	0	0	0	0	0	0	0	565	0	565	0	2	0	877	0	877	3	5	1442	1442	0.000	0.000	0.942	0.888
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS							0	0	0	0	0	0	0	0	5234	0	5234	65	49	3	5030	1	5034	50	45	10268	10268				
ADT							0	0	0	0			0	0	7463	0	7463	2.2%		4	7172	1	7178	1.9%		14640	14640				

N Leg Hourly Factor:	0.00	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.57	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.00	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.86	W Leg Monthly Factor:	0.88

N Leg Combined Factor:		E Leg Combined Factor:	1.43
S Leg Combined Factor:	1.34	W Leg Combined Factor:	1.43

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Park Synagogue Center
Counter: ALB
Day of Week: Tuesday

File Name : B. MAYFIELD ROAD and CENTER DRIVEWAY 9-17-2024 ALB
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE CENTER DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	164	0	0	164	0	0	0	0	0	0	70	0	0	70	234
07:15 AM	0	0	0	0	0	0	183	0	2	185	0	0	0	0	0	0	83	0	0	83	268
07:30 AM	0	0	0	0	0	0	260	0	2	262	0	0	0	0	0	0	108	0	0	108	370
07:45 AM	0	0	0	0	0	0	243	0	1	244	0	0	0	0	0	0	108	0	0	108	352
Total	0	0	0	0	0	0	850	0	5	855	0	0	0	0	0	0	369	0	0	369	1224
08:00 AM	0	0	0	0	0	0	235	0	0	235	0	0	0	0	0	0	105	0	1	106	341
08:15 AM	0	0	0	0	0	0	185	0	3	188	0	0	0	0	0	0	110	0	0	110	298
08:30 AM	0	0	0	0	0	0	186	0	2	188	0	0	0	0	0	0	85	0	0	85	273
08:45 AM	0	0	0	0	0	0	161	0	1	162	0	0	0	0	0	0	87	0	0	87	249
Total	0	0	0	0	0	0	767	0	6	773	0	0	0	0	0	0	387	0	1	388	1161
09:00 AM	0	0	0	0	0	0	188	0	2	190	0	0	0	0	0	0	100	0	1	101	291
09:15 AM	0	0	0	1	1	0	155	0	1	156	0	0	0	0	0	0	89	0	0	89	246
09:30 AM	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	0	100	0	0	100	239
09:45 AM	0	0	0	0	0	0	131	0	2	133	0	0	0	0	0	0	110	0	0	110	243
Total	0	0	0	1	1	0	613	0	5	618	0	0	0	0	0	0	399	0	1	400	1019
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : B. MAYFIELD ROAD and CENTER DRIVEWAY 9-17-2024 ALB
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE CENTER DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	121	0	0	121	0	0	0	0	0	0	120	0	0	120	241
11:15 AM	0	0	0	0	0	0	114	0	1	115	0	0	0	0	0	0	103	0	0	103	218
11:30 AM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	140	0	0	140	273
11:45 AM	0	0	0	0	0	0	134	0	5	139	0	0	0	0	0	0	113	3	0	116	255
Total	0	0	0	0	0	0	502	0	6	508	0	0	0	0	0	0	476	3	0	479	987
12:00 PM	0	0	0	0	0	0	114	0	0	114	0	0	0	0	0	0	133	0	0	133	247
12:15 PM	0	0	0	1	1	0	133	0	1	134	0	0	0	0	0	0	126	0	0	126	261
12:30 PM	0	0	0	0	0	0	123	0	0	123	0	0	0	0	0	0	137	0	0	137	260
12:45 PM	0	0	0	0	0	0	120	0	0	120	0	0	0	0	0	0	107	0	0	107	227
Total	0	0	0	1	1	0	490	0	1	491	0	0	0	0	0	0	503	0	0	503	995
01:00 PM	0	0	0	0	0	0	123	0	0	123	0	0	0	0	0	0	121	0	0	121	244
01:15 PM	0	0	0	0	0	0	124	0	0	124	0	0	0	0	0	0	140	0	0	140	264
01:30 PM	0	0	0	0	0	0	114	0	0	114	0	0	0	0	0	0	125	0	0	125	239
01:45 PM	0	0	0	0	0	0	109	0	1	110	0	0	0	0	0	0	126	0	0	126	236
Total	0	0	0	0	0	0	470	0	1	471	0	0	0	0	0	0	512	0	0	512	983
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : B. MAYFIELD ROAD and CENTER DRIVEWAY 9-17-2024 ALB
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE CENTER DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	120	0	1	121	0	0	0	0	0	0	137	0	0	137	258
03:15 PM	0	0	0	0	0	0	120	0	1	121	0	0	0	0	0	0	178	0	0	178	299
03:30 PM	0	0	0	0	0	0	97	0	2	99	0	0	0	0	0	0	156	0	0	156	255
03:45 PM	0	0	0	0	0	0	126	0	0	126	0	0	0	0	0	0	174	0	0	174	300
Total	0	0	0	0	0	0	463	0	4	467	0	0	0	0	0	0	645	0	0	645	1112
04:00 PM	0	0	0	0	0	0	149	0	0	149	0	0	0	0	0	1	164	0	0	165	314
04:15 PM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	249	0	0	249	382
04:30 PM	0	0	0	0	0	0	120	0	2	122	0	0	0	0	0	0	205	0	0	205	327
04:45 PM	0	0	0	0	0	0	112	0	1	113	0	0	0	0	0	0	244	0	0	244	357
Total	0	0	0	0	0	0	514	0	3	517	0	0	0	0	0	1	862	0	0	863	1380
05:00 PM	0	0	0	0	0	0	149	0	2	151	0	0	0	0	0	0	225	0	0	225	376
05:15 PM	0	0	0	0	0	0	150	0	0	150	0	0	0	0	0	0	247	0	0	247	397
05:30 PM	0	0	0	0	0	0	134	0	0	134	0	0	0	0	0	0	232	0	0	232	366
05:45 PM	0	0	0	0	0	0	132	0	0	132	0	0	0	0	0	0	173	0	0	173	305
Total	0	0	0	0	0	0	565	0	2	567	0	0	0	0	0	0	877	0	0	877	1444
Grand Total	0	0	0	2	2	0	5234	0	33	5267	0	0	0	0	0	1	5030	3	2	5036	10305
Apprch %	0	0	0	100		0	99.4	0	0.6		0	0	0	0		0	99.9	0.1	0		
Total %	0	0	0	0	0	0	50.8	0	0.3	51.1	0	0	0	0	0	0	48.8	0	0	48.9	
Cars	0	0	0	2	2	0	5120	0	33	5153	0	0	0	0	0	1	4935	3	2	4941	10096
% Cars	0	0	0	100	100	0	97.8	0	100	97.8	0	0	0	0	0	100	98.1	100	100	98.1	98
Trucks	0	0	0	0	0	0	65	0	0	65	0	0	0	0	0	0	50	0	0	50	115

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

% Trucks	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	1	0	0	1	1.1
Buses	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	45	0	0	45	94
% Buses	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	0.9	0	0	0.9	0.9

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE CENTER DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**260**	0	2	**262**	0	0	0	0	0	0	108	0	0	108	**370**
07:45 AM	0	0	0	0	0	0	243	0	1	244	0	0	0	0	0	0	108	0	0	108	352
08:00 AM	0	0	0	0	0	0	235	0	0	235	0	0	0	0	0	0	105	0	**1**	106	341
08:15 AM	0	0	0	0	0	0	185	0	**3**	188	0	0	0	0	0	0	**110**	0	0	**110**	298
Total Volume	0	0	0	0	0	0	923	0	6	929	0	0	0	0	0	0	431	0	1	432	1361
% App. Total	0	0	0	0		0	99.4	0	0.6		0	0	0	0		0	99.8	0	0.2		
PHF	.000	.000	.000	.000	.000	.000	.888	.000	.500	.886	.000	.000	.000	.000	.000	.000	.980	.000	.250	.982	.920
Cars	0	0	0	0	0	0	906	0	6	912	0	0	0	0	0	0	417	0	1	418	1330
% Cars	0	0	0	0	0	0	98.2	0	100	98.2	0	0	0	0	0	0	96.8	0	100	96.8	97.7
Trucks	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	8	0	0	8	15
% Trucks	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0	0	1.9	0	0	1.9	1.1
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	6	0	0	6	16
% Buses	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	1.4	0	0	1.4	1.2
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	120	0	**2**	122	0	0	0	0	0	0	205	0	0	205	327
04:45 PM	0	0	0	0	0	0	112	0	1	113	0	0	0	0	0	0	244	0	0	244	357
05:00 PM	0	0	0	0	0	0	149	0	2	**151**	0	0	0	0	0	0	225	0	0	225	376
05:15 PM	0	0	0	0	0	0	**150**	0	0	150	0	0	0	0	0	0	**247**	0	0	**247**	**397**
Total Volume	0	0	0	0	0	0	531	0	5	536	0	0	0	0	0	0	921	0	0	921	1457
% App. Total	0	0	0	0		0	99.1	0	0.9		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.885	.000	.625	.887	.000	.000	.000	.000	.000	.000	.932	.000	.000	.932	.918
Cars	0	0	0	0	0	0	528	0	5	533	0	0	0	0	0	0	917	0	0	917	1450
% Cars	0	0	0	0	0	0	99.4	0	100	99.4	0	0	0	0	0	0	99.6	0	0	99.6	99.5
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0.2
Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
% Buses	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0	0.1	0	0	0.1	0.3

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Mayfield Road **and** Park Synagogue East Driveway

Date: 9/17/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Mayfield Rd & Park Synagogue East 091724

Weather: Clear **Recorder(s):** SLC **Data entry by:** JJO **Date entered:** Sep. 18, 2024

TIME BEGINS	FROM NORTH						Park Synagogue East FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00							0	0	0	0	0	0	0	0	849	0	849	9	9	0	365	0	365	8	9	1214	1214	0.000	0.000	0.839	0.754
08:00							1	0	0	1	0	0	1	0	823	0	823	9	9	0	404	1	405	15	12	1228	1229	0.000	0.250	0.833	0.938
09:00							0	0	1	1	0	0	1	0	604	0	604	17	4	0	381	1	382	15	7	986	987	0.000	0.250	0.899	0.868
10:00																														
11:00							0	0	0	0	0	0	0	1	471	0	472	12	4	0	395	0	395	12	6	867	867	0.000	0.000	0.937	0.882
12:00							0	0	1	1	0	0	1	0	499	0	499	14	7	0	491	0	491	12	8	990	991	0.000	0.250	0.800	0.871
1:00							0	0	1	1	0	0	1	0	437	0	437	13	7	0	477	1	478	8	6	915	916	0.000	0.250	0.910	0.919
2:00																														
3:00							0	0	0	0	0	0	0	0	412	0	412	7	6	0	585	0	585	6	8	997	997	0.000	0.000	0.844	0.903
4:00							0	0	0	0	0	0	0	0	388	0	388	3	5	0	545	0	545	5	4	933	933	0.000	0.000	0.851	0.668
5:00							0	0	0	0	0	0	0	0	534	0	534	0	4	0	779	0	779	6	6	1313	1313	0.000	0.000	0.954	0.950
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS							1	0	3	4	0	0	4	1	5017	0	5018	84	55	0	4422	3	4425	87	66	9443	9447				
ADT							1	0	4	5	0.0%		5	1	7153	0	7155	2.8%		0	6305	4	6309	3.5%		13464	13469				

N Leg Hourly Factor:	0.00	E Leg Hourly Factor:	1.61
S Leg Hourly Factor:	1.57	W leg Hourly Factor:	1.61
N Leg Monthly Factor:	0.00	E Leg Monthly Factor:	0.88
S Leg Monthly Factor:	0.86	W Leg Monthly Factor:	0.88

N Leg Combined Factor:		E Leg Combined Factor:	1.43
S Leg Combined Factor:	1.34	W Leg Combined Factor:	1.43

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Mayfield Rd & Park Synagogue East
Counter: SLC
Day of the week: Tuesday

File Name : C. Cleveland Hgts Traffic Count #3 Mayfield Rd & East Driveway of Park Synagogue 091724 Sue
Site Code : 00000000
Start Date : 9/17/2024
Page No : 1

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE EAST DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	175	0	0	175	0	0	0	0	0	0	71	0	0	71	246
07:15 AM	0	0	0	0	0	0	179	0	0	179	0	0	0	0	0	0	78	0	2	80	259
07:30 AM	0	0	0	0	0	0	253	0	0	253	0	0	0	0	0	0	95	0	0	95	348
07:45 AM	0	0	0	0	0	0	242	0	0	242	0	0	0	0	0	0	121	0	0	121	363
Total	0	0	0	0	0	0	849	0	0	849	0	0	0	0	0	0	365	0	2	367	1216
08:00 AM	0	0	0	0	0	0	247	0	0	247	0	0	0	0	0	0	108	0	0	108	355
08:15 AM	0	0	0	0	0	0	195	0	0	195	0	0	0	0	0	0	106	0	0	106	301
08:30 AM	0	0	0	0	0	0	186	0	0	186	0	0	0	0	0	0	105	0	1	106	292
08:45 AM	0	0	0	0	0	0	195	0	0	195	0	0	1	0	1	1	85	0	0	86	282
Total	0	0	0	0	0	0	823	0	0	823	0	0	1	0	1	1	404	0	1	406	1230
09:00 AM	0	0	0	0	0	0	168	0	0	168	0	0	0	0	0	1	92	0	0	93	261
09:15 AM	0	0	0	0	0	0	162	0	0	162	0	0	0	0	0	0	88	0	0	88	250
09:30 AM	0	0	0	0	0	0	133	0	0	133	1	0	0	0	1	0	91	0	0	91	225
09:45 AM	0	0	0	0	0	0	141	0	0	141	0	0	0	0	0	0	110	0	1	111	252
Total	0	0	0	0	0	0	604	0	0	604	1	0	0	0	1	1	381	0	1	383	988
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : C. Cleveland Hgts Traffic Count #3 Mayfield Rd & East Driveway of Park Synagogue 091724 Sue
Site Code : 00000000
Start Date : 9/17/2024
Page No : 2

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE EAST DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	118	0	0	118	0	0	0	0	0	0	111	0	0	111	229
11:15 AM	0	0	0	0	0	0	124	0	0	124	0	0	0	0	0	0	112	0	1	113	237
11:30 AM	0	0	0	0	0	0	104	0	0	104	0	0	0	0	0	0	107	0	0	107	211
11:45 AM	0	0	0	0	0	0	125	1	0	126	0	0	0	0	0	0	65	0	0	65	191
Total	0	0	0	0	0	0	471	1	0	472	0	0	0	0	0	0	395	0	1	396	868
12:00 PM	0	0	0	0	0	0	82	0	0	82	0	0	0	0	0	0	102	0	0	102	184
12:15 PM	0	0	0	0	0	0	156	0	0	156	0	0	0	0	0	0	128	0	0	128	284
12:30 PM	0	0	0	0	0	0	126	0	0	126	1	0	0	0	1	0	141	0	0	141	268
12:45 PM	0	0	0	0	0	0	135	0	0	135	0	0	0	0	0	0	120	0	0	120	255
Total	0	0	0	0	0	0	499	0	0	499	1	0	0	0	1	0	491	0	0	491	991
01:00 PM	0	0	0	0	0	0	110	0	0	110	1	0	0	0	1	0	113	0	0	113	224
01:15 PM	0	0	0	0	0	0	118	0	0	118	0	0	0	0	0	0	126	0	0	126	244
01:30 PM	0	0	0	0	0	0	120	0	0	120	0	0	0	0	0	0	130	0	0	130	250
01:45 PM	0	0	0	0	0	0	89	0	1	90	0	0	0	0	0	1	108	0	0	109	199
Total	0	0	0	0	0	0	437	0	1	438	1	0	0	0	1	1	477	0	0	478	917
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : C. Cleveland Hgts Traffic Count #3 Mayfield Rd & East Driveway of Park Synagogue 091724 Sue
Site Code : 00000000
Start Date : 9/17/2024

Groups Printed- Cars - Trucks - Buses

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE EAST DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	122	0	0	122	0	0	0	0	0	0	145	0	0	145	267
03:15 PM	0	0	0	0	0	0	106	0	0	106	0	0	0	0	0	0	150	0	1	151	257
03:30 PM	0	0	0	0	0	0	84	0	0	84	0	0	0	0	0	0	128	0	0	128	212
03:45 PM	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	162	0	0	162	262
Total	0	0	0	0	0	0	412	0	0	412	0	0	0	0	0	0	585	0	1	586	998
04:00 PM	0	0	0	0	0	0	97	0	0	97	0	0	0	0	0	0	109	0	0	109	206
04:15 PM	0	0	0	0	0	0	80	0	0	80	0	0	0	0	0	0	96	0	0	96	176
04:30 PM	0	0	0	0	0	0	97	0	0	97	0	0	0	0	0	0	136	0	0	136	233
04:45 PM	0	0	0	0	0	0	114	0	0	114	0	0	0	0	0	0	204	0	0	204	318
Total	0	0	0	0	0	0	388	0	0	388	0	0	0	0	0	0	545	0	0	545	933
05:00 PM	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	0	205	0	1	206	345
05:15 PM	0	0	0	0	0	0	140	0	0	140	0	0	0	0	0	0	204	0	0	204	344
05:30 PM	0	0	0	0	0	0	118	0	0	118	0	0	0	0	0	0	203	0	0	203	321
05:45 PM	0	0	0	0	0	0	137	0	0	137	0	0	0	0	0	0	167	0	0	167	304
Total	0	0	0	0	0	0	534	0	0	534	0	0	0	0	0	0	779	0	1	780	1314
Grand Total	0	0	0	0	0	0	5017	1	1	5019	3	0	1	0	4	3	4422	0	7	4432	9455
Apprch %	0	0	0	0		0	100	0	0		75	0	25	0		0.1	99.8	0	0.2		
Total %	0	0	0	0	0	0	53.1	0	0	53.1	0	0	0	0	0	0	46.8	0	0.1	46.9	
Cars	0	0	0	0	0	0	4878	1	0	4879	3	0	1	0	4	3	4269	0	6	4278	9161
% Cars	0	0	0	0	0	0	97.2	100	0	97.2	100	0	100	0	100	100	96.5	0	85.7	96.5	96.9
Trucks	0	0	0	0	0	0	84	0	1	85	0	0	0	0	0	0	87	0	0	87	172
% Trucks	0	0	0	0	0	0	1.7	0	100	1.7	0	0	0	0	0	0	2	0	0	2	1.8
Buses	0	0	0	0	0	0	55	0	0	55	0	0	0	0	0	0	66	0	1	67	122

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
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Transportation Management Services

% Buses	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	1.5	0	14.3	1.5	1.3

	From North					MAYFIELD ROAD From East					PARK SYNAGOGUE EAST DRIVEWAY From South					MAYFIELD ROAD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**253**	0	0	**253**	0	0	0	0	0	0	95	0	0	95	348
07:45 AM	0	0	0	0	0	0	242	0	0	242	0	0	0	0	0	0	**121**	0	0	**121**	**363**
08:00 AM	0	0	0	0	0	0	247	0	0	247	0	0	0	0	0	0	108	0	0	108	355
08:15 AM	0	0	0	0	0	0	195	0	0	195	0	0	0	0	0	0	106	0	0	106	301
Total Volume	0	0	0	0	0	0	937	0	0	937	0	0	0	0	0	0	430	0	0	430	1367
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.926	.000	.000	.926	.000	.000	.000	.000	.000	.000	.888	.000	.000	.888	.941
Cars	0	0	0	0	0	0	919	0	0	919	0	0	0	0	0	0	409	0	0	409	1328
% Cars	0	0	0	0	0	0	98.1	0	0	98.1	0	0	0	0	0	0	95.1	0	0	95.1	97.1
Trucks	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	12	0	0	12	21
% Trucks	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0	2.8	0	0	2.8	1.5
Buses	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	9	0	0	9	18
% Buses	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0	2.1	0	0	2.1	1.3
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	97	0	0	97	0	0	0	0	0	0	136	0	0	136	233
04:45 PM	0	0	0	0	0	0	114	0	0	114	0	0	0	0	0	0	204	0	0	204	318
05:00 PM	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	0	**205**	0	**1**	**206**	**345**
05:15 PM	0	0	0	0	0	0	**140**	0	0	**140**	0	0	0	0	0	0	204	0	0	204	344
Total Volume	0	0	0	0	0	0	490	0	0	490	0	0	0	0	0	0	749	0	1	750	1240
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	99.9	0	0.1		
PHF	.000	.000	.000	.000	.000	.000	.875	.000	.000	.875	.000	.000	.000	.000	.000	.000	.913	.000	.250	.910	.899
Cars	0	0	0	0	0	0	486	0	0	486	0	0	0	0	0	0	740	0	1	741	1227
% Cars	0	0	0	0	0	0	99.2	0	0	99.2	0	0	0	0	0	0	98.8	0	100	98.8	99.0
Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
% Trucks	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0.7	0.5
Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
% Buses	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0	0.5	0	0	0.5	0.6

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Cleveland Heights **At Intersection of:** Euclid Heights Boulevard **and** Park Synagogue South Driveway

Date: 9/17/2024 **Day:** Tue. **Comments:** **Project:** 24-032

Weather: Clear **Recorder(s):** KPB **Data entry by:** JJO **Date entered:** Sep. 18, 2024

Euclid Heights Blvd & Park Synagogue South 091724

TIME BEGINS	Park Synagogue South FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus			North	South	East	West
06:00																														
07:00	1	0	0	1	0	0							1	0	143	1	144	1	1	2	128	0	130	1	2	274	275	0.250	0.000	0.818	0.774
08:00	1	0	1	2	0	1							2	0	158	0	158	4	2	0	153	0	153	4	0	311	313	0.250	0.000	0.878	0.850
09:00	0	0	1	1	0	0							1	0	168	1	169	3	2	0	176	0	176	6	1	345	346	0.250	0.000	0.862	0.815
10:00																														
11:00	1	0	1	2	0	1							2	0	138	1	139	5	0	1	135	0	136	6	0	275	277	0.500	0.000	0.790	0.756
12:00	0	0	0	0	0	0							0	0	165	3	168	4	0	0	174	0	174	3	0	342	342	0.000	0.000	0.824	0.870
1:00	0	0	0	0	0	0							0	0	149	1	150	1	0	0	154	0	154	2	0	304	304	0.000	0.000	0.915	0.856
2:00																														
3:00	0	0	1	1	0	0							1	0	199	1	200	5	1	3	237	0	240	6	2	440	441	0.250	0.000	0.893	0.938
4:00	1	0	2	3	0	0							3	0	186	3	189	1	0	1	216	0	217	2	4	406	409	0.250	0.000	0.859	0.935
5:00	1	0	0	1	0	0							1	0	190	1	191	3	0	0	224	0	224	1	1	415	416	0.250	0.000	0.809	0.949
6:00																														
7:00																														
8:00																														
9:00																														
TOTALS	5	0	6	11	0	2							11	0	1496	12	1508	27	6	7	1597	0	1604	31	10	3112	3123				
ADT	7	0	8	15	18.2%								15	0	1965	16	1981	2.2%		9	2097	0	2107	2.6%		4087	4102				

N Leg Hourly Factor:	1.57	E Leg Hourly Factor:	1.54
S Leg Hourly Factor:	0.00	W leg Hourly Factor:	1.54
N Leg Monthly Factor:	0.86	E Leg Monthly Factor:	0.86
S Leg Monthly Factor:	0.00	W Leg Monthly Factor:	0.86

N Leg Combined Factor:	1.34	E Leg Combined Factor:	1.31
S Leg Combined Factor:		W Leg Combined Factor:	1.31

TMS ENGINEERS, INC.

2112 Case Parkway South #7

Twinsburg, Ohio 44087

(330) 686-6402 FAX: (330) 686-6417

Figure #:

Page #:

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Cleveland Heights
Intersection: Euclid Heights Blvd & Park Synagogue South
Counter: KPB
Day of the Week: Tuesday

File Name : 08-17-2024 map KB
Site Code : 00000000
Start Date : 9/17/2024
Page No : 1

Groups Printed- Cars - Trucks - Busses

	PARK SYNAGOGUE SOUTH DRIVEWAY From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	27	0	0	27	52
07:15 AM	0	0	0	0	0	0	37	0	1	38	0	0	0	0	0	0	22	1	0	23	61
07:30 AM	0	0	1	1	2	0	38	0	1	39	0	0	0	0	0	0	41	1	0	42	83
07:45 AM	0	0	0	0	0	1	43	0	0	44	0	0	0	0	0	0	38	0	1	39	83
Total	0	0	1	1	2	1	143	0	2	146	0	0	0	0	0	0	128	2	1	131	279
08:00 AM	0	0	0	0	0	0	39	0	1	40	0	0	0	0	0	0	32	0	0	32	72
08:15 AM	1	0	1	0	2	0	41	0	0	41	0	0	0	0	0	0	41	0	0	41	84
08:30 AM	0	0	0	0	0	0	45	0	0	45	0	0	0	0	0	0	35	0	0	35	80
08:45 AM	0	0	0	0	0	0	33	0	1	34	0	0	0	0	0	0	45	0	0	45	79
Total	1	0	1	0	2	0	158	0	2	160	0	0	0	0	0	0	153	0	0	153	315
09:00 AM	1	0	0	1	2	0	48	0	0	48	0	0	0	0	0	0	44	0	0	44	94
09:15 AM	0	0	0	0	0	1	35	0	0	36	0	0	0	0	0	0	38	0	0	38	74
09:30 AM	0	0	0	1	1	0	49	0	1	50	0	0	0	0	0	0	40	0	1	41	92
09:45 AM	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	0	54	0	0	54	90
Total	1	0	0	2	3	1	168	0	1	170	0	0	0	0	0	0	176	0	1	177	350
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	29	0	0	29	64
11:15 AM	0	0	0	2	2	1	30	0	0	31	0	0	0	0	0	0	31	1	0	32	65
11:30 AM	1	0	0	0	1	0	44	0	1	45	0	0	0	0	0	0	45	0	0	45	91
11:45 AM	0	0	1	0	1	0	29	0	2	31	0	0	0	0	0	0	30	0	0	30	62
Total	1	0	1	2	4	1	138	0	3	142	0	0	0	0	0	0	135	1	0	136	282
12:00 PM	0	0	0	0	0	1	32	0	0	33	0	0	0	0	0	0	35	0	0	35	68
12:15 PM	0	0	0	1	1	2	49	0	0	51	0	0	0	0	0	0	50	0	0	50	102
12:30 PM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	49	0	0	49	84

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 08-17-2024 map KB
Site Code : 00000000
Start Date : 9/17/2024
Page No : 2

Groups Printed- Cars - Trucks - Busses

	PARK SYNAGOGUE SOUTH DRIVEWAY From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	40	0	0	40	89
Total	0	0	0	1	1	3	165	0	0	168	0	0	0	0	0	0	174	0	0	174	343
01:00 PM	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	37	0	0	37	66
01:15 PM	0	0	0	0	0	1	39	0	0	40	0	0	0	0	0	0	41	0	0	41	81
01:30 PM	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	45	0	0	45	85
01:45 PM	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	0	31	0	0	31	72
Total	0	0	0	0	0	1	149	0	0	150	0	0	0	0	0	0	154	0	0	154	304
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	1	0	0	0	1	1	55	0	1	57	0	0	0	0	0	0	63	1	0	64	122
03:15 PM	0	0	0	2	2	0	49	0	2	51	0	0	0	0	0	0	62	0	0	62	115
03:30 PM	0	0	0	5	5	0	51	0	2	53	0	0	0	0	0	0	54	1	0	55	113
03:45 PM	0	0	0	0	0	0	44	0	0	44	0	0	0	0	0	0	58	1	0	59	103
Total	1	0	0	7	8	1	199	0	5	205	0	0	0	0	0	0	237	3	0	240	453
04:00 PM	0	0	0	0	0	0	55	0	1	56	0	0	0	0	0	0	57	0	0	57	113
04:15 PM	0	0	0	0	0	1	41	0	1	43	0	0	0	0	0	0	58	0	0	58	101
04:30 PM	0	0	0	1	1	0	54	0	0	54	0	0	0	0	0	0	56	0	0	56	111
04:45 PM	2	0	1	1	4	2	36	0	0	38	0	0	0	0	0	0	45	1	0	46	88
Total	2	0	1	2	5	3	186	0	2	191	0	0	0	0	0	0	216	1	0	217	413
05:00 PM	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	0	58	0	0	58	105
05:15 PM	0	0	1	0	1	0	59	0	0	59	0	0	0	0	0	0	56	0	0	56	116
05:30 PM	0	0	0	0	0	1	43	0	1	45	0	0	0	0	0	0	51	0	0	51	96
05:45 PM	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	0	59	0	0	59	100
Total	0	0	1	0	1	1	190	0	1	192	0	0	0	0	0	0	224	0	0	224	417
Grand Total	6	0	5	15	26	12	1496	0	16	1524	0	0	0	0	0	0	1597	7	2	1606	3156
Apprch %	23.1	0	19.2	57.7		0.8	98.2	0	1		0	0	0	0		0	99.4	0.4	0.1		
Total %	0.2	0	0.2	0.5	0.8	0.4	47.4	0	0.5	48.3	0	0	0	0	0	0	50.6	0.2	0.1	50.9	
Cars	5	0	4	15	24	12	1463	0	16	1491	0	0	0	0	0	0	1556	7	2	1565	3080
% Cars	83.3	0	80	100	92.3	100	97.8	0	100	97.8	0	0	0	0	0	0	97.4	100	100	97.4	97.6
Trucks	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	0	31	0	0	31	58
% Trucks	0	0	0	0	0	0	1.8	0	0	1.8	0	0	0	0	0	0	1.9	0	0	1.9	1.8
Busses	1	0	1	0	2	0	6	0	0	6	0	0	0	0	0	0	10	0	0	10	18

TMS Engineers, Inc.

2112 Case Pkwy. S. #7
Twinsburg, Ohio 44087
Transportation Management Services

% Busses	16.7	0	20	0	7.7	0	0.4	0	0	0.4	0	0	0	0	0	0	0.6	0	0	0.6	0.6

	PARK SYNAGOGUE SOUTH DRIVEWAY From North					EUCLID HEIGHTS BOULEVARD From East					From South					EUCLID HEIGHTS BOULEVARD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	**1**	**1**	**2**	0	38	0	**1**	39	0	0	0	0	0	0	**41**	**1**	0	**42**	83
07:45 AM	0	0	0	0	0	**1**	**43**	0	0	**44**	0	0	0	0	0	0	38	0	**1**	39	83
08:00 AM	0	0	0	0	0	0	39	0	1	40	0	0	0	0	0	0	32	0	0	32	72
08:15 AM	**1**	0	1	0	2	0	41	0	0	41	0	0	0	0	0	0	41	0	0	41	**84**
Total Volume	1	0	2	1	4	1	161	0	2	164	0	0	0	0	0	0	152	1	1	154	322
% App. Total	25	0	50	25		0.6	98.2	0	1.2		0	0	0	0		0	98.7	0.6	0.6		
PHF	.250	.000	.500	.250	.500	.250	.936	.000	.500	.932	.000	.000	.000	.000	.000	.000	.927	.250	.250	.917	.958
Cars	0	0	2	1	3	1	157	0	2	160	0	0	0	0	0	0	147	1	1	149	312
% Cars	0	0	100	100	75.0	100	97.5	0	100	97.6	0	0	0	0	0	0	96.7	100	100	96.8	96.9
Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
% Trucks	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	2.6	0	0	2.6	1.9
Busses	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
% Busses	100	0	0	0	25.0	0	1.2	0	0	1.2	0	0	0	0	0	0	0.7	0	0	0.6	1.2
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	**1**	1	0	54	0	0	54	0	0	0	0	0	0	56	0	0	56	111
04:45 PM	**2**	0	**1**	1	**4**	**2**	36	0	0	38	0	0	0	0	0	0	45	**1**	0	46	88
05:00 PM	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	0	**58**	0	0	**58**	105
05:15 PM	0	0	1	0	1	0	**59**	0	0	**59**	0	0	0	0	0	0	56	0	0	56	**116**
Total Volume	2	0	2	2	6	2	196	0	0	198	0	0	0	0	0	0	215	1	0	216	420
% App. Total	33.3	0	33.3	33.3		1	99	0	0		0	0	0	0		0	99.5	0.5	0		
PHF	.250	.000	.500	.500	.375	.250	.831	.000	.000	.839	.000	.000	.000	.000	.000	.000	.927	.250	.000	.931	.905
Cars	2	0	2	2	6	2	194	0	0	196	0	0	0	0	0	0	213	1	0	214	416
% Cars	100	0	100	100	100	100	99.0	0	0	99.0	0	0	0	0	0	0	99.1	100	0	99.1	99.0
Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% Trucks	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0	0.5	0	0	0.5	0.7
Busses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Busses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0.2

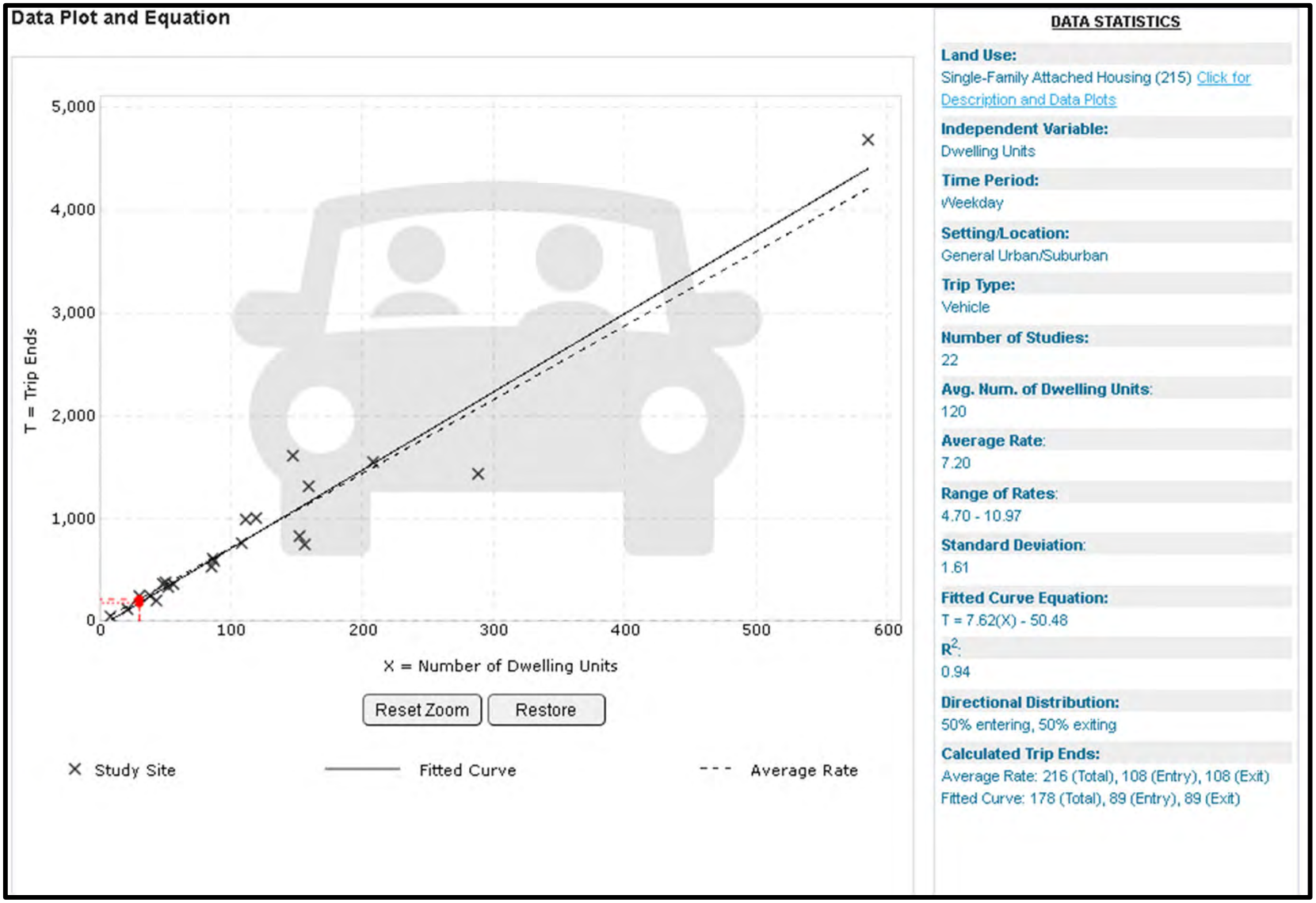
Appendix D
Trip Generation Data

Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Average Daily Traffic



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

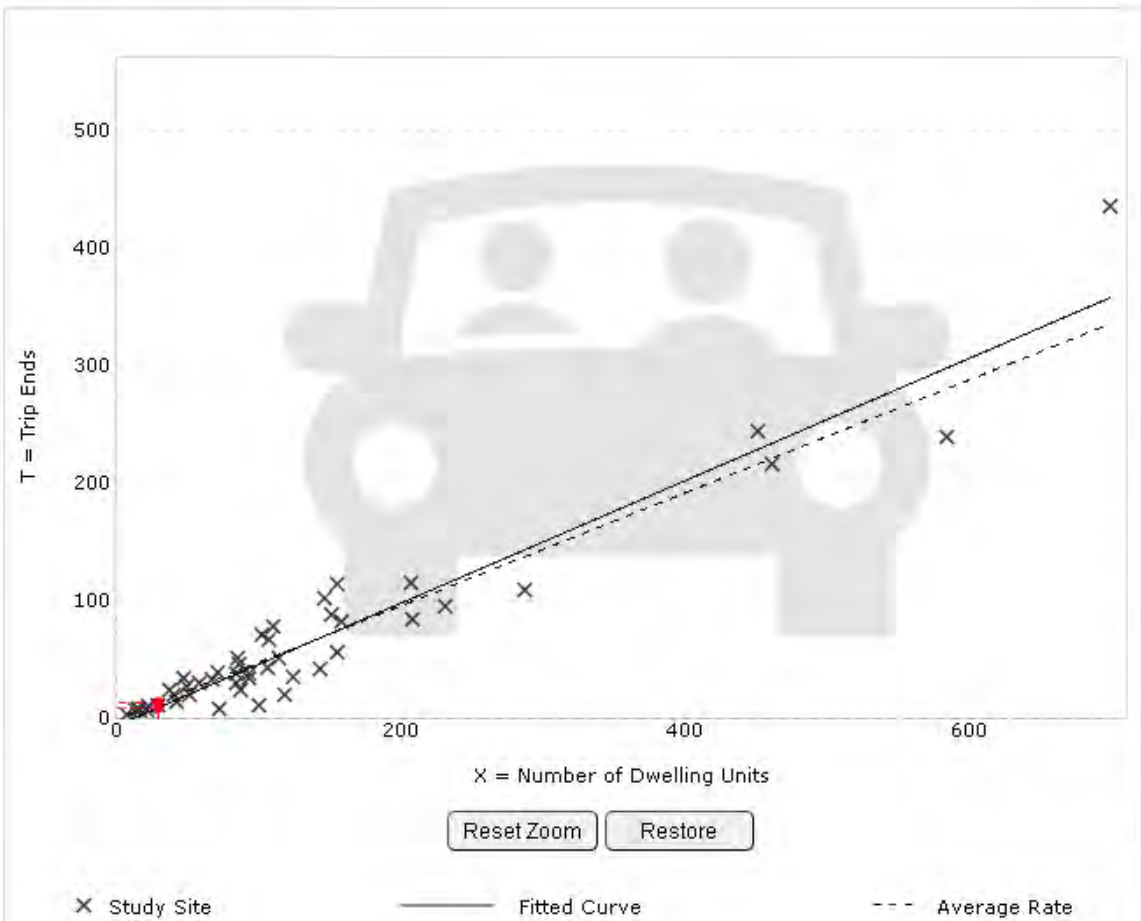
Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Peak Hour of Adjacent Street Traffic: 7-9 AM

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
46

Avg. Num. of Dwelling Units:
135

Average Rate:
0.48

Range of Rates:
0.12 - 0.74

Standard Deviation:
0.14

Fitted Curve Equation:
T = 0.52(X) - 5.70

R^2:
0.92

Directional Distribution:
25% entering, 75% exiting

Calculated Trip Ends:
Average Rate: 14 (Total), 4 (Entry), 10 (Exit)
Fitted Curve: 10 (Total), 2 (Entry), 8 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

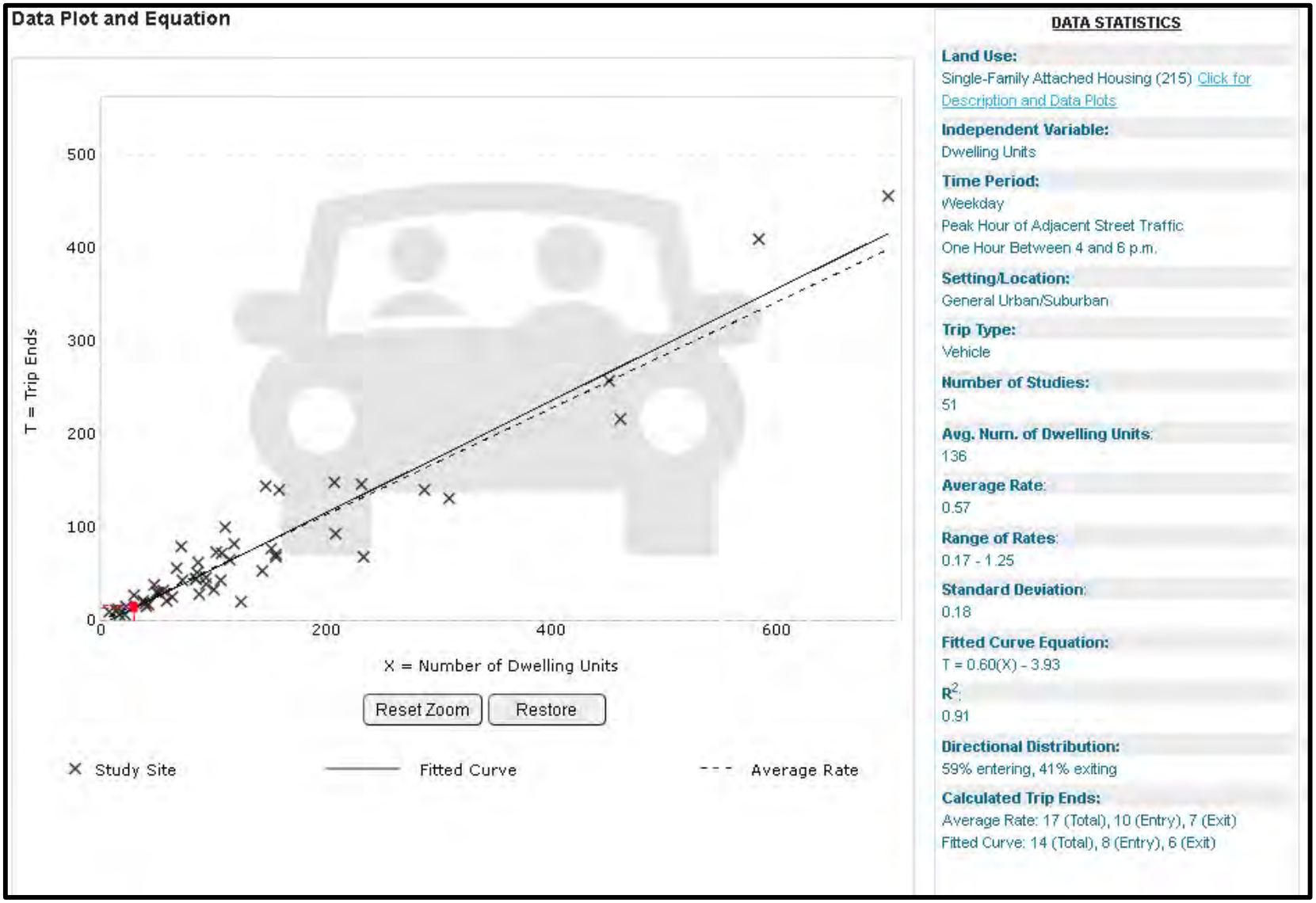
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Peak Hour of Adjacent Street Traffic: 4-6 PM



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

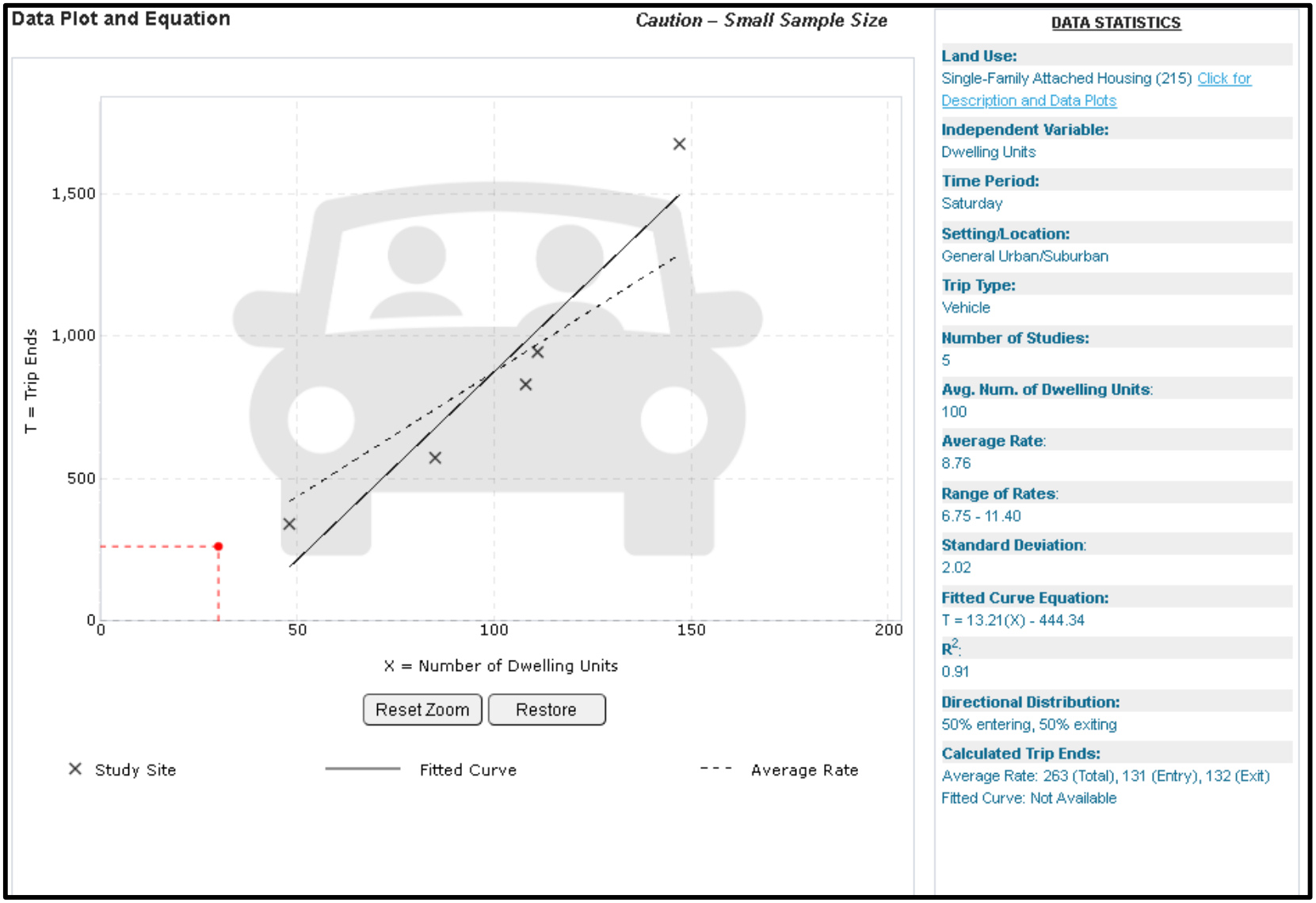
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Saturday



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

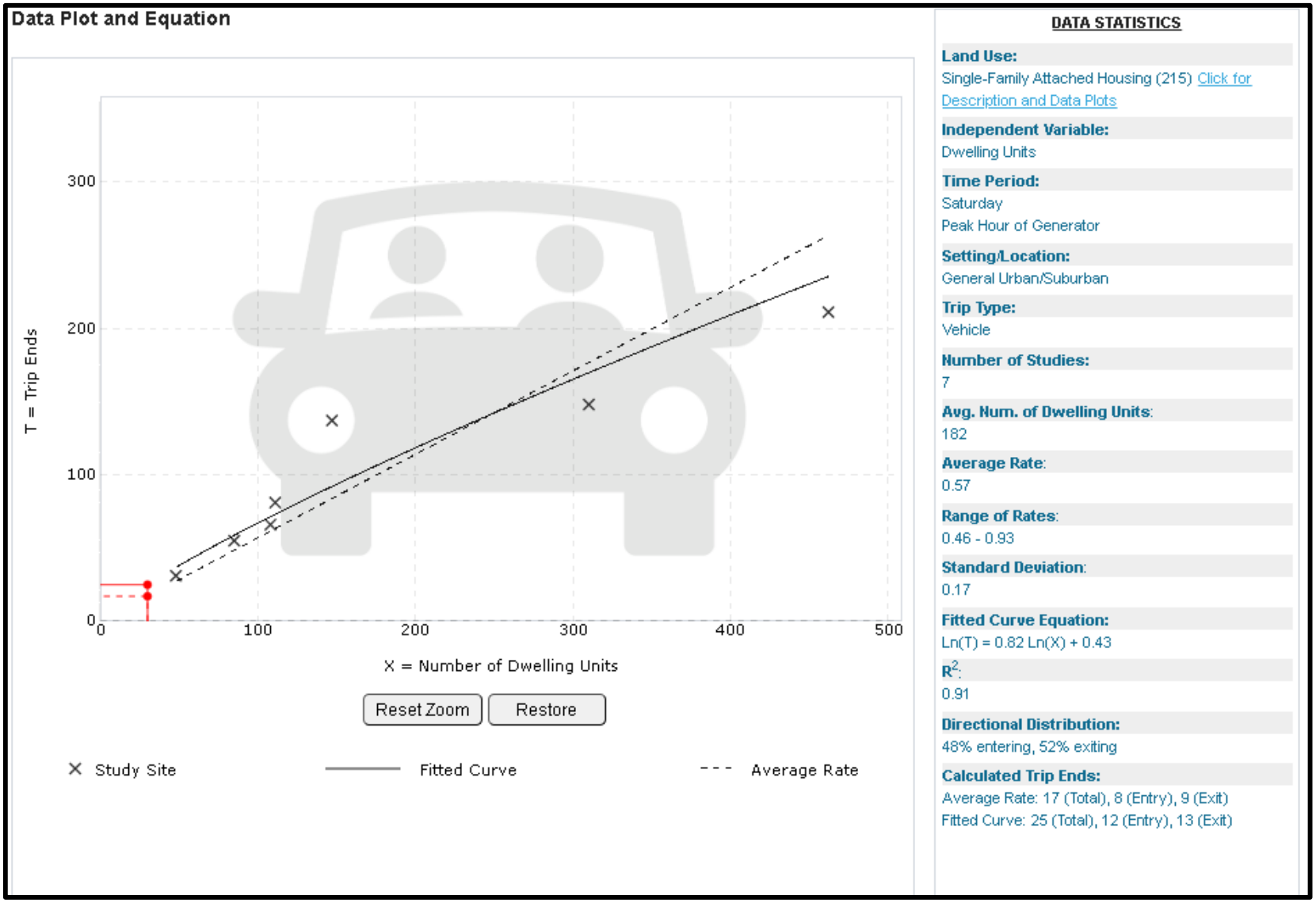
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Saturday Peak Hour of Generator



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

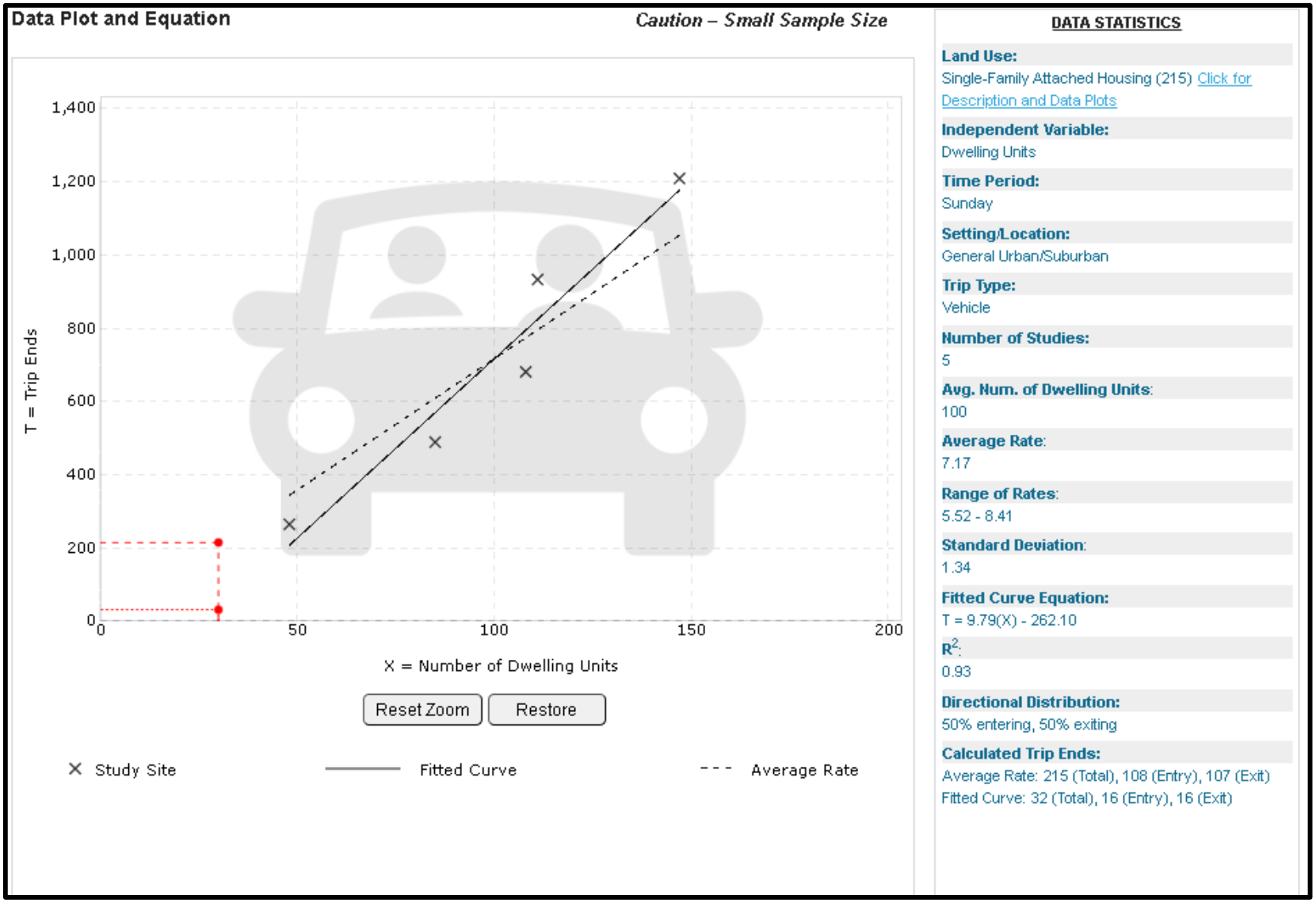
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Sunday



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

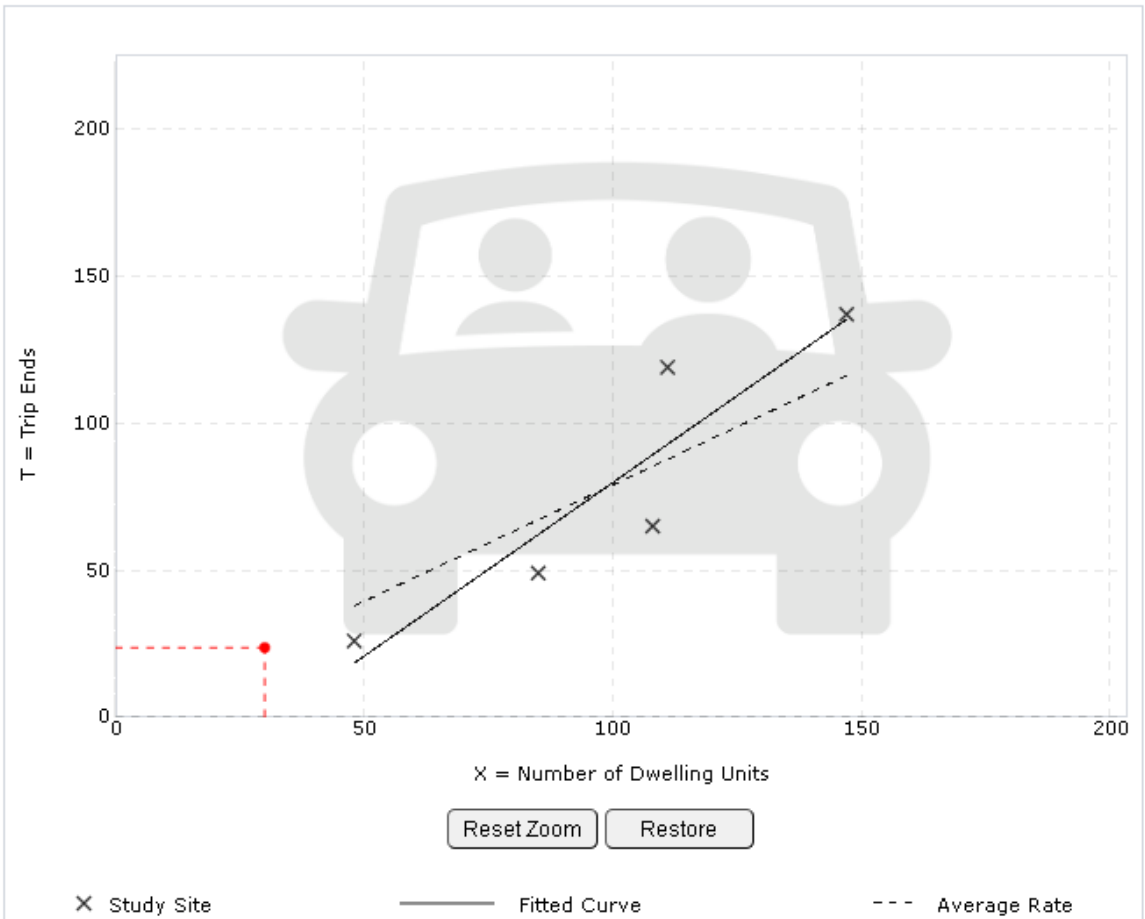
Single Family Attached Housing– ITE CODE #215

Size: 30 Dwelling Units

WEEKDAY

Sunday Peak Hour of Generator

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Sunday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
100

Average Rate:
0.79

Range of Rates:
0.54 - 1.07

Standard Deviation:
0.24

Fitted Curve Equation:
T = 1.18(X) - 38.18

R^2:
0.83

Directional Distribution:
Not available

Calculated Trip Ends:
Average Rate: 24 (Total)
Fitted Curve: Not Available

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

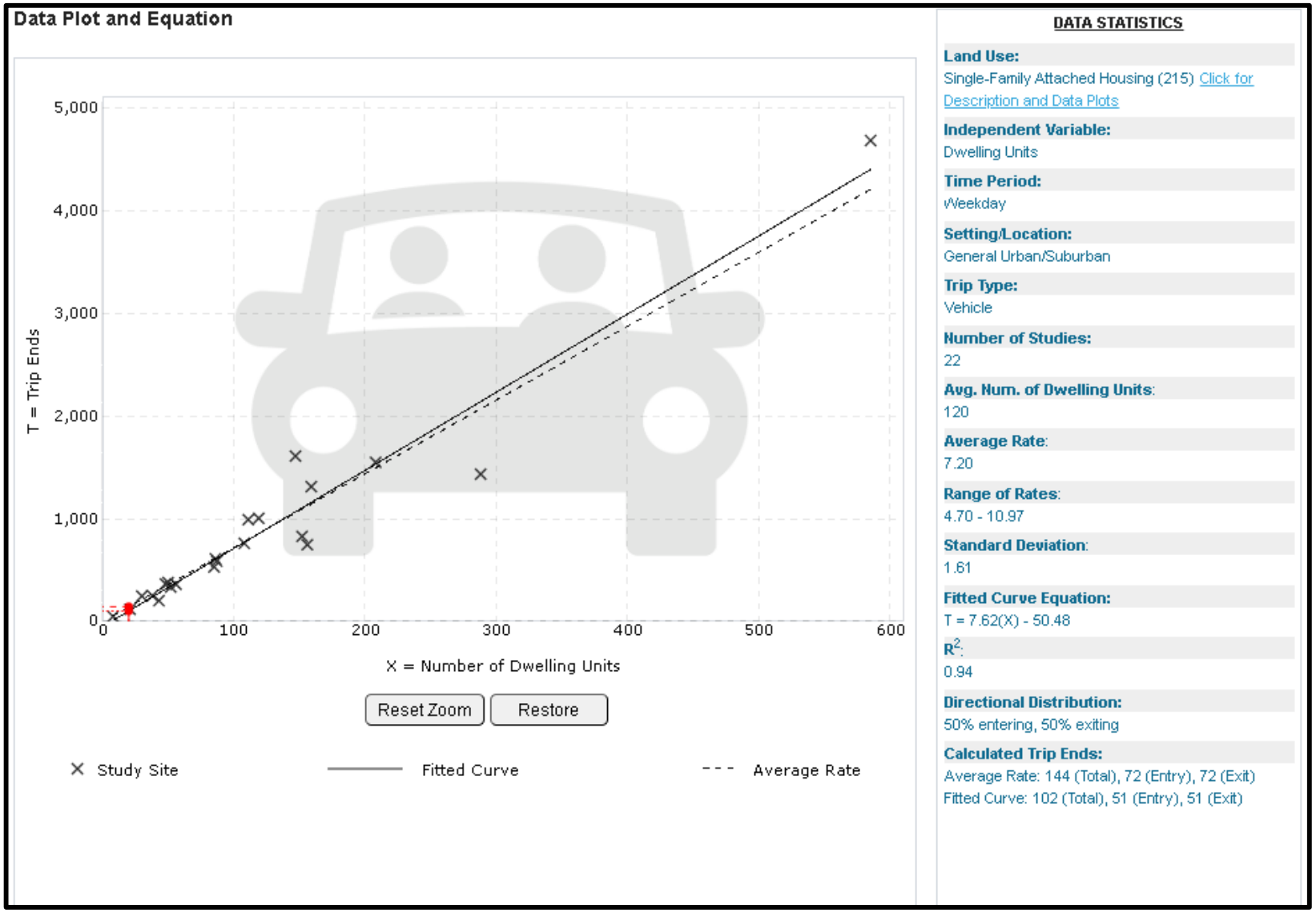
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Average Daily Traffic



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

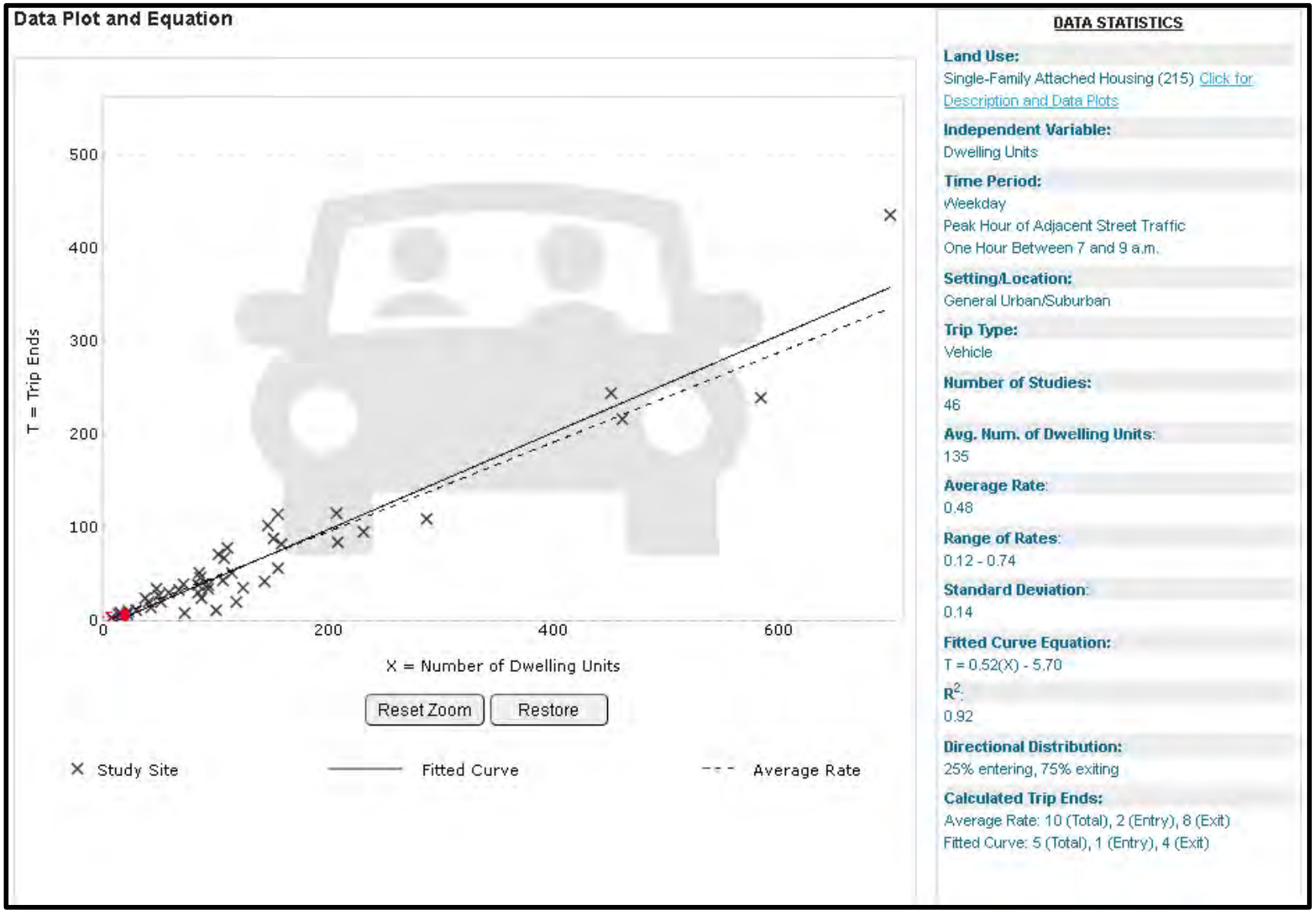
Date: 02/11/24

Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Peak Hour of Adjacent Street Traffic: 7-9 AM

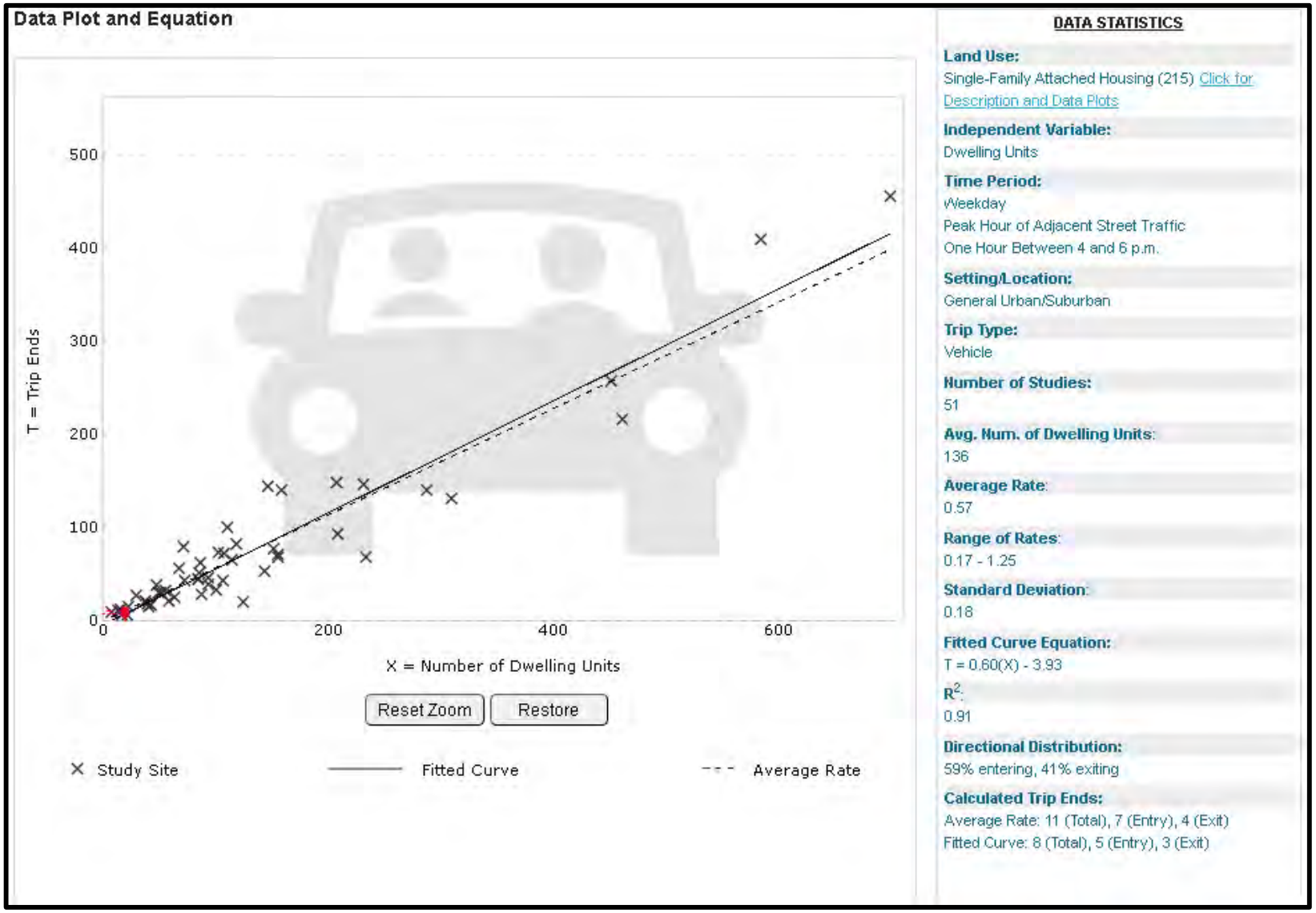


Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

Single Family Attached Housing– ITE CODE #215 **WEEKDAY**

Size: 20 Dwelling Units **Peak Hour of Adjacent Street Traffic: 4-6 PM**



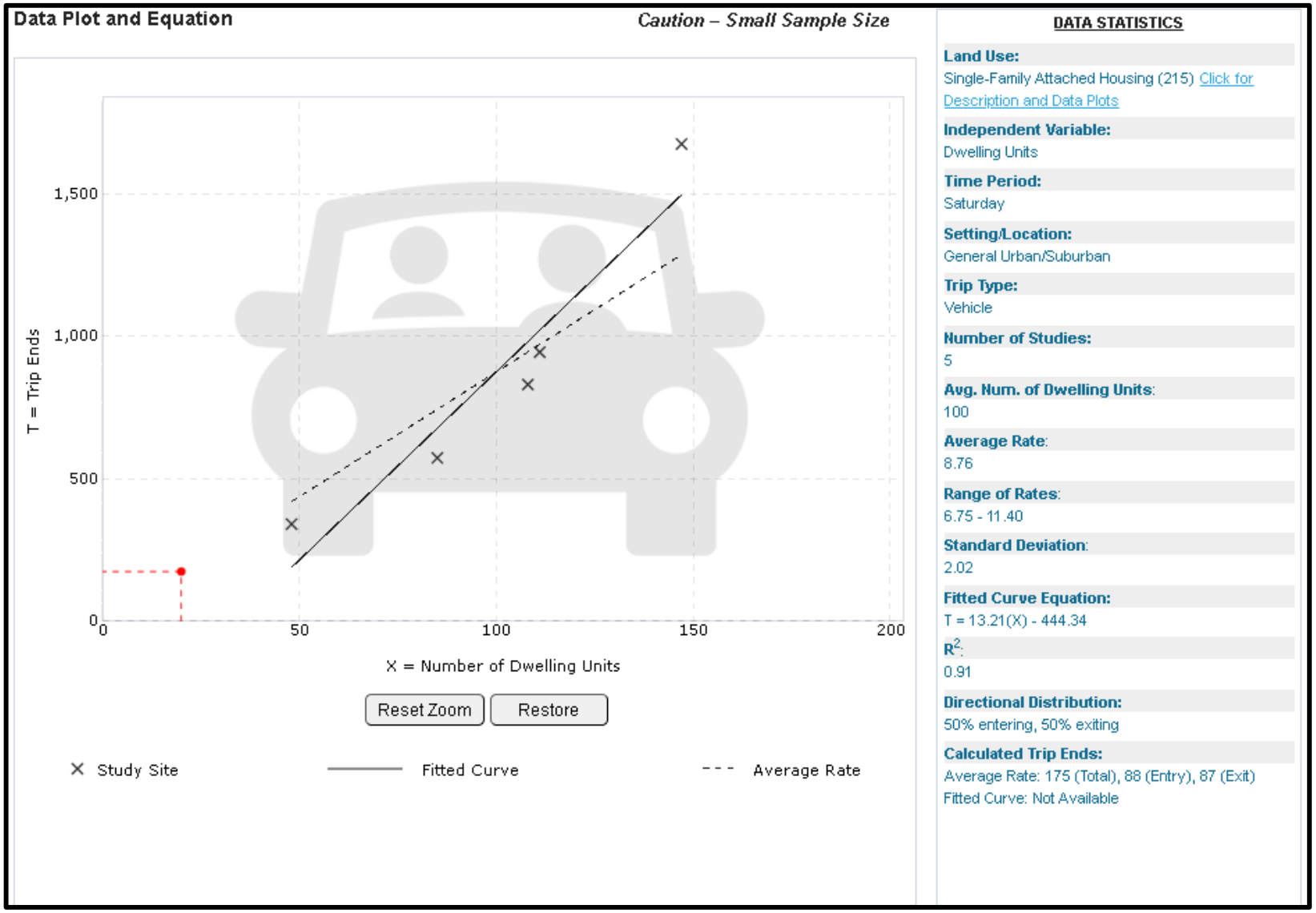
Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021 **Date: 02/11/24**

Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Saturday



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

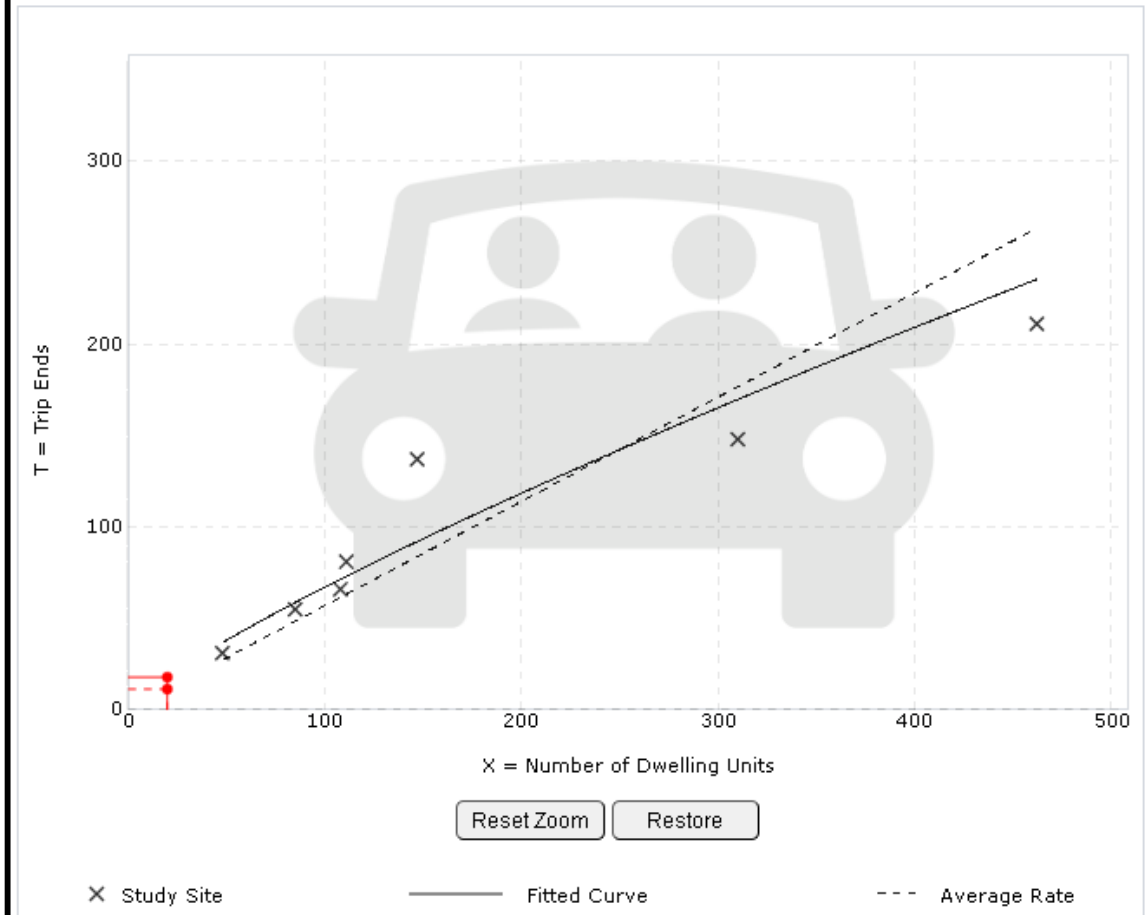
Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Saturday Peak Hour of Generator

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Saturday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
7

Avg. Num. of Dwelling Units:
182

Average Rate:
0.57

Range of Rates:
0.46 - 0.93

Standard Deviation:
0.17

Fitted Curve Equation:
Ln(T) = 0.82 Ln(X) + 0.43

R^2:
0.91

Directional Distribution:
48% entering, 52% exiting

Calculated Trip Ends:
Average Rate: 11 (Total), 5 (Entry), 6 (Exit)
Fitted Curve: 18 (Total), 9 (Entry), 9 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

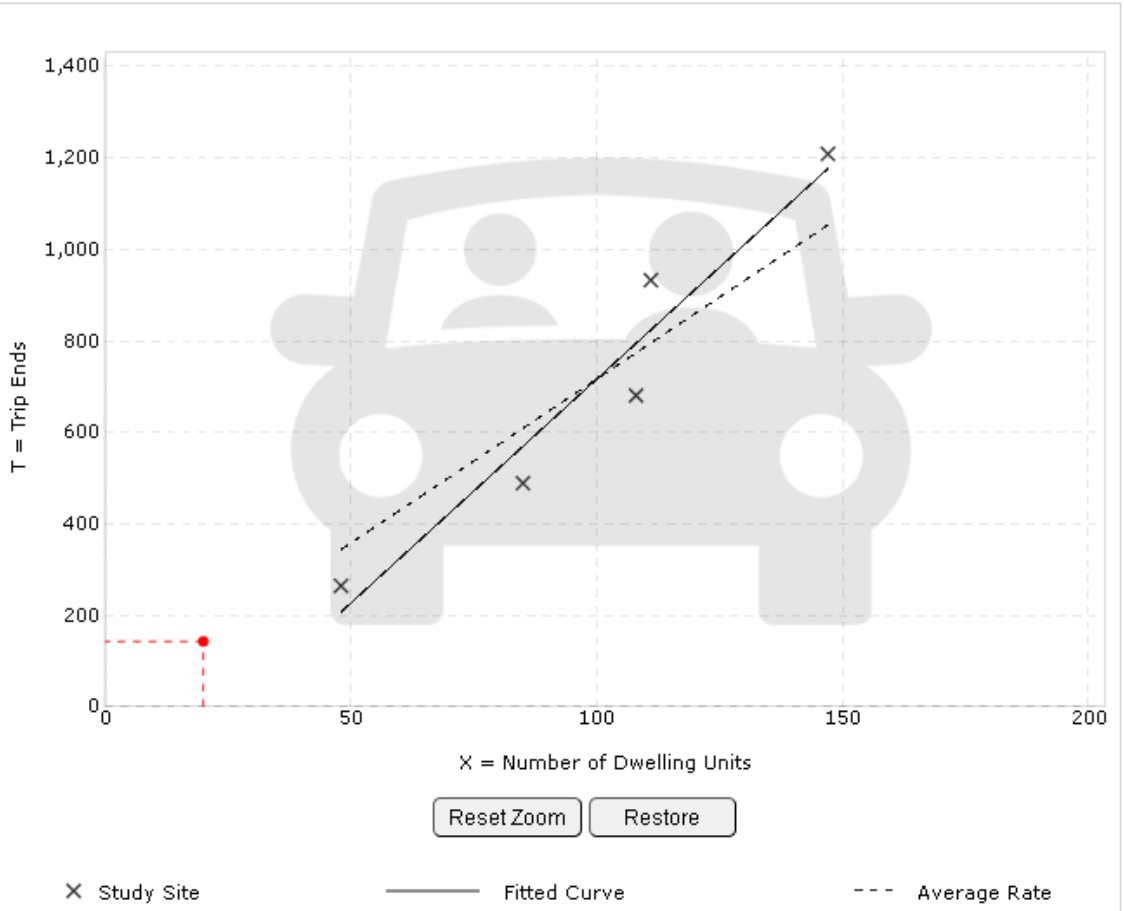
Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Sunday

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Sunday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
100

Average Rate:
7.17

Range of Rates:
5.52 - 8.41

Standard Deviation:
1.34

Fitted Curve Equation:
T = 9.79(X) - 262.10

R^2:
0.93

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 143 (Total), 72 (Entry), 71 (Exit)
Fitted Curve: Not Available

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/24

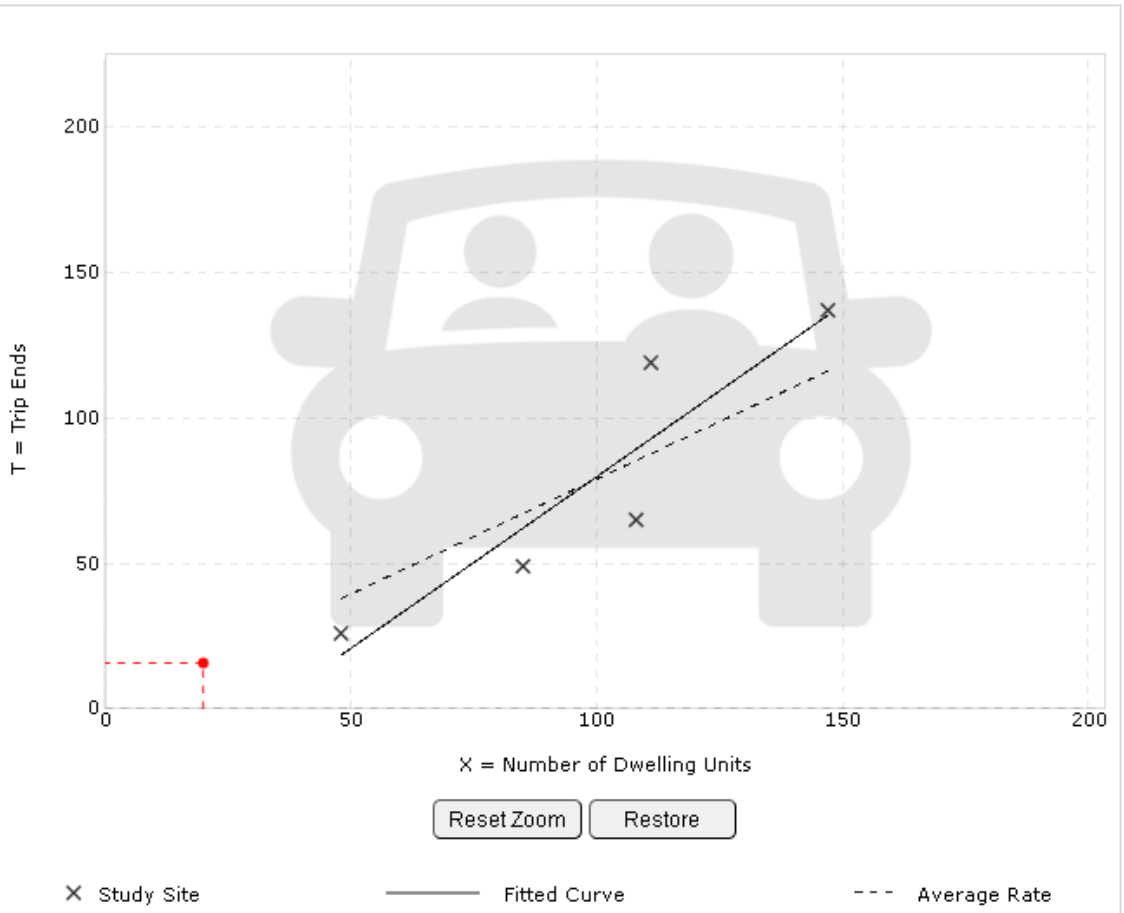
Single Family Attached Housing– ITE CODE #215

Size: 20 Dwelling Units

WEEKDAY

Sunday Peak Hour of Generator

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Sunday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
100

Average Rate:
0.79

Range of Rates:
0.54 - 1.07

Standard Deviation:
0.24

Fitted Curve Equation:
T = 1.18(X) - 38.18

R^2:
0.83

Directional Distribution:
Not available

Calculated Trip Ends:
Average Rate: 16 (Total)
Fitted Curve: Not Available

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

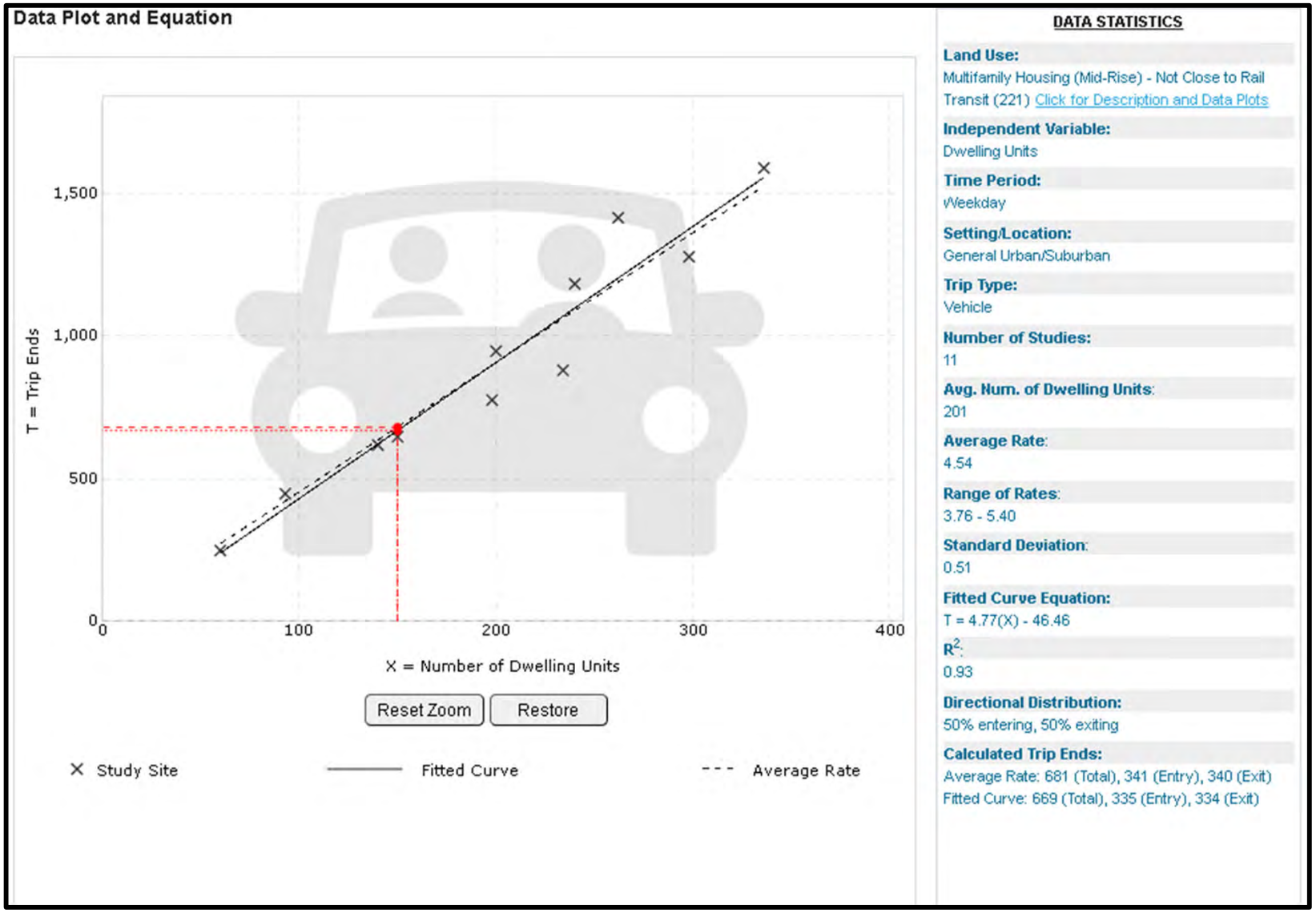
Date: 02/11/24

Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Average Daily Traffic



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

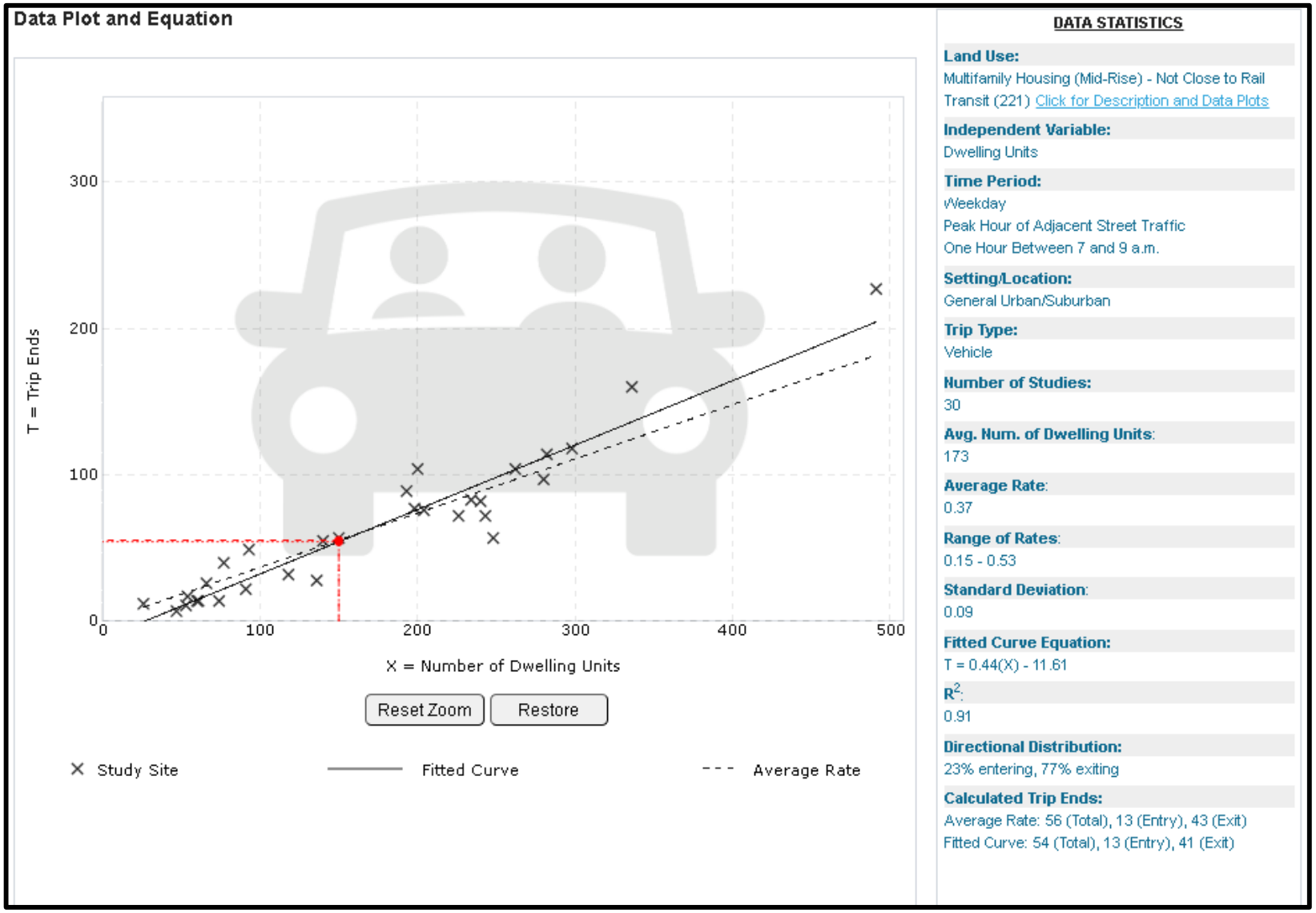
Date: 02/11/2025

Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Peak Hour of Adjacent Street Traffic: 7-9 AM



DATA STATISTICS

Land Use:
Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (221) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
30

Avg. Num. of Dwelling Units:
173

Average Rate:
0.37

Range of Rates:
0.15 - 0.53

Standard Deviation:
0.09

Fitted Curve Equation:
T = 0.44(X) - 11.61

R^2:
0.91

Directional Distribution:
23% entering, 77% exiting

Calculated Trip Ends:
Average Rate: 56 (Total), 13 (Entry), 43 (Exit)
Fitted Curve: 54 (Total), 13 (Entry), 41 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

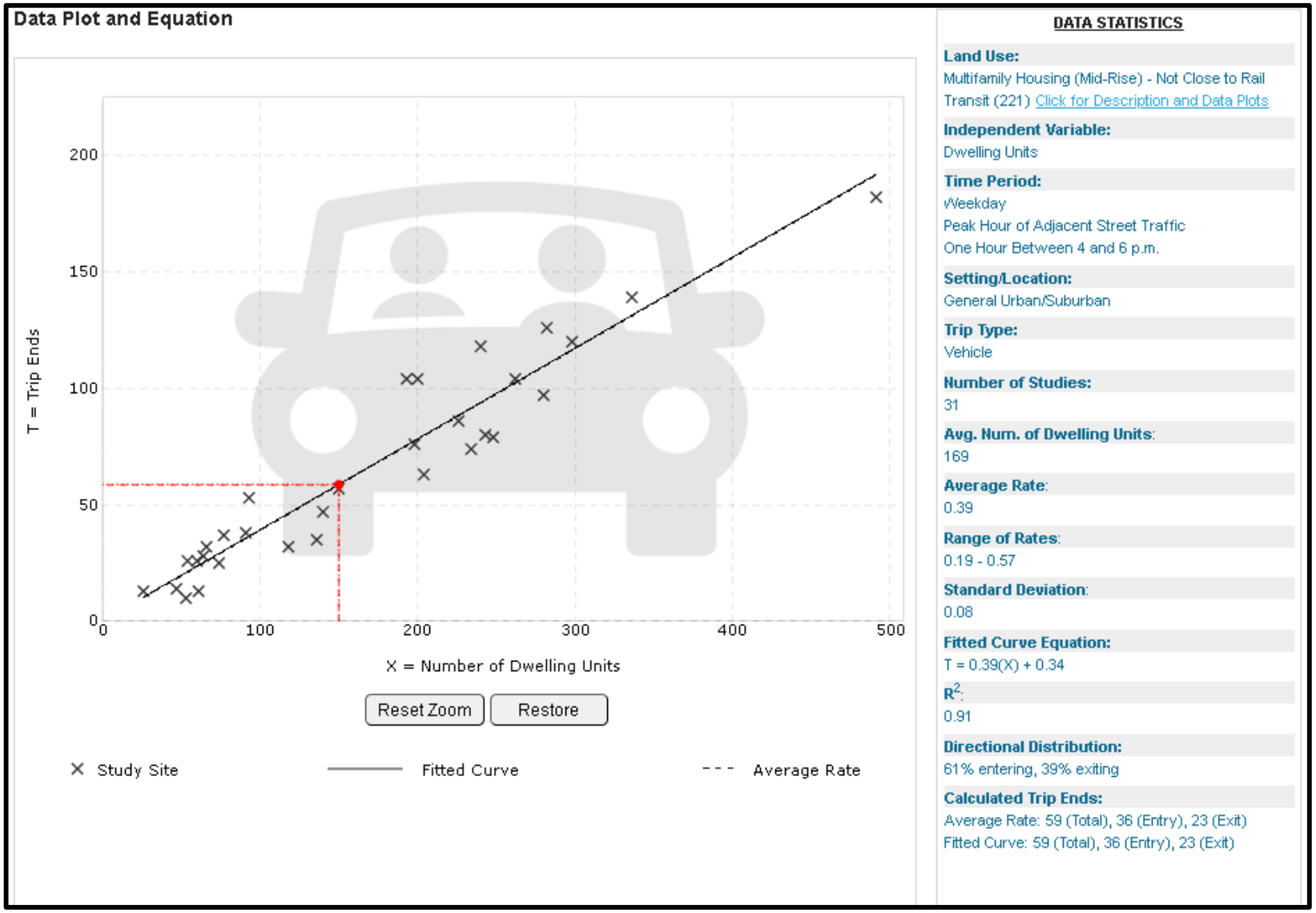
Date: 02/11/2025

Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Peak Hour of Adjacent Street Traffic: 4-6 PM



DATA STATISTICS

Land Use:
Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (221) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
31

Avg. Num. of Dwelling Units:
169

Average Rate:
0.39

Range of Rates:
0.19 - 0.57

Standard Deviation:
0.08

Fitted Curve Equation:
T = 0.39(X) + 0.34

R^2:
0.91

Directional Distribution:
61% entering, 39% exiting

Calculated Trip Ends:
Average Rate: 59 (Total), 36 (Entry), 23 (Exit)
Fitted Curve: 59 (Total), 36 (Entry), 23 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/2025

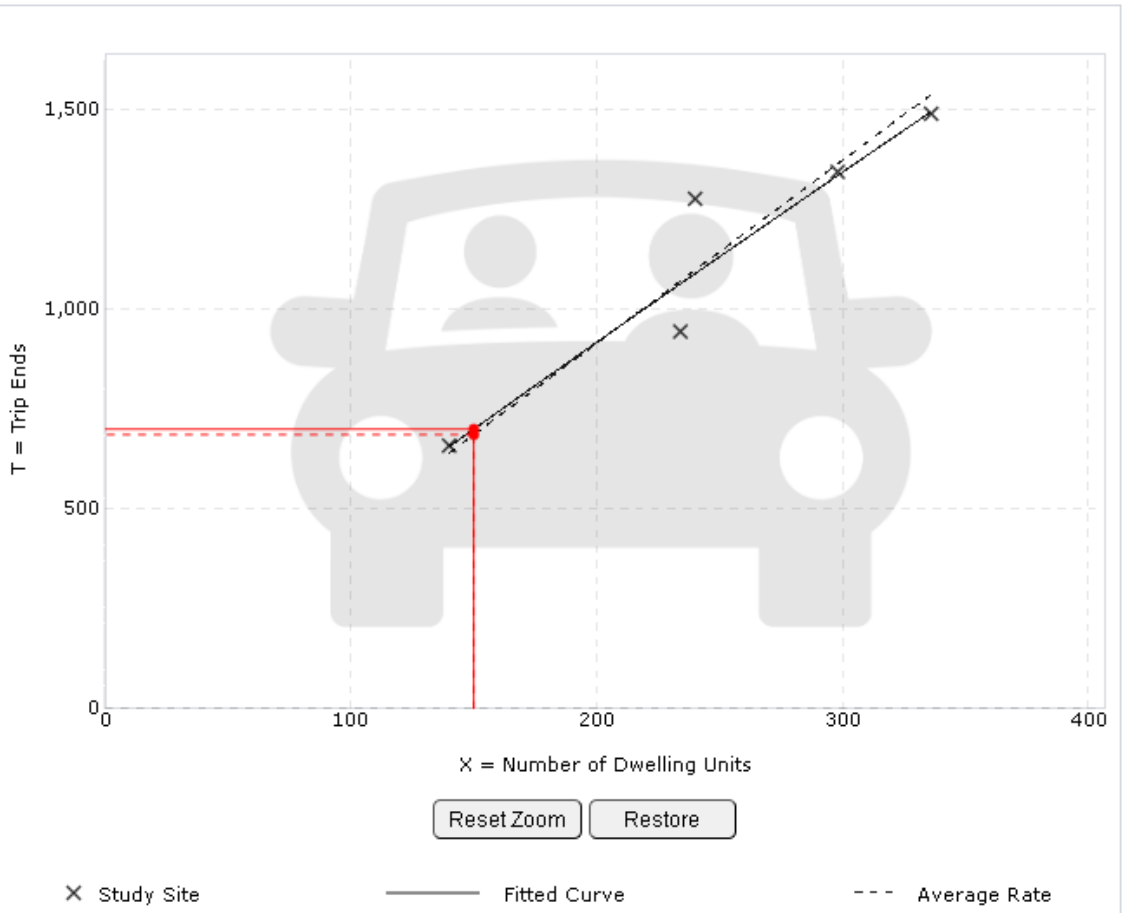
Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Saturday

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (221) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Saturday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
250

Average Rate:
4.57

Range of Rates:
4.03 - 5.31

Standard Deviation:
0.46

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 1.84

R^2:
0.91

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 686 (Total), 343 (Entry), 343 (Exit)
Fitted Curve: 699 (Total), 350 (Entry), 349 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

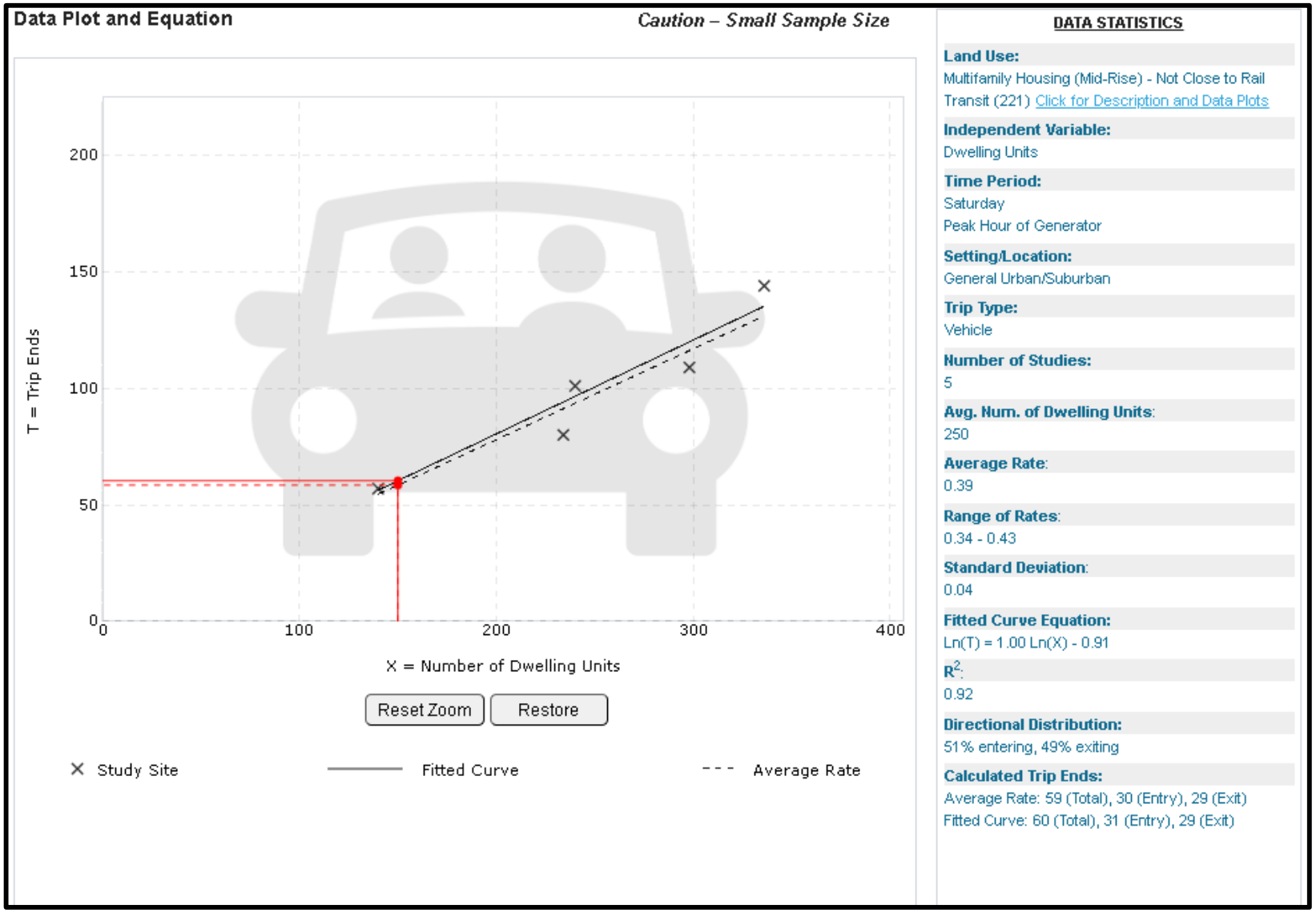
Date: 02/11/2025

Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Saturday Peak Hour of Generator



Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/2025

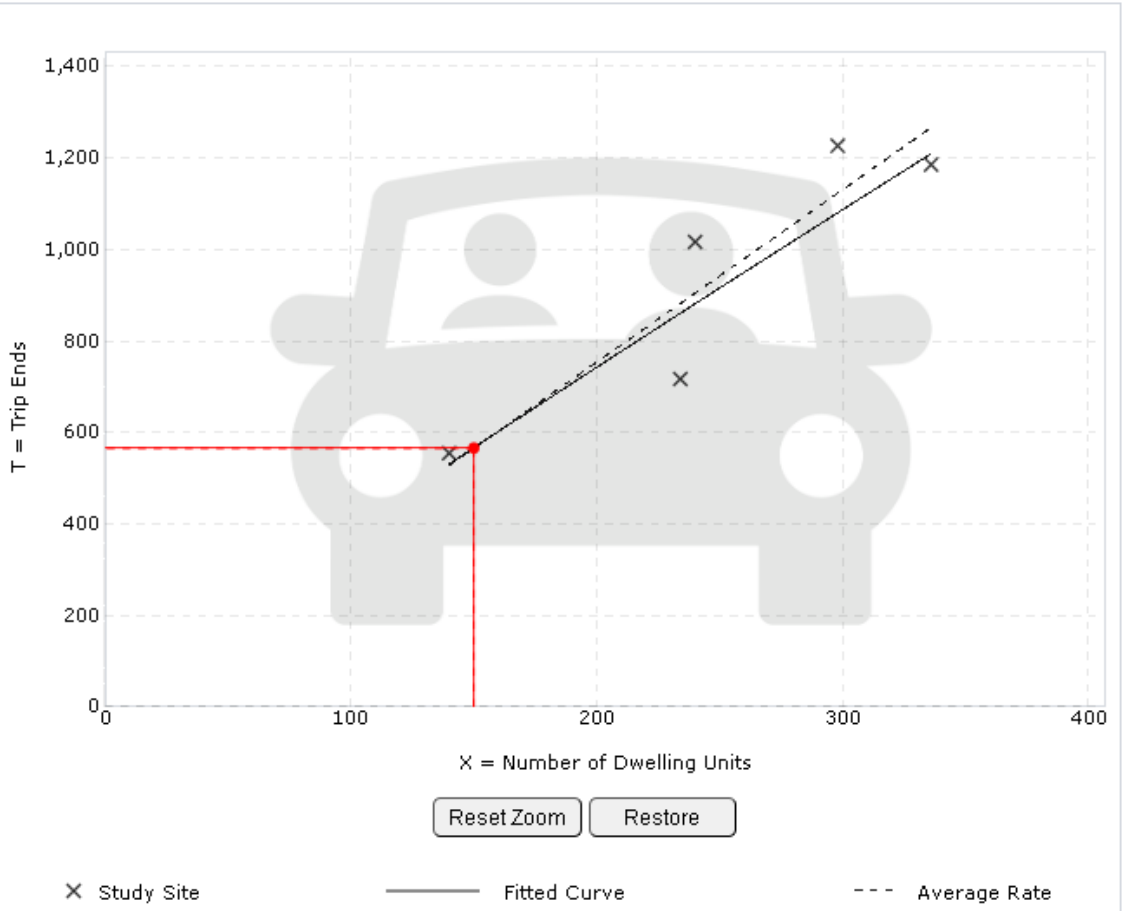
Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Sunday

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (221) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Sunday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
250

Average Rate:
3.77

Range of Rates:
3.06 - 4.24

Standard Deviation:
0.48

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 1.63

R^2:
0.85

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 566 (Total), 283 (Entry), 283 (Exit)
Fitted Curve: 567 (Total), 283 (Entry), 284 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 02/11/2025

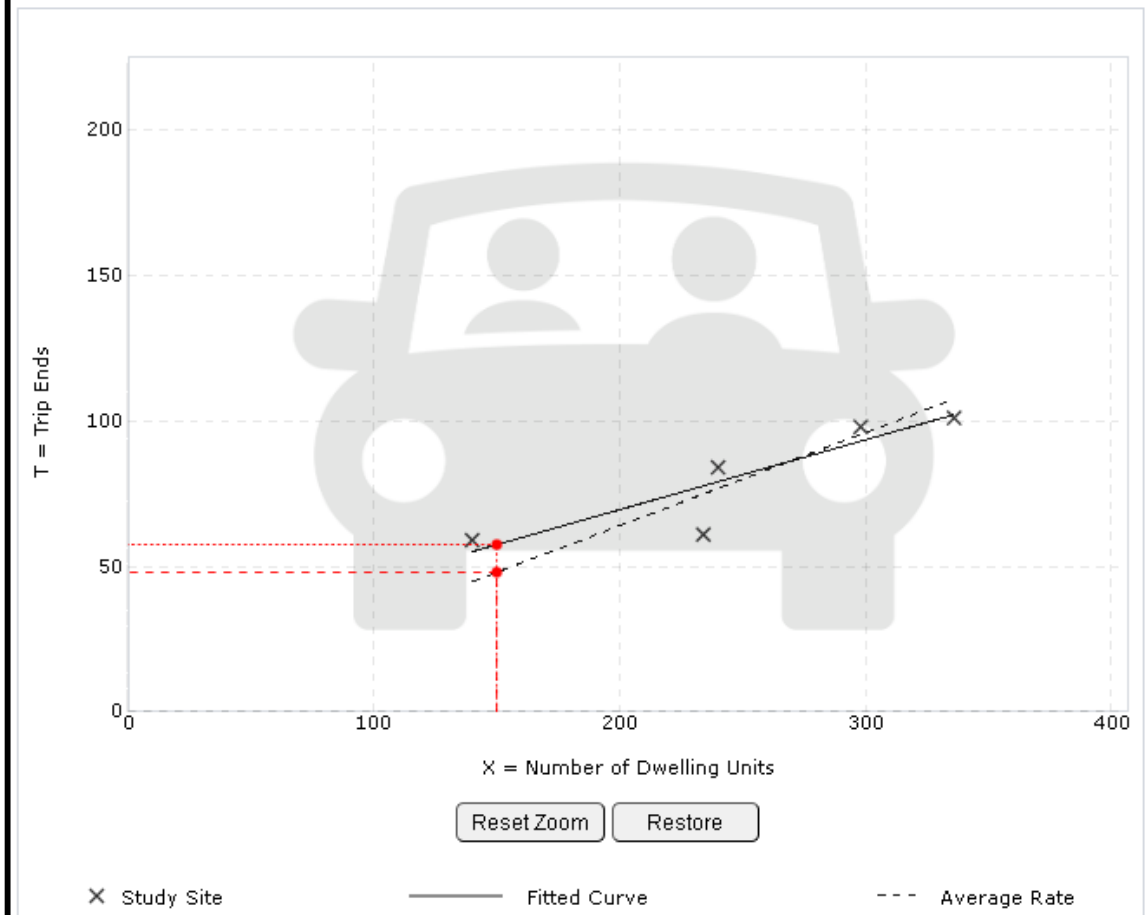
Multifamily Housing (Mid-Rise)– ITE CODE #221

Size: 150 Dwelling Units

WEEKDAY

Sunday Peak Hour of Generator

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (221) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Sunday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Dwelling Units:
250

Average Rate:
0.32

Range of Rates:
0.26 - 0.42

Standard Deviation:
0.05

Fitted Curve Equation:
T = 0.24(X) + 21.51

R^2:
0.79

Directional Distribution:
55% entering, 45% exiting

Calculated Trip Ends:
Average Rate: 48 (Total), 26 (Entry), 22 (Exit)
Fitted Curve: 58 (Total), 32 (Entry), 26 (Exit)

Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

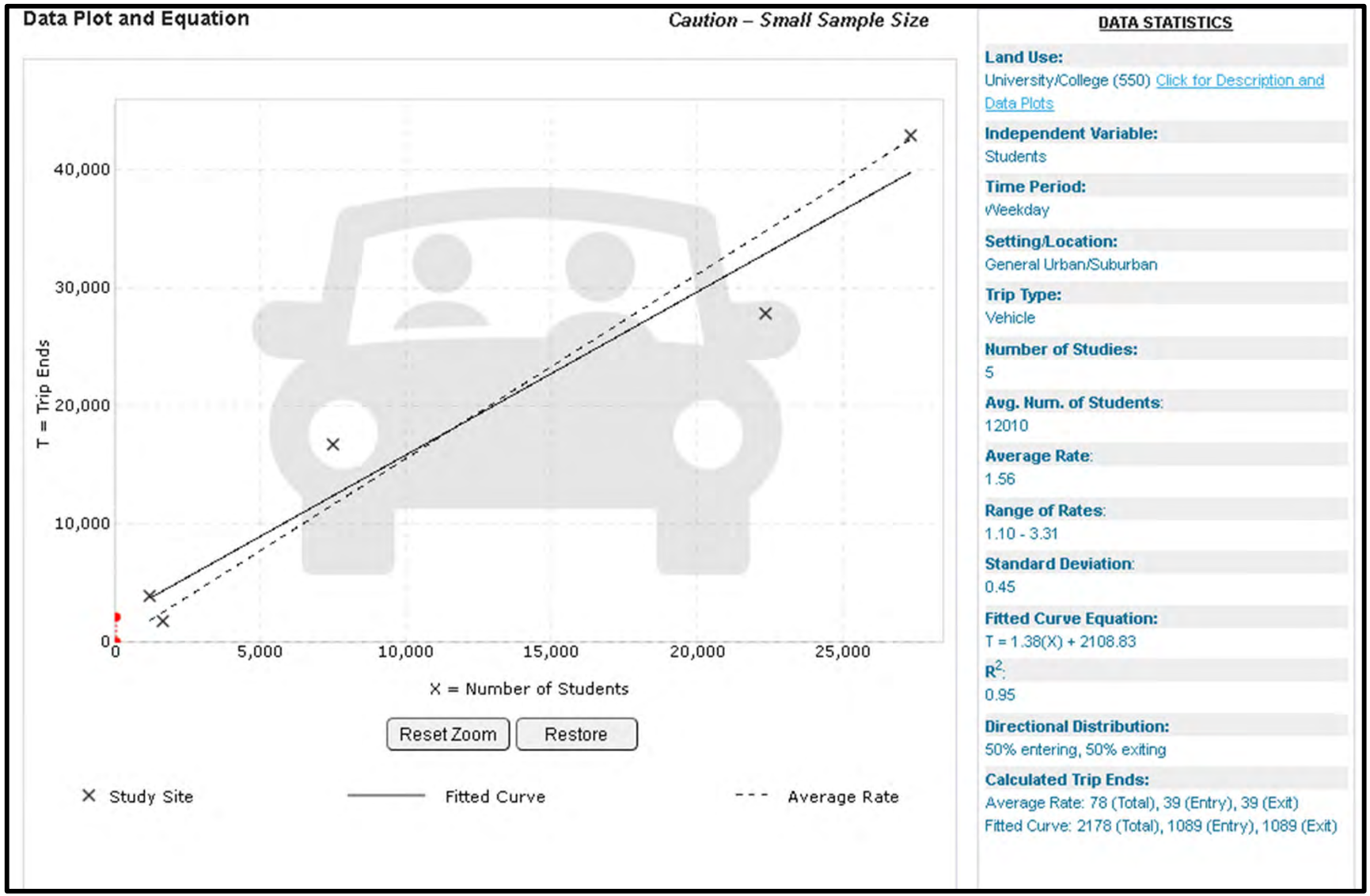
Date: 02/11/2025

University/College– ITE CODE #550

Size: 50 Students

WEEKDAY

Average Daily Traffic



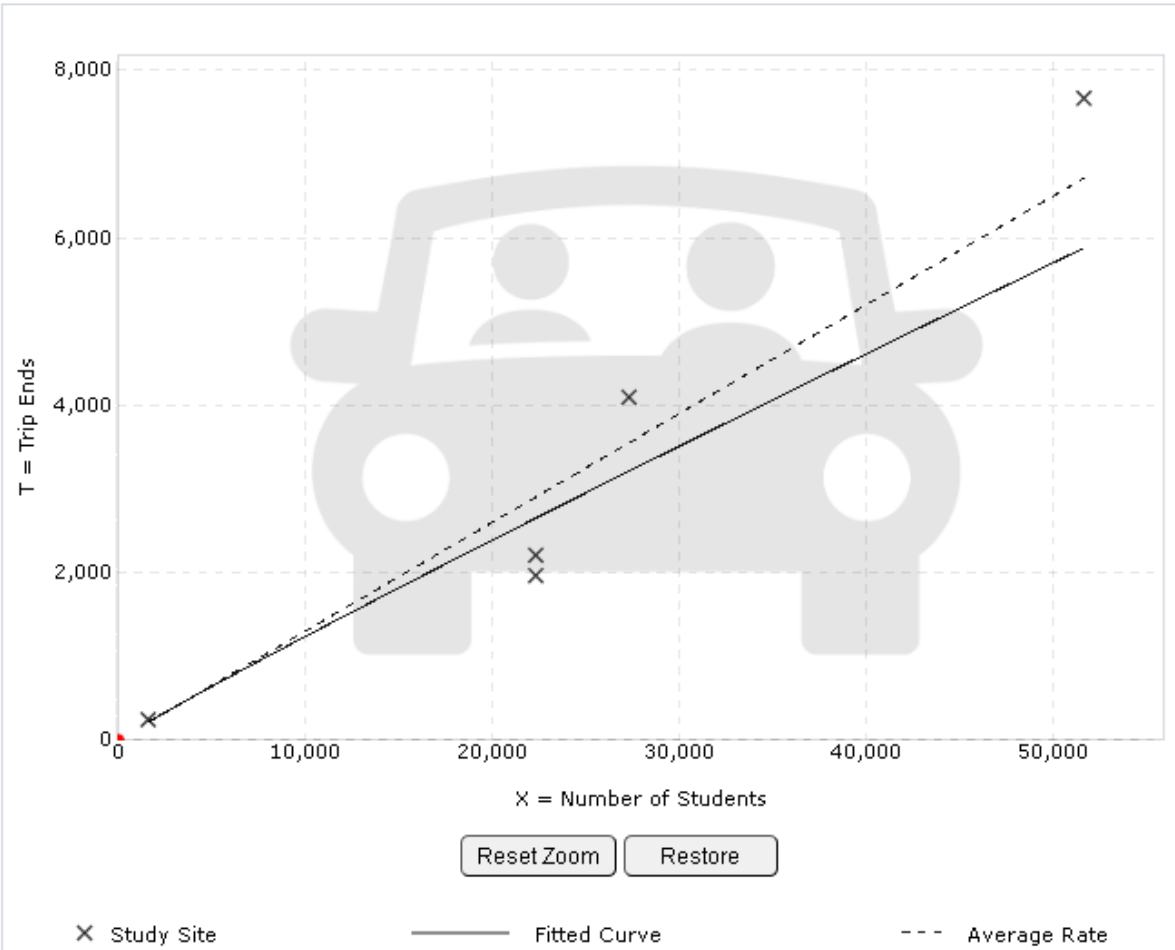
Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 7/31/24

University/College– ITE CODE #550
Size: 50 Students

WEEKDAY
Peak Hour Generator: 7-9 AM

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
University/College (550) Click for Description and Data Plots

Independent Variable:
Students

Time Period:
Weekday
AM Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Students:
25073

Average Rate:
0.13

Range of Rates:
0.09 - 0.15

Standard Deviation:
0.03

Fitted Curve Equation:
Ln(T) = 0.95 Ln(X) - 1.63

R^2:
0.96

Directional Distribution:
75% entering, 25% exiting

Calculated Trip Ends:
Average Rate: 7 (Total), 5 (Entry), 2 (Exit)
Fitted Curve: 8 (Total), 6 (Entry), 2 (Exit)

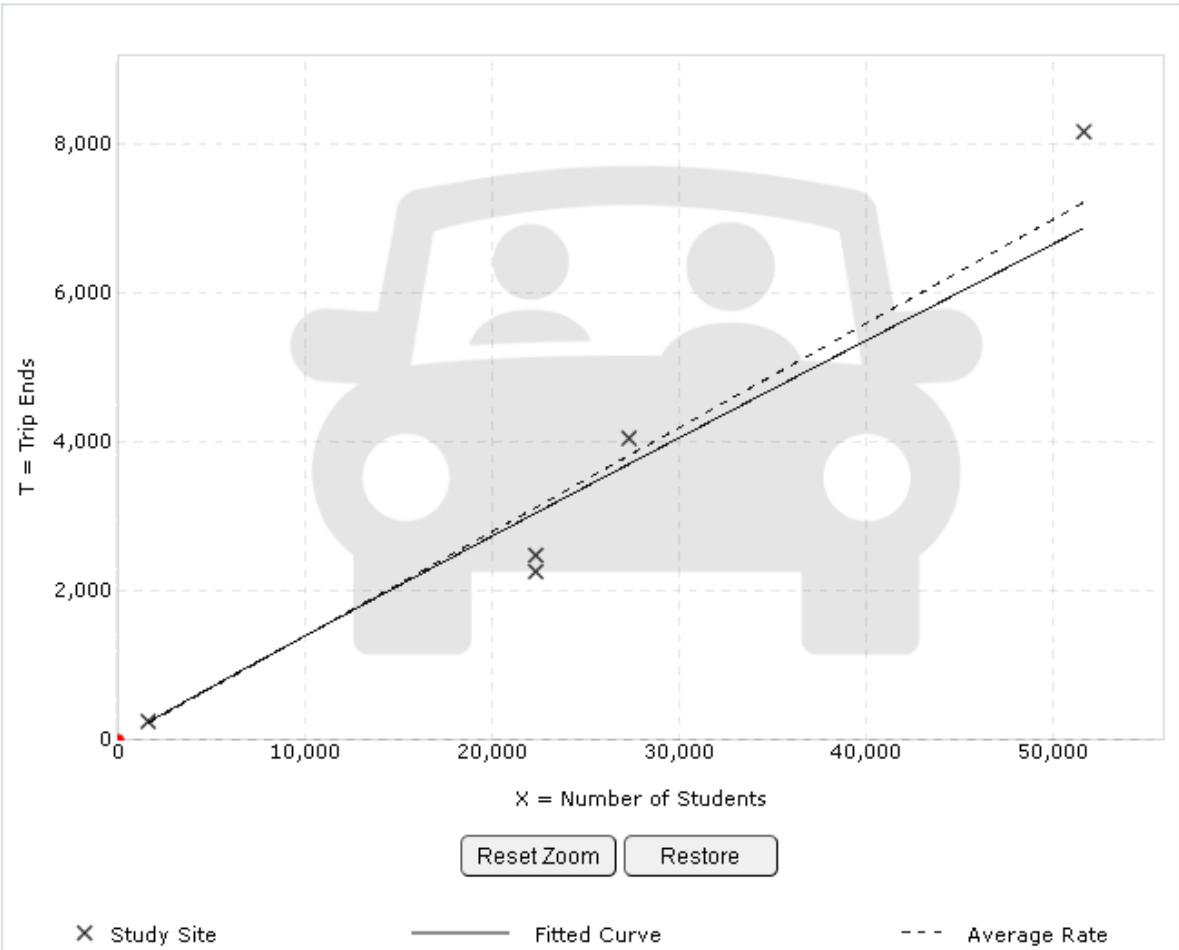
Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 7/31/24

University/College– ITE CODE #550
Size: 50 Students

WEEKDAY
Peak Hour Generator: 4-6 PM

Data Plot and Equation *Caution – Small Sample Size*



DATA STATISTICS

Land Use:
University/College (550) Click for Description and Data Plots

Independent Variable:
Students

Time Period:
Weekday
PM Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. Num. of Students:
25073

Average Rate:
0.14

Range of Rates:
0.10 - 0.16

Standard Deviation:
0.03

Fitted Curve Equation:
Ln(T) = 0.97 Ln(X) - 1.69

R^2:
0.98

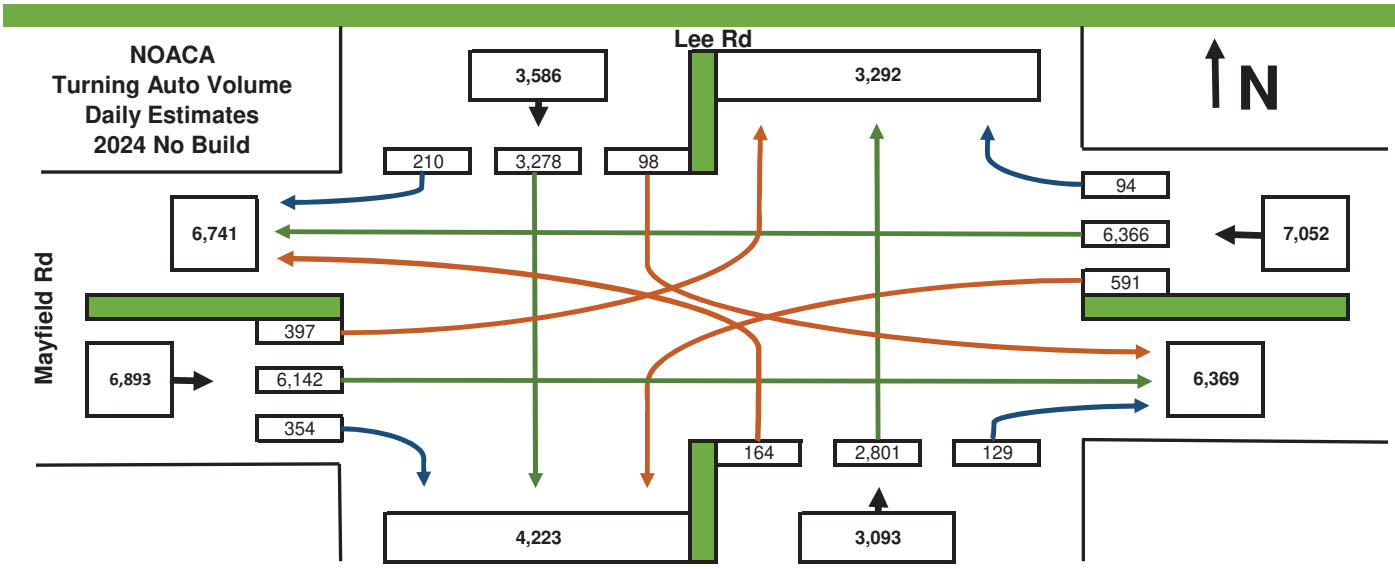
Directional Distribution:
32% entering, 68% exiting

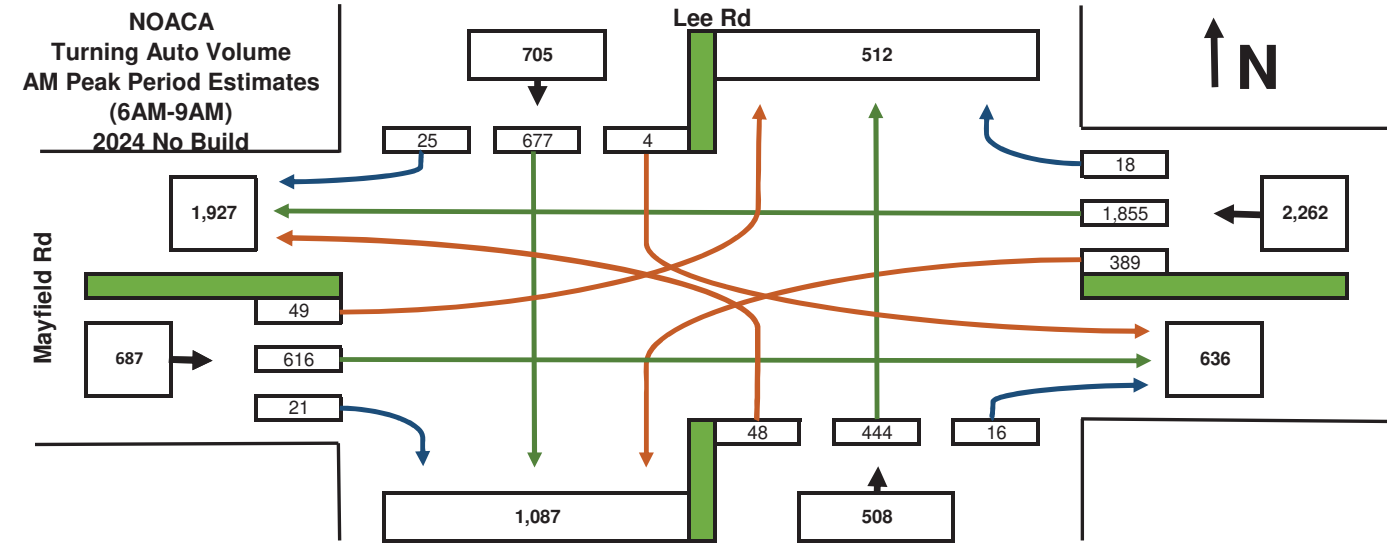
Calculated Trip Ends:
Average Rate: 7 (Total), 2 (Entry), 5 (Exit)
Fitted Curve: 8 (Total), 3 (Entry), 5 (Exit)

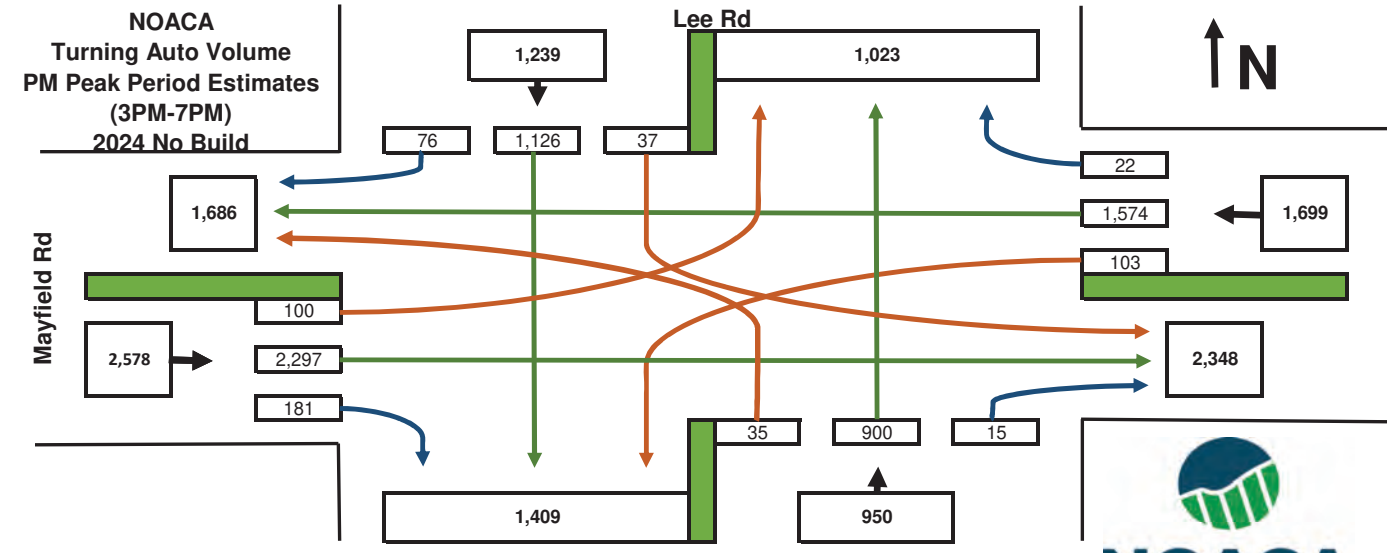
Source: Institute of Transportation Engineers, Trip Generation Manual, 11TH Editions, 2021

Date: 7/31/24

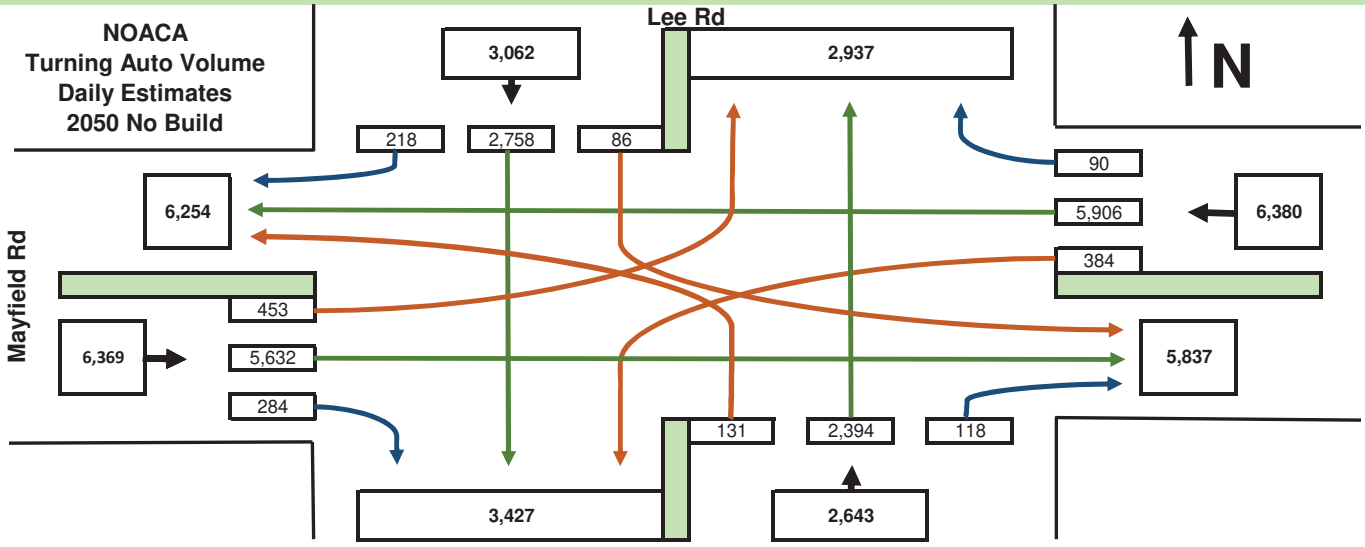
Appendix E
NOACA Growth Rates

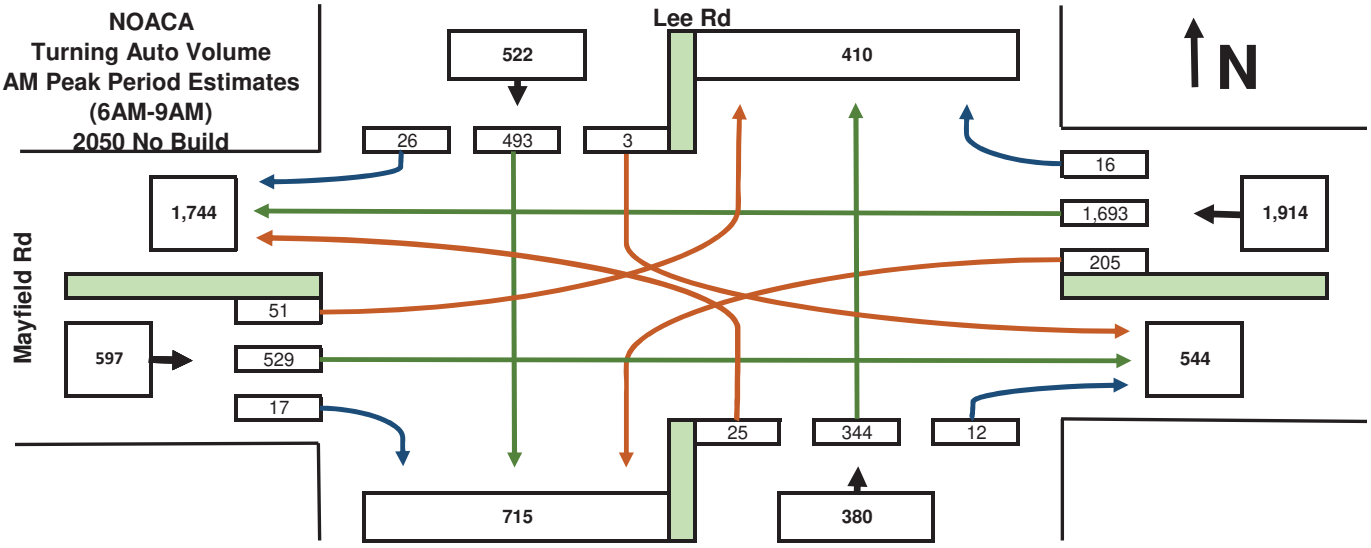


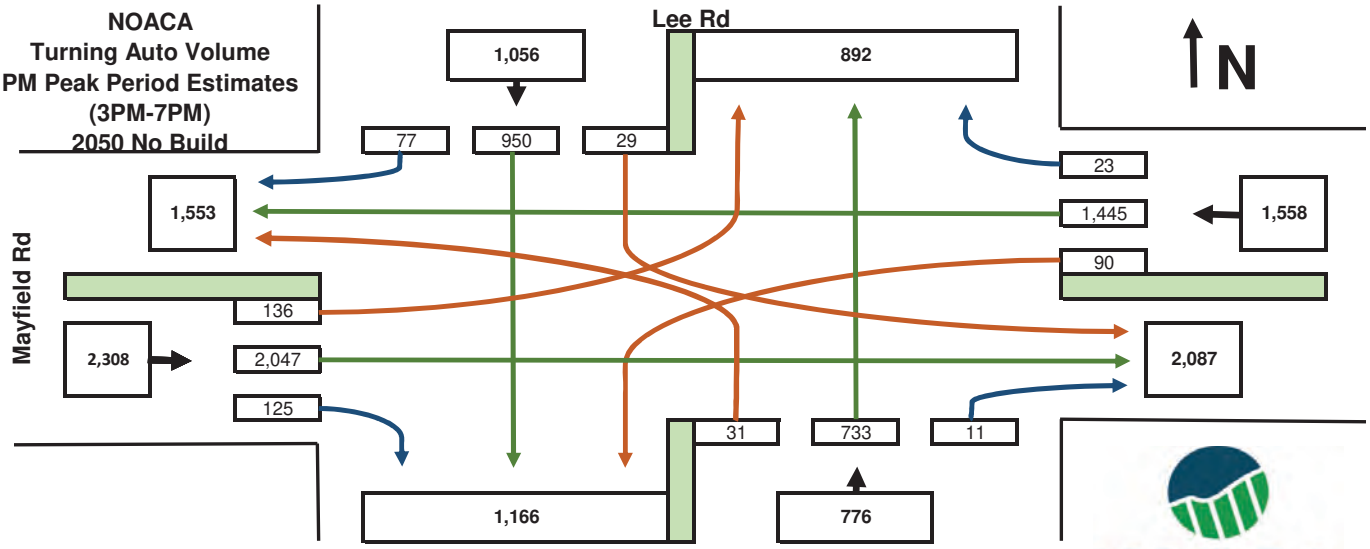




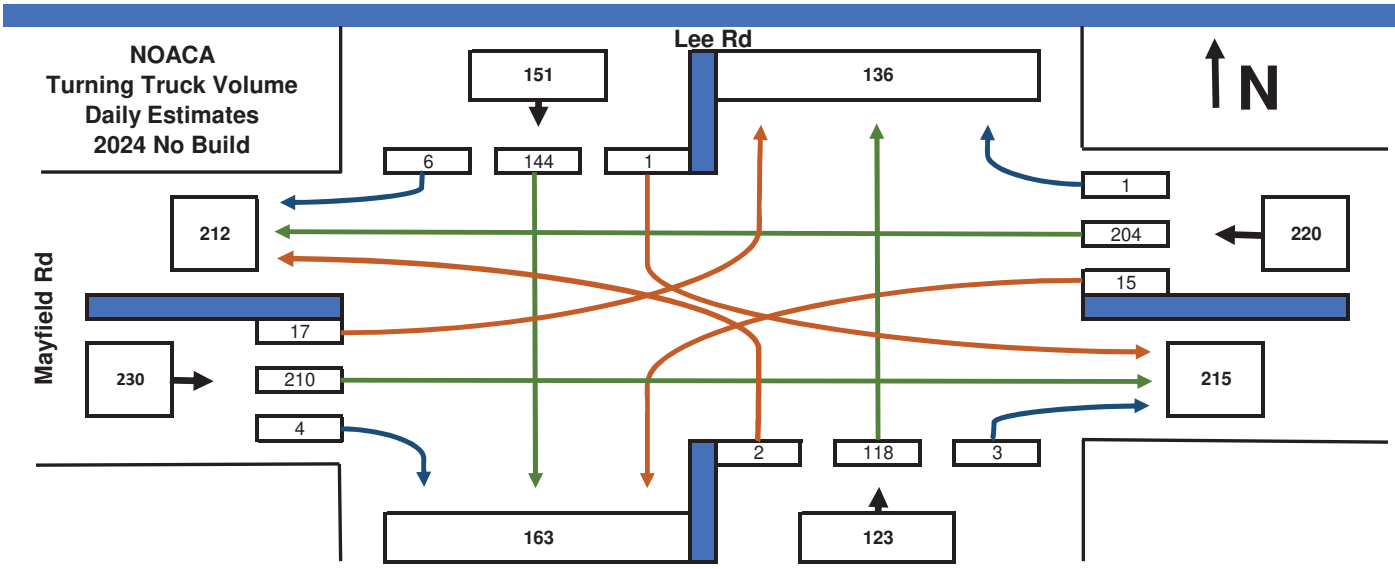
NOACA
Northeast Ohio Areawide Coordinating Agency

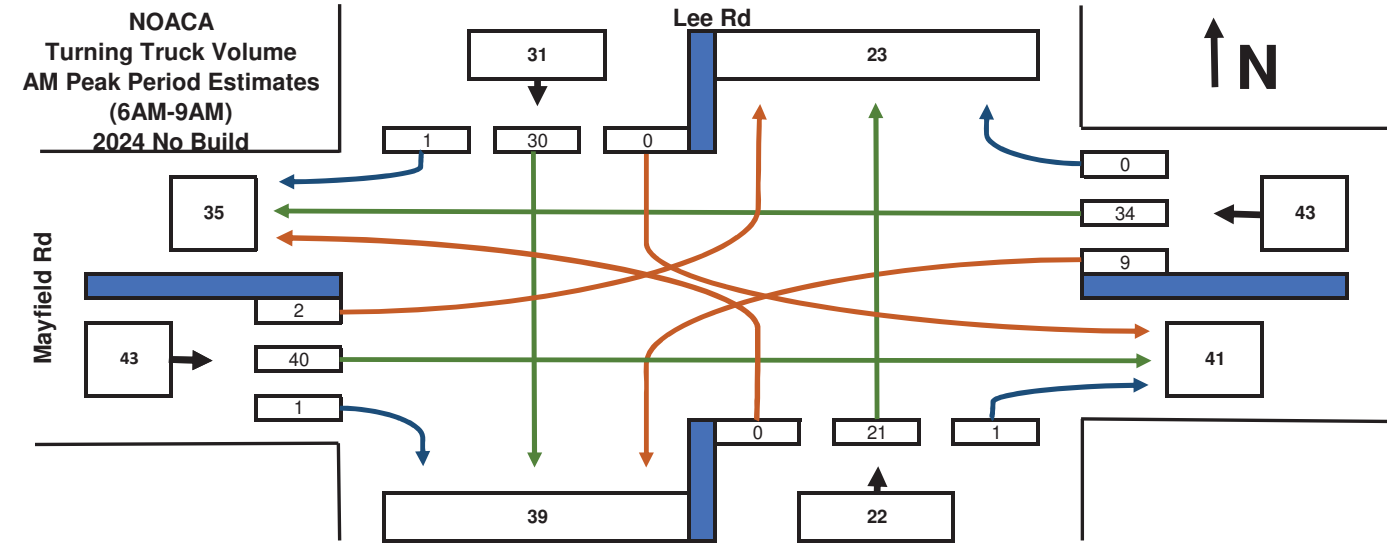


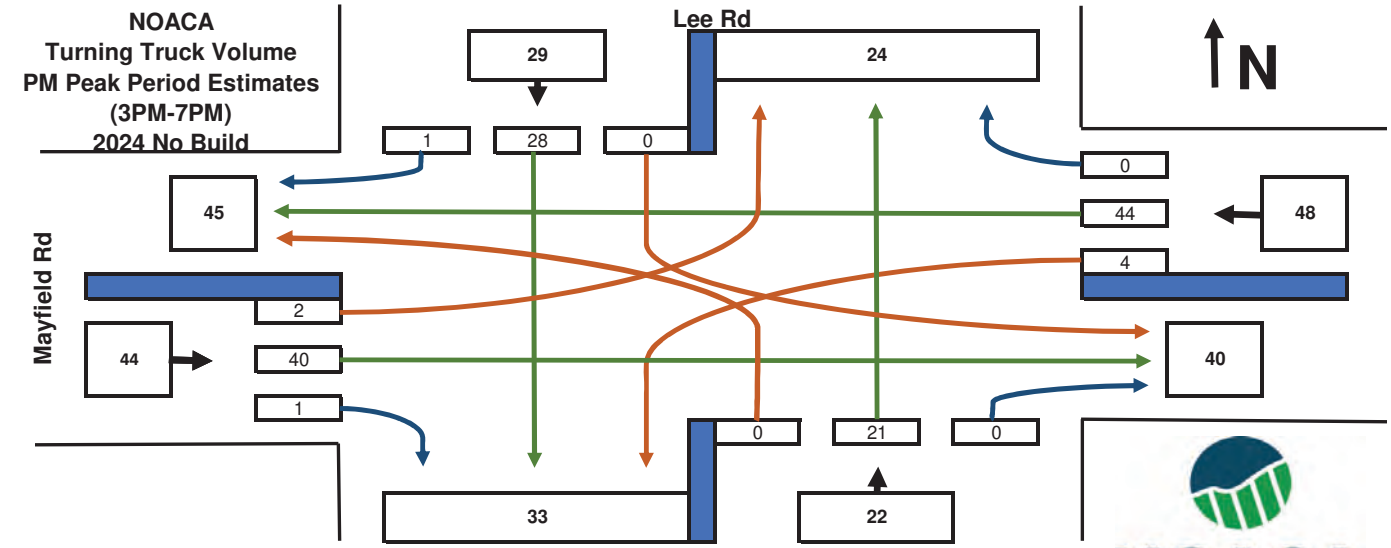




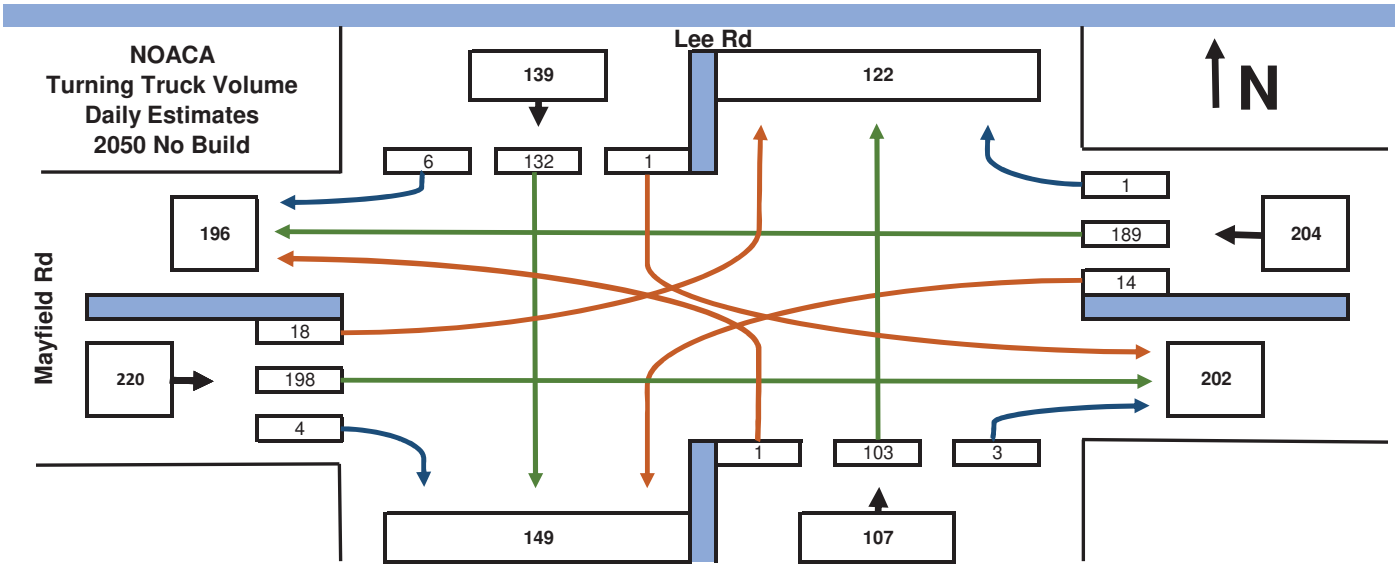
NOACA
Northeast Ohio Areawide Coordinating Agency

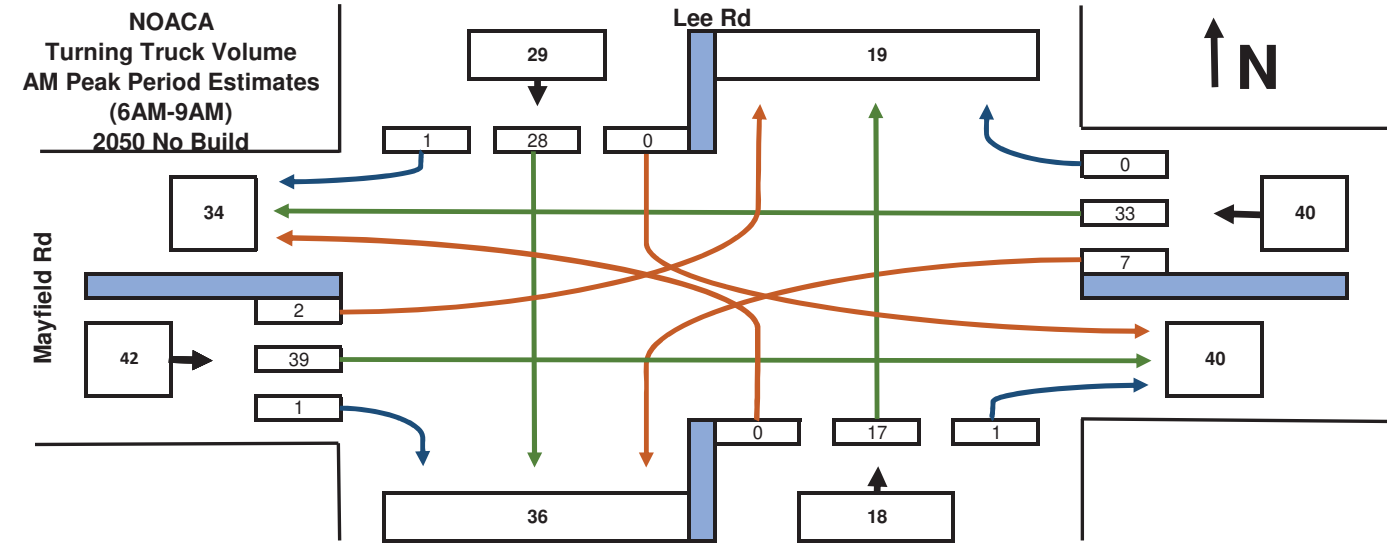


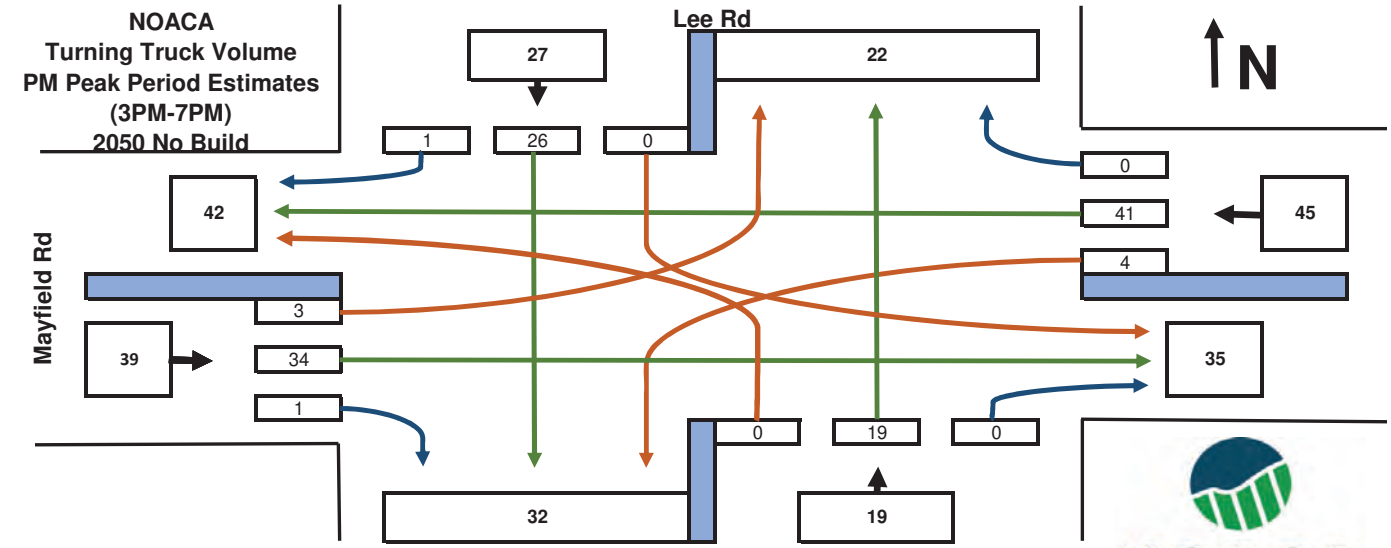




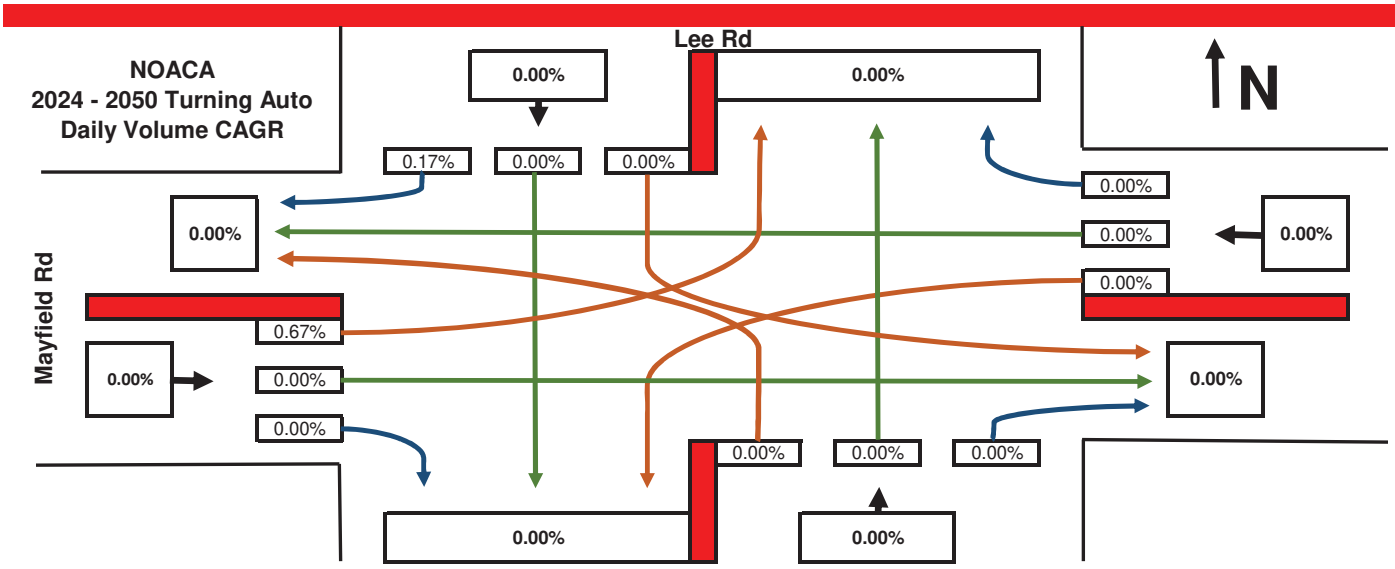
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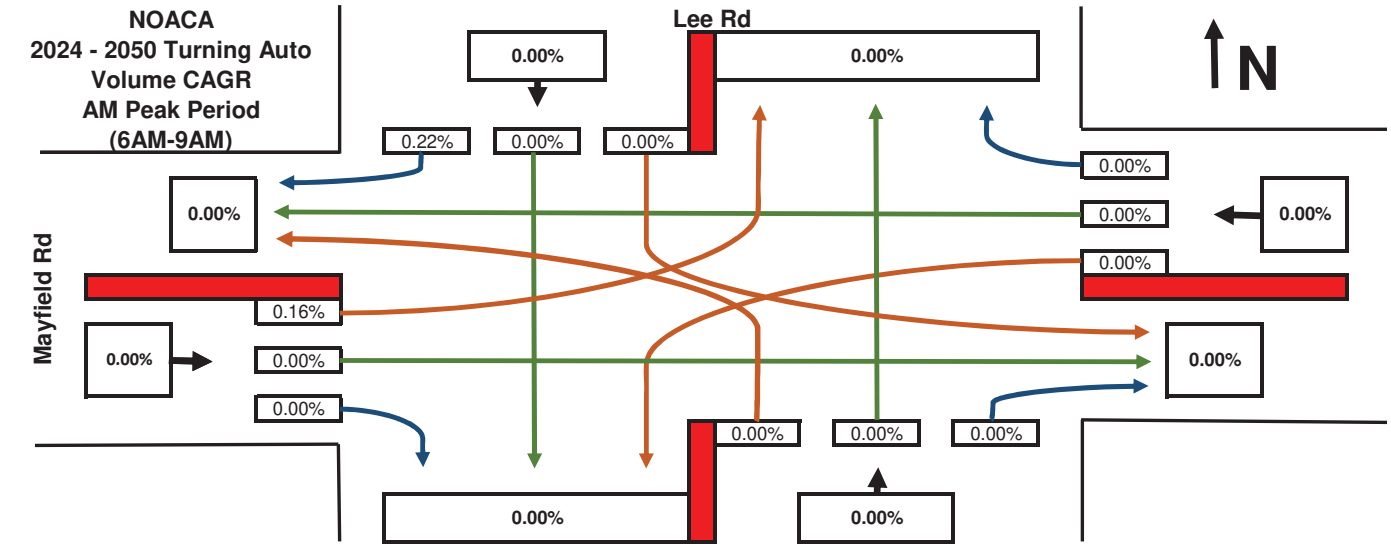


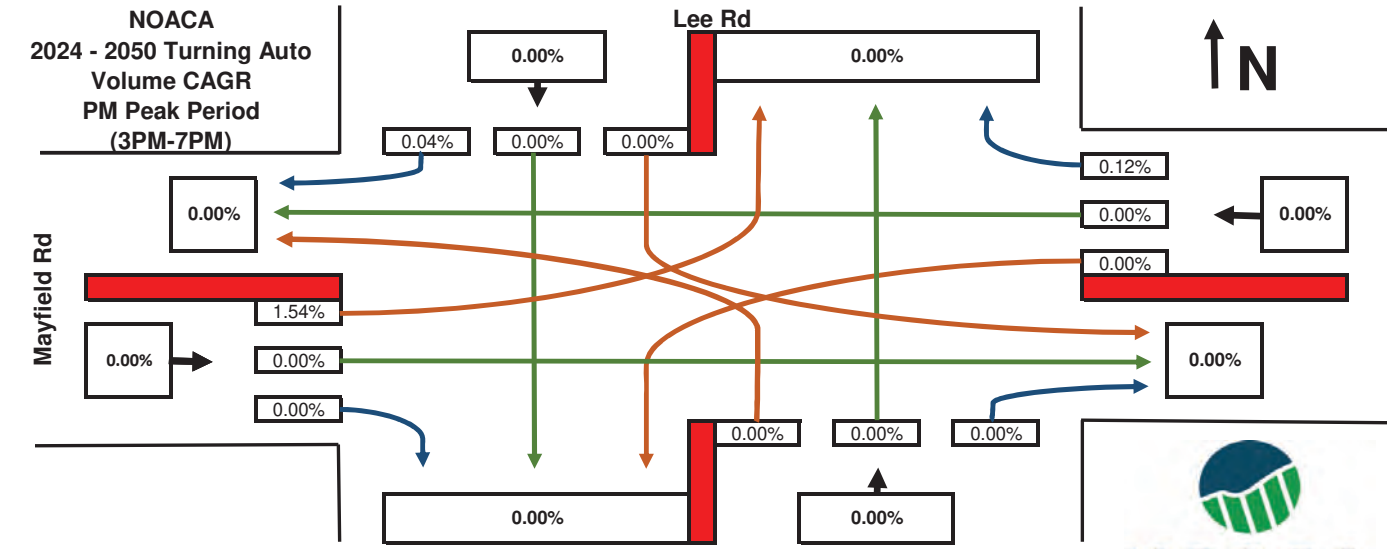




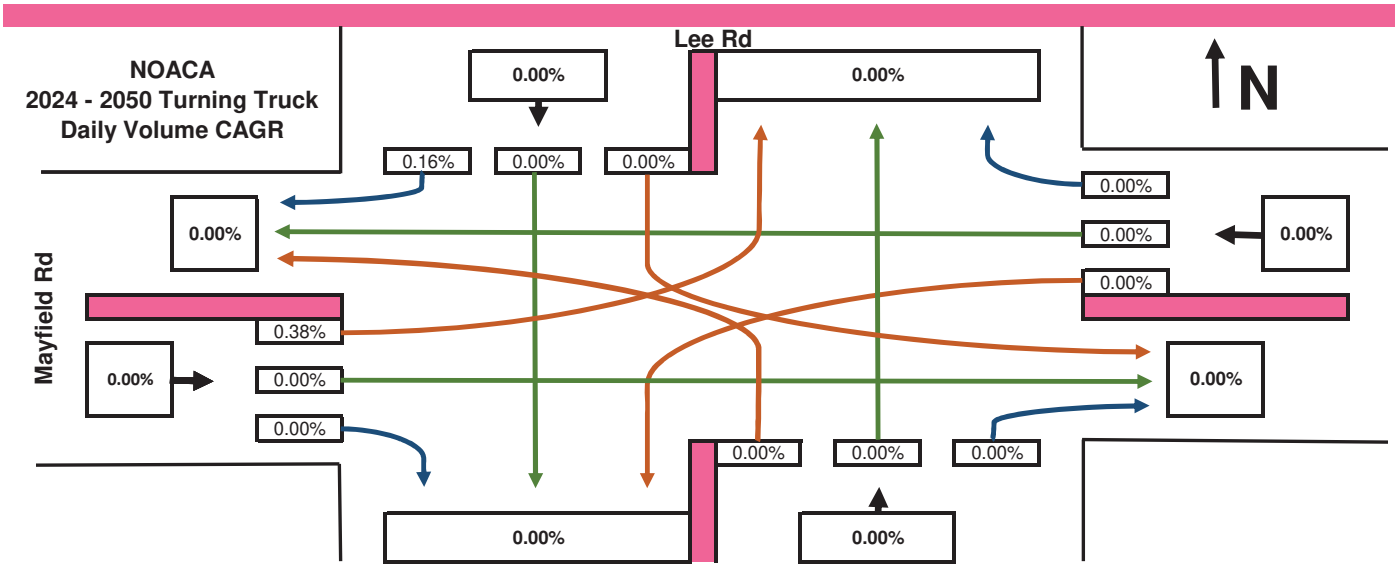
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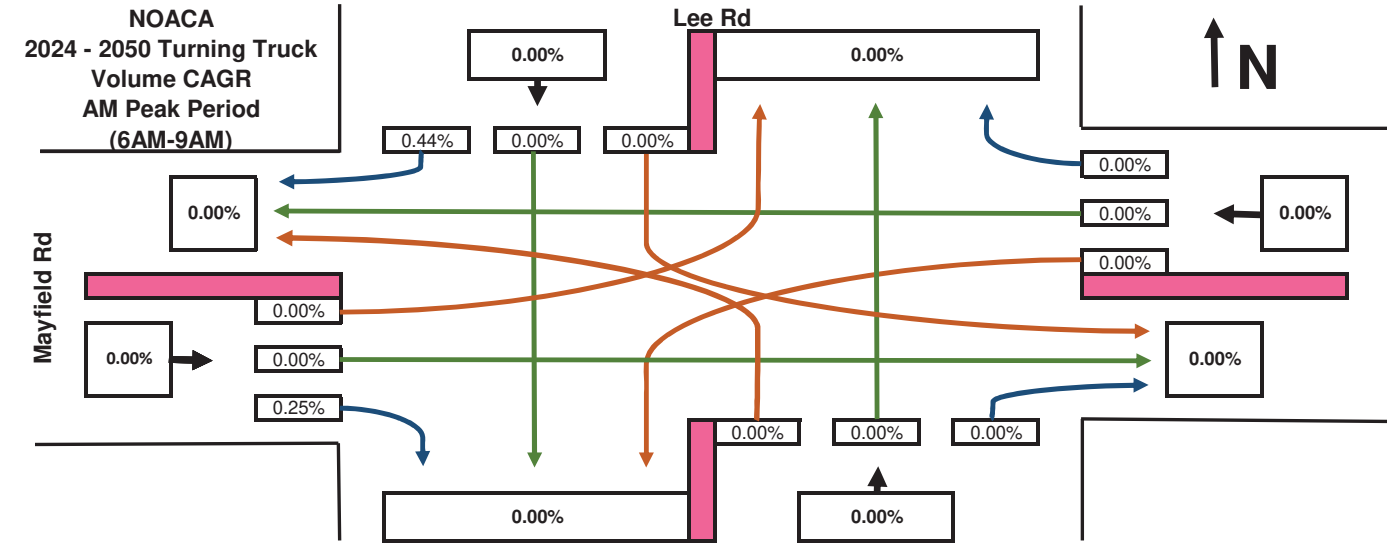


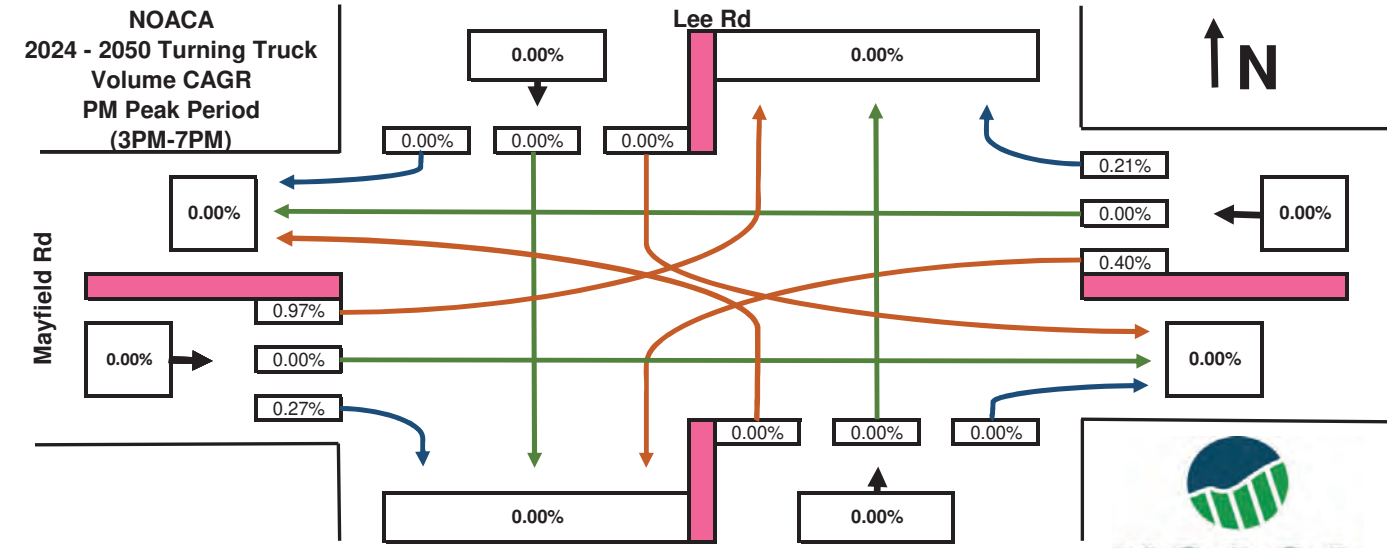




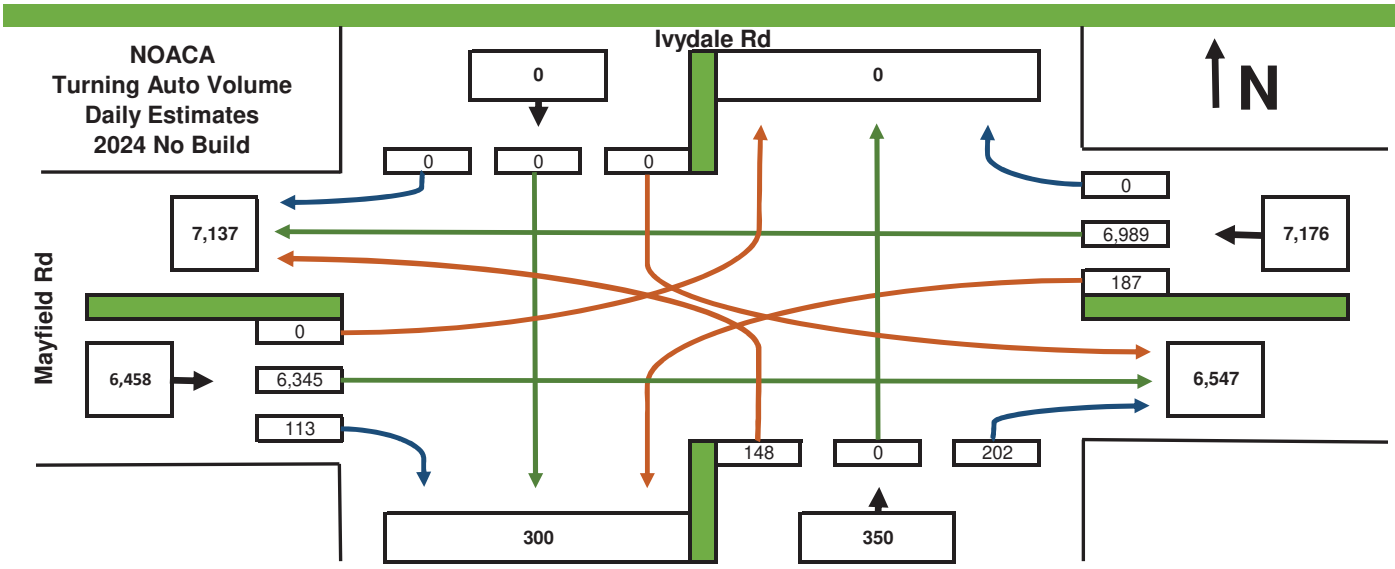
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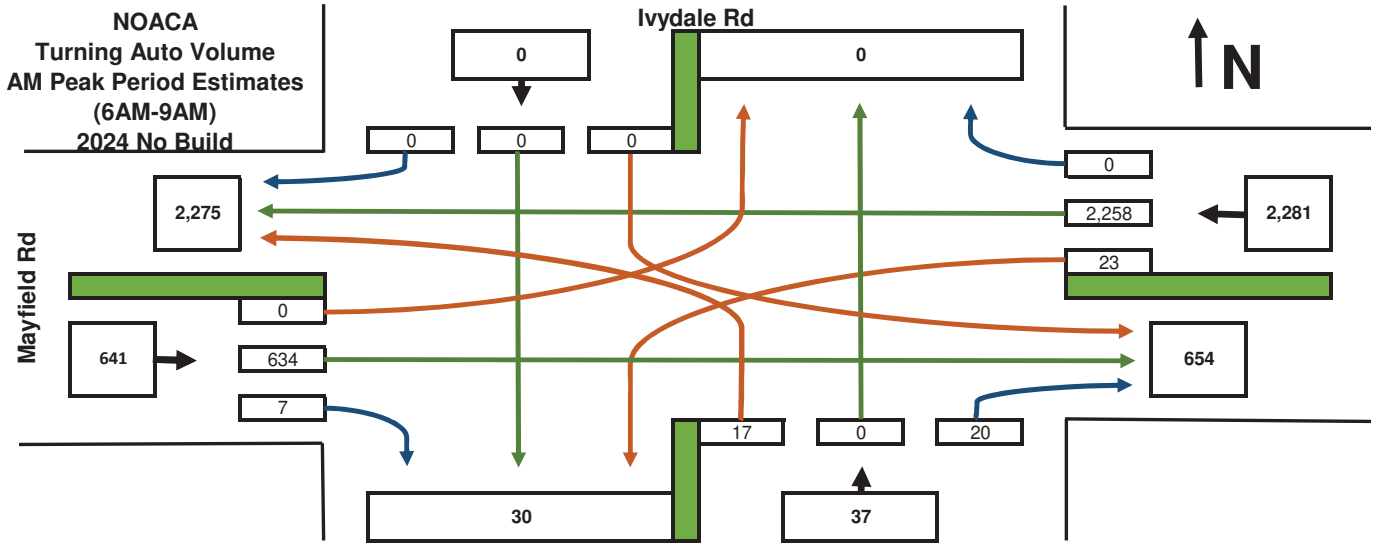


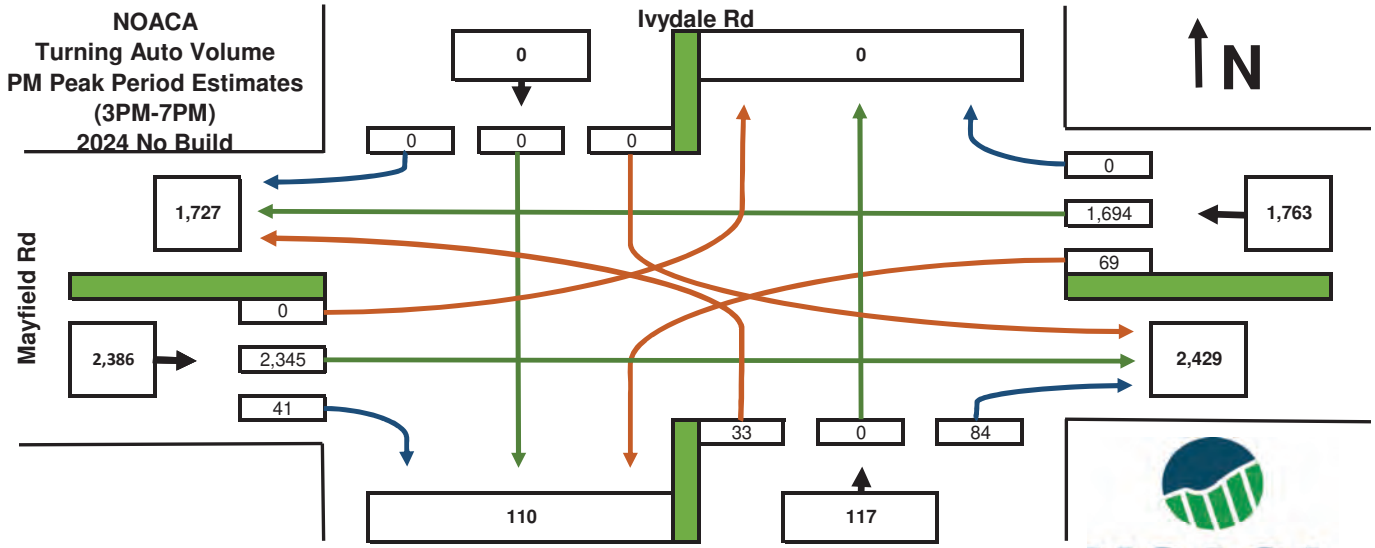




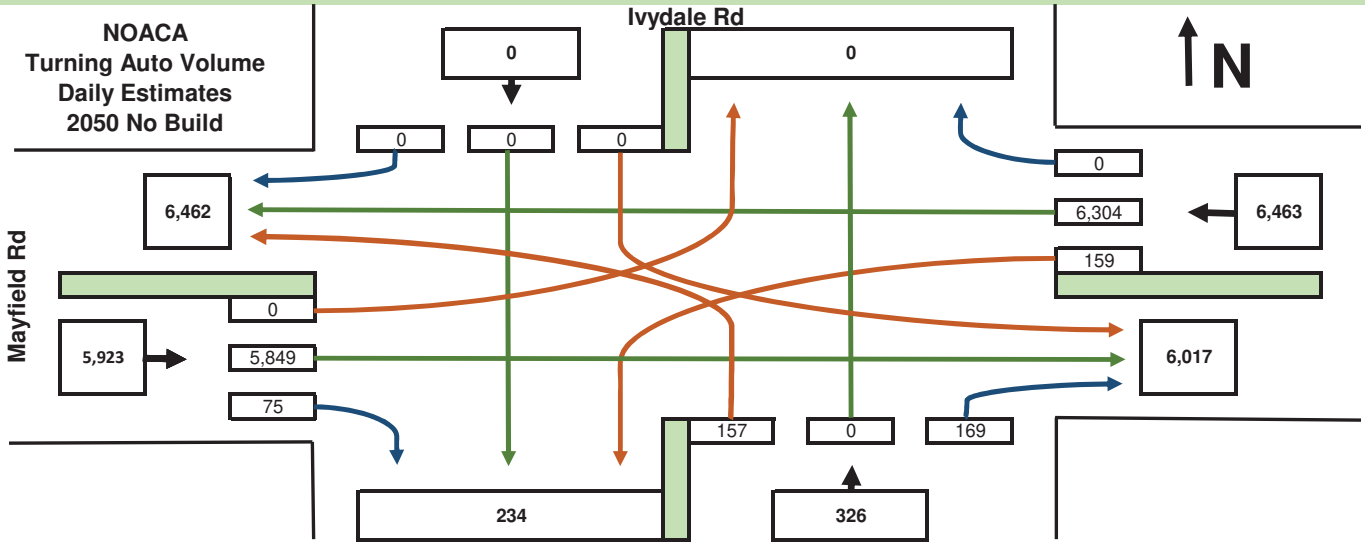
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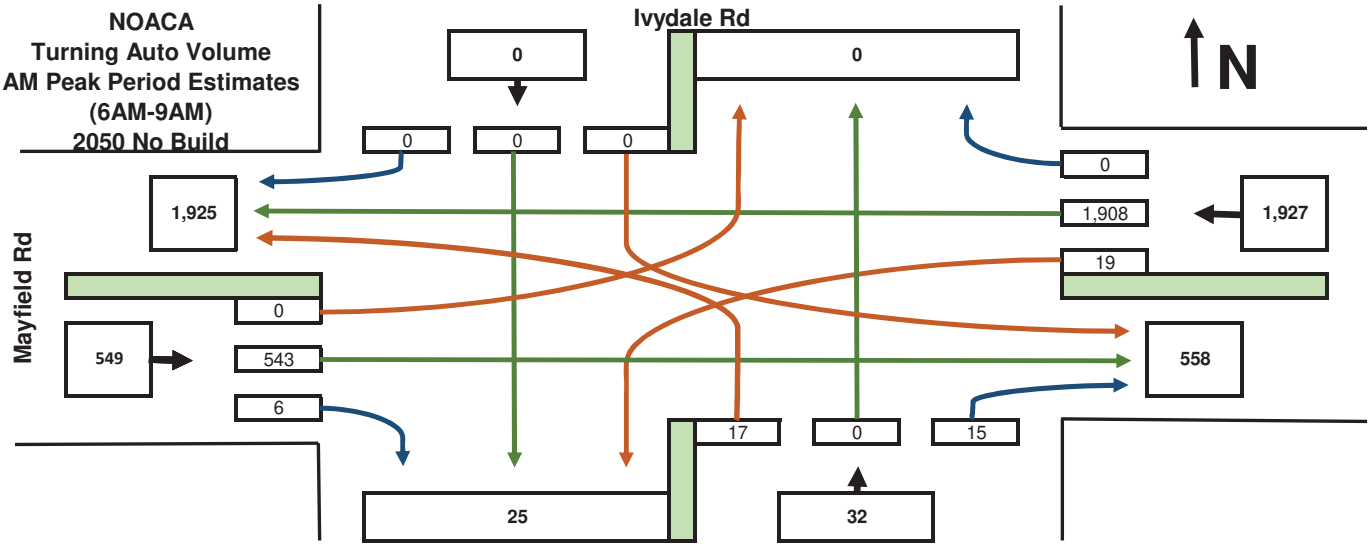


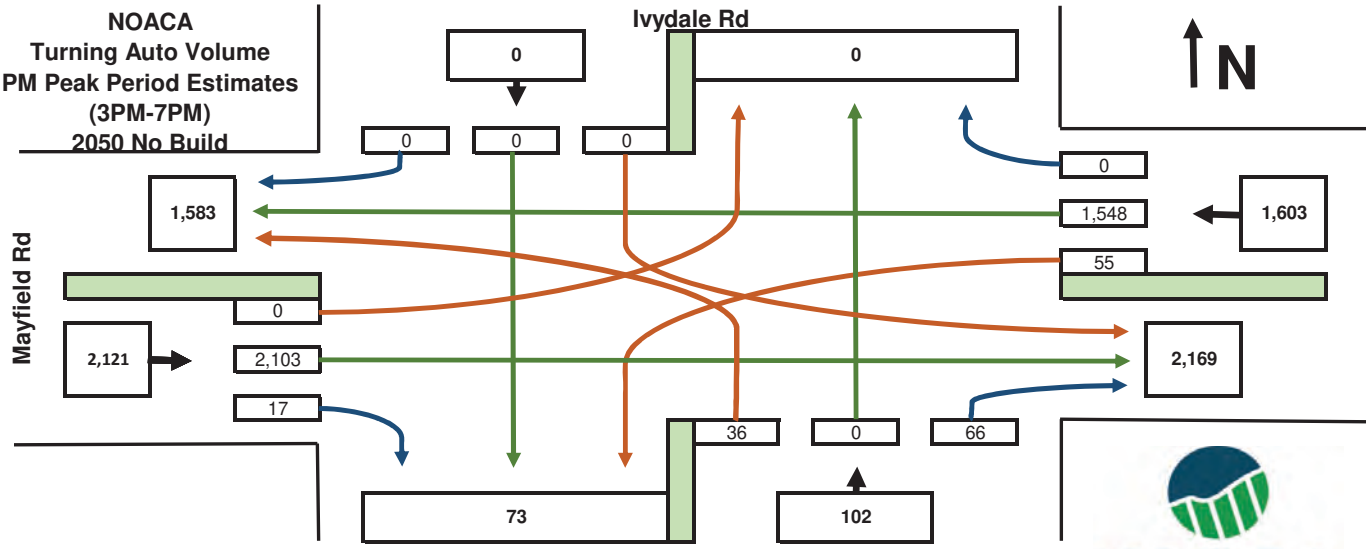




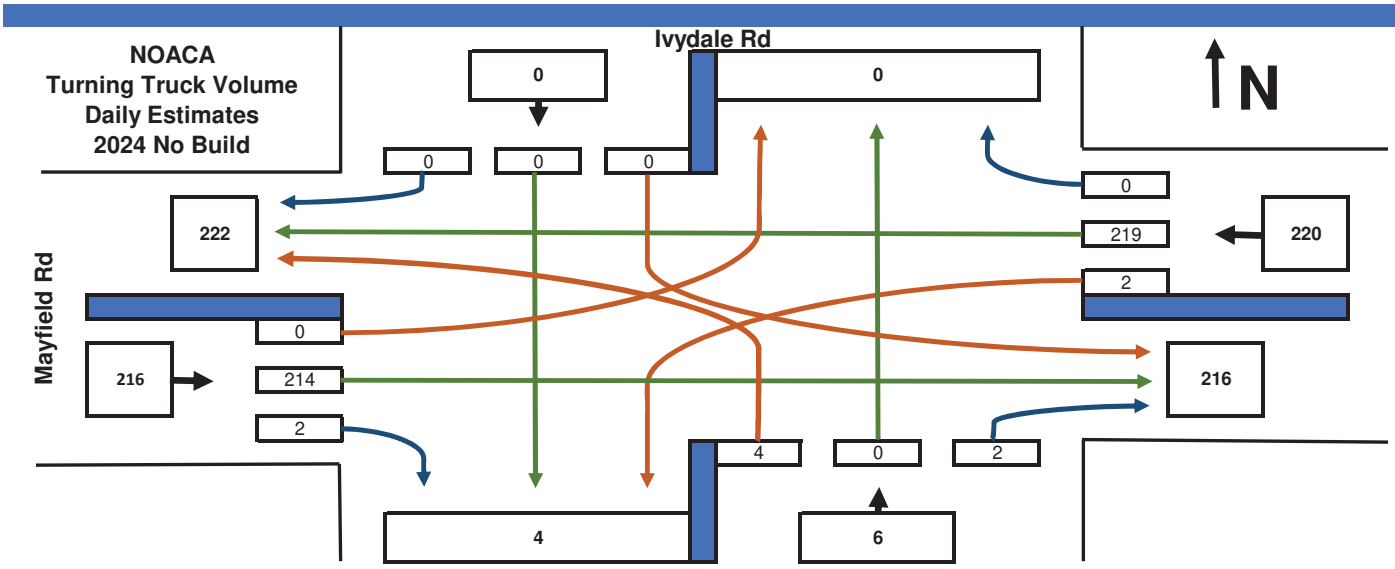
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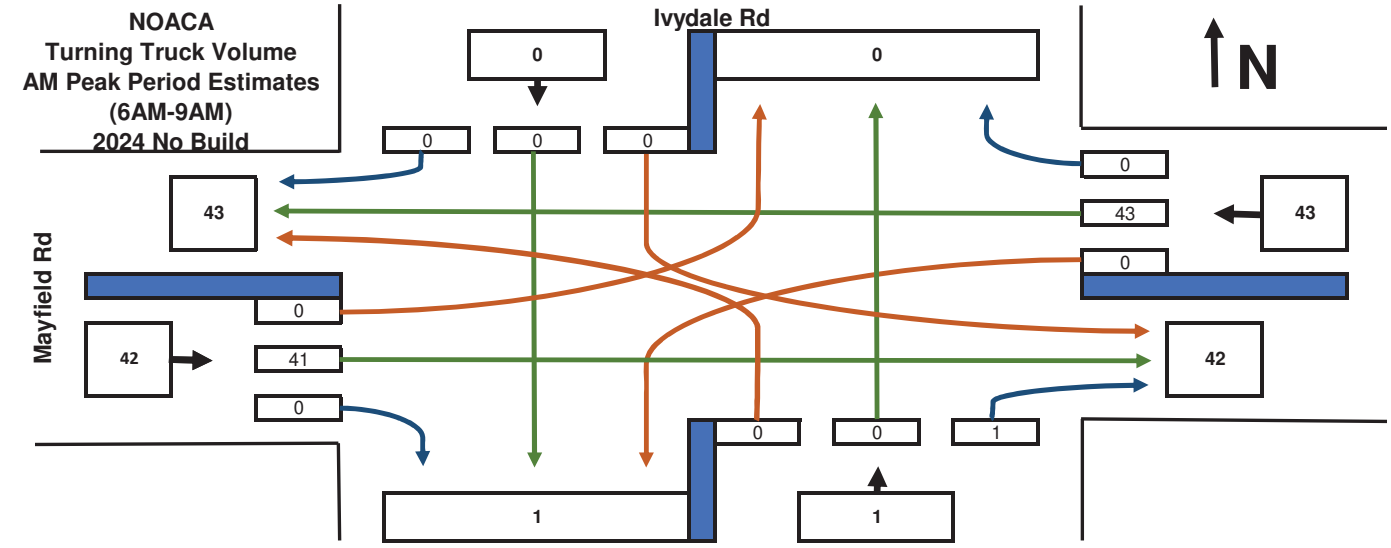


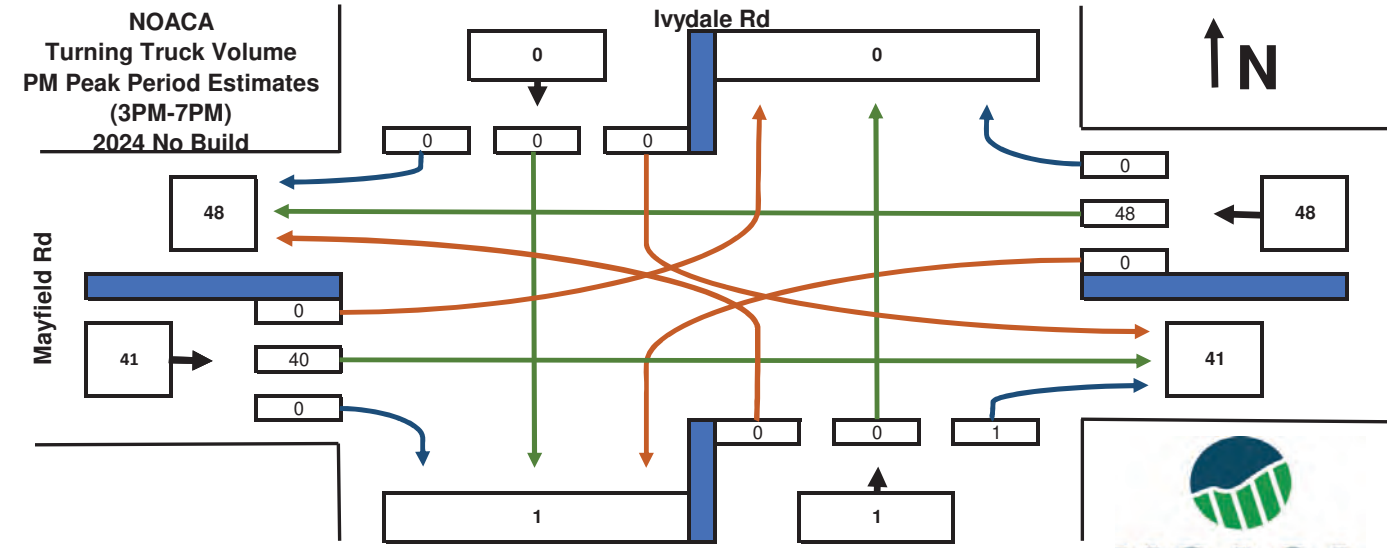




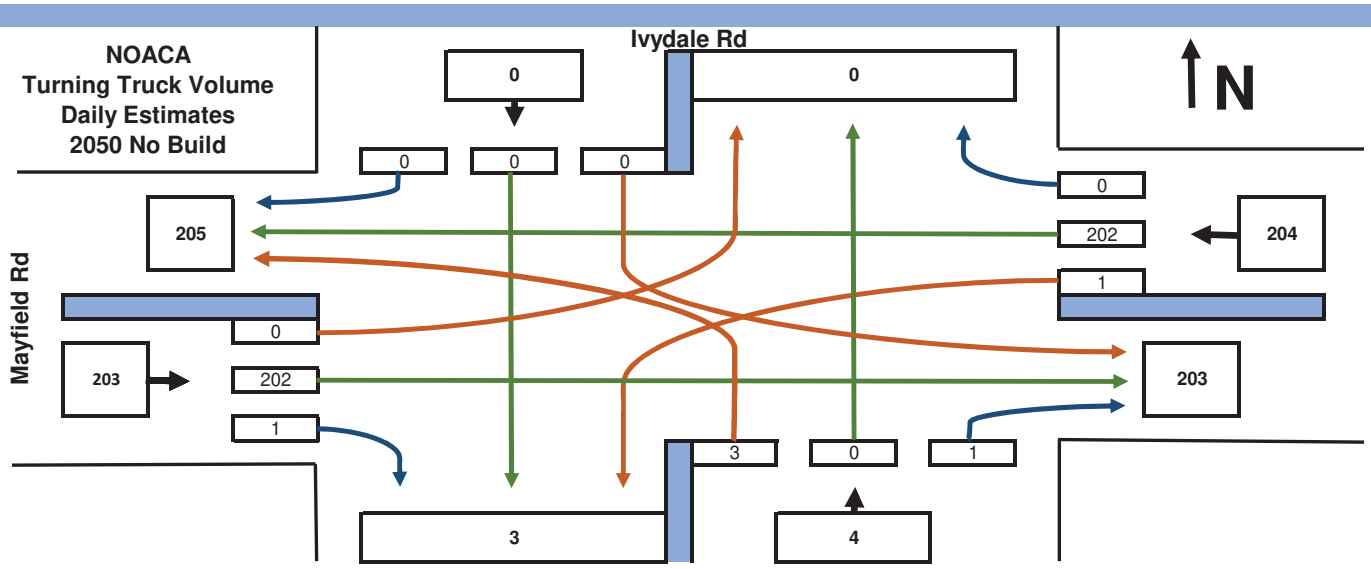
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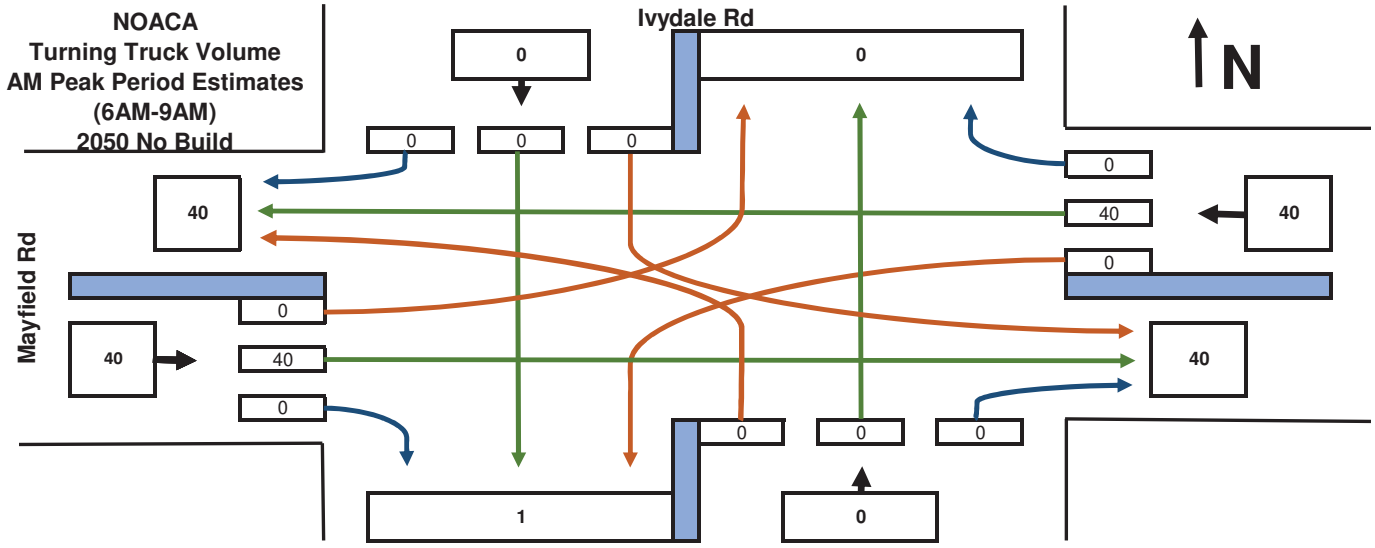


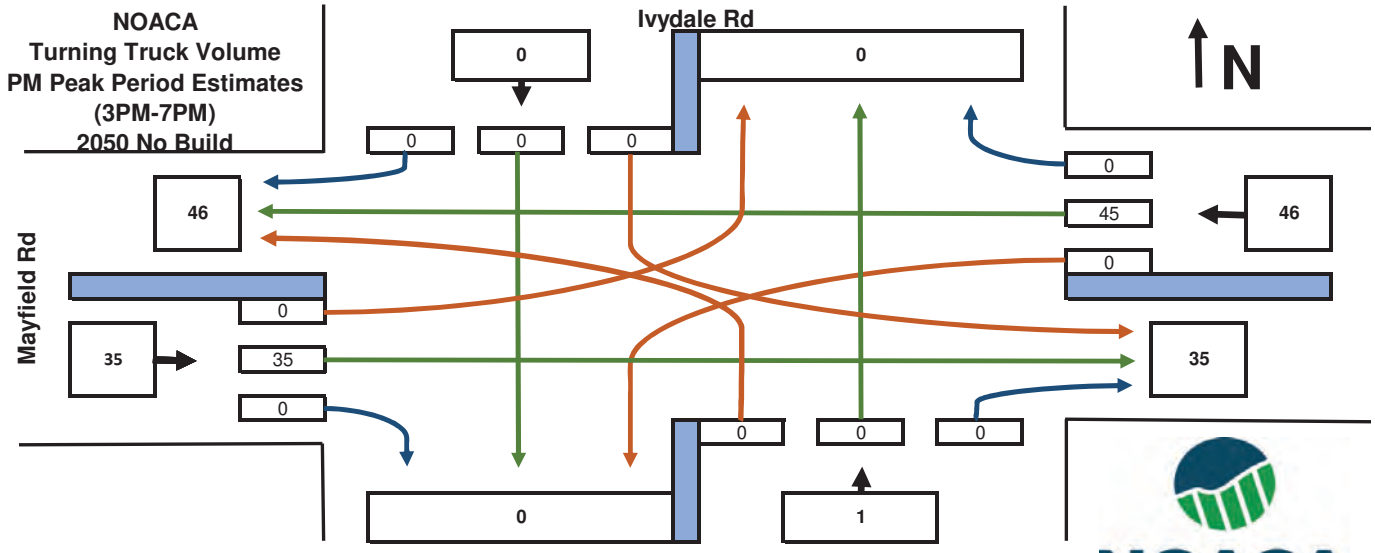




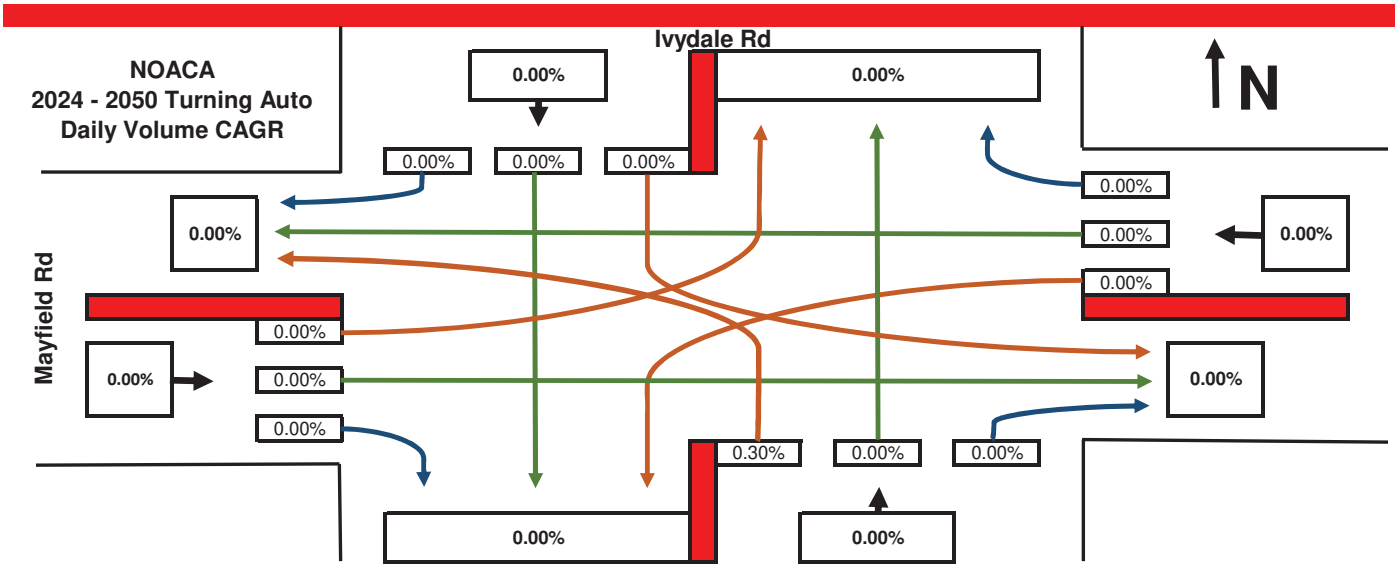
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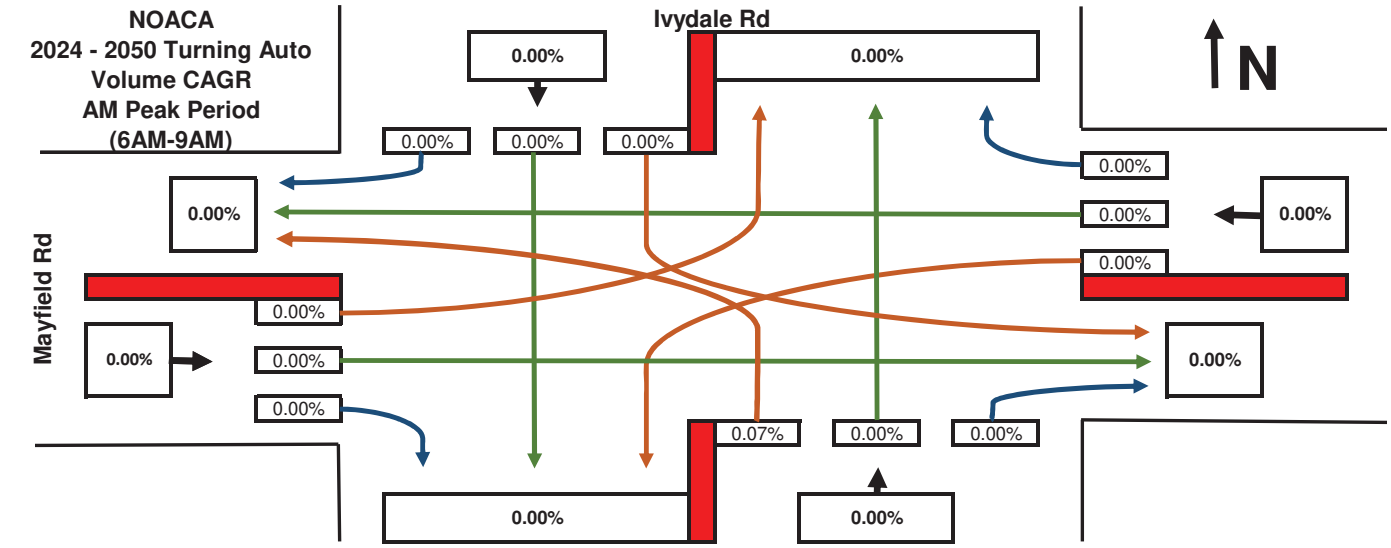


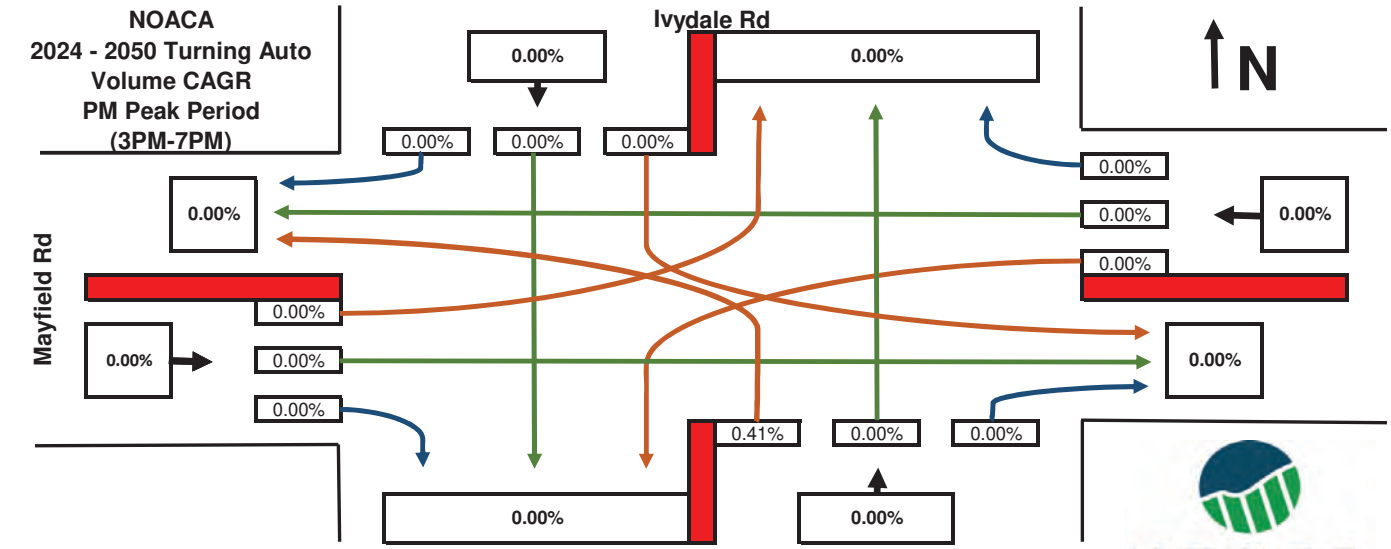




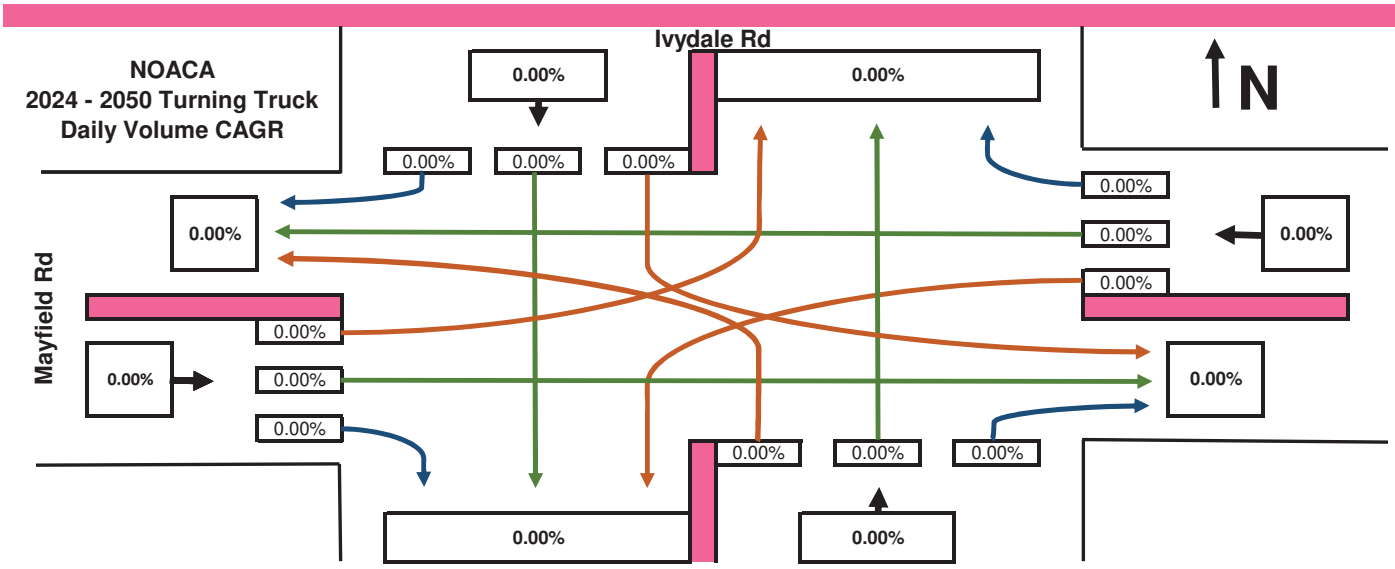
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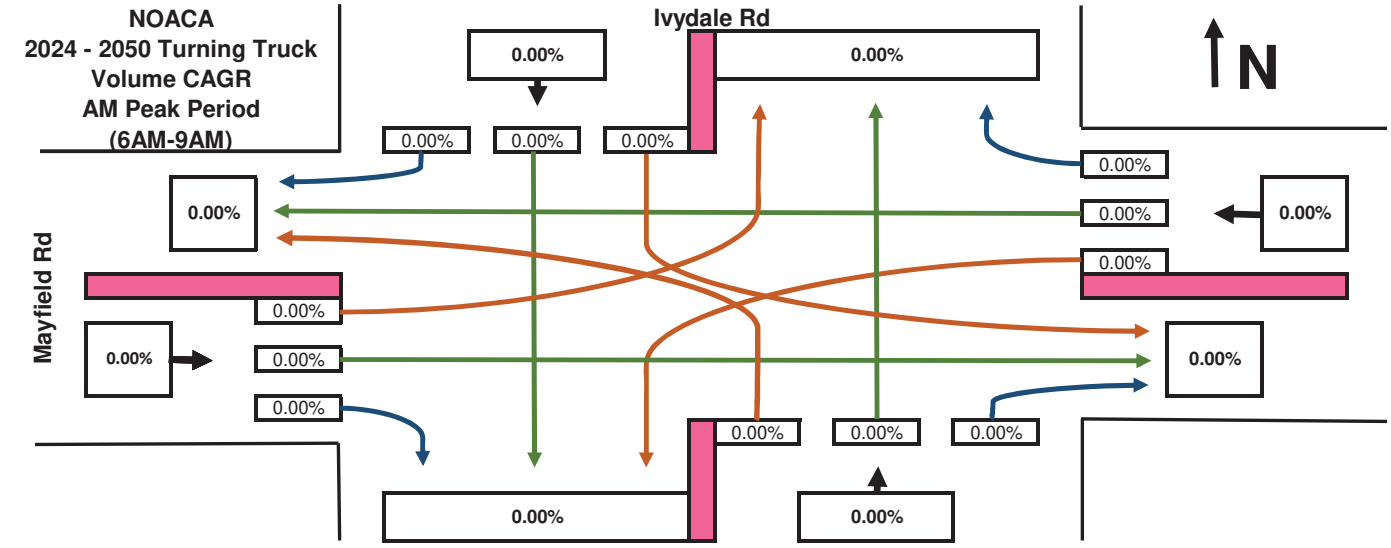


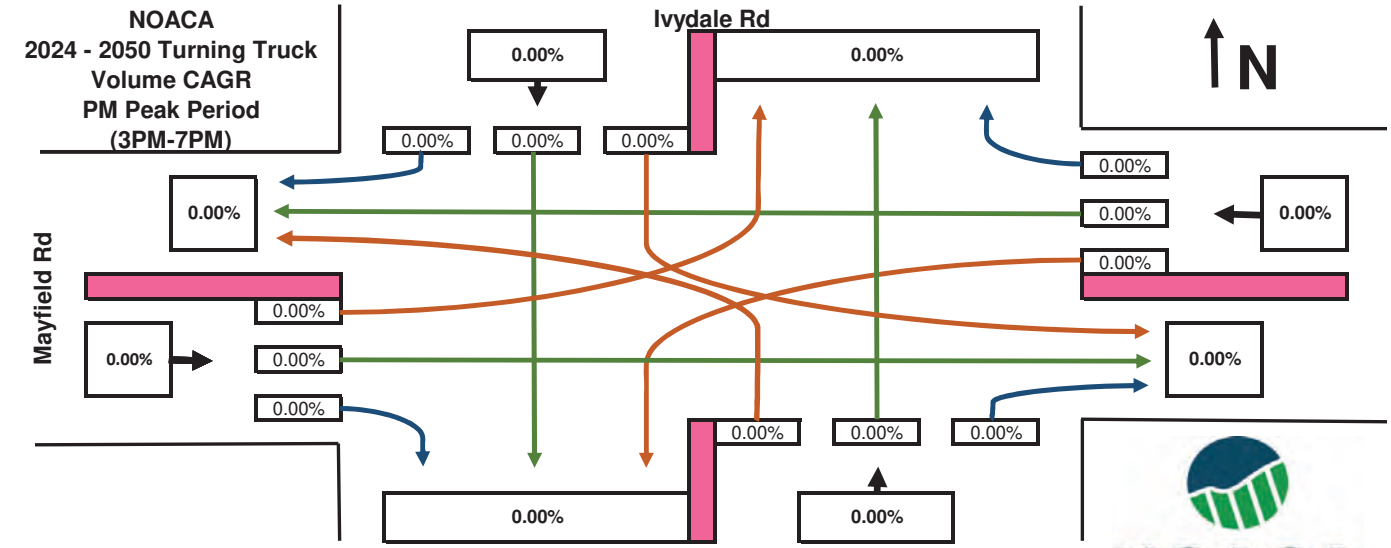




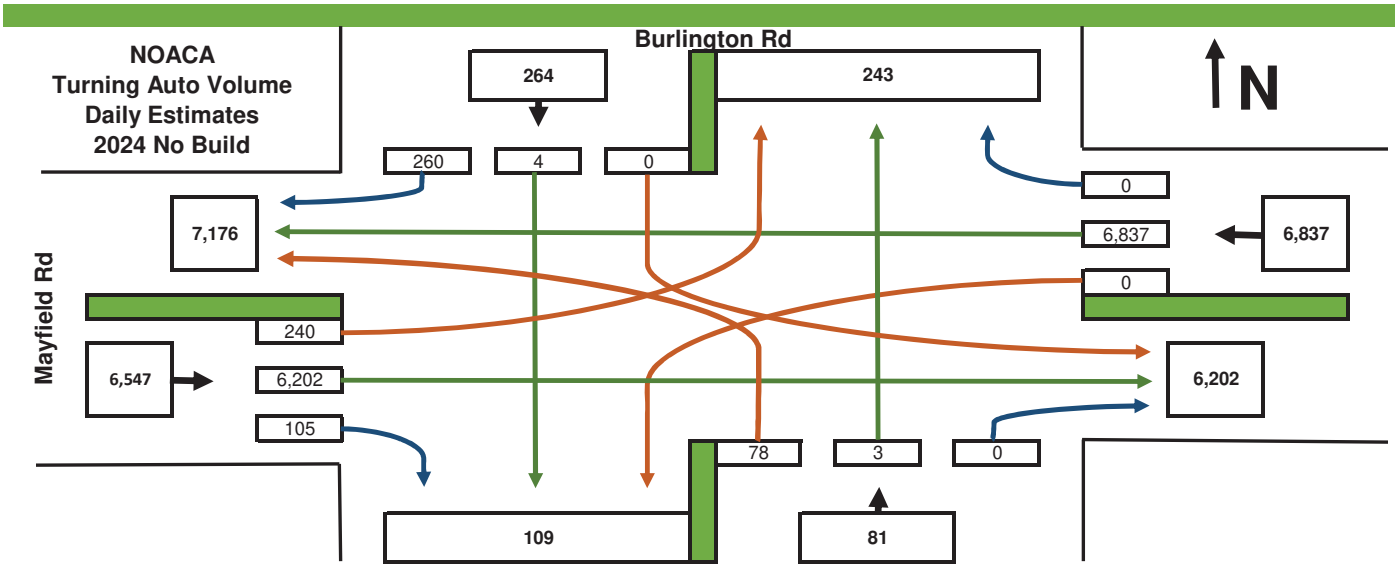
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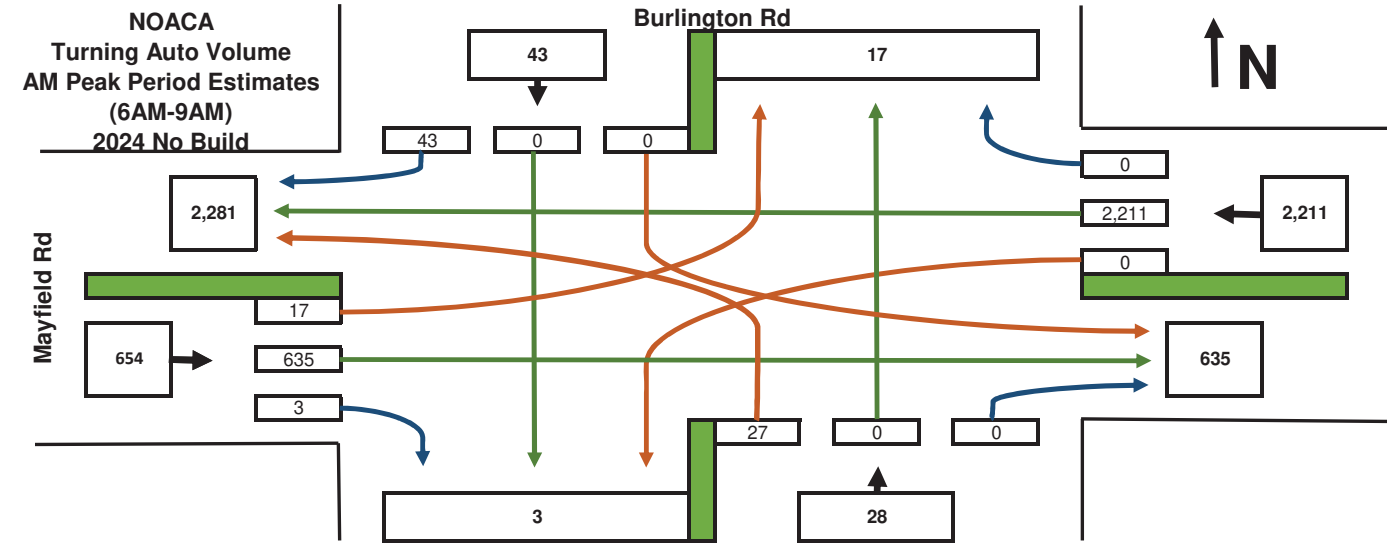


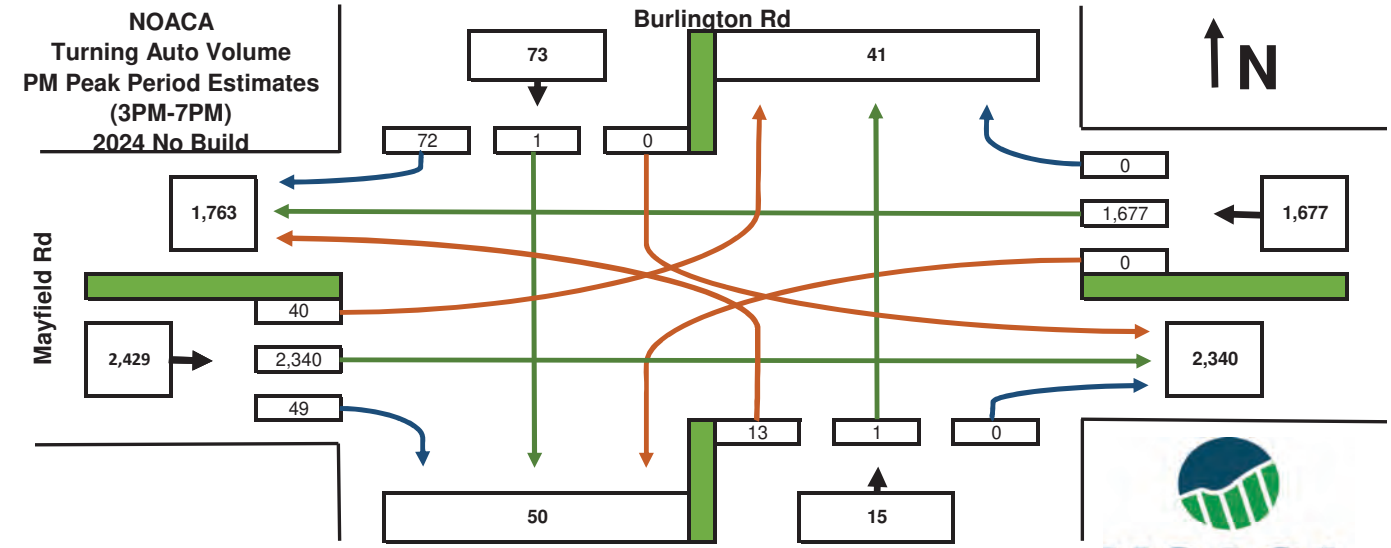




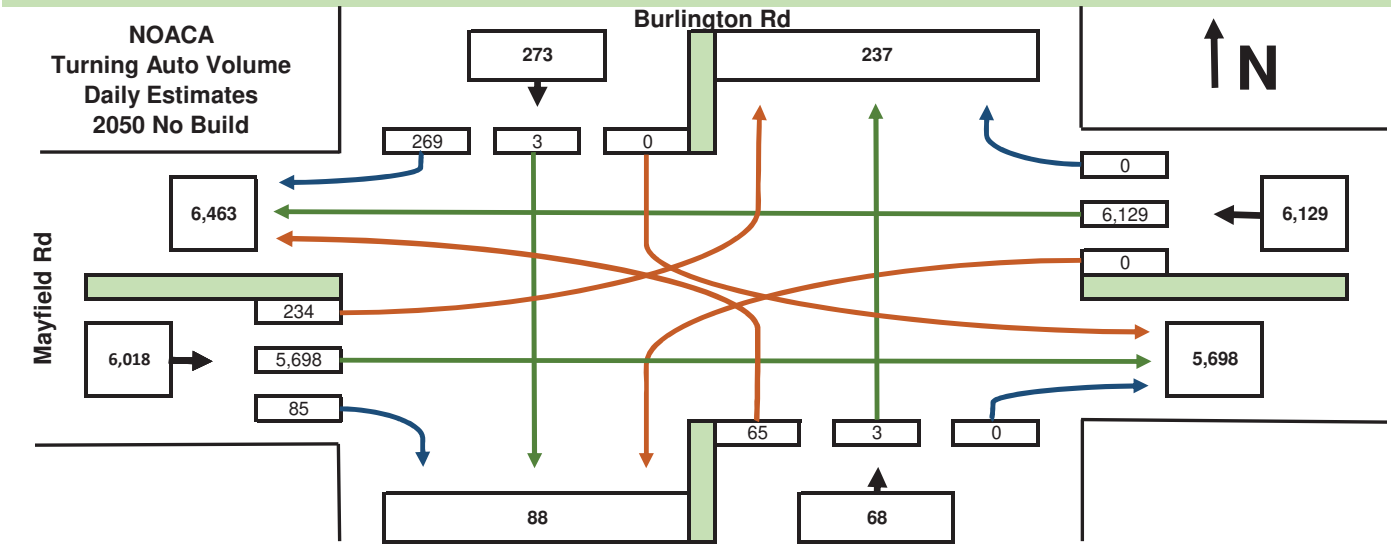
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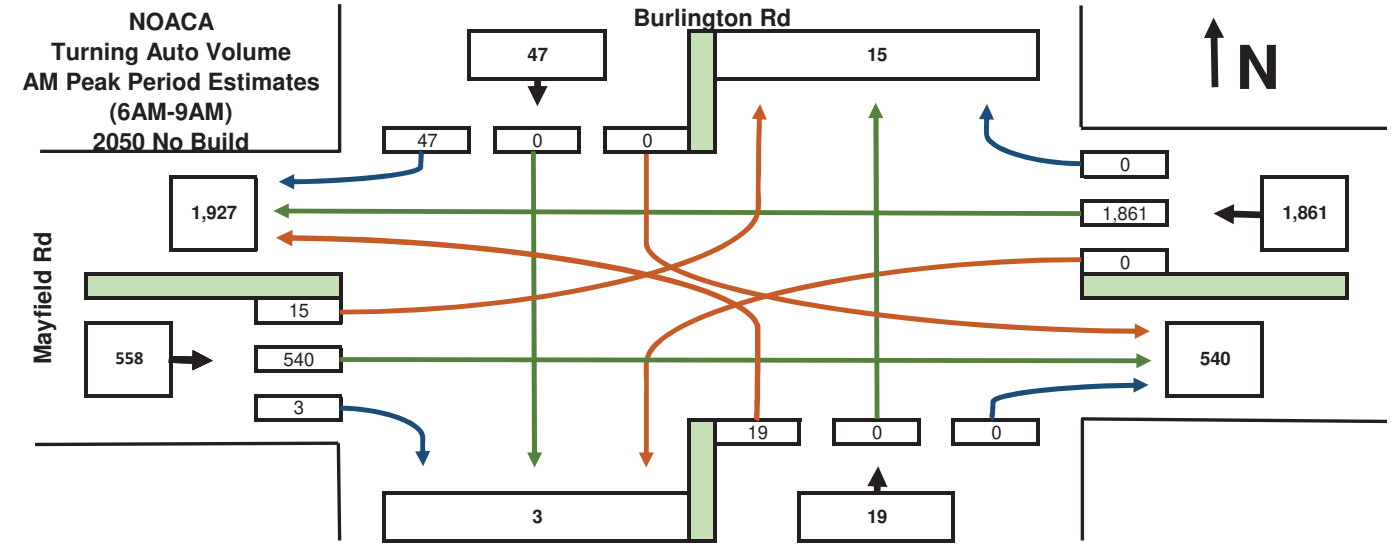


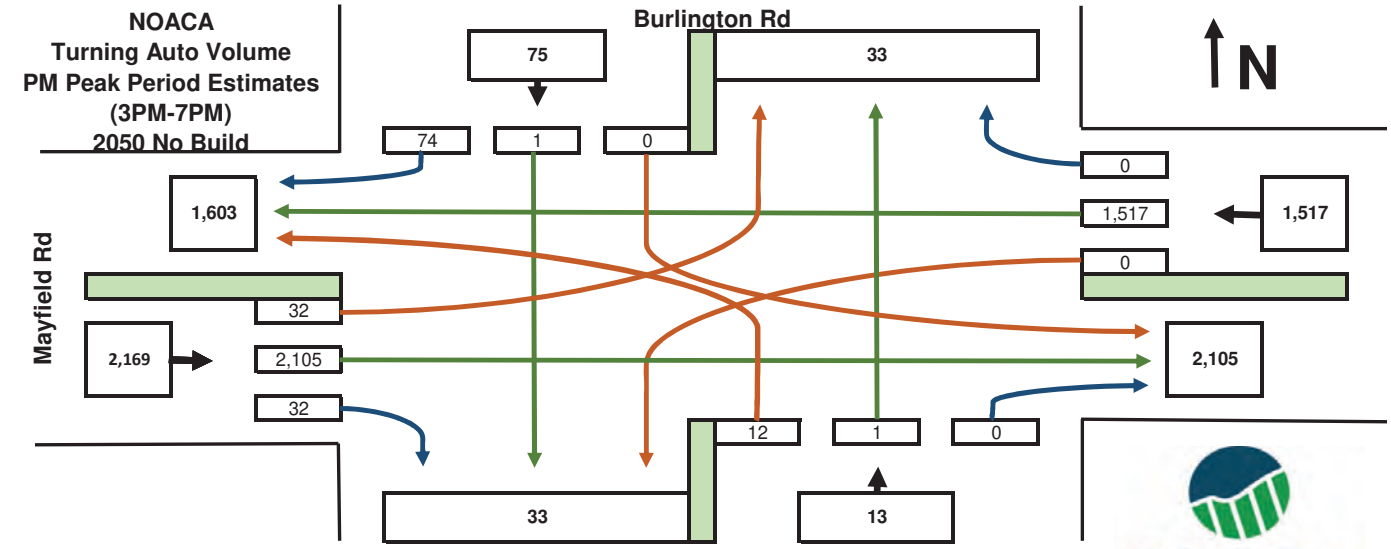




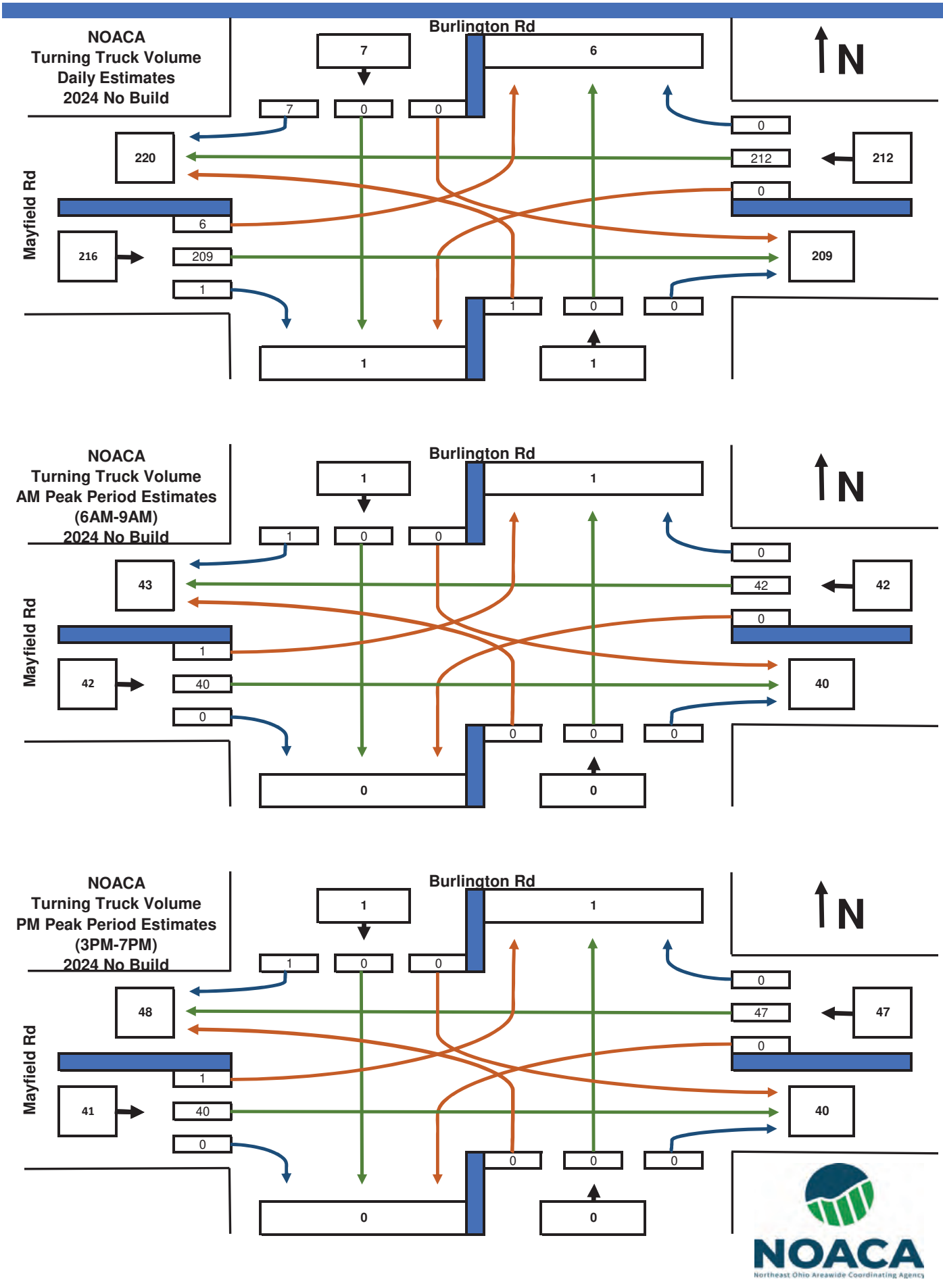
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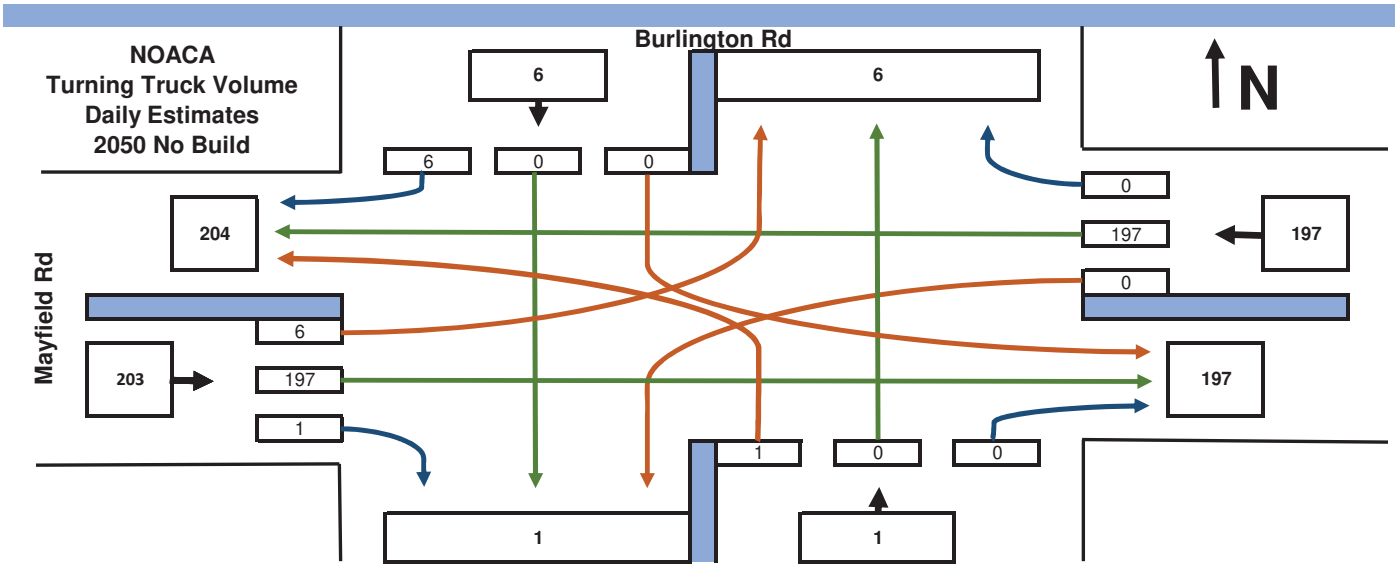


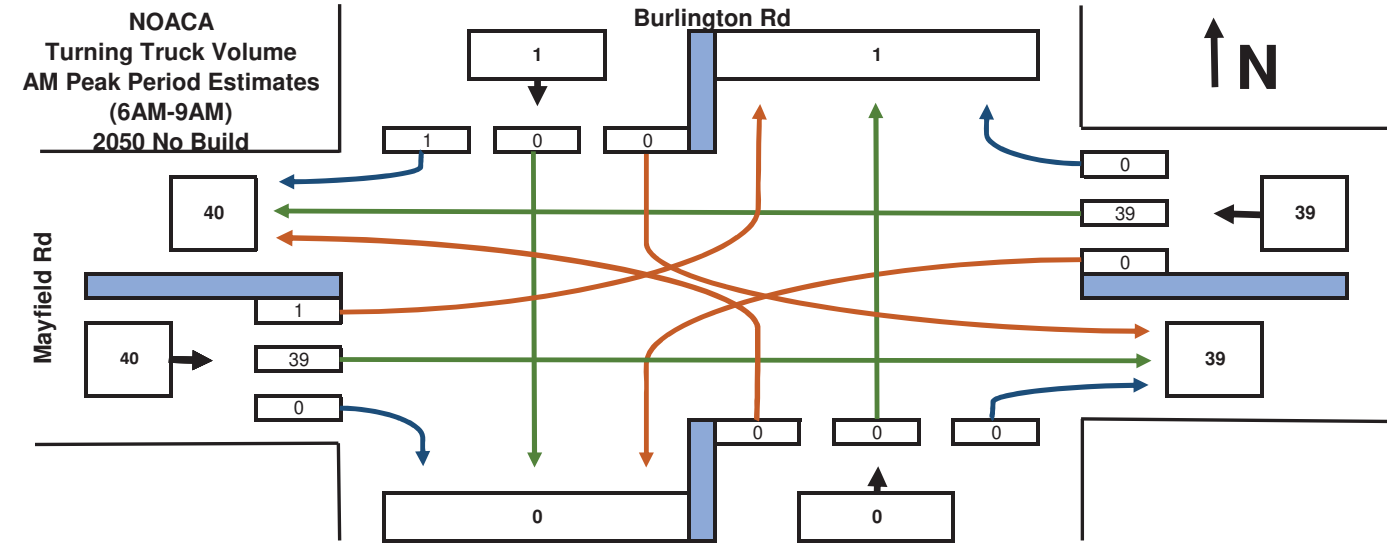


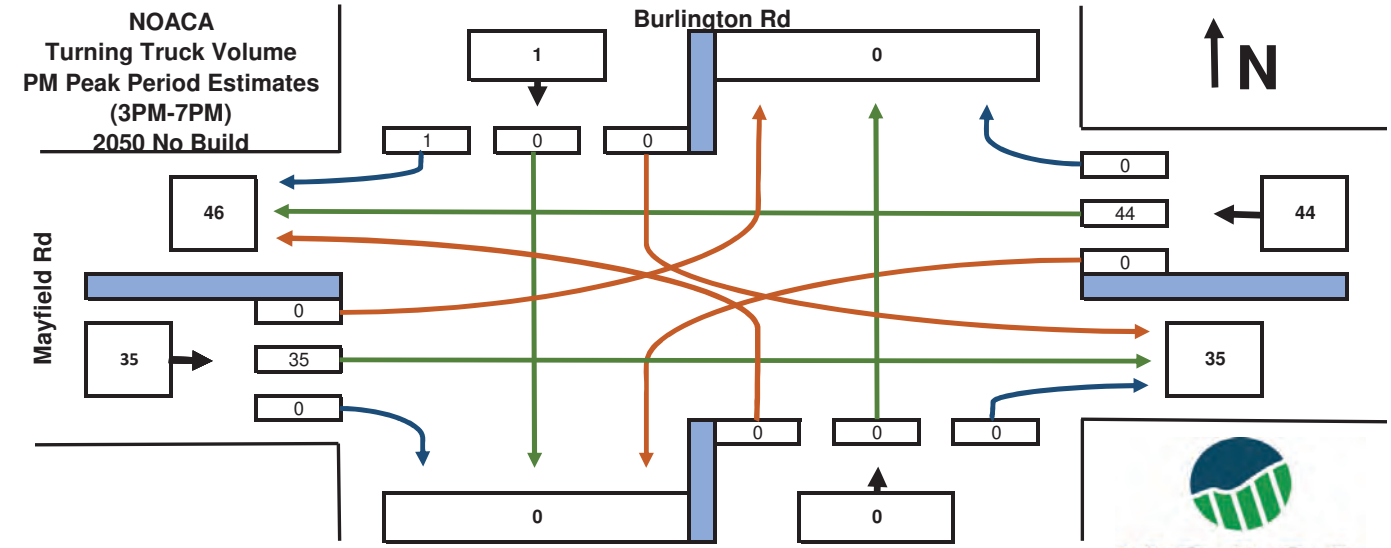


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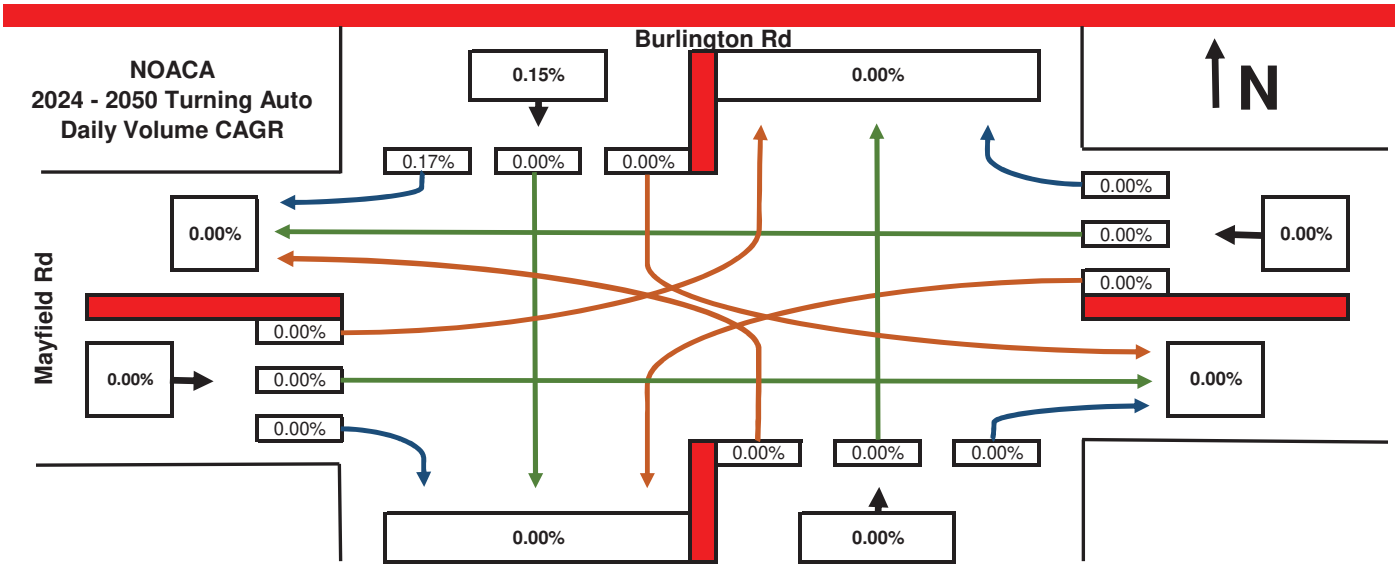

NOACA
Turning Truck Volume
Daily Estimates
2024 No Build
Burlington Rd
N
Mayfield Rd
7
6
7
0
0
0
220
212
212
0
6
216
209
209
1
1
0
0
1
1
NOACA
Turning Truck Volume
AM Peak Period Estimates
(6AM-9AM)
2024 No Build
Burlington Rd
N
Mayfield Rd
1
1
1
0
0
0
43
42
42
0
1
42
40
40
0
0
0
0
0
0
NOACA
Turning Truck Volume
PM Peak Period Estimates
(3PM-7PM)
2024 No Build
Burlington Rd
N
Mayfield Rd
1
1
1
0
0
0
48
47
47
0
1
41
40
40
0
0
0
0
0
0
NOACA
Northeast Ohio Areawide Coordinating Agency

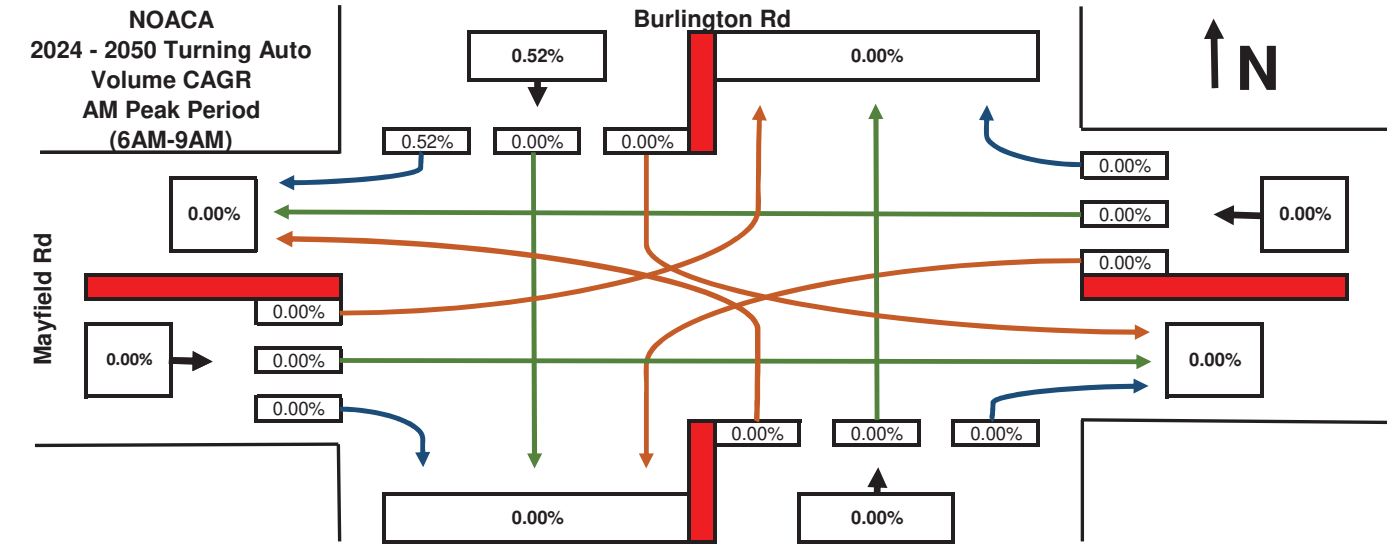


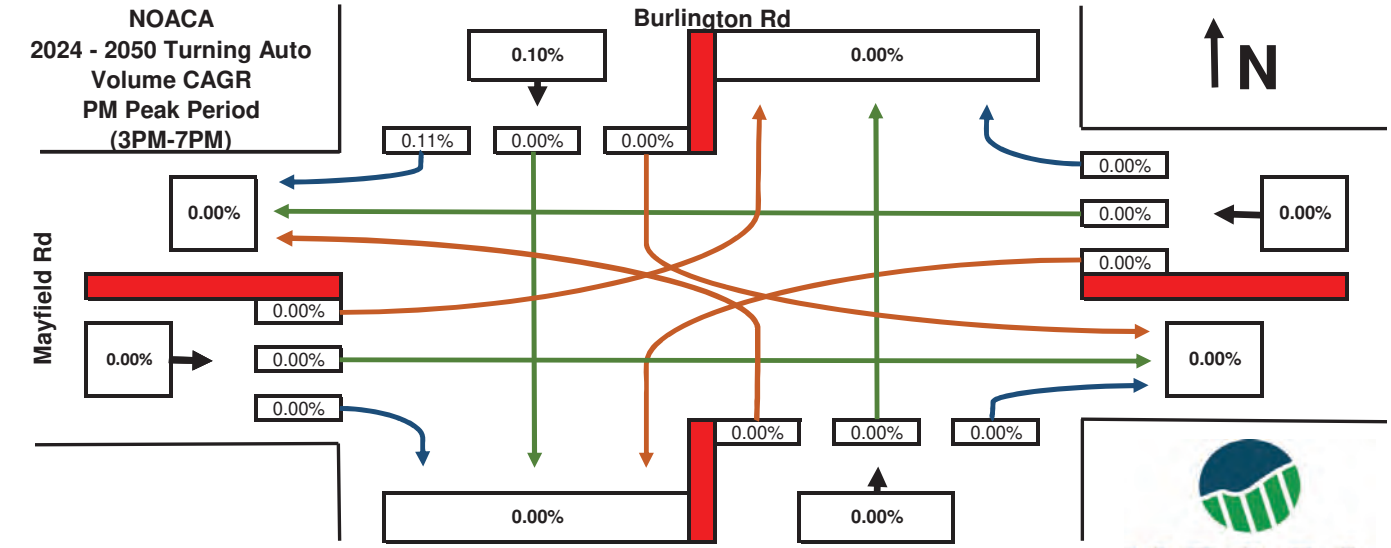




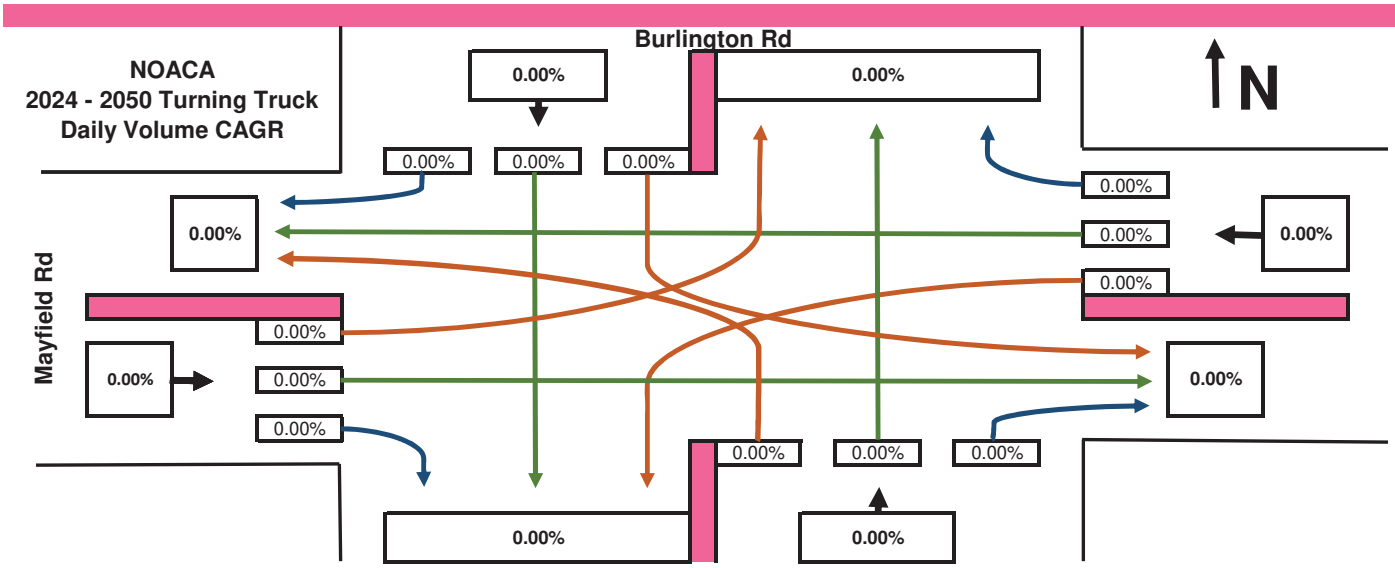
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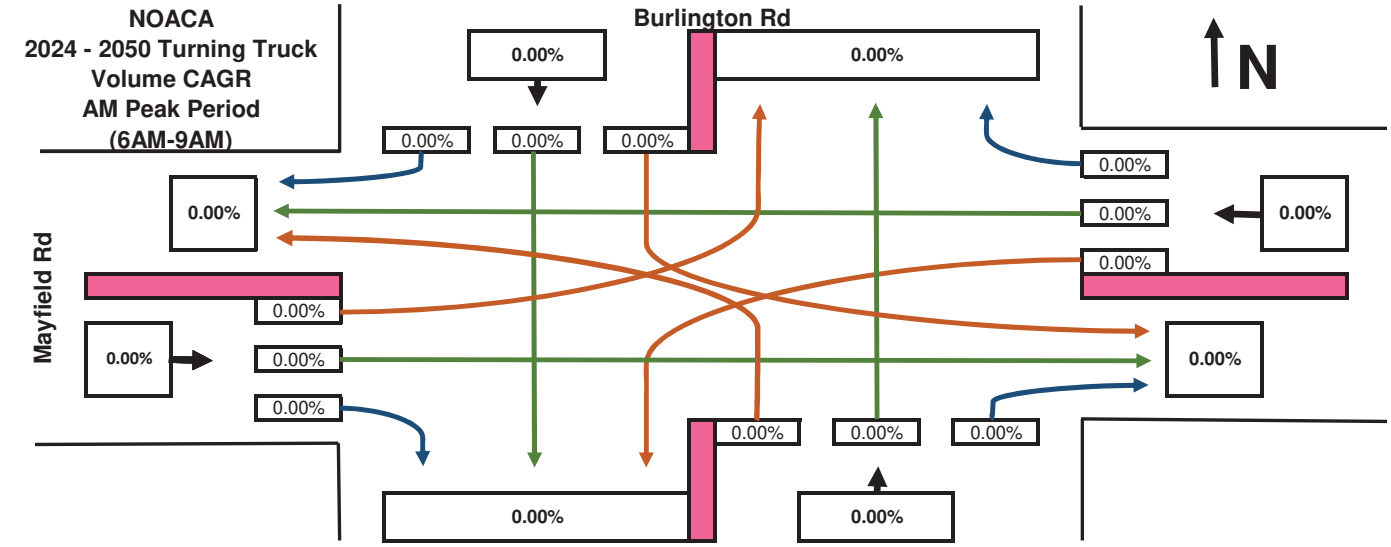


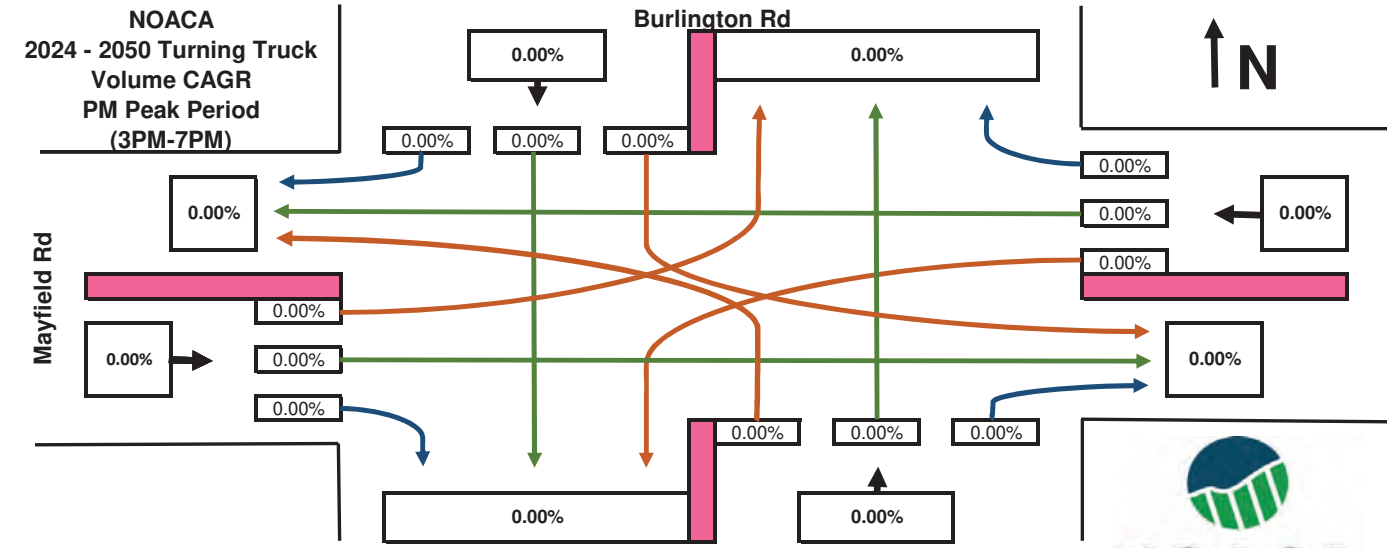




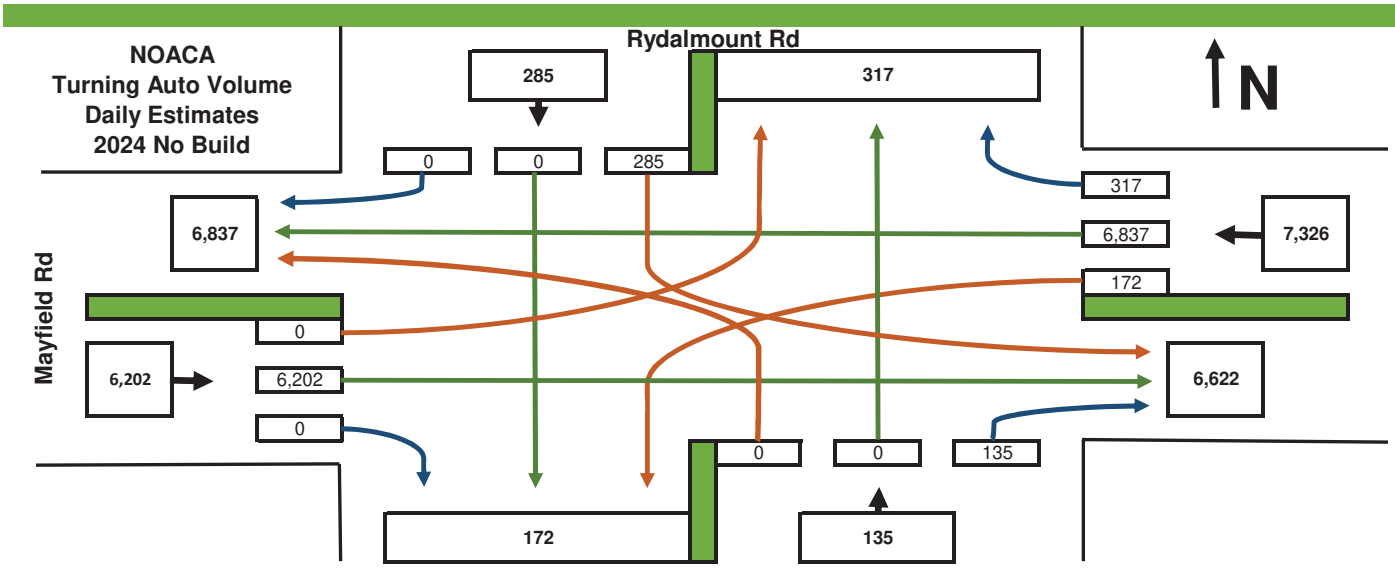
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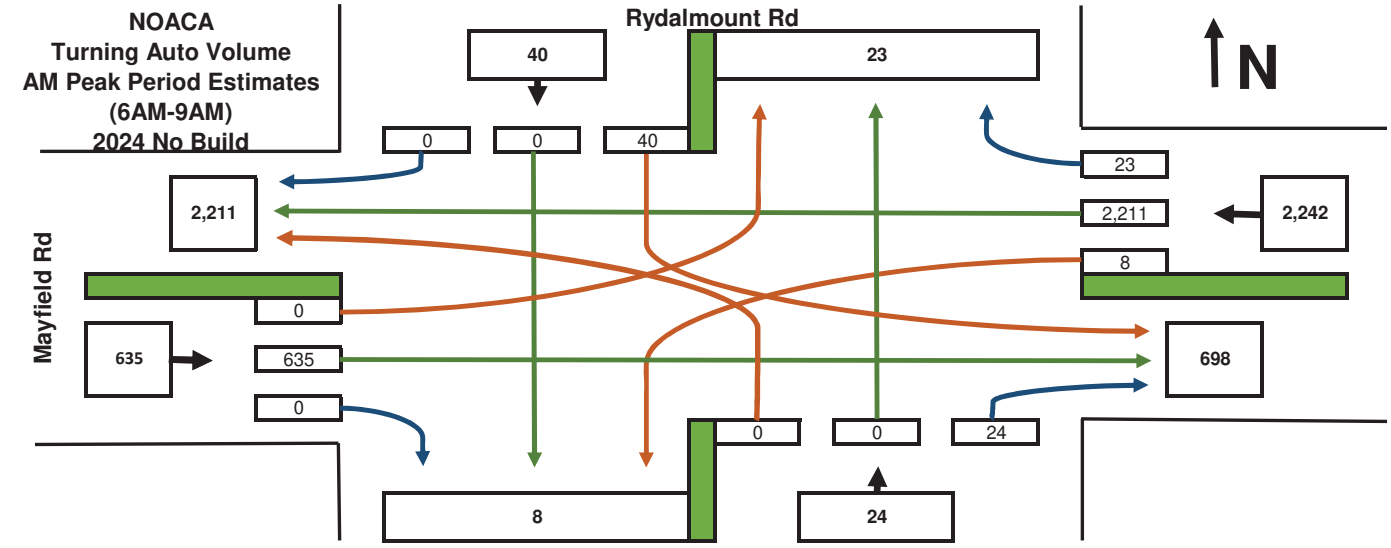


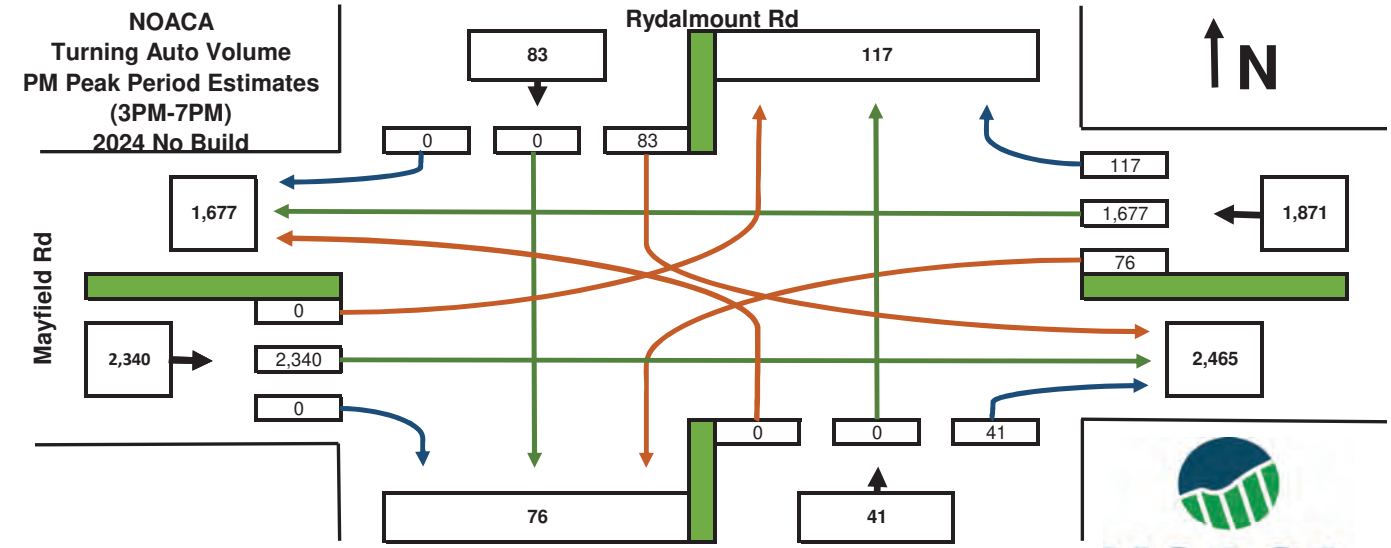




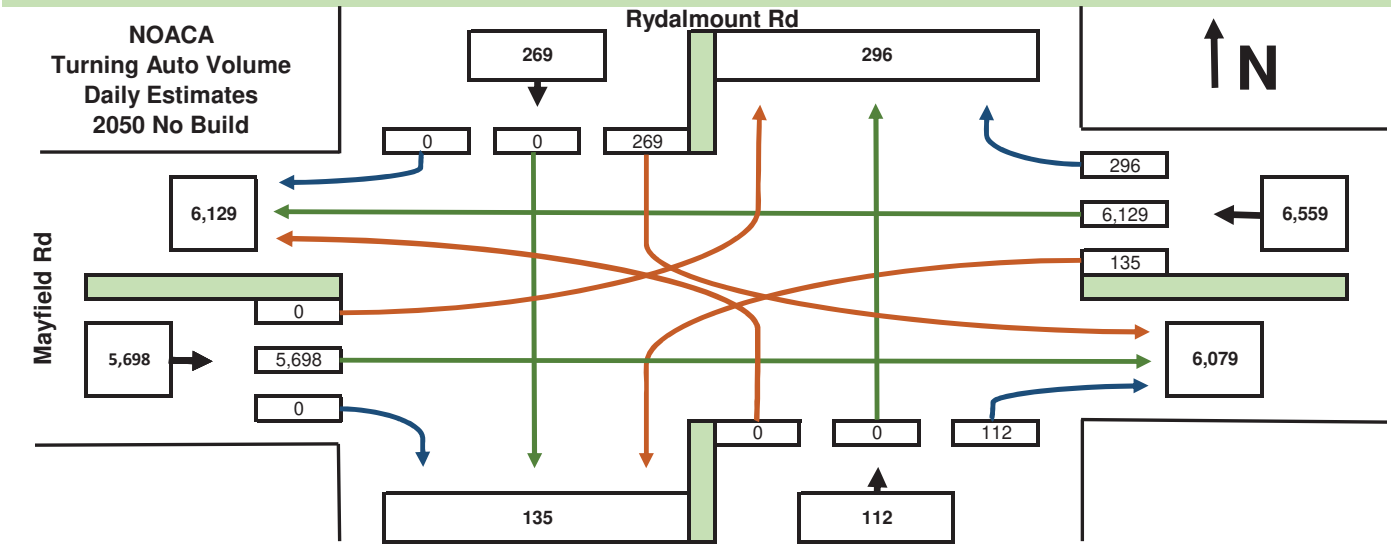
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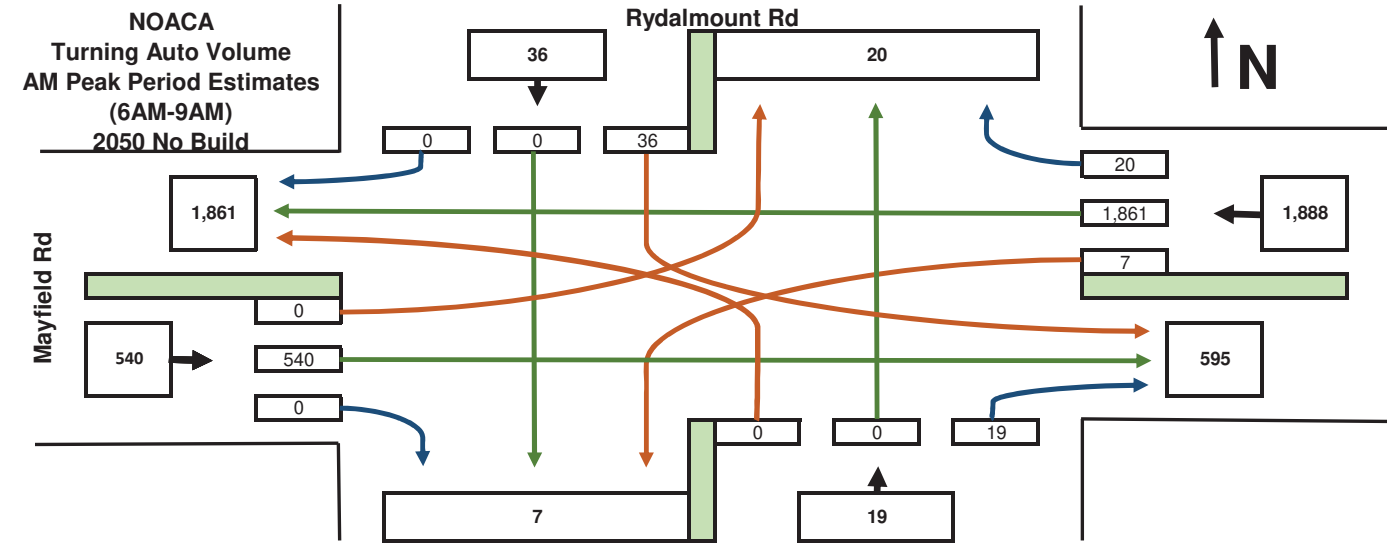


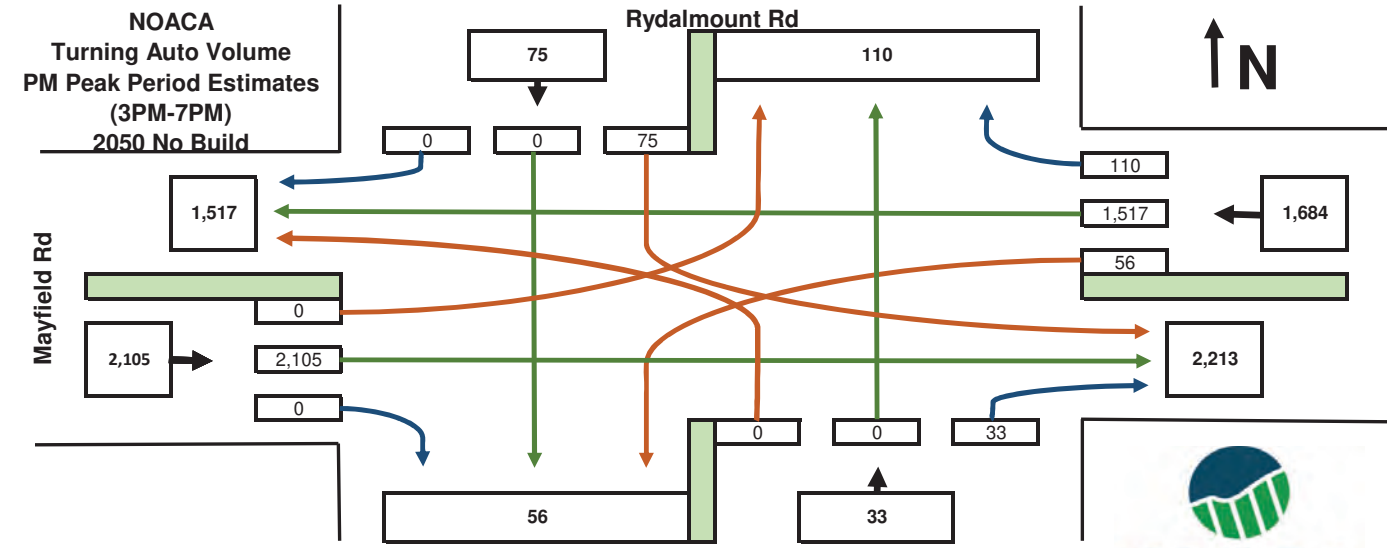




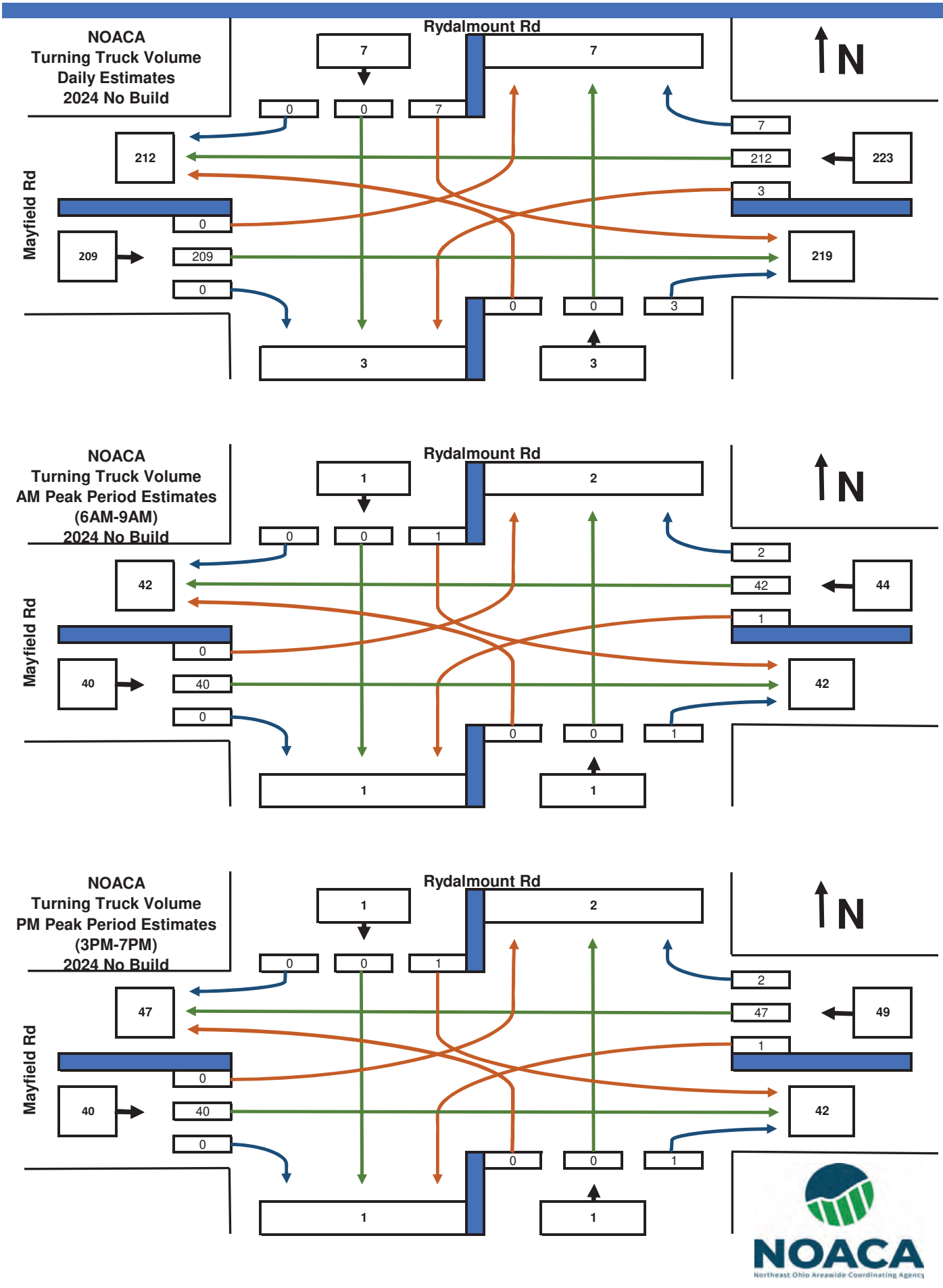
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Northeast Ohio Areawide Coordinating Agency

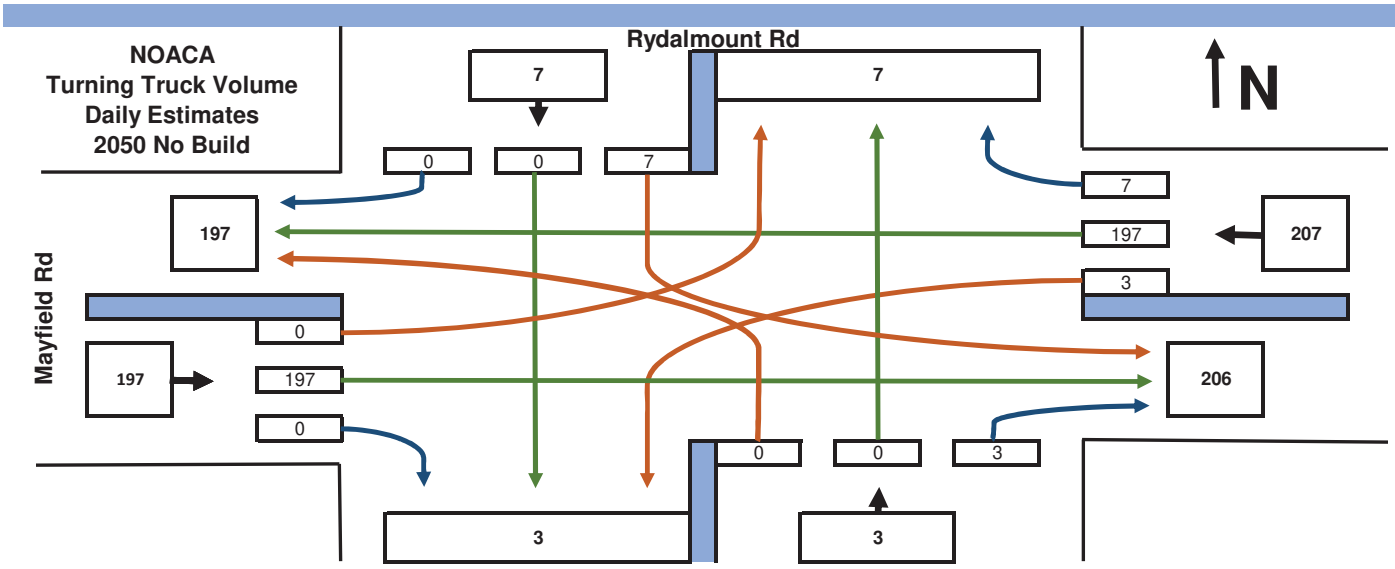


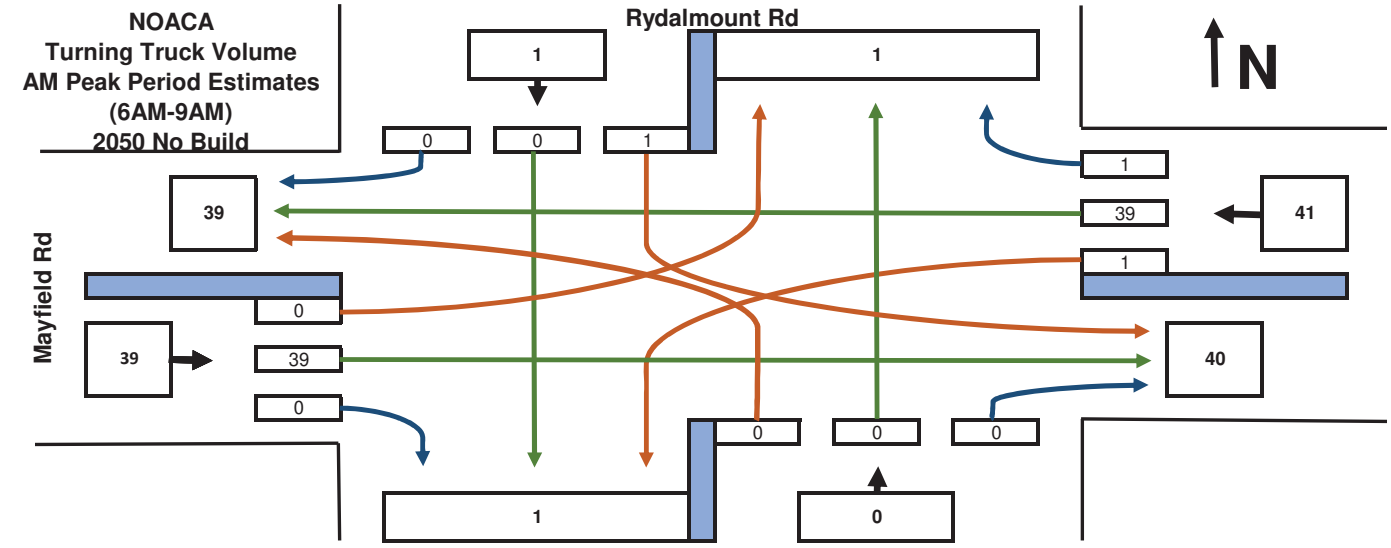


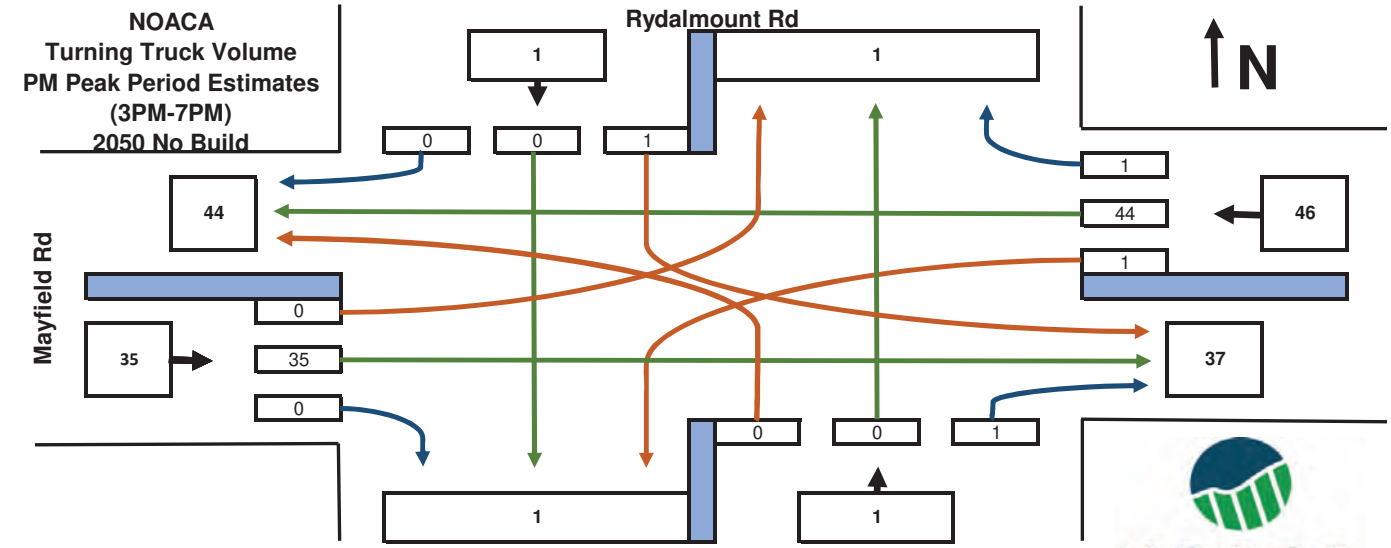


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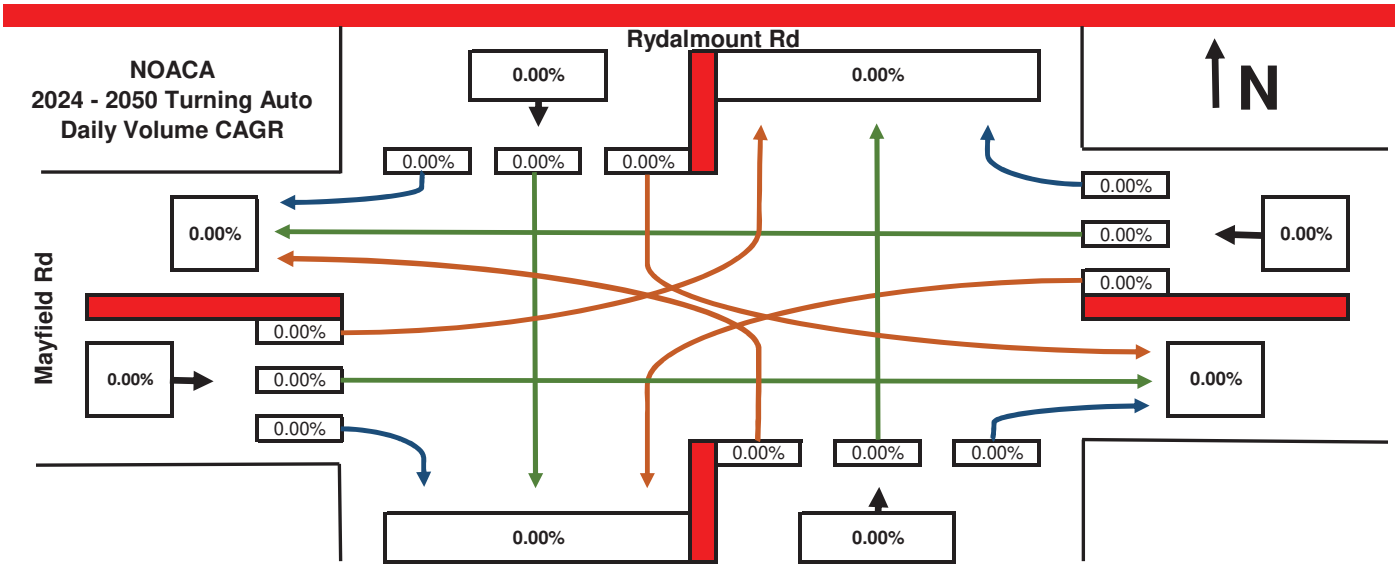

NOACA
Turning Truck Volume
Daily Estimates
2024 No Build
Rydalmount Rd
N
Mayfield Rd
7
7
0
0
7
212
212
223
7
3
0
209
209
219
0
0
0
3
3
3
NOACA
Turning Truck Volume
AM Peak Period Estimates
(6AM-9AM)
2024 No Build
Rydalmount Rd
N
Mayfield Rd
1
2
0
0
1
42
42
44
2
1
0
40
40
42
0
0
0
1
1
1
NOACA
Turning Truck Volume
PM Peak Period Estimates
(3PM-7PM)
2024 No Build
Rydalmount Rd
N
Mayfield Rd
1
2
0
0
1
47
47
49
2
1
0
40
40
42
0
0
0
1
1
1
NOACA
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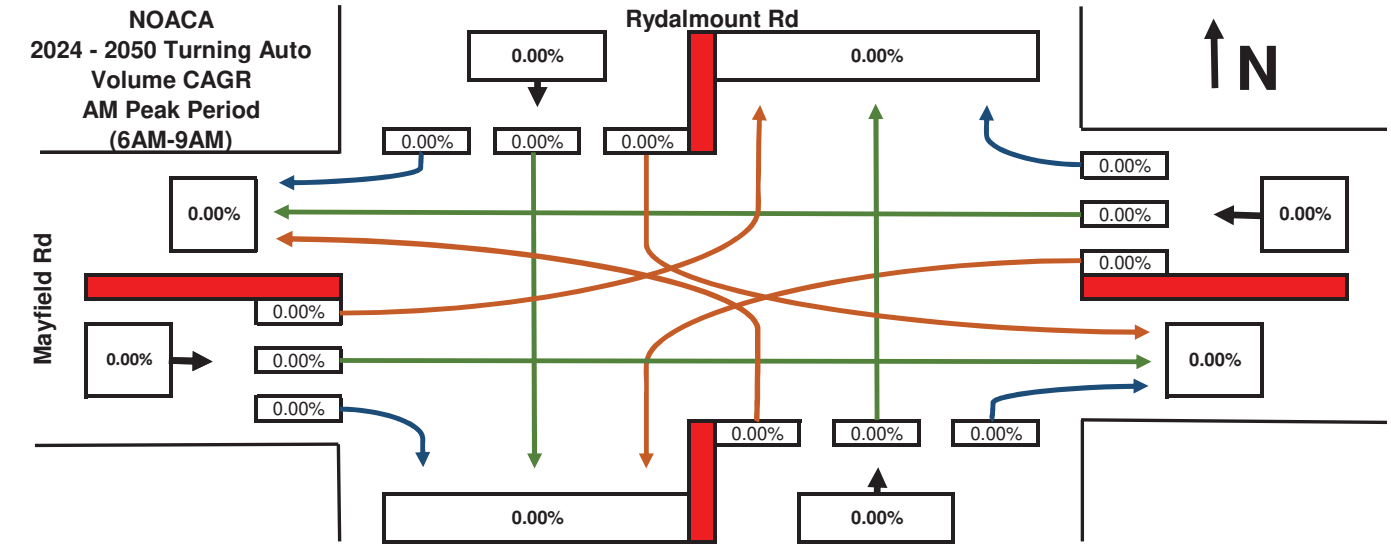


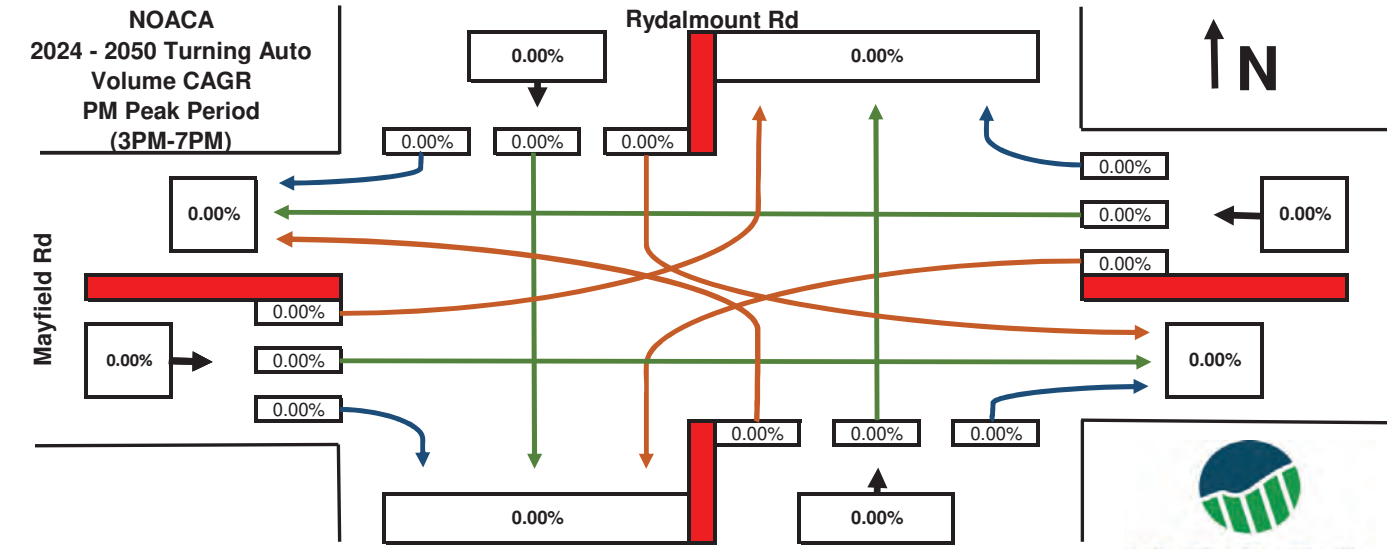




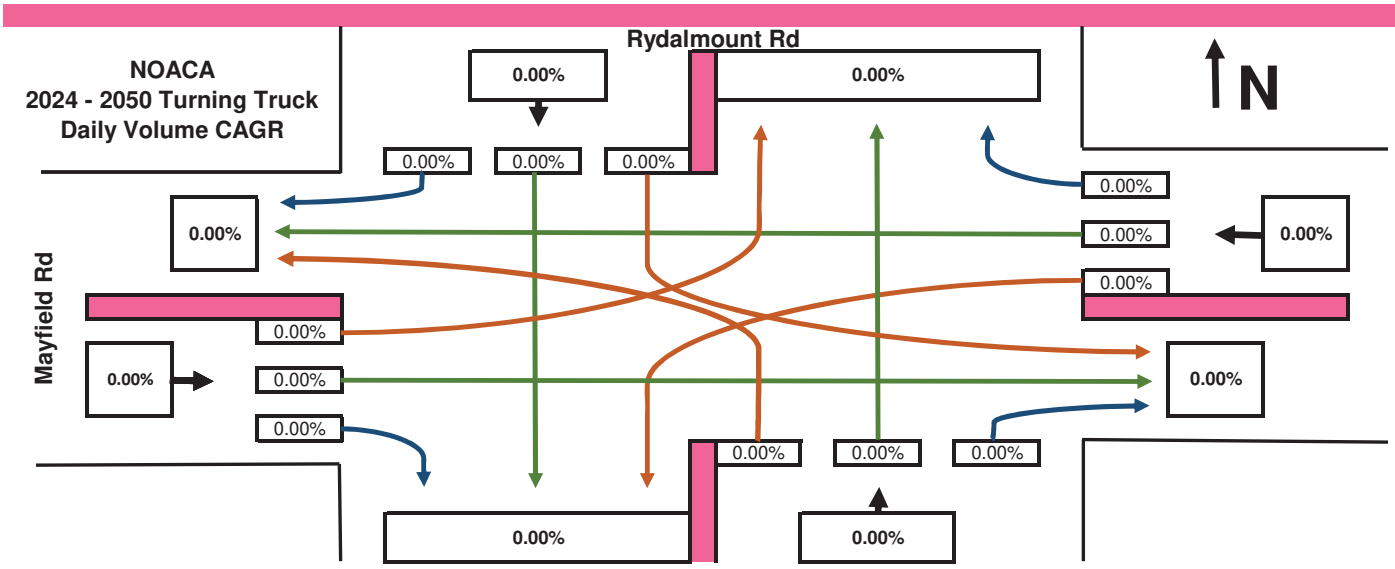
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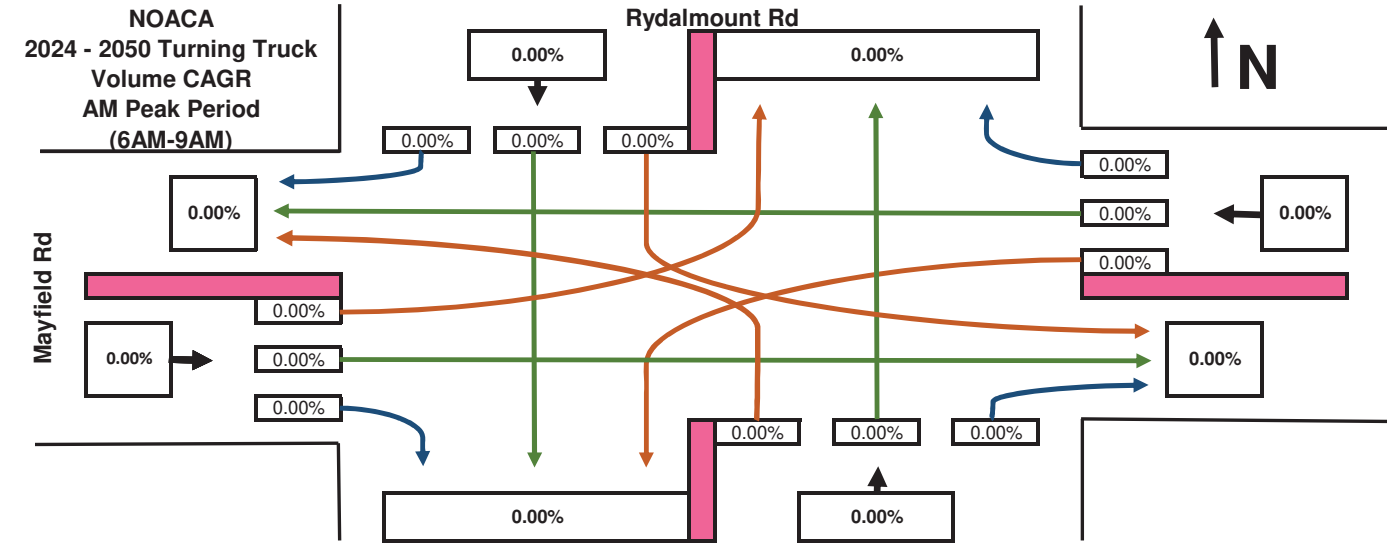


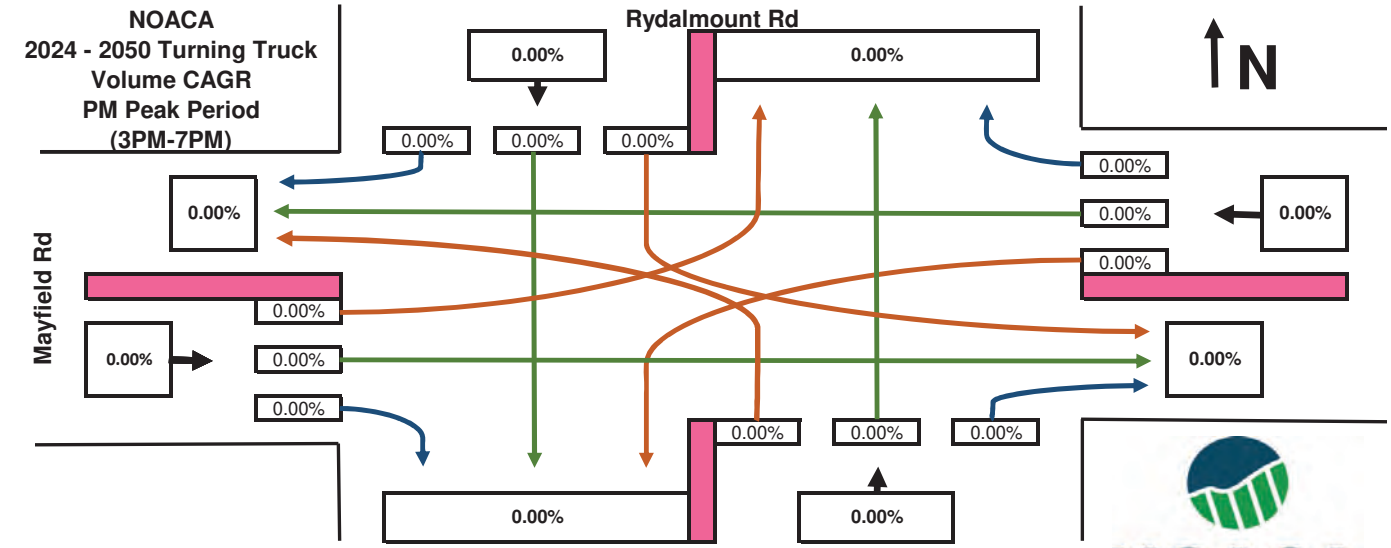




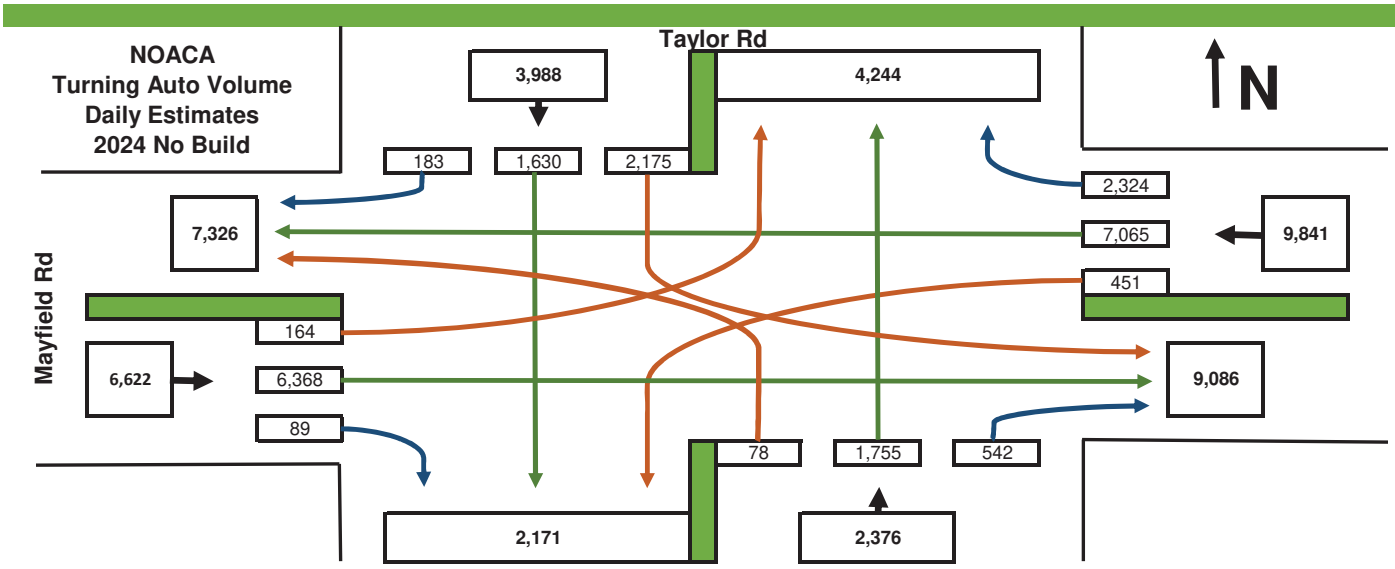
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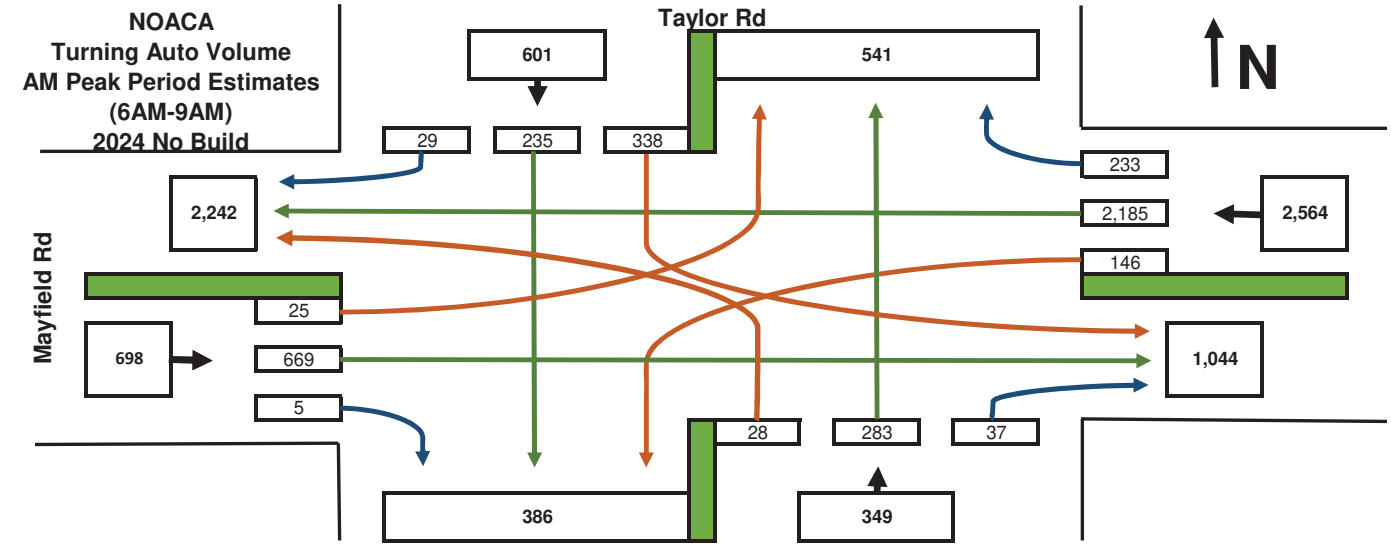


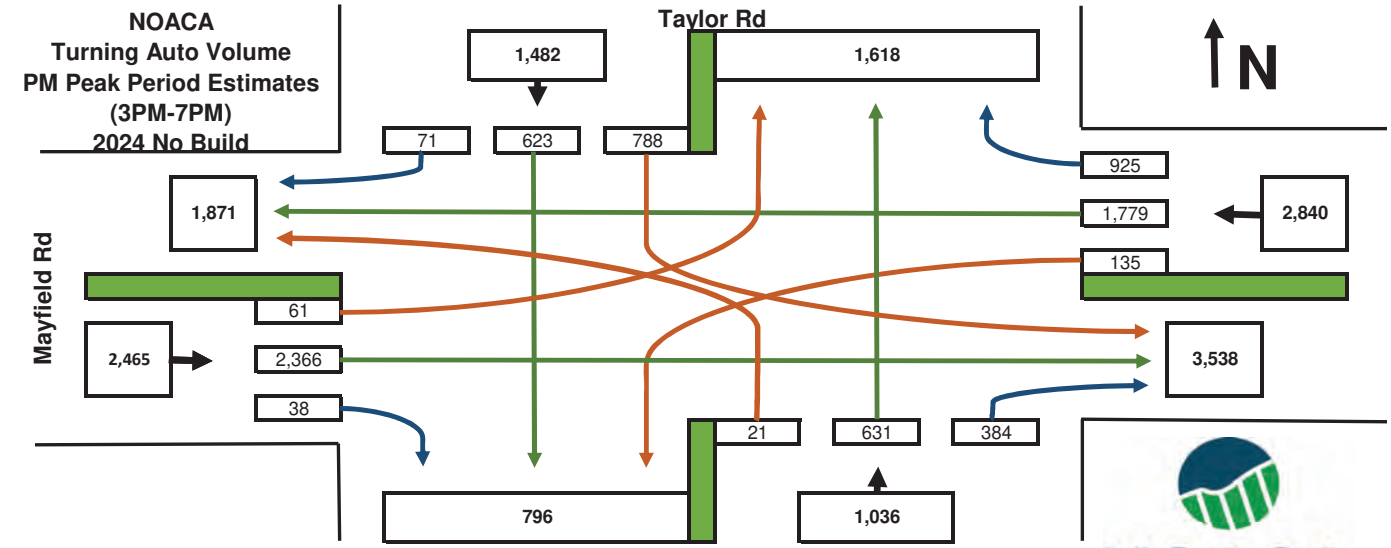




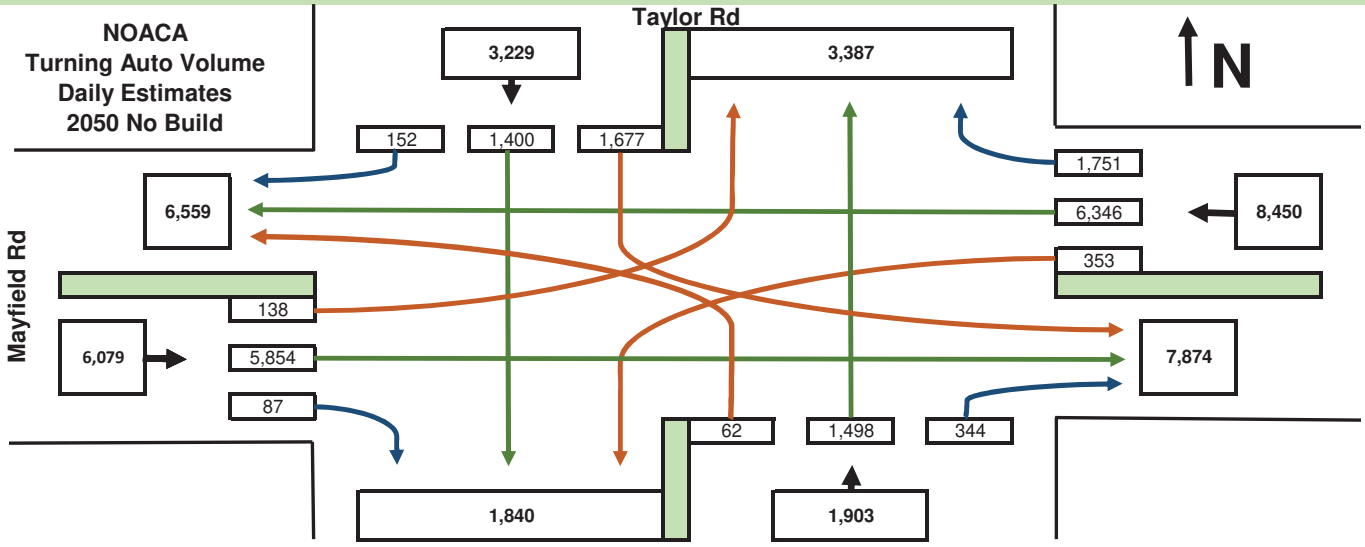
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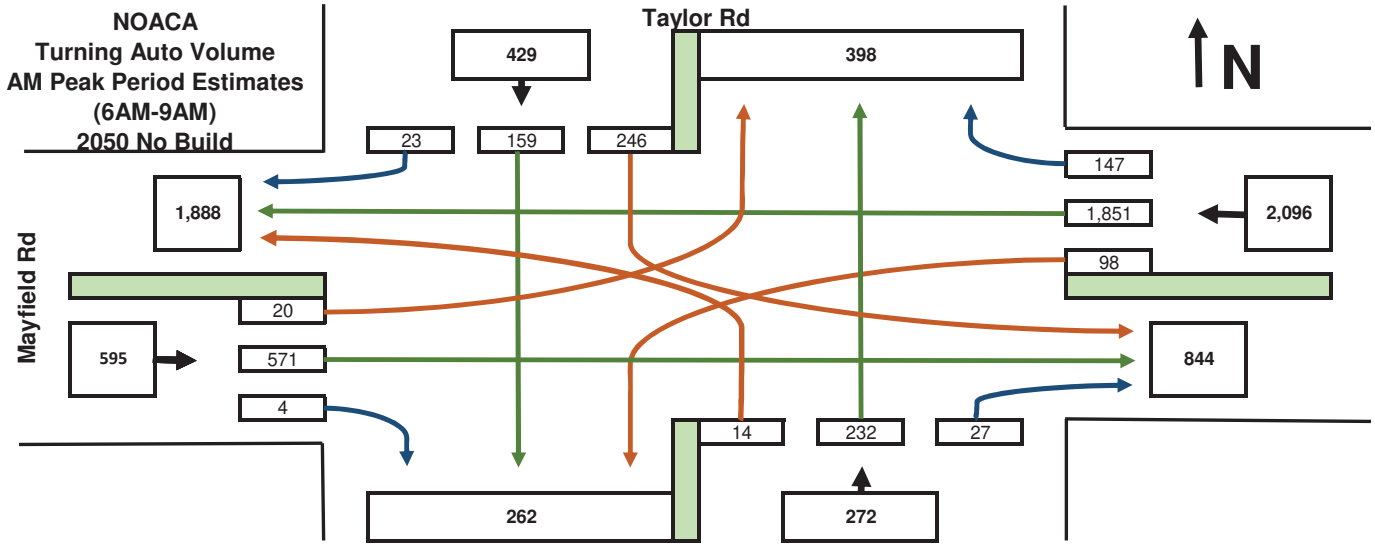


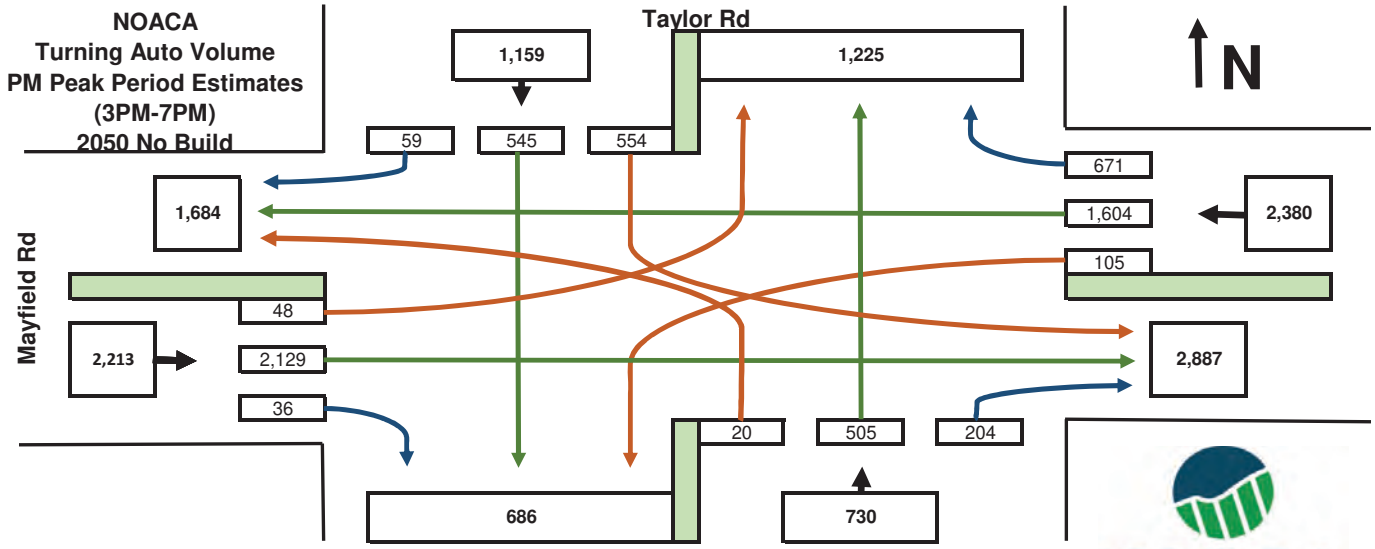




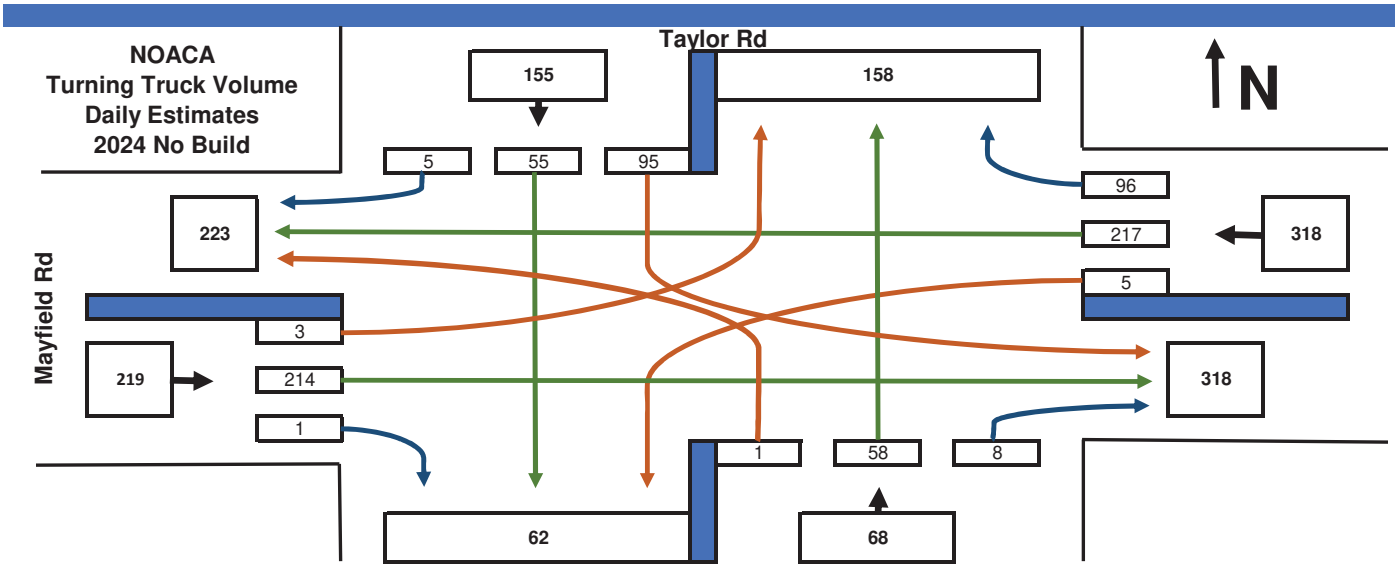
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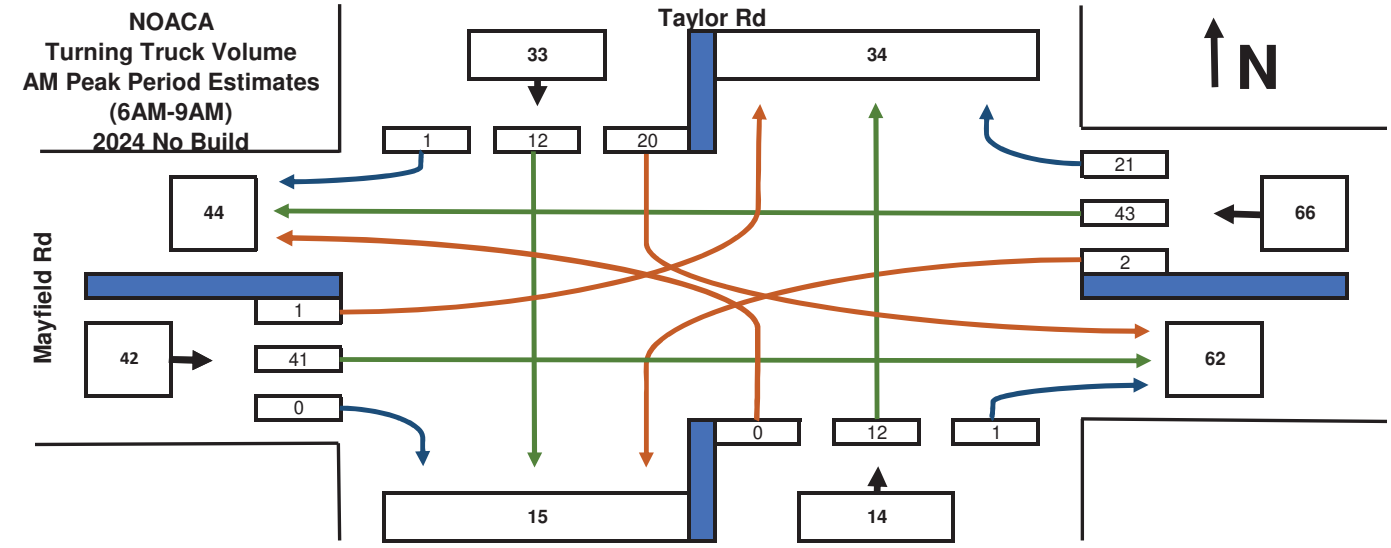


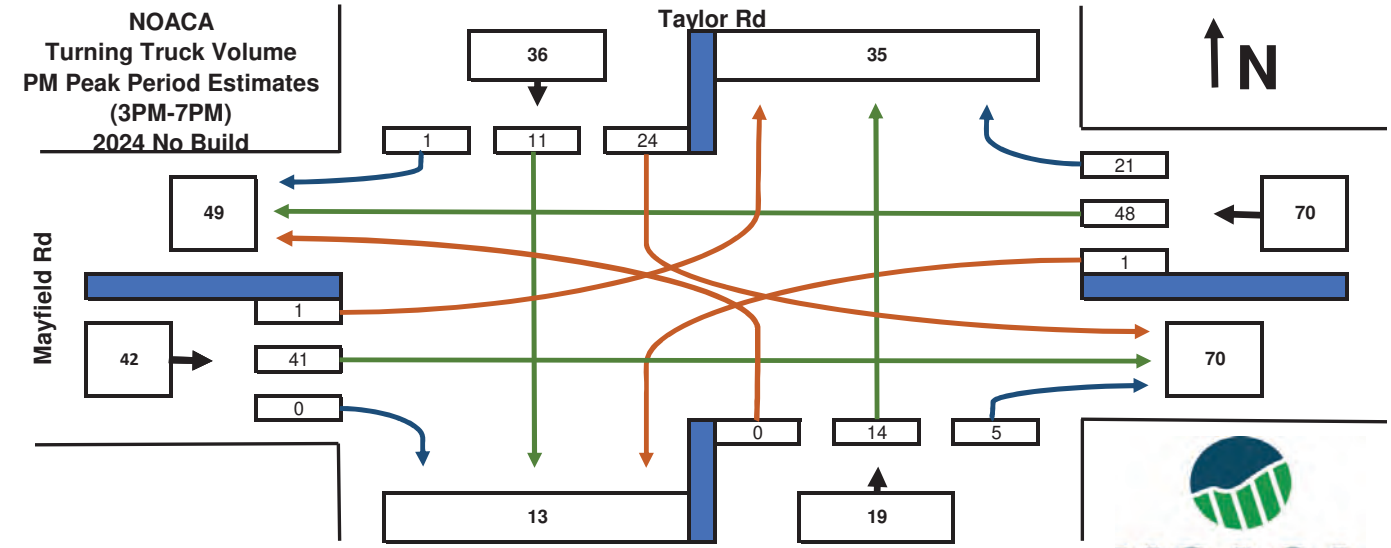




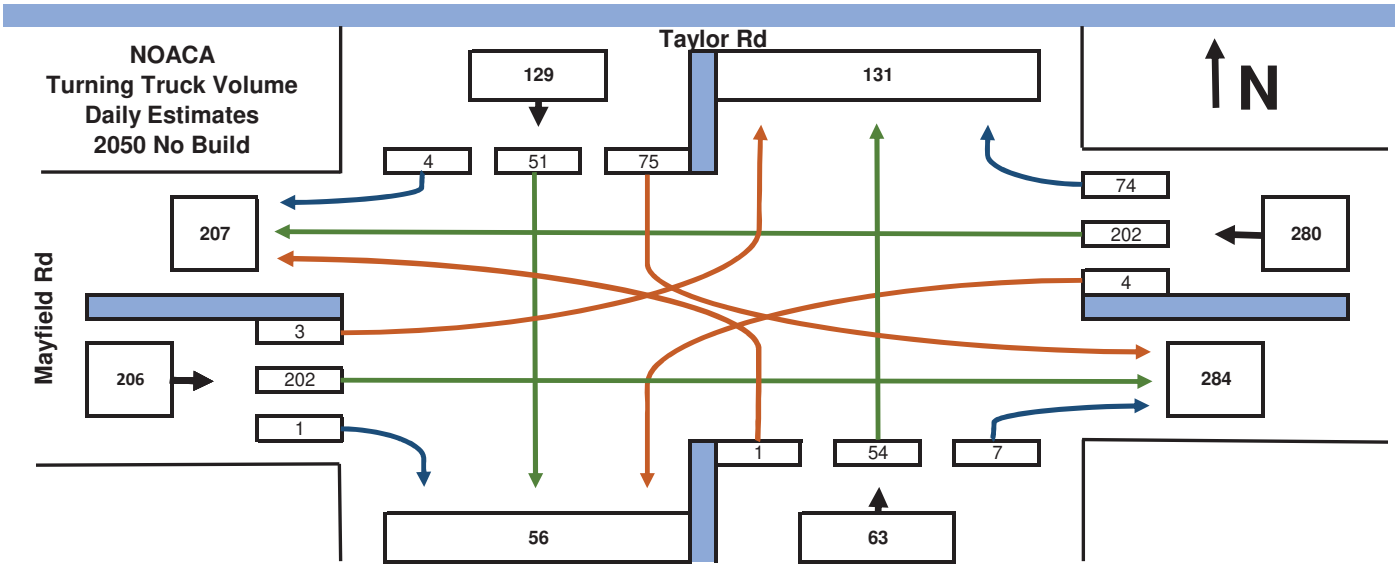
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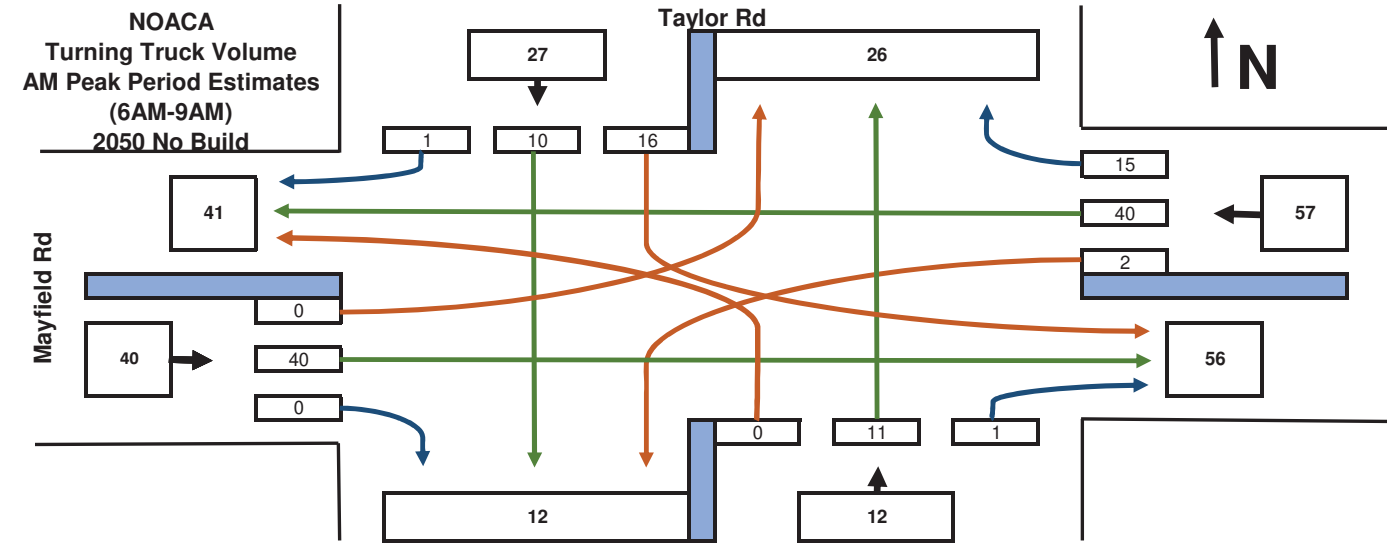


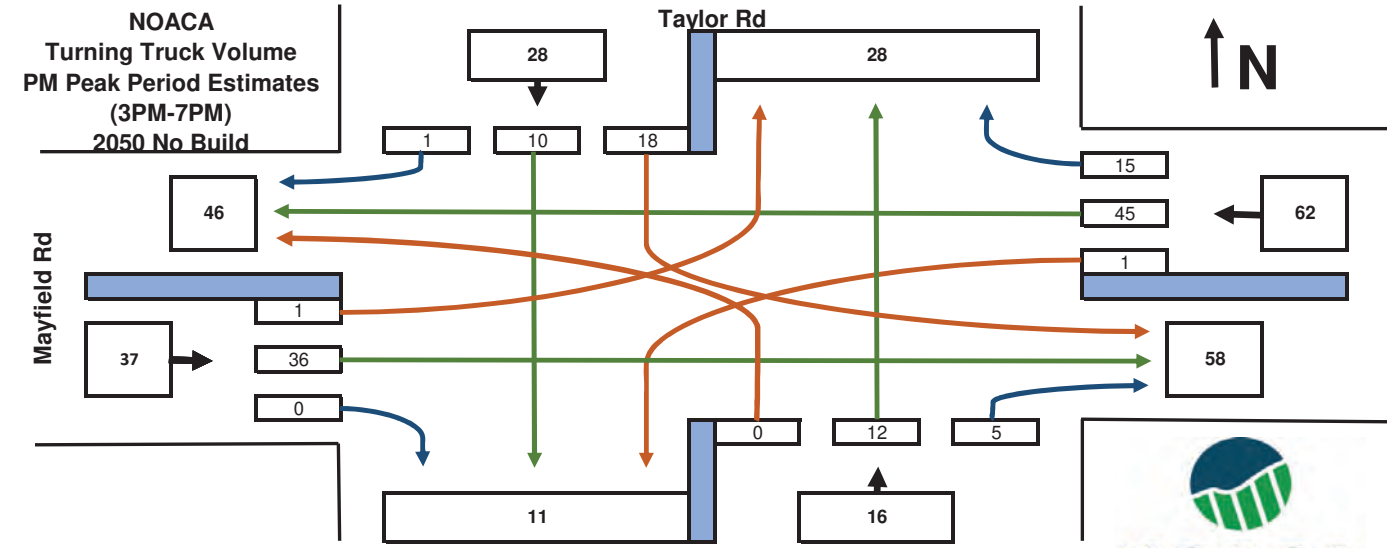




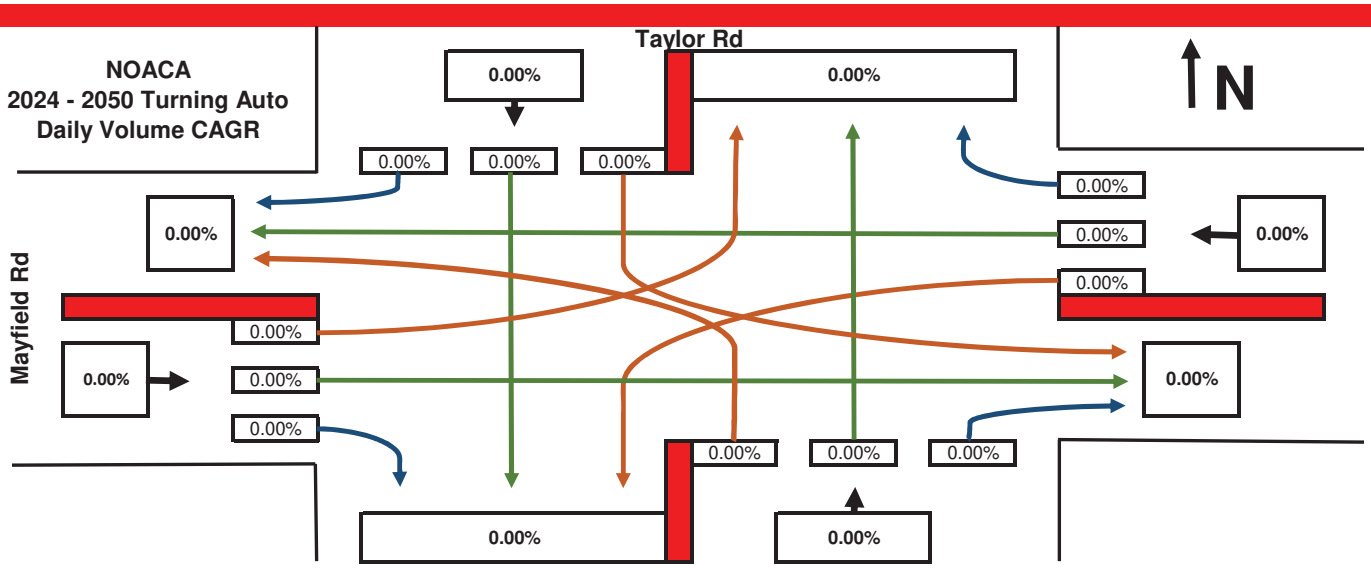
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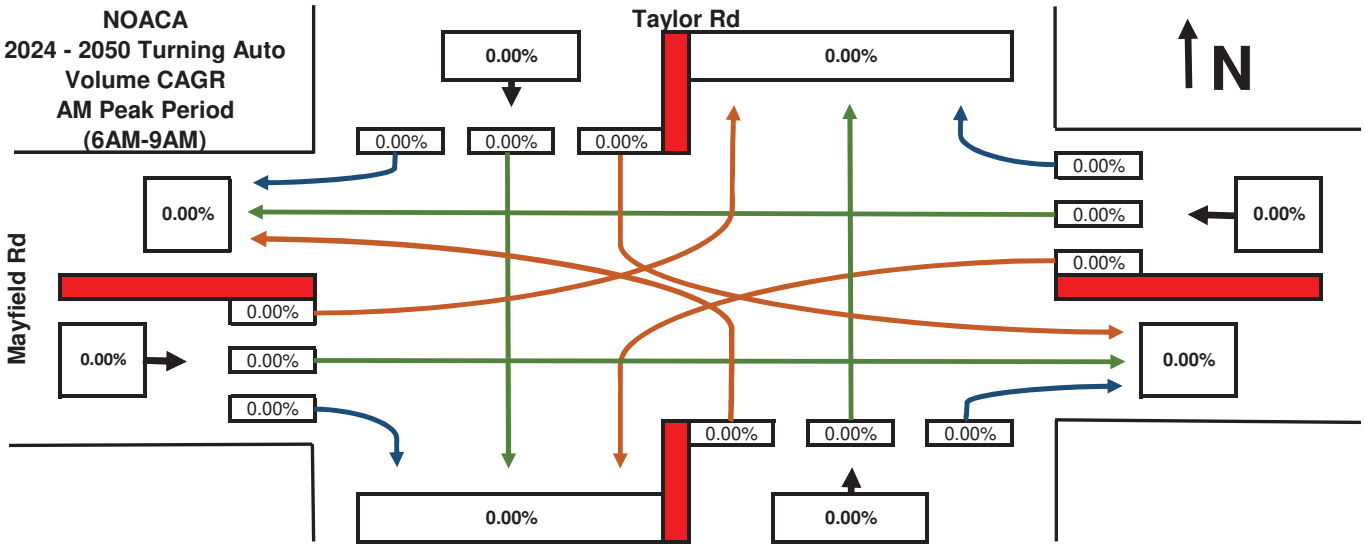


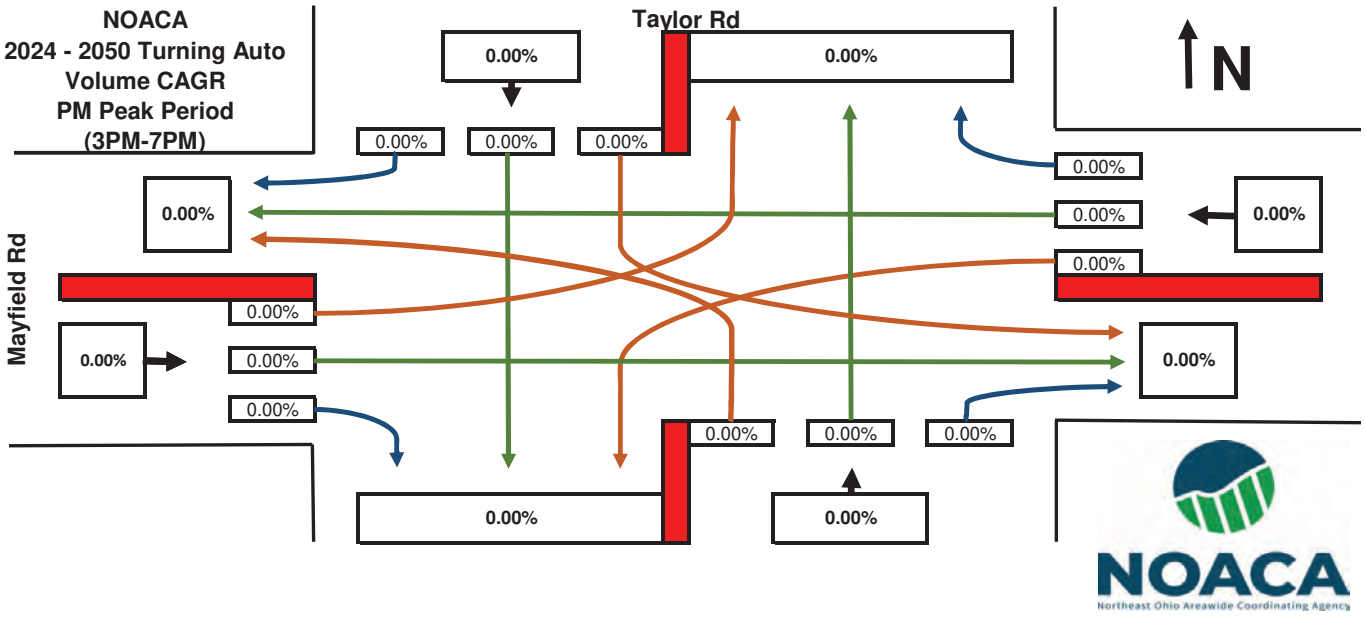


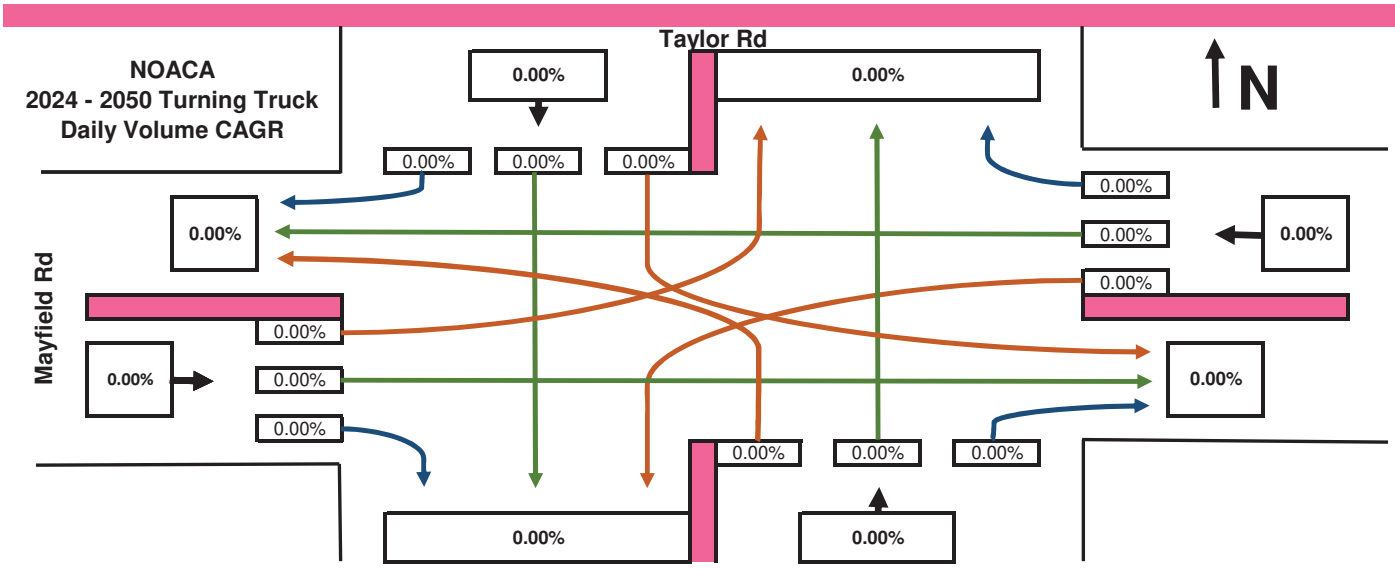


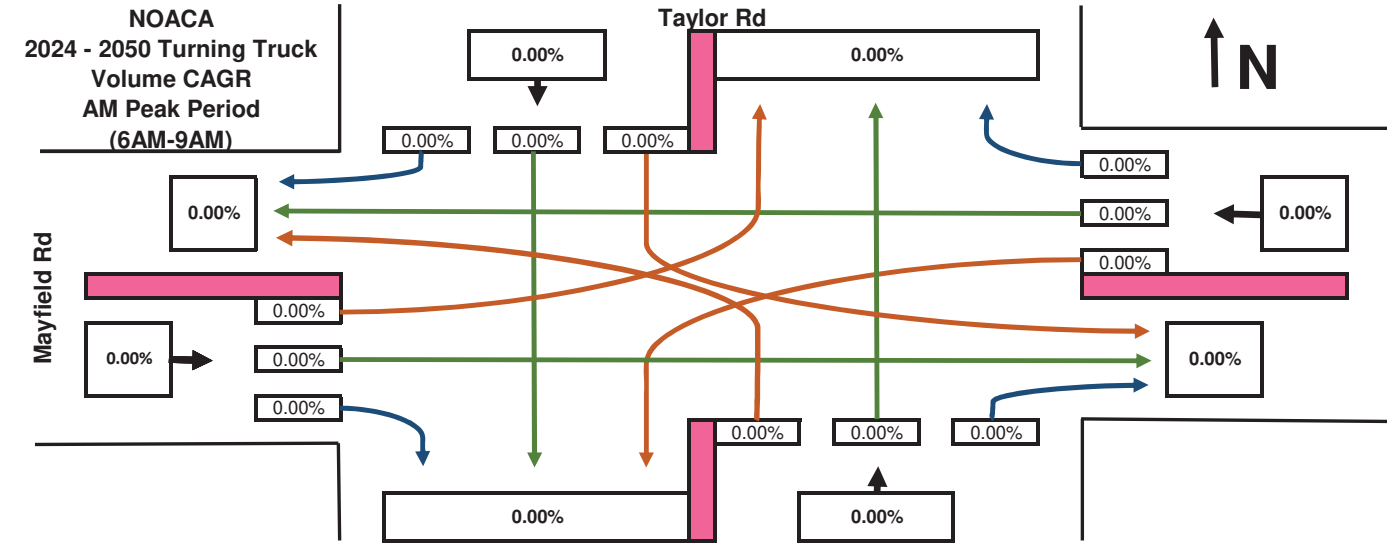
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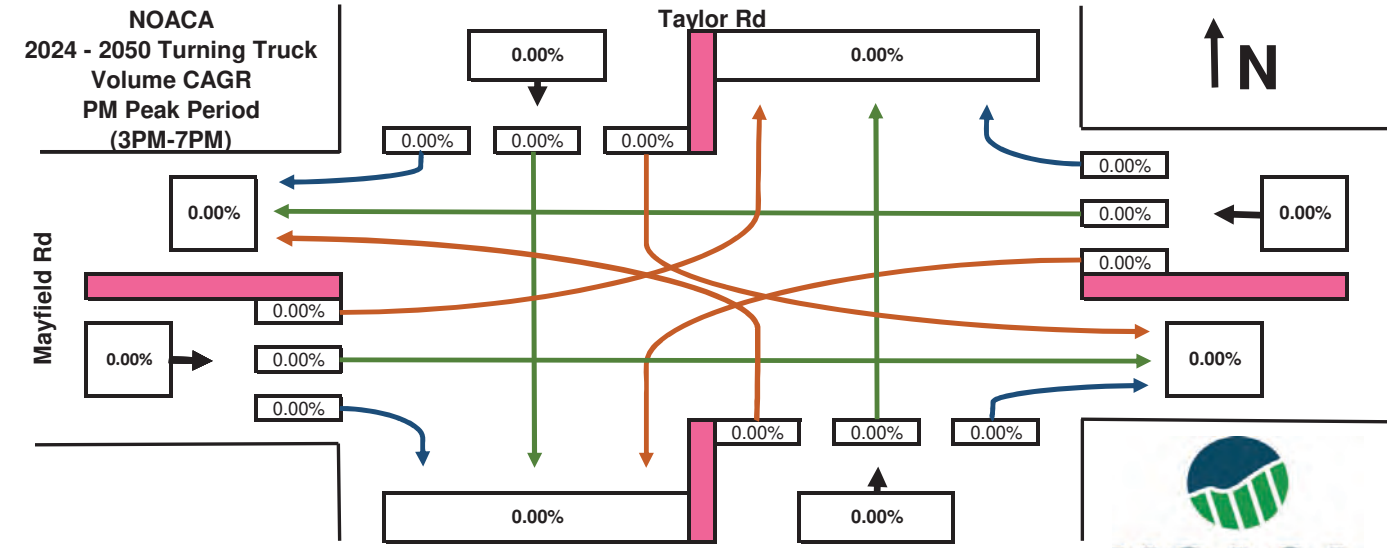

NOACA
2024 - 2050 Turning Auto
Daily Volume CAGR
Taylor Rd
Mayfield Rd
N
0.00%


NOACA
2024 - 2050 Turning Auto
Volume CAGR
AM Peak Period
(6AM-9AM)
Taylor Rd
Mayfield Rd
N
0.00%

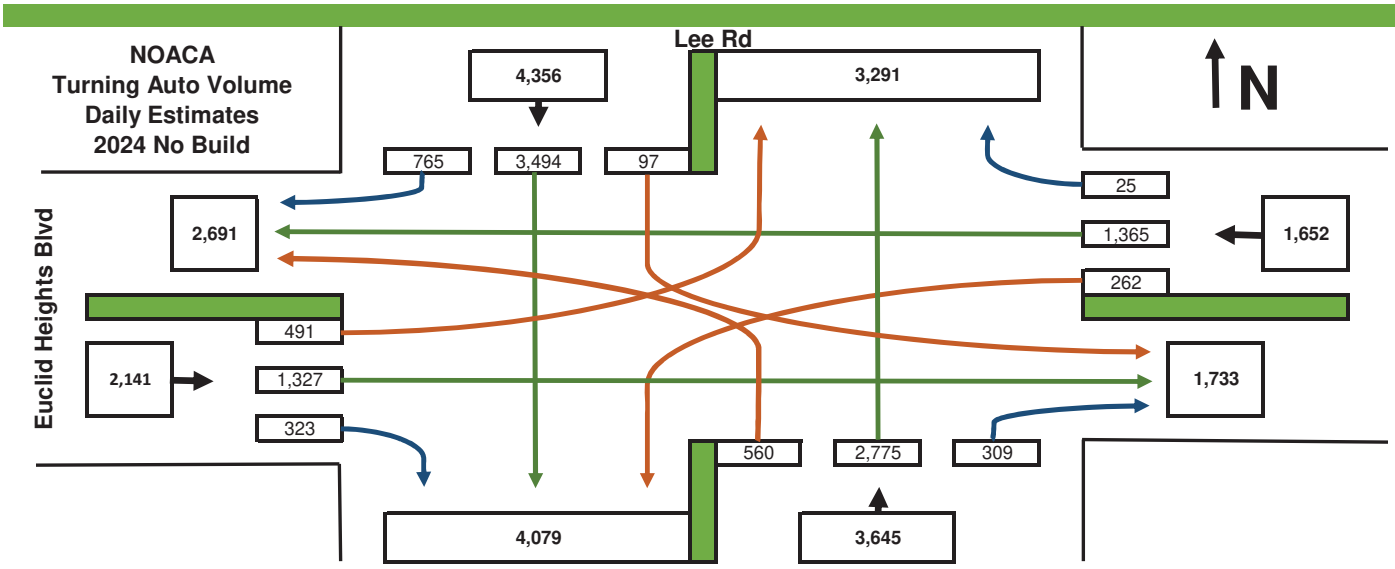

NOACA
2024 - 2050 Turning Auto
Volume CAGR
PM Peak Period
(3PM-7PM)
Taylor Rd
Mayfield Rd
N
0.00%
NOACA
Northeast Ohio Areawide Coordinating Agency

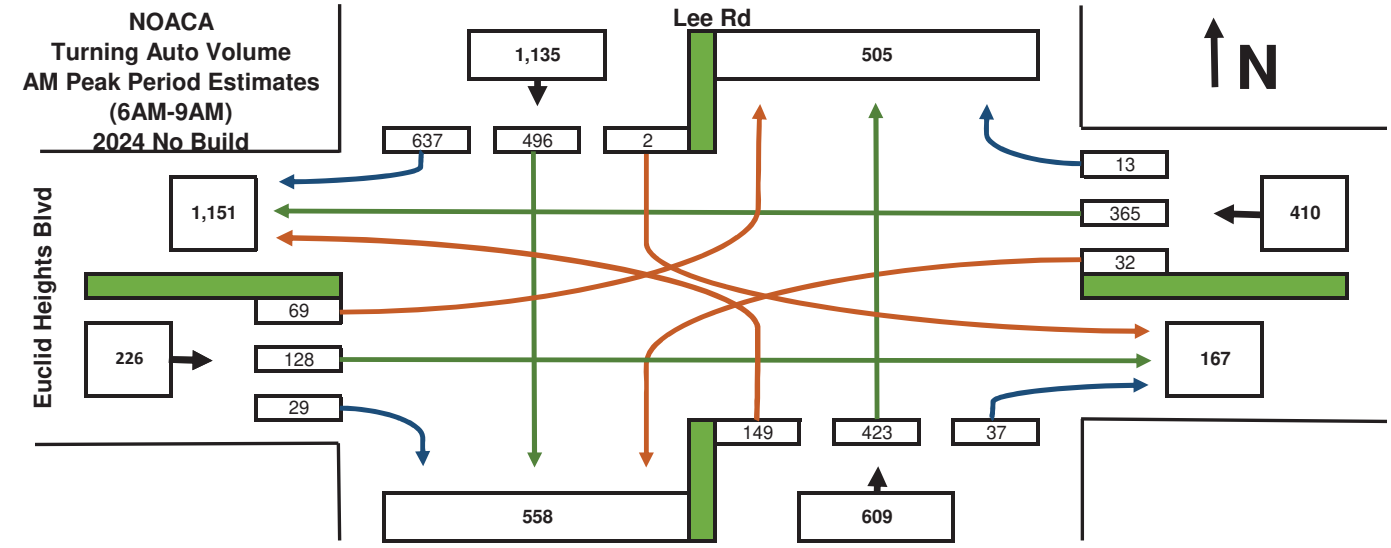


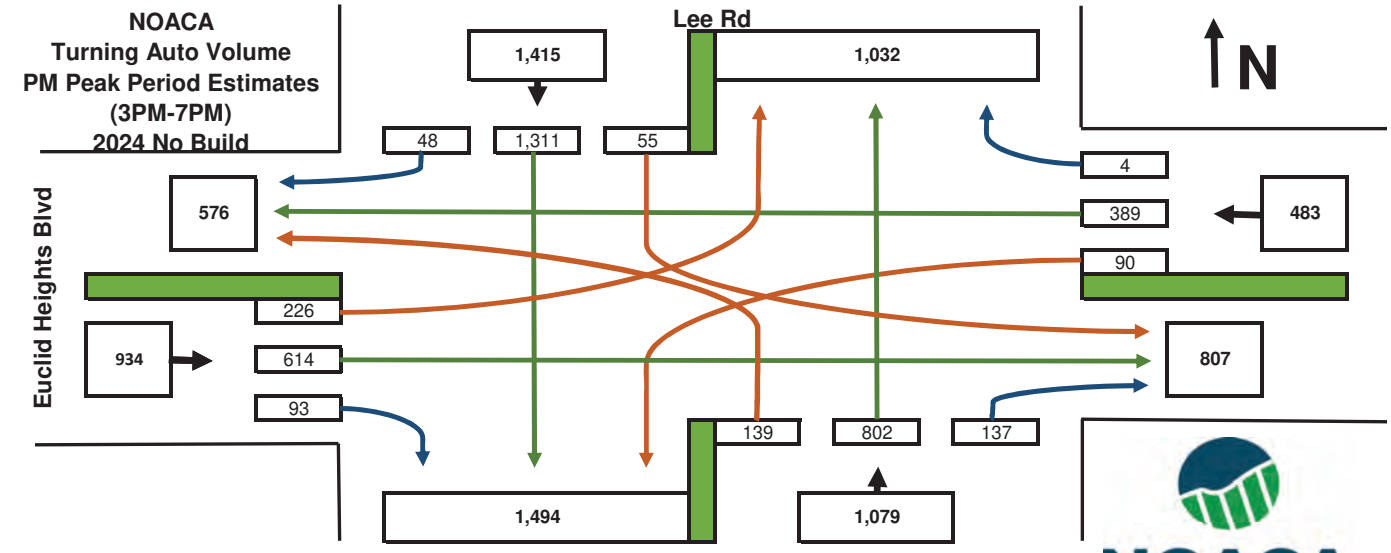




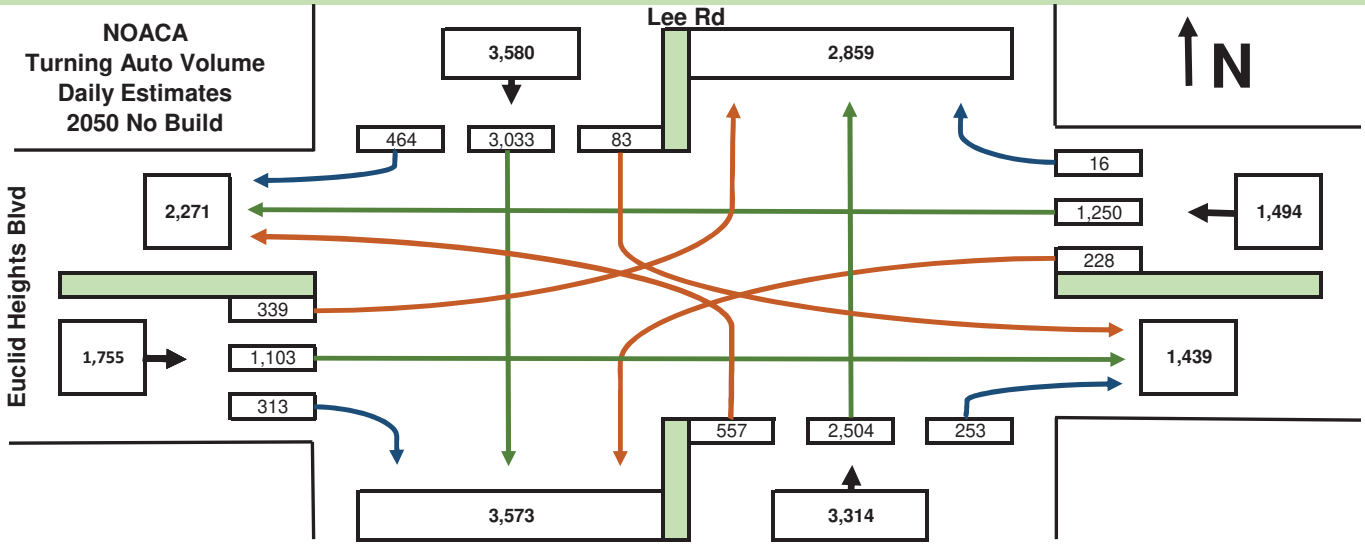
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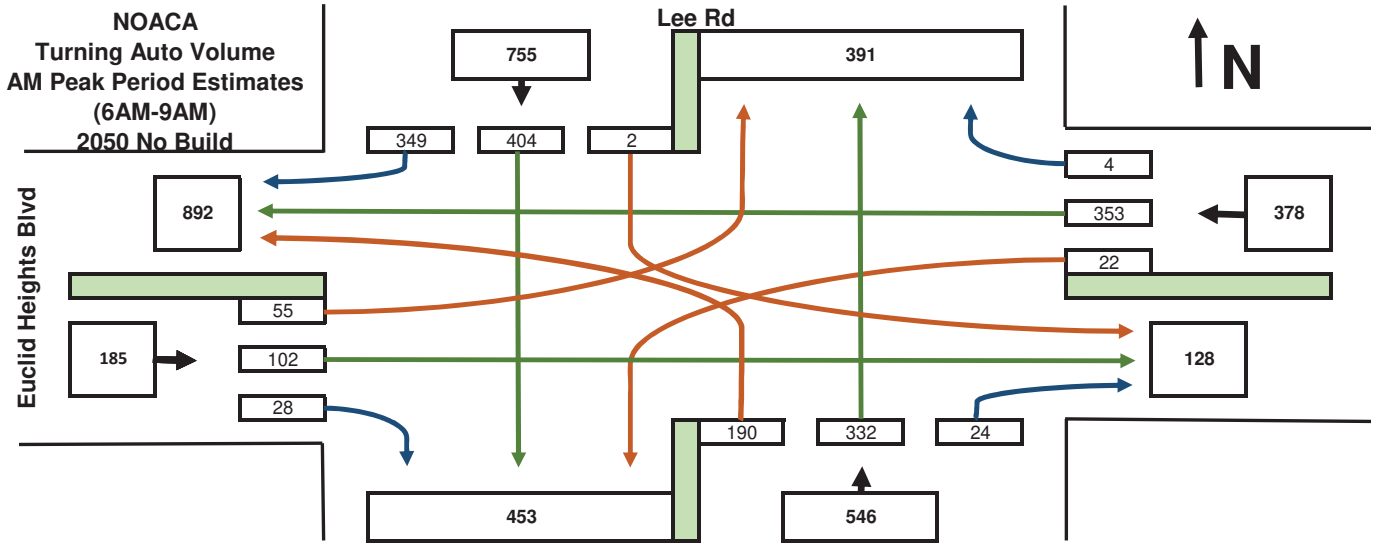


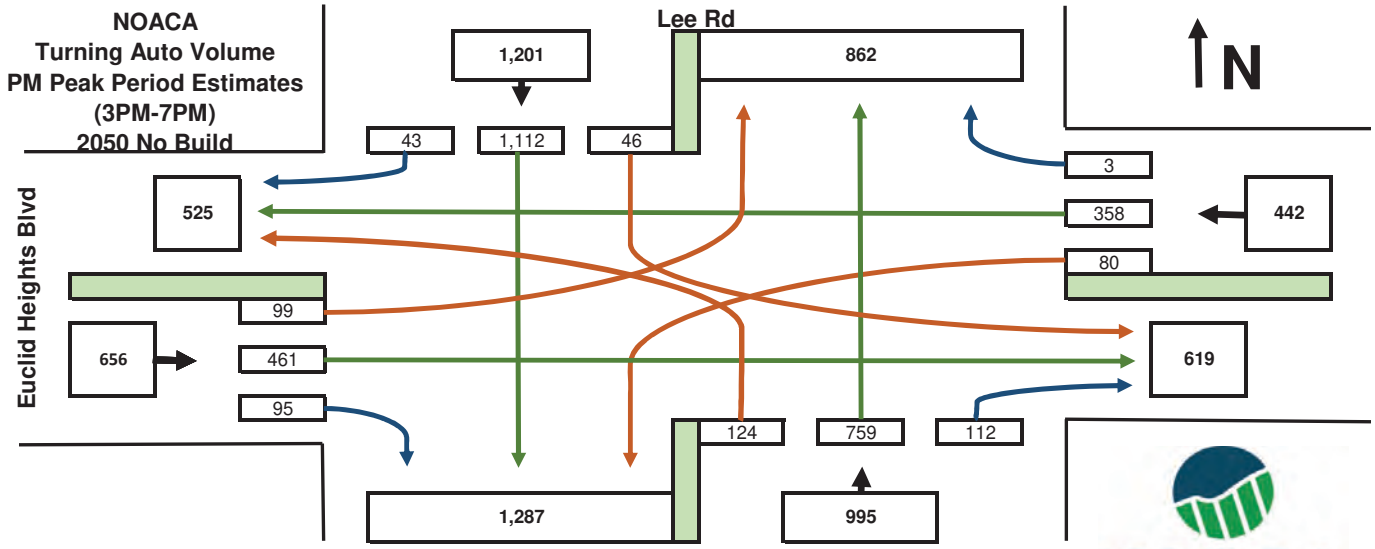




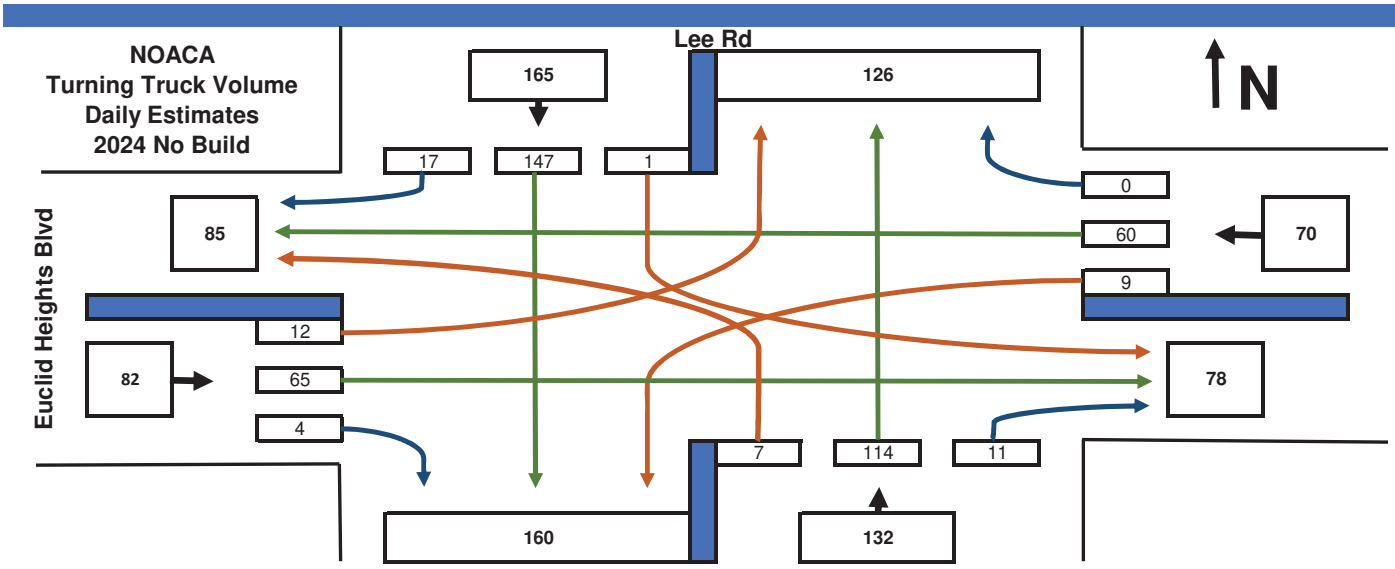
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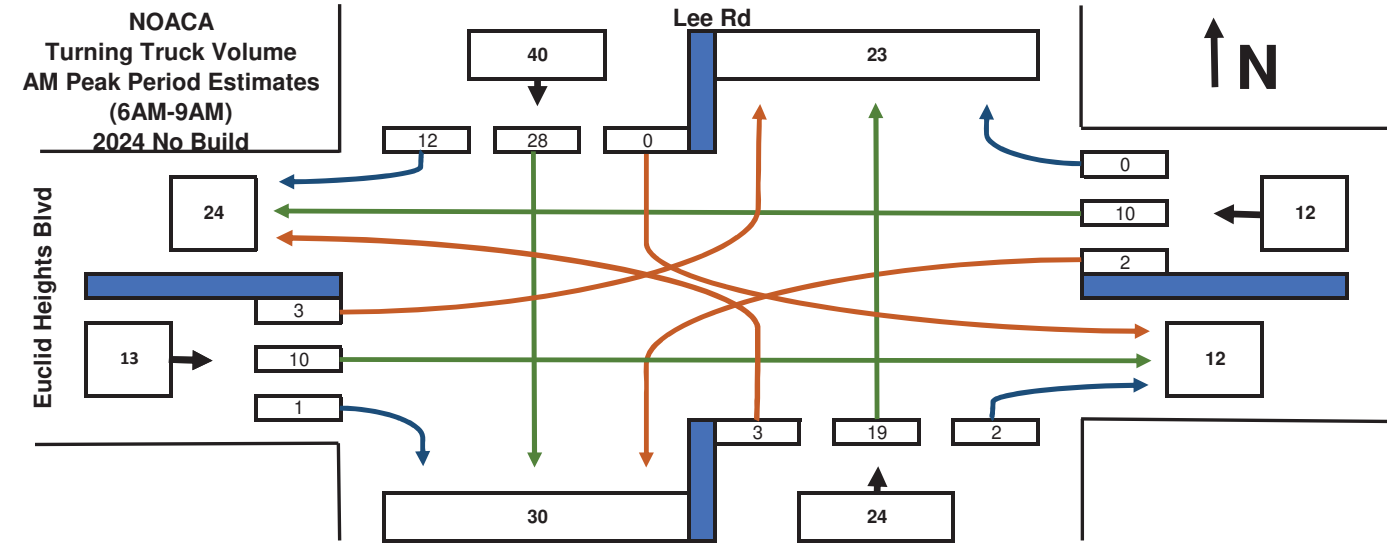


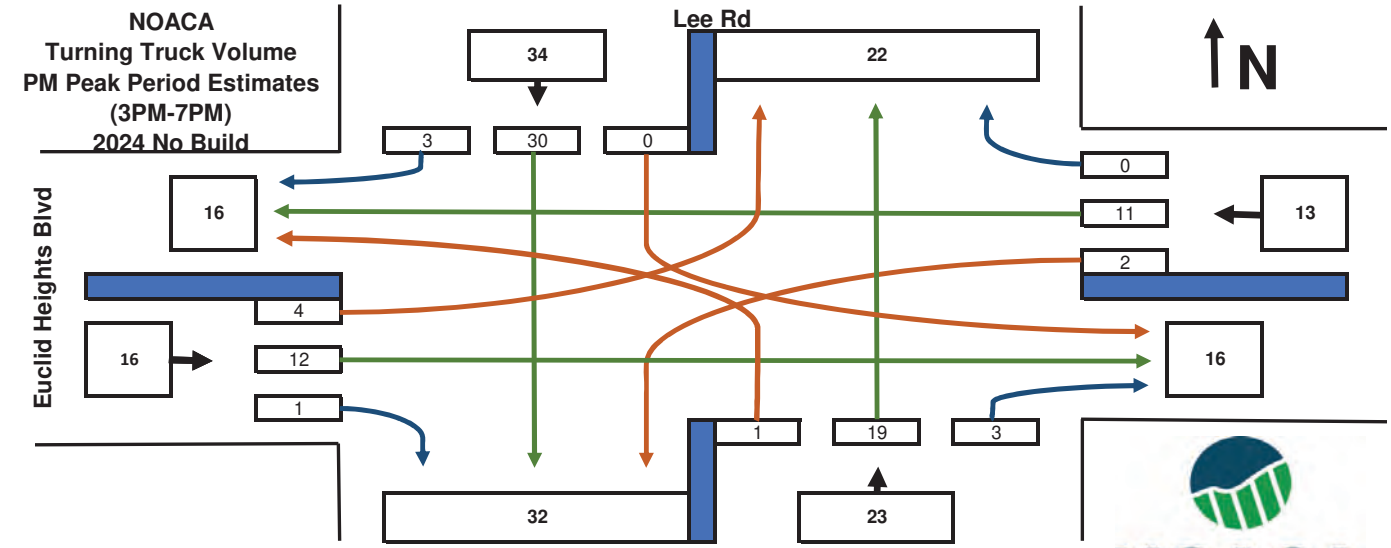




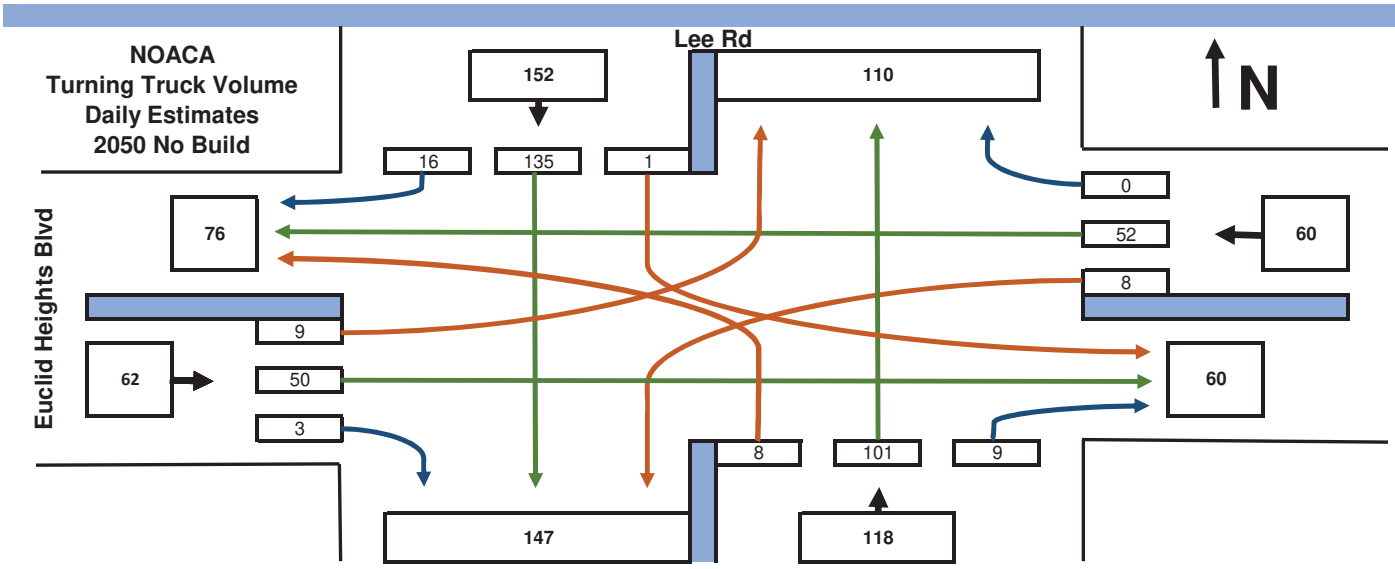
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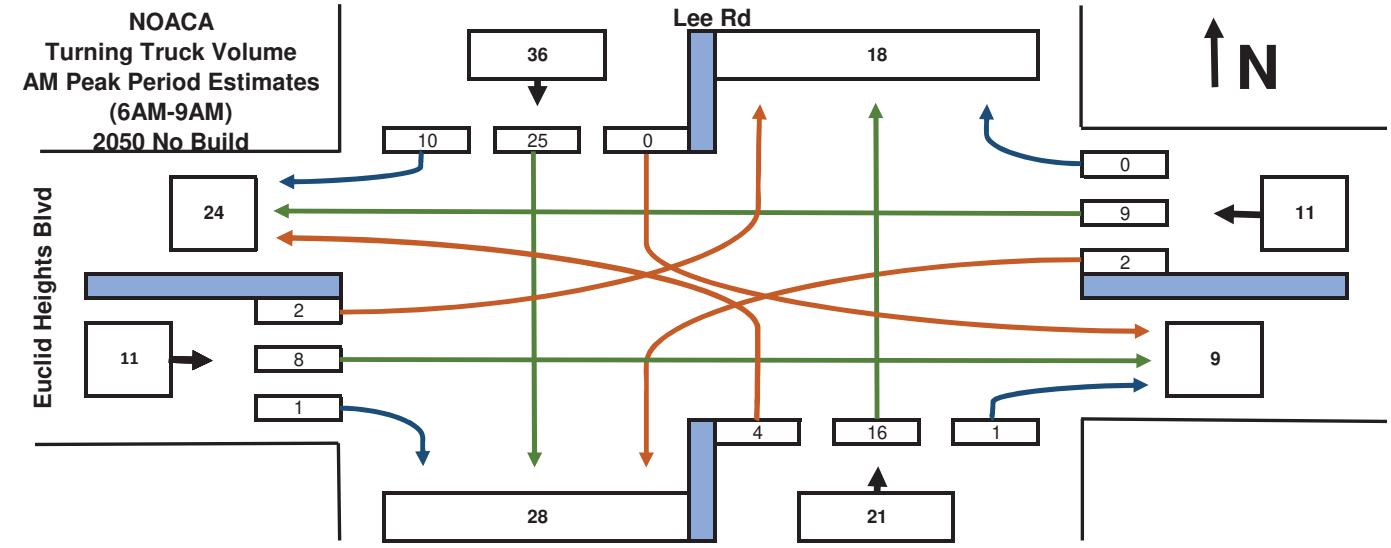


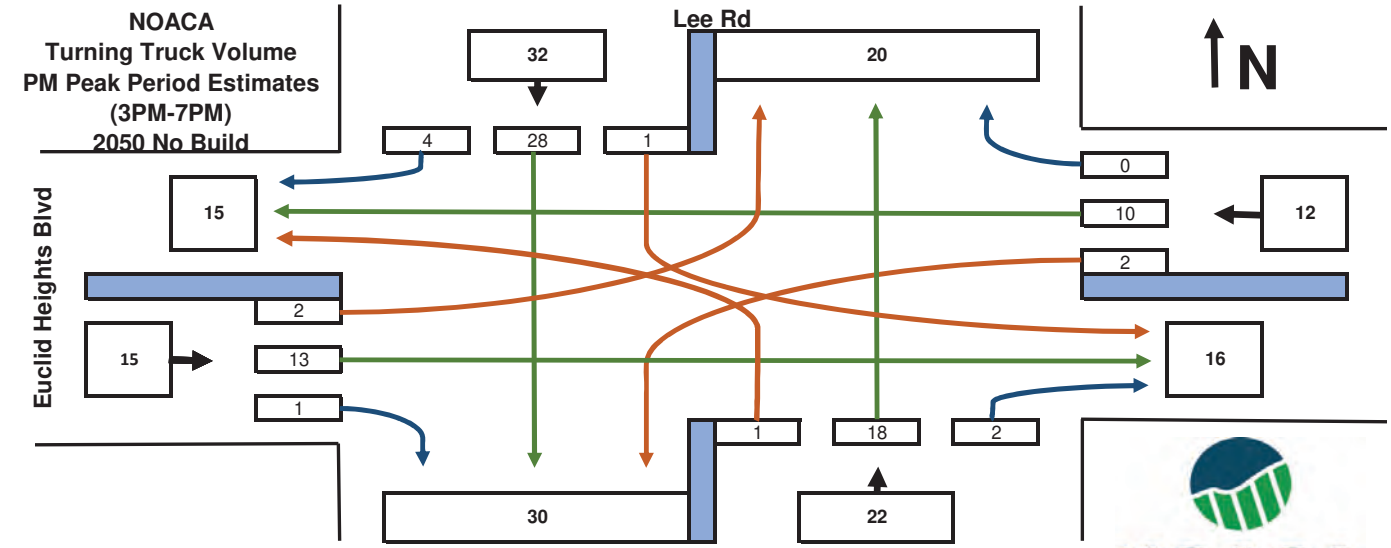




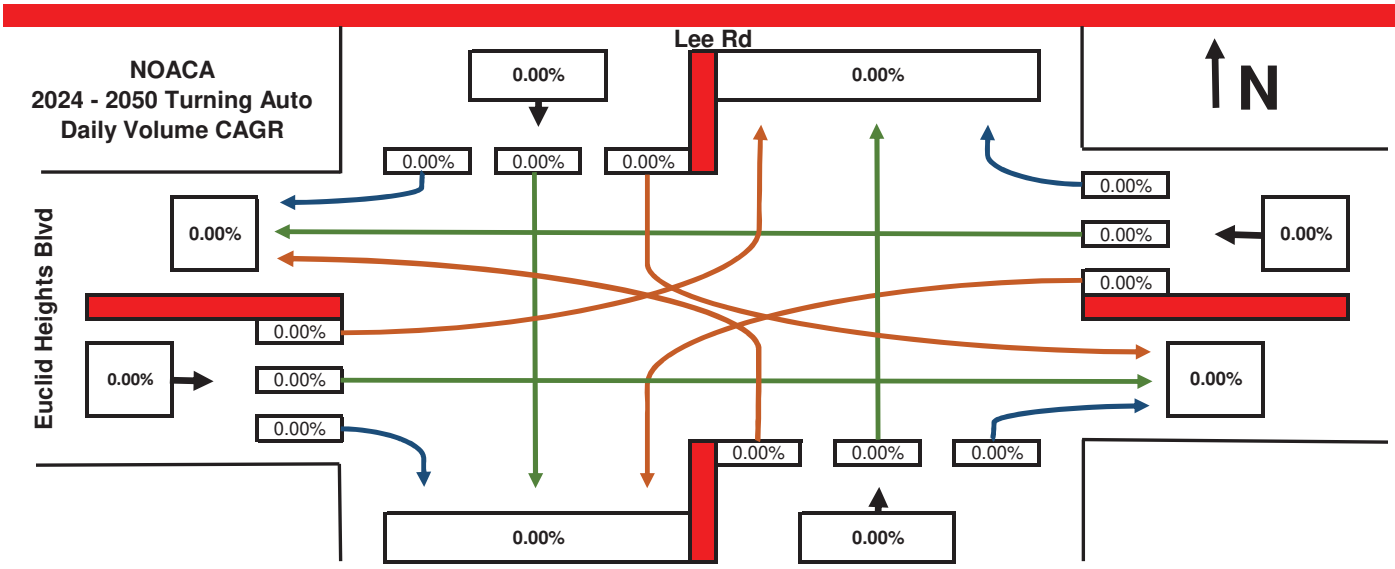
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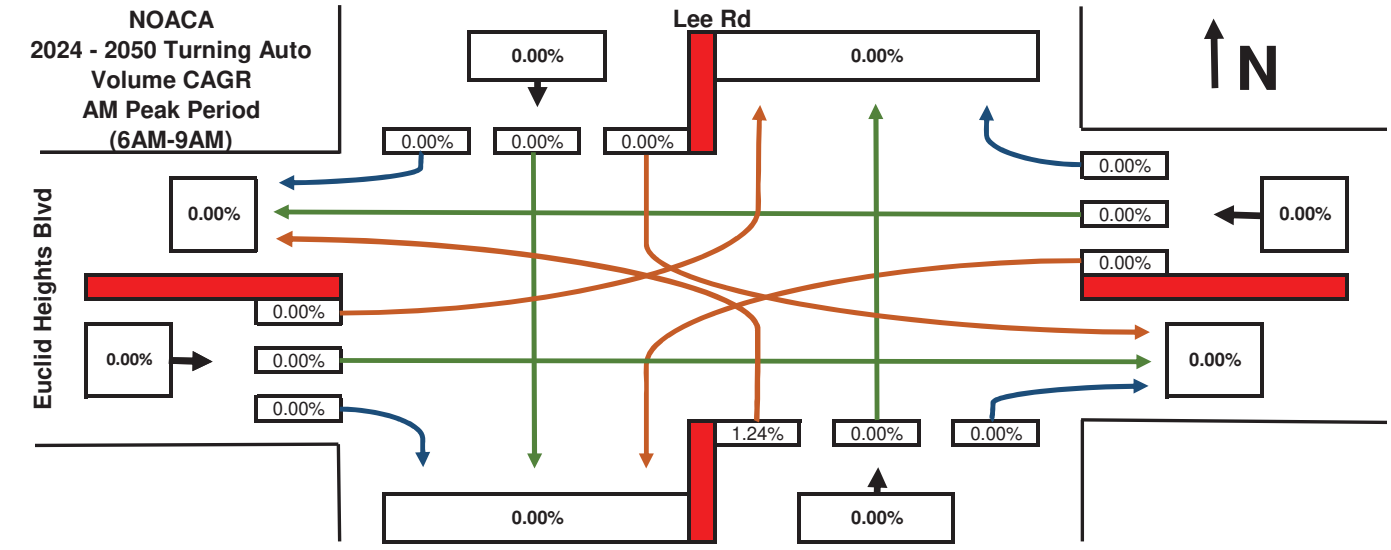


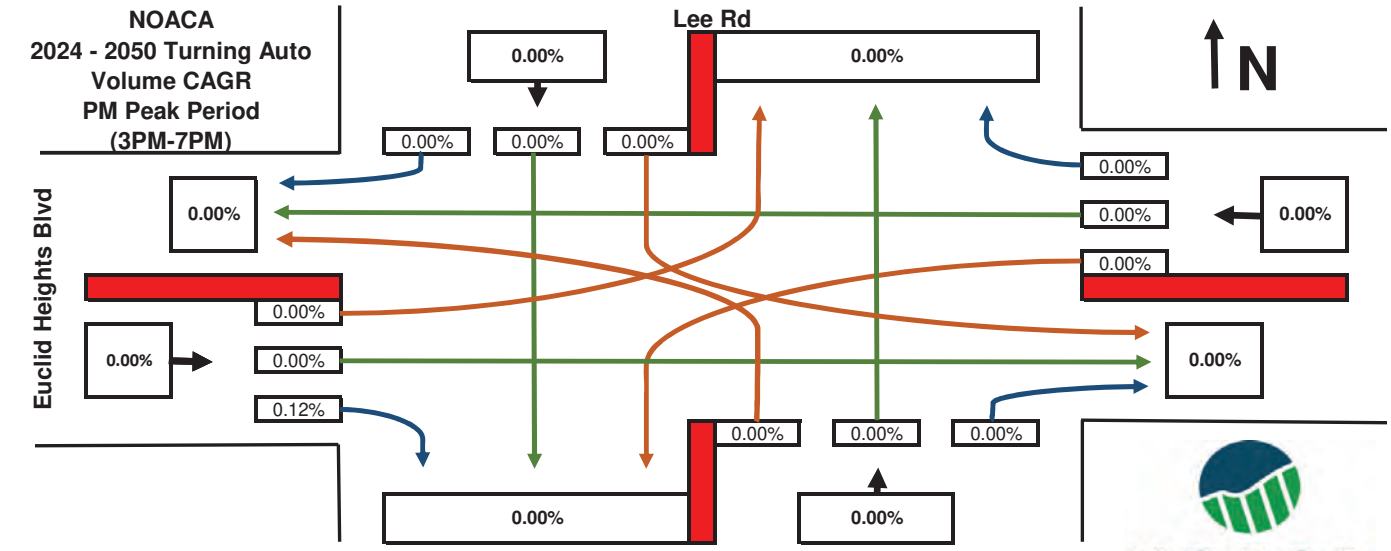




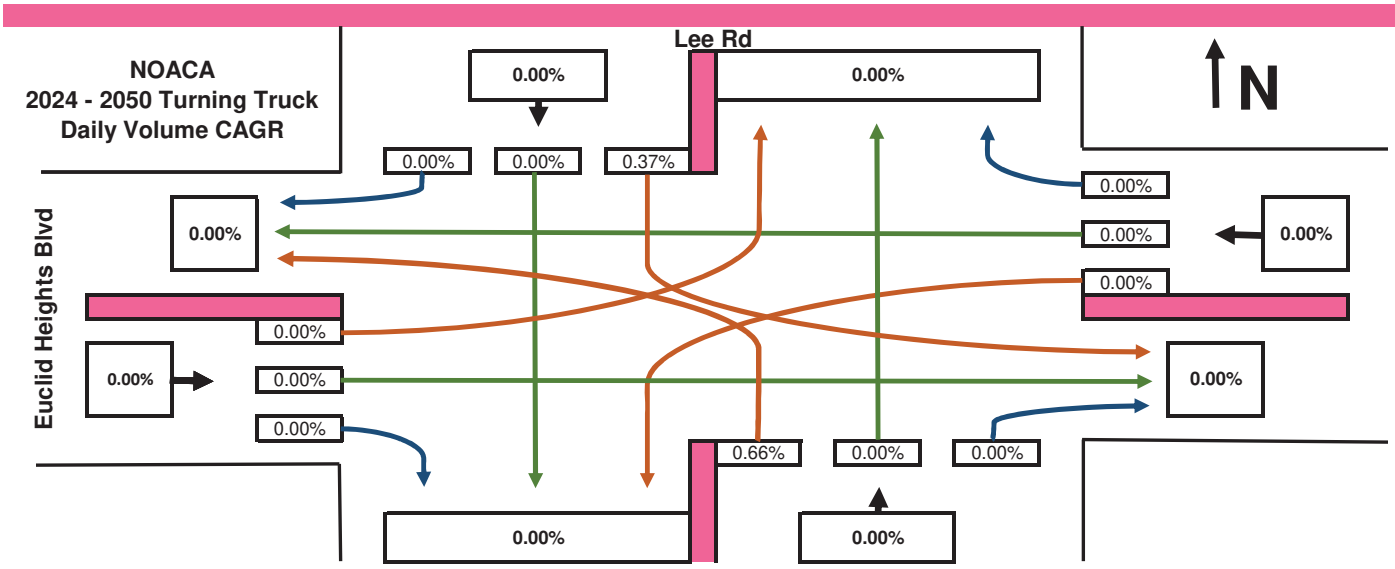
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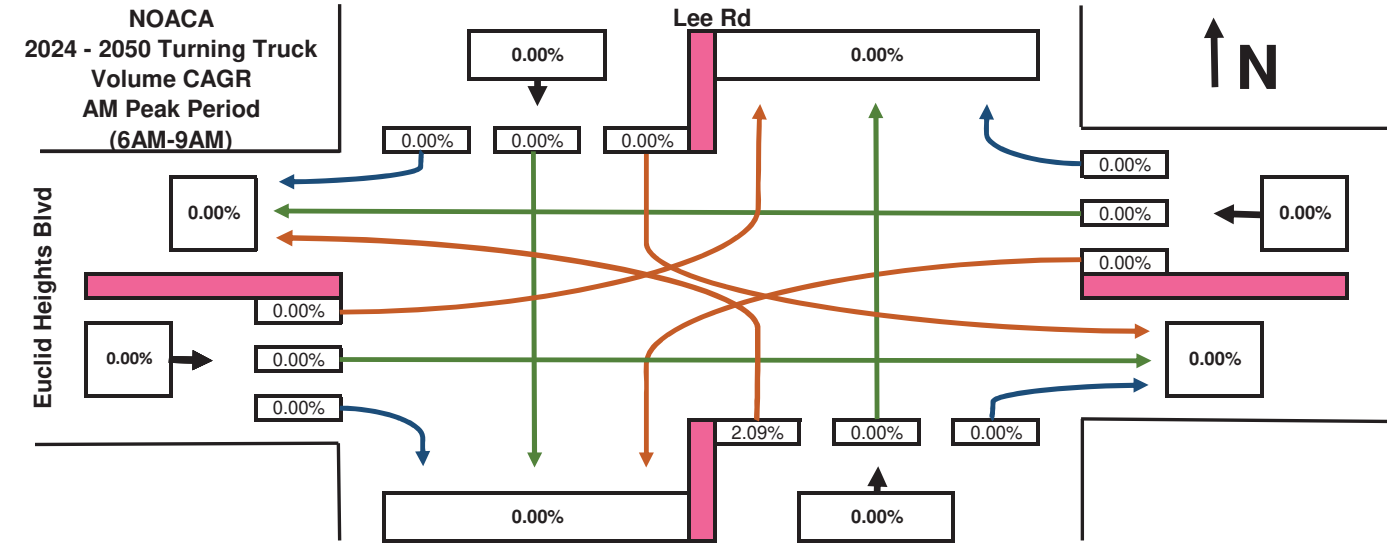


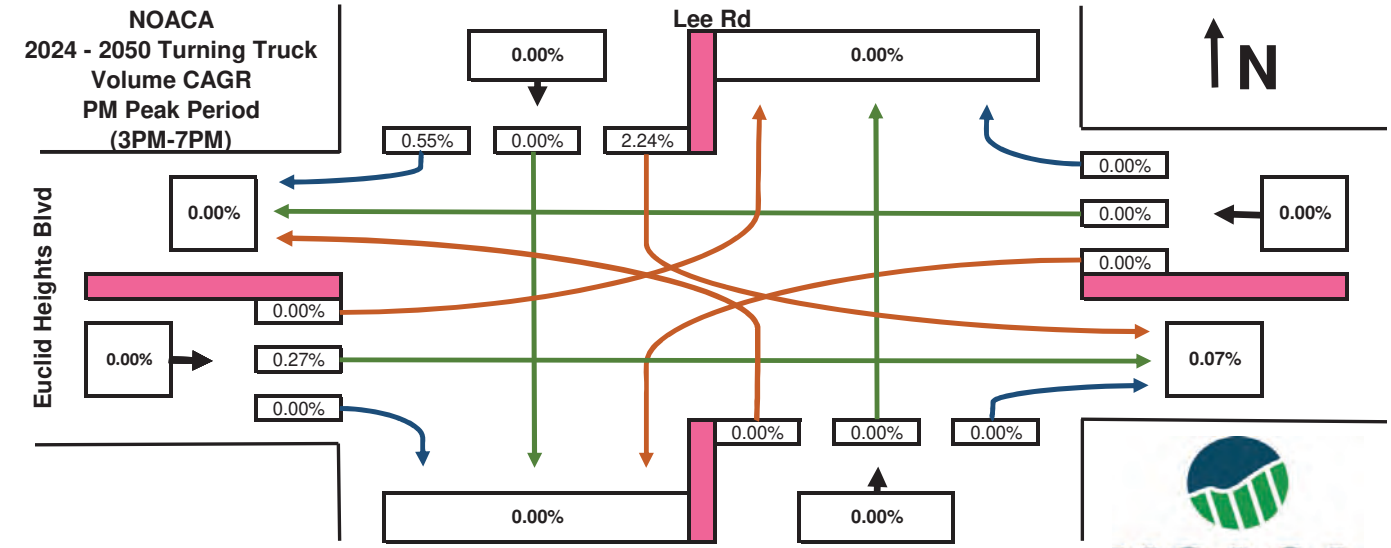




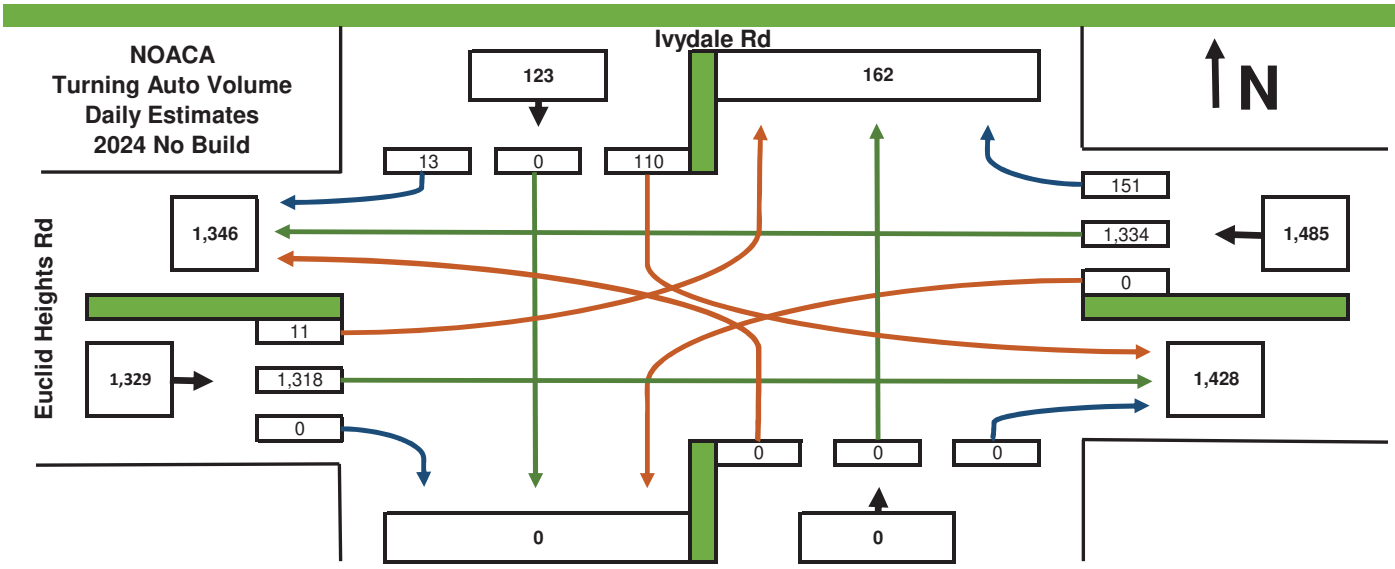
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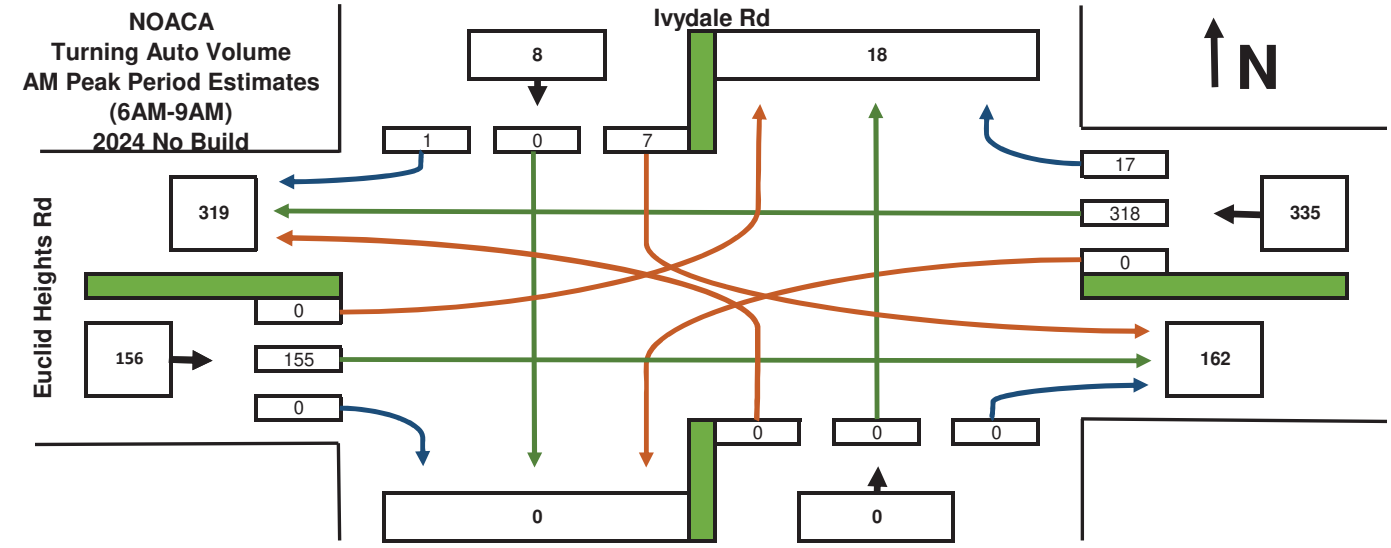


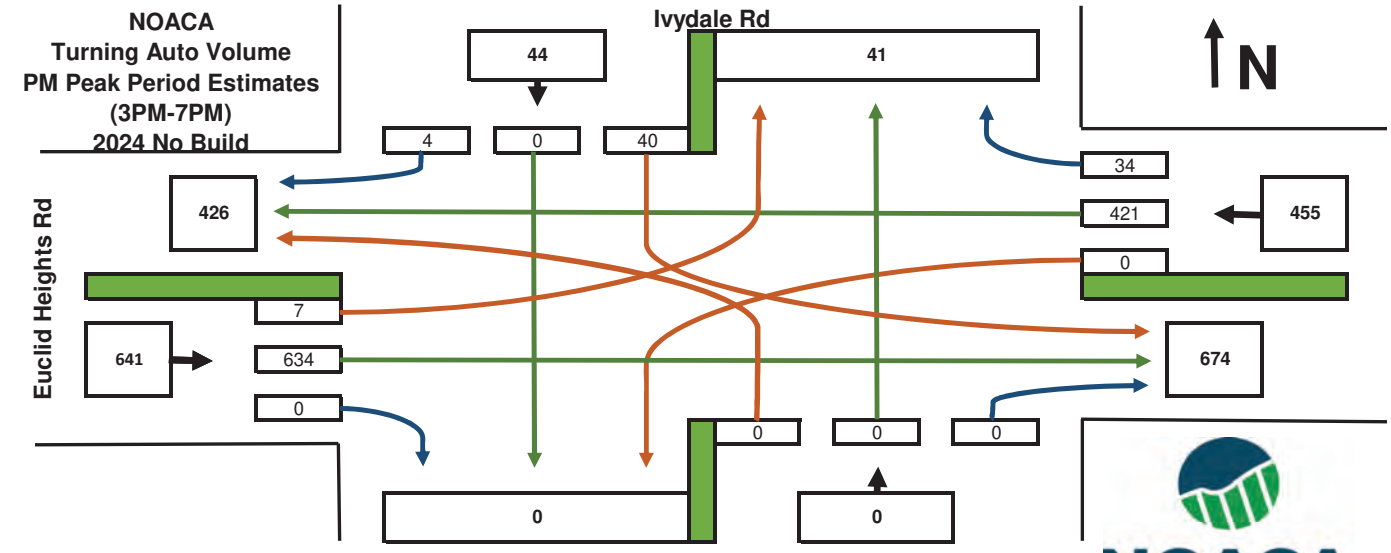




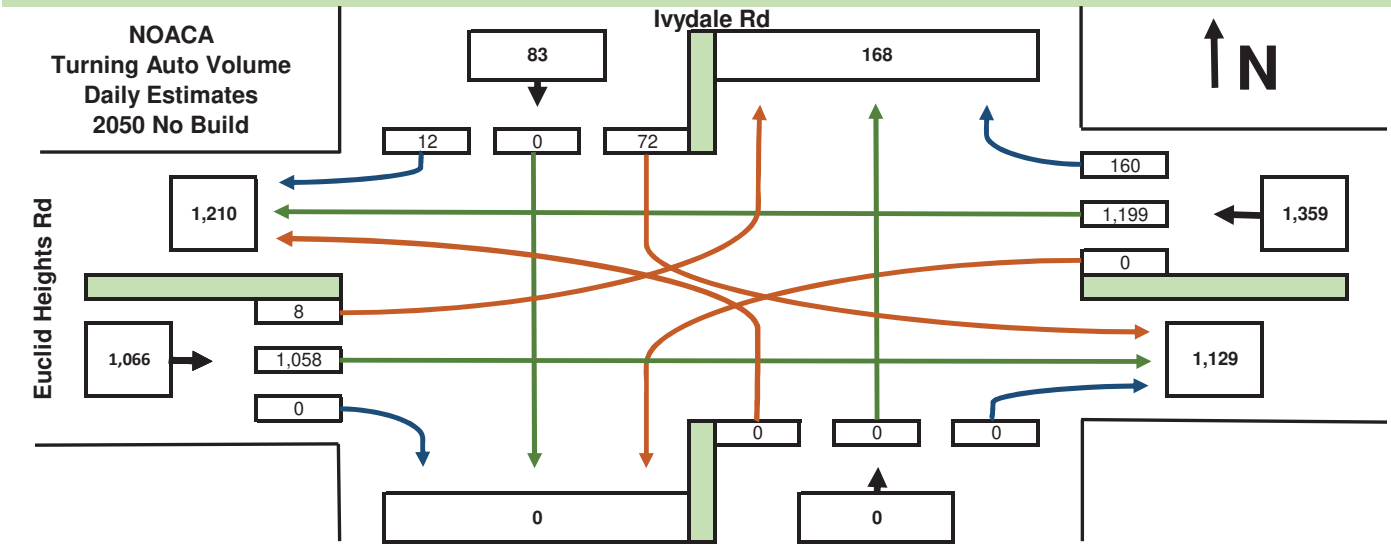
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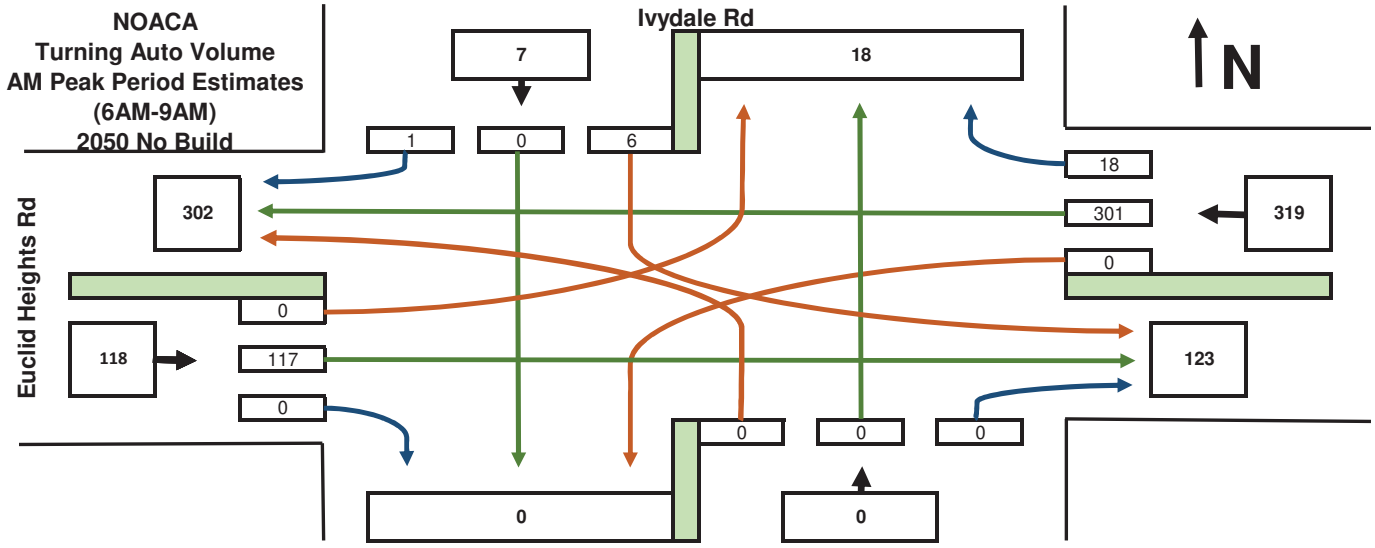


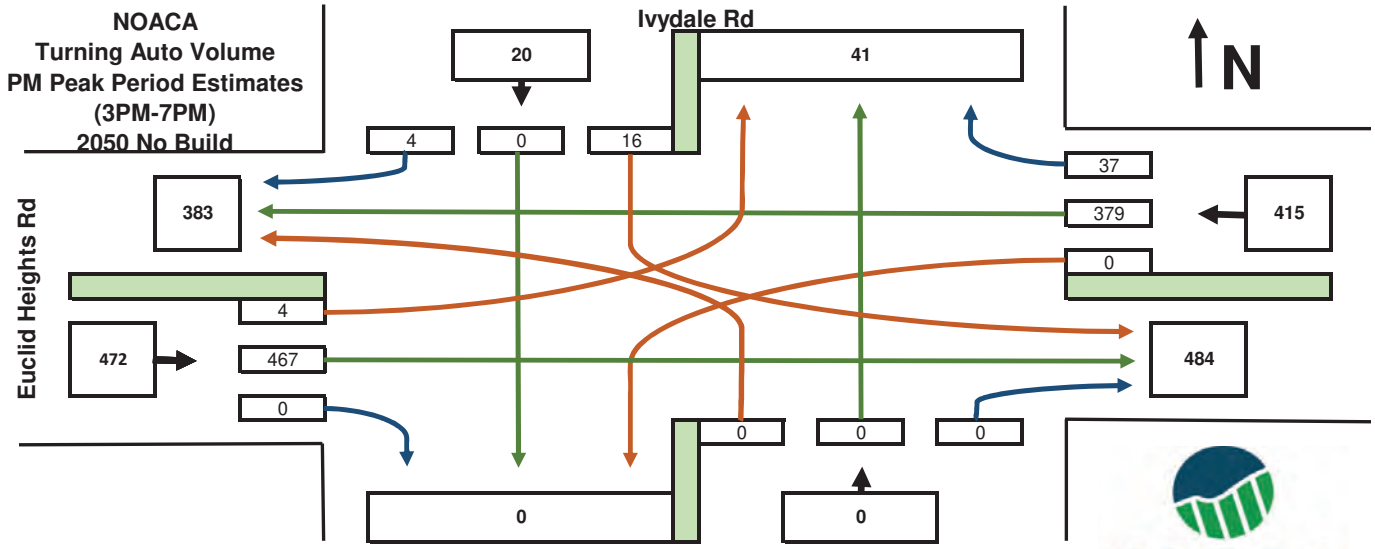




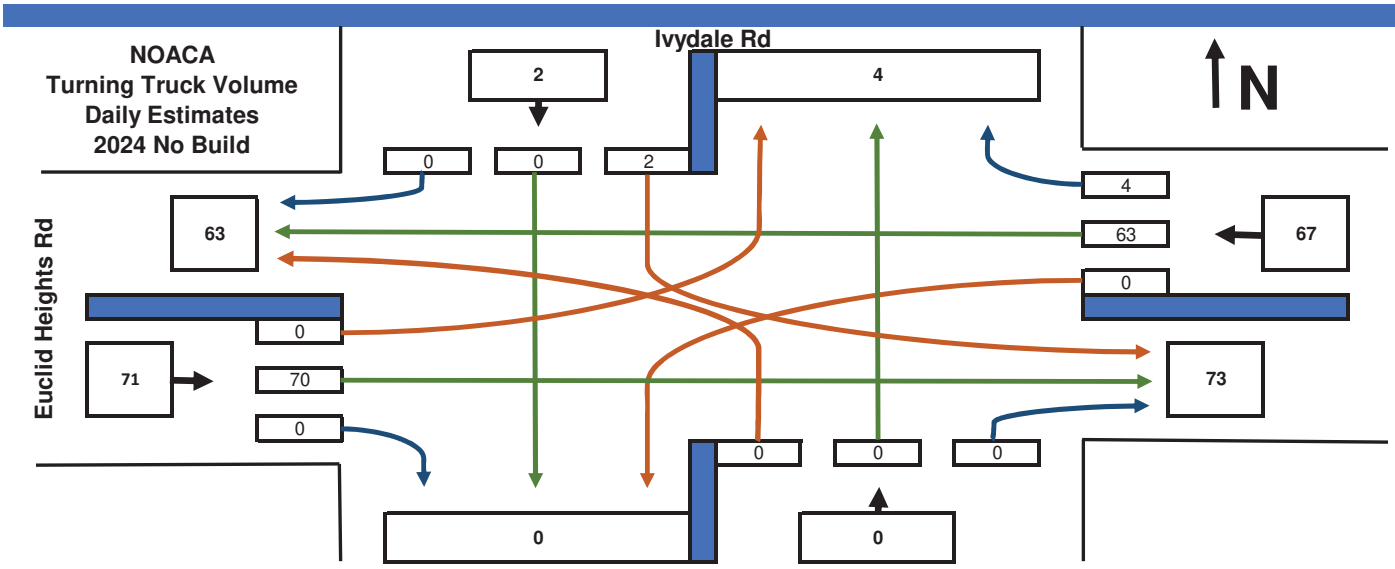
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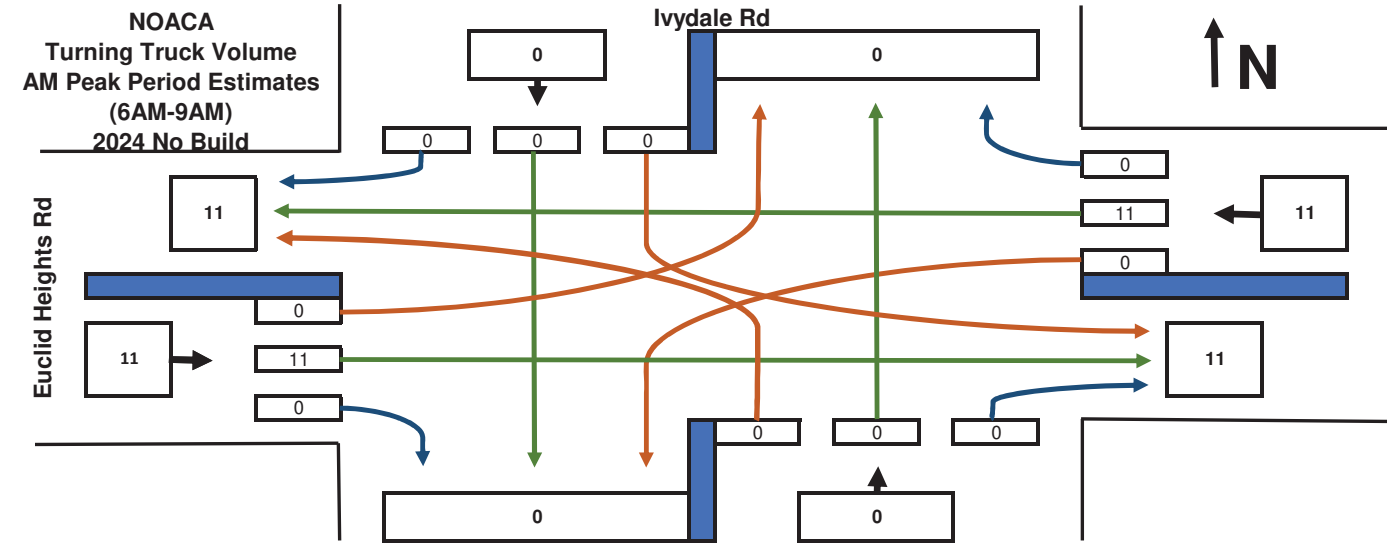


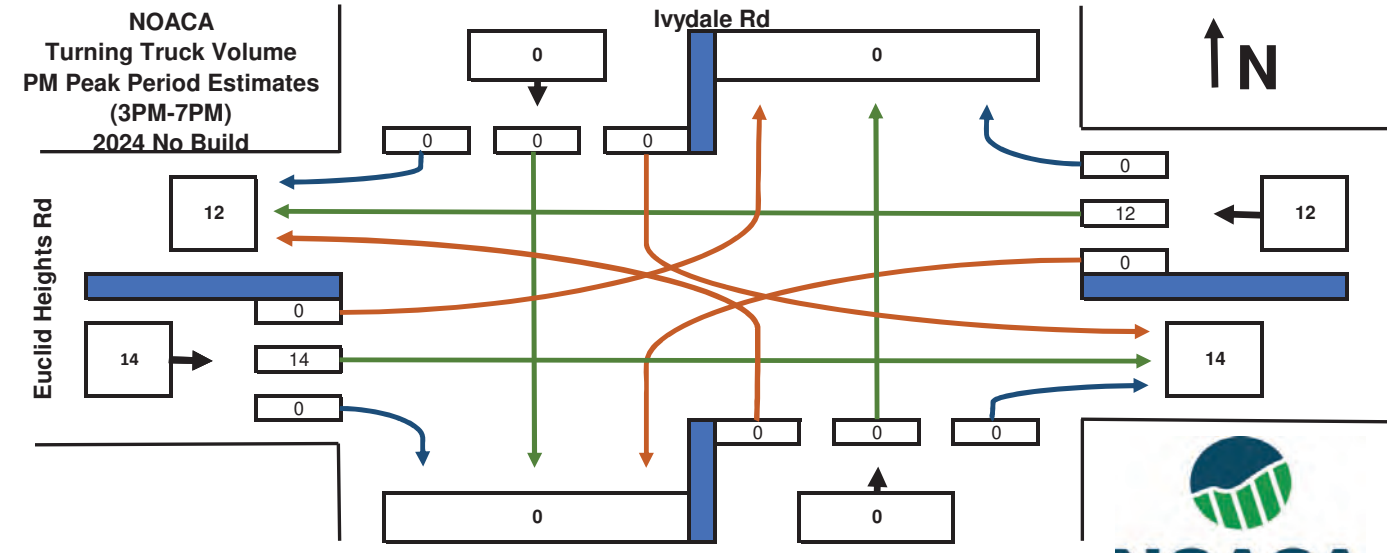




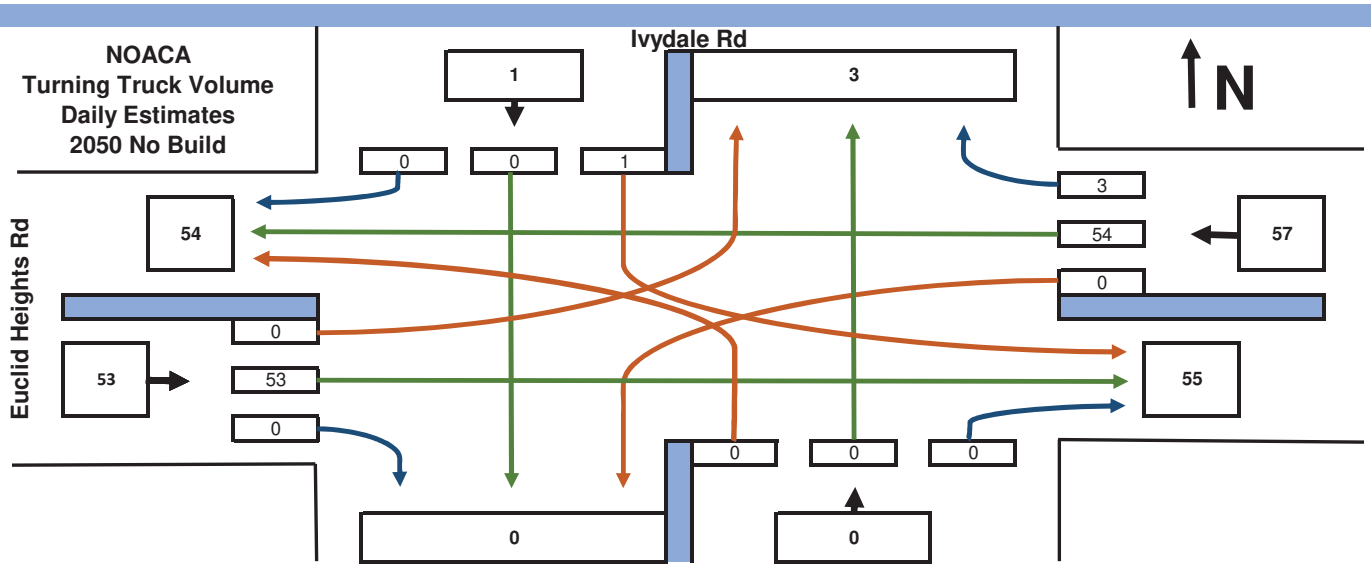
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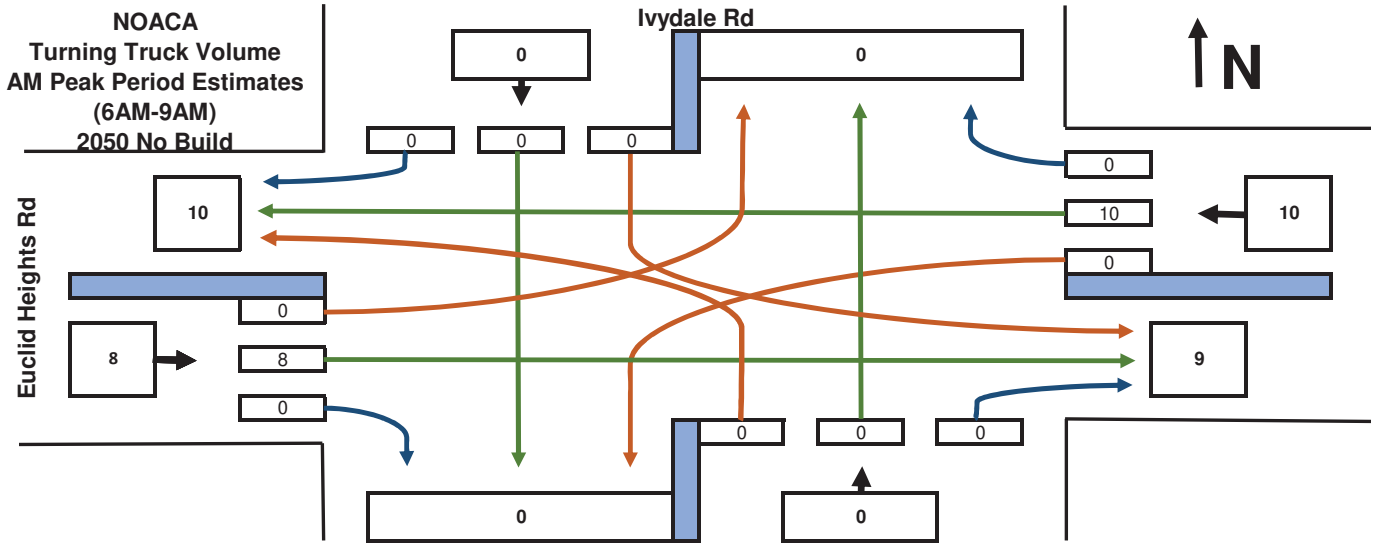


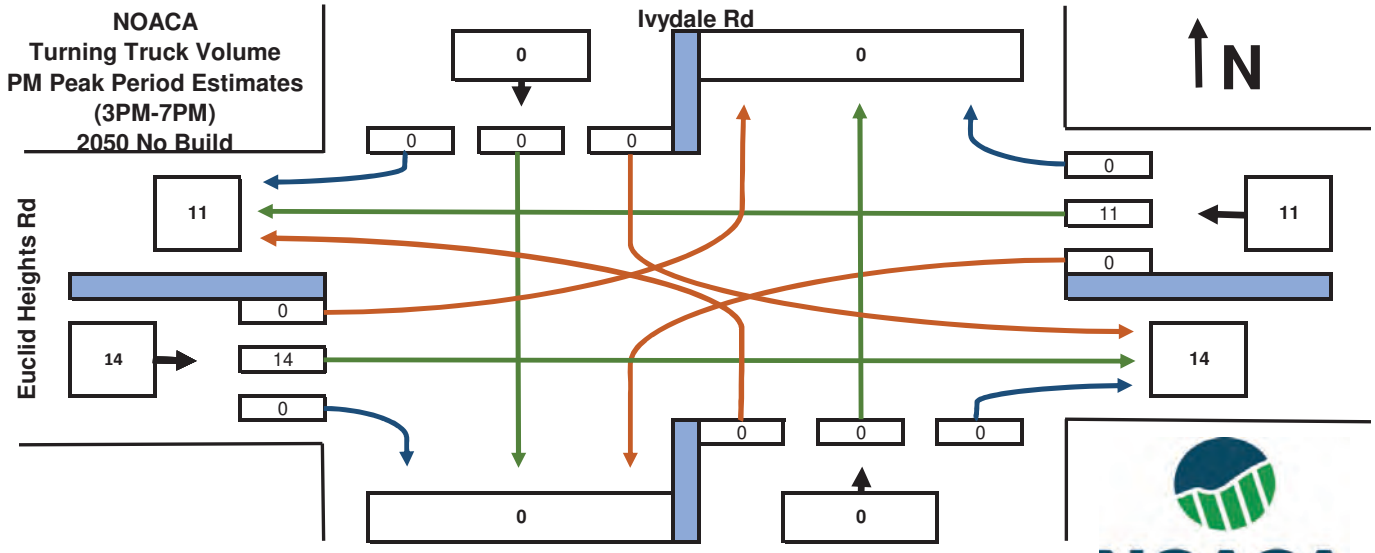




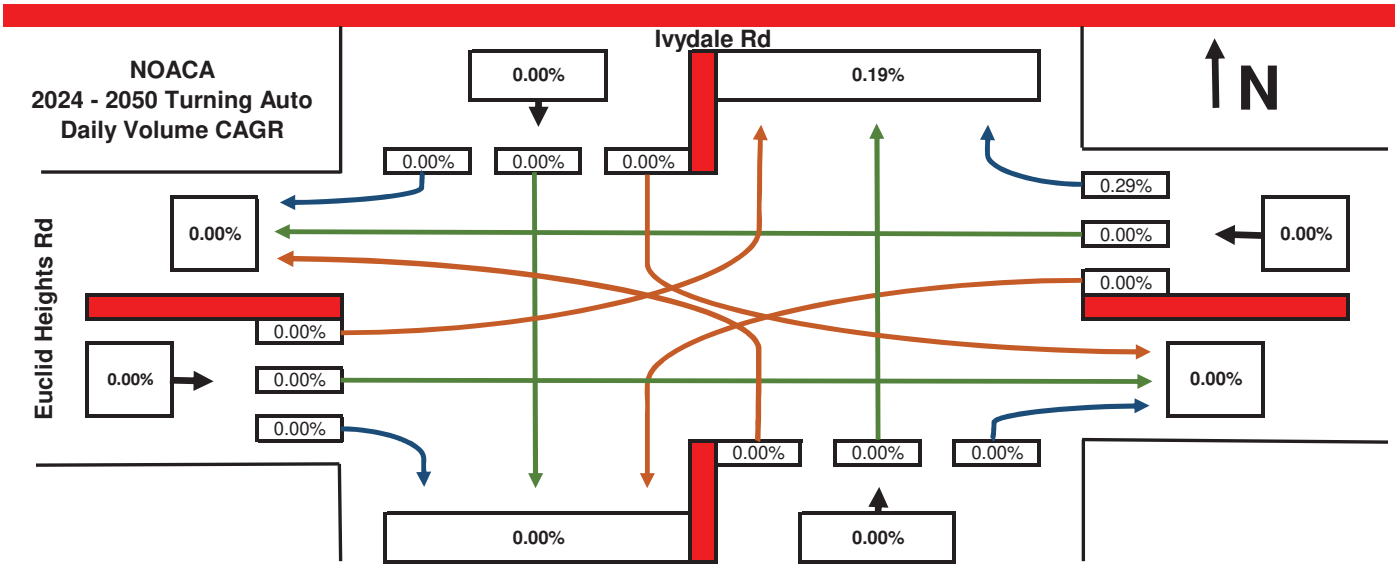
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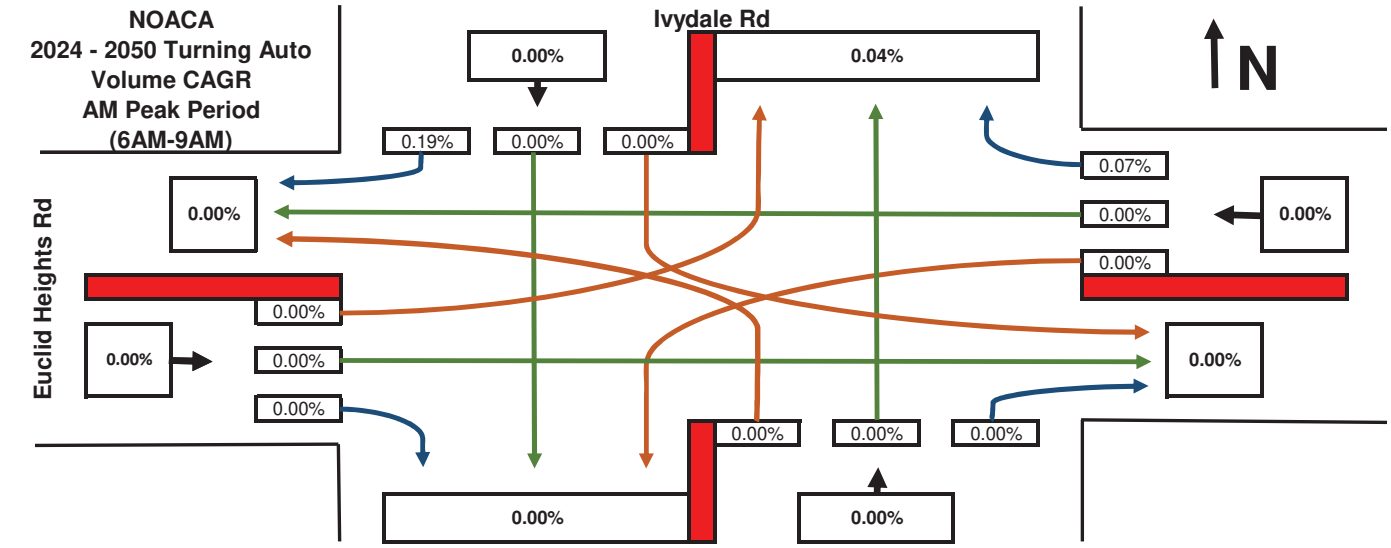


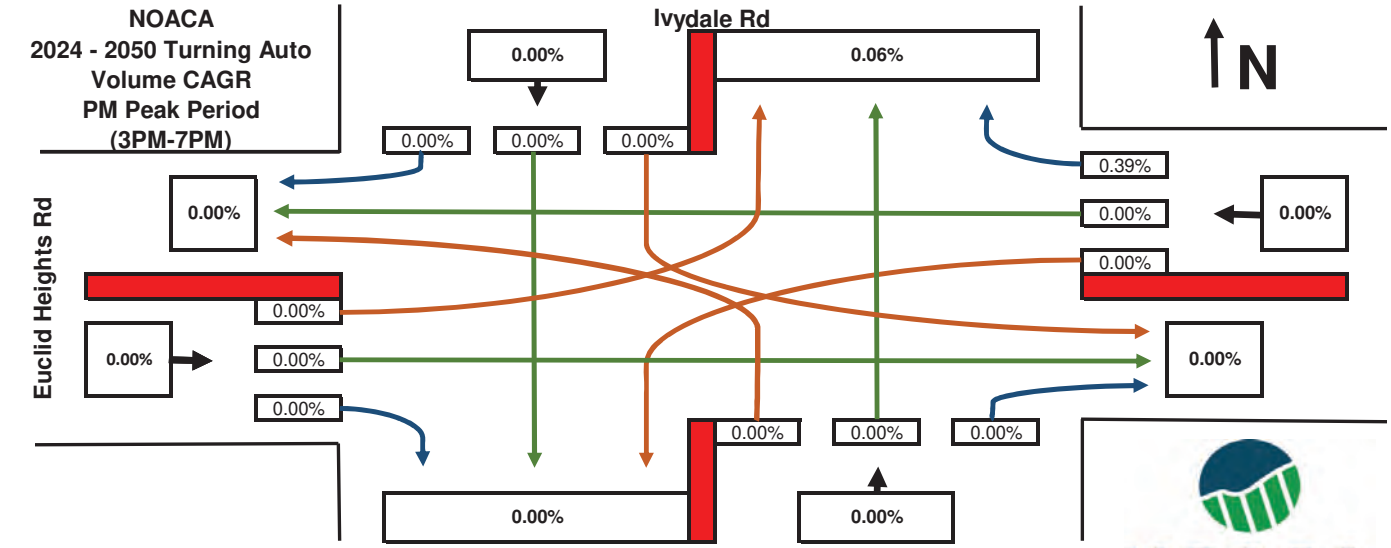




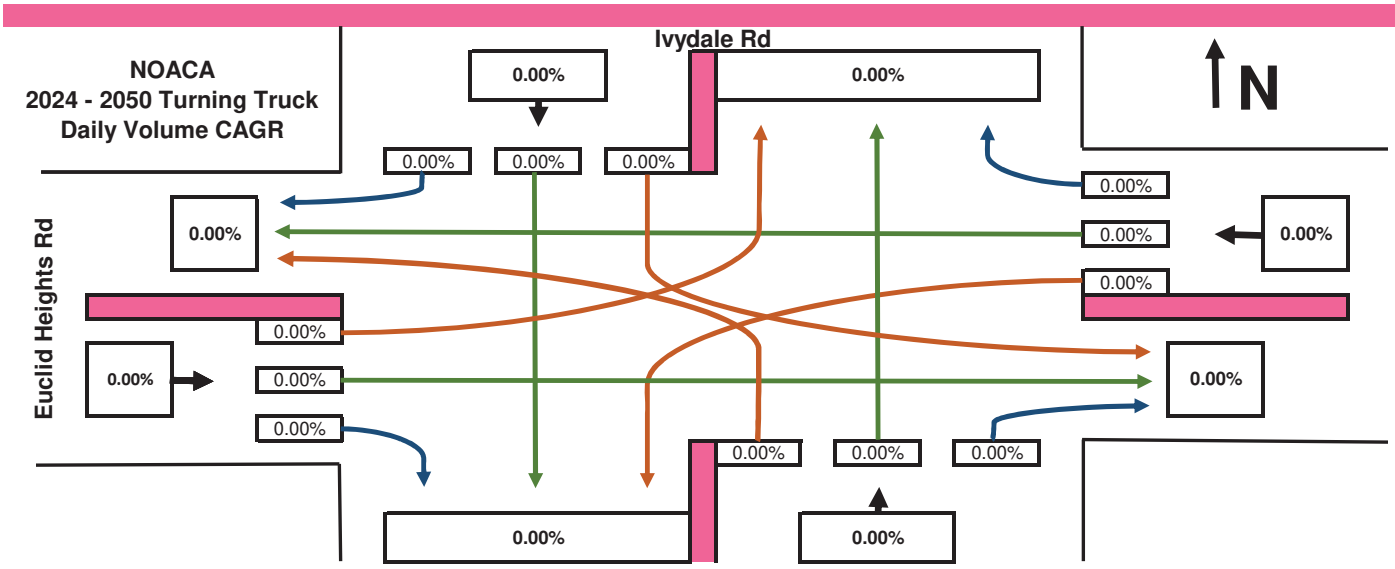
NOACA
Northeast Ohio Areawide Coordinating Agency

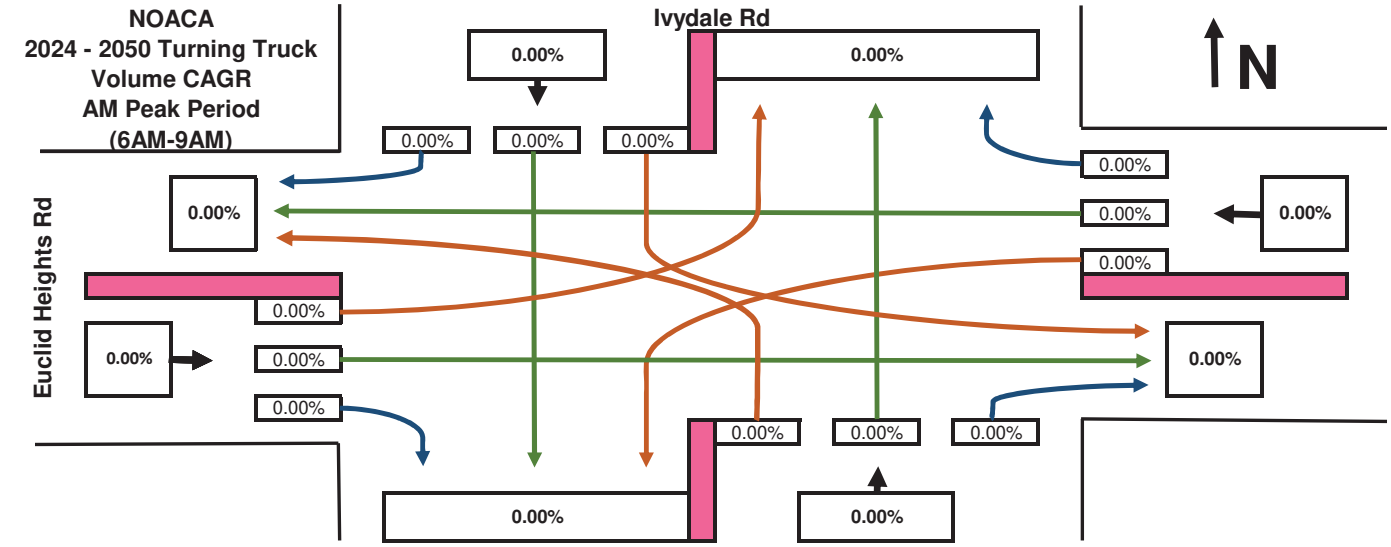


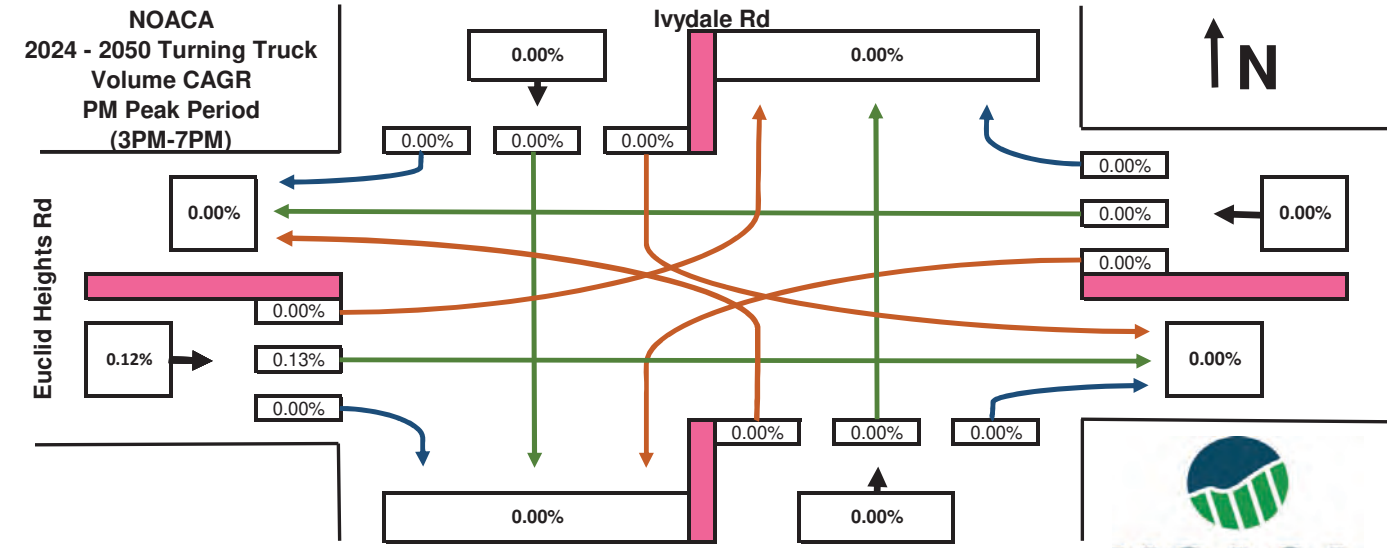




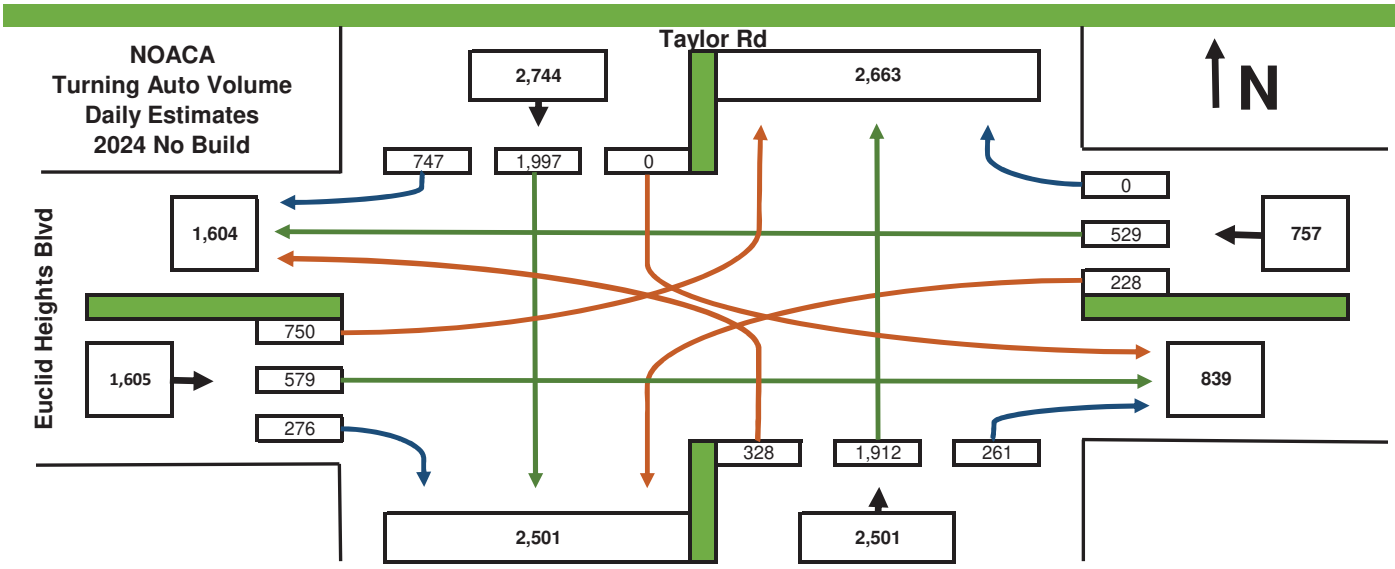
NOACA
Northeast Ohio Areawide Coordinating Agency

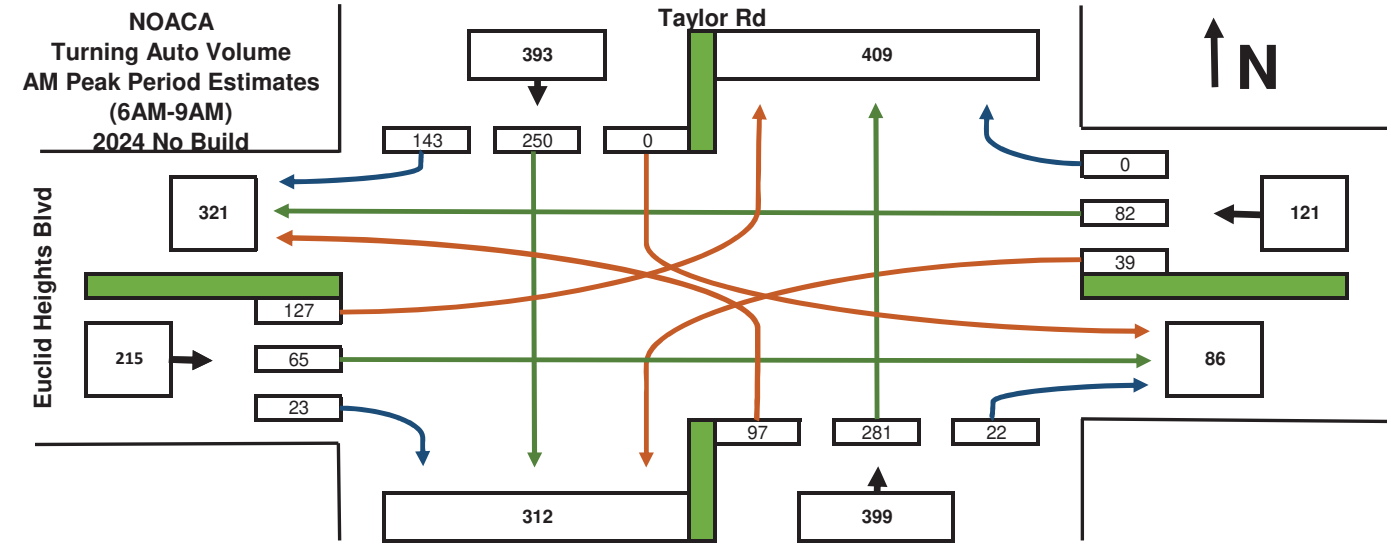


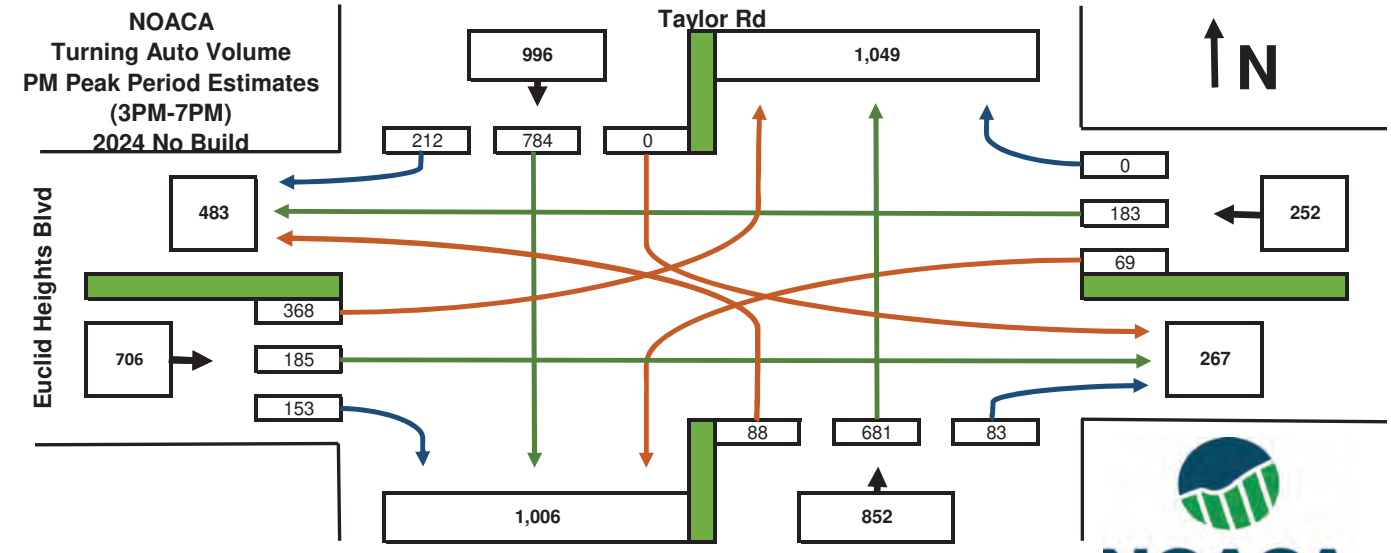




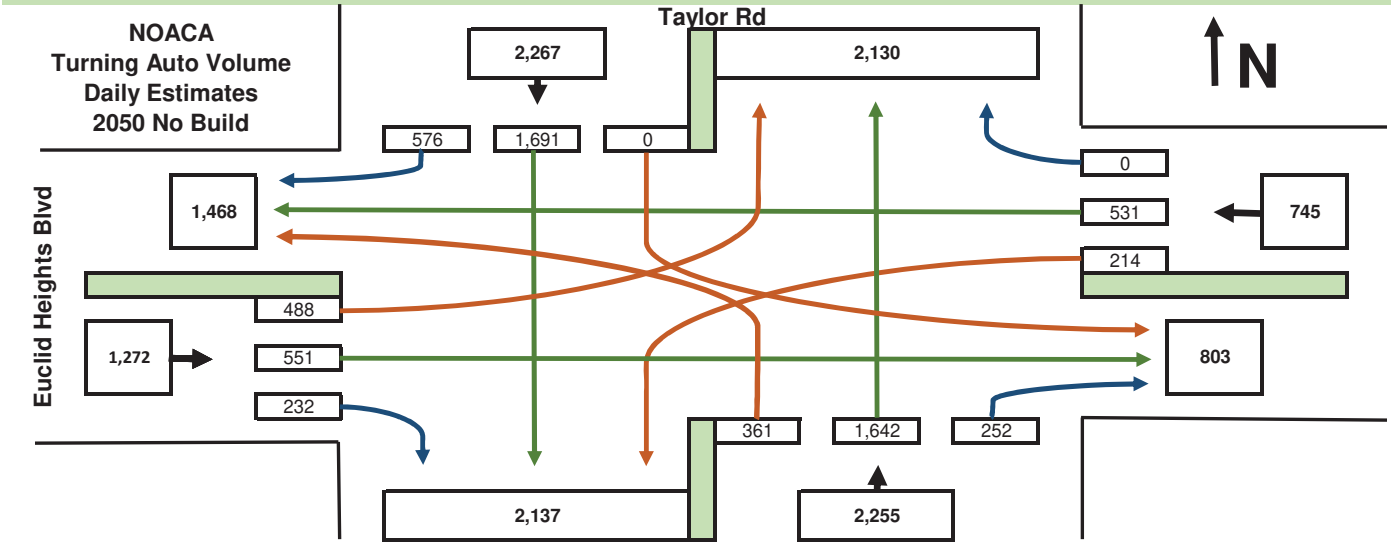
NOACA
Northeast Ohio Areawide Coordinating Agency

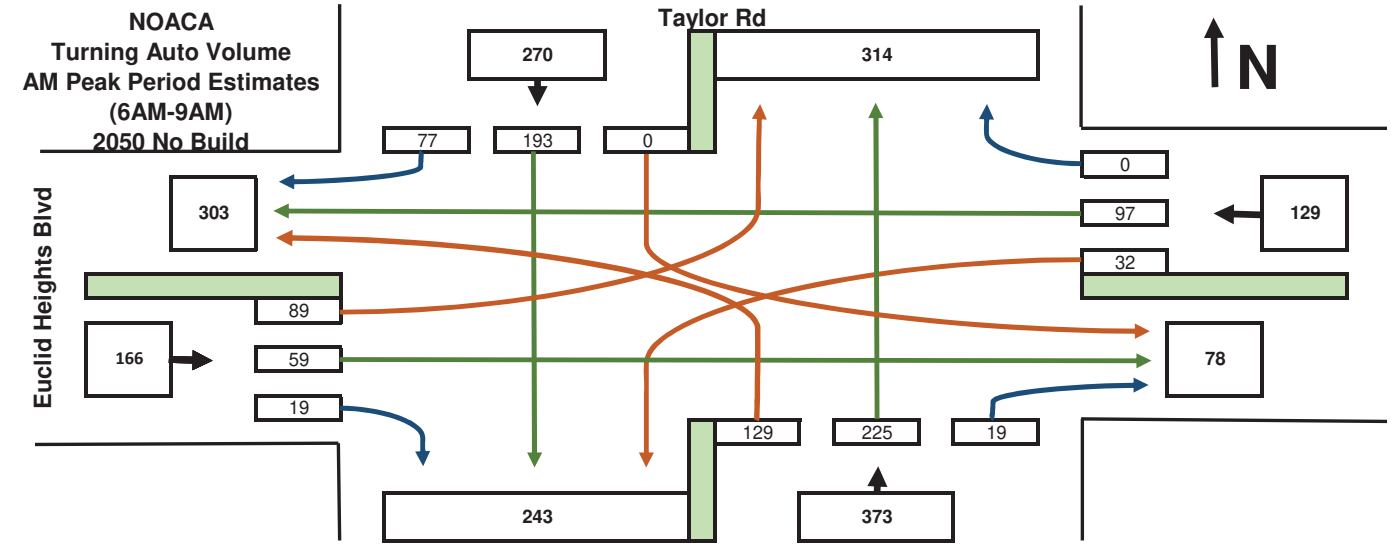


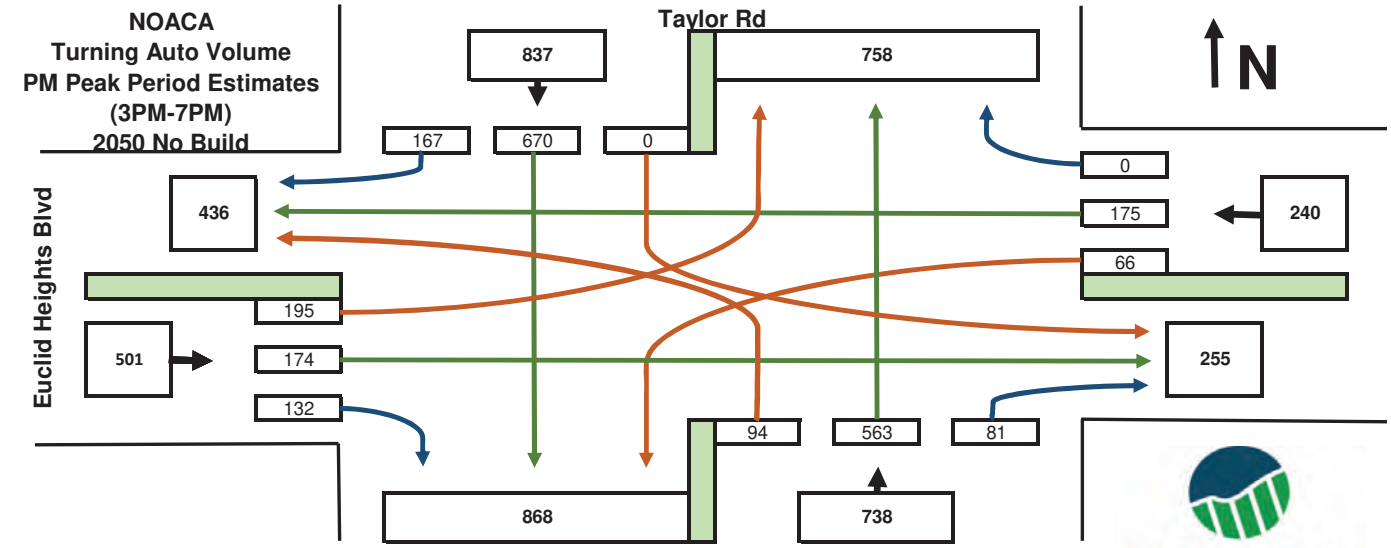




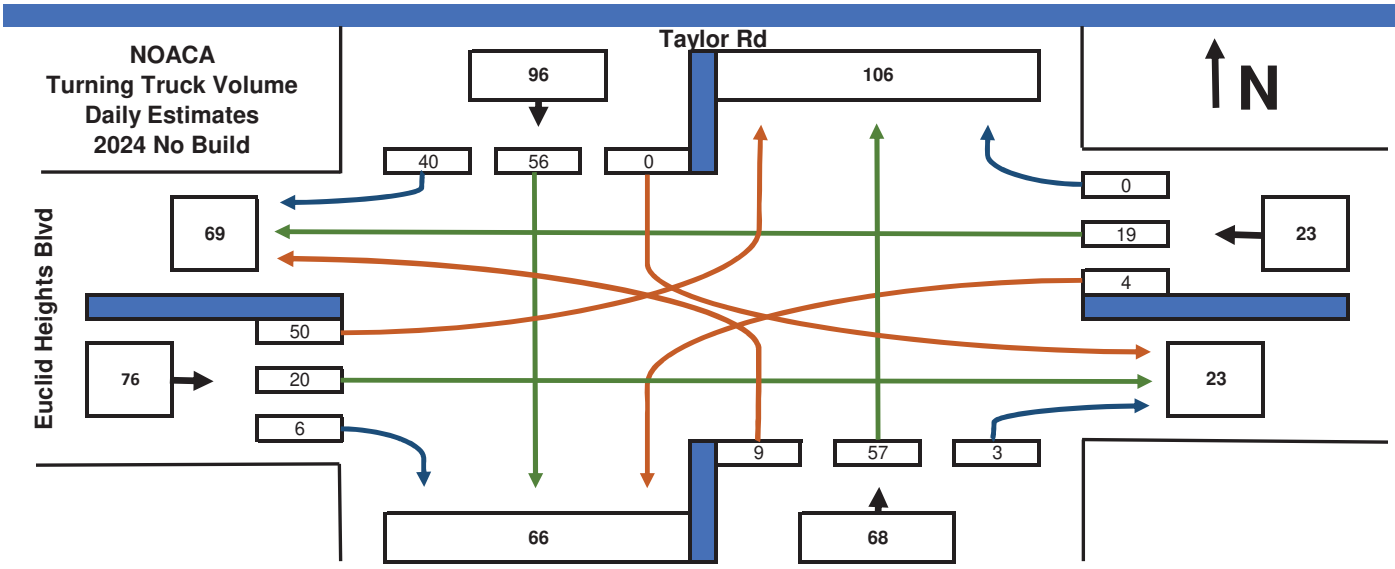
NOACA
Northeast Ohio Areawide Coordinating Agency

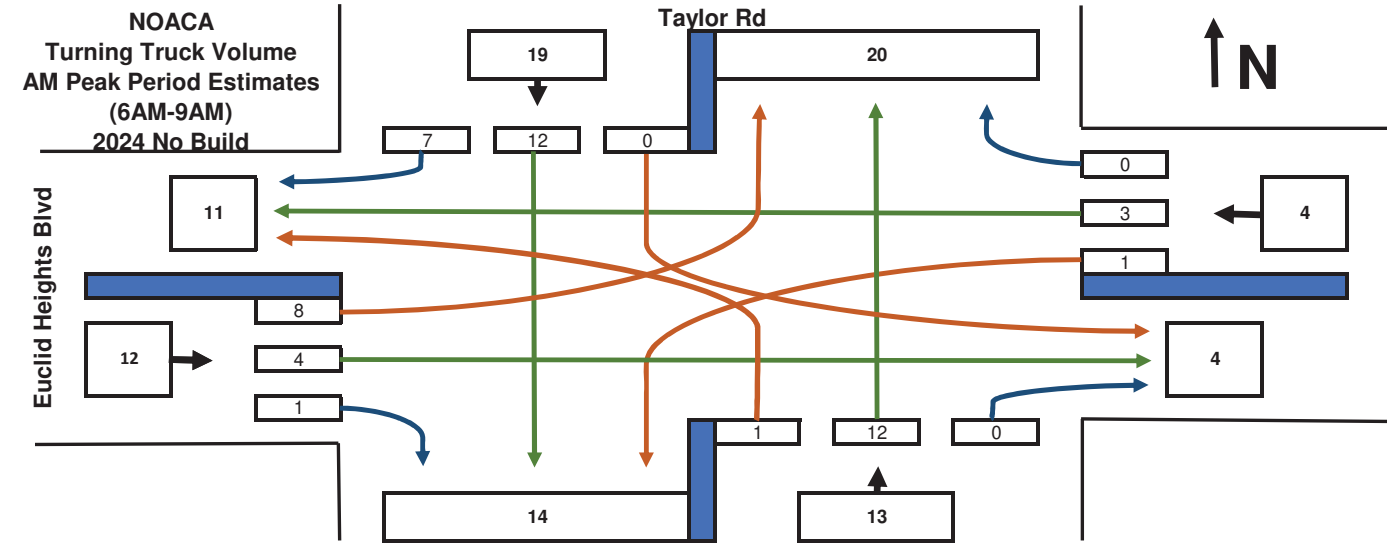


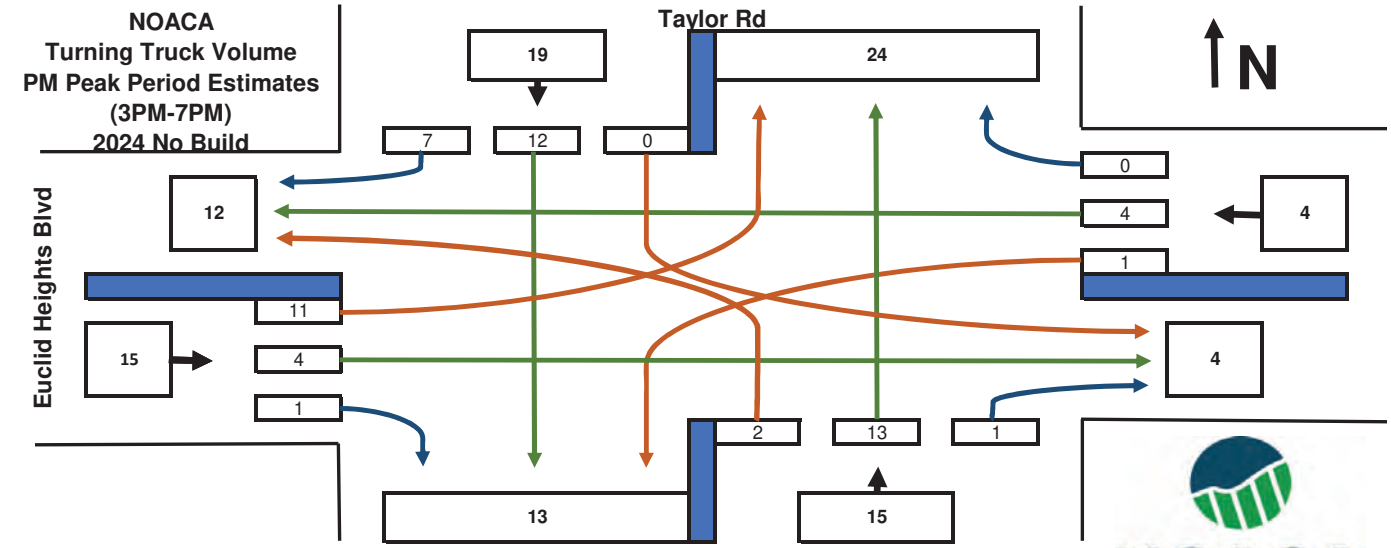




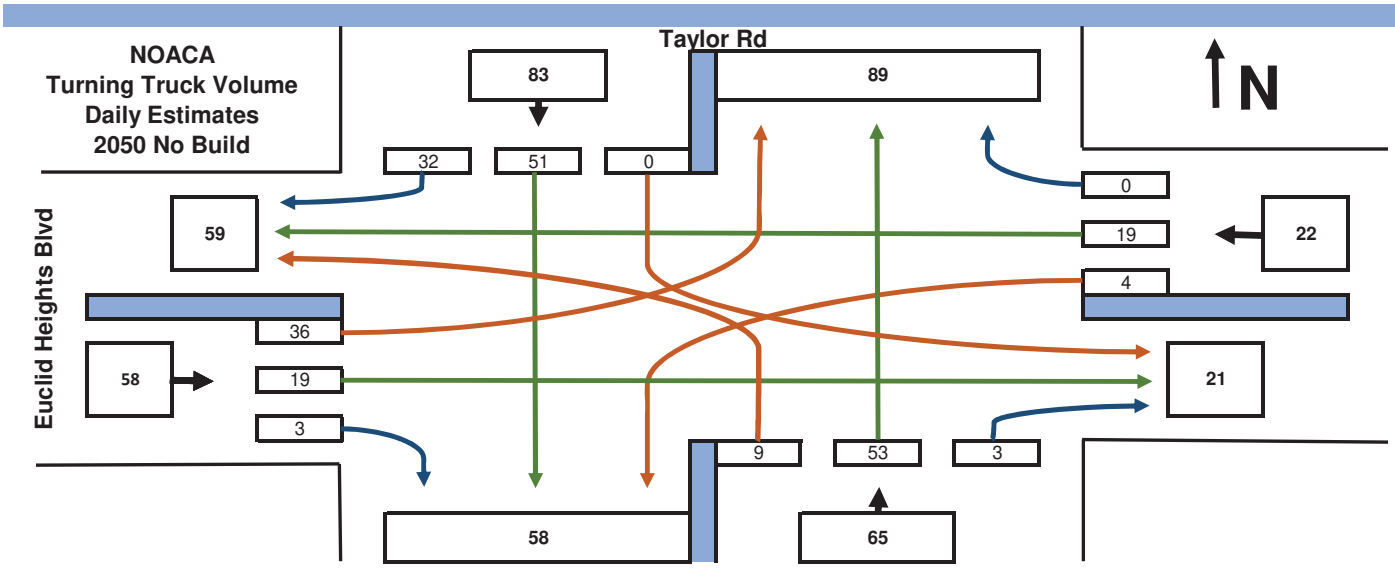
NOACA
Northeast Ohio Areawide Coordinating Agency

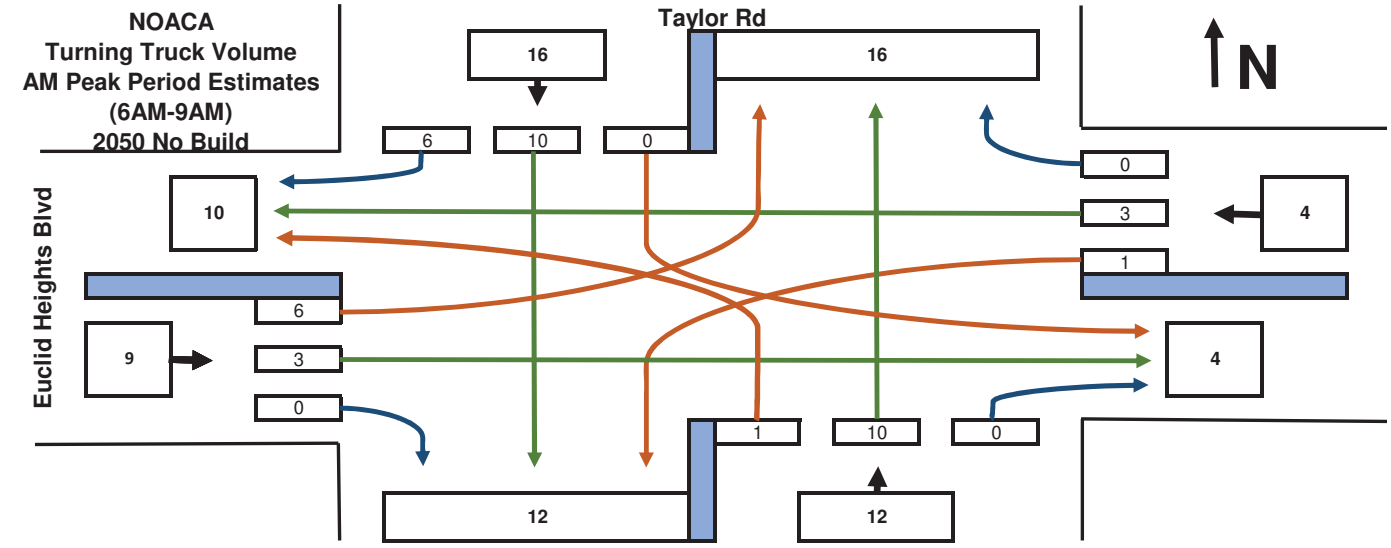


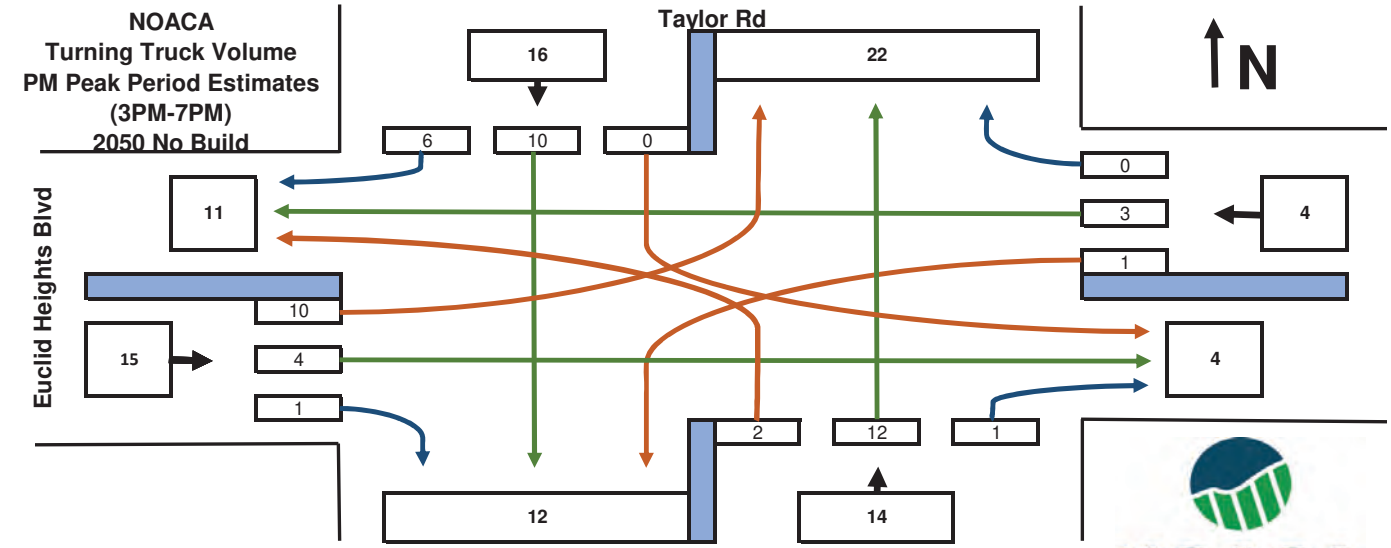




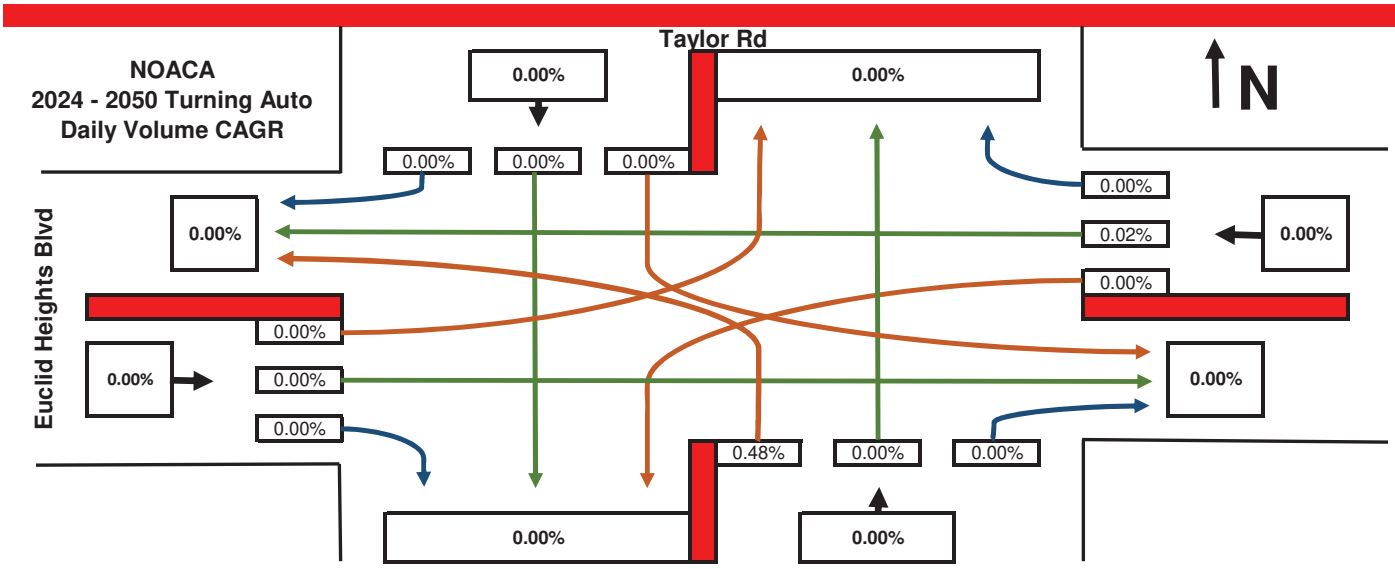
NOACA
Northeast Ohio Areawide Coordinating Agency

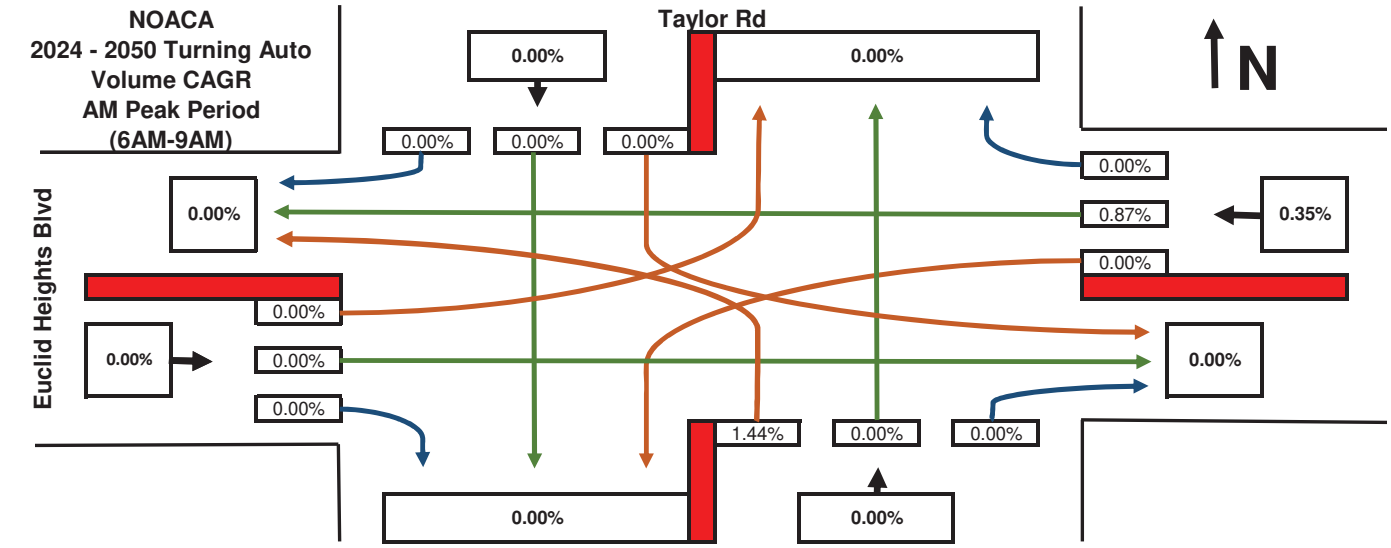


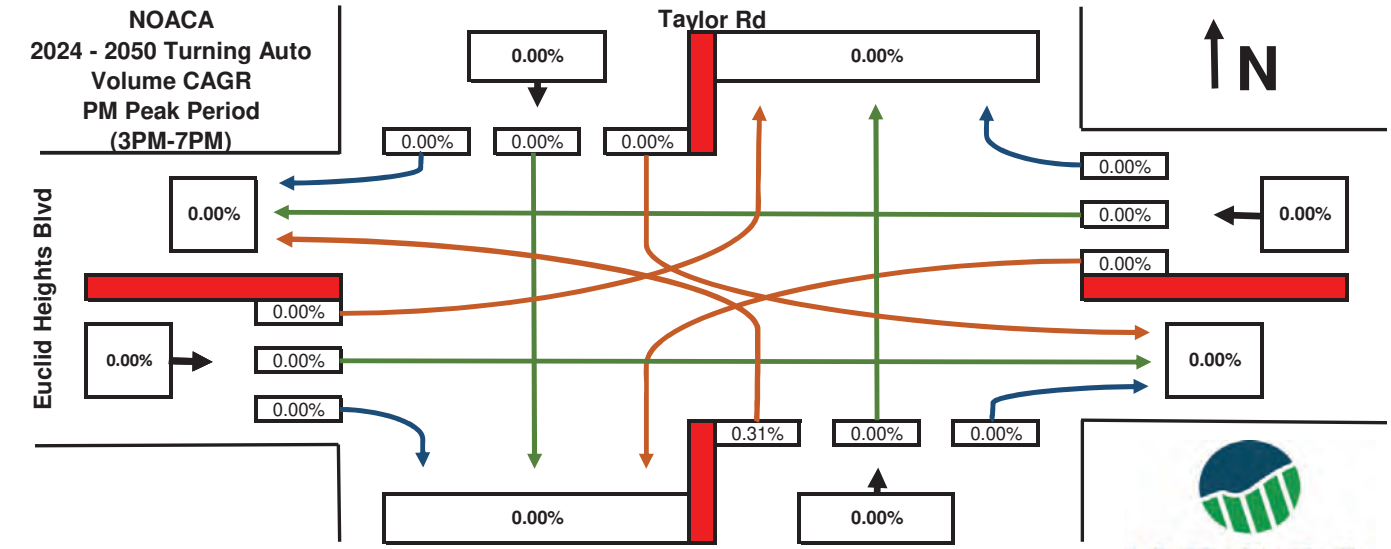




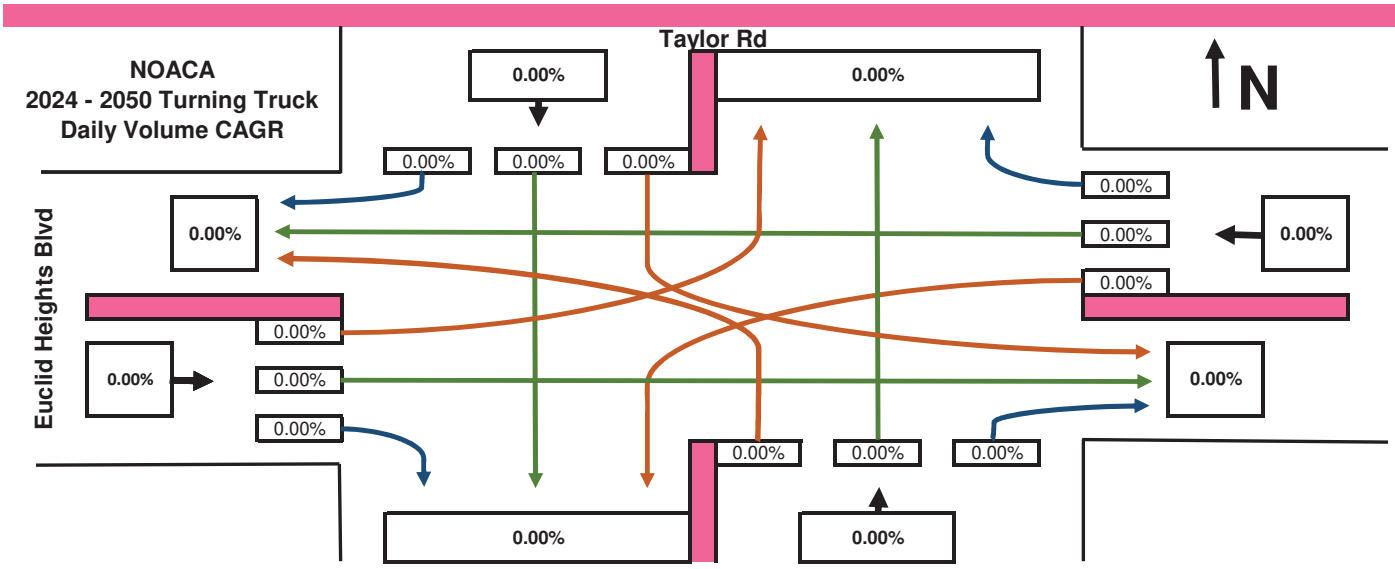
NOACA
Northeast Ohio Areawide Coordinating Agency

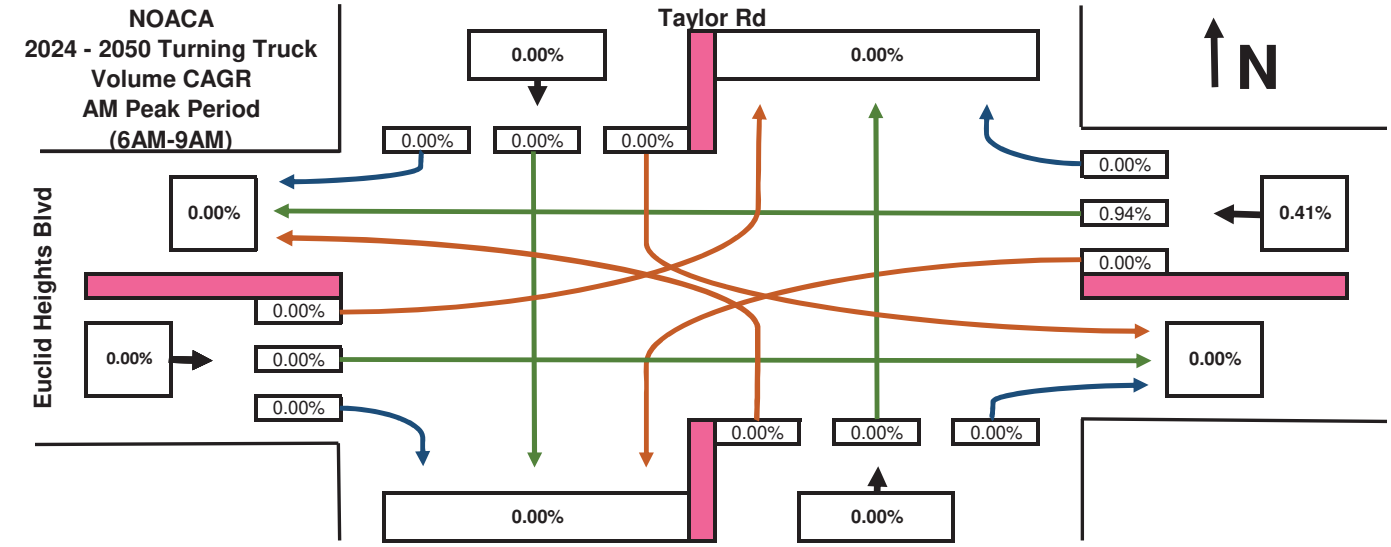


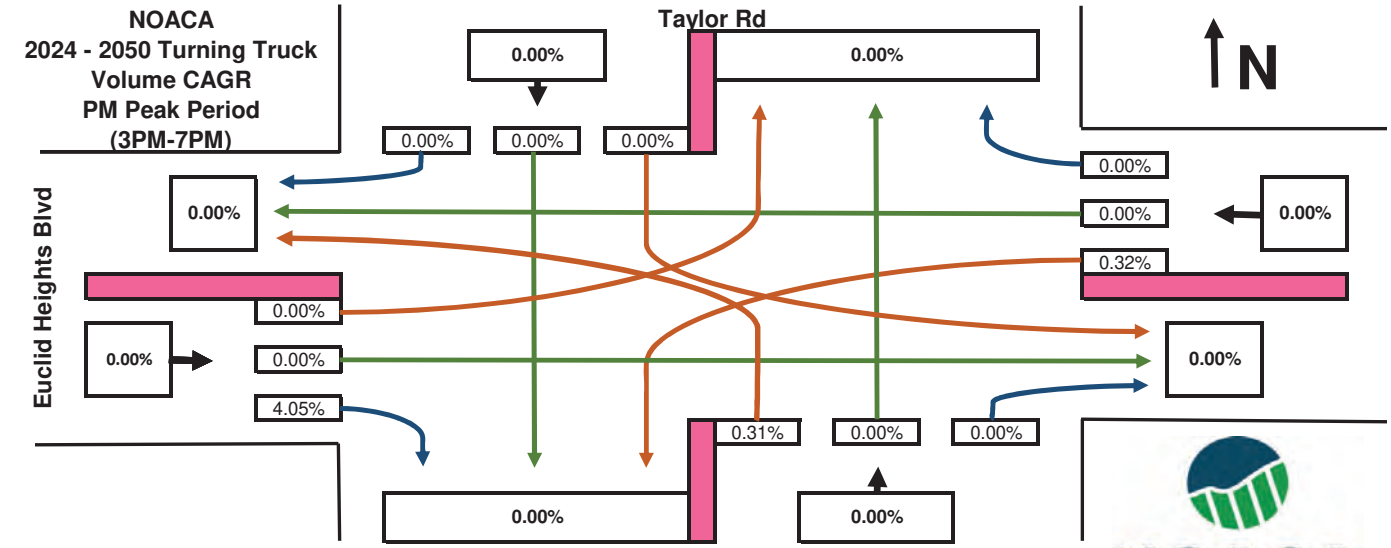




NOACA
Northeast Ohio Areawide Coordinating Agency


NOACA
2024 - 2050 Turning Truck
Daily Volume CAGR
Taylor Rd
N
Euclid Heights Blvd
0.00%


NOACA
2024 - 2050 Turning Truck
Volume CAGR
AM Peak Period
(6AM-9AM)
Taylor Rd
N
Euclid Heights Blvd
0.00%
0.94%
0.41%


NOACA
2024 - 2050 Turning Truck
Volume CAGR
PM Peak Period
(3PM-7PM)
Taylor Rd
N
Euclid Heights Blvd
0.00%
0.32%
4.05%
0.31%

Appendix F
Growth Rate Calculations

Intersection #2 — Mayfield Road & Ivydale Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0007	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0041	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0021	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0124	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0042	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0249	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0162	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0987	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Intersection #2 — Mayfield Road & Ivydale Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #3 — Mayfield Road & Burlington Road

Year 2024 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0052	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0011	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0157	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0033	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0316	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0066	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.52%	0.00%	0.00%			
			1.1267	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0256	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #3 — Mayfield Road & Burlington Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #4 — Mayfield Road & Rydalmount Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #4 — Mayfield Road & Rydalmount Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #5 — Mayfield Road & S. Taylor Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #5 — Mayfield Road & S. Taylor Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #6 — Lee Road & Euclid Heights Boulevard

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0124	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0012	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0377	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0036	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0767	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0072	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.3277	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0280	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #6 — Lee Road & Euclid Heights Boulevard

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0209	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0055	1.0000	1.0224			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0027	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0640	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0166	1.0000	1.0687			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0081	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.1321	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0335	1.0000	1.1422			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0163	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.6092	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.1345	1.0000	1.6645			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0640	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #7 — Euclid Heights Boulevard & Ivydale Road

Year 2024 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0019	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0007	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0039	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0057	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0021	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0117	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0115	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0042	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0236	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0446	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0162	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0937	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #7 — Euclid Heights Boulevard & Ivydale Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0013	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0039	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0078	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0303	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #8 — S. Taylor Road & Euclid Heights Boulevard

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0087	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0144	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0031	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0263	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0438	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0093	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0533	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0896	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0187	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.2205	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.3894	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0738	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Intersection #8 — S. Taylor Road & Euclid Heights Boulevard

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0094	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.0405	Right				Left	1.0032	0.32%
			Left	Thru	Right			
			1.0031	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0285	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.1265	Right				Left	1.0096	0.32%
			Left	Thru	Right			
			1.0093	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0577	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.2690	Right				Left	1.0194	0.32%
			Left	Thru	Right			
			1.0187	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.2401	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	2.4921	Right				Left	1.0762	0.32%
			Left	Thru	Right			
			1.0738	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Intersection #2 — Mayfield Road & Ivydale Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0007	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0041	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0021	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0124	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0042	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0249	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0162	1.0000	1.0000			
			0.07%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0987	1.0000	1.0000			
			0.41%	0.00%	0.00%			

Intersection #2 — Mayfield Road & Ivydale Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #2		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #3 — Mayfield Road & Burlington Road

Year 2024 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0052	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0011	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0157	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0033	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.52%	0.00%	0.00%			
			1.0316	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0066	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.52%	0.00%	0.00%			
			1.1267	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.11%	0.00%	0.00%			
			1.0256	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #3 — Mayfield Road & Burlington Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #3		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #4 — Mayfield Road & Rydalmount Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #4 — Mayfield Road & Rydalmount Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #4		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #5 — Mayfield Road & S. Taylor Road

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #5 — Mayfield Road & S. Taylor Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #5		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #6 — Lee Road & Euclid Heights Boulevard

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0124	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0012	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0377	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0036	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0767	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0072	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.3277	1.0000	1.0000			
			1.24%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.12%	1.0280	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #6 — Lee Road & Euclid Heights Boulevard

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0209	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0055	1.0000	1.0224			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0027	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0640	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0166	1.0000	1.0687			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0081	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.1321	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.0335	1.0000	1.1422			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0163	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.6092	1.0000	1.0000			
			2.09%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.55%	0.00%	2.24%			
			1.1345	1.0000	1.6645			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.27%	1.0640	Thru		Intersection #6		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #7 — Euclid Heights Boulevard & Ivydale Road

Year 2024 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0019	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0007	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0039	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0057	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0021	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0117	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0115	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0042	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0236	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.19%	0.00%	0.00%			
			1.0446	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0162	0.07%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0937	0.39%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #7 — Euclid Heights Boulevard & Ivydale Road

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0013	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0039	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0078	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #7		Thru	1.0000	0.00%
0.13%	1.0303	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Intersection #8 — S. Taylor Road & Euclid Heights Boulevard

Year 2024 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0087	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0144	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2024 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0031	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2027 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0263	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0438	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2027 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0093	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2030 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0533	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0896	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2030 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0187	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2047 AM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.2205	0.87%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.3894	1.0000	1.0000			
			1.44%	0.00%	0.00%			

Year 2047 PM AUTOS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0738	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Intersection #8 — S. Taylor Road & Euclid Heights Boulevard

Year 2024 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0094	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2024 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.0405	Right				Left	1.0032	0.32%
			Left	Thru	Right			
			1.0031	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2027 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0285	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2027 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.1265	Right				Left	1.0096	0.32%
			Left	Thru	Right			
			1.0093	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2030 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0577	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2030 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	1.2690	Right				Left	1.0194	0.32%
			Left	Thru	Right			
			1.0187	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Year 2047 AM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.2401	0.94%
0.00%	1.0000	Right				Left	1.0000	0.00%
			Left	Thru	Right			
			1.0000	1.0000	1.0000			
			0.00%	0.00%	0.00%			

Year 2047 PM TRUCKS

			0.00%	0.00%	0.00%			
			1.0000	1.0000	1.0000			
			Right	Thru	Left			
0.00%	1.0000	Left				Right	1.0000	0.00%
0.00%	1.0000	Thru		Intersection #8		Thru	1.0000	0.00%
4.05%	2.4921	Right				Left	1.0762	0.32%
			Left	Thru	Right			
			1.0738	1.0000	1.0000			
			0.31%	0.00%	0.00%			

Appendix G
ODOT Peak Hour to Design Hour Charts

PEAK HOUR to DESIGN HOUR FACTORS

FUNCTIONAL CLASSIFICATION = 03, 04, 05u

(Urban Principal Arterial, Urban Minor Arterial, & Urban Minor Collector)

Month \ Day		Monthly Average by Day-of-Week							
		WEEKDAY MON-THUR	Sun	Mon	Tue	Wed	Thu	Fri	Sat
		0	1	2	3	4	5	6	7
January	1	1.25	1.81	1.27	1.25	1.25	1.23	1.18	1.61
February	2	1.23	1.78	1.26	1.23	1.23	1.19	1.17	1.58
March	3	1.18	1.63	1.20	1.18	1.17	1.17	1.12	1.47
April	4	1.13	1.57	1.15	1.14	1.12	1.11	1.08	1.42
May	5	1.10	1.47	1.12	1.10	1.10	1.07	1.06	1.35
June	6	1.14	1.51	1.16	1.14	1.14	1.11	1.10	1.40
July	7	1.14	1.54	1.16	1.14	1.13	1.14	1.11	1.45
August	8	1.12	1.49	1.14	1.14	1.12	1.10	1.06	1.41
September	9	1.12	1.53	1.15	1.13	1.13	1.09	1.05	1.42
October	10	1.12	1.54	1.15	1.12	1.11	1.10	1.05	1.42
November	11	1.16	1.63	1.17	1.15	1.15	1.15	1.08	1.52
December	12	1.16	1.61	1.18	1.16	1.16	1.13	1.10	1.50

peak hour volume * factor = design hour volume

source: year 2018, 2019, & 2021 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 15 Stations
2019: 21 Stations
2021: 22 Stations

Ohio Department of Transportation
Modeling & Forecasting Section

Nov-22

NOTE: These are NOT seasonal adjustment factors!!!

NOTE: Factors shown rounded to 2 decimal places. Unrounded value will be used in calculations.

Note: Insufficient data exists to produce factors for functional classes 06 and 07 Urban.

Appendix H
Background Growth Spreadsheet

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Lee Rd 022724

			Lee Rd. FROM NORTH						Lee Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	25	198	39	262			29	168	90	287			549	76	736	12	824			15	312	17	344			1168	1717
	2024	Raw Trucks	0	7	0	7			2	2	6	10			17	2	12	0	14			0	13	5	18			32	49
	2024	Raw Cars+Trucks	25	205	39	269			31	170	96	297			566	78	748	12	838			15	325	22	362			1200	1766
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284						
	2024	Cars Only	31	243	48	322			36	206	111	353			675	93	904	15	1012			18	383	21	422			1434	2109
	2024	Trucks Only	0	9	0	9			2	2	7	12			21	2	15	0	17			0	16	6	22			39	60
	2024	No Build	31	252	48	330			38	209	118	365			695	96	919	15	1029			18	399	27	445			1474	2169
	Cars Growth	Factor	1.000	1.000	1.0066				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0048	1.0000	1.0000					
	Truck Growth	Factor	1.000	1.000	1.013				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0075					
	2027	Adj +Growth+DHV	31	252	48	331			38	209	118	365			696	96	919	15	1029			19	399	27	445			1474	2170
	Phase 1	Round	30	250	50	330			40	210	120	370			700	100	920	10	1030			20	400	30	450			1480	2180
	Cars Growth	Factor	1.000	1.000	1.0133				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0096	1.0000	1.0000					
	Truck Growth	Factor	1.000	1.000	1.0267				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0151					
	2030	Adj +Growth+DHV	31	252	49	332			38	209	118	365			697	96	919	15	1030			19	399	27	445			1475	2172
	Opening Year	Round	30	250	50	330			40	210	120	370			700	100	920	10	1030			20	400	30	450			1480	2180
	Cars Growth	Factor	1.000	1.000	1.0518				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0375	1.0000	1.0000					
	Truck Growth	Factor	1.000	1.000	1.1063				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0591					
	2047	Adj +Growth+DHV	31	252	50	333			38	209	118	365			698	96	919	15	1030			19	399	27	445			1475	2173
	Design Year	Round	30	250	50	330			40	210	120	370			700	100	920	10	1030			20	400	30	450			1480	2180
PM PEAK	2024	Raw Cars Only	20	180	16	216			20	239	57	316			532	88	380	23	491			43	605	41	689			1180	1712
	2024	Raw Trucks	0	0	0	0			1	3	0	4			4	2	4	0	6			0	5	2	7			13	17
	2024	Raw Cars+Trucks	20	180	16	216			21	242	57	320			536	90	384	23	497			43	610	43	696			1193	1729
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					
	2024	Cars Only	25	221	20	266			25	294	70	389			655	108	467	28	603			53	743	50	846			1449	2104
	2024	Trucks Only	0	0	0	0			1	4	0	5			5	2	5	0	7			0	6	2	9			16	21
	2024	No Build	25	221	20	265			26	297	70	393			658	111	472	28	610			53	749	53	855			1465	2124
	Cars Growth	Factor	1.0000	1.0000	1.0012				1.0000	1.0000	1.0000					1.0000	1.0000	1.0036				1.0469	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0120	1.0000	1.0063				1.0294	1.0000	1.0081					
	2027	Adj+Growth+DHV	25	221	20	265			26	297	70	393			658	111	472	28	611			55	749	53	857			1468	2126
	Phase 1	Round	20	220	20	260			30	300	70	400			660	110	470	30	610			60	750	50	860			1470	2130
	Cars Growth	Factor	1.0000	1.0000	1.0024				1.0000	1.0000	1.0000					1.0000	1.0000	1.0072				1.0960	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0242	1.0000	1.0127				1.0596	1.0000	1.0163					
	2030	Adj+Growth+DHV	25	221	20	266			26	297	70	393			659	111	472	28	611			58	749	53	860			1471	2130
	Opening Year	Round	20	220	20	260			30	300	70	400			660	110	470	30	610			60	750	50	860			1470	2130
	Cars Growth	Factor	1.0000	1.0000	1.0092				1.0000	1.0000	1.0000					1.0000	1.0000	1.0280				1.4212	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0962	1.0000	1.0494				1.2486	1.0000	1.0640					
	2047	Adj+Growth+DHV	25	221	20	266			26	297	70	393			659	111	472	29	612			75	749	53	877			1489	2148
	Design Year	Round	20	220	20	260			30	300	70	400			660	110	470	30	610			80	750	50	880			1490	2150

TMS Engineers, Inc.
2112 Case Parkway S.
Unit #7
Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Ivydale Rd 030524

			Car Repari Shop FROM NORTH						Ivydale Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	0	0	2	2			20	0	23	43			45	28	900	0	928			1	372	10	383			1311	1356
	2024	Raw Trucks	0	0	0	0			0	0	2	2			2	2	21	0	23			0	8	1	9			32	34
	2024	Raw Cars+Trucks	0	0	2	2			20	0	25	45			47	30	921	0	951			1	380	11	392			1343	1390
	DHV	Factor	1.1796	1.1796	1.1796				1.1796	1.1796	1.1796					1.1796	1.1796	1.1796				1.1796	1.1796	1.1796					
	2024	Cars Only	0	0	2	2			24	0	27	51			53	33	1062	0	1095			1	439	12	452			1547	1600
	2024	Trucks Only	0	0	0	0			0	0	2	2			2	2	25	0	27			0	9	1	11			38	40
	2024	No Build	0	0	2	2			24	0	29	53			55	35	1086	0	1122			1	448	13	462			1584	1640
	Cars Growth	Factor	0.0000	0.0000	0.0000				1.0021	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	0.000	0.000	0.000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2027	Adj +Growth+DHV	0	0	2	2			24	0	29	53			55	35	1086	0	1122			1	448	13	462			1584	1640
	Phase 1	Round	0	0	10	10			20	0	30	50			60	40	1090	0	1130			10	450	10	470			1600	1660
	Cars Growth	Factor							1.0042	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor							1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2030	Adj +Growth+DHV	0	0	2	2			24	0	29	53			55	35	1086	0	1121			1	448	13	462			1583	1638
	Opening Year	Round	0	0	10	10			20	0	30	50			60	40	1090	0	1130			10	450	10	470			1600	1660
	Cars Growth	Factor							1.0162	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor							1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2047	Adj +Growth+DHV	0	0	2	2			24	0	29	53			55	35	1086	0	1121			1	448	13	462			1583	1638
	Design Year	Round	0	0	10	10			20	0	30	50			60	40	1090	0	1130			10	450	10	470			1600	1660
PM PEAK	2024	Raw Cars Only	0	0	4	4			19	0	22	41			45	28	492	0	520			0	747	24	771			1291	1336
	2024	Raw Trucks	0	0	0	0			2	0	0	2			2	1	5	0	6			0	7	0	7			13	15
	2024	Raw Cars+Trucks	0	0	4	4			21	0	22	43			47	29	497	0	526			0	754	24	778			1304	1351
	DHV	Factor	1.1796	1.1796	1.1796				1.1796	1.1796	1.1796					1.1796	1.1796	1.1796				1.1796	1.1796	1.1796					
	2024	Cars Only	0	0	5	5			22	0	26	48			53	33	580	0	613			0	881	28	909			1522	1575
	2024	Trucks Only	0	0	0	0			2	0	0	2			2	1	6	0	7			0	8	0	8			15	18
	2024	No Build	0	0	5	5			25	0	26	51			55	34	586	0	620			0	889	28	918			1538	1594
	Cars Growth	Factor	0.0000	0.0000	0.0000				1.0124	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	0.000	0.000	0.000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2027	Adj+Growth+DHV	0	0	5	5			25	0	26	51			56	34	586	0	620			0	889	28	918			1538	1594
	Phase 1	Round	0	0	10	10			30	0	30	60			70	30	590	0	620			0	890	30	920			1540	1610
	Cars Growth	Factor							1.0249	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor							1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2030	Adj+Growth+DHV	0	0	5	5			25	0	26	51			56	34	586	0	620			0	889	28	917			1537	1593
	Opening Year	Round	0	0	10	10			30	0	30	60			70	30	590	0	620			0	890	30	920			1540	1610
	Cars Growth	Factor							1.0987	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor							1.0000	1.0000	0.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2047	Adj+Growth+DHV	0	0	5	5			27	0	26	53			58	34	586	0	620			0	889	28	917			1537	1595
	Design Year	Round	0	0	10	10			30	0	30	60			70	30	590	0	620			0	890	30	920			1540	1610

TMS Engineers, Inc.
2112 Case Parkway S.
Unit #7
Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Burlington Rd 022924

			Burlington Rd. FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	3	0	21	24			0	0	0	0			24	0	941	2	943			3	355	0	358			1301	1325
	2024	Raw Trucks	1	0	0	1			0	0	0	0			1	0	20	0	20			0	25	0	25			45	46
	2024	Raw Cars+Trucks	4	0	21	25			0	0	0	0			25	0	961	2	963			3	380	0	383			1346	1371
	DHV	Factor	1.1917	1.1917	1.1917				1.0000	1.0000	1.0000					1.1917	1.1917	1.1917				1.1917	1.1917	1.1917						
	2024	Cars Only	4	0	25	29			0	0	0	0			29	0	1121	2	1123			4	423	0	427			1550	1579
	2024	Trucks Only	1	0	0	1			0	0	0	0			1	0	24	0	24			0	30	0	30			54	55
	2024	No Build	5	0	25	30			0	0	0	0			30	0	1145	2	1148			4	453	0	456			1604	1634
	Cars Growth	Factor	1.0000	1.0000	1.0157				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj +Growth+DHV	5	0	25	30			0	0	0	0			30	0	1145	2	1148			4	453	0	456			1604	1634
	Phase 1	Round	10	0	30	40			0	0	0	0			40	0	1150	10	1160			10	450	0	460			1620	1660
	Cars Growth	Factor	1.0000	1.0000	1.0316				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj +Growth+DHV	5	0	26	31			0	0	0	0			31	0	1145	2	1147			4	453	0	457			1604	1635
	Opening Year	Round	10	0	30	40			0	0	0	0			40	0	1150	10	1160			10	450	0	460			1620	1660
	Cars Growth	Factor	1.0000	1.0000	1.1267				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj +Growth+DHV	5	0	28	33			0	0	0	0			33	0	1145	2	1147			4	453	0	457			1604	1637
	Design Year	Round	10	0	30	40			0	0	0	0			40	0	1150	10	1160			10	450	0	460			1620	1660
PM PEAK	2024	Raw Cars Only	5	0	9	14			0	0	0	0			14	0	564	9	573			14	929	0	943			1516	1530
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	10	0	10			0	15	0	15			25	25
	2024	Raw Cars+Trucks	5	0	9	14			0	0	0	0			14	0	574	9	583			14	944	0	958			1541	1555
	DHV	Factor	1.1917	1.1917	1.1917				1.0000	1.0000	1.0000					1.1917	1.1917	1.1917				1.1917	1.1917	1.1917						
	2024	Cars Only	6	0	11	17			0	0	0	0			17	0	672	11	683			17	1107	0	1124			1807	1824
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	12	0	12			0	18	0	18			30	30
	2024	No Build	6	0	11	17			0	0	0	0			17	0	684	11	695			17	1125	0	1142			1836	1853
	Cars Growth	Factor	1.0000	1.0000	1.0033				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj+Growth+DHV	6	0	11	17			0	0	0	0			17	0	684	11	695			17	1125	0	1142			1836	1853
	Phase 1	Round	10	0	10	20			0	0	0	0			20	0	680	10	690			20	1120	0	1140			1830	1850
	Cars Growth	Factor	1.0000	1.0000	1.0066				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj+Growth+DHV	6	0	11	17			0	0	0	0			17	0	684	11	695			17	1125	0	1142			1837	1854
	Opening Year	Round	10	0	10	20			0	0	0	0			20	0	680	10	690			20	1120	0	1140			1830	1850
	Cars Growth	Factor	1.0000	1.0000	1.0256				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj+Growth+DHV	6	0	11	17			0	0	0	0			17	0	684	11	695			17	1125	0	1142			1837	1854
	Design Year	Round	10	0	10	20			0	0	0	0			20	0	680	10	690			20	1120	0	1140			1830	1850

TMS Engineers, Inc.
2112 Case Parkway S.
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WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Rydalmount Rd 022724

			Forest Hills Blvd. FROM NORTH						Rydalmount Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	53	8	15	76			2	3	4	9			85	4	834	96	934			1	311	1	313			1247	1332
	2024	Raw Trucks	1	0	0	1			0	0	0	0			1	0	13	2	15			0	25	1	26			41	42
	2024	Raw Cars+Trucks	54	8	15	77			2	3	4	9			86	4	847	98	949			1	336	2	339			1288	1374
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284						
	2024	Cars Only	65	10	18	93			2	4	5	11			104	5	1024	118	1147			1	382	1	384			1531	1635
	2024	Trucks Only	1	0	0	1			0	0	0	0			1	0	16	2	18			0	31	1	32			50	52
	2024	No Build	66	10	18	95			2	4	5	11			106	5	1040	120	1166			1	413	2	416			1582	1688
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj +Growth+DHV	66	10	18	95			2	4	5	11			106	5	1040	120	1166			1	413	2	416			1582	1688
	Phase 1	Round	70	10	20	100			10	10	10	30			130	10	1040	120	1170			10	410	10	430			1600	1730
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj +Growth+DHV	66	10	18	94			2	4	5	11			105	5	1040	120	1165			1	413	2	416			1581	1686
	Opening Year	Round	70	10	20	100			10	10	10	30			130	10	1040	120	1170			10	410	10	430			1600	1730
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj +Growth+DHV	66	10	18	94			2	4	5	11			105	5	1040	120	1165			1	413	2	416			1581	1686
	Design Year	Round	70	10	20	100			10	10	10	30			130	10	1040	120	1170			10	410	10	430			1600	1730
PM PEAK	2024	Raw Cars Only	101	7	8	116			1	4	10	15			131	10	555	152	717			11	805	13	829			1546	1677
	2024	Raw Trucks	1	0	0	1			0	0	0	0			1	0	9	0	9			0	5	0	5			14	15
	2024	Raw Cars+Trucks	102	7	8	117			1	4	10	15			132	10	564	152	726			11	810	13	834			1560	1692
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284						
	2024	Cars Only	124	9	10	143			1	5	12	18			161	12	682	187	881			14	989	16	1019			1900	2061
	2024	Trucks Only	1	0	0	1			0	0	0	0			1	0	11	0	11			0	6	0	6			17	18
	2024	No Build	125	9	10	144			1	5	12	18			162	12	693	187	892			14	995	16	1024			1916	2078
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj+Growth+DHV	125	9	10	144			1	5	12	18			162	12	693	187	892			14	995	16	1024			1916	2078
	Phase 1	Round	130	10	10	150			10	10	10	30			180	10	690	190	890			10	990	20	1020			1910	2090
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000				10.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj+Growth+DHV	125	9	10	144			1	5	12	18			162	12	693	187	892			14	995	16	1025			1917	2079
	Opening Year	Round	130	10	10	150			10	10	10	30			180	10	690	190	890			10	990	20	1020			1910	2090
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
			1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj+Growth+DHV	125	9	10	144			1	5	12	18			162	12	693	187	892			14	995	16	1025			1917	2079
	Design Year	Round	130	10	10	150			10	10	10	30			180	10	690	190	890			10	990	20	1020			1910	2090

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WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & S.Taylor Rd 022924

			S.Taylor Rd. FROM NORTH						S.Taylor Rd. FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	136	247	34	417			64	204	114	382			799	153	909	74	1136			16	357	32	405			1541	2340
	2024	Raw Trucks	6	5	0	11			0	2	3	5			16	1	16	5	22			0	10	3	13			35	51
	2024	Raw Cars+Trucks	142	252	34	428			64	206	117	387			815	154	925	79	1158			16	367	35	418			1576	2391
	DHV	Factor	1.1917	1.1917	1.1917				1.1917	1.1917	1.1917					1.1917	1.1917	1.1917				1.1917	1.1917	1.1917						
	2024	Cars Only	162	294	41	497			76	243	136	455			952	182	1083	88	1353			19	425	38	482			1835	2787
	2024	Trucks Only	7	6	0	13			0	2	4	6			19	1	19	6	26			0	12	4	15			42	61
	2024	No Build	169	300	41	510			76	245	139	461			971	184	1102	94	1380			19	437	42	498			1878	2849
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj +Growth+DHV	169	300	41	510			76	245	139	461			971	184	1102	94	1380			19	437	42	498			1878	2849
	Phase 1	Round	170	300	40	510			80	250	140	470			980	180	1100	90	1370			20	440	40	500			1870	2850
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj +Growth+DHV	169	300	41	510			76	245	139	460			970	184	1102	94	1380			19	437	42	498			1878	2848
	Opening Year	Round	170	300	40	510			80	250	140	470			980	180	1100	90	1370			20	440	40	500			1870	2850
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj +Growth+DHV	169	300	41	510			76	245	139	460			970	184	1102	94	1380			19	437	42	498			1878	2848
	Design Year	Round	170	300	40	510			80	250	140	470			980	180	1100	90	1370			20	440	40	500			1870	2850
PM PEAK	2024	Raw Cars Only	122	207	24	353			80	227	156	463			816	83	592	102	777			40	734	75	849			1626	2442
	2024	Raw Trucks	4	0	0	4			3	1	2	6			10	0	5	1	6			0	3	0	3			9	19
	2024	Raw Cars+Trucks	126	207	24	357			83	228	158	469			826	83	597	103	783			40	737	75	852			1635	2461
	DHV	Factor	1.1917	1.1917	1.1917				1.1917	1.1917	1.1917					1.1917	1.1917	1.1917				1.1917	1.1917	1.1917						
	2024	Cars Only	145	247	29	421			95	271	186	552			973	99	705	122	926			48	875	89	1012			1938	2911
	2024	Trucks Only	5	0	0	5			4	1	2	7			12	0	6	1	7			0	4	0	4			11	23
	2024	No Build	150	247	29	425			99	272	188	559			984	99	711	123	933			48	878	89	1015			1948	2933
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2027	Adj+Growth+DHV	150	247	29	425			99	272	188	559			984	99	711	123	933			48	878	89	1015			1948	2933
	Phase 1	Round	150	250	30	430			100	270	190	560			990	100	710	120	930			50	880	90	1020			1950	2940
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2030	Adj+Growth+DHV	150	247	29	426			99	272	188	559			985	99	711	123	933			48	878	89	1015			1948	2933
	Opening Year	Round	150	250	30	430			100	270	190	560			990	100	710	120	930			50	880	90	1020			1950	2940
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000						
	2047	Adj+Growth+DHV	150	247	29	426			99	272	188	559			985	99	711	123	933			48	878	89	1015			1948	2933
	Design Year	Round	150	250	30	430			100	270	190	560			990	100	710	120	930			50	880	90	1020			1950	2940

TMS Engineers, Inc.
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WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Euclid Heights Blvd & Lee Rd 022724

			Lee Rd. FROM NORTH						Lee Rd. FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	4	254	28	286			31	239	61	331			617	60	180	5	245			23	142	10	175			420	1037
	2024	Raw Trucks	2	8	1	11			2	8	1	11			22	0	3	0	3			0	1	0	1			4	26
	2024	Raw Cars+Trucks	6	262	29	297			33	247	62	342			639	60	183	5	248			23	143	10	176				
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					
	2024	Cars Only	5	312	34	351			38	294	75	407			758	74	221	6	301			28	174	12	214			515	1273
	2024	Trucks Only	2	10	1	14			2	10	1	14			27	0	4	0	4			0	1	0	1			5	32
	2024	No Build	7	322	36	365			41	303	76	420			785	74	225	6	305			28	176	12	216			521	1306
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0377	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	1				
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0640	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	1				
	2027	Adj +Growth+DHV	7	322	36	365			42	303	76	422			787	74	225	6	305			28	176	12	216			521	1307
	Phase 1	Round	10	320	40	370			40	300	80	420			790	70	220	10	300			30	180	10	220			520	1310
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0767	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.1321	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2030	Adj +Growth+DHV	7	322	36	365			44	303	76	423			788	74	225	6	305			28	176	12	216			521	1309
	Opening Year	Round	10	320	40	370			40	300	80	420			790	70	220	10	300			30	180	10	220			520	1310
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.3277	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.6092	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2047	Adj +Growth+DHV	7	322	36	365			55	303	76	434			799	74	225	6	305			28	176	12	216			521	1320
	Design Year	Round	10	320	40	370			50	300	80	430			800	70	220	10	300			30	180	10	220			520	1320
PM PEAK	2024	Raw Cars Only	14	308	43	365			16	294	67	377			742	57	154	8	219			77	256	29	362			581	1323
	2024	Raw Trucks	0	4	0	4			0	4	0	4			8	0	0	0	0			0	1	0	1			1	9
	2024	Raw Cars+Trucks	14	312	43	369			16	298	67	381			750	57	154	8	219			77	257	29	363				
	DHV	Factor	1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					
	2024	Cars Only	17	378	53	448			20	361	82	463			911	70	189	10	269			95	314	36	445			714	1625
	2024	Trucks Only	0	5	0	5			0	5	0	5			10	0	0	0	0			0	1	0	1			1	11
	2024	No Build	17	383	53	453			20	366	82	468			921	70	189	10	269			95	316	36	446			715	1636
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0036					
	Truck Growth	Factor	1.0687	1.0000	1.0166				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0081	1.0000					
	2027	Adj+Growth+DHV	17	383	53	453			20	366	82	468			921	70	189	10	269			95	316	36	446			715	1636
	Phase 1	Round	20	380	50	450			20	370	80	470			920	70	190	10	270			90	320	40	450			720	1640
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0072					
	Truck Growth	Factor	1.1422	1.0000	1.0335				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0163	1.0000					
	2030	Adj+Growth+DHV	17	383	53	453			20	366	82	468			921	70	189	10	269			95	316	36	447			716	1637
	Opening Year	Round	20	380	50	450			20	370	80	470			920	70	190	10	270			90	320	40	450			720	1640
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0280					
	Truck Growth	Factor	1.6645	1.0000	1.1345				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0640	1.0000					
	2047	Adj+Growth+DHV	17	383	53	453			20	366	82	468			921	70	189	10	269			95	316	37	448			717	1638
	Design Year	Round	20	380	50	450			20	370	80	470			920	70	190	10	270			90	320	40	450			720	1640

TMS Engineers, Inc.
2112 Case Parkway S.
Unit #7
Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Euclid Heights Blvd & Ivydale Rd 022724

			Ivydale Rd. FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	15	0	6	21			0	0	0	0			21	0	141	16	157			5	174	0	179			336	357
	2024	Raw Trucks	1	0	0	1			0	0	0	0			1	0	0	2	2			1	2	0	3			5	6
	2024	Raw Cars+Trucks	16	0	6	22			0	0	0	0			22	0	141	18	159			6	176	0	182				
	DHV	Factor	1.2284	1.2284	1.2284				1.0000	1.0000	1.0000					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					
	2024	Cars Only	18	0	7	25			0	0	0	0			25	0	173	20	193			6	214	0	220			413	438
	2024	Trucks Only	1	0	0	1			0	0	0	0			1	0	0	2	2			1	2	0	4			6	7
	2024	No Build	20	0	7	27			0	0	0	0			27	0	173	22	195			7	216	0	224			419	446
	Cars Growth	Factor	1.0000	1.0000	1.0057				1.0000	1.0000	1.0000					1.0000	1.0000	1.0021				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2027	Adj +Growth+DHV	20	0	7	27			0	0	0	0			27	0	173	22	195			7	216	0	224			419	446
	Phase 1	Round	20	0	10	30			0	0	0	0			30	0	170	20	190			10	220	0	230			420	450
	Cars Growth	Factor	1.0000	1.0000	1.0115				1.0000	1.0000	1.0000					1.0000	1.0000	1.0042				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2030	Adj +Growth+DHV	20	0	7	27			0	0	0	0			27	0	173	22	195			7	216	0	223			418	445
	Opening Year	Round	20	0	10	30			0	0	0	0			30	0	170	20	190			10	220	0	230			420	450
	Cars Growth	Factor	1.0000	1.0000	1.0446				1.0000	1.0000	1.0000					1.0000	1.0000	1.0162				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	2047	Adj +Growth+DHV	20	0	8	28			0	0	0	0			28	0	173	22	195			7	216	0	223			418	446
	Design Year	Round	20	0	10	30			0	0	0	0			30	0	170	20	190			10	220	0	230			420	450
PM PEAK	2024	Raw Cars Only	15	0	6	21			0	0	0	0			21	0	150	22	172			8	217	0	225			397	418
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	15	0	6	21			0	0	0	0			21	0	150	22	172			8	217	0	225			397	418
	DHV	Factor	1.2284	1.2284	1.2284				1.0000	1.0000	1.0000					1.2284	1.2284	1.2284				1.2284	1.2284	1.2284					
	2024	Cars Only	18	0	7	25			0	0	0	0			25	0	184	27	211			10	267	0	277			488	513
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	18	0	7	26			0	0	0	0			26	0	184	27	211			10	267	0	276			488	513
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0117				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0039					
	2027	Adj+Growth+DHV	18	0	7	26			0	0	0	0			26	0	184	27	212			10	267	0	276			488	514
	Phase 1	Round	20	0	10	30			0	0	0	0			30	0	180	30	210			10	270	0	280			490	520
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0236				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0078					
	2030	Adj+Growth+DHV	18	0	7	25			0	0	0	0			25	0	184	28	212			10	267	0	277			489	514
	Opening Year	Round	20	0	10	30			0	0	0	0			30	0	180	30	210			10	270	0	280			490	520
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0937				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0303					
	2047	Adj+Growth+DHV	18	0	7	25			0	0	0	0			25	0	184	30	214			10	267	0	277			491	516
	Design Year	Round	20	0	10	30			0	0	0	0			30	0	180	30	210			10	270	0	280			490	520

TMS Engineers, Inc.
2112 Case Parkway S.
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WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Euclid Heights Blvd & S. Taylor Rd 022124

			S. Taylor Rd. FROM NORTH						S. Taylor Rd. FROM SOUTH						TOTAL NORTH SOUTH	Severnece Circle FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	15	338	80	433			14	297	131	442			875	64	57	15	136			57	116	21	194			330	1205
	2024	Raw Trucks	4	5	1	10			2	9	1	12			22	1	1	0	2			0	2	1	3			5	27
	2024	Raw Cars+Trucks	19	343	81	443			16	306	132	454			897	65	58	15	138			57	118	22	197			335	1232
	DHV	Factor	1.2340	1.2340	1.2340				1.2340	1.2340	1.2340					1.2340	1.2340	1.2340				1.2340	1.2340	1.2340					
	2024	Cars Only	19	417	99	535			17	366	162	545			1080	79	70	19	168			70	143	26	239			407	1487
	2024	Trucks Only	5	6	1	12			2	11	1	15			27	1	1	0	2			0	2	1	4			6	33
	2024	No Build	23	423	100	547			20	378	163	560			1107	80	72	19	170			70	146	27	243			413	1520
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0438	1.0000	1.0000					1.0000	1.0263	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0285	1.0000				1.0000	1.0000	1.0000					
	2027	Adj +Growth+DHV	23	423	100	547			21	378	163	561			1108	80	73	19	172			70	146	27	243			415	1523
	Phase 1	Round	20	420	100	540			20	380	160	560			1100	80	70	20	170			70	150	30	250			420	1520
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0896	1.0000	1.0000					1.0000	1.0533	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.0577	1.0000				1.0000	1.0000	1.0000					
	2030	Adj +Growth+DHV	23	423	100	546			21	378	163	562			1108	80	75	19	174			70	146	27	243			417	1525
	Opening Year	Round	20	420	100	540			20	380	160	560			1100	80	80	20	180			70	150	30	250			430	1530
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.3894	1.0000	1.0000					1.0000	1.2205	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					1.0000	1.2401	1.0000				1.0000	1.0000	1.0000					
	2047	Adj +Growth+DHV	23	423	100	546			26	378	163	567			1113	80	87	19	186			70	146	27	243			429	1542
	Design Year	Round	20	420	100	540			30	380	160	570			1110	80	90	20	190			70	150	30	250			440	1550
PM PEAK	2024	Raw Cars Only	14	307	58	379			37	333	181	551			930	144	106	27	277			107	123	27	257			534	1464
	2024	Raw Trucks	1	3	0	4			0	2	2	4			8	3	0	4	7			1	1	3	5			12	20
	2024	Raw Cars+Trucks	15	310	58	383			37	335	183	555			938	147	106	31	284			108	124	30	262			546	1484
	DHV	Factor	1.2340	1.2340	1.2340				1.2340	1.2340	1.2340					1.2340	1.2340	1.2340				1.2340	1.2340	1.2340					
	2024	Cars Only	17	379	72	468			46	411	223	680			1148	178	131	33	342			132	152	33	317			659	1807
	2024	Trucks Only	1	4	0	5			0	2	2	5			10	4	0	5	9			1	1	4	6			15	25
	2024	No Build	19	383	72	473			46	413	226	685			1157	181	131	38	350			133	153	37	323			674	1831
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0093	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0093	1.0000	1.0000					1.0096	1.0000	1.0000				1.0000	1.0000	1.1265					
	2027	Adj+Growth+DHV	19	383	72	473			46	413	226	685			1158	181	131	38	350			133	153	37	324			674	1832
	Phase 1	Round	20	380	70	470			50	410	230	690			1160	180	130	40	350			130	150	40	320			670	1830
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0187	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0187	1.0000	1.0000					1.0194	1.0000	1.0000				1.0000	1.0000	1.2690					
	2030	Adj+Growth+DHV	19	383	72	474			47	413	226	686			1160	181	131	38	350			133	153	38	324			674	1834
	Opening Year	Round	20	380	70	470			50	410	230	690			1160	180	130	40	350			130	150	40	320			670	1830
	Cars Growth	Factor	1.0000	1.0000	1.0000				1.0738	1.0000	1.0000					1.0000	1.0000	1.0000				1.0000	1.0000	1.0000					
	Truck Growth	Factor	1.0000	1.0000	1.0000				1.0738	1.0000	1.0000					1.0762	1.0000	1.0000				1.0000	1.0000	2.4921					
	2047	Adj+Growth+DHV	19	383	72	474			49	413	226	688			1162	182	131	38	351			133	153	43	329			680	1842
	Design Year	Round	20	380	70	470			50	410	230	690			1160	180	130	40	350			130	150	40	320			670	1830

TMS Engineers, Inc.
2112 Case Parkway S.
Unit #7
Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Park Synagogue West 091724

			FROM NORTH						Park Synagogue West FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	7	7			8	11
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	1	1			1	1
	2024	Raw Cars+Trucks	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	8	8			9	12
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	8	8			9	12
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	1	1			1	1
	2024	No Build	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	9	9			10	14
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj +Growth+DHV	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	9	9			10	14
	Phase 1	Round	0	0	0	0			10	0	10	20			20	10	0	0	10			0	0	10	10			20	40
	2030	Adj +Growth+DHV	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	9	9			10	13
	Opening Year	Round	0	0	0	0			10	0	10	20			20	10	0	0	10			0	0	10	10			20	40
	2047	Adj +Growth+DHV	0	0	0	0			2	0	1	3			3	1	0	0	1			0	0	9	9			10	13
	Design Year	Round	0	0	0	0			10	0	10	20			20	10	0	0	10			0	0	10	10			20	40
PM PEAK	2024	Raw Cars Only	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj+Growth+DHV	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0				######	######
	Phase 1	Round	0	0	0	0			0	0	10	10			10	10	0	0	10			0	0	0				######	######
	2030	Adj+Growth+DHV	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	Opening Year	Round	0	0	0	0			0	0	10	10			10	10	0	0	10			0	0	0	0			10	20
	2047	Adj+Growth+DHV	0	0	0	0			0	0	2	2			2	1	0	0	1			0	0	0	0			1	3
	Design Year	Round	0	0	0	0			0	0	10	10			10	10	0	0	10			0	0	0	0			10	20

TMS Engineers, Inc.
2112 Case Parkway S.
Unit #7
Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Park Synagogue Center 091724

			FROM NORTH						Park Synagogue Center FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Phase 1	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2030	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Opening Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2047	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Design Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
PM PEAK	2024	Raw Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj+Growth+DHV	0	0	0	0			0	0	0	0				0	0	0	0			0	0	0					
	Phase 1	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0					
	2030	Adj+Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Opening Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2047	Adj+Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Design Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0

TMS Engineers, Inc.
2112 Case Parkway S.
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Twinsburg, Ohio 44087

WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Mayfield Rd & Park Synagogue East 091724

			FROM NORTH						Park Synagogue East FROM SOUTH						TOTAL NORTH SOUTH	Mayfield Rd. FROM EAST						Mayfield Rd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Phase 1	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2030	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Opening Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2047	Adj +Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Design Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
PM PEAK	2024	Raw Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Raw Cars+Trucks	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	DHV	Factor	1.0000	1.0000	1.0000				1.1254	1.1254	1.1254					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2024	No Build	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj+Growth+DHV	0	0	0	0			0	0	0	0				0	0	0	0			0	0	0	0				
	Phase 1	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0				
	2030	Adj+Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Opening Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	2047	Adj+Growth+DHV	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0
	Design Year	Round	0	0	0	0			0	0	0	0			0	0	0	0	0			0	0	0	0			0	0

TMS Engineers, Inc.
2112 Case Parkway S.
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WORKSHEET FOR NO BUILD VEHICULAR TRAFFIC VOLUME CALCULATIONS

Euclid Heights Blvd & Park Synagogue South 091724

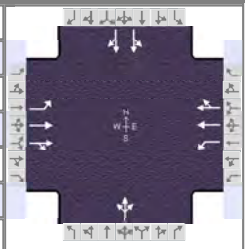
			Park Synagogue South FROM NORTH						FROM SOUTH						TOTAL NORTH SOUTH	Euclid Heights Blvd. FROM EAST						Euclid Heights Blvd. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIREC.
			Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus		
AM PEAK	2024	Raw Cars Only	2	0	0	2			0	0	0	0			2	0	157	1	158			1	144	0	145			303	305
	2024	Raw Trucks	0	0	1	1			0	0	0	0			1	0	4	0	4			0	8	0	8			12	13
	2024	Raw Cars+Trucks	2	0	1	3			0	0	0	0			3	0	161	1	162			1	152	0	153			315	318
	DHV	Factor	1.1254	1.1254	1.1254				1.0000	1.0000	1.0000					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	2	0	0	2			0	0	0	0			2	0	177	1	178			1	162	0	163			341	343
	2024	Trucks Only	0	0	1	1			0	0	0	0			1	0	5	0	5			0	9	0	9			14	15
	2024	No Build	2	0	1	3			0	0	0	0			3	0	181	1	182			1	171	0	172			355	358
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj +Growth+DHV	2	0	0	2			0	0	0	0			2	0	181	1	182			1	171	0	172			355	357
	Phase 1	Round	10	0	0	10			0	0	0	0			10	0	180	10	190			10	170	0	180			370	380
	2030	Adj +Growth+DHV	2	0	0	2			0	0	0	0			2	0	181	1	182			1	171	0	172			354	356
	Opening Year	Round	10	0	0	10			0	0	0	0			10	0	180	10	190			10	170	0	180			370	380
	2047	Adj +Growth+DHV	2	0	0	2			0	0	0	0			2	0	181	1	182			1	171	0	172			354	356
	Design Year	Round	10	0	0	10			0	0	0	0			10	0	180	10	190			10	170	0	180			370	380
PM PEAK	2024	Raw Cars Only	2	0	2	4			0	0	0	0			4	0	194	2	196			1	213	0	214			410	414
	2024	Raw Trucks	0	0	0	0			0	0	0	0			0	0	2	0	2			0	2	0	2			4	4
	2024	Raw Cars+Trucks	2	0	2	4			0	0	0	0			4	0	196	2	198			1	215	0	216			414	418
	DHV	Factor	1.1254	1.1254	1.1254				1.0000	1.0000	1.0000					1.1254	1.1254	1.1254				1.1254	1.1254	1.1254					
	2024	Cars Only	2	0	2	4			0	0	0	0			4	0	218	2	220			1	240	0	241			461	465
	2024	Trucks Only	0	0	0	0			0	0	0	0			0	0	2	0	2			0	2	0	2			5	5
	2024	No Build	2	0	2	5			0	0	0	0			5	0	221	2	223			1	242	0	243			466	470
	Cars Growth	Factor	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					0.0000	0.0000	0.0000				0.0000	0.0000	0.0000					
	Truck Growth	Factor	0.000	0.000	0.000				0.000	0.000	0.000					0.000	0.000	0.000				0.000	0.000	0.000					
	2027	Adj+Growth+DHV	2	0	2	5			0	0	0	0			5	0	221	2	223			1	242	0	243			466	470
	Phase 1	Round	10	0	10	20			0	0	0	0			20	0	220	10	230			10	240	0	250			480	500
	2030	Adj+Growth+DHV	2	0	2	4			0	0	0	0			4	0	221	2	223			1	242	0	243			466	470
	Opening Year	Round	10	0	10	20			0	0	0	0			20	0	220	10	230			10	240	0	250			480	500
	2047	Adj+Growth+DHV	2	0	2	4			0	0	0	0			4	0	221	2	223			1	242	0	243			466	470
	Design Year	Round	10	0	10	20			0	0	0	0			20	0	220	10	230			10	240	0	250			480	500

TMS Engineers, Inc.
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Appendix I
Intersection Capacity Analysis Worksheets - No-Build - 2027

HCS Signalized Intersection Results Summary

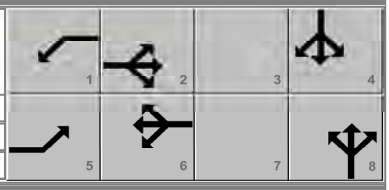
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2027 NB AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	400	30	100	920	10	40	210	120	30	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	3.5	51.6	27.8	0.0	0.0	
Yellow	3.0	0.0	3.0	3.0	0.0	0.0	
Red	3.0	0.0	3.0	4.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.6	12.7	61.0		34.8		34.8
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.3		11.2
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

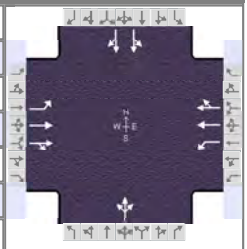
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	226	222	104	485	483		385		171		173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1848		1612		1478		1614
Queue Service Time (g_s), s	0.6	7.4	7.5	2.9	17.7	17.7		15.1		0.0		9.2
Cycle Queue Clearance Time (g_c), s	0.6	7.4	7.5	2.9	17.7	17.7		24.3		7.8		9.2
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.26		0.26		0.26
Capacity (*c*), veh/h	316	911	888	573	972	969		465		432		427
Volume-to-Capacity Ratio (*X*)	0.066	0.248	0.250	0.182	0.499	0.499		0.830		0.396		0.404
Back of Queue (*Q*), ft/ln (95 th percentile)	11	147	145	51	309	308		375		159		164
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.7	5.6	2.0	12.1	12.0		14.5		6.3		6.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.14	0.51	0.31	0.31		0.38		0.16		0.16
Uniform Delay (d_1), s/veh	13.5	15.5	15.5	11.4	16.1	16.1		37.2		31.2		31.8
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	1.8	1.8		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.5	16.1	16.2	11.4	17.9	17.9		38.7		31.5		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.0	B		17.3	B		38.7	D		31.7	C	
Intersection Delay, s/veh / LOS	22.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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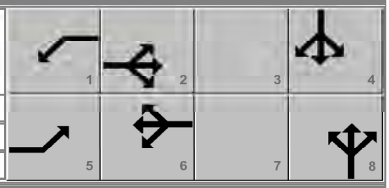
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2027 NB PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	750	50	110	470	30	30	300	70	20	220	20

Signal Information										
Cycle, s	105.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	6.0	0.8	50.0	29.2	0.0	0.0
				Yellow	3.0	0.0	3.0	3.0	0.0	0.0
				Red	3.0	0.0	3.0	4.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.0	56.0	12.8	56.9		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	3.9		5.5			27.7		9.1
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.4		1.5
Phase Call Probability	0.85		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	66	444	435	121	277	272		440		143		142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1814	1767	1856	1816		1731		1527		1656
Queue Service Time (g_s), s	1.9	17.3	17.3	3.5	9.5	9.6		15.1		0.0		7.1
Cycle Queue Clearance Time (g_c), s	1.9	17.3	17.3	3.5	9.5	9.6		25.7		6.3		7.1
Green Ratio (*g/C*)	0.53	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	488	884	865	378	899	880		518		464		460
Volume-to-Capacity Ratio (*X*)	0.135	0.503	0.503	0.320	0.308	0.310		0.849		0.309		0.309
Back of Queue (*Q*), ft/ln (95 th percentile)	33	310	306	62	189	186		417		128		129
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	12.1	11.9	2.4	7.4	7.3		16.2		5.1		5.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18	0.31	0.31	0.62	0.19	0.19		0.42		0.13		0.13
Uniform Delay (d_1), s/veh	12.5	18.9	18.9	13.6	16.4	16.4		36.5		29.7		30.0
Incremental Delay (d_2), s/veh	0.0	2.0	2.1	0.2	0.9	0.9		1.5		0.1		0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.5	21.0	21.0	13.8	17.3	17.3		38.1		29.8		30.1
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.4	C		16.7	B		38.1	D		29.9	C	
Intersection Delay, s/veh / LOS	23.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

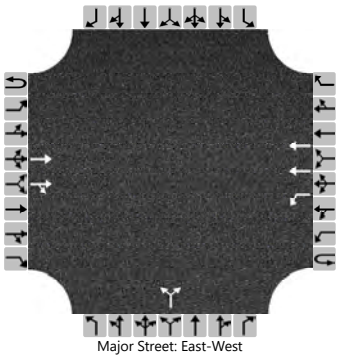
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			450	10	0	40	1090			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1082					352					
v/c Ratio						0.04					0.14					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

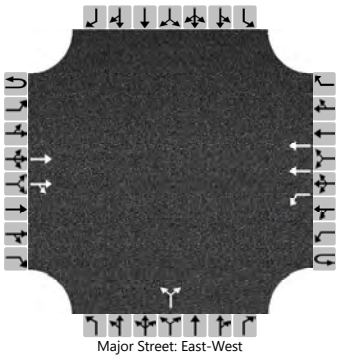
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			890	30	0	30	590			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						701					218					
v/c Ratio						0.05					0.29					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.4					28.1					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				28.1							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

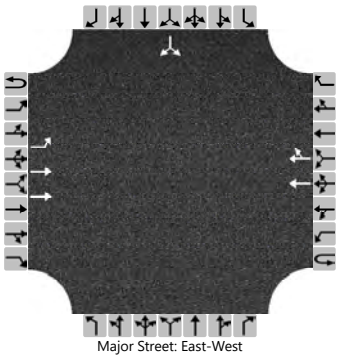
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

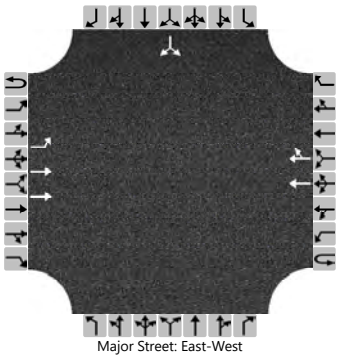
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

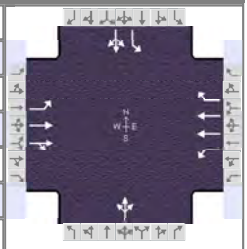
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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HCS Signalized Intersection Results Summary

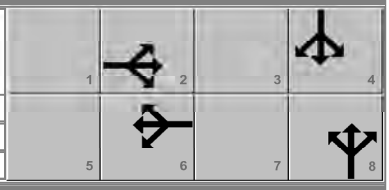
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2027 NB AM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	420	10	10	1090	120	10	10	10	70	10	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.5	9.7	6.4	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		77.0		77.0		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.1
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

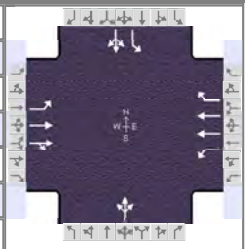
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	12	251	249	12	1267	140		35		81	35	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	434	1856	1840	898	1781	1585		1751		1781	1670	
Queue Service Time (g_s), s	1.5	5.4	5.4	0.5	19.1	3.3		2.0		4.6	2.0	
Cycle Queue Clearance Time (g_c), s	20.6	5.4	5.4	6.0	19.1	3.3		2.0		4.6	2.0	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	281	1245	1235	625	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.041	0.201	0.202	0.019	0.530	0.131		0.328		0.496	0.227	
Back of Queue (*Q*), ft/ln (95 th percentile)	8	92	92	5	277	49		40		93	39	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	3.6	3.6	0.2	10.9	1.9		1.6		3.7	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.09	0.09	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.1	6.6	6.6	7.7	8.8	6.2		47.2		45.4	44.2	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.1	0.8	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	14.4	6.9	6.9	7.8	9.7	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.1	A		9.3	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

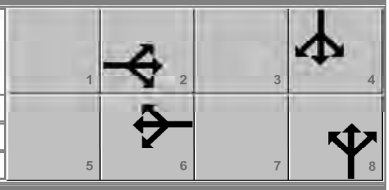
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2027 NB PM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	990	20	10	690	190	10	10	10	130	10	10

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.2	10.2	6.1	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

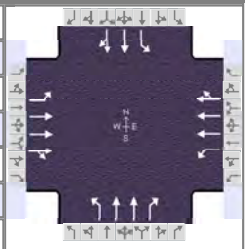
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	11	545	541	11	742	204		32		140	22	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	712	1856	1842	519	1781	1585		1751		1781	1716	
Queue Service Time (g_s), s	0.7	14.5	14.5	1.0	9.2	5.1		1.9		8.1	1.2	
Cycle Queue Clearance Time (g_c), s	9.9	14.5	14.5	15.5	9.2	5.1		1.9		8.1	1.2	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	482	1241	1232	344	2381	1060		102		173	167	
Volume-to-Capacity Ratio (*X*)	0.022	0.439	0.439	0.031	0.312	0.193		0.317		0.808	0.129	
Back of Queue (*Q*), ft/ln (95 th percentile)	5	237	236	6	146	76		37		168	23	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	9.3	9.2	0.2	5.7	3.0		1.5		6.6	0.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.04	0.24	0.24	0.06	0.15	0.25		0.04		0.94	0.02	
Uniform Delay (d_1), s/veh	9.4	8.2	8.2	11.8	7.3	6.6		47.5		46.4	43.3	
Incremental Delay (d_2), s/veh	0.1	1.1	1.1	0.2	0.3	0.4		0.7		3.4	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.4	9.3	9.3	12.0	7.6	7.0		48.1		49.8	43.5	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.3	A		7.5	A		48.1	D		49.0	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

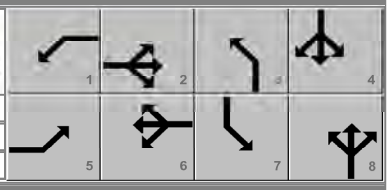
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2027 NB AM Peak Mayfield Rd._S. Taylor Rd..x…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	440	40	180	1100	90	80	250	140	170	300	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	40.0	7.5	6.4	4.6	12.4
Yellow	3.5	3.5	3.5	3.5	0.0	3.5
Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	9.7	56.2	13.5	60.0	12.4	18.4	16.9	23.0
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	2.7		2.0		6.2	11.2	10.9	11.4
Green Extension Time (g_e), s	0.0	0.0	2.8	0.0	0.1	1.2	0.1	1.4
Phase Call Probability	0.45		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.21		0.00	0.08	0.07	0.01

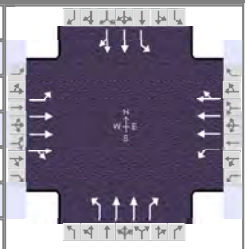
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	333	162	186	829	398	82	258	144	175	177	173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1795	1795	1795	1598	1781	1870	1793
Queue Service Time (g_s), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Cycle Queue Clearance Time (g_c), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Green Ratio (*g/C*)	0.43	0.47	0.47	0.43	0.51	0.51	0.18	0.12	0.12	0.23	0.16	0.16
Capacity (*c*), veh/h	232	1771	847	514	1907	915	232	424	189	310	302	290
Volume-to-Capacity Ratio (*X*)	0.089	0.188	0.192	0.361	0.435	0.435	0.355	0.609	0.766	0.566	0.588	0.598
Back of Queue (*Q*), ft/ln (95 th percentile)	13	105	106	146	259	260	83	144	159	175	194	190
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	4.1	4.1	5.7	10.2	10.2	3.3	5.7	6.3	6.9	7.6	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.11	0.10	0.11	0.86	0.26	0.26	0.17	0.14	0.33	0.58	0.19	0.19
Uniform Delay (d_1), s/veh	18.6	16.0	16.0	21.6	16.2	16.2	37.4	44.0	7.6	35.1	40.8	40.9
Incremental Delay (d_2), s/veh	0.1	0.2	0.5	0.2	0.7	1.5	0.3	0.5	2.4	0.6	0.7	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.7	16.2	16.5	21.7	16.9	17.7	37.7	44.5	10.0	35.7	41.5	41.6
Level of Service (LOS)	B	B	B	C	B	B	D	D	B	D	D	D
Approach Delay, s/veh / LOS	16.4	B		17.8	B		33.1	C		39.6	D	
Intersection Delay, s/veh / LOS	24.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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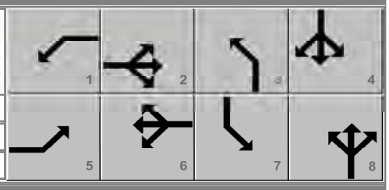
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2027 NB PM Peak Mayfield Rd._S. Taylor Rd.…..		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	990	90	100	760	120	100	270	190	150	250	30

Signal Information												
Cycle, s	105.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	5.4	35.9	7.1	6.8	2.9	15.9		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	3.5	3.5	0.0	3.5		
				Red	3.0	3.0	2.5	2.5	0.0	2.5		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	11.9	54.4	13.1	55.6	12.8	21.9	15.6	24.7
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.8		2.0		7.0	14.3	9.5	9.4
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.77		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

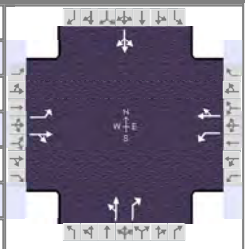
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	51	745	357	102	611	287	102	276	194	153	144	141
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1737	1795	1795	1598	1781	1870	1800
Queue Service Time (g_s), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Cycle Queue Clearance Time (g_c), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Green Ratio (*g/C*)	0.41	0.46	0.46	0.39	0.47	0.47	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	307	1705	815	335	1748	812	283	543	242	321	334	321
Volume-to-Capacity Ratio (*X*)	0.166	0.437	0.438	0.304	0.350	0.353	0.361	0.508	0.803	0.477	0.432	0.440
Back of Queue (*Q*), ft/ln (95 th percentile)	34	259	259	91	209	206	98	147	148	147	150	148
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	10.2	10.1	3.6	8.2	8.0	3.9	5.9	5.9	5.8	5.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.28	0.26	0.26	0.53	0.21	0.20	0.20	0.15	0.31	0.49	0.15	0.15
Uniform Delay (d_1), s/veh	19.5	19.4	19.4	26.5	17.8	17.8	34.5	41.0	20.8	33.2	38.4	38.5
Incremental Delay (d_2), s/veh	0.1	0.8	1.7	0.2	0.6	1.2	0.3	0.3	2.4	0.4	0.3	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.6	20.2	21.1	26.7	18.4	19.0	34.8	41.2	23.2	33.6	38.7	38.8
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.5	C		19.4	B		34.0	C		37.0	D	
Intersection Delay, s/veh / LOS	24.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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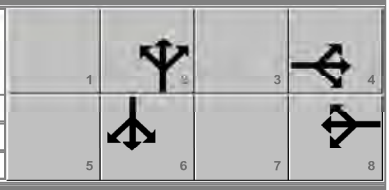
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2027 NB AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	180	10	70	220	10	40	300	80	10	320	40

Signal Information											
Cycle, s	105.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On	Green	73.6	20.4	0.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
				Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		25.9		25.9		79.1		79.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		18.0		19.1				
Green Extension Time (*g e*), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

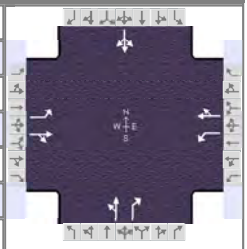
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	207		76	250			370	87		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1130	1853		1175	1856			1702	1560		1806	
Queue Service Time (*g s*), s	2.9	10.6		6.6	13.2			0.0	1.9		0.0	
Cycle Queue Clearance Time (*g c*), s	16.0	10.6		17.1	13.2			7.9	1.9		8.9	
Green Ratio (*g/C*)	0.19	0.19		0.19	0.19			0.70	0.70		0.70	
Capacity (*c*), veh/h	149	362		181	363			1230	1092		1299	
Volume-to-Capacity Ratio (*X*)	0.219	0.570		0.422	0.689			0.301	0.080		0.310	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		88	253			132	26		145	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.4		3.5	10.0			5.1	1.0		5.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		0.88	0.25			0.13	0.33		0.14	
Uniform Delay (*d 1*), s/veh	46.7	38.2		46.0	39.3			5.9	5.0		6.1	
Incremental Delay (*d 2*), s/veh	0.3	0.5		0.6	0.9			0.6	0.1		0.6	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.9	38.8		46.5	40.2			6.5	5.2		6.7	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	39.9	D		41.6	D		6.3	A		6.7	A	
Intersection Delay, s/veh / LOS	20.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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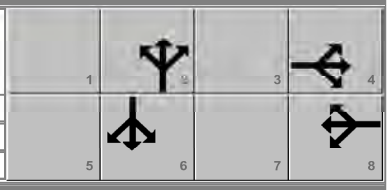
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2027 NB PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	320	40	70	190	10	20	370	80	20	380	50

Signal Information											
Cycle, s	105.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On	Green	63.9	30.1	0.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
				Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		35.6		35.6		69.4		69.4
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		21.5		28.4				
Green Extension Time (*g e*), s		1.6		1.6		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	379		74	211			411	84		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1171	1834		1004	1854			1794	1560		1786	
Queue Service Time (*g s*), s	7.4	19.5		7.4	9.6			0.0	2.4		0.0	
Cycle Queue Clearance Time (*g c*), s	16.6	19.5		26.4	9.6			11.8	2.4		14.5	
Green Ratio (*g/C*)	0.29	0.29		0.29	0.29			0.61	0.61		0.61	
Capacity (*c*), veh/h	303	528		176	534			1125	947		1120	
Volume-to-Capacity Ratio (*X*)	0.312	0.717		0.419	0.394			0.365	0.089		0.423	
Back of Queue (*Q*), ft/ln (95 th percentile)	96	338		85	193			213	37		246	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.8	13.3		3.3	7.6			8.3	1.4		9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.07	0.34		0.85	0.19			0.21	0.46		0.25	
Uniform Delay (*d 1*), s/veh	36.5	33.5		45.2	30.0			10.4	8.6		11.0	
Incremental Delay (*d 2*), s/veh	0.2	0.7		0.6	0.2			0.9	0.2		1.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	36.7	34.2		45.8	30.2			11.3	8.8		12.1	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	34.7	C		34.2	C		10.9	B		12.1	B	
Intersection Delay, s/veh / LOS	21.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

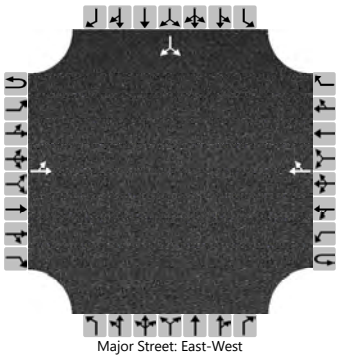
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	220				170	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1383													648	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.6	0.1												10.8	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.4												10.8			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

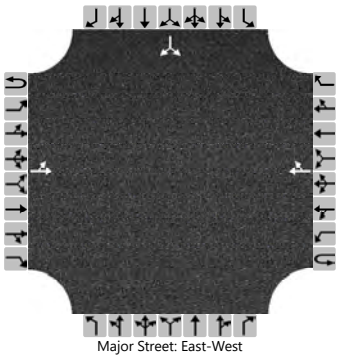
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	270				180	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

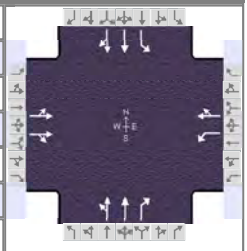
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1334													568	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.7	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.7		
Approach LOS		A												B		

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HCS Signalized Intersection Results Summary

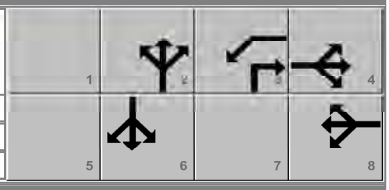
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2027 NB AM Peak S. Taylor Rd._Euclid Height…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	30	80	70	20	20	380	160	20	420	100

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.7	27.0	26.9	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.2		40.2
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		8.4		6.3				
Green Extension Time (*g e*), s		0.4		0.3		0.0		0.0
Phase Call Probability		1.00		0.99				
Max Out Probability		0.00		0.00				

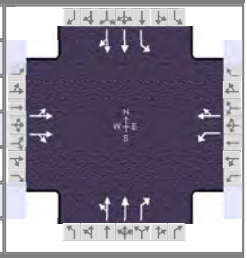
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	138		125	84	95		216	205	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1822		1789	1781	1798		1763	1702	1585	1000	1870	1746
Queue Service Time (*g s*), s	6.4		5.9	3.9	4.3		0.0	9.6	5.2	1.7	12.5	12.6
Cycle Queue Clearance Time (*g c*), s	6.4		5.9	3.9	4.3		9.2	9.6	5.2	11.4	12.5	12.6
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	468		460	456	460		620	562	929	307	617	576
Volume-to-Capacity Ratio (*X*)	0.295		0.271	0.185	0.206		0.348	0.365	0.181	0.069	0.456	0.462
Back of Queue (*Q*), ft/ln (95 th percentile)	128		113	76	86		192	188	82	20	250	236
Back of Queue (*Q*), veh/ln (95 th percentile)	5.0		4.5	3.0	3.4		7.7	7.4	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13		0.11	0.76	0.09		0.19	0.19	1.03	0.00	0.25	0.24
Uniform Delay (*d 1*), s/veh	31.4		31.2	30.5	30.7		26.6	26.8	10.1	31.1	27.7	27.8
Incremental Delay (*d 2*), s/veh	0.1		0.1	0.1	0.1		1.5	1.8	0.4	0.4	2.4	2.6
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.5		31.3	30.6	30.8		28.2	28.6	10.5	31.6	30.2	30.4
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.4		C	30.7		C	23.3		C	30.3		C
Intersection Delay, s/veh / LOS	28.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

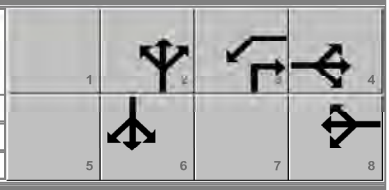
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2027 NB PM Peak S. Taylor Rd._Euclid Height…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	40	180	130	40	50	410	230	20	380	70

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.5	27.0	27.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		10.8		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	183		165	196	185		225	275	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1801		1786	1781	1794		1350	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	8.8		8.0	9.6	9.0		5.3	13.6	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	8.8		8.0	9.6	9.0		16.3	13.6	8.1	15.6	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	463		459	458	461		486	559	928	259	615	581
Volume-to-Capacity Ratio (*X*)	0.394		0.360	0.427	0.400		0.463	0.492	0.269	0.084	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	174		153	188	176		217	250	130	22	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	6.8		6.1	7.4	6.9		8.7	9.9	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17		0.16	1.88	0.18		0.22	0.25	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.2		31.9	32.5	32.3		28.5	28.2	10.7	34.5	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		3.1	3.1	0.7	0.6	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.4		32.1	32.8	32.5		31.7	31.3	11.4	35.1	29.3	29.5
Level of Service (LOS)	C		C	C	C		C	C	B	D	C	C
Approach Delay, s/veh / LOS	32.3	C		32.6	C		24.8	C		29.7	C	
Intersection Delay, s/veh / LOS	28.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

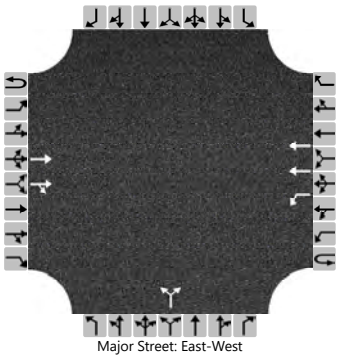
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	10	0	10	1130			10		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					21					
Capacity, c (veh/h)						1053					324					
v/c Ratio						0.01					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
95% Queue Length, Q_{95} (ft)						0.0					5.0					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

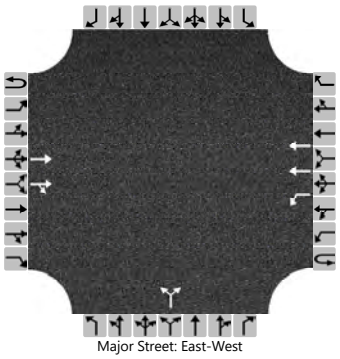
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	0	0	10	620			0		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					11					
Capacity, c (veh/h)						669					513					
v/c Ratio						0.02					0.02					
95% Queue Length, Q_{95} (veh)						0.1					0.1					
95% Queue Length, Q_{95} (ft)						2.6					2.5					
Control Delay (s/veh)						10.5					12.2					
Level of Service (LOS)						B					B					
Approach Delay (s/veh)					0.2				12.2							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

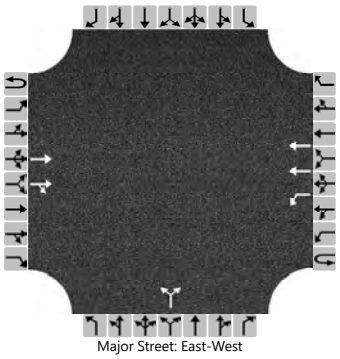
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	0	1160			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						1063					326					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						8.4					16.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				16.1							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

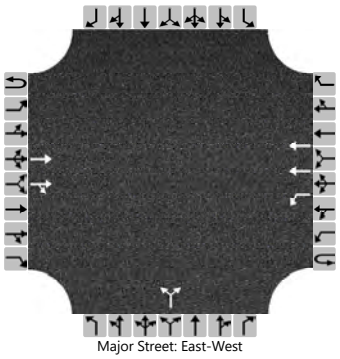
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	0	690			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						544					153					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						11.6					28.9					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.0				28.9							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

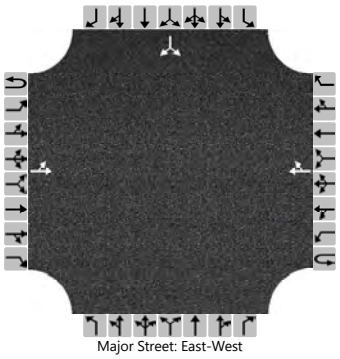
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	170				180	10						10		0
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													10	
Capacity, c (veh/h)		1369													578	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.7	0.1												11.3	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.5												11.3			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

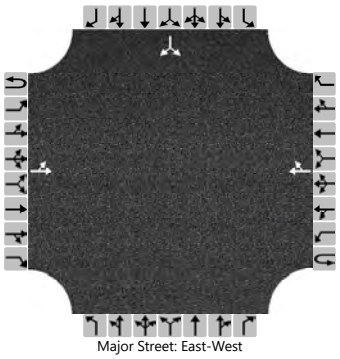
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	240				220	10						10		10
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

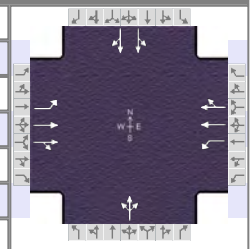
Flow Rate, v (veh/h)		11													22	
Capacity, c (veh/h)		1307													584	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.8	0.1												11.4	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.4		
Approach LOS		A												B		

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Appendix J
Intersection Capacity Analysis Worksheets - Build - 2027

HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2027 AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	401	30	100	923	11	40	210	120	31	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	3.2	3.5	51.5	27.8	0.0	0.0	5	6	7	8
Yellow	3.0	0.0	3.0	3.0	0.0	0.0				
Red	3.0	0.0	3.0	4.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.5	12.7	61.0		34.8		34.8
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.3		11.3
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

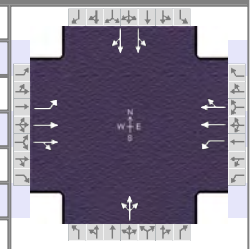
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	226	222	104	487	485		385		171		174
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1848		1609		1457		1615
Queue Service Time (g_s), s	0.6	7.4	7.5	2.9	17.8	17.8		15.0		0.0		9.3
Cycle Queue Clearance Time (g_c), s	0.6	7.4	7.5	2.9	17.8	17.8		24.3		7.7		9.3
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.27		0.27		0.27
Capacity (*c*), veh/h	314	910	888	572	971	967		465		427		428
Volume-to-Capacity Ratio (*X*)	0.066	0.249	0.251	0.182	0.502	0.502		0.829		0.399		0.406
Back of Queue (*Q*), ft/ln (95 th percentile)	11	147	145	51	312	310		375		159		165
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.8	5.7	2.0	12.2	12.1		14.5		6.2		6.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.15	0.51	0.31	0.31		0.38		0.16		0.16
Uniform Delay (d_1), s/veh	13.5	15.5	15.5	11.4	16.2	16.2		37.2		31.2		31.8
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	1.9	1.9		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.6	16.2	16.2	11.5	18.0	18.0		38.7		31.4		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.1	B		17.4	B		38.7	D		31.7	C	
Intersection Delay, s/veh / LOS	22.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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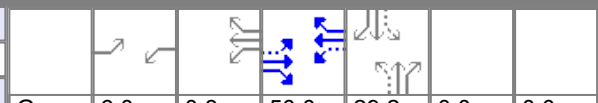
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2027 PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				

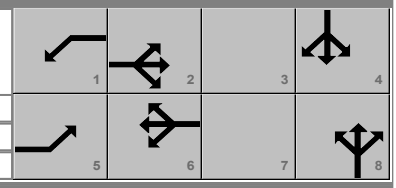


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	752	50	110	471	31	30	300	70	21	220	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.0	0.8	50.0	29.2	0.0	0.0
Yellow	3.0	0.0	3.0	3.0	0.0	0.0
Red	3.0	0.0	3.0	4.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.0	56.0	12.8	56.9		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	3.9		5.5			27.7		9.2
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.4		1.5
Phase Call Probability	0.85		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	66	446	436	121	278	273		440		143		144
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1814	1767	1856	1815		1731		1498		1656
Queue Service Time (g_s), s	1.9	17.4	17.4	3.5	9.6	9.6		15.1		0.0		7.2
Cycle Queue Clearance Time (g_c), s	1.9	17.4	17.4	3.5	9.6	9.6		25.7		6.3		7.2
Green Ratio (*g/C*)	0.53	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	487	884	865	377	899	879		518		456		460
Volume-to-Capacity Ratio (*X*)	0.135	0.504	0.504	0.320	0.310	0.311		0.849		0.314		0.312
Back of Queue (*Q*), ft/ln (95 th percentile)	33	311	306	62	190	187		417		128		130
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	12.2	12.0	2.4	7.4	7.3		16.2		5.0		5.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18	0.31	0.31	0.62	0.19	0.19		0.42		0.13		0.13
Uniform Delay (d_1), s/veh	12.5	18.9	18.9	13.6	16.4	16.4		36.5		29.7		30.0
Incremental Delay (d_2), s/veh	0.0	2.0	2.1	0.2	0.9	0.9		1.5		0.1		0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.5	21.0	21.0	13.8	17.3	17.4		38.1		29.8		30.1
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.4	C		16.7	B		38.1	D		30.0	C	
Intersection Delay, s/veh / LOS	23.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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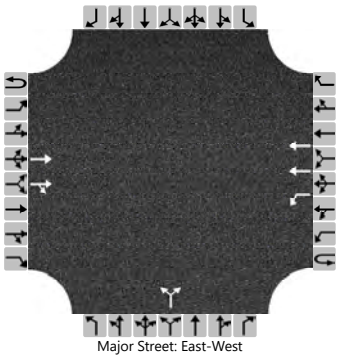
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			452	10	0	40	1094			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1080					351					
v/c Ratio						0.04					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					17.0					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				17.0							
Approach LOS					A				C							

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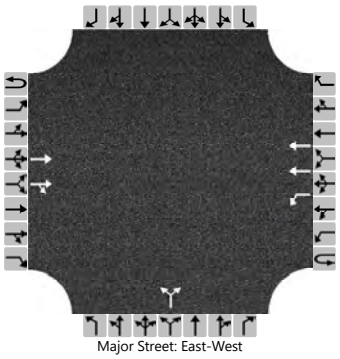
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			893	30	0	30	592			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						699					217					
v/c Ratio						0.05					0.29					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.4					28.3					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				28.3							
Approach LOS					A				D							

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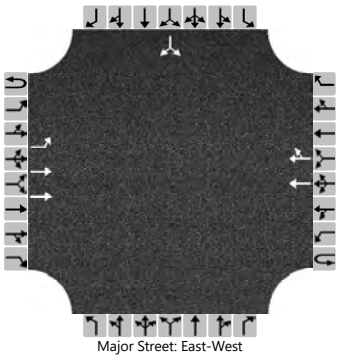
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

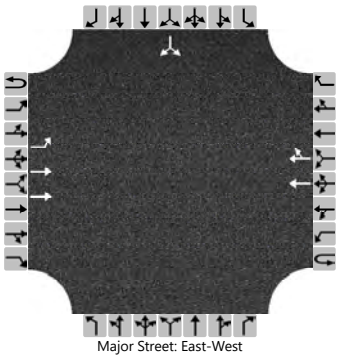
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

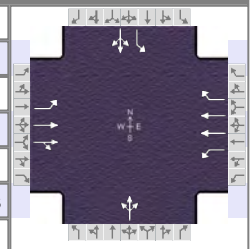
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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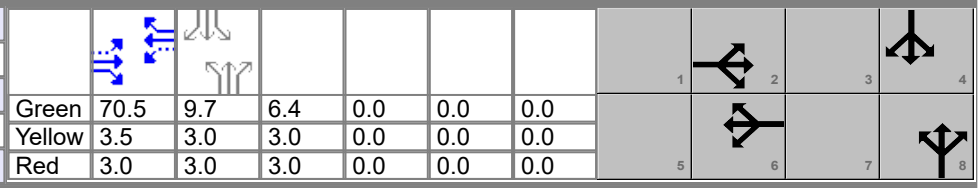
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2027 AM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	423	10	10	1094	120	10	10	10	70	10	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	70.5	9.7	6.4	0.0	0.0	0.0						
Yellow	3.5	3.0	3.0	0.0	0.0	0.0						
Red	3.0	3.0	3.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		77.0		77.0		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.1
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

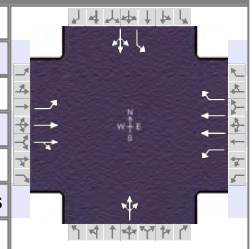
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	12	253	251	12	1272	140		35		81	35	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	432	1856	1840	895	1781	1585		1751		1781	1670	
Queue Service Time (g_s), s	1.5	5.4	5.5	0.5	19.2	3.3		2.0		4.6	2.0	
Cycle Queue Clearance Time (g_c), s	20.7	5.4	5.5	6.0	19.2	3.3		2.0		4.6	2.0	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	279	1245	1235	622	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.042	0.203	0.203	0.019	0.532	0.131		0.328		0.496	0.227	
Back of Queue (*Q*), ft/ln (95 th percentile)	8	93	93	5	278	49		40		93	39	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	3.6	3.6	0.2	11.0	1.9		1.6		3.7	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.09	0.09	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.2	6.6	6.6	7.7	8.8	6.2		47.2		45.4	44.2	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.1	0.9	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	14.4	6.9	7.0	7.8	9.7	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.1	A		9.4	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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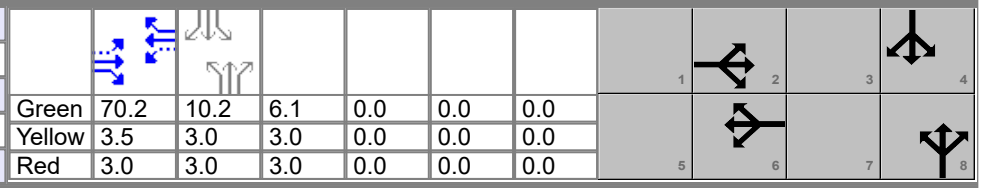
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2027 PM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	11	994	20	10	694	190	10	10	10	130	10	10

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	70.2	10.2	6.1	0.0	0.0	0.0		
Yellow	3.5	3.0	3.0	0.0	0.0	0.0		
Red	3.0	3.0	3.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

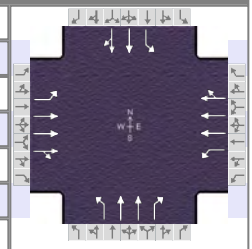
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	12	547	543	11	746	204		32		140	22	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	709	1856	1842	517	1781	1585		1751		1781	1716	
Queue Service Time (g_s), s	0.7	14.5	14.6	1.0	9.2	5.1		1.9		8.1	1.2	
Cycle Queue Clearance Time (g_c), s	10.0	14.5	14.6	15.6	9.2	5.1		1.9		8.1	1.2	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	480	1241	1232	343	2381	1060		102		173	167	
Volume-to-Capacity Ratio (*X*)	0.025	0.441	0.441	0.031	0.313	0.193		0.317		0.808	0.129	
Back of Queue (*Q*), ft/ln (95 th percentile)	6	238	237	6	146	76		37		168	23	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	9.3	9.3	0.2	5.8	3.0		1.5		6.6	0.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.05	0.24	0.24	0.06	0.15	0.25		0.04		0.94	0.02	
Uniform Delay (d_1), s/veh	9.4	8.2	8.2	11.9	7.3	6.6		47.5		46.4	43.3	
Incremental Delay (d_2), s/veh	0.1	1.1	1.1	0.2	0.3	0.4		0.7		3.4	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.5	9.3	9.3	12.0	7.6	7.0		48.1		49.8	43.5	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.3	A		7.6	A		48.1	D		49.0	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

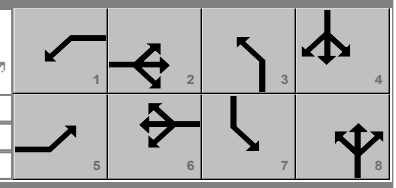
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2027 AM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	21	442	40	180	1103	90	80	250	140	170	300	41

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.3	39.5	7.5	6.4	4.7	12.7	
Yellow	3.5	3.5	3.5	3.5	0.0	3.5	
Red	3.0	3.0	2.5	2.5	0.0	2.5	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	9.8	55.8	13.5	59.5	12.4	18.7	17.0	23.4
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	2.7		2.0		6.1	11.2	10.8	11.4
Green Extension Time (g_e), s	0.0	0.0	3.6	0.0	0.1	1.5	0.3	1.5
Phase Call Probability	0.47		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

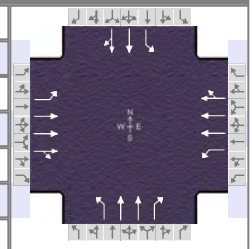
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	22	334	163	186	831	399	82	258	144	175	178	174
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1789	1781	1870	1795	1795	1795	1598	1781	1870	1792
Queue Service Time (g_s), s	0.7	5.5	5.6	0.0	14.9	14.9	4.1	7.1	9.2	8.8	9.2	9.4
Cycle Queue Clearance Time (g_c), s	0.7	5.5	5.6	0.0	14.9	14.9	4.1	7.1	9.2	8.8	9.2	9.4
Green Ratio (*g/C*)	0.43	0.47	0.47	0.42	0.50	0.50	0.18	0.12	0.12	0.23	0.17	0.17
Capacity (*c*), veh/h	230	1756	840	508	1888	906	236	434	193	315	309	296
Volume-to-Capacity Ratio (*X*)	0.094	0.190	0.194	0.365	0.440	0.441	0.349	0.594	0.747	0.556	0.575	0.585
Back of Queue (*Q*), ft/ln (95 th percentile)	14	106	108	148	263	264	82	143	162	173	193	189
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	4.2	4.2	5.8	10.4	10.3	3.3	5.7	6.4	6.8	7.6	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.12	0.11	0.11	0.87	0.26	0.26	0.17	0.14	0.34	0.58	0.19	0.19
Uniform Delay (d_1), s/veh	18.9	16.2	16.3	22.0	16.6	16.6	37.1	43.7	20.8	34.6	40.4	40.5
Incremental Delay (d_2), s/veh	0.1	0.2	0.5	0.2	0.7	1.6	0.3	0.5	2.2	0.6	0.6	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.0	16.5	16.8	22.1	17.3	18.1	37.4	44.2	22.9	35.2	41.0	41.2
Level of Service (LOS)	B	B	B	C	B	B	D	D	C	D	D	D
Approach Delay, s/veh / LOS	16.7	B		18.2	B		36.7	D		39.1	D	
Intersection Delay, s/veh / LOS	24.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

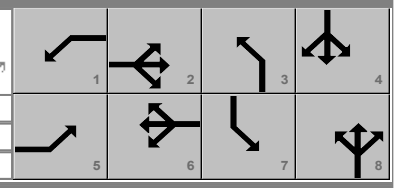
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2027 PM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	51	993	90	100	763	120	100	270	190	150	250	31

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.5	35.9	7.1	6.8	2.9	15.9	
Yellow	3.5	3.5	3.5	3.5	0.0	3.5	
Red	3.0	3.0	2.5	2.5	0.0	2.5	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	12.0	54.4	13.1	55.5	12.8	21.9	15.6	24.7
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.9		2.0		7.0	14.3	9.5	9.4
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.78		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

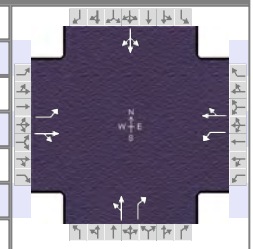
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	52	747	358	102	613	288	102	276	194	153	145	142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1737	1795	1795	1598	1781	1870	1798
Queue Service Time (g_s), s	1.9	14.3	14.3	0.0	11.0	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Cycle Queue Clearance Time (g_c), s	1.9	14.3	14.3	0.0	11.0	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Green Ratio (*g/C*)	0.41	0.46	0.46	0.39	0.47	0.47	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	307	1705	815	334	1747	811	282	543	242	321	334	321
Volume-to-Capacity Ratio (*X*)	0.169	0.438	0.439	0.305	0.351	0.355	0.362	0.508	0.803	0.477	0.434	0.442
Back of Queue (*Q*), ft/ln (95 th percentile)	35	260	260	91	209	206	98	147	148	147	151	148
Back of Queue (*Q*), veh/ln (95 th percentile)	1.4	10.2	10.2	3.6	8.2	8.1	3.9	5.9	5.9	5.8	5.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.29	0.26	0.26	0.54	0.21	0.20	0.20	0.15	0.31	0.49	0.15	0.15
Uniform Delay (d_1), s/veh	19.5	19.4	19.4	26.6	17.8	17.9	34.5	41.0	20.8	33.2	38.4	38.5
Incremental Delay (d_2), s/veh	0.1	0.8	1.7	0.2	0.6	1.2	0.3	0.3	2.4	0.4	0.3	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.6	20.3	21.2	26.8	18.4	19.1	34.8	41.2	23.2	33.6	38.7	38.8
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.5	C		19.5	B		34.0	C		37.0	D	
Intersection Delay, s/veh / LOS	24.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

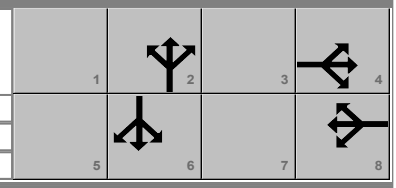
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2027 AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	180	10	71	221	10	40	300	81	10	320	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	73.6	20.4	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		25.9		25.9		79.1		79.1
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (g_s), s		18.0		19.2				
Green Extension Time (g_e), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

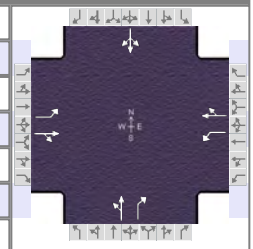
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	207		77	251			370	88		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1129	1853		1175	1856			1702	1560		1806	
Queue Service Time (g_s), s	2.9	10.6		6.7	13.2			0.0	1.9		0.0	
Cycle Queue Clearance Time (g_c), s	16.0	10.6		17.2	13.2			7.9	1.9		9.0	
Green Ratio (*g/C*)	0.19	0.19		0.19	0.19			0.70	0.70		0.70	
Capacity (*c*), veh/h	149	364		182	364			1228	1090		1298	
Volume-to-Capacity Ratio (*X*)	0.219	0.568		0.425	0.689			0.301	0.081		0.310	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		89	254			132	27		146	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.4		3.5	10.0			5.1	1.0		5.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		0.89	0.25			0.13	0.33		0.15	
Uniform Delay (d_1), s/veh	46.6	38.2		45.9	39.2			6.0	5.0		6.1	
Incremental Delay (d_2), s/veh	0.3	0.5		0.6	0.9			0.6	0.1		0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.9	38.7		46.5	40.1			6.6	5.2		6.7	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	39.8	D		41.6	D		6.3	A		6.7	A	
Intersection Delay, s/veh / LOS	20.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

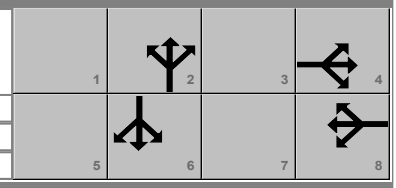
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2027 PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	321	40	71	191	10	20	370	81	20	380	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	63.7	30.3	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		35.8		35.8		69.2		69.2
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		21.5		28.6				
Green Extension Time (*g e*), s		1.6		1.6		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	380		75	212			411	85		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1170	1834		1003	1854			1794	1560		1786	
Queue Service Time (*g s*), s	7.4	19.5		7.5	9.6			0.0	2.4		0.0	
Cycle Queue Clearance Time (*g c*), s	16.6	19.5		26.6	9.6			11.9	2.4		14.6	
Green Ratio (*g/C*)	0.29	0.29		0.29	0.29			0.61	0.61		0.61	
Capacity (*c*), veh/h	304	531		177	537			1123	945		1117	
Volume-to-Capacity Ratio (*X*)	0.311	0.716		0.422	0.394			0.366	0.090		0.424	
Back of Queue (*Q*), ft/ln (95 th percentile)	96	339		86	193			213	37		247	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.8	13.3		3.4	7.6			8.3	1.4		9.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.07	0.34		0.86	0.19			0.21	0.47		0.25	
Uniform Delay (*d 1*), s/veh	36.4	33.4		45.1	29.9			10.5	8.6		11.0	
Incremental Delay (*d 2*), s/veh	0.2	0.7		0.6	0.2			0.9	0.2		1.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	36.6	34.1		45.7	30.1			11.4	8.8		12.2	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	34.6	C		34.2	C		11.0	B		12.2	B	
Intersection Delay, s/veh / LOS	21.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

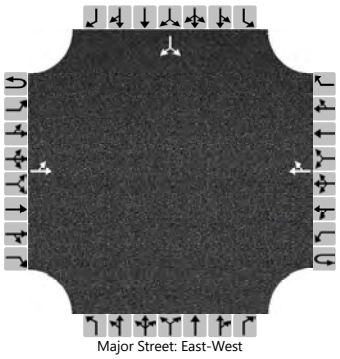
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	221				172	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1381													645	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.6	0.1												10.9	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.4												10.9			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

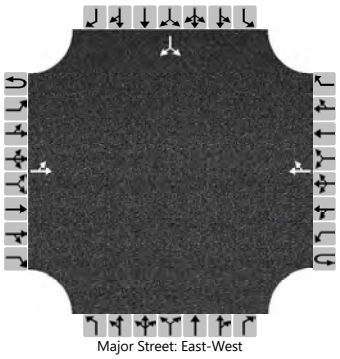
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	272				182	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

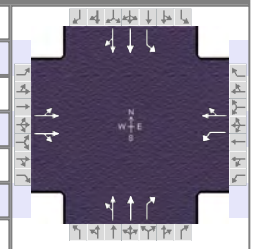
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1332													565	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.8	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.4												11.8			
Approach LOS	A												B			

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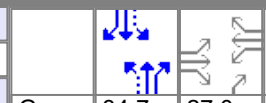
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2027 AM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				

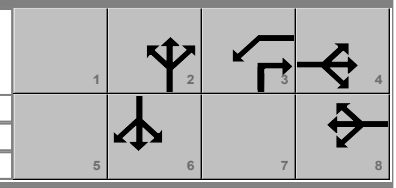


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	31	80	70	20	21	380	160	20	420	100

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	34.7	27.0	26.9	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.2		40.2
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (g_s), s		8.4		6.3				
Green Extension Time (g_e), s		0.4		0.3		0.0		0.0
Phase Call Probability		1.00		0.99				
Max Out Probability		0.00		0.00				

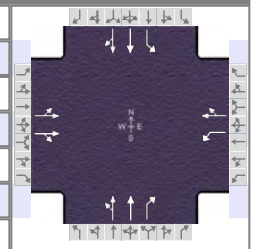
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	139		125	84	95		216	206	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1822		1787	1781	1798		1755	1702	1585	1000	1870	1746
Queue Service Time (g_s), s	6.4		5.9	3.9	4.3		0.0	9.7	5.2	1.7	12.5	12.6
Cycle Queue Clearance Time (g_c), s	6.4		5.9	3.9	4.3		9.2	9.7	5.2	11.4	12.5	12.6
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	468		459	456	460		617	562	929	306	617	576
Volume-to-Capacity Ratio (*X*)	0.297		0.273	0.185	0.206		0.350	0.367	0.181	0.069	0.456	0.462
Back of Queue (*Q*), ft/ln (95 th percentile)	128		113	76	86		192	189	82	20	250	236
Back of Queue (*Q*), veh/ln (95 th percentile)	5.1		4.5	3.0	3.4		7.7	7.5	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13		0.12	0.76	0.09		0.20	0.19	1.03	0.00	0.25	0.24
Uniform Delay (d_1), s/veh	31.4		31.2	30.5	30.7		26.6	26.8	10.1	31.2	27.7	27.8
Incremental Delay (d_2), s/veh	0.1		0.1	0.1	0.1		1.6	1.8	0.4	0.4	2.4	2.6
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.5		31.3	30.6	30.8		28.2	28.7	10.5	31.6	30.2	30.4
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.4	C		30.7	C		23.3	C		30.3	C	
Intersection Delay, s/veh / LOS	28.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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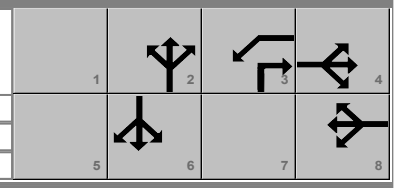
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 12, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2027	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2027 PM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	42	180	130	40	52	410	230	20	380	70

Signal Information												
Cycle, s	105.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	34.5	27.0	27.0	0.0	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	3.5	3.5	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		10.9		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	184		166	196	185		223	279	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1801		1782	1781	1794		1321	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	8.9		8.0	9.6	9.0		5.8	13.8	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	8.9		8.0	9.6	9.0		16.8	13.8	8.1	15.8	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	463		458	458	461		477	559	928	258	615	581
Volume-to-Capacity Ratio (*X*)	0.397		0.363	0.427	0.400		0.469	0.498	0.269	0.084	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	175		154	188	176		218	254	130	22	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	6.9		6.2	7.4	6.9		8.7	10.0	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18		0.16	1.88	0.18		0.22	0.25	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.3		32.0	32.5	32.3		28.8	28.3	10.7	34.6	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		3.3	3.2	0.7	0.6	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.5		32.1	32.8	32.5		32.0	31.5	11.4	35.3	29.3	29.5
Level of Service (LOS)	C		C	C	C		C	C	B	D	C	C
Approach Delay, s/veh / LOS	32.3	C		32.6	C		25.0	C		29.7	C	
Intersection Delay, s/veh / LOS	28.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

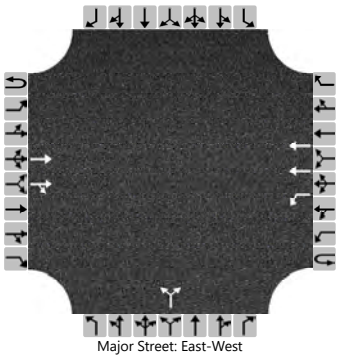
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	12	0	10	1130			14		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					25					
Capacity, c (veh/h)						1052					296					
v/c Ratio						0.01					0.08					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
95% Queue Length, Q_{95} (ft)						0.0					7.5					
Control Delay (s/veh)						8.5					18.3					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				18.3							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

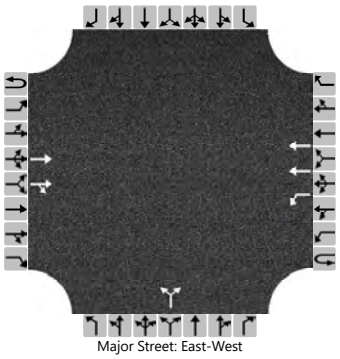
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	3	0	10	620			2		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					13					
Capacity, c (veh/h)						667					347					
v/c Ratio						0.02					0.04					
95% Queue Length, Q_{95} (veh)						0.1					0.1					
95% Queue Length, Q_{95} (ft)						2.6					2.5					
Control Delay (s/veh)						10.5					15.8					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.2				15.8							
Approach LOS					A				C							

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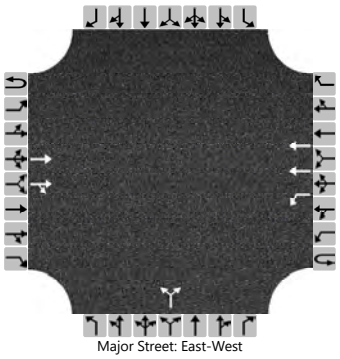
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	4	1160			1		3				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4					4					
Capacity, c (veh/h)						1063					453					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)						0.0					0.0					
Control Delay (s/veh)						8.4					13.0					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.0				13.0							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

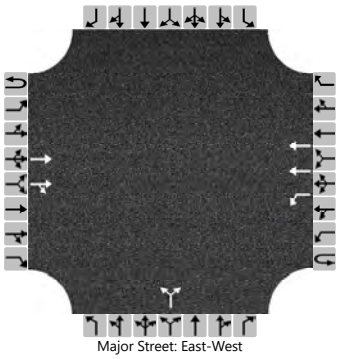
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	4	690			1		5				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4					7					
Capacity, c (veh/h)						544					266					
v/c Ratio						0.01					0.03					
95% Queue Length, Q_{95} (veh)						0.0					0.1					
95% Queue Length, Q_{95} (ft)						0.0					2.5					
Control Delay (s/veh)						11.7					18.9					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.1				18.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

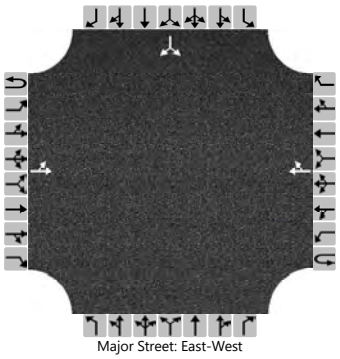
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		11	170				180	11						11		2
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													14	
Capacity, c (veh/h)		1367													603	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.7	0.1												11.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.5												11.1		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

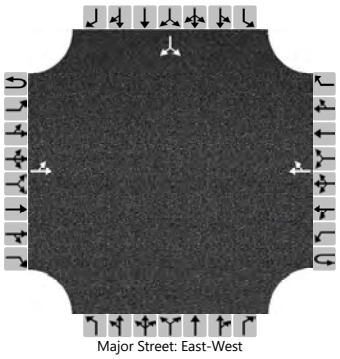
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/12/2025
Analysis Year	2027
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	240				220	12						12		12
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

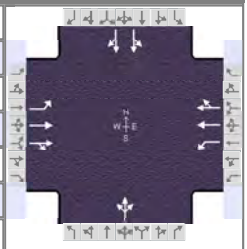
Flow Rate, v (veh/h)		13													26	
Capacity, c (veh/h)		1304													580	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.8	0.1												11.5	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.5												11.5			
Approach LOS	A												B			

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Appendix K
Intersection Capacity Analysis Worksheets - No-Build - 2030

HCS Signalized Intersection Results Summary

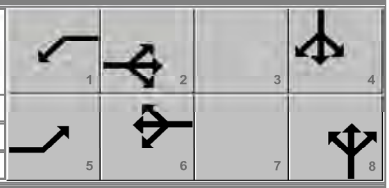
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2030 NB AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	400	30	100	920	10	40	210	120	30	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	3.5	51.6	27.8	0.0	0.0	
Yellow	3.0	0.0	3.0	3.0	0.0	0.0	
Red	3.0	0.0	3.0	4.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.6	12.7	61.0		34.8		34.8
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.3		11.2
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

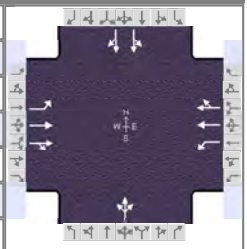
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	226	222	104	485	483		385		171		173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1848		1612		1478		1614
Queue Service Time (g_s), s	0.6	7.4	7.5	2.9	17.7	17.7		15.1		0.0		9.2
Cycle Queue Clearance Time (g_c), s	0.6	7.4	7.5	2.9	17.7	17.7		24.3		7.8		9.2
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.26		0.26		0.26
Capacity (*c*), veh/h	316	911	888	573	972	969		465		432		427
Volume-to-Capacity Ratio (*X*)	0.066	0.248	0.250	0.182	0.499	0.499		0.830		0.396		0.404
Back of Queue (*Q*), ft/ln (95 th percentile)	11	147	145	51	309	308		375		159		164
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.7	5.6	2.0	12.1	12.0		14.5		6.3		6.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.14	0.51	0.31	0.31		0.38		0.16		0.16
Uniform Delay (d_1), s/veh	13.5	15.5	15.5	11.4	16.1	16.1		37.2		31.2		31.8
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	1.8	1.8		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.5	16.1	16.2	11.4	17.9	17.9		38.7		31.5		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.0	B		17.3	B		38.7	D		31.7	C	
Intersection Delay, s/veh / LOS	22.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

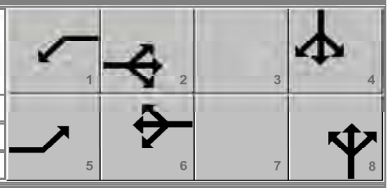
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2030 NB PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	750	50	110	470	30	30	300	70	20	220	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	0.8	50.0	29.2	0.0	0.0	
Yellow	3.0	0.0	3.0	3.0	0.0	0.0	
Red	3.0	0.0	3.0	4.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.0	56.0	12.8	56.9		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	3.9		5.5			27.7		9.1
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.4		1.5
Phase Call Probability	0.85		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	66	444	435	121	277	272		440		143		142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1814	1767	1856	1816		1731		1527		1656
Queue Service Time (g_s), s	1.9	17.3	17.3	3.5	9.5	9.6		15.1		0.0		7.1
Cycle Queue Clearance Time (g_c), s	1.9	17.3	17.3	3.5	9.5	9.6		25.7		6.3		7.1
Green Ratio (*g/C*)	0.53	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	488	884	865	378	899	880		518		464		460
Volume-to-Capacity Ratio (*X*)	0.135	0.503	0.503	0.320	0.308	0.310		0.849		0.309		0.309
Back of Queue (*Q*), ft/ln (95 th percentile)	33	310	306	62	189	186		417		128		129
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	12.1	11.9	2.4	7.4	7.3		16.2		5.1		5.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18	0.31	0.31	0.62	0.19	0.19		0.42		0.13		0.13
Uniform Delay (d_1), s/veh	12.5	18.9	18.9	13.6	16.4	16.4		36.5		29.7		30.0
Incremental Delay (d_2), s/veh	0.0	2.0	2.1	0.2	0.9	0.9		1.5		0.1		0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.5	21.0	21.0	13.8	17.3	17.3		38.1		29.8		30.1
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.4	C		16.7	B		38.1	D		29.9	C	
Intersection Delay, s/veh / LOS	23.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

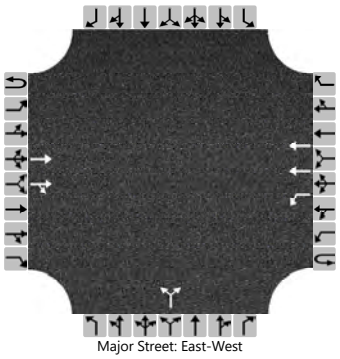
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			450	10	0	40	1090			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1082					352					
v/c Ratio						0.04					0.14					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

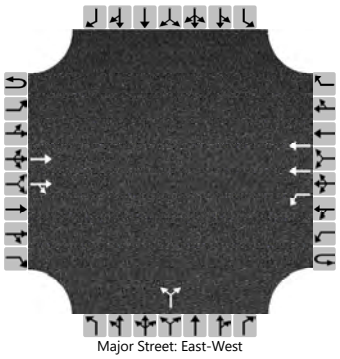
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			890	30	0	30	590			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						701					218					
v/c Ratio						0.05					0.29					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.4					28.1					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				28.1							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

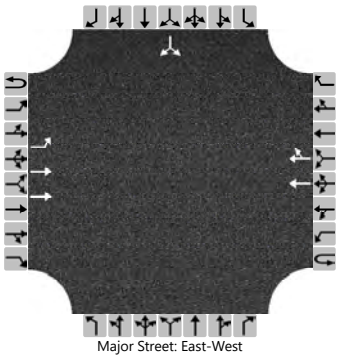
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

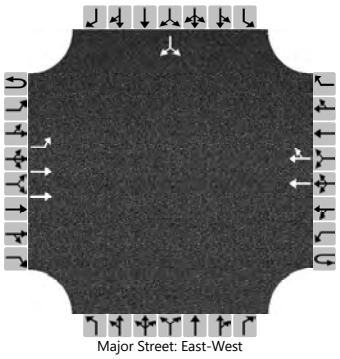
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

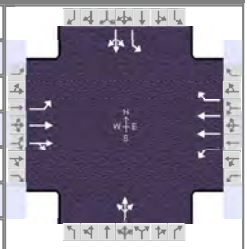
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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HCS Signalized Intersection Results Summary

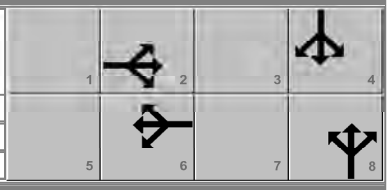
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2030 NB AM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	420	10	10	1090	120	10	10	10	70	10	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.5	9.7	6.4	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		77.0		77.0		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.1
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

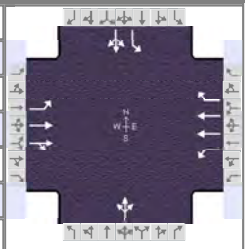
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	12	251	249	12	1267	140		35		81	35	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	434	1856	1840	898	1781	1585		1751		1781	1670	
Queue Service Time (g_s), s	1.5	5.4	5.4	0.5	19.1	3.3		2.0		4.6	2.0	
Cycle Queue Clearance Time (g_c), s	20.6	5.4	5.4	6.0	19.1	3.3		2.0		4.6	2.0	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	281	1245	1235	625	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.041	0.201	0.202	0.019	0.530	0.131		0.328		0.496	0.227	
Back of Queue (*Q*), ft/ln (95 th percentile)	8	92	92	5	277	49		40		93	39	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	3.6	3.6	0.2	10.9	1.9		1.6		3.7	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.09	0.09	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.1	6.6	6.6	7.7	8.8	6.2		47.2		45.4	44.2	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.1	0.8	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	14.4	6.9	6.9	7.8	9.7	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.1	A		9.3	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

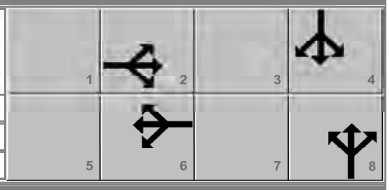
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2030 NB PM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	990	20	10	690	190	10	10	10	130	10	10

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.2	10.2	6.1	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

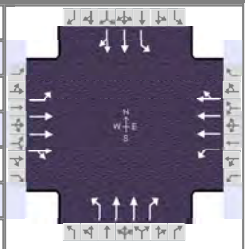
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	11	545	541	11	742	204		32		140	22	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	712	1856	1842	519	1781	1585		1751		1781	1716	
Queue Service Time (g_s), s	0.7	14.5	14.5	1.0	9.2	5.1		1.9		8.1	1.2	
Cycle Queue Clearance Time (g_c), s	9.9	14.5	14.5	15.5	9.2	5.1		1.9		8.1	1.2	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	482	1241	1232	344	2381	1060		102		173	167	
Volume-to-Capacity Ratio (*X*)	0.022	0.439	0.439	0.031	0.312	0.193		0.317		0.808	0.129	
Back of Queue (*Q*), ft/ln (95 th percentile)	5	237	236	6	146	76		37		168	23	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	9.3	9.2	0.2	5.7	3.0		1.5		6.6	0.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.04	0.24	0.24	0.06	0.15	0.25		0.04		0.94	0.02	
Uniform Delay (d_1), s/veh	9.4	8.2	8.2	11.8	7.3	6.6		47.5		46.4	43.3	
Incremental Delay (d_2), s/veh	0.1	1.1	1.1	0.2	0.3	0.4		0.7		3.4	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.4	9.3	9.3	12.0	7.6	7.0		48.1		49.8	43.5	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.3	A		7.5	A		48.1	D		49.0	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

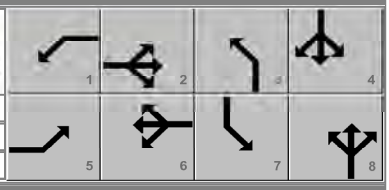
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2030 NB AM Peak Mayfield Rd._S. Taylor Rd..x…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	440	40	180	1100	90	80	250	140	170	300	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	40.0	7.5	6.4	4.6	12.4
Yellow	3.5	3.5	3.5	3.5	0.0	3.5
Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	9.7	56.2	13.5	60.0	12.4	18.4	16.9	23.0
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	2.7		2.0		6.2	11.2	10.9	11.4
Green Extension Time (g_e), s	0.0	0.0	2.8	0.0	0.1	1.2	0.1	1.4
Phase Call Probability	0.45		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.21		0.00	0.08	0.07	0.01

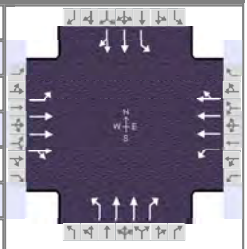
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	333	162	186	829	398	82	258	144	175	177	173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1795	1795	1795	1598	1781	1870	1793
Queue Service Time (g_s), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Cycle Queue Clearance Time (g_c), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Green Ratio (*g/C*)	0.43	0.47	0.47	0.43	0.51	0.51	0.18	0.12	0.12	0.23	0.16	0.16
Capacity (*c*), veh/h	232	1771	847	514	1907	915	232	424	189	310	302	290
Volume-to-Capacity Ratio (*X*)	0.089	0.188	0.192	0.361	0.435	0.435	0.355	0.609	0.766	0.566	0.588	0.598
Back of Queue (*Q*), ft/ln (95 th percentile)	13	105	106	146	259	260	83	144	159	175	194	190
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	4.1	4.1	5.7	10.2	10.2	3.3	5.7	6.3	6.9	7.6	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.11	0.10	0.11	0.86	0.26	0.26	0.17	0.14	0.33	0.58	0.19	0.19
Uniform Delay (d_1), s/veh	18.6	16.0	16.0	21.6	16.2	16.2	37.4	44.0	7.6	35.1	40.8	40.9
Incremental Delay (d_2), s/veh	0.1	0.2	0.5	0.2	0.7	1.5	0.3	0.5	2.4	0.6	0.7	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.7	16.2	16.5	21.7	16.9	17.7	37.7	44.5	10.0	35.7	41.5	41.6
Level of Service (LOS)	B	B	B	C	B	B	D	D	B	D	D	D
Approach Delay, s/veh / LOS	16.4	B		17.8	B		33.1	C		39.6	D	
Intersection Delay, s/veh / LOS	24.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

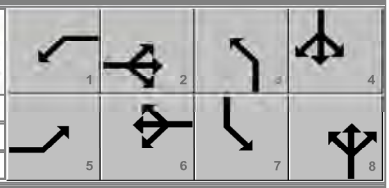
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2030 NB PM Peak Mayfield Rd._S. Taylor Rd.…..		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	990	90	100	760	120	100	270	190	150	250	30

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.4	35.9	7.1	6.8	2.9	15.9
Yellow	3.5	3.5	3.5	3.5	0.0	3.5
Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	11.9	54.4	13.1	55.6	12.8	21.9	15.6	24.7
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.8		2.0		7.0	14.3	9.5	9.4
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.77		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

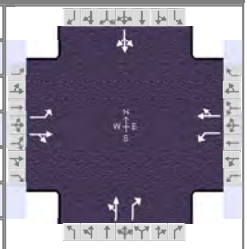
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	51	745	357	102	611	287	102	276	194	153	144	141
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1737	1795	1795	1598	1781	1870	1800
Queue Service Time (g_s), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Cycle Queue Clearance Time (g_c), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Green Ratio (*g/C*)	0.41	0.46	0.46	0.39	0.47	0.47	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	307	1705	815	335	1748	812	283	543	242	321	334	321
Volume-to-Capacity Ratio (*X*)	0.166	0.437	0.438	0.304	0.350	0.353	0.361	0.508	0.803	0.477	0.432	0.440
Back of Queue (*Q*), ft/ln (95 th percentile)	34	259	259	91	209	206	98	147	148	147	150	148
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	10.2	10.1	3.6	8.2	8.0	3.9	5.9	5.9	5.8	5.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.28	0.26	0.26	0.53	0.21	0.20	0.20	0.15	0.31	0.49	0.15	0.15
Uniform Delay (d_1), s/veh	19.5	19.4	19.4	26.5	17.8	17.8	34.5	41.0	20.8	33.2	38.4	38.5
Incremental Delay (d_2), s/veh	0.1	0.8	1.7	0.2	0.6	1.2	0.3	0.3	2.4	0.4	0.3	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.6	20.2	21.1	26.7	18.4	19.0	34.8	41.2	23.2	33.6	38.7	38.8
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.5	C		19.4	B		34.0	C		37.0	D	
Intersection Delay, s/veh / LOS	24.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

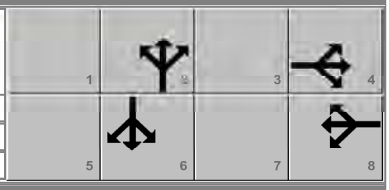
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6.2030 NB AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	180	10	70	220	10	40	300	80	10	320	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	73.6	20.4	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		25.9		25.9		79.1		79.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		18.0		19.1				
Green Extension Time (*g e*), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

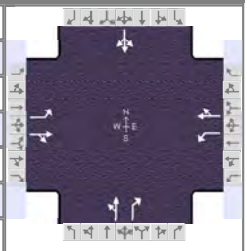
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	207		76	250			370	87		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1130	1853		1175	1856			1702	1560		1806	
Queue Service Time (*g s*), s	2.9	10.6		6.6	13.2			0.0	1.9		0.0	
Cycle Queue Clearance Time (*g c*), s	16.0	10.6		17.1	13.2			7.9	1.9		8.9	
Green Ratio (*g/C*)	0.19	0.19		0.19	0.19			0.70	0.70		0.70	
Capacity (*c*), veh/h	149	362		181	363			1230	1092		1299	
Volume-to-Capacity Ratio (*X*)	0.219	0.570		0.422	0.689			0.301	0.080		0.310	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		88	253			132	26		145	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.4		3.5	10.0			5.1	1.0		5.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		0.88	0.25			0.13	0.33		0.14	
Uniform Delay (*d 1*), s/veh	46.7	38.2		46.0	39.3			5.9	5.0		6.1	
Incremental Delay (*d 2*), s/veh	0.3	0.5		0.6	0.9			0.6	0.1		0.6	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.9	38.8		46.5	40.2			6.5	5.2		6.7	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	39.9	D		41.6	D		6.3	A		6.7	A	
Intersection Delay, s/veh / LOS	20.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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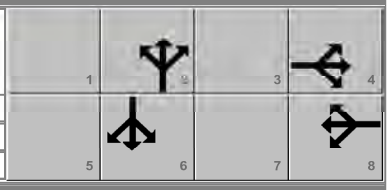
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2030 NB PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	320	40	70	190	10	20	370	80	20	380	50

Signal Information											
Cycle, s	105.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On	Green	63.9	30.1	0.0	0.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
				Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		35.6		35.6		69.4		69.4
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		21.5		28.4				
Green Extension Time (*g e*), s		1.6		1.6		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	379		74	211			411	84		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1171	1834		1004	1854			1794	1560		1786	
Queue Service Time (*g s*), s	7.4	19.5		7.4	9.6			0.0	2.4		0.0	
Cycle Queue Clearance Time (*g c*), s	16.6	19.5		26.4	9.6			11.8	2.4		14.5	
Green Ratio (*g/C*)	0.29	0.29		0.29	0.29			0.61	0.61		0.61	
Capacity (*c*), veh/h	303	528		176	534			1125	947		1120	
Volume-to-Capacity Ratio (*X*)	0.312	0.717		0.419	0.394			0.365	0.089		0.423	
Back of Queue (*Q*), ft/ln (95 th percentile)	96	338		85	193			213	37		246	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.8	13.3		3.3	7.6			8.3	1.4		9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.07	0.34		0.85	0.19			0.21	0.46		0.25	
Uniform Delay (*d 1*), s/veh	36.5	33.5		45.2	30.0			10.4	8.6		11.0	
Incremental Delay (*d 2*), s/veh	0.2	0.7		0.6	0.2			0.9	0.2		1.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	36.7	34.2		45.8	30.2			11.3	8.8		12.1	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	34.7	C		34.2	C		10.9	B		12.1	B	
Intersection Delay, s/veh / LOS	21.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

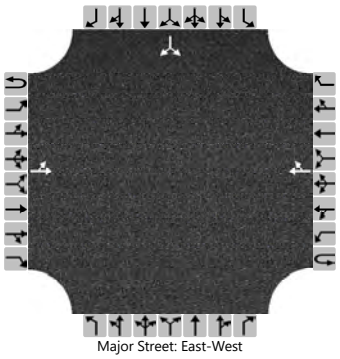
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	220				170	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1383													648	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.6	0.1												10.8	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.4												10.8			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

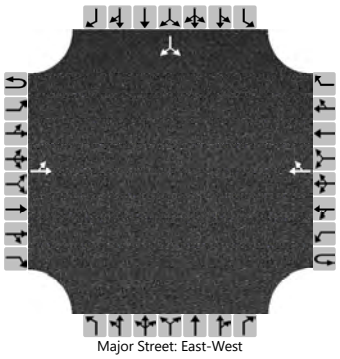
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	270				180	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

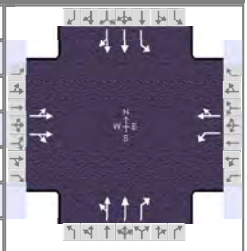
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1334													568	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.7	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.4												11.7			
Approach LOS	A												B			

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HCS Signalized Intersection Results Summary

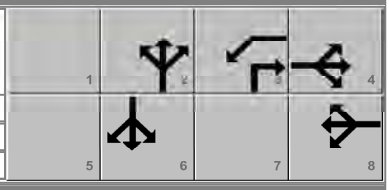
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8.2030 NB AM Peak S. Taylor Rd._Euclid Heights…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	30	80	80	20	20	380	160	20	420	100

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.6	27.0	26.9	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.1		40.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		8.4		6.8				
Green Extension Time (*g e*), s		0.4		0.3		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

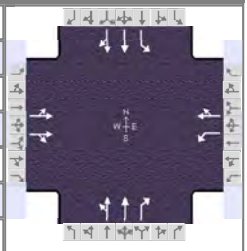
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	138		125	84	105		216	205	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1822		1789	1781	1805		1763	1702	1585	1000	1870	1746
Queue Service Time (*g s*), s	6.4		5.9	3.9	4.8		0.0	9.7	5.2	1.7	12.5	12.7
Cycle Queue Clearance Time (*g c*), s	6.4		5.9	3.9	4.8		9.2	9.7	5.2	11.4	12.5	12.7
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	468		460	456	462		619	561	929	306	617	576
Volume-to-Capacity Ratio (*X*)	0.295		0.271	0.185	0.228		0.349	0.366	0.181	0.069	0.456	0.462
Back of Queue (*Q*), ft/ln (95 th percentile)	128		113	76	96		192	188	82	20	250	236
Back of Queue (*Q*), veh/ln (95 th percentile)	5.0		4.5	3.0	3.8		7.7	7.4	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13		0.11	0.76	0.10		0.19	0.19	1.03	0.00	0.25	0.24
Uniform Delay (*d 1*), s/veh	31.4		31.2	30.5	30.8		26.7	26.8	10.1	31.2	27.8	27.8
Incremental Delay (*d 2*), s/veh	0.1		0.1	0.1	0.1		1.5	1.8	0.4	0.4	2.4	2.7
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.5		31.3	30.6	30.9		28.2	28.7	10.5	31.6	30.2	30.5
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.4	C		30.8	C		23.3	C		30.4	C	
Intersection Delay, s/veh / LOS	28.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

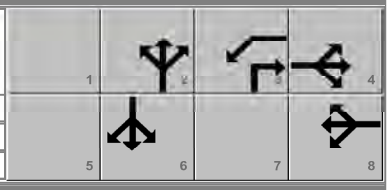
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2030 NB PM Peak S. Taylor Rd._Euclid Height…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	40	180	130	40	50	410	230	20	380	70

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.5	27.0	27.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		10.8		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	183		165	196	185		225	275	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1801		1786	1781	1794		1350	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	8.8		8.0	9.6	9.0		5.3	13.6	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	8.8		8.0	9.6	9.0		16.3	13.6	8.1	15.6	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	463		459	458	461		486	559	928	259	615	581
Volume-to-Capacity Ratio (*X*)	0.394		0.360	0.427	0.400		0.463	0.492	0.269	0.084	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	174		153	188	176		217	250	130	22	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	6.8		6.1	7.4	6.9		8.7	9.9	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17		0.16	1.88	0.18		0.22	0.25	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.2		31.9	32.5	32.3		28.5	28.2	10.7	34.5	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		3.1	3.1	0.7	0.6	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.4		32.1	32.8	32.5		31.7	31.3	11.4	35.1	29.3	29.5
Level of Service (LOS)	C		C	C	C		C	C	B	D	C	C
Approach Delay, s/veh / LOS	32.3	C		32.6	C		24.8	C		29.7	C	
Intersection Delay, s/veh / LOS	28.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

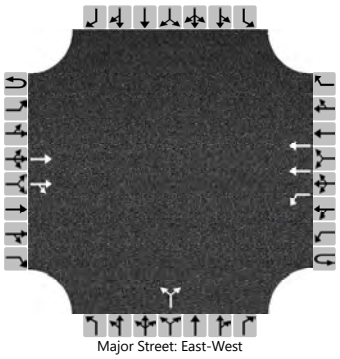
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	10	0	10	1130			10		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					21					
Capacity, c (veh/h)						1053					324					
v/c Ratio						0.01					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
95% Queue Length, Q_{95} (ft)						0.0					5.0					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

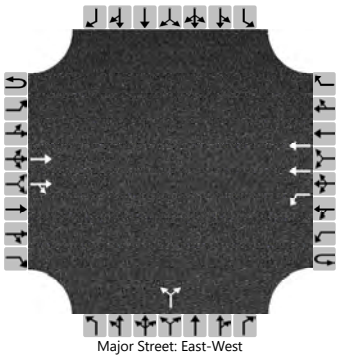
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	0	0	10	620			0		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					11					
Capacity, c (veh/h)						669					513					
v/c Ratio						0.02					0.02					
95% Queue Length, Q_{95} (veh)						0.1					0.1					
95% Queue Length, Q_{95} (ft)						2.6					2.5					
Control Delay (s/veh)						10.5					12.2					
Level of Service (LOS)						B					B					
Approach Delay (s/veh)					0.2				12.2							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

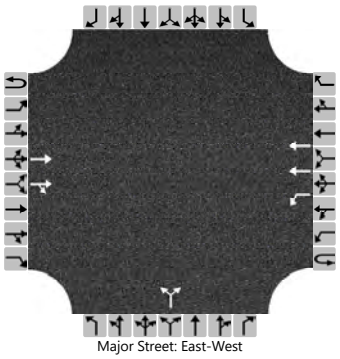
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	0	1160			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						1063					326					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						8.4					16.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				16.1							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

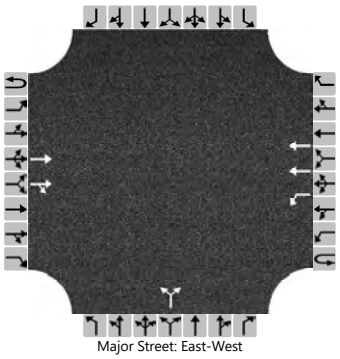
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	0	690			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						544					153					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						11.6					28.9					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.0				28.9							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

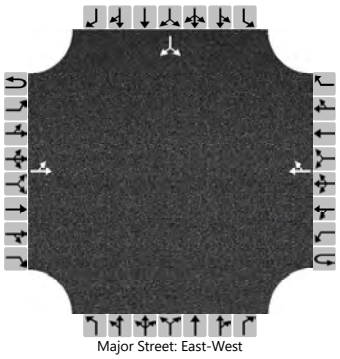
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	170				180	10						10		0
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													10	
Capacity, c (veh/h)		1369													578	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.7	0.1												11.3	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.5												11.3			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

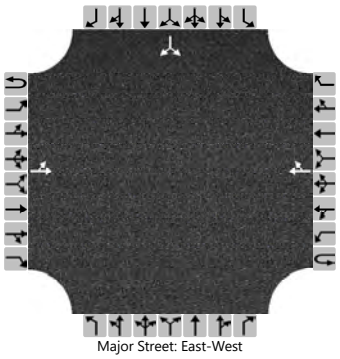
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	240				220	10						10		10
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

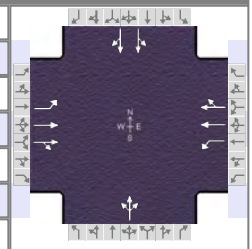
Flow Rate, v (veh/h)		11													22	
Capacity, c (veh/h)		1307													584	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.8	0.1												11.4	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.4		
Approach LOS		A												B		

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Appendix L
Intersection Capacity Analysis Worksheets - Build - 2030

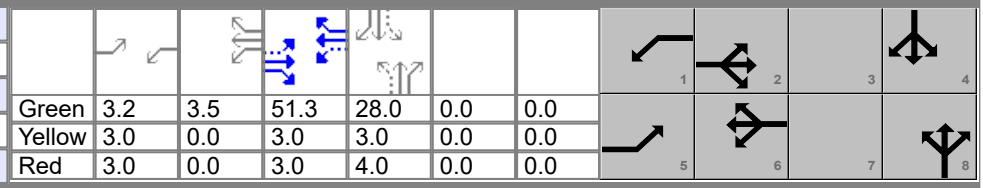
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2030 AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	404	30	100	950	18	40	210	120	34	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.2	3.5	51.3	28.0	0.0	0.0
Yellow	3.0	0.0	3.0	3.0	0.0	0.0
Red	3.0	0.0	3.0	4.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.3	12.7	60.8		35.0		35.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.5		11.5
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

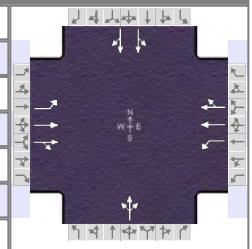
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	228	224	104	506	502		385		169		178
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1843		1600		1394		1617
Queue Service Time (g_s), s	0.6	7.5	7.6	2.9	18.8	18.8		15.0		0.0		9.5
Cycle Queue Clearance Time (g_c), s	0.6	7.5	7.6	2.9	18.8	18.8		24.5		8.2		9.5
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.27		0.27		0.27
Capacity (*c*), veh/h	302	907	885	569	968	962		465		414		431
Volume-to-Capacity Ratio (*X*)	0.069	0.251	0.253	0.183	0.522	0.522		0.829		0.410		0.414
Back of Queue (*Q*), ft/ln (95 th percentile)	11	149	147	51	326	324		375		157		169
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.8	5.7	2.0	12.7	12.7		14.5		6.2		6.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.15	0.51	0.33	0.32		0.38		0.16		0.17
Uniform Delay (d_1), s/veh	13.8	15.6	15.7	11.5	16.5	16.5		37.1		31.1		31.7
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	2.0	2.0		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.8	16.3	16.3	11.5	18.5	18.5		38.6		31.3		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.2	B		17.9	B		38.6	D		31.6	C	
Intersection Delay, s/veh / LOS	23.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

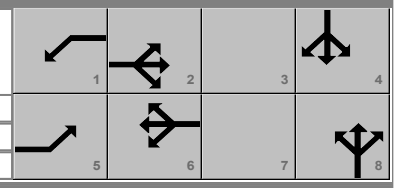
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2030 PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	771	50	110	479	36	30	300	70	27	220	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	0.8	50.0	29.2	0.0	0.0
Yellow	3.0	0.0	3.0	3.0	0.0	0.0
Red	3.0	0.0	3.0	4.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.0	56.0	12.8	56.8		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	3.9		5.5			27.7		9.7
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.85		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	66	456	446	121	286	280		440		141		153
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1815	1767	1856	1810		1731		1333		1659
Queue Service Time (g_s), s	1.9	17.9	17.9	3.5	9.9	9.9		15.1		0.0		7.7
Cycle Queue Clearance Time (g_c), s	1.9	17.9	17.9	3.5	9.9	9.9		25.7		6.2		7.7
Green Ratio (*g/C*)	0.53	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	480	884	865	370	898	876		518		412		461
Volume-to-Capacity Ratio (*X*)	0.137	0.516	0.516	0.327	0.318	0.320		0.848		0.341		0.331
Back of Queue (*Q*), ft/ln (95 th percentile)	33	319	314	62	196	193		417		126		139
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	12.5	12.3	2.4	7.7	7.5		16.2		5.0		5.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18	0.32	0.31	0.62	0.20	0.19		0.42		0.13		0.14
Uniform Delay (d_1), s/veh	12.5	19.1	19.1	13.8	16.5	16.5		36.5		29.6		30.1
Incremental Delay (d_2), s/veh	0.0	2.1	2.2	0.2	0.9	1.0		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.6	21.2	21.3	14.0	17.4	17.5		38.0		29.8		30.3
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.7	C		16.9	B		38.0	D		30.0	C	
Intersection Delay, s/veh / LOS	23.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

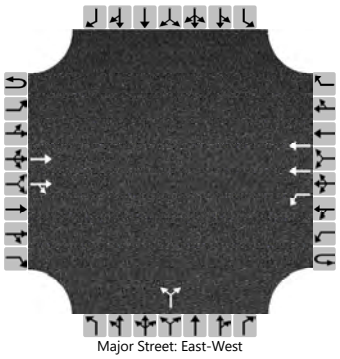
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			458	10	0	40	1128			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1074					341					
v/c Ratio						0.04					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					17.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				17.4							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

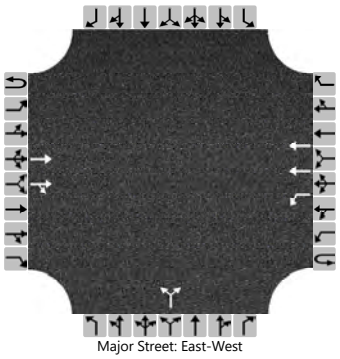
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			918	30	0	30	605			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						683					207					
v/c Ratio						0.05					0.30					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.5					29.8					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				29.8							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

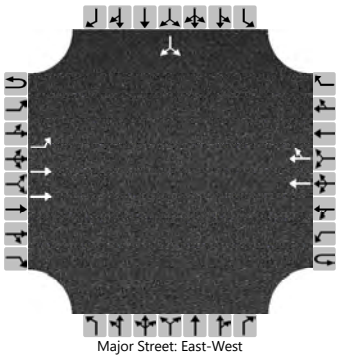
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

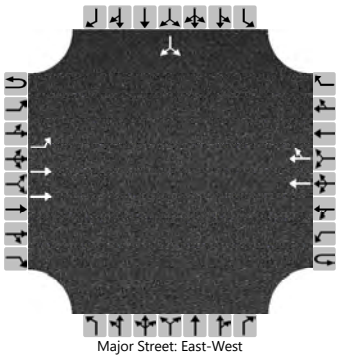
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

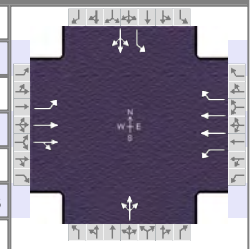
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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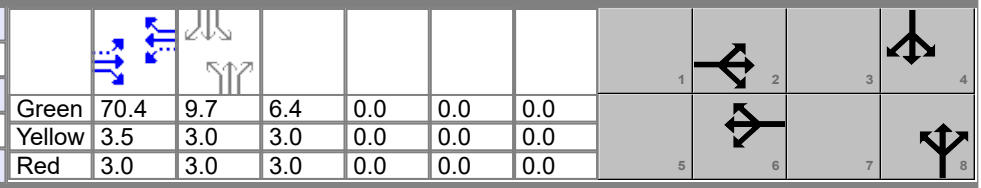
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2030 AM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	454	10	10	1109	120	10	10	10	70	10	21

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	70.4	9.7	6.4	0.0	0.0	0.0						
Yellow	3.5	3.0	3.0	0.0	0.0	0.0						
Red	3.0	3.0	3.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.9		76.9		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.2
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

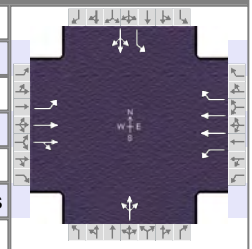
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	16	271	269	12	1290	140		35		81	36	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	425	1856	1841	866	1781	1585		1751		1781	1667	
Queue Service Time (g_s), s	2.2	5.9	5.9	0.6	19.6	3.3		2.0		4.6	2.1	
Cycle Queue Clearance Time (g_c), s	21.8	5.9	5.9	6.5	19.6	3.3		2.0		4.6	2.1	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	274	1245	1235	600	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.059	0.217	0.218	0.019	0.540	0.131		0.328		0.496	0.235	
Back of Queue (*Q*), ft/ln (95 th percentile)	11	101	101	5	283	49		40		93	40	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	3.9	3.9	0.2	11.1	1.9		1.6		3.7	1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.09	0.10	0.10	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.6	6.7	6.7	7.9	8.9	6.2		47.2		45.3	44.2	
Incremental Delay (d_2), s/veh	0.4	0.4	0.4	0.1	0.9	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	15.0	7.1	7.1	8.0	9.8	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.3	A		9.5	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2030 PM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				

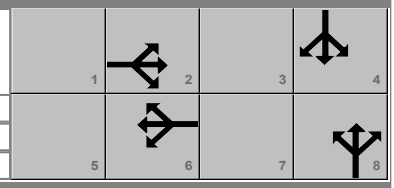


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	1019	20	10	724	190	10	10	10	130	10	13

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	70.2	10.2	6.1	0.0	0.0	0.0						
Yellow	3.5	3.0	3.0	0.0	0.0	0.0						
Red	3.0	3.0	3.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

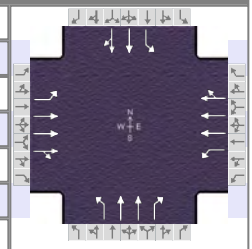
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	15	560	557	11	778	204		32		140	25	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	688	1856	1843	504	1781	1585		1751		1781	1698	
Queue Service Time (g_s), s	1.0	15.1	15.1	1.1	9.7	5.2		1.9		8.1	1.4	
Cycle Queue Clearance Time (g_c), s	10.8	15.1	15.1	16.2	9.7	5.2		1.9		8.1	1.4	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	465	1240	1232	333	2380	1060		102		173	165	
Volume-to-Capacity Ratio (*X*)	0.032	0.452	0.452	0.032	0.327	0.193		0.317		0.807	0.150	
Back of Queue (*Q*), ft/ln (95 th percentile)	7	246	244	6	155	76		37		168	27	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	9.6	9.6	0.2	6.1	3.0		1.5		6.6	1.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.25	0.24	0.06	0.16	0.25		0.04		0.94	0.03	
Uniform Delay (d_1), s/veh	9.7	8.3	8.3	12.1	7.4	6.6		47.5		46.4	43.4	
Incremental Delay (d_2), s/veh	0.1	1.2	1.2	0.2	0.4	0.4		0.7		3.3	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.8	9.5	9.5	12.3	7.8	7.0		48.1		49.8	43.6	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.5	A		7.7	A		48.1	D		48.8	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

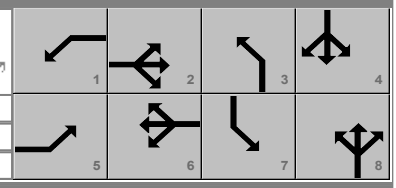
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2030 AM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	31	463	40	180	1114	90	80	250	140	170	300	45

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.2	38.5	7.5	6.4	4.7	12.7	
Yellow	3.5	3.5	3.5	3.5	0.0	3.5	
Red	3.0	3.0	2.5	2.5	0.0	2.5	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	10.7	55.8	13.5	58.5	12.4	18.7	17.0	23.4
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.1		2.0		6.1	11.2	10.8	11.5
Green Extension Time (g_e), s	0.0	0.0	3.6	0.0	0.1	1.5	0.3	1.6
Phase Call Probability	0.61		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

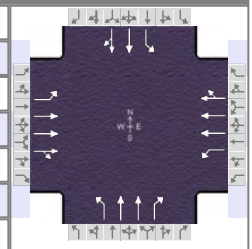
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	32	349	170	186	838	403	82	258	144	175	180	175
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1792	1781	1870	1796	1795	1795	1598	1781	1870	1785
Queue Service Time (g_s), s	1.1	5.7	5.8	0.0	15.3	15.3	4.1	7.1	9.2	8.8	9.3	9.5
Cycle Queue Clearance Time (g_c), s	1.1	5.7	5.8	0.0	15.3	15.3	4.1	7.1	9.2	8.8	9.3	9.5
Green Ratio (*g/C*)	0.43	0.47	0.47	0.41	0.50	0.50	0.18	0.12	0.12	0.23	0.17	0.17
Capacity (*c*), veh/h	240	1756	841	494	1853	890	235	435	193	315	310	296
Volume-to-Capacity Ratio (*X*)	0.133	0.199	0.202	0.376	0.452	0.453	0.351	0.593	0.746	0.556	0.583	0.593
Back of Queue (*Q*), ft/ln (95 th percentile)	20	112	113	152	270	271	82	143	162	173	195	192
Back of Queue (*Q*), veh/ln (95 th percentile)	0.8	4.4	4.4	6.0	10.6	10.6	3.3	5.7	6.4	6.8	7.7	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17	0.11	0.11	0.89	0.27	0.27	0.17	0.14	0.34	0.58	0.20	0.19
Uniform Delay (d_1), s/veh	19.1	16.3	16.3	22.8	17.2	17.2	37.1	43.7	20.8	34.6	40.5	40.5
Incremental Delay (d_2), s/veh	0.1	0.3	0.5	0.2	0.8	1.7	0.3	0.5	2.2	0.6	0.6	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.2	16.6	16.9	23.0	18.0	18.9	37.4	44.2	22.9	35.2	41.1	41.3
Level of Service (LOS)	B	B	B	C	B	B	D	D	C	D	D	D
Approach Delay, s/veh / LOS	16.8	B		18.9	B		36.7	D		39.2	D	
Intersection Delay, s/veh / LOS	25.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

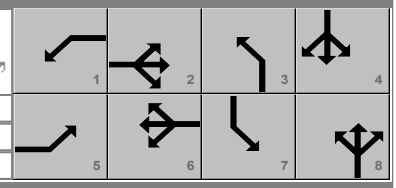
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2030 PM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	58	1011	90	100	784	120	100	270	190	150	250	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.8	35.6	7.1	6.8	2.9	15.9	
Yellow	3.5	3.5	3.5	3.5	0.0	3.5	
Red	3.0	3.0	2.5	2.5	0.0	2.5	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	12.3	54.3	13.1	55.2	12.8	21.9	15.6	24.8
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	4.1		2.0		7.0	14.3	9.5	9.7
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.82		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

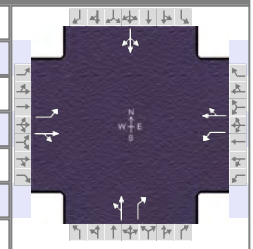
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	59	759	364	102	628	295	102	276	194	153	150	146
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1789	1781	1870	1740	1795	1795	1598	1781	1870	1781
Queue Service Time (g_s), s	2.1	14.6	14.6	0.0	11.3	11.5	5.0	7.4	12.3	7.5	7.5	7.7
Cycle Queue Clearance Time (g_c), s	2.1	14.6	14.6	0.0	11.3	11.5	5.0	7.4	12.3	7.5	7.5	7.7
Green Ratio (*g/C*)	0.41	0.46	0.46	0.38	0.46	0.46	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	305	1704	815	330	1736	807	278	543	242	321	334	318
Volume-to-Capacity Ratio (*X*)	0.194	0.446	0.447	0.309	0.362	0.365	0.367	0.507	0.802	0.477	0.449	0.459
Back of Queue (*Q*), ft/ln (95 th percentile)	40	264	264	92	215	212	98	147	148	147	157	153
Back of Queue (*Q*), veh/ln (95 th percentile)	1.6	10.4	10.3	3.6	8.5	8.3	3.9	5.9	5.9	5.8	6.2	6.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.33	0.26	0.26	0.54	0.22	0.21	0.20	0.15	0.31	0.49	0.16	0.15
Uniform Delay (d_1), s/veh	19.7	19.5	19.5	27.0	18.1	18.2	34.5	41.0	20.8	33.2	38.5	38.6
Incremental Delay (d_2), s/veh	0.1	0.8	1.8	0.2	0.6	1.3	0.3	0.3	2.4	0.4	0.4	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.8	20.4	21.3	27.1	18.7	19.4	34.8	41.2	23.2	33.6	38.9	39.0
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.6	C		19.8	B		34.0	C		37.1	D	
Intersection Delay, s/veh / LOS	25.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

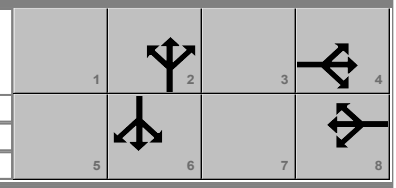
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2030 AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	182	10	82	229	10	40	300	84	10	320	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	72.5	21.5	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		27.0		27.0		78.0		78.0
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (g_s), s		18.3		20.2				
Green Extension Time (g_e), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

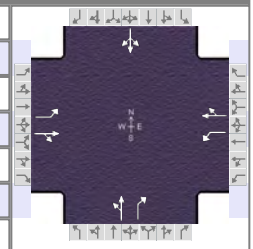
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	209		89	260			370	91		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1120	1853		1173	1856			1703	1560		1806	
Queue Service Time (g_s), s	2.9	10.6		7.7	13.6			0.0	2.0		0.0	
Cycle Queue Clearance Time (g_c), s	16.3	10.6		18.2	13.6			8.2	2.0		9.3	
Green Ratio (*g/C*)	0.20	0.20		0.20	0.20			0.69	0.69		0.69	
Capacity (*c*), veh/h	157	382		194	383			1211	1075		1280	
Volume-to-Capacity Ratio (*X*)	0.208	0.546		0.460	0.678			0.305	0.085		0.314	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		103	259			138	29		152	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.3		4.0	10.2			5.4	1.1		5.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		1.03	0.26			0.14	0.36		0.15	
Uniform Delay (d_1), s/veh	45.9	37.3		45.3	38.5			6.4	5.4		6.5	
Incremental Delay (d_2), s/veh	0.2	0.5		0.6	0.8			0.7	0.2		0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.2	37.7		46.0	39.2			7.0	5.6		7.2	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	38.9	D		41.0	D		6.7	A		7.2	A	
Intersection Delay, s/veh / LOS	20.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

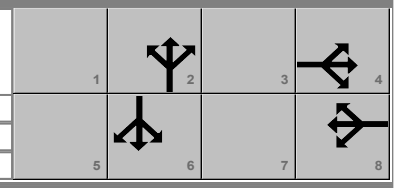
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2030 PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	331	40	78	195	10	20	370	91	20	380	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	62.5	31.5	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		37.0		37.0		68.0		68.0
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (g_s), s		21.9		29.7				
Green Extension Time (g_e), s		1.7		1.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	391		82	216			411	96		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1166	1835		993	1854			1794	1560		1785	
Queue Service Time (g_s), s	7.3	19.9		8.4	9.7			0.0	2.8		0.0	
Cycle Queue Clearance Time (g_c), s	16.6	19.9		27.7	9.7			12.2	2.8		15.0	
Green Ratio (*g/C*)	0.30	0.30		0.30	0.30			0.60	0.60		0.60	
Capacity (*c*), veh/h	316	552		184	558			1103	927		1097	
Volume-to-Capacity Ratio (*X*)	0.300	0.708		0.446	0.387			0.372	0.103		0.432	
Back of Queue (*Q*), ft/ln (95 th percentile)	94	343		94	194			220	44		255	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.7	13.5		3.7	7.6			8.5	1.7		10.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.05	0.34		0.94	0.19			0.22	0.55		0.26	
Uniform Delay (d_1), s/veh	35.4	32.6		44.7	29.1			11.1	9.2		11.7	
Incremental Delay (d_2), s/veh	0.2	0.6		0.6	0.2			1.0	0.2		1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	35.6	33.2		45.3	29.2			12.1	9.4		12.9	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	33.7	C		33.7	C		11.6	B		12.9	B	
Intersection Delay, s/veh / LOS	21.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

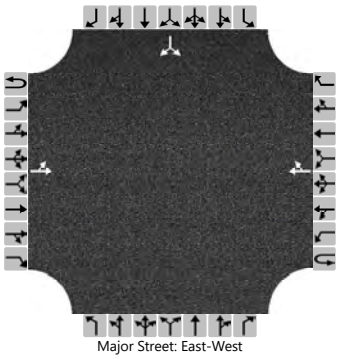
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	226				191	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1358													626	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.1		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

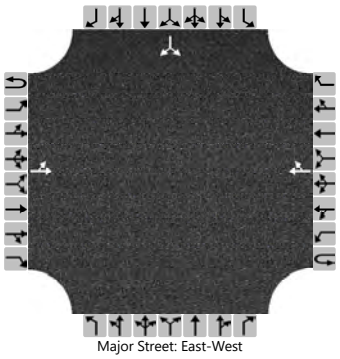
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	292				193	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

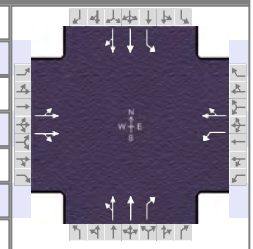
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1318													542	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.8	0.1												12.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.3												12.1		
Approach LOS		A												B		

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HCS Signalized Intersection Results Summary

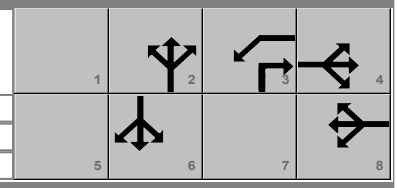
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2030 AM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	45	80	80	20	25	380	160	20	420	100

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.6	27.0	26.9	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.1		40.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		8.9		6.8				
Green Extension Time (*g e*), s		0.5		0.3		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

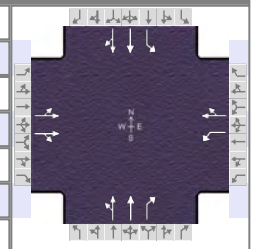
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	147		132	84	105		217	210	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1825		1757	1781	1805		1724	1702	1585	1000	1870	1746
Queue Service Time (*g s*), s	6.9		6.3	3.9	4.8		0.0	9.9	5.2	1.7	12.5	12.7
Cycle Queue Clearance Time (*g c*), s	6.9		6.3	3.9	4.8		9.2	9.9	5.2	11.6	12.5	12.7
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	469		452	456	462		607	561	929	304	617	576
Volume-to-Capacity Ratio (*X*)	0.314		0.291	0.185	0.228		0.357	0.374	0.181	0.069	0.456	0.462
Back of Queue (*Q*), ft/ln (95 th percentile)	137		120	76	96		193	193	82	20	250	236
Back of Queue (*Q*), veh/ln (95 th percentile)	5.4		4.8	3.0	3.8		7.7	7.6	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.14		0.12	0.76	0.10		0.20	0.19	1.03	0.00	0.25	0.24
Uniform Delay (*d 1*), s/veh	31.5		31.3	30.5	30.8		26.7	26.9	10.1	31.4	27.8	27.8
Incremental Delay (*d 2*), s/veh	0.1		0.1	0.1	0.1		1.6	1.9	0.4	0.4	2.4	2.7
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.7		31.5	30.6	30.9		28.3	28.8	10.5	31.8	30.2	30.5
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.6		C	30.8		C	23.4		C	30.4		C
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

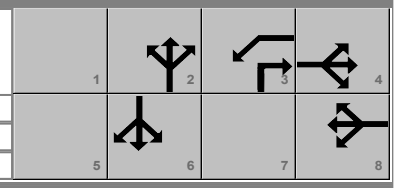
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2030	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2030 PM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	51	180	130	40	67	410	230	20	380	70

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.5	27.0	27.0	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		11.2		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	189		170	196	185		215	304	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1803		1767	1781	1794		1147	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	9.2		8.3	9.6	9.0		8.8	15.3	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	9.2		8.3	9.6	9.0		19.9	15.3	8.1	17.3	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	464		454	458	461		423	559	928	244	615	581
Volume-to-Capacity Ratio (*X*)	0.409		0.375	0.427	0.400		0.508	0.543	0.269	0.089	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	181		159	188	176		220	277	130	23	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	7.1		6.3	7.4	6.9		8.8	10.9	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18		0.16	1.88	0.18		0.22	0.28	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.4		32.1	32.5	32.3		30.7	28.8	10.7	35.9	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		4.3	3.8	0.7	0.7	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.6		32.3	32.8	32.5		35.0	32.6	11.4	36.6	29.3	29.5
Level of Service (LOS)	C		C	C	C		D	C	B	D	C	C
Approach Delay, s/veh / LOS	32.4	C		32.6	C		26.4	C		29.7	C	
Intersection Delay, s/veh / LOS	29.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

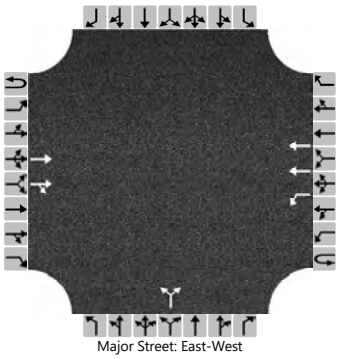
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	18	0	10	1130			48		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					60					
Capacity, c (veh/h)						1046					234					
v/c Ratio						0.01					0.26					
95% Queue Length, Q_{95} (veh)						0.0					1.0					
95% Queue Length, Q_{95} (ft)						0.0					25.0					
Control Delay (s/veh)						8.5					25.6					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					0.1				25.6							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

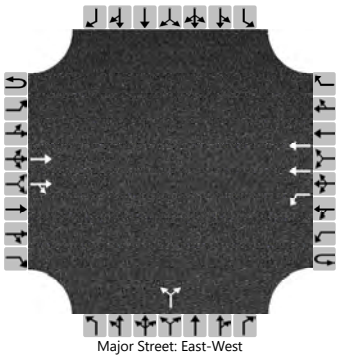
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	28	0	10	620			15		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					28					
Capacity, c (veh/h)						651					185					
v/c Ratio						0.02					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.5					
Control Delay (s/veh)						10.6					27.8					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				27.8							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

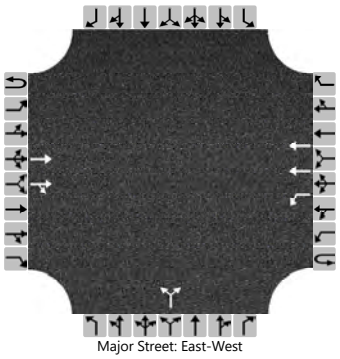
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	20	1160			1		38				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21					41					
Capacity, c (veh/h)						1063					708					
v/c Ratio						0.02					0.06					
95% Queue Length, Q_{95} (veh)						0.1					0.2					
95% Queue Length, Q_{95} (ft)						2.6					5.0					
Control Delay (s/veh)						8.5					10.4					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.1				10.4							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

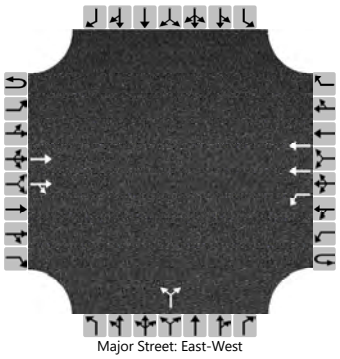
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	37	690			1		33				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					38					
Capacity, c (veh/h)						544					379					
v/c Ratio						0.08					0.10					
95% Queue Length, Q_{95} (veh)						0.2					0.3					
95% Queue Length, Q_{95} (ft)						5.1					7.5					
Control Delay (s/veh)						12.2					15.6					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.6				15.6							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

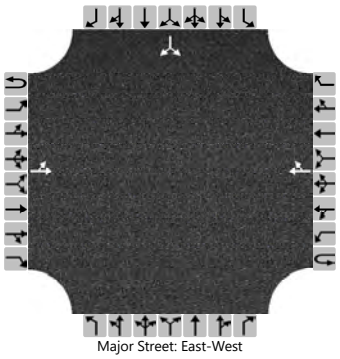
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		16	170				180	15						25		21
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17													48	
Capacity, c (veh/h)		1363													654	
v/c Ratio		0.01													0.07	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.7	
Control Delay (s/veh)		7.7	0.1												10.9	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.8												10.9		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

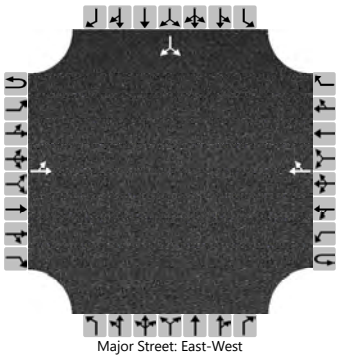
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		32	240				220	27						21		23
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

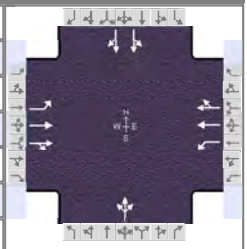
Flow Rate, v (veh/h)		35													48	
Capacity, c (veh/h)		1286													552	
v/c Ratio		0.03													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													8.6	
Control Delay (s/veh)		7.9	0.3												12.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		1.1												12.1		
Approach LOS		A												B		

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Appendix M
Intersection Capacity Analysis Worksheets - No-Build - 2047

HCS Signalized Intersection Results Summary

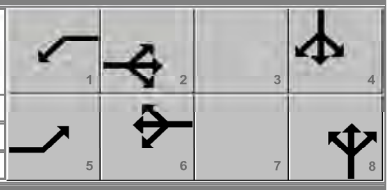
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2047 NB AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	400	30	100	920	10	40	210	120	30	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	3.5	51.6	27.8	0.0	0.0	
Yellow	3.0	0.0	3.0	3.0	0.0	0.0	
Red	3.0	0.0	3.0	4.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.6	12.7	61.0		34.8		34.8
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.3		11.2
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

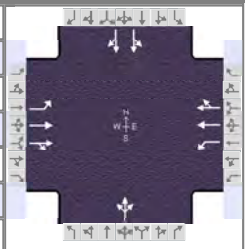
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	226	222	104	485	483		385		171		173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1848		1612		1478		1614
Queue Service Time (g_s), s	0.6	7.4	7.5	2.9	17.7	17.7		15.1		0.0		9.2
Cycle Queue Clearance Time (g_c), s	0.6	7.4	7.5	2.9	17.7	17.7		24.3		7.8		9.2
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.26		0.26		0.26
Capacity (*c*), veh/h	316	911	888	573	972	969		465		432		427
Volume-to-Capacity Ratio (*X*)	0.066	0.248	0.250	0.182	0.499	0.499		0.830		0.396		0.404
Back of Queue (*Q*), ft/ln (95 th percentile)	11	147	145	51	309	308		375		159		164
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.7	5.6	2.0	12.1	12.0		14.5		6.3		6.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.14	0.51	0.31	0.31		0.38		0.16		0.16
Uniform Delay (d_1), s/veh	13.5	15.5	15.5	11.4	16.1	16.1		37.2		31.2		31.8
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	1.8	1.8		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.5	16.1	16.2	11.4	17.9	17.9		38.7		31.5		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.0	B		17.3	B		38.7	D		31.7	C	
Intersection Delay, s/veh / LOS	22.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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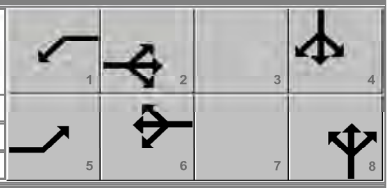
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2047 NB PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	80	750	50	110	470	30	30	300	70	20	220	20

Signal Information												
Cycle, s	105.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	6.5	0.3	50.0	29.2	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.0	0.0	3.0	3.0	0.0	0.0		
				Red	3.0	0.0	3.0	4.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.5	56.0	12.8	56.4		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	4.5		5.5			27.7		9.1
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.4		1.5
Phase Call Probability	0.92		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	88	444	435	121	277	272		440		143		142
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1814	1767	1856	1816		1731		1527		1656
Queue Service Time (g_s), s	2.5	17.3	17.3	3.5	9.6	9.6		15.1		0.0		7.1
Cycle Queue Clearance Time (g_c), s	2.5	17.3	17.3	3.5	9.6	9.6		25.7		6.3		7.1
Green Ratio (*g/C*)	0.54	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	491	884	865	378	890	871		518		464		460
Volume-to-Capacity Ratio (*X*)	0.179	0.503	0.503	0.320	0.311	0.313		0.849		0.309		0.309
Back of Queue (*Q*), ft/ln (95 th percentile)	44	310	306	62	192	189		417		128		129
Back of Queue (*Q*), veh/ln (95 th percentile)	1.7	12.1	11.9	2.4	7.5	7.4		16.2		5.1		5.1
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.31	0.31	0.62	0.19	0.19		0.42		0.13		0.13
Uniform Delay (d_1), s/veh	12.5	18.9	18.9	13.6	16.7	16.7		36.5		29.7		30.0
Incremental Delay (d_2), s/veh	0.1	2.0	2.1	0.2	0.9	0.9		1.5		0.1		0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.5	21.0	21.0	13.8	17.6	17.7		38.1		29.8		30.1
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.2	C		16.9	B		38.1	D		29.9	C	
Intersection Delay, s/veh / LOS	23.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

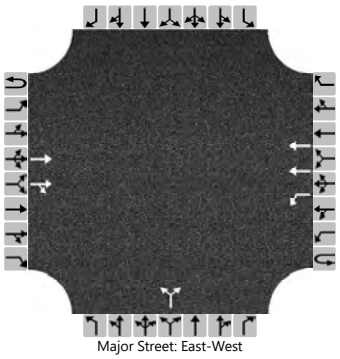
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			890	30	0	30	590			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						701					218					
v/c Ratio						0.05					0.29					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.4					28.1					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				28.1							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

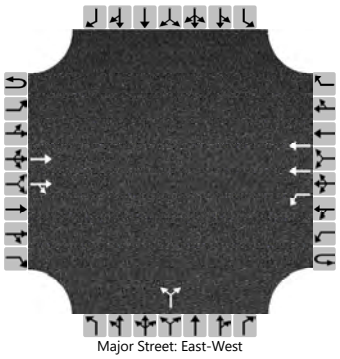
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			450	10	0	40	1090			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1082					352					
v/c Ratio						0.04					0.14					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

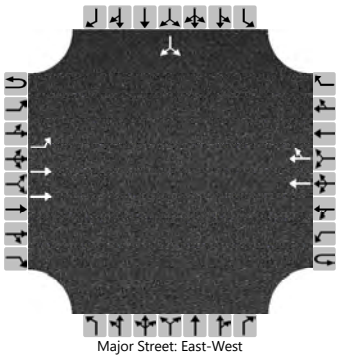
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

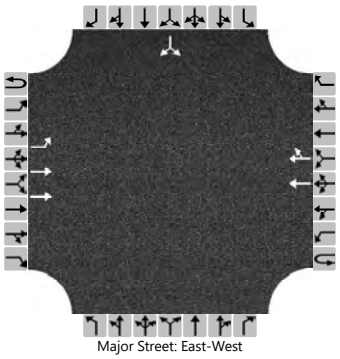
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

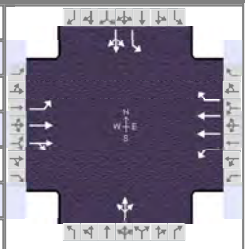
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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HCS Signalized Intersection Results Summary

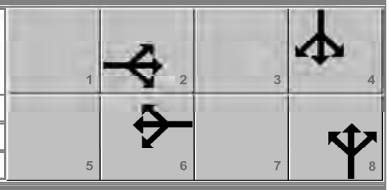
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2047 NB AM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	420	10	10	1090	120	10	10	10	70	10	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.5	9.7	6.4	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		77.0		77.0		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.1
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

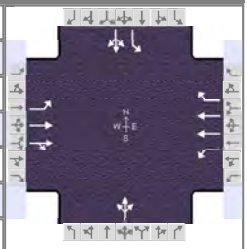
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	12	251	249	12	1267	140		35		81	35	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	434	1856	1840	898	1781	1585		1751		1781	1670	
Queue Service Time (g_s), s	1.5	5.4	5.4	0.5	19.1	3.3		2.0		4.6	2.0	
Cycle Queue Clearance Time (g_c), s	20.6	5.4	5.4	6.0	19.1	3.3		2.0		4.6	2.0	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	281	1245	1235	625	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.041	0.201	0.202	0.019	0.530	0.131		0.328		0.496	0.227	
Back of Queue (*Q*), ft/ln (95 th percentile)	8	92	92	5	277	49		40		93	39	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	3.6	3.6	0.2	10.9	1.9		1.6		3.7	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.09	0.09	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.1	6.6	6.6	7.7	8.8	6.2		47.2		45.4	44.2	
Incremental Delay (d_2), s/veh	0.3	0.4	0.4	0.1	0.8	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	14.4	6.9	6.9	7.8	9.7	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.1	A		9.3	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

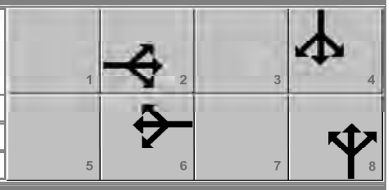
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2047 NB PM Peak Mayfield Rd._Rydalmount R…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	990	20	10	690	190	10	10	10	130	10	10

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.2	10.2	6.1	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

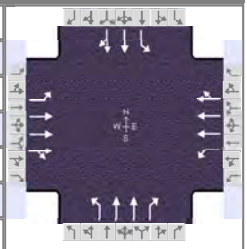
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	11	545	541	11	742	204		32		140	22	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	712	1856	1842	519	1781	1585		1751		1781	1716	
Queue Service Time (g_s), s	0.7	14.5	14.5	1.0	9.2	5.1		1.9		8.1	1.2	
Cycle Queue Clearance Time (g_c), s	9.9	14.5	14.5	15.5	9.2	5.1		1.9		8.1	1.2	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	482	1241	1232	344	2381	1060		102		173	167	
Volume-to-Capacity Ratio (*X*)	0.022	0.439	0.439	0.031	0.312	0.193		0.317		0.808	0.129	
Back of Queue (*Q*), ft/ln (95 th percentile)	5	237	236	6	146	76		37		168	23	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	9.3	9.2	0.2	5.7	3.0		1.5		6.6	0.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.04	0.24	0.24	0.06	0.15	0.25		0.04		0.94	0.02	
Uniform Delay (d_1), s/veh	9.4	8.2	8.2	11.8	7.3	6.6		47.5		46.4	43.3	
Incremental Delay (d_2), s/veh	0.1	1.1	1.1	0.2	0.3	0.4		0.7		3.4	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.4	9.3	9.3	12.0	7.6	7.0		48.1		49.8	43.5	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.3	A		7.5	A		48.1	D		49.0	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

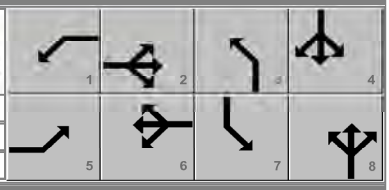
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2047 NB AM Peak Mayfield Rd._S. Taylor Rd..x…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	440	40	180	1100	90	80	250	140	170	300	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	40.0	7.5	6.4	4.6	12.4
Yellow	3.5	3.5	3.5	3.5	0.0	3.5
Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	9.7	56.2	13.5	60.0	12.4	18.4	16.9	23.0
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	2.7		2.0		6.2	11.2	10.9	11.4
Green Extension Time (g_e), s	0.0	0.0	2.8	0.0	0.1	1.2	0.1	1.4
Phase Call Probability	0.45		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.21		0.00	0.08	0.07	0.01

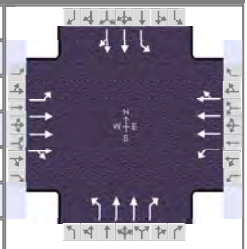
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	333	162	186	829	398	82	258	144	175	177	173
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1795	1795	1795	1598	1781	1870	1793
Queue Service Time (g_s), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Cycle Queue Clearance Time (g_c), s	0.7	5.4	5.5	0.0	14.7	14.7	4.2	7.2	9.2	8.9	9.2	9.4
Green Ratio (*g/C*)	0.43	0.47	0.47	0.43	0.51	0.51	0.18	0.12	0.12	0.23	0.16	0.16
Capacity (*c*), veh/h	232	1771	847	514	1907	915	232	424	189	310	302	290
Volume-to-Capacity Ratio (*X*)	0.089	0.188	0.192	0.361	0.435	0.435	0.355	0.609	0.766	0.566	0.588	0.598
Back of Queue (*Q*), ft/ln (95 th percentile)	13	105	106	146	259	260	83	144	159	175	194	190
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5	4.1	4.1	5.7	10.2	10.2	3.3	5.7	6.3	6.9	7.6	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.11	0.10	0.11	0.86	0.26	0.26	0.17	0.14	0.33	0.58	0.19	0.19
Uniform Delay (d_1), s/veh	18.6	16.0	16.0	21.6	16.2	16.2	37.4	44.0	7.6	35.1	40.8	40.9
Incremental Delay (d_2), s/veh	0.1	0.2	0.5	0.2	0.7	1.5	0.3	0.5	2.4	0.6	0.7	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.7	16.2	16.5	21.7	16.9	17.7	37.7	44.5	10.0	35.7	41.5	41.6
Level of Service (LOS)	B	B	B	C	B	B	D	D	B	D	D	D
Approach Delay, s/veh / LOS	16.4	B		17.8	B		33.1	C		39.6	D	
Intersection Delay, s/veh / LOS	24.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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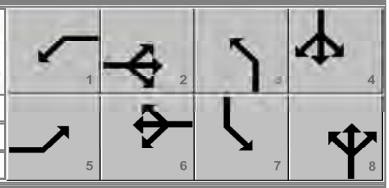
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2047 NB PM Peak Mayfield Rd._S. Taylor Rd..…		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	50	990	90	100	760	120	100	270	190	150	250	30

Signal Information										
Cycle, s	105.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	5.4	35.9	7.1	6.8	2.9	15.9
				Yellow	3.5	3.5	3.5	3.5	0.0	3.5
				Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	11.9	54.4	13.1	55.6	12.8	21.9	15.6	24.7
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.8		2.0		7.0	14.3	9.5	9.4
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.77		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

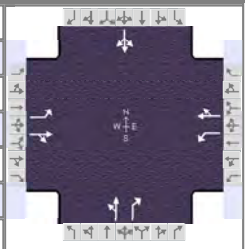
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	51	745	357	102	611	287	102	276	194	153	144	141
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1788	1781	1870	1737	1795	1795	1598	1781	1870	1800
Queue Service Time (g_s), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Cycle Queue Clearance Time (g_c), s	1.8	14.2	14.3	0.0	10.9	11.1	5.0	7.4	12.3	7.5	7.2	7.4
Green Ratio (*g/C*)	0.41	0.46	0.46	0.39	0.47	0.47	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	307	1705	815	335	1748	812	283	543	242	321	334	321
Volume-to-Capacity Ratio (*X*)	0.166	0.437	0.438	0.304	0.350	0.353	0.361	0.508	0.803	0.477	0.432	0.440
Back of Queue (*Q*), ft/ln (95 th percentile)	34	259	259	91	209	206	98	147	148	147	150	148
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	10.2	10.1	3.6	8.2	8.0	3.9	5.9	5.9	5.8	5.9	5.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.28	0.26	0.26	0.53	0.21	0.20	0.20	0.15	0.31	0.49	0.15	0.15
Uniform Delay (d_1), s/veh	19.5	19.4	19.4	26.5	17.8	17.8	34.5	41.0	20.8	33.2	38.4	38.5
Incremental Delay (d_2), s/veh	0.1	0.8	1.7	0.2	0.6	1.2	0.3	0.3	2.4	0.4	0.3	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.6	20.2	21.1	26.7	18.4	19.0	34.8	41.2	23.2	33.6	38.7	38.8
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.5	C		19.4	B		34.0	C		37.0	D	
Intersection Delay, s/veh / LOS	24.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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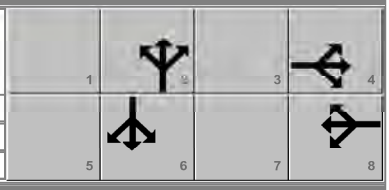
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2047 NB PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	320	40	70	190	10	20	370	80	20	380	50

Signal Information										
Cycle, s	105.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	63.9	30.1	0.0	0.0	0.0	0.0
				Yellow	3.5	3.5	0.0	0.0	0.0	0.0
				Red	2.0	2.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		35.6		35.6		69.4		69.4
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		21.5		28.4				
Green Extension Time (*g e*), s		1.6		1.6		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

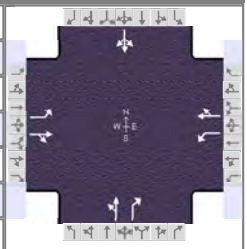
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	379		74	211			411	84		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1171	1834		1004	1854			1794	1560		1786	
Queue Service Time (*g s*), s	7.4	19.5		7.4	9.6			0.0	2.4		0.0	
Cycle Queue Clearance Time (*g c*), s	16.6	19.5		26.4	9.6			11.8	2.4		14.5	
Green Ratio (*g/C*)	0.29	0.29		0.29	0.29			0.61	0.61		0.61	
Capacity (*c*), veh/h	303	528		176	534			1125	947		1120	
Volume-to-Capacity Ratio (*X*)	0.312	0.717		0.419	0.394			0.365	0.089		0.423	
Back of Queue (*Q*), ft/ln (95 th percentile)	96	338		85	193			213	37		246	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.8	13.3		3.3	7.6			8.3	1.4		9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.07	0.34		0.85	0.19			0.21	0.46		0.25	
Uniform Delay (*d 1*), s/veh	36.5	33.5		45.2	30.0			10.4	8.6		11.0	
Incremental Delay (*d 2*), s/veh	0.2	0.7		0.6	0.2			0.9	0.2		1.2	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	36.7	34.2		45.8	30.2			11.3	8.8		12.1	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	34.7	C		34.2	C		10.9	B		12.1	B	
Intersection Delay, s/veh / LOS	21.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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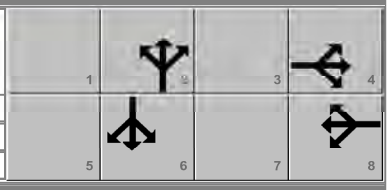
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6.2047 NB AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	180	10	70	220	10	50	300	80	10	320	40

Signal Information												
Cycle, s	105.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	73.6	20.4	0.0	0.0	0.0	0.0		
				Yellow	3.5	3.5	0.0	0.0	0.0	0.0		
				Red	2.0	2.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		25.9		25.9		79.1		79.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (*g s*), s		18.0		19.1				
Green Extension Time (*g e*), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	207		76	250			380	87		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1130	1853		1175	1856			1668	1560		1806	
Queue Service Time (*g s*), s	2.9	10.6		6.6	13.2			0.0	1.9		0.0	
Cycle Queue Clearance Time (*g c*), s	16.0	10.6		17.1	13.2			8.2	1.9		8.9	
Green Ratio (*g/C*)	0.19	0.19		0.19	0.19			0.70	0.70		0.70	
Capacity (*c*), veh/h	149	362		181	363			1206	1092		1299	
Volume-to-Capacity Ratio (*X*)	0.219	0.570		0.422	0.689			0.315	0.080		0.310	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		88	253			137	26		145	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.4		3.5	10.0			5.3	1.0		5.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		0.88	0.25			0.14	0.33		0.14	
Uniform Delay (*d 1*), s/veh	46.7	38.2		46.0	39.3			6.0	5.0		6.1	
Incremental Delay (*d 2*), s/veh	0.3	0.5		0.6	0.9			0.7	0.1		0.6	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.9	38.8		46.5	40.2			6.7	5.2		6.7	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	39.9	D		41.6	D		6.4	A		6.7	A	
Intersection Delay, s/veh / LOS	20.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

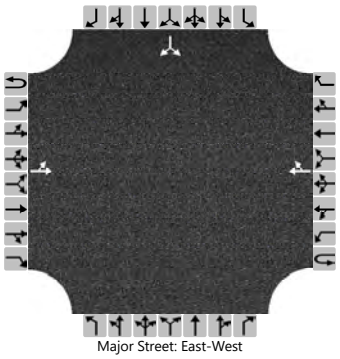
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	220				170	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1383													648	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.6	0.1												10.8	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												10.8		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

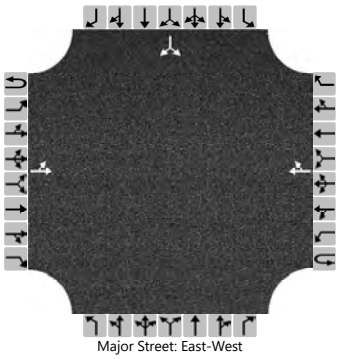
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	270				180	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

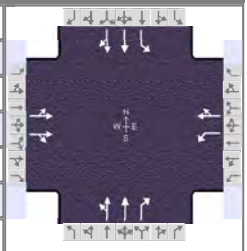
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1334													568	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.7	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.7		
Approach LOS		A												B		

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HCS Signalized Intersection Results Summary

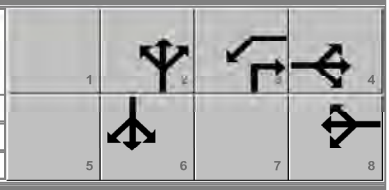
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8.2047 NB AM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	30	80	90	20	30	380	160	20	420	100

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.6	27.0	26.9	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.1		40.1
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (g_s), s		8.4		7.3				
Green Extension Time (g_e), s		0.4		0.3		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

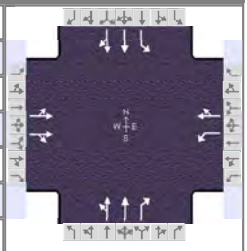
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	138		125	84	116		211	221	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1822		1789	1781	1811		1585	1702	1585	1000	1870	1746
Queue Service Time (g_s), s	6.4		5.9	3.9	5.3		0.3	10.5	5.2	1.7	12.5	12.7
Cycle Queue Clearance Time (g_c), s	6.4		5.9	3.9	5.3		13.0	10.5	5.2	12.2	12.5	12.7
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	468		460	457	464		562	561	929	298	616	575
Volume-to-Capacity Ratio (*X*)	0.295		0.271	0.184	0.249		0.375	0.394	0.181	0.071	0.457	0.462
Back of Queue (*Q*), ft/ln (95 th percentile)	128		113	76	106		189	203	82	20	250	237
Back of Queue (*Q*), veh/ln (95 th percentile)	5.0		4.5	3.0	4.2		7.6	8.0	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13		0.11	0.75	0.11		0.19	0.20	1.03	0.00	0.25	0.24
Uniform Delay (d_1), s/veh	31.4		31.2	30.5	31.0		26.6	27.1	10.1	31.8	27.8	27.8
Incremental Delay (d_2), s/veh	0.1		0.1	0.1	0.1		1.9	2.1	0.4	0.5	2.4	2.7
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.5		31.3	30.5	31.1		28.5	29.2	10.5	32.3	30.2	30.5
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.4	C		30.9	C		23.7	C		30.4	C	
Intersection Delay, s/veh / LOS	28.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

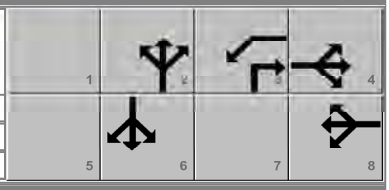
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	9/16/2024	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2047 NB PM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	No-Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	40	180	130	40	50	410	230	20	380	70

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.5	27.0	27.0	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		10.8		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	183		165	196	185		225	275	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1801		1786	1781	1794		1350	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	8.8		8.0	9.6	9.0		5.3	13.6	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	8.8		8.0	9.6	9.0		16.3	13.6	8.1	15.6	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	463		459	458	461		486	559	928	259	615	581
Volume-to-Capacity Ratio (*X*)	0.394		0.360	0.427	0.400		0.463	0.492	0.269	0.084	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	174		153	188	176		217	250	130	22	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	6.8		6.1	7.4	6.9		8.7	9.9	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17		0.16	1.88	0.18		0.22	0.25	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.2		31.9	32.5	32.3		28.5	28.2	10.7	34.5	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		3.1	3.1	0.7	0.6	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.4		32.1	32.8	32.5		31.7	31.3	11.4	35.1	29.3	29.5
Level of Service (LOS)	C		C	C	C		C	C	B	D	C	C
Approach Delay, s/veh / LOS	32.3	C		32.6	C		24.8	C		29.7	C	
Intersection Delay, s/veh / LOS	28.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

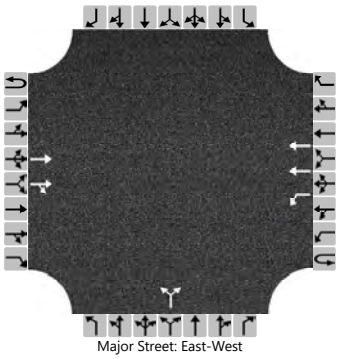
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	10	0	10	1130			10		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					21					
Capacity, c (veh/h)						1053					324					
v/c Ratio						0.01					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
95% Queue Length, Q_{95} (ft)						0.0					5.0					
Control Delay (s/veh)						8.5					16.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				16.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

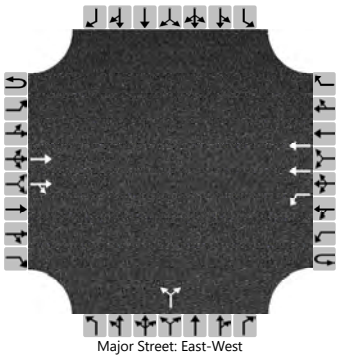
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	0	0	10	620			0		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					11					
Capacity, c (veh/h)						669					513					
v/c Ratio						0.02					0.02					
95% Queue Length, Q_{95} (veh)						0.1					0.1					
95% Queue Length, Q_{95} (ft)						2.6					2.5					
Control Delay (s/veh)						10.5					12.2					
Level of Service (LOS)						B					B					
Approach Delay (s/veh)					0.2				12.2							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

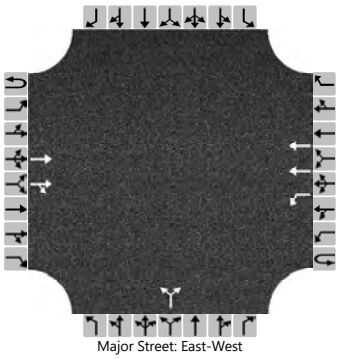
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	0	1160			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						1063					326					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						8.4					16.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				16.1							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

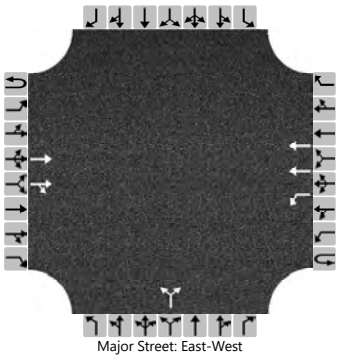
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	0	690			1		1				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					2					
Capacity, c (veh/h)						544					153					
v/c Ratio						0.00					0.01					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)											0.0					
Control Delay (s/veh)						11.6					28.9					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.0				28.9							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

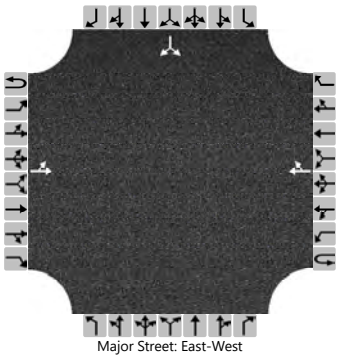
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	170				180	10						10		0
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													10	
Capacity, c (veh/h)		1369													578	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.7	0.1												11.3	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.5												11.3		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

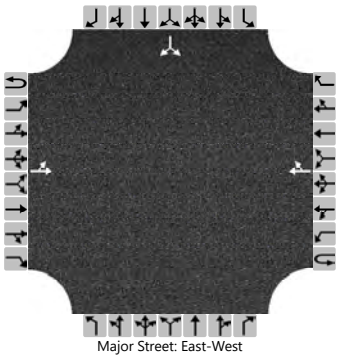
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	9/30/2024
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	No-Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	240				220	10						10		10
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

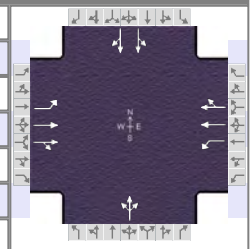
Flow Rate, v (veh/h)		11													22	
Capacity, c (veh/h)		1307													584	
v/c Ratio		0.01													0.04	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
95% Queue Length, Q_{95} (ft)		0.0													2.9	
Control Delay (s/veh)		7.8	0.1												11.4	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.4		
Approach LOS		A												B		

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Appendix N
Intersection Capacity Analysis Worksheets - Build - 2047

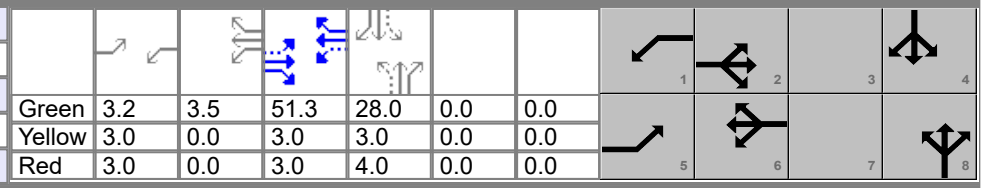
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.96
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2047 AM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	404	30	100	950	18	40	210	120	34	250	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	3.2	3.5	51.3	28.0	0.0	0.0
Yellow	3.0	0.0	3.0	3.0	0.0	0.0
Red	3.0	0.0	3.0	4.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	9.2	57.3	12.7	60.8		35.0		35.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	2.6		4.9			26.5		11.5
Green Extension Time (g_e), s	0.0	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.46		0.95			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

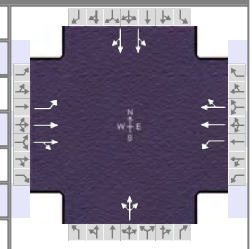
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	21	228	224	104	506	502		385		169		178
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1810	1767	1856	1843		1600		1394		1617
Queue Service Time (g_s), s	0.6	7.5	7.6	2.9	18.8	18.8		15.0		0.0		9.5
Cycle Queue Clearance Time (g_c), s	0.6	7.5	7.6	2.9	18.8	18.8		24.5		8.2		9.5
Green Ratio (*g/C*)	0.52	0.49	0.49	0.55	0.52	0.52		0.27		0.27		0.27
Capacity (*c*), veh/h	302	907	885	569	968	962		465		414		431
Volume-to-Capacity Ratio (*X*)	0.069	0.251	0.253	0.183	0.522	0.522		0.829		0.410		0.414
Back of Queue (*Q*), ft/ln (95 th percentile)	11	149	147	51	326	324		375		157		169
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	5.8	5.7	2.0	12.7	12.7		14.5		6.2		6.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.15	0.15	0.51	0.33	0.32		0.38		0.16		0.17
Uniform Delay (d_1), s/veh	13.8	15.6	15.7	11.5	16.5	16.5		37.1		31.1		31.7
Incremental Delay (d_2), s/veh	0.0	0.7	0.7	0.1	2.0	2.0		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	13.8	16.3	16.3	11.5	18.5	18.5		38.6		31.3		32.0
Level of Service (LOS)	B	B	B	B	B	B		D		C		C
Approach Delay, s/veh / LOS	16.2	B		17.9	B		38.6	D		31.6	C	
Intersection Delay, s/veh / LOS	23.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

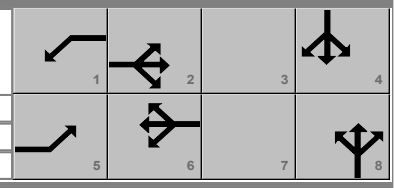
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.91
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Lee Ro…	File Name	1. 2047 PM Peak Mayfield Rd._Lee Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	80	771	50	110	479	36	30	300	70	27	220	20

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.5	0.3	50.0	29.2	0.0	0.0
Yellow	3.0	0.0	3.0	3.0	0.0	0.0
Red	3.0	0.0	3.0	4.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	12.5	56.0	12.8	56.4		36.2		36.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0		7.0		7.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	4.5		5.5			27.7		9.7
Green Extension Time (g_e), s	0.1	0.0	0.2	0.0		1.5		1.5
Phase Call Probability	0.92		0.97			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	88	456	446	121	286	280		440		141		153
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1767	1856	1815	1767	1856	1810		1731		1333		1659
Queue Service Time (g_s), s	2.5	17.9	17.9	3.5	10.0	10.0		15.1		0.0		7.7
Cycle Queue Clearance Time (g_c), s	2.5	17.9	17.9	3.5	10.0	10.0		25.7		6.2		7.7
Green Ratio (*g/C*)	0.54	0.48	0.48	0.54	0.48	0.48		0.28		0.28		0.28
Capacity (*c*), veh/h	483	884	865	370	890	868		518		412		461
Volume-to-Capacity Ratio (*X*)	0.182	0.516	0.516	0.327	0.321	0.323		0.848		0.341		0.331
Back of Queue (*Q*), ft/ln (95 th percentile)	44	319	314	62	198	195		417		126		139
Back of Queue (*Q*), veh/ln (95 th percentile)	1.7	12.5	12.3	2.4	7.7	7.6		16.2		5.0		5.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.32	0.31	0.62	0.20	0.20		0.42		0.13		0.14
Uniform Delay (d_1), s/veh	12.5	19.1	19.1	13.8	16.8	16.8		36.5		29.6		30.1
Incremental Delay (d_2), s/veh	0.1	2.1	2.2	0.2	1.0	1.0		1.5		0.2		0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Control Delay (*d*), s/veh	12.6	21.2	21.3	14.0	17.8	17.8		38.0		29.8		30.3
Level of Service (LOS)	B	C	C	B	B	B		D		C		C
Approach Delay, s/veh / LOS	20.5	C		17.1	B		38.0	D		30.0	C	
Intersection Delay, s/veh / LOS	23.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

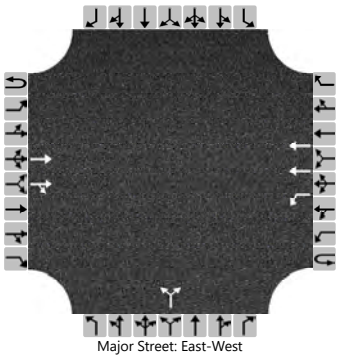
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			458	10	0	40	1128			20		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					51					
Capacity, c (veh/h)						1074					341					
v/c Ratio						0.04					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.9					
Control Delay (s/veh)						8.5					17.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				17.4							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

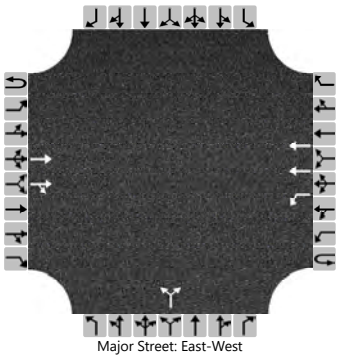
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Ivydale Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			918	30	0	30	605			30		30				
Percent Heavy Vehicles (%)					3	3				4		4				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.88		6.98				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.54		3.34				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					63					
Capacity, c (veh/h)						683					207					
v/c Ratio						0.05					0.30					
95% Queue Length, Q_{95} (veh)						0.1					1.2					
95% Queue Length, Q_{95} (ft)						2.6					31.0					
Control Delay (s/veh)						10.5					29.8					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				29.8							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

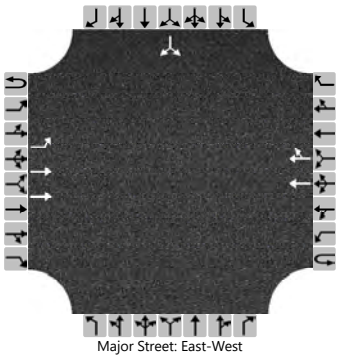
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	10	450				1150	10						10		30
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													44	
Capacity, c (veh/h)		530													233	
v/c Ratio		0.02													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
95% Queue Length, Q_{95} (ft)		2.6													18.2	
Control Delay (s/veh)		11.9													24.0	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.3												24.0			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

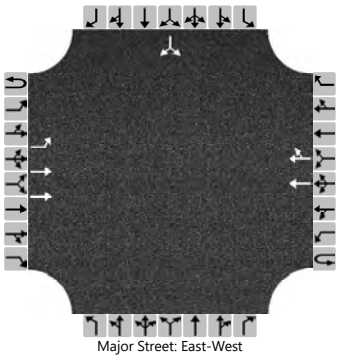
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	20	1120				680	10						10		10
Percent Heavy Vehicles (%)	4	4												5		5
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.18												6.90		7.00
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.24												3.55		3.35

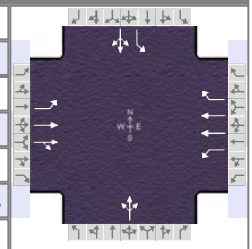
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20													20	
Capacity, c (veh/h)		876													233	
v/c Ratio		0.02													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													7.8	
Control Delay (s/veh)		9.2													21.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	0.2												21.9			
Approach LOS	A												C			

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HCS Signalized Intersection Results Summary

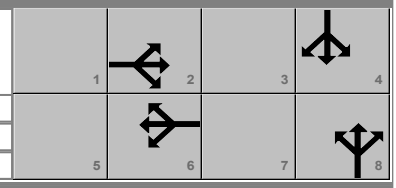
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.86
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2047 AM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	454	10	10	1109	120	10	10	10	70	10	21

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	70.4	9.7	6.4	0.0	0.0	0.0	
Yellow	3.5	3.0	3.0	0.0	0.0	0.0	
Red	3.0	3.0	3.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.9		76.9		12.4		15.7
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						4.0		6.6
Green Extension Time (g_e), s		0.0		0.0		0.1		0.2
Phase Call Probability						0.64		0.97
Max Out Probability						0.00		0.00

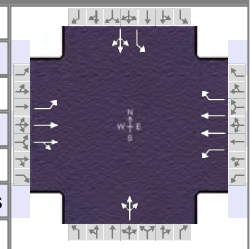
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	16	271	269	12	1290	140		35		81	36	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	425	1856	1841	866	1781	1585		1751		1781	1667	
Queue Service Time (g_s), s	2.2	5.9	5.9	0.6	19.6	3.3		2.0		4.6	2.1	
Cycle Queue Clearance Time (g_c), s	21.8	5.9	5.9	6.5	19.6	3.3		2.0		4.6	2.1	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.09	0.09	
Capacity (*c*), veh/h	274	1245	1235	600	2389	1063		107		164	154	
Volume-to-Capacity Ratio (*X*)	0.059	0.217	0.218	0.019	0.540	0.131		0.328		0.496	0.235	
Back of Queue (*Q*), ft/ln (95 th percentile)	11	101	101	5	283	49		40		93	40	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	3.9	3.9	0.2	11.1	1.9		1.6		3.7	1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.09	0.10	0.10	0.05	0.28	0.16		0.04		0.52	0.04	
Uniform Delay (d_1), s/veh	14.6	6.7	6.7	7.9	8.9	6.2		47.2		45.3	44.2	
Incremental Delay (d_2), s/veh	0.4	0.4	0.4	0.1	0.9	0.3		0.7		0.9	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	15.0	7.1	7.1	8.0	9.8	6.5		47.9		46.2	44.5	
Level of Service (LOS)	B	A	A	A	A	A		D		D	D	
Approach Delay, s/veh / LOS	7.3	A		9.5	A		47.9	D		45.7	D	
Intersection Delay, s/veh / LOS	11.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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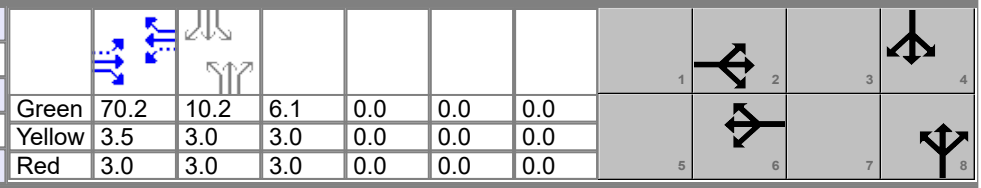
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.93
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & Rydal…	File Name	4. 2047 PM Peak Mayfield Rd._Rydalmount Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	14	1019	20	10	724	190	10	10	10	130	10	13

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	70.2	10.2	6.1	0.0	0.0	0.0						
Yellow	3.5	3.0	3.0	0.0	0.0	0.0						
Red	3.0	3.0	3.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		5.0		12.0		10.0
Phase Duration, s		76.7		76.7		12.1		16.2
Change Period, ($Y+R_c$), s		6.5		6.5		6.0		6.0
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.1
Queue Clearance Time (g_s), s						3.9		10.1
Green Extension Time (g_e), s		0.0		0.0		0.0		0.2
Phase Call Probability						0.61		0.99
Max Out Probability						0.00		0.00

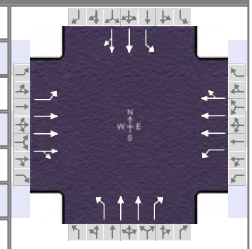
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	15	560	557	11	778	204		32		140	25	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	688	1856	1843	504	1781	1585		1751		1781	1698	
Queue Service Time (g_s), s	1.0	15.1	15.1	1.1	9.7	5.2		1.9		8.1	1.4	
Cycle Queue Clearance Time (g_c), s	10.8	15.1	15.1	16.2	9.7	5.2		1.9		8.1	1.4	
Green Ratio (*g/C*)	0.67	0.67	0.67	0.67	0.67	0.67		0.06		0.10	0.10	
Capacity (*c*), veh/h	465	1240	1232	333	2380	1060		102		173	165	
Volume-to-Capacity Ratio (*X*)	0.032	0.452	0.452	0.032	0.327	0.193		0.317		0.807	0.150	
Back of Queue (*Q*), ft/ln (95 th percentile)	7	246	244	6	155	76		37		168	27	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	9.6	9.6	0.2	6.1	3.0		1.5		6.6	1.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.06	0.25	0.24	0.06	0.16	0.25		0.04		0.94	0.03	
Uniform Delay (d_1), s/veh	9.7	8.3	8.3	12.1	7.4	6.6		47.5		46.4	43.4	
Incremental Delay (d_2), s/veh	0.1	1.2	1.2	0.2	0.4	0.4		0.7		3.3	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.8	9.5	9.5	12.3	7.8	7.0		48.1		49.8	43.6	
Level of Service (LOS)	A	A	A	B	A	A		D		D	D	
Approach Delay, s/veh / LOS	9.5	A		7.7	A		48.1	D		48.8	D	
Intersection Delay, s/veh / LOS	12.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

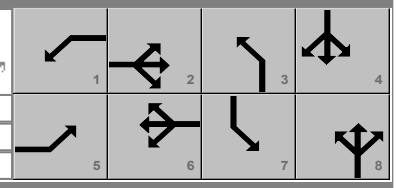
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.97
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2047 AM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	31	463	40	180	1114	90	80	250	140	170	300	45

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.2	38.5	7.5	6.4	4.7	12.7
Yellow	3.5	3.5	3.5	3.5	0.0	3.5
Red	3.0	3.0	2.5	2.5	0.0	2.5



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	10.7	55.8	13.5	58.5	12.4	18.7	17.0	23.4
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	3.1		2.0		6.1	11.2	10.8	11.5
Green Extension Time (g_e), s	0.0	0.0	3.6	0.0	0.1	1.5	0.3	1.6
Phase Call Probability	0.61		1.00		0.91	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

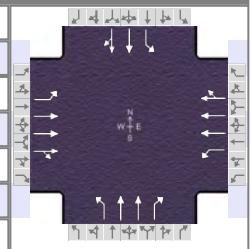
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	32	349	170	186	838	403	82	258	144	175	180	175
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1792	1781	1870	1796	1795	1795	1598	1781	1870	1785
Queue Service Time (g_s), s	1.1	5.7	5.8	0.0	15.3	15.3	4.1	7.1	9.2	8.8	9.3	9.5
Cycle Queue Clearance Time (g_c), s	1.1	5.7	5.8	0.0	15.3	15.3	4.1	7.1	9.2	8.8	9.3	9.5
Green Ratio (*g/C*)	0.43	0.47	0.47	0.41	0.50	0.50	0.18	0.12	0.12	0.23	0.17	0.17
Capacity (*c*), veh/h	240	1756	841	494	1853	890	235	435	193	315	310	296
Volume-to-Capacity Ratio (*X*)	0.133	0.199	0.202	0.376	0.452	0.453	0.351	0.593	0.746	0.556	0.583	0.593
Back of Queue (*Q*), ft/ln (95 th percentile)	20	112	113	152	270	271	82	143	162	173	195	192
Back of Queue (*Q*), veh/ln (95 th percentile)	0.8	4.4	4.4	6.0	10.6	10.6	3.3	5.7	6.4	6.8	7.7	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17	0.11	0.11	0.89	0.27	0.27	0.17	0.14	0.34	0.58	0.20	0.19
Uniform Delay (d_1), s/veh	19.1	16.3	16.3	22.8	17.2	17.2	37.1	43.7	20.8	34.6	40.5	40.5
Incremental Delay (d_2), s/veh	0.1	0.3	0.5	0.2	0.8	1.7	0.3	0.5	2.2	0.6	0.6	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.2	16.6	16.9	23.0	18.0	18.9	37.4	44.2	22.9	35.2	41.1	41.3
Level of Service (LOS)	B	B	B	C	B	B	D	D	C	D	D	D
Approach Delay, s/veh / LOS	16.8	B		18.9	B		36.7	D		39.2	D	
Intersection Delay, s/veh / LOS	25.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

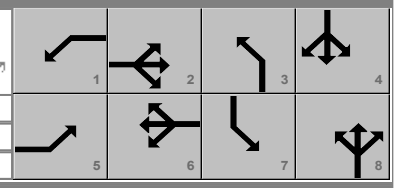
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.98
Urban Street	Mayfield Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Mayfield Road & S. Tayl…	File Name	5. 2047 PM Peak Mayfield Rd._S. Taylor Rd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	58	1011	90	100	784	120	100	270	190	150	250	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.8	35.6	7.1	6.8	2.9	15.9	
Yellow	3.5	3.5	3.5	3.5	0.0	3.5	
Red	3.0	3.0	2.5	2.5	0.0	2.5	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.2	4.0	1.3	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	12.3	54.3	13.1	55.2	12.8	21.9	15.6	24.8
Change Period, ($Y+R_c$), s	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	4.1		2.0		7.0	14.3	9.5	9.7
Green Extension Time (g_e), s	0.1	0.0	2.4	0.0	0.2	1.6	0.3	1.6
Phase Call Probability	0.82		0.95		0.95	1.00	0.99	1.00
Max Out Probability	0.00		0.00		0.00	0.00	0.00	0.00

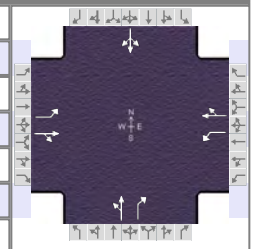
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	59	759	364	102	628	295	102	276	194	153	150	146
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1870	1789	1781	1870	1740	1795	1795	1598	1781	1870	1781
Queue Service Time (g_s), s	2.1	14.6	14.6	0.0	11.3	11.5	5.0	7.4	12.3	7.5	7.5	7.7
Cycle Queue Clearance Time (g_c), s	2.1	14.6	14.6	0.0	11.3	11.5	5.0	7.4	12.3	7.5	7.5	7.7
Green Ratio (*g/C*)	0.41	0.46	0.46	0.38	0.46	0.46	0.22	0.15	0.15	0.24	0.18	0.18
Capacity (*c*), veh/h	305	1704	815	330	1736	807	278	543	242	321	334	318
Volume-to-Capacity Ratio (*X*)	0.194	0.446	0.447	0.309	0.362	0.365	0.367	0.507	0.802	0.477	0.449	0.459
Back of Queue (*Q*), ft/ln (95 th percentile)	40	264	264	92	215	212	98	147	148	147	157	153
Back of Queue (*Q*), veh/ln (95 th percentile)	1.6	10.4	10.3	3.6	8.5	8.3	3.9	5.9	5.9	5.8	6.2	6.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.33	0.26	0.26	0.54	0.22	0.21	0.20	0.15	0.31	0.49	0.16	0.15
Uniform Delay (d_1), s/veh	19.7	19.5	19.5	27.0	18.1	18.2	34.5	41.0	20.8	33.2	38.5	38.6
Incremental Delay (d_2), s/veh	0.1	0.8	1.8	0.2	0.6	1.3	0.3	0.3	2.4	0.4	0.4	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.8	20.4	21.3	27.1	18.7	19.4	34.8	41.2	23.2	33.6	38.9	39.0
Level of Service (LOS)	B	C	C	C	B	B	C	D	C	C	D	D
Approach Delay, s/veh / LOS	20.6	C		19.8	B		34.0	C		37.1	D	
Intersection Delay, s/veh / LOS	25.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

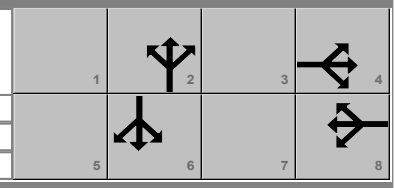
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.92
Urban Street	Lee Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2047 AM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	182	10	82	229	10	50	300	84	10	320	40

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	72.5	21.5	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		27.0		27.0		78.0		78.0
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (g_s), s		18.3		20.2				
Green Extension Time (g_e), s		1.1		1.1		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

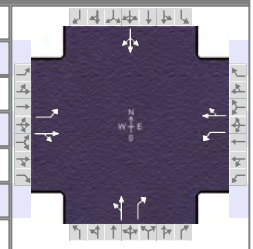
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	33	209		89	260			380	91		402	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1120	1853		1173	1856			1668	1560		1806	
Queue Service Time (g_s), s	2.9	10.6		7.7	13.6			0.0	2.0		0.0	
Cycle Queue Clearance Time (g_c), s	16.3	10.6		18.2	13.6			8.5	2.0		9.3	
Green Ratio (*g/C*)	0.20	0.20		0.20	0.20			0.69	0.69		0.69	
Capacity (*c*), veh/h	157	382		194	383			1189	1075		1280	
Volume-to-Capacity Ratio (*X*)	0.208	0.546		0.460	0.678			0.320	0.085		0.314	
Back of Queue (*Q*), ft/ln (95 th percentile)	37	212		103	259			144	29		152	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.5	8.3		4.0	10.2			5.6	1.1		5.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.41	0.21		1.03	0.26			0.14	0.36		0.15	
Uniform Delay (d_1), s/veh	45.9	37.3		45.3	38.5			6.4	5.4		6.5	
Incremental Delay (d_2), s/veh	0.2	0.5		0.6	0.8			0.7	0.2		0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	46.2	37.7		46.0	39.2			7.1	5.6		7.2	
Level of Service (LOS)	D	D		D	D			A	A		A	
Approach Delay, s/veh / LOS	38.9	D		41.0	D		6.8	A		7.2	A	
Intersection Delay, s/veh / LOS	20.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

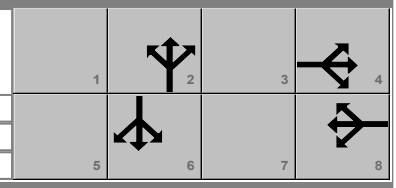
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.95
Urban Street	Lee Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	Lee Road & Euclid Heig…	File Name	6. 2047 PM Peak Lee Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	331	40	78	195	10	20	370	91	20	380	50

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	62.5	31.5	0.0	0.0	0.0	0.0	
Yellow	3.5	3.5	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		7.0		8.0
Phase Duration, s		37.0		37.0		68.0		68.0
Change Period, ($Y+R_c$), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.2		3.2		0.0		0.0
Queue Clearance Time (g_s), s		21.9		29.7				
Green Extension Time (g_e), s		1.7		1.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	95	391		82	216			411	96		474	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1166	1835		993	1854			1794	1560		1785	
Queue Service Time (g_s), s	7.3	19.9		8.4	9.7			0.0	2.8		0.0	
Cycle Queue Clearance Time (g_c), s	16.6	19.9		27.7	9.7			12.2	2.8		15.0	
Green Ratio (*g/C*)	0.30	0.30		0.30	0.30			0.60	0.60		0.60	
Capacity (*c*), veh/h	316	552		184	558			1103	927		1097	
Volume-to-Capacity Ratio (*X*)	0.300	0.708		0.446	0.387			0.372	0.103		0.432	
Back of Queue (*Q*), ft/ln (95 th percentile)	94	343		94	194			220	44		255	
Back of Queue (*Q*), veh/ln (95 th percentile)	3.7	13.5		3.7	7.6			8.5	1.7		10.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	1.05	0.34		0.94	0.19			0.22	0.55		0.26	
Uniform Delay (d_1), s/veh	35.4	32.6		44.7	29.1			11.1	9.2		11.7	
Incremental Delay (d_2), s/veh	0.2	0.6		0.6	0.2			1.0	0.2		1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Control Delay (*d*), s/veh	35.6	33.2		45.3	29.2			12.1	9.4		12.9	
Level of Service (LOS)	D	C		D	C			B	A		B	
Approach Delay, s/veh / LOS	33.7	C		33.7	C		11.6	B		12.9	B	
Intersection Delay, s/veh / LOS	21.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

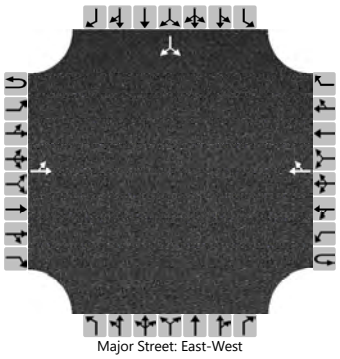
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	226				191	20						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10													31	
Capacity, c (veh/h)		1358													626	
v/c Ratio		0.01													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.7	0.1												11.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.4												11.1		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

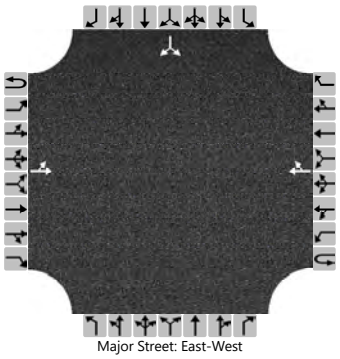
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & Ivydale Road
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	Ivydale Road
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	292				193	30						20		10
Percent Heavy Vehicles (%)		1												1		1
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.41		6.21
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.51		3.31

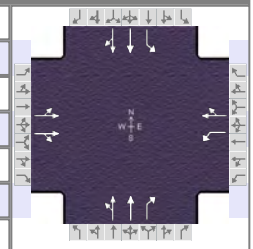
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11													34	
Capacity, c (veh/h)		1318													542	
v/c Ratio		0.01													0.06	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.0	
Control Delay (s/veh)		7.8	0.1												12.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.3												12.1			
Approach LOS	A												B			

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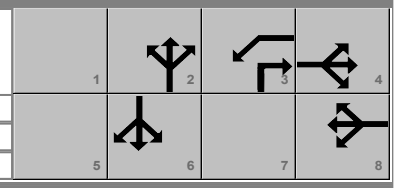
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	AM Peak	PHF	0.95
Urban Street	S. Taylor Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2047 AM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	150	45	80	90	20	35	380	160	20	420	100

Signal Information												
Cycle, s	105.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	34.6	27.0	26.9	0.0	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	3.5	3.5	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.4		40.1		40.1
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		8.9		7.3				
Green Extension Time (*g e*), s		0.5		0.3		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

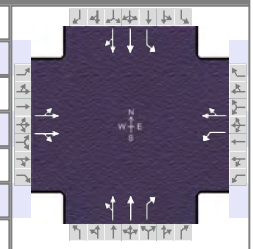
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	147		132	84	116		205	232	168	21	281	266
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1825		1757	1781	1811		1456	1702	1585	1000	1870	1746
Queue Service Time (*g s*), s	6.9		6.3	3.9	5.3		0.6	11.1	5.2	1.8	12.5	12.7
Cycle Queue Clearance Time (*g c*), s	6.9		6.3	3.9	5.3		13.2	11.1	5.2	12.9	12.5	12.7
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	469		452	457	464		520	561	929	292	616	575
Volume-to-Capacity Ratio (*X*)	0.314		0.291	0.184	0.249		0.394	0.414	0.181	0.072	0.457	0.463
Back of Queue (*Q*), ft/ln (95 th percentile)	137		120	76	106		185	212	82	21	250	237
Back of Queue (*Q*), veh/ln (95 th percentile)	5.4		4.8	3.0	4.2		7.4	8.4	3.2	0.8	9.8	9.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.14		0.12	0.75	0.11		0.19	0.21	1.03	0.00	0.25	0.24
Uniform Delay (*d 1*), s/veh	31.5		31.3	30.5	31.0		26.6	27.3	10.1	32.3	27.8	27.9
Incremental Delay (*d 2*), s/veh	0.1		0.1	0.1	0.1		2.2	2.2	0.4	0.5	2.4	2.7
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	31.7		31.5	30.5	31.1		28.8	29.6	10.5	32.8	30.2	30.5
Level of Service (LOS)	C		C	C	C		C	C	B	C	C	C
Approach Delay, s/veh / LOS	31.6	C		30.9	C		24.0	C		30.5	C	
Intersection Delay, s/veh / LOS	28.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Signalized Intersection Results Summary

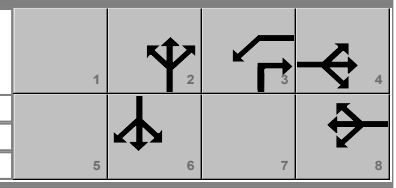
General Information				Intersection Information	
Agency	TMS Engineers, Inc.			Duration, h	0.250
Analyst	KMC	Analysis Date	Feb 13, 2025	Area Type	Other
Jurisdiction	Cleveland Heights	Time Period	PM Peak	PHF	0.92
Urban Street	S. Taylor Road	Analysis Year	2047	Analysis Period	1> 7:00
Intersection	S. Taylor Road & Euclid…	File Name	8. 2047 PM Peak S. Taylor Rd._Euclid Blvd..xus		
Project Description	Build				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	150	51	180	130	40	67	410	230	20	380	70

Signal Information			
Cycle, s	105.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	34.5	27.0	27.0	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	2.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		12.0		10.0		7.0		6.0
Phase Duration, s		32.5		32.5		40.0		40.0
Change Period, (*Y+R c*), s		5.5		5.5		5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1		0.0		0.0
Queue Clearance Time (*g s*), s		11.2		11.6				
Green Extension Time (*g e*), s		0.6		0.7		0.0		0.0
Phase Call Probability		1.00		1.00				
Max Out Probability		0.00		0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	189		170	196	185		215	304	250	22	250	239
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1803		1767	1781	1794		1147	1702	1585	959	1870	1769
Queue Service Time (*g s*), s	9.2		8.3	9.6	9.0		8.8	15.3	8.1	2.0	10.9	11.0
Cycle Queue Clearance Time (*g c*), s	9.2		8.3	9.6	9.0		19.9	15.3	8.1	17.3	10.9	11.0
Green Ratio (*g/C*)	0.26		0.26	0.26	0.26		0.33	0.33	0.59	0.33	0.33	0.33
Capacity (*c*), veh/h	464		454	458	461		423	559	928	244	615	581
Volume-to-Capacity Ratio (*X*)	0.409		0.375	0.427	0.400		0.508	0.543	0.269	0.089	0.406	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)	181		159	188	176		220	277	130	23	223	213
Back of Queue (*Q*), veh/ln (95 th percentile)	7.1		6.3	7.4	6.9		8.8	10.9	5.1	0.9	8.8	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.18		0.16	1.88	0.18		0.22	0.28	1.63	0.00	0.22	0.22
Uniform Delay (*d 1*), s/veh	32.4		32.1	32.5	32.3		30.7	28.8	10.7	35.9	27.3	27.4
Incremental Delay (*d 2*), s/veh	0.2		0.2	0.2	0.2		4.3	3.8	0.7	0.7	2.0	2.2
Initial Queue Delay (*d 3*), s/veh	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.6		32.3	32.8	32.5		35.0	32.6	11.4	36.6	29.3	29.5
Level of Service (LOS)	C		C	C	C		D	C	B	D	C	C
Approach Delay, s/veh / LOS	32.4	C		32.6	C		26.4	C		29.7	C	
Intersection Delay, s/veh / LOS	29.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS Two-Way Stop-Control Report

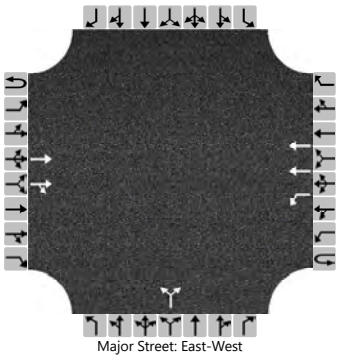
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			470	18	0	10	1130			48		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					60					
Capacity, c (veh/h)						1046					234					
v/c Ratio						0.01					0.26					
95% Queue Length, Q_{95} (veh)						0.0					1.0					
95% Queue Length, Q_{95} (ft)						0.0					25.0					
Control Delay (s/veh)						8.5					25.6					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					0.1				25.6							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

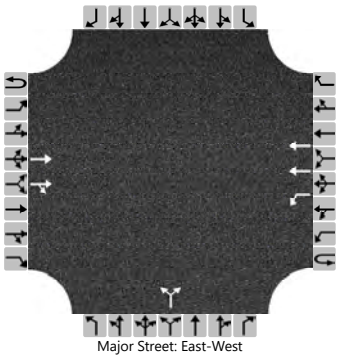
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			920	28	0	10	620			15		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					28					
Capacity, c (veh/h)						651					185					
v/c Ratio						0.02					0.15					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
95% Queue Length, Q_{95} (ft)						2.6					12.5					
Control Delay (s/veh)						10.6					27.8					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				27.8							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

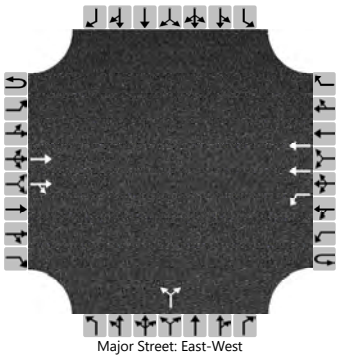
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	0	0	20	1160			1		38				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21					41					
Capacity, c (veh/h)						1063					708					
v/c Ratio						0.02					0.06					
95% Queue Length, Q_{95} (veh)						0.1					0.2					
95% Queue Length, Q_{95} (ft)						2.6					5.0					
Control Delay (s/veh)						8.5					10.4					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.1				10.4							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

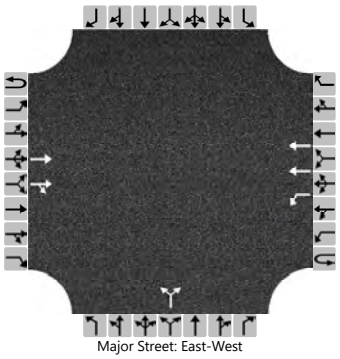
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Mayfield Road & East Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	East Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1130	0	0	37	690			1		33				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					38					
Capacity, c (veh/h)						544					379					
v/c Ratio						0.08					0.10					
95% Queue Length, Q_{95} (veh)						0.2					0.3					
95% Queue Length, Q_{95} (ft)						5.1					7.5					
Control Delay (s/veh)						12.2					15.6					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.6				15.6							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

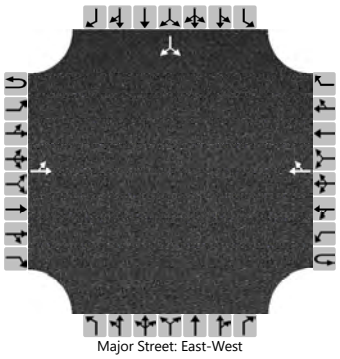
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		16	170				180	15						25		21
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17													48	
Capacity, c (veh/h)		1363													654	
v/c Ratio		0.01													0.07	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
95% Queue Length, Q_{95} (ft)		0.0													5.7	
Control Delay (s/veh)		7.7	0.1												10.9	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.8												10.9		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

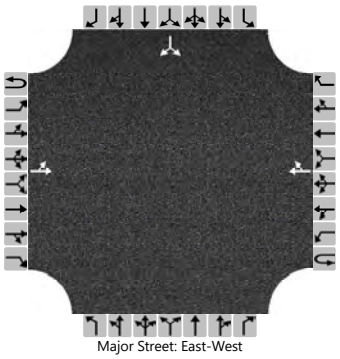
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build

Site Information

Intersection	Euclid Heights Boulevard & South Driveway
Jurisdiction	Cleveland Heights
East/West Street	Euclid Heights Boulevard
North/South Street	South Driveway
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		32	240				220	27						21		23
Percent Heavy Vehicles (%)		3												18		18
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.58		6.38
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.66		3.46

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		35													48	
Capacity, c (veh/h)		1286													552	
v/c Ratio		0.03													0.09	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
95% Queue Length, Q_{95} (ft)		2.6													8.6	
Control Delay (s/veh)		7.9	0.3												12.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		1.1												12.1		
Approach LOS		A												B		

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Appendix O
Alternative Intersection
Capacity Analysis Worksheets - Build - 2030

HCS Two-Way Stop-Control Report

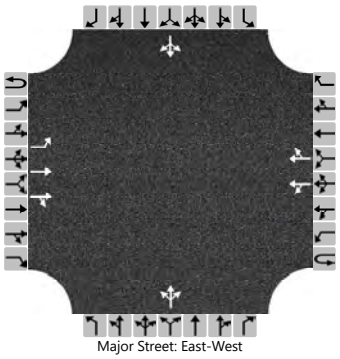
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	ALT Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		L	T	TR		LT		TR			LTR				LTR	
Volume (veh/h)	0	10	460	0		15	1155	10		0	0	28		10	0	30
Percent Heavy Vehicles (%)	4	4				3				4	3	4		5	3	5
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.18				4.16				7.58	6.56	6.98		7.60	6.56	7.00
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.24				2.23				3.54	4.03	3.34		3.55	4.03	3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				16					31				44	
Capacity, c (veh/h)		527				1048					741				176	
v/c Ratio		0.02				0.02					0.04				0.25	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.1				0.9	
95% Queue Length, Q_{95} (ft)		2.6				0.0					2.6				23.4	
Control Delay (s/veh)		12.0				8.5	0.2				10.1				32.1	
Level of Service (LOS)		B				A	A				B				D	
Approach Delay (s/veh)	0.3				0.3				10.1				32.1			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

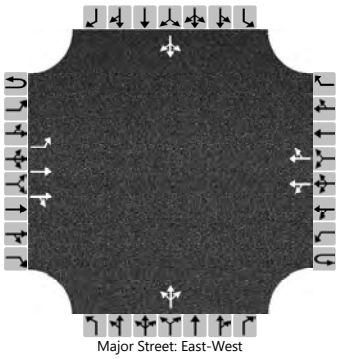
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	ALT Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		L	T	TR		LT		TR			LTR				LTR	
Volume (veh/h)	0	20	1128	0		28	689	10		0	0	25		10	0	10
Percent Heavy Vehicles (%)	4	4				3				4	4	4		5	5	5
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.18				4.16				7.58	6.58	6.98		7.60	6.60	7.00
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.24				2.23				3.54	4.04	3.34		3.55	4.05	3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20				29					26				20	
Capacity, c (veh/h)		869				597					456				153	
v/c Ratio		0.02				0.05					0.06				0.13	
95% Queue Length, Q_{95} (veh)		0.1				0.2					0.2				0.4	
95% Queue Length, Q_{95} (ft)		2.6				5.1					5.2				10.4	
Control Delay (s/veh)		9.2				11.3	0.6				13.4				32.1	
Level of Service (LOS)		A				B	A				B				D	
Approach Delay (s/veh)	0.2				1.0				13.4				32.1			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

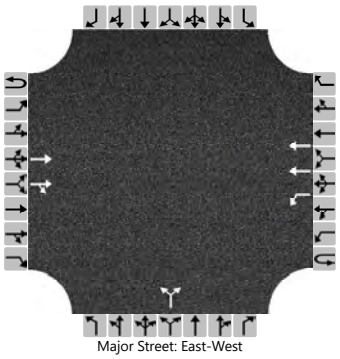
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			472	16	0	10	1140			38		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					50					
Capacity, c (veh/h)						1046					240					
v/c Ratio						0.01					0.21					
95% Queue Length, Q_{95} (veh)						0.0					0.8					
95% Queue Length, Q_{95} (ft)						0.0					20.0					
Control Delay (s/veh)						8.5					23.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				23.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

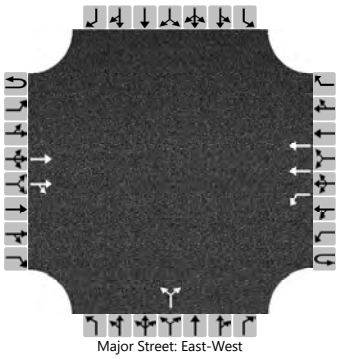
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			927	21	0	10	624			11		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					23					
Capacity, c (veh/h)						651					200					
v/c Ratio						0.02					0.12					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
95% Queue Length, Q_{95} (ft)						2.6					10.0					
Control Delay (s/veh)						10.6					25.4					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				25.4							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

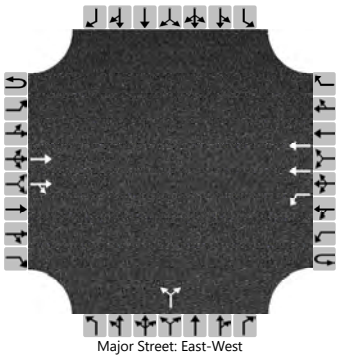
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & Center Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Center Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	2	0	5	1180			10		10				
Percent Heavy Vehicles (%)					2	2				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5					22					
Capacity, c (veh/h)						1058					307					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
95% Queue Length, Q_{95} (ft)						0.0					5.0					
Control Delay (s/veh)						8.4					17.6					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				17.6							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

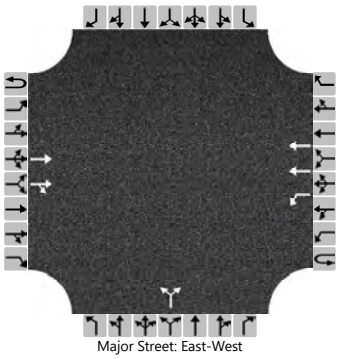
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2030
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & Center Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Center Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1140	7	0	9	690			4		8				
Percent Heavy Vehicles (%)					2	2				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					13					
Capacity, c (veh/h)						554					193					
v/c Ratio						0.02					0.07					
95% Queue Length, Q_{95} (veh)						0.1					0.2					
95% Queue Length, Q_{95} (ft)						2.5					5.0					
Control Delay (s/veh)						11.6					25.0					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.1				25.0							
Approach LOS					A				C							

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Appendix P
Alternative Intersection
Capacity Analysis Worksheets - Build - 2047

HCS Two-Way Stop-Control Report

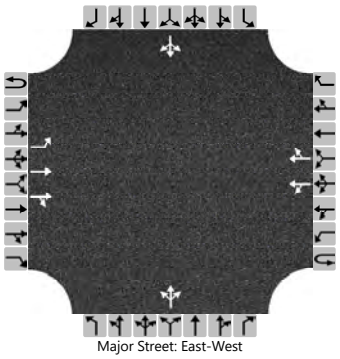
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	ALT Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.91
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		L	T	TR		LT		TR			LTR				LTR	
Volume (veh/h)	0	10	460	0		15	1155	10		0	0	28		10	0	30
Percent Heavy Vehicles (%)	4	4				3				4	3	4		5	3	5
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.18				4.16				7.58	6.56	6.98		7.60	6.56	7.00
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.24				2.23				3.54	4.03	3.34		3.55	4.03	3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				16					31				44	
Capacity, c (veh/h)		527				1048					741				176	
v/c Ratio		0.02				0.02					0.04				0.25	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.1				0.9	
95% Queue Length, Q_{95} (ft)		2.6				0.0					2.6				23.4	
Control Delay (s/veh)		12.0				8.5	0.2				10.1				32.1	
Level of Service (LOS)		B				A	A				B				D	
Approach Delay (s/veh)	0.3				0.3				10.1				32.1			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

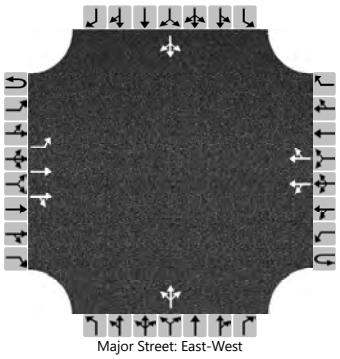
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	ALT Mayfield Road & Burlington Road
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Burlington Road
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	1	0		0	1	0
Configuration		L	T	TR		LT		TR			LTR				LTR	
Volume (veh/h)	0	20	1128	0		28	689	10		0	0	25		10	0	10
Percent Heavy Vehicles (%)	4	4				3				4	4	4		5	5	5
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.18				4.16				7.58	6.58	6.98		7.60	6.60	7.00
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.24				2.23				3.54	4.04	3.34		3.55	4.05	3.35

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20				29					26				20	
Capacity, c (veh/h)		869				597					456				153	
v/c Ratio		0.02				0.05					0.06				0.13	
95% Queue Length, Q_{95} (veh)		0.1				0.2					0.2				0.4	
95% Queue Length, Q_{95} (ft)		2.6				5.1					5.2				10.4	
Control Delay (s/veh)		9.2				11.3	0.6				13.4				32.1	
Level of Service (LOS)		A				B	A				B				D	
Approach Delay (s/veh)	0.2				1.0				13.4				32.1			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

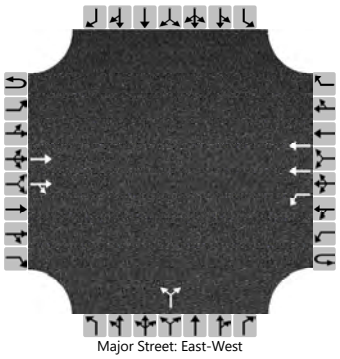
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			472	16	0	10	1140			38		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					50					
Capacity, c (veh/h)						1046					240					
v/c Ratio						0.01					0.21					
95% Queue Length, Q_{95} (veh)						0.0					0.8					
95% Queue Length, Q_{95} (ft)						0.0					20.0					
Control Delay (s/veh)						8.5					23.9					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				23.9							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

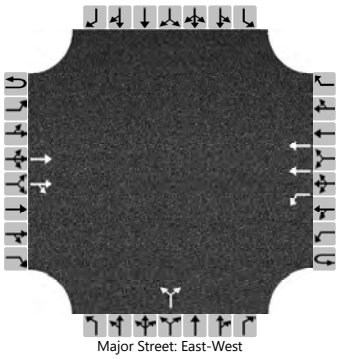
General Information

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Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & West Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	West Driveway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			927	21	0	10	624			11		10				
Percent Heavy Vehicles (%)					3	3				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					23					
Capacity, c (veh/h)						651					200					
v/c Ratio						0.02					0.12					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
95% Queue Length, Q_{95} (ft)						2.6					10.0					
Control Delay (s/veh)						10.6					25.4					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.2				25.4							
Approach LOS					A				D							

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HCS Two-Way Stop-Control Report

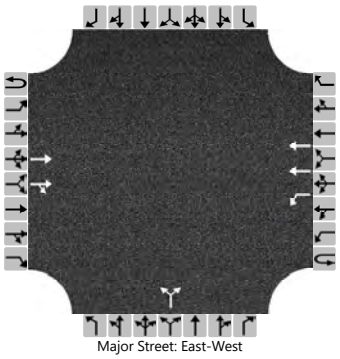
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & Center Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Center Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			460	2	0	5	1180			10		10				
Percent Heavy Vehicles (%)					2	2				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5					22					
Capacity, c (veh/h)						1058					307					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
95% Queue Length, Q_{95} (ft)						0.0					5.0					
Control Delay (s/veh)						8.4					17.6					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.0				17.6							
Approach LOS					A				C							

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HCS Two-Way Stop-Control Report

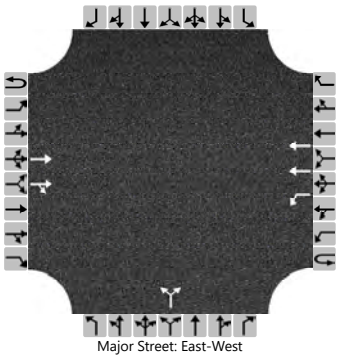
General Information

Analyst	KMC
Agency/Co.	TMS Engineers, Inc.
Date Performed	2/13/2025
Analysis Year	2047
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Build ALT

Site Information

Intersection	Mayfield Road & Center Driveway
Jurisdiction	Cleveland Heights
East/West Street	Mayfield Road
North/South Street	Center Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1140	7	0	9	690			4		8				
Percent Heavy Vehicles (%)					2	2				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					13					
Capacity, c (veh/h)						554					193					
v/c Ratio						0.02					0.07					
95% Queue Length, Q_{95} (veh)						0.1					0.2					
95% Queue Length, Q_{95} (ft)						2.5					5.0					
Control Delay (s/veh)						11.6					25.0					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.1				25.0							
Approach LOS					A				C							

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Appendix Q
Traffic Signal Warrant Analysis

STUDY AND ANALYSIS INFORMATION

Municipality:	Cleveland Heights	**Traffic Volumes Obtained By:**	TMS Engineers, Inc.
County:	Cuyahoga	**Analysis Date:**	2/13/2025
ODOT Engineering District:	12	**Agency/ Company Name Performing Warrant Analysis:**	TMS Engineers, Inc.
Google map link:	Map		

Analysis Information

Data Collection Date:	2/29/2024
Day of the Week:	Thursday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	No
Total Number of Approaches at Intersection:	4

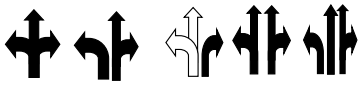
Major Street Information

Major Street Name and Route Number:	Mayfield Road	
Major Street Approach Direction:	E-Bound W-Bound	
Number of Thru Lanes on Each Major Street Approach:	2	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	35	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Burlington Road/East Driveway	
Minor Street Approach Configuration:	1	N-Bound
	1	S-Bound



Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 5:00 PM 6:00 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	Yes	**No**	If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 5:00 PM 6:00 PM
Warrant 5, School Crossing	Yes	**No**	N/A	
Warrant 6, Coordinated Signal System	Yes	**No**	(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	Yes	**No**	If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	Yes	**No**	(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	N/A	**No**	May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes: Traffic signal control is not warranted at the intersection.

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach						NOTES:
	Southbound						Westbound						Nouthbound						Eastbound						
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	
12:00 AM						0						0						0						0	It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.
12:15 AM						0						0						0						0	
12:30 AM						0						0						0						0	
12:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM						0						0						0						0	
1:15 AM						0						0						0						0	
1:30 AM						0						0						0						0	
1:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM						0						0						0						0	
2:15 AM						0						0						0						0	
2:30 AM						0						0						0						0	
2:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM						0						0						0						0	
3:15 AM						0						0						0						0	
3:30 AM						0						0						0						0	
3:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM						0						0						0						0	
4:15 AM						0						0						0						0	
4:30 AM						0						0						0						0	
4:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM						0						0						0						0	
5:15 AM						0						0						0						0	
5:30 AM						0						0						0						0	
5:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:15 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:30 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:45 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	1	0	1		0	2	1	154	1		0	156	1	0	0		0	1	0	68	0		0	68	
7:15 AM	2	0	1		0	3	1	201	1		0	203	0	0	0		0	0	0	80	0		0	80	
7:30 AM	7	0	2		0	9	1	257	1		0	259	0	0	0		0	0	0	72	0		0	72	
7:45 AM	3	0	1		2	4	0	207	1		2	208	0	0	0		0	0	0	97	0		0	97	
Hourly Total	13	0	5	0	2	18	3	819	4	0	2	826	1	0	0	0	0	1	0	317	0	0	0	317	
8:00 AM	5	0	0		0	5	0	233	0		0	233	1	0	0		0	1	0	108	1		0	109	
8:15 AM	6	0	1		0	7	1	264	0		0	265	0	0	0		0	0	0	103	2		0	105	
8:30 AM	4	0	2		0	6	1	212	0		1	213	0	0	0		0	0	0	108	0		0	108	
8:45 AM	4	0	0		0	4	1	181	0		0	182	0	0	0		0	0	0	89	2		0	91	
Hourly Total	19	0	3	0	0	22	3	890	0	0	1	893	1	0	0	0	0	1	0	408	5	0	0	413	
9:00 AM	4	0	1		0	5	2	195	1		0	198	1	0	0		0	1	6	114	1		0	121	
9:15 AM	0	0	0		0	0	3	180	0		0	183	0	0	0		0	0	0	90	0		0	90	
9:30 AM	5	0	0		0	5	3	169	0		1	172	0	0	0		0	0	0	88	1		0	89	
9:45 AM	4	0	3		0	7	0	166	0		0	166	0	0	0		0	0	0	121	1		0	122	
Hourly Total	13	0	4	0	0	17	8	710	1	0	1	719	1	0	0	0	0	1	6	413	3	0	0	422	
10:00 AM	0	0	0		0	0	0	0	1		0	1	1	0	0		0	1	0	0	0		0	0	
10:15 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
10:30 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
10:45 AM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	
11:00 AM	2	0	2		1	4	0	105	0		1	105	0	0	0		0	0	0	115	0		0	115	
11:15 AM	1	0	0		0	1	3	116	0		1	119	0	0	0		0	0	0	135	1		0	136	
11:30 AM	0	0	4		0	4	0	123	1		2	124	0	0	0		0	0	0	118	1		0	119	
11:45 AM	1	0	0		0	1	1	88	0		0	89	0	0	0		0	0	0	107	4		0	111	
Hourly Total	4	0	6	0	1	10	4	432	1	0	4	437	0	0	0	0	0	0	0	475	6	0	0	481	
12:00 PM	2	0	1		0	3	1	117	1		0	119	0	0	0		0	0	0	136	1		0	137	
12:15 PM	0	0	1		0	1	2	99	0		0	101	0	0	0		0	0	0	123	2		0	125	
12:30 PM	4	0	0		0	4	1	126	1		0	128	0	0	0		0	0	0	131	0		0	131	
12:45 PM	0	0	1		0	1	0	114	0		0	114	0	0	0		0	0	0	116	1		0	117	
Hourly Total	6	0	3	0	0	9	4	456	2	0	0	462	0	0	0	0	0	0	0	506	4	0	0	510	
1:00 PM	2	1	2		0	5	1	122	2		0	125	0	1	0		0	1	0	108	2		0	110	
1:15 PM	4	0	1		0	5	0	120	1		1	121	0	0	0		0	0	0	135	0		0	135	
1:30 PM	1	0	1		0	2	1	108	1		1	110	0	0	0		0	0	0	133	0		0	133	
1:45 PM	3	0	0		0	3	1	127	1		1	129	0	0	0		0	0	0	130	2		0	132	
Hourly Total	10	1	4	0	0	15	3	477	5	0	3	485	0	1	0	0	0	1	0	506	4	0	0	510	
2:00 PM	0	0	0		0	0	0	4	11		0	15	15	1	0		0	16	0	5	0		0	5	
2:15 PM	0	0	0		0	0	0	3	11		0	14	15	1	0		0	16	0	5	0		0	5	
2:30 PM	0	0	0		0	0	0	4	11		0	15	15	0	0		0	15	0	5	0		0	5	
2:45 PM	0	0	0		0	0	0	3	10		0	13	14	0	0		0	14	0	4	0		0	4	
Hourly Total	0	0	0	0	0	0	0	14	43	0	0	57	59	2	0	0	0	61	0	19	0	0	0	19	
3:00 PM	1	0	1		0	2	1	160	7		0	168	15	1	0		0	16	0	174	3		0	177	
3:15 PM	3	0	2		1	5	3	129	7		2	139	15	1	0		0	16	0	191	3		0	194	
3:30 PM	5	0	2		0	7	16	121	7		0	144	15	0	0		0	15	0	193	5		0	198	
3:45 PM	4	0	1		0	5	0	184	7		0	191	14	0	0		0	14	0	183	1		0	184	
Hourly Total	13	0	6	0	1	19	20	594	28	0	2	642	59	2	0	0	0	61	0	741	12	0	0	753	
4:00 PM	1	0	1		2	2	3	132	11		1	146	12	1	0		0	13	0	190	4		0	194	
4:15 PM	2	0	2		0	4	1	162	11		0	174	12	0	0		0	12	0	216	4		0	220	
4:30 PM	2	0	3		0	5	4	159	11		0	174	12	0	0		0	12	0	233	4		0	237	
4:45 PM	1	0	0		0	1	2	162	11		0	175	12	0	0		0	12	0	224	6		0	230	
Hourly Total	6	0	6	0	2	12	10	615	44	0	1	669	48	1	0	0	0	49	0	863	18	0	0	881	
5:00 PM	3	0	2		0	5	3	137	15		2	155	15	1	0		0	16	0	257	1		0	258	
5:15 PM	3	0	0		0	3	0	133	14		0	147	15	1	0		0	16	0	246	3		0	249	
5:30 PM	1	0	1		0	2	4	144	14		0	162	15	0	0		0	15	0	213	2		0	215	
5:45 PM	2	0	0		0	2	1	149	14		2	164	14	0	0		0	14	0	238	0		0	238	
Hourly Total	9	0	3	0	0	12	8	563	57	0	4	628	59	2	0	0	0	61	0	954	6	0	0	960	
6:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
6:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
7:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
7:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
7:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
8:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
8:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
8:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
9:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
9:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
9:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
10:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
10:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
10:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
11:15 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
11:30 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
11:45 PM	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
1:30 AM	0	0																
1:45 AM	0	0																
2:00 AM	0	0																
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5:30 AM	0	0																
5:45 AM	0	0																
6:00 AM	0	0																
6:15 AM	224	2																
6:30 AM	507	5			1						1				1		1	
6:45 AM	838	14	1						1				1					
7:00 AM	1143	18					1											
7:15 AM	1261	21																
7:30 AM	1348	25			1						1				1		1	
7:45 AM	1338	22	1						1				1					
8:00 AM	1306	22					1											
8:15 AM	1283	22																
8:30 AM	1186	15			1						1				1		1	
8:45 AM	1126	14	1						1				1					
9:00 AM	1141	17					1											
9:15 AM	823	12																
9:30 AM	550	12			1						1				1		1	
9:45 AM	289	7																
10:00 AM	1	1																
10:15 AM	220	4																
10:30 AM	475	5			1										1			
10:45 AM	718	9	1						1		1						1	
11:00 AM	918	10					1						1					
11:15 AM	954	9																
11:30 AM	925	9			1										1			
11:45 AM	941	9	1						1		1						1	
12:00 PM	972	9					1						1					
12:15 PM	951	11																
12:30 PM	981	15			1										1			
12:45 PM	965	13	1						1		1						1	
1:00 PM	995	15					1						1					
1:15 PM	780	16																
1:30 PM	543	32			1										1			
1:45 PM	320	47																
2:00 PM	76	61																
2:15 PM	401	61																
2:30 PM	715	61	1		1				1	1	1				1		1	1
2:45 PM	1037	61					1						1	1				
3:00 PM	1395	61																
3:15 PM	1390	58																
3:30 PM	1451	54	1		1				1	1	1				1		1	1
3:45 PM	1520	51					1						1					
4:00 PM	1550	49																
4:15 PM	1623	52																
4:30 PM	1625	56	1		1				1	1	1				1		1	1
4:45 PM	1591	59					1						1					
5:00 PM	1588	61																
5:15 PM	1175	45																
5:30 PM	779	29	1		1				1		1				1		1	
5:45 PM	402	14																
6:00 PM	0	0																
6:15 PM	0	0																
6:30 PM	0	0																
6:45 PM	0	0																
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8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			**10**	**0**	**12**	**0**	**9**	**0**	**10**	**3**	**11**	**0**	**9**	**1**	**12**	**0**	**11**	**3**
WARRANT SATISFIED?			**NO**		**N/A**		**NO**		**N/A**		**NO**				**NO**			

Warrant Met: No

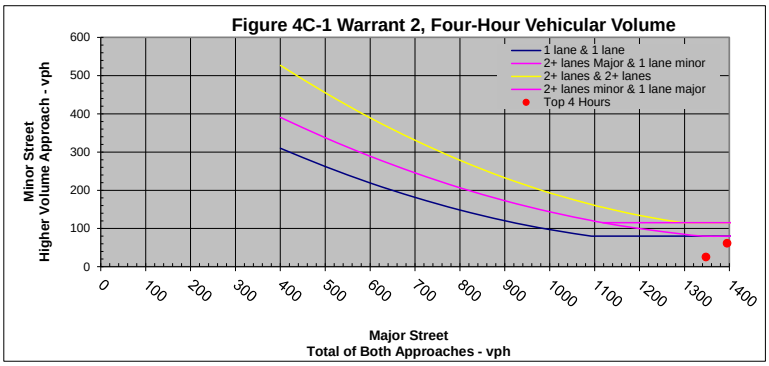
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	2
Minor Street:	1 Lane		

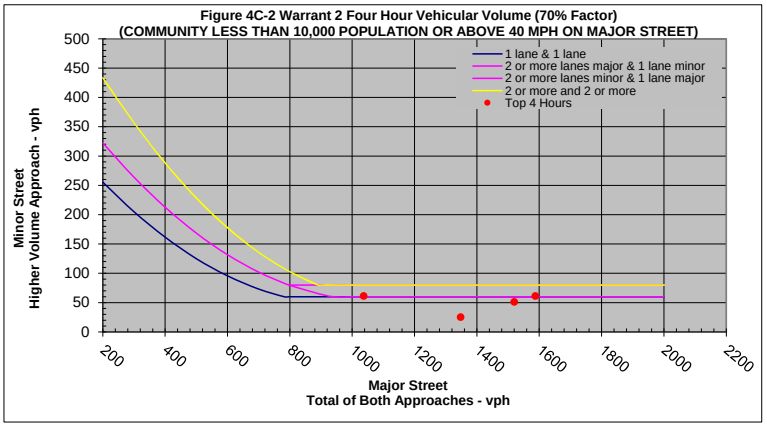
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Minor - Burlington Road/East Driveway		Major - Mayfield Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	0	0	0	0	0	0		
6:15 AM	1	2	156	68	224	2		
6:30 AM	1	5	359	148	507	5		
6:45 AM	1	14	618	220	838	14		
7:00 AM	1	18	826	317	1143	18		
7:15 AM	1	21	903	358	1261	21		
7:30 AM	1	25	965	383	1348	25		
7:45 AM	1	22	919	419	1338	22		
8:00 AM	1	22	893	413	1306	22		
8:15 AM	1	22	858	425	1283	22		
8:30 AM	1	15	776	410	1186	15		
8:45 AM	1	14	735	391	1126	14		
9:00 AM	1	17	719	422	1141	17		
9:15 AM	1	12	522	301	823	12		
9:30 AM	1	12	339	211	550	12		
9:45 AM	1	7	167	122	289	7		
10:00 AM	1	0	1	0	1	1		
10:15 AM	0	4	105	115	220	4		
10:30 AM	0	5	224	251	475	5		
10:45 AM	0	9	348	370	718	9		
11:00 AM	0	10	437	481	918	10		
11:15 AM	0	9	451	503	954	9		
11:30 AM	0	9	433	492	925	9		
11:45 AM	0	9	437	504	941	9		
12:00 PM	0	9	462	510	972	9		
12:15 PM	1	11	468	483	951	11		
12:30 PM	1	15	488	493	981	15		
12:45 PM	1	13	470	495	965	13		
1:00 PM	1	15	485	510	995	15		
1:15 PM	16	10	375	405	780	16		
1:30 PM	32	5	268	275	543	32		
1:45 PM	47	3	173	147	320	47		
2:00 PM	61	0	57	19	76	61		
2:15 PM	61	2	210	191	401	61		
2:30 PM	61	7	335	380	715	61		
2:45 PM	61	14	464	573	1037	61		Met
3:00 PM	61	19	642	753	1395	61		
3:15 PM	58	19	620	770	1390	58		
3:30 PM	54	18	655	796	1451	54		
3:45 PM	51	16	685	835	1520	51		
4:00 PM	49	12	669	881	1550	49		
4:15 PM	52	15	678	945	1623	52		
4:30 PM	56	14	651	974	1625	56		
4:45 PM	59	11	639	952	1591	59		
5:00 PM	61	12	628	960	1588	61		Met
5:15 PM	45	7	473	702	1175	45		
5:30 PM	29	4	326	453	779	29		
5:45 PM	14	2	164	238	402	14		
6:00 PM	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	5:00 PM	6:00 PM	1588	61
2nd Highest Hour	3:00 PM	4:00 PM	1395	61
3rd Highest Hour	4:00 PM	5:00 PM	1550	49
4th Highest Hour	7:30 AM	8:30 AM	1348	25

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	5:00 PM	6:00 PM	1588	61
2nd Highest Hour	2:45 PM	3:45 PM	1037	61
3rd Highest Hour	3:45 PM	4:45 PM	1520	51
4th Highest Hour	7:30 AM	8:30 AM	1348	25



Are the requirements for Warrant 2 met?: No

OMUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	5:00 PM
Major Street:	2 or More Lanes	Peak Hour End Time	6:00 PM
Minor Street:	1 Lane		

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes

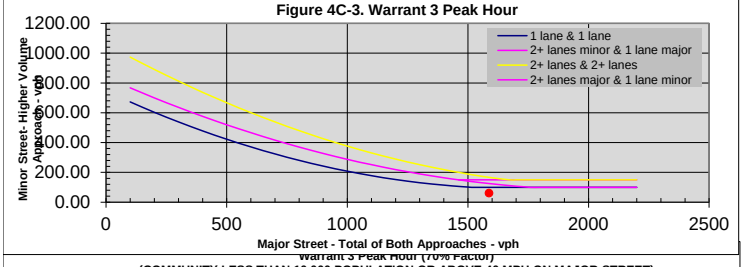
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

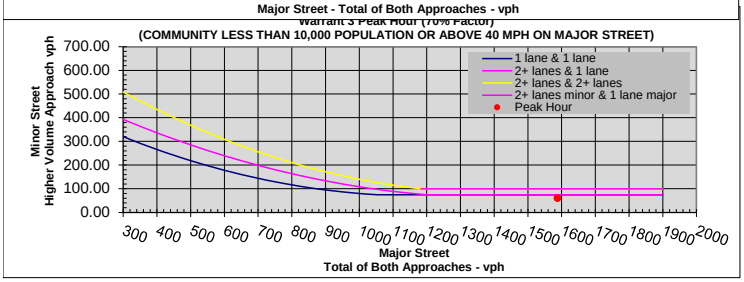
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

**If applicable, attach all supporting calculations and documentation.*

Are the requirements for Warrant 3 met?: **No**

Figure 4C-3. Warrant 3 Peak Hour





Hour Vehicular Volume

Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	0	0	0	0
6:15 AM	224	2	226	227
6:30 AM	507	5	512	513
6:45 AM	838	14	852	853
7:00 AM	1143	18	1161	1162
7:15 AM	1261	21	1282	1283
7:30 AM	1348	25	1373	1374
7:45 AM	1338	22	1360	1361
8:00 AM	1306	22	1328	1329
8:15 AM	1283	22	1305	1306
8:30 AM	1186	15	1201	1202
8:45 AM	1126	14	1140	1141
9:00 AM	1141	17	1158	1159
9:15 AM	823	12	835	836
9:30 AM	550	12	562	563
9:45 AM	289	7	296	297
10:00 AM	1	1	2	2
10:15 AM	220	4	224	224
10:30 AM	475	5	480	480
10:45 AM	718	9	727	727
11:00 AM	918	10	928	928
11:15 AM	954	9	963	963
11:30 AM	925	9	934	934
11:45 AM	941	9	950	950
12:00 PM	972	9	981	981
12:15 PM	951	11	962	963
12:30 PM	981	15	996	997
12:45 PM	965	13	978	979
1:00 PM	995	15	1010	1011
1:15 PM	780	16	796	806
1:30 PM	543	32	575	580
1:45 PM	320	47	367	370
2:00 PM	76	61	137	137
2:15 PM	401	61	462	464
2:30 PM	715	61	776	783
2:45 PM	1037	61	1098	1112
3:00 PM	1395	61	1456	1475
3:15 PM	1390	58	1448	1467
3:30 PM	1451	54	1505	1523
3:45 PM	1520	51	1571	1587
4:00 PM	1550	49	1599	1611
4:15 PM	1623	52	1675	1690
4:30 PM	1625	56	1681	1695
4:45 PM	1591	59	1650	1661
5:00 PM	1588	61	1649	1661
5:15 PM	1175	45	1220	1227
5:30 PM	779	29	808	812
5:45 PM	402	14	416	418
6:00 PM	0	0	0	0
6:15 PM	0	0	0	0
6:30 PM	0	0	0	0
6:45 PM	0	0	0	0
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1588	61	125	75

OMUTCD WARRANT 4, PEDESTRIAN VOLUME

Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Total of All Pedestrians Crossing Major Street Pedestrians Per Hour (PPH)
6:00 AM	0	0
6:15 AM	224	0
6:30 AM	507	0
6:45 AM	838	0
7:00 AM	1143	2
7:15 AM	1261	2
7:30 AM	1348	2
7:45 AM	1338	3
8:00 AM	1306	1
8:15 AM	1283	1
8:30 AM	1186	1
8:45 AM	1126	1
9:00 AM	1141	1
9:15 AM	823	1
9:30 AM	550	1
9:45 AM	289	0
10:00 AM	1	0
10:15 AM	220	1
10:30 AM	475	2
10:45 AM	718	4
11:00 AM	918	4
11:15 AM	954	3
11:30 AM	925	2
11:45 AM	941	0
12:00 PM	972	0
12:15 PM	951	0
12:30 PM	981	1
12:45 PM	965	2
1:00 PM	995	3
1:15 PM	780	3
1:30 PM	543	2
1:45 PM	320	1
2:00 PM	76	0
2:15 PM	401	0
2:30 PM	715	2
2:45 PM	1037	2
3:00 PM	1395	2
3:15 PM	1390	3
3:30 PM	1451	1
3:45 PM	1520	1
4:00 PM	1550	1
4:15 PM	1623	2
4:30 PM	1625	2
4:45 PM	1591	2
5:00 PM	1588	4
5:15 PM	1175	2
5:30 PM	779	2
5:45 PM	402	2
6:00 PM	0	0
6:15 PM	0	0
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
7:30 PM	0	0
7:45 PM	0	0
8:00 PM	0	0

Built-up Isolated Community With Less Than 10,000 Population or Above 35 MPH on Major Street? No

15th Percentile Pedestrian Crossing Speed Less than 3.5 f/s?* No

**If applicable, attach all supporting calculations, documentation, and findings.*

If 15th Percentile Pedestrian Crossing Speed is Less than 3.5 f/s, Reduce Criterion by (up to 50%): 0%

Is the distance to the nearest traffic control signal or STOP sign controlling the major street that pedestrians desire to cross less than 300 feet? No

If the distance to the nearest traffic control signal or STOP sign controlling the major street that pedestrians desire to cross is less than 300 feet, will the proposed traffic control signal restrict the progressive movement of traffic? If applicable, attach supporting justification. No

Does the intersection meet the 4-Hour Volume? No

Does the intersection meet the Peak Hour? No

Are the Requirements for Warrant 4 Satisfied? **No**

Top Hours for Figure 4C-5	Start Time	End Time	Vehicles	Pedestrians
Top Hour	5:00 PM	6:00 PM	1588	4
2nd Highest Hour	3:15 PM	4:15 PM	1390	3
3rd Highest Hour	7:45 AM	8:45 AM	1338	3
4th Highest Hour	9:00 AM	10:00 AM	1141	1

Top Hours for Figure 4C-6	Start Time	End Time	Vehicles	Pedestrians
Top Hour	5:00 PM	6:00 PM	1588	4
2nd Highest Hour	11:00 AM	12:00 PM	918	4
3rd Highest Hour	3:15 PM	4:15 PM	1390	3
4th Highest Hour	7:45 AM	8:45 AM	1338	3

Peak Hour Used for Graphs 4C-7 & 4C-8

Top Hour			
Start Time	End Time	Vehicles	Pedestrians
5:00 PM	6:00 PM	1588	4

Number of Hours That Met the 4-Hour Criteria 4C-5	0
Number of Hours That Met the 4-Hour Criteria 4C-6	0

Figure 4C-5. Warrant 4, Pedestrians Four-Hour Volume

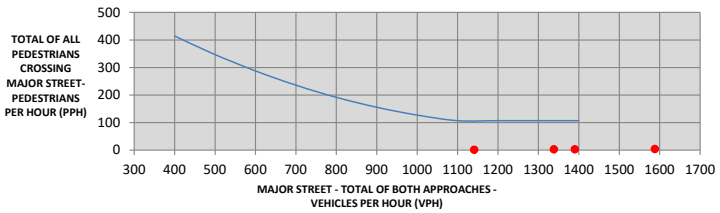
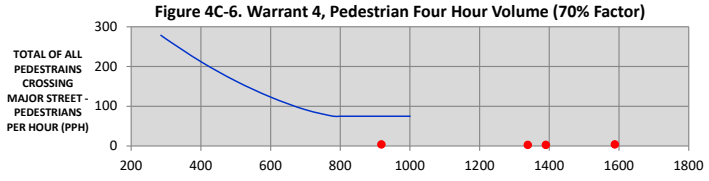
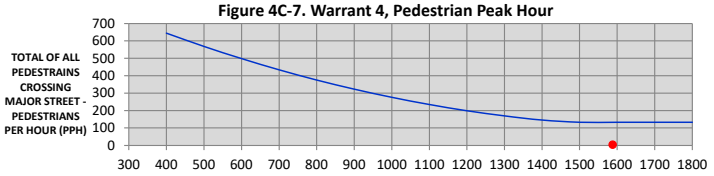


Figure 4C-6. Warrant 4, Pedestrian Four Hour Volume (70% Factor)



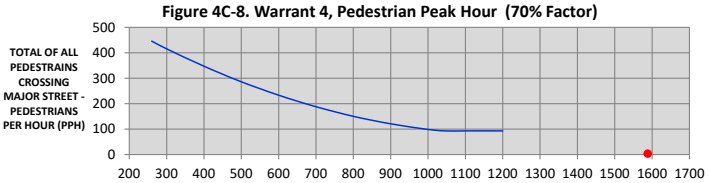
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

OMUTCD WARRANT 5, SCHOOL CROSSING

Do school children (elementary through high school students) cross the major street?	No
Has consideration been given to implement other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing?	Yes
Is the distance to the nearest traffic control signal along the major street less than 300 feet?	No
If the distance to the nearest traffic control signal along the major street is less than 300 feet, will the proposed traffic control signal restrict the progressive movement of traffic?	No
Minimum of 20 schoolchildren during the highest crossing hour?	No
Has a traffic engineering study been conducted to determine the adequacy and frequency of gaps in the vehicular traffic stream as related to the number and size of groups of school children at an established school crossing across the major street?	No

Pedestrian Gap Acceptance Engineering and Traffic Study Evaluation

Data Collection Date: **Day of the Week:**

Study Period		Study Duration (min)	Crossing 1 (Stage 1)		Crossing 1 (Stage 2)		Crossing 2 (Stage 1)		Crossing 2 (Stage 2)	
			Total Adequate Gaps	Met?	Road A	Met?	Total Adequate Gaps	Met?	Total Adequate Gaps	Met?
1				N/A		N/A		N/A		N/A
2				N/A		N/A		N/A		N/A
3				N/A		N/A		N/A		N/A
4				N/A		N/A		N/A		N/A
5				N/A		N/A		N/A		N/A
		Summary:		**Not Met**		**Not Met**		**Not Met**		**Not Met**

Estimation of Expected Gaps if No Study was Done.

Crossing Width: **feet**
Required Gap time: **sec.**

Length of Time period for which the volume applies: **Sec.**

Two way vehicular volume across the crossing path over time period:

Expected number of gaps per the length of time which are equal to or greater than the required gap time

Are the requirements for Warrant 5 met?: No

OMUTCD WARRANT 6, COORDINATED SIGNAL SYSTEM

On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.	No
On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.	No

**Warrant 6 should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.*

Are the requirements for Warrant 6 met?: No

OMUTCD WARRANT 7, CRASH EXPERIENCE

Built-up Isolated Community With Less Than 10,000 Population or Above 40 mph on Major Street?: No

Number of Lanes for Moving Traffic on Each Approach
Major Street: 2 or More Lanes
Minor Street: 1 Lane

Has adequate trial of alternative with satisfactory observance and enforcement failed to reduce the crash frequency? No

Five or more reportable and/ or non-reportable crashes, of types susceptible to correction by a traffic control signal have occurred within a 12-month period during the most recent 3 years of available crash data.* No

**If applicable attach a summary of the crash data analysis used for this criterion*

For each of any 8 hours of an average day, the vehicles per hour given in both the 80% columns of Condition A in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, if in a built-up isolated community with less than 10,000 population or above 40 mph on major street, the 56% columns may be used. No

For each of any 8 hours of an average day, the vehicles per hour given in both the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, if in a built-up isolated community with less than 10,000 population or above 40 mph on major street, the 56% columns may be used. No

The volume of pedestrian traffic is 80% or more of the requirements specified in Warrant 4, the Pedestrian Volume warrant.* No

**If applicable, attach all supporting calculations and documentation*

Are the requirements for Warrant 7 met?: No

OMUTCD WARRANT 8, ROADWAY NETWORK*

Does the intersection have a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3, during the average weekday? No

Does the intersection have a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)? No

Is the major street part of the street or highway system that serves as the principal roadway network for through traffic flow? No

Does the major street include rural or suburban highways outside, entering, or traversing a city? No

Does the major street appear as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study? No

**Refer to Section 4.3 of ODOT Publication 46 (Traffic Engineering Manual) for additional Department documentation requirements to justify the installation of a signal under Warrant 8. Attach all supplementary documentation and calculations, especially those relating to traffic volume projections and subsequent Warrant analyses.*

Are the requirements for Warrant 8 met?: No

Land Use Code	215		
Land Use	Single-Family Attached Housing		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	7		
	% of 24-Hour Vehicle Trips		
	Entering	318	Exiting	318
12:00 - 1:00 AM	0.7%	2	0.3%	1
1:00 - 2:00 AM	0.4%	1	0.1%	0
2:00 - 3:00 AM	0.2%	1	0.3%	1
3:00 - 4:00 AM	0.3%	1	0.4%	1
4:00 - 5:00 AM	0.4%	1	1.0%	3
5:00 - 6:00 AM	0.1%	0	2.6%	8
6:00 - 7:00 AM	1.1%	3	5.8%	19
7:00 - 8:00 AM	2.7%	8	13.2%	42
8:00 - 9:00 AM	3.8%	12	9.3%	30
9:00 - 10:00 AM	3.7%	12	6.9%	22
10:00 - 11:00 AM	4.0%	13	4.3%	14
11:00 - 12:00 PM	4.8%	15	5.7%	18
12:00 - 1:00 PM	5.4%	17	5.1%	16
1:00 - 2:00 PM	4.5%	14	4.8%	15
2:00 - 3:00 PM	5.5%	18	6.0%	19
3:00 - 4:00 PM	8.2%	26	4.8%	15
4:00 - 5:00 PM	9.8%	31	5.1%	16
5:00 - 6:00 PM	12.1%	38	6.8%	22
6:00 - 7:00 PM	9.8%	31	6.6%	21
7:00 - 8:00 PM	7.3%	23	4.5%	14
8:00 - 9:00 PM	5.9%	19	3.5%	11
9:00 - 10:00 PM	4.8%	15	1.3%	4
10:00 - 11:00 PM	3.0%	10	1.1%	3
11:00 - 12:00 AM	1.5%	5	0.4%	1

Land Use Code	221			
Land Use	Multifamily Housing (Mid-Rise)			
Setting	Not Close to Rail transit			
Time Period	Dense Multi-Use Urban			
# Data Sites	Weekday			
	% of 24-Hour Vehicle Trips			
	Entering	670	Exiting	670
12:00 - 1:00 AM	1.0%	6	0.2%	2
1:00 - 2:00 AM	0.0%	0	0.5%	3
2:00 - 3:00 AM	0.2%	2	0.2%	2
3:00 - 4:00 AM	0.0%	0	0.0%	0
4:00 - 5:00 AM	0.0%	0	1.2%	8
5:00 - 6:00 AM	0.7%	5	3.6%	24
6:00 - 7:00 AM	1.5%	10	7.0%	47
7:00 - 8:00 AM	1.9%	13	17.6%	118
8:00 - 9:00 AM	1.9%	13	17.1%	115
9:00 - 10:00 AM	3.4%	23	7.0%	47
10:00 - 11:00 AM	2.9%	19	4.8%	32
11:00 - 12:00 PM	3.6%	24	3.4%	23
12:00 - 1:00 PM	4.1%	28	4.8%	32
1:00 - 2:00 PM	4.6%	31	3.6%	24
2:00 - 3:00 PM	2.9%	19	3.6%	24
3:00 - 4:00 PM	4.1%	28	4.1%	27
4:00 - 5:00 PM	6.3%	42	3.6%	24
5:00 - 6:00 PM	13.1%	88	5.1%	34
6:00 - 7:00 PM	15.0%	101	3.9%	26
7:00 - 8:00 PM	13.1%	88	3.6%	24
8:00 - 9:00 PM	7.3%	49	2.9%	19
9:00 - 10:00 PM	7.0%	47	1.0%	6
10:00 - 11:00 PM	3.9%	26	1.0%	6
11:00 - 12:00 AM	1.5%	10	0.2%	2

Land Use Code	550			
Land Use	University/College			
Setting	General Urban/Suburban			
Time Period	Weekday			
# Data Sites	1			
	% of 24-Hour Vehicle Trips			
	Entering	1089	Exiting	1089
12:00 - 1:00 AM	0.1%	1	0.1%	1
1:00 - 2:00 AM	0.0%	0	0.0%	0
2:00 - 3:00 AM	0.0%	0	0.0%	0
3:00 - 4:00 AM	0.1%	1	0.1%	1
4:00 - 5:00 AM	0.0%	0	0.0%	0
5:00 - 6:00 AM	0.0%	0	0.0%	0
6:00 - 7:00 AM	0.2%	2	0.1%	1
7:00 - 8:00 AM	12.8%	140	0.9%	10
8:00 - 9:00 AM	7.3%	79	2.3%	25
9:00 - 10:00 AM	11.8%	129	6.3%	69
10:00 - 11:00 AM	16.4%	179	11.0%	120
11:00 - 12:00 PM	7.3%	79	7.8%	85
12:00 - 1:00 PM	11.0%	119	17.2%	187
1:00 - 2:00 PM	8.3%	90	10.1%	110
2:00 - 3:00 PM	3.9%	43	8.4%	92
3:00 - 4:00 PM	5.3%	58	11.0%	120
4:00 - 5:00 PM	3.1%	34	4.0%	43
5:00 - 6:00 PM	4.9%	53	4.7%	51
6:00 - 7:00 PM	5.3%	58	5.1%	56
7:00 - 8:00 PM	0.8%	8	3.0%	33
8:00 - 9:00 PM	0.8%	8	5.1%	56
9:00 - 10:00 PM	0.7%	7	2.8%	30
10:00 - 11:00 PM	0.0%	0	0.1%	1
11:00 - 12:00 AM	0.0%	0	0.0%	0

totals	Entering	Exiting
12:00 - 1:00 AM	10	4
1:00 - 2:00 AM	1	4
2:00 - 3:00 AM	2	3
3:00 - 4:00 AM	2	2
4:00 - 5:00 AM	1	11
5:00 - 6:00 AM	5	32
6:00 - 7:00 AM	15	67
7:00 - 8:00 AM	161	169
8:00 - 9:00 AM	104	170
9:00 - 10:00 AM	163	138
10:00 - 11:00 AM	211	165
11:00 - 12:00 PM	119	125
12:00 - 1:00 PM	164	236
1:00 - 2:00 PM	135	149
2:00 - 3:00 PM	80	135
3:00 - 4:00 PM	112	162
4:00 - 5:00 PM	108	84
5:00 - 6:00 PM	179	106
6:00 - 7:00 PM	190	102
7:00 - 8:00 PM	119	71
8:00 - 9:00 PM	76	86
9:00 - 10:00 PM	69	41
10:00 - 11:00 PM	36	11
11:00 - 12:00 AM	14	3

2045 Totals

	SB RIGHT		SB THRU		SB LEFT			WB RIGHT		WB THRU		WB LEFT			NB RIGHT		NB THRU		NB LEFT			EB RIGHT		EB THRU		EB LEFT	
Time Begins	%	New Trips	%	New Trips	%	New Trips	Time Begins	%	New Trips	%	New Trips	%	New Trips	Time Begins	%	New Trips	%	New Trips	%	New Trips	Time Begins	%	New Trips	%	New Trips	%	New Trips
7:00 - 8:00 AM	0	0	1%	0	0	0	7:00 - 8:00 AM	0	0	12%	1	38%	4	7:00 - 8:00 AM	26%	1	0%	0	0%	0	7:00 - 8:00 AM	0%	0	8%	0	0%	0
8:00 - 9:00 AM	0	0	1%	0	0	0	8:00 - 9:00 AM	0	0	12%	0	38%	0	8:00 - 9:00 AM	26%	1	0%	0	0%	0	8:00 - 9:00 AM	0%	0	8%	0	0%	0
9:00 - 10:00 AM	0	0	1%	0	0	0	9:00 - 10:00 AM	0	0	12%	0	38%	1	9:00 - 10:00 AM	26%	1	0%	0	0%	0	9:00 - 10:00 AM	0%	0	8%	0	0%	0
10:00 - 11:00 AM	0	0	1%	0	0	0	10:00 - 11:00 AM	0	0	12%	0	38%	1	10:00 - 11:00 AM	26%	1	0%	0	0%	0	10:00 - 11:00 AM	0%	0	8%	0	0%	0
11:00 - 12:00 PM	0	0	1%	0	0	0	11:00 - 12:00 PM	0	0	11%	0	33%	0	11:00 - 12:00 PM	0%	0	1%	0	0%	0	11:00 - 12:00 PM	0%	0	10%	1	0%	0
12:00 - 1:00 PM	0	0	1%	0	0	0	12:00 - 1:00 PM	0	0	11%	1	33%	2	12:00 - 1:00 PM	0%	0	1%	0	0%	0	12:00 - 1:00 PM	0%	0	10%	3	0%	0
1:00 - 2:00 PM	0	0	1%	1	0	0	1:00 - 2:00 PM	0	0	11%	2	33%	5	1:00 - 2:00 PM	0%	0	1%	1	0%	0	1:00 - 2:00 PM	0%	0	10%	7	0%	0
2:00 - 3:00 PM	0	0	0%	0	0	0	2:00 - 3:00 PM	0	0	9%	14	27%	43	2:00 - 3:00 PM	35%	59	1%	2	0%	0	2:00 - 3:00 PM	0%	0	11%	19	0%	0
3:00 - 4:00 PM	0	0	0%	0	0	0	3:00 - 4:00 PM	0	0	9%	9	27%	28	3:00 - 4:00 PM	35%	59	1%	2	0%	0	3:00 - 4:00 PM	0%	0	11%	19	0%	0
4:00 - 5:00 PM	0	0	0%	0	0	0	4:00 - 5:00 PM	0	0	9%	15	27%	44	4:00 - 5:00 PM	35%	48	1%	1	0%	0	4:00 - 5:00 PM	0%	0	11%	15	0%	0
5:00 - 6:00 PM	0	0	0%	0	0	0	5:00 - 6:00 PM	0	0	9%	19	27%	57	5:00 - 6:00 PM	35%	58	1%	2	0%	0	5:00 - 6:00 PM	0%	0	11%	18	0%	0

Growth Rate 2047
1

RAW

Street Name	SB					WB					NB					EB				
	0					0					0					0				
Start Time	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	1	0	1	0	2	1	153	0	0	154	0	0	0	0	0	0	68	0	0	68
7:15 AM	2	0	1	0	3	1	201	0	0	202	0	0	0	0	0	0	80	0	0	80
7:30 AM	7	0	2	0	9	1	257	0	0	258	0	0	0	0	0	0	72	0	0	72
7:45 AM	3	0	1	2	4	0	207	0	2	207	0	0	0	0	0	0	97	0	0	97
8:00 AM	5	0	0	0	5	0	233	0	0	233	0	0	0	0	0	0	108	1	0	109
8:15 AM	6	0	1	0	7	1	264	0	0	265	0	0	0	0	0	0	103	2	0	105
8:30 AM	4	0	2	0	6	1	212	0	1	213	0	0	0	0	0	0	108	0	0	108
8:45 AM	4	0	0	0	4	1	181	0	0	182	0	0	0	0	0	0	89	2	0	91
9:00 AM	4	0	1	0	5	2	195	0	0	197	0	0	0	0	0	6	114	1	0	121
9:15 AM	0	0	0	0	0	3	180	0	0	183	0	0	0	0	0	0	90	0	0	90
9:30 AM	5	0	0	0	5	3	169	0	1	172	0	0	0	0	0	0	88	1	0	89
9:45 AM	4	0	3	0	7	0	166	0	0	166	0	0	0	0	0	0	121	1	0	122
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	2	0	2	1	4	0	105	0	1	105	0	0	0	0	0	0	114	0	0	114
11:15 AM	1	0	0	0	1	3	116	0	1	119	0	0	0	0	0	0	135	1	0	136
11:30 AM	0	0	4	0	4	0	123	1	2	124	0	0	0	0	0	0	118	1	0	119
11:45 AM	1	0	0	0	1	1	88	0	0	89	0	0	0	0	0	0	107	4	0	111
12:00 PM	2	0	1	0	3	1	116	0	0	117	0	0	0	0	0	0	135	1	0	136
12:15 PM	0	0	1	0	1	2	99	0	0	101	0	0	0	0	0	0	122	2	0	124
12:30 PM	4	0	0	0	4	1	126	0	0	127	0	0	0	0	0	0	130	0	0	130
12:45 PM	0	0	1	0	1	0	114	0	0	114	0	0	0	0	0	0	116	1	0	117
1:00 PM	2	0	2	0	4	1	121	0	0	122	0	0	0	0	0	0	106	2	0	108
1:15 PM	4	0	1	0	5	0	119	0	1	119	0	0	0	0	0	0	133	0	0	133
1:30 PM	1	0	1	0	2	1	108	0	1	109	0	0	0	0	0	0	131	0	0	131
1:45 PM	3	0	0	0	3	1	127	0	1	128	0	0	0	0	0	0	129	2	0	131
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	1	0	1	0	2	1	157	0	0	158	0	0	0	0	0	0	169	3	0	172
3:15 PM	3	0	2	1	5	3	127	0	2	130	0	0	0	0	0	0	186	3	0	189
3:30 PM	5	0	2	0	7	16	119	0	0	135	0	0	0	0	0	0	188	5	0	193
3:45 PM	4	0	1	0	5	0	182	0	0	182	0	0	0	0	0	0	179	1	0	180
4:00 PM	1	0	1	2	2	3	128	0	1	131	0	0	0	0	0	0	186	4	0	190
4:15 PM	2	0	2	0	4	1	158	0	0	159	0	0	0	0	0	0	212	4	0	216
4:30 PM	2	0	3	0	5	4	155	0	0	159	0	0	0	0	0	0	229	4	0	233
4:45 PM	1	0	0	0	1	2	159	0	0	161	0	0	0	0	0	0	221	6	0	227
5:00 PM	3	0	2	0	5	3	132	0	2	135	0	0	0	0	0	0	253	1	0	254
5:15 PM	3	0	0	0	3	0	128	0	0	128	0	0	0	0	0	0	241	3	0	244
5:30 PM	1	0	1	0	2	4	139	0	0	143	0	0	0	0	0	0	209	2	0	211
5:45 PM	2	0	0	0	2	1	145	0	2	146	0	0	0	0	0	0	233	0	0	233
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NO BUILD 2047

Street Name	SB					WB					NB					EB				
	0					0					0					0				
Start Time	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	1	0	1	0	2	1	153	0	0	154	0	0	0	0	0	0	68	0	0	68
7:15 AM	2	0	1	0	3	1	201	0	0	202	0	0	0	0	0	0	80	0	0	80
7:30 AM	7	0	2	0	9	1	257	0	0	258	0	0	0	0	0	0	72	0	0	72
7:45 AM	3	0	1	2	6	0	207	0	2	209	0	0	0	0	0	0	97	0	0	97
8:00 AM	5	0	0	0	5	0	233	0	0	233	0	0	0	0	0	0	108	1	0	109
8:15 AM	6	0	1	0	7	1	264	0	0	265	0	0	0	0	0	0	103	2	0	105
8:30 AM	4	0	2	0	6	1	212	0	1	214	0	0	0	0	0	0	108	0	0	108
8:45 AM	4	0	0	0	4	1	181	0	0	182	0	0	0	0	0	0	89	2	0	91
9:00 AM	4	0	1	0	5	2	195	0	0	197	0	0	0	0	0	6	114	1	0	121
9:15 AM	0	0	0	0	0	3	180	0	0	183	0	0	0	0	0	0	90	0	0	90
9:30 AM	5	0	0	0	5	3	169	0	1	173	0	0	0	0	0	0	88	1	0	89
9:45 AM	4	0	3	0	7	0	166	0	0	166	0	0	0	0	0	0	121	1	0	122
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	2	0	2	1	5	0	105	0	1	106	0	0	0	0	0	0	114	0	0	114
11:15 AM	1	0	0	0	1	3	116	0	1	120	0	0	0	0	0	0	135	1	0	136
11:30 AM	0	0	4	0	4	0	123	1	2	126	0	0	0	0	0	0	118	1	0	119
11:45 AM	1	0	0	0	1	1	88	0	0	89	0	0	0	0	0	0	107	4	0	111
12:00 PM	2	0	1	0	3	1	116	0	0	117	0	0	0	0	0	0	135	1	0	136
12:15 PM	0	0	1	0	1	2	99	0	0	101	0	0	0	0	0	0	122	2	0	124
12:30 PM	4	0	0	0	4	1	126	0	0	127	0	0	0	0	0	0	130	0	0	130
12:45 PM	0	0	1	0	1	0	114	0	0	114	0	0	0	0	0	0	116	1	0	117
1:00 PM	2	0	2	0	4	1	121	0	0	122	0	0	0	0	0	0	106	2	0	108
1:15 PM	4	0	1	0	5	0	119	0	1	120	0	0	0	0	0	0	133	0	0	133
1:30 PM	1	0	1	0	2	1	108	0	1	110	0	0	0	0	0	0	131	0	0	131
1:45 PM	3	0	0	0	3	1	127	0	1	129	0	0	0	0	0	0	129	2	0	131
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	1	0	1	0	2	1	157	0	0	158	0	0	0	0	0	0	169	3	0	172
3:15 PM	3	0	2	1	6	3	127	0	2	132	0	0	0	0	0	0	186	3	0	189
3:30 PM	5	0	2	0	7	16	119	0	0	135	0	0	0	0	0	0	188	5	0	193
3:45 PM	4	0	1	0	5	0	182	0	0	182	0	0	0	0	0	0	179	1	0	180
4:00 PM	1	0	1	2	4	3	128	0	1	132	0	0	0	0	0	0	186	4	0	190
4:15 PM	2	0	2	0	4	1	158	0	0	159	0	0	0	0	0	0	212	4	0	216
4:30 PM	2	0	3	0	5	4	155	0	0	159	0	0	0	0	0	0	229	4	0	233
4:45 PM	1	0	0	0	1	2	159	0	0	161	0	0	0	0	0	0	221	6	0	227
5:00 PM	3	0	2	0	5	3	132	0	2	137	0	0	0	0	0	0	253	1	0	254
5:15 PM	3	0	0	0	3	0	128	0	0	128	0	0	0	0	0	0	241	3	0	244
5:30 PM	1	0	1	0	2	4	139	0	0	143	0	0	0	0	0	0	209	2	0	211
5:45 PM	2	0	0	0	2	1	145	0	2	148	0	0	0	0	0	0	233	0	0	233
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BUILD 2047

Street Name	SB					WB					NB					EB				
	175					0					0					0				
Start Time	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total	Right	Thru	Left	Peds	Total
6:00 AM																				
6:15 AM																				
6:30 AM																				
6:45 AM																				
7:00 AM	1	0	1	0	2	1	154	1	0	156	1	0	0	0	1	0	68	0	0	68
7:15 AM	2	0	1	0	3	1	201	1	0	203	0	0	0	0	0	0	80	0	0	80
7:30 AM	7	0	2	0	9	1	257	1	0	259	0	0	0	0	0	0	72	0	0	72
7:45 AM	3	0	1	2	4	0	207	1	2	208	0	0	0	0	0	0	97	0	0	97
8:00 AM	5	0	0	0	5	0	233	0	0	233	1	0	0	0	1	0	108	1	0	109
8:15 AM	6	0	1	0	7	1	264	0	0	265	0	0	0	0	0	0	103	2	0	105
8:30 AM	4	0	2	0	6	1	212	0	1	213	0	0	0	0	0	0	108	0	0	108
8:45 AM	4	0	0	0	4	1	181	0	0	182	0	0	0	0	0	0	89	2	0	91
9:00 AM	4	0	1	0	5	2	195	1	0	198	1	0	0	0	1	6	114	1	0	121
9:15 AM	0	0	0	0	0	3	180	0	0	183	0	0	0	0	0	0	90	0	0	90
9:30 AM	5	0	0	0	5	3	169	0	1	172	0	0	0	0	0	0	88	1	0	89
9:45 AM	4	0	3	0	7	0	166	0	0	166	0	0	0	0	0	0	121	1	0	122
10:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	2	0	2	1	4	0	105	1	0	106	0	0	0	0	0	0	115	0	0	115
11:15 AM	1	0	0	0	1	3	116	0	1	119	0	0	0	0	0	0	135	1	0	136
11:30 AM	0	0	4	0	4	0	123	1	2	124	0	0	0	0	0	0	118	1	0	119
11:45 AM	1	0	0	0	1	1	88	0	0	89	0	0	0	0	0	0	107	4	0	111
12:00 PM	2	0	1	0	3	1	117	1	0	119	0	0	0	0	0	0	136	1	0	137
12:15 PM	0	0	1	0	1	2	99	0	0	101	0	0	0	0	0	0	123	2	0	125
12:30 PM	4	0	0	0	4	1	126	1	0	128	0	0	0	0	0	0	131	0	0	131
12:45 PM	0	0	1	0	1	0	114	0	0	114	0	0	0	0	0	0	116	1	0	117
1:00 PM	2	1	2	0	5	1	122	2	0	125	0	1	0	0	1	0	108	2	0	110
1:15 PM	4	0	1	0	5	0	120	1	1	121	0	0	0	0	0	0	135	0	0	135
1:30 PM	1	0	1	0	2	1	108	1	1	110	0	0	0	0	0	0	133	0	0	133
1:45 PM	3	0	0	0	3	1	127	1	1	129	0	0	0	0	0	0	130	2	0	132
2:00 PM	0	0	0	0	0	0	4	11	0	15	15	1	0	0	16	0	5	0	0	5
2:15 PM	0	0	0	0	0	0	3	11	0	14	15	1	0	0	16	0	5	0	0	5
2:30 PM	0	0	0	0	0	0	4	11	0	15	15	0	0	0	15	0	5	0	0	5
2:45 PM	0	0	0	0	0	0	3	10	0	13	14	0	0	0	14	0	4	0	0	4
3:00 PM	1	0	1	0	2	1	160	7	0	168	15	1	0	0	16	0	174	3	0	177
3:15 PM	3	0	2	1	5	3	129	7	2	139	15	1	0	0	16	0	191	3	0	194
3:30 PM	5	0	2	0	7	16	121	7	0	144	15	0	0	0	15	0	193	5	0	198
3:45 PM	4	0	1	0	5	0	184	7	0	191	14	0	0	0	14	0	183	1	0	184
4:00 PM	1	0	1	2	2	3	132	11	1	146	12	1	0	0	13	0	190	4	0	194
4:15 PM	2	0	2	0	4	1	162	11	0	174	12	0	0	0	12	0	216	4	0	220
4:30 PM	2	0	3	0	5	4	159	11	0	174	12	0	0	0	12	0	233	4	0	237
4:45 PM	1	0	0	0	1	2	162	11	0	175	12	0	0	0	12	0	224	6	0	230
5:00 PM	3	0	2	0	5	3	137	15	2	155	15	1	0	0	16	0	257	1	0	258
5:15 PM	3	0	0	0	3	0	133	14	0	147	15	1	0	0	16	0	246	3	0	249
5:30 PM	1	0	1	0	2	4	144	14	0	162	15	0	0	0	15	0	213	2	0	215
5:45 PM	2	0	0	0	2	1	149	14	2	164	14	0	0	0	14	0	238	0	0	238
6:00 PM																				
6:15 PM																				
6:30 PM																				
6:45 PM																				

Appendix R
Pedestrian Treatment Analysis

INTERSECTION GAP ANALYSIS

MAIN STREET: Mayfield Road
SIDE STREET(S): Burlington Road
CITY: Cleveland Heights
COUNTY: Cuyahoga
STATE: Ohio

DATE: 10/7/2024
ENGINEER: ABC
CHKD. BY: MWS
PROJECT # 24-032

TMS ENGINEERS
2112 Case Parkway South #7
Twinsburg, Ohio 44087
PHONE (330) 686-6402
FAX (330) 686-6417

DATA INPUT

1.) ROADWAY (PAVEMENT) WIDTH, CURB TO CURB, (FEET): **W=** 60 FT

2.) DESIRED CROSSING RATE ACROSS WIDTH OF STREET, (FT/SEC): **CR=** 3.5 FT/SEC
USE 4.0 FT/SEC FOR HANDICAP

3.) DESIRED GAP TIME (G), (SECONDS): CALCULATED FROM EQUATION A

(A) $G = R + (W/CR) + 2(N-1)$

WHERE,

G = DESIRED GAP TIME, SECONDS
R = PEDESTRIAN REACTION TIME, SECONDS **R=** 1.0 SEC
N = NUMBER OF ROWS OF PEDESTRIANS CROSSING IN THE 85TH PERCENTILE GROUP **N=** 1 ROWS

THERFORE DESIRED GAP TIME **G=** 18.14 SEC

4.) TRAFFIC COUNT TIME PERIOD:
FROM: 16:30 TO: 16:45 **T1=** 15 MINUTES

5.) TOTAL NUMBER OF PEDESTRIANS CROSSING STREET IN ABOVE TIME PERIOD **PED=** 1 PEDS

6.) VEHICULAR VOLUME (V) IN ABOVE TIME PERIOD(BOTH DIRECTIONS) **V=** 392 VEHICLES

7.) NUMBER OF AVAILABLE GAPS GREATER THAN **G=** 18 SECONDS

$N = Ve^{-(V)(G/T)}$ (POISSON DISTRIBUTION)

WHERE: N = NUMBER OF AVAILABLE GAPS GREATER THAN THE DESIRED GAP TIME
T = TIME PERIOD IN SECONDS **T=** 900 SECONDS
G = DESIRED GAP TIME **G=** 18 SECONDS
e = BASE OF NATURAL (NAPERIEN) LOGS **e=** 2.718281828
V = VEHICULAR VOLUME IN TIME PERIOD **V=** 392 VEHICLES

THEREFORE AVAILABLE GAPS (N) = **0.15** GAPS

GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS

This spreadsheet combines Worksheet 1 and Worksheet 2 (Appendix A, pages 69-70) of TCRP Report 112/NCHRP Report 562 (*Improving Pedestrian Safety at Unsignalized Intersections*) into an electronic format. This spreadsheet should be used in conjunction with, and not independent of, Appendix A documentation.

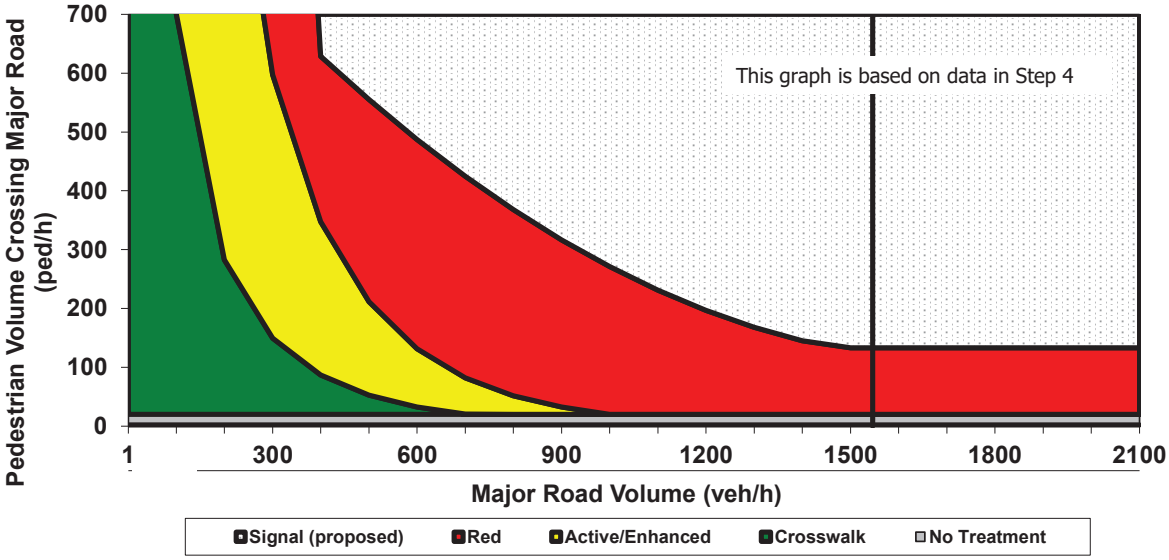
This spreadsheet is still under development, please inform TTI if errors are identified.

Key

- Blue fields contain descriptive information.
- Green fields are required and must be completed.
- Tan fields are adjustments that are filled out only under certain conditions (follow instructions to the left of the cell).
- Gray fields are automatically calculated and should not be edited.

Analyst and Site Information			
Analyst	KMC	Major Street	Mayfield Road
Analysis Date	October 2, 2024	Minor Street or Location	Mid-Block
Data Collection Date	February 29, 2024	Peak Hour	PM

Step 1: Select worksheet:		
Posted or statutory speed limit (or 85th percentile speed) on the major street (mph)	*1a*	35
Is the population of the surrounding area <10,000? (enter ***YES*** or ***NO***)	*1b*	no
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a traffic control device?		
Peak-hour pedestrian volume (ped/h), V_p	*2a*	2
Result: Consider raised median islands, curb extensions, traffic calming, etc. as feasible.		
Step 3: Does the crossing meet the pedestrian warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), $V_{maj\text{-}s}$	*3a*	1546
[Calculated automatically] Preliminary (before min. threshold) peak hour pedestrian volume to meet warrant	*3b*	133
[Calculated automatically] Minimum required peak hour pedestrian volume to meet traffic signal warrant	*3c*	133
Is 15th percentile crossing speed of pedestrians less than 3.5 ft/s (1.1 m/s)? (enter ***YES*** or ***NO***)	*3d*	no
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — % rate of reduction for *3c* (up to 50%)	*3e*	
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — Reduced value or *3c*	*3f*	133
Result:		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	*4a*	60
Pedestrian walking speed (ft/s), S_p (suggested speed = 3.5 ft/s)	*4b*	3.5
Pedestrian start-up time and end clearance time (s), t_s (suggested start-up time = 3 sec)	*4c*	3
[Calculated automatically] Critical gap required for crossing pedestrian (s), t_c	*4d*	20
Major road volume, total both approaches OR approach being crossed if raised median island is present, during peak hour (veh/h), $V_{maj\text{-}d}$	*4e*	1546
Major road flow rate (veh/s), v	*4f*	0.43
Average pedestrian delay (s/person), d_p	*4g*	13410
Total pedestrian delay (h), D_p The value in 4h is the calculated estimated delay for all pedestrians crossing the major roadway without a crossing treatment (assumes 0% compliance). If the actual total pedestrian delay has been measured at the site, that value can be entered in 4i to replace the calculated value in 4h.	*4h*	7.4
	4i	
Step 5: Select treatment based up on total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region: enter ***HIGH for High Compliance*** or ***LOW for Low Compliance***	*5a*	low
Treatment Category:	**Consider raised median islands, curb extensions, traffic calming, etc. as feasible.**	



This worksheet provides general recommendations on pedestrian crossing treatments to consider at unsignalized intersections; in all cases, engineering judgment should be used in selecting a specific treatment for installation. This worksheet does not apply to school crossings. In addition to the results provided by this worksheet, users should consider whether a pedestrian treatment could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex geometrics, or nearby traffic signals.

GUIDELINES FOR PEDESTRIAN CROSSING TREATMENTS

This spreadsheet combines Worksheet 1 and Worksheet 2 (Appendix A, pages 69-70) of TCRP Report 112/NCHRP Report 562 (*Improving Pedestrian Safety at Unsignalized Intersections*) into an electronic format. This spreadsheet should be used in conjunction with, and not independent of, Appendix A documentation.

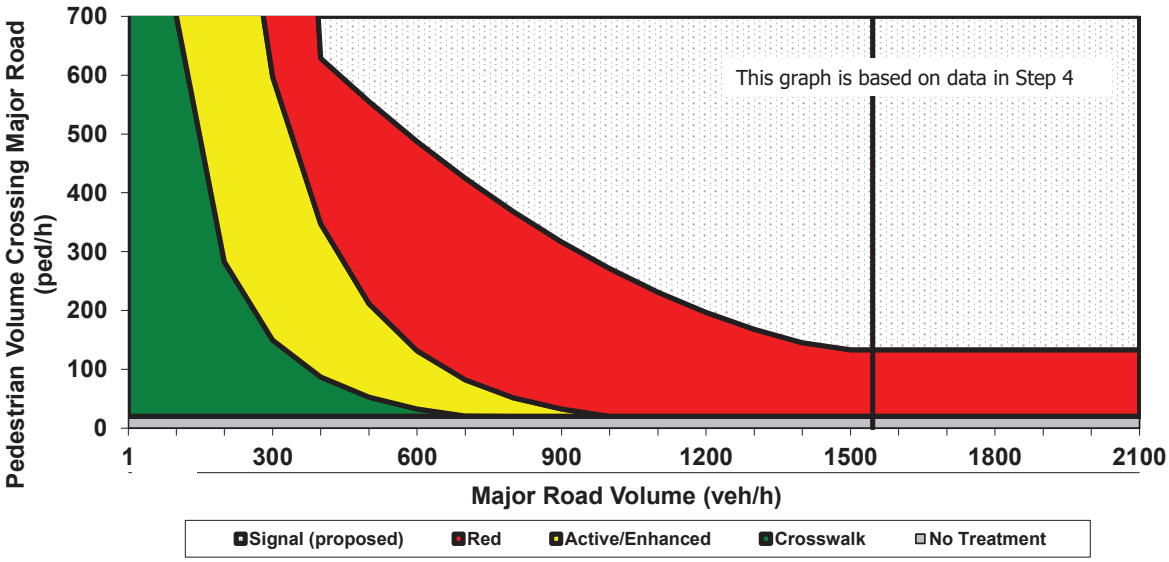
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Key

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Analyst and Site Information			
Analyst	KMC	Major Street	Mayfield Road
Analysis Date	October 2, 2024	Minor Street or Location	Mid-Block
Data Collection Date	February 29, 2024	Peak Hour	PM

Step 1: Select worksheet:		
Posted or statutory speed limit (or 85th percentile speed) on the major street (mph)	*1a*	35
Is the population of the surrounding area <10,000? (enter ***YES*** or ***NO***)	*1b*	no
Step 2: Does the crossing meet minimum pedestrian volumes to be considered for a traffic control device?		
Peak-hour pedestrian volume (ped/h), V_p	*2a*	20
Result: Go to step 3.		
Step 3: Does the crossing meet the pedestrian warrant for a traffic signal?		
Major road volume, total of both approaches during peak hour (veh/h), V_{maj-s}	*3a*	1546
[Calculated automatically] Preliminary (before min. threshold) peak hour pedestrian volume to meet warrant	*3b*	133
[Calculated automatically] Minimum required peak hour pedestrian volume to meet traffic signal warrant	*3c*	133
Is 15th percentile crossing speed of pedestrians less than 3.5 ft/s (1.1 m/s)? (enter ***YES*** or ***NO***)	*3d*	no
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — % rate of reduction for *3c* (up to 50%)	*3e*	
If 15th percentile crossing speed of pedestrians is less than 3.5 ft/s (1.1 m/s), then reduce *3c* by up to 50%. — Reduced value or *3c*	*3f*	133
Result: The signal warrant is not met. Go to step 4.		
Step 4: Estimate pedestrian delay.		
Pedestrian crossing distance, curb to curb (ft), L	*4a*	60
Pedestrian walking speed (ft/s), S_p (suggested speed = 3.5 ft/s)	*4b*	3.5
Pedestrian start-up time and end clearance time (s), t_s (suggested start-up time = 3 sec)	*4c*	20
[Calculated automatically] Critical gap required for crossing pedestrian (s), t_c	*4d*	37
Major road volume, total both approaches OR approach being crossed if raised median island is present, during peak hour (veh/h), V_{maj-d}	*4e*	1546
Major road flow rate (veh/s), v	*4f*	0.43
Average pedestrian delay (s/person), d_p	*4g*	20083250
Total pedestrian delay (h), D_p The value in 4h is the calculated estimated delay for all pedestrians crossing the major roadway without a crossing treatment (assumes 0% compliance). If the actual total pedestrian delay has been measured at the site, that value can be entered in 4i to replace the calculated value in 4h.	*4h*	111573.6
	4i	
Step 5: Select treatment based up on total pedestrian delay and expected motorist compliance.		
Expected motorist compliance at pedestrian crossings in region: enter ***HIGH for High Compliance*** or ***LOW for Low Compliance***	*5a*	low
Treatment Category:		**RED**

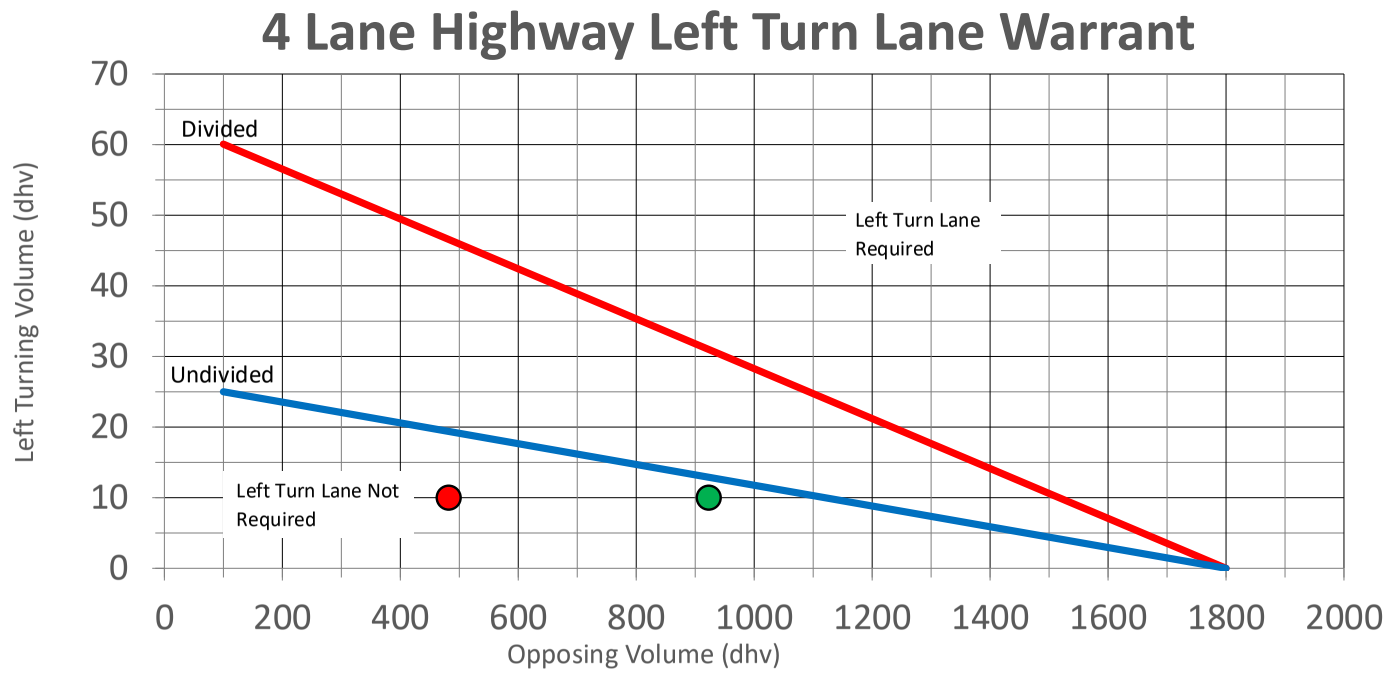


This worksheet provides general recommendations on pedestrian crossing treatments to consider at unsignalized intersections; in all cases, engineering judgment should be used in selecting a specific treatment for installation. This worksheet does not apply to school crossings. In addition to the results provided by this worksheet, users should consider whether a pedestrian treatment could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex geometrics, or nearby traffic signals.

Appendix S
ODOT Turn Lane Warrant Graphs

Mayfield Road & Site Access Driveway A

2027 Build **WARRANT IS NOT MET**



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	10	470	12	482	NO
PM	10	920	3	923	NO

4-LANE LEFT TURN LANE WARRANT

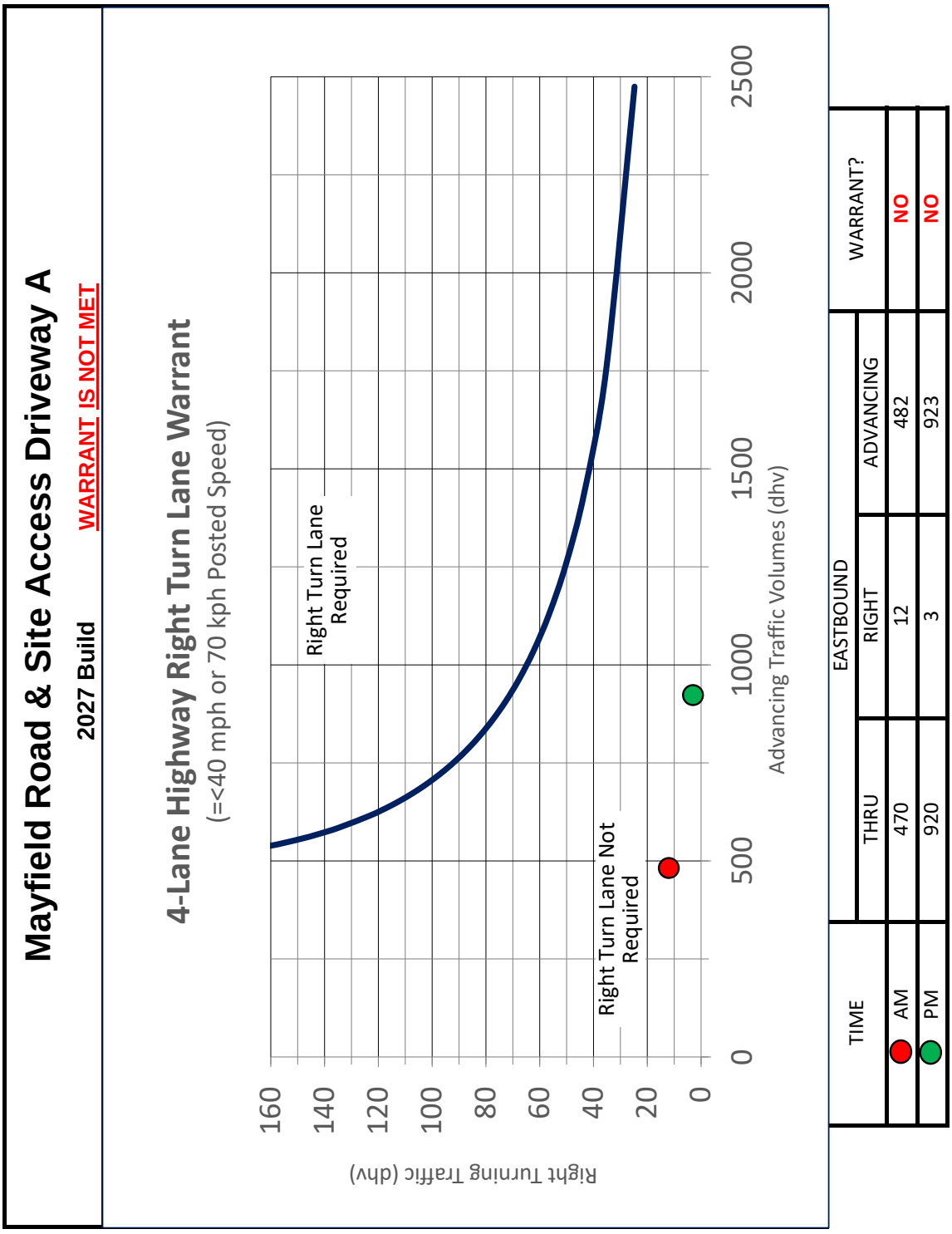
401-5cM

REFERENCE SECTION 401.6.1

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION
401.6.3



4-LANE LEFT TURN LANE WARRANT

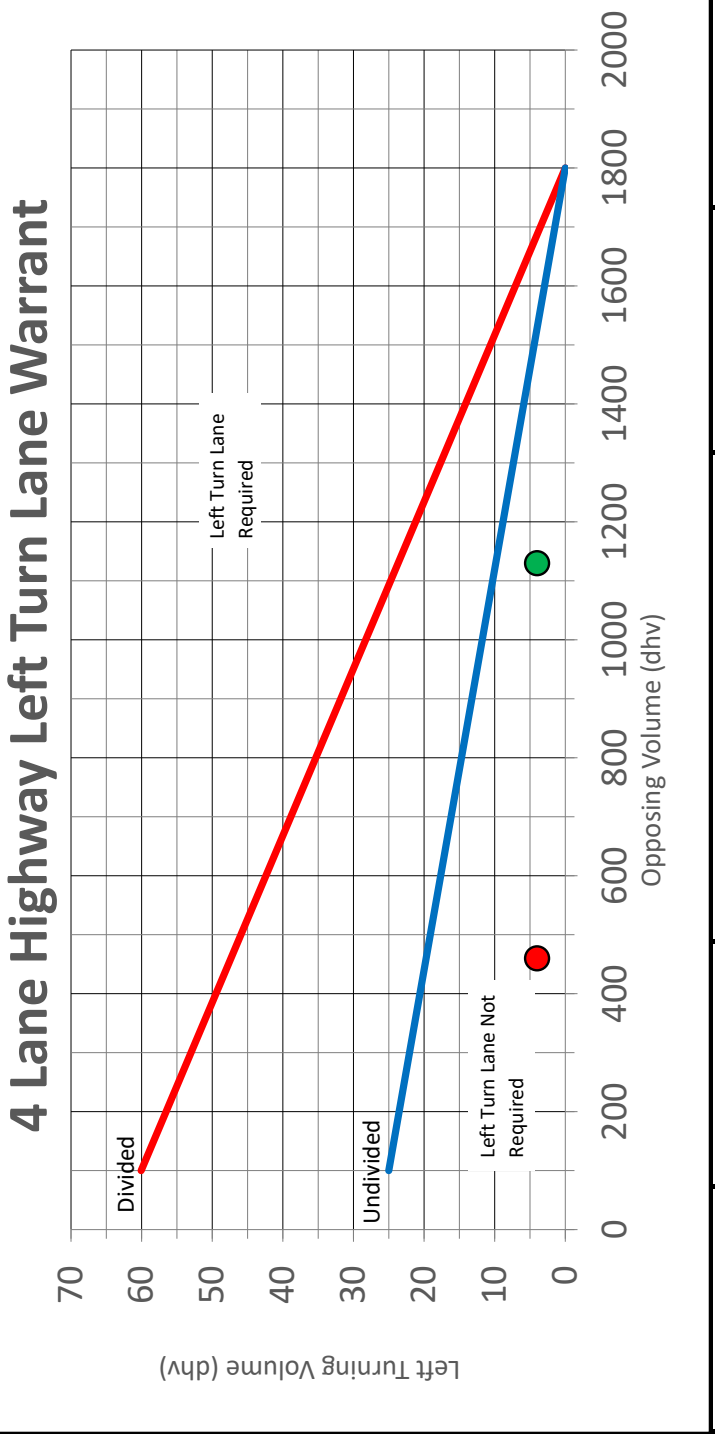
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway C

2027 Build

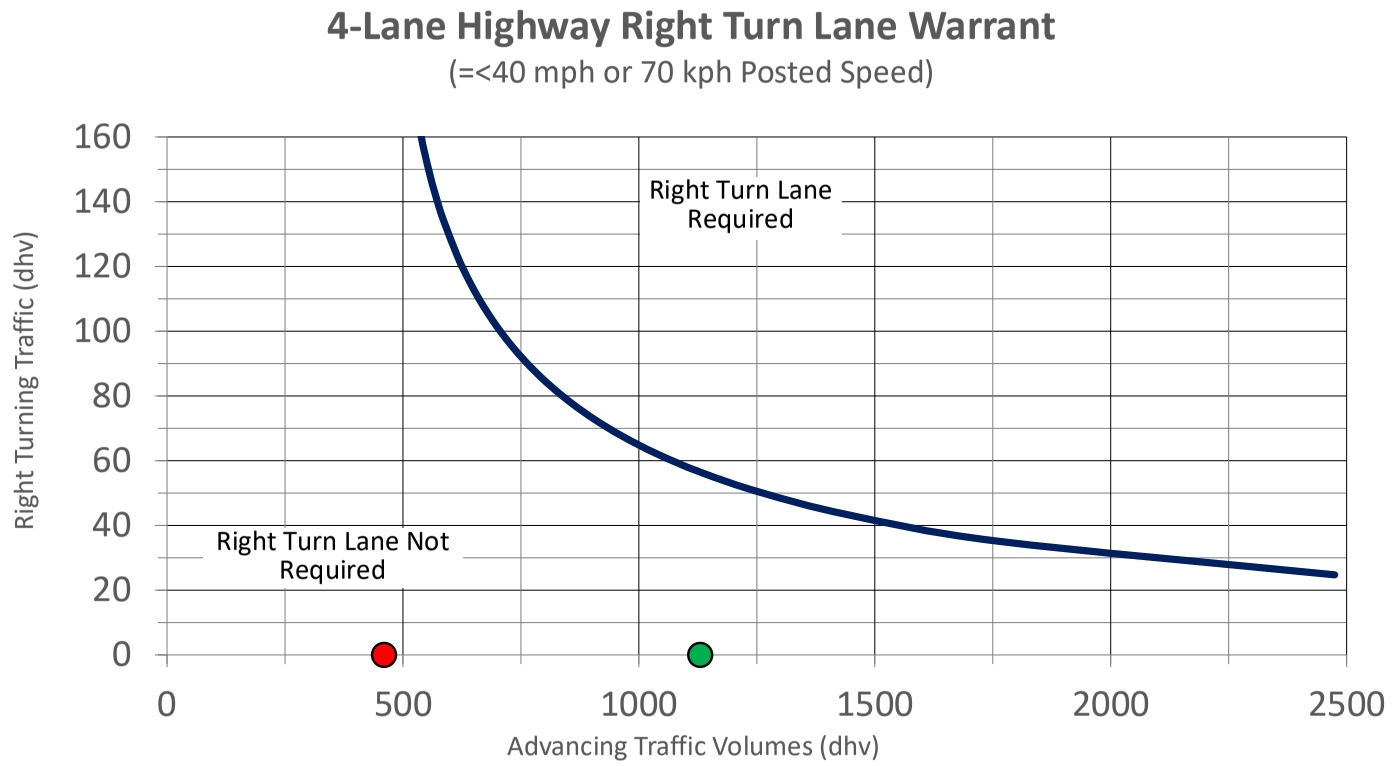
WARRANT IS NOT MET



TIME	WESTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	OPPOSING	WARRANT?
AM	4	460	0	460	NO
PM	4	1130	0	1130	NO

Mayfield Road & Site Access Driveway C

2027 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	0	460	-
PM	1130	0	1130	-

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

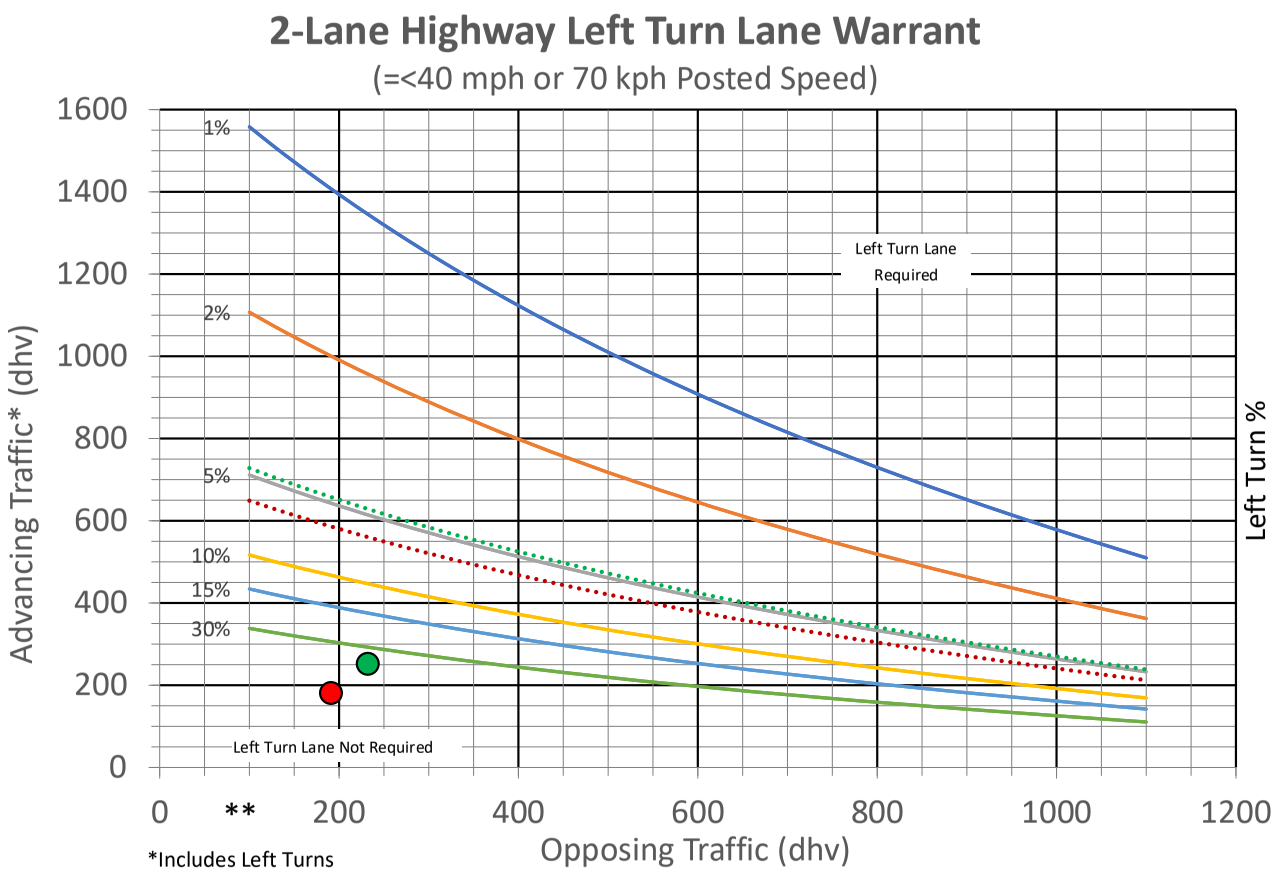
REFERENCE SECTION 401.6.3

Euclid Heights Boulevard & Site Access Driveway D

2027 Build **WARRANT IS NOT MET**

Left turn lane is warranted in the AM when the red dot is located on or above the dotted red line.

Left turn lane is warranted in the PM when the green dot is located on or above the dotted green line.



*Includes Left Turns

**There is no minimum number of turns

TIME	EASTBOUND		WESTBOUND		ADVANCING	OPPOSING	LT%	WARRANT?
	LEFT	THRU	THRU	RIGHT				
AM	11	170	180	11	181	191	6.1%	NO
PM	12	240	220	12	252	232	4.8%	NO

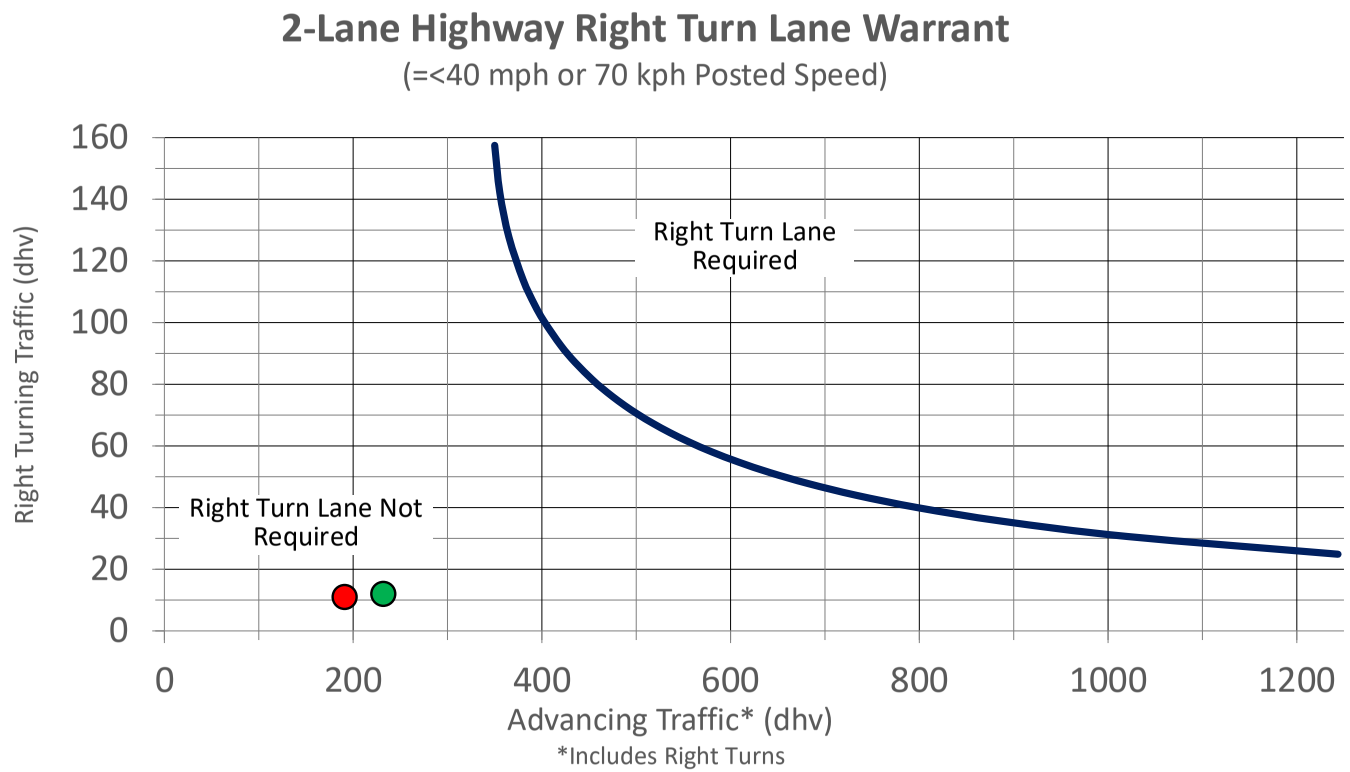
2-LANE LEFT TURN LANE WARRANT (LOW SPEED)

401-5aM

REFERENCE SECTION 401.6.1

Euclid Heights Boulevard & Site Access Driveway D

2027 Build WARRANT IS NOT MET



TIME	WESTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	180	11	191	NO
PM	220	12	232	NO

2-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6aM

REFERENCE SECTION 401.6.3

4-LANE LEFT TURN LANE WARRANT

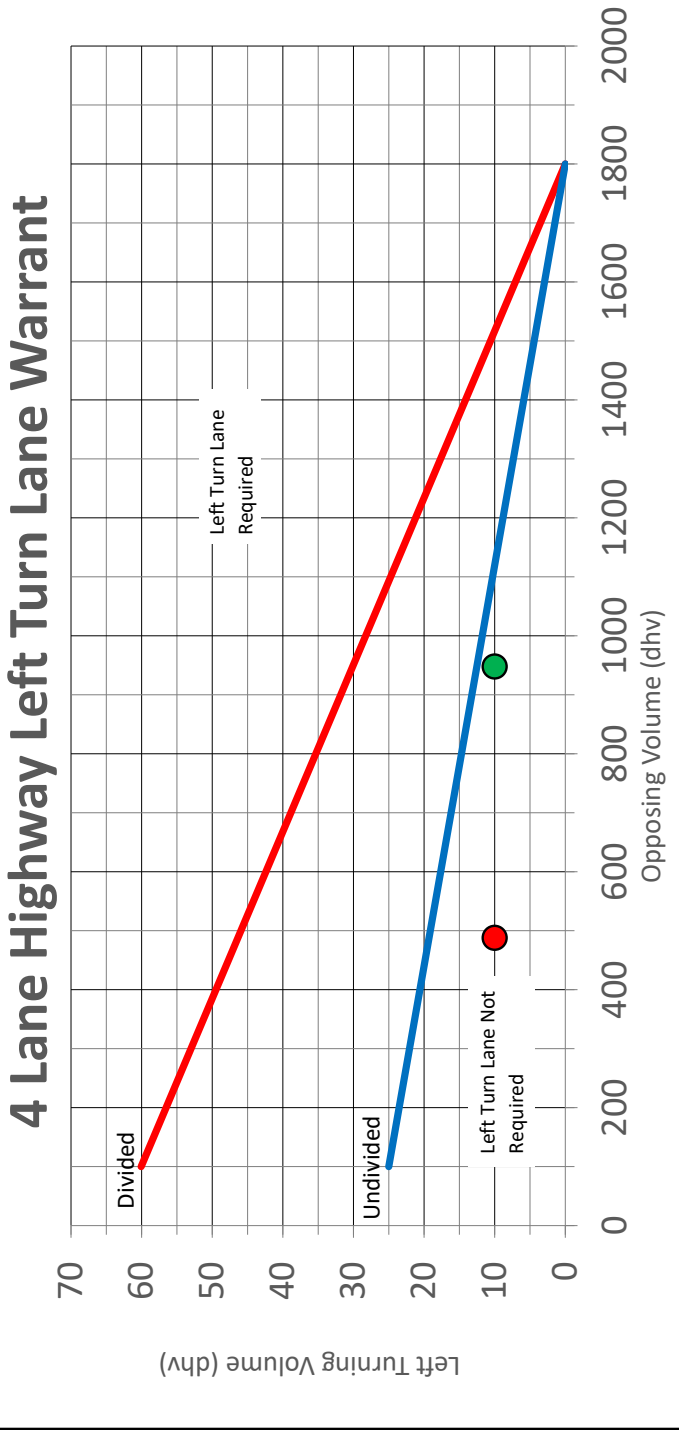
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway A

2030 Build

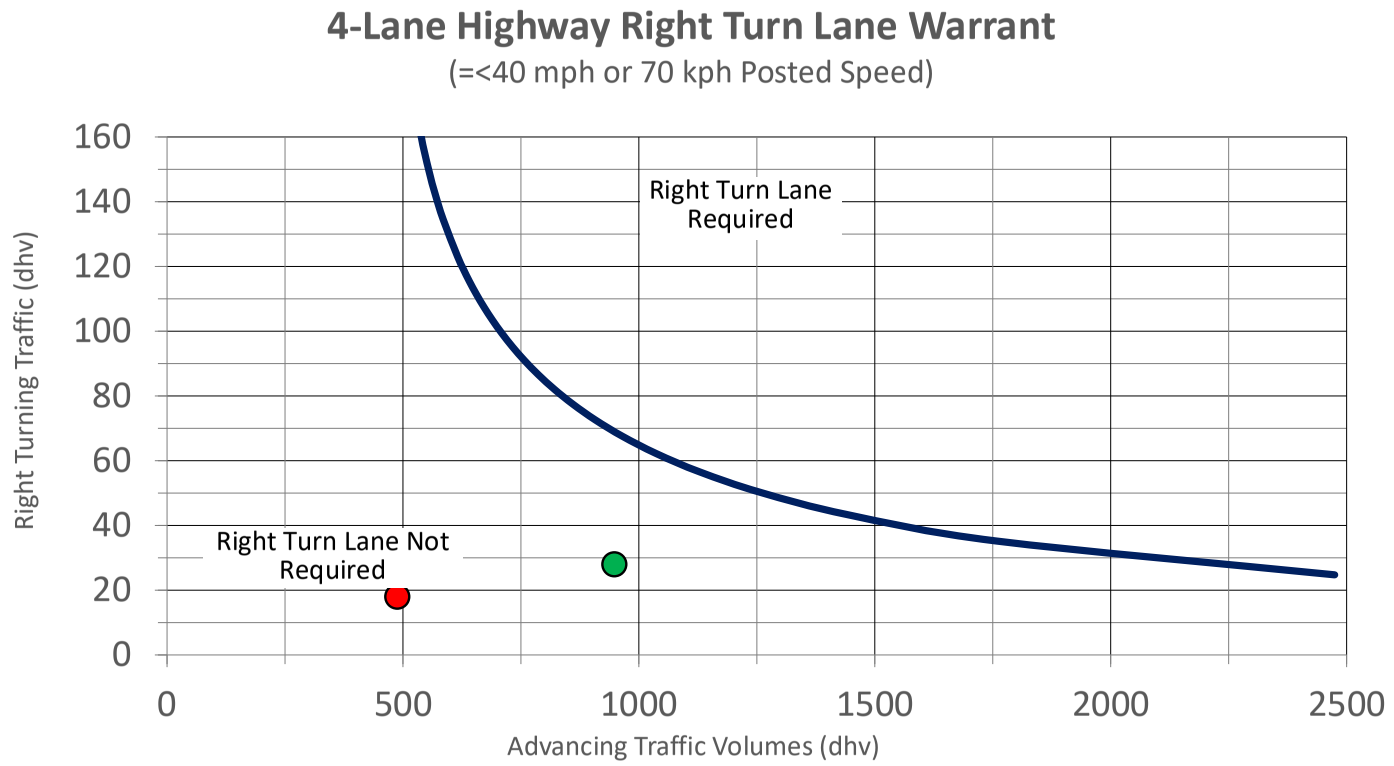
WARRANT IS NOT MET



TIME	WESTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	OPPOSING	WARRANT?
AM	10	470	18	488	NO
PM	10	920	28	948	NO

Mayfield Road & Site Access Driveway A

2030 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	470	18	488	NO
PM	920	28	948	NO

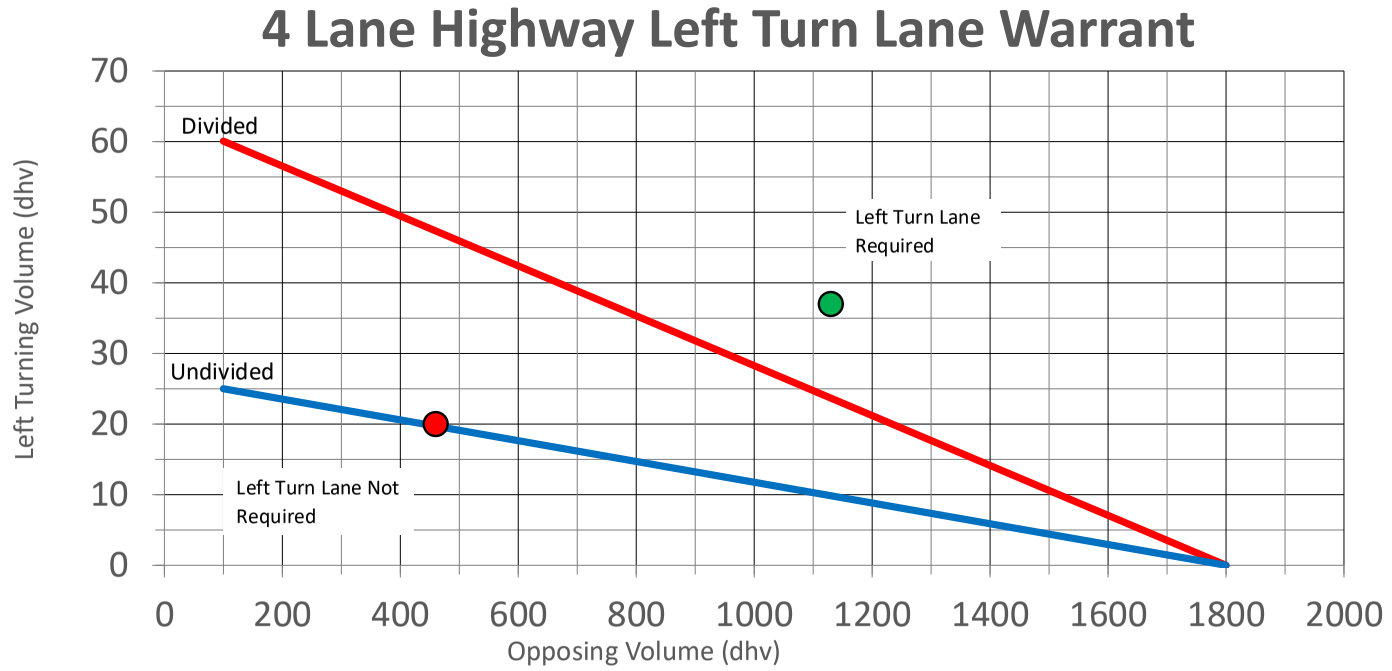
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Site Access Driveway C

2030 Build **WARRANT IS MET**



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	20	0	460	460	YES
PM	37	0	1130	1130	YES

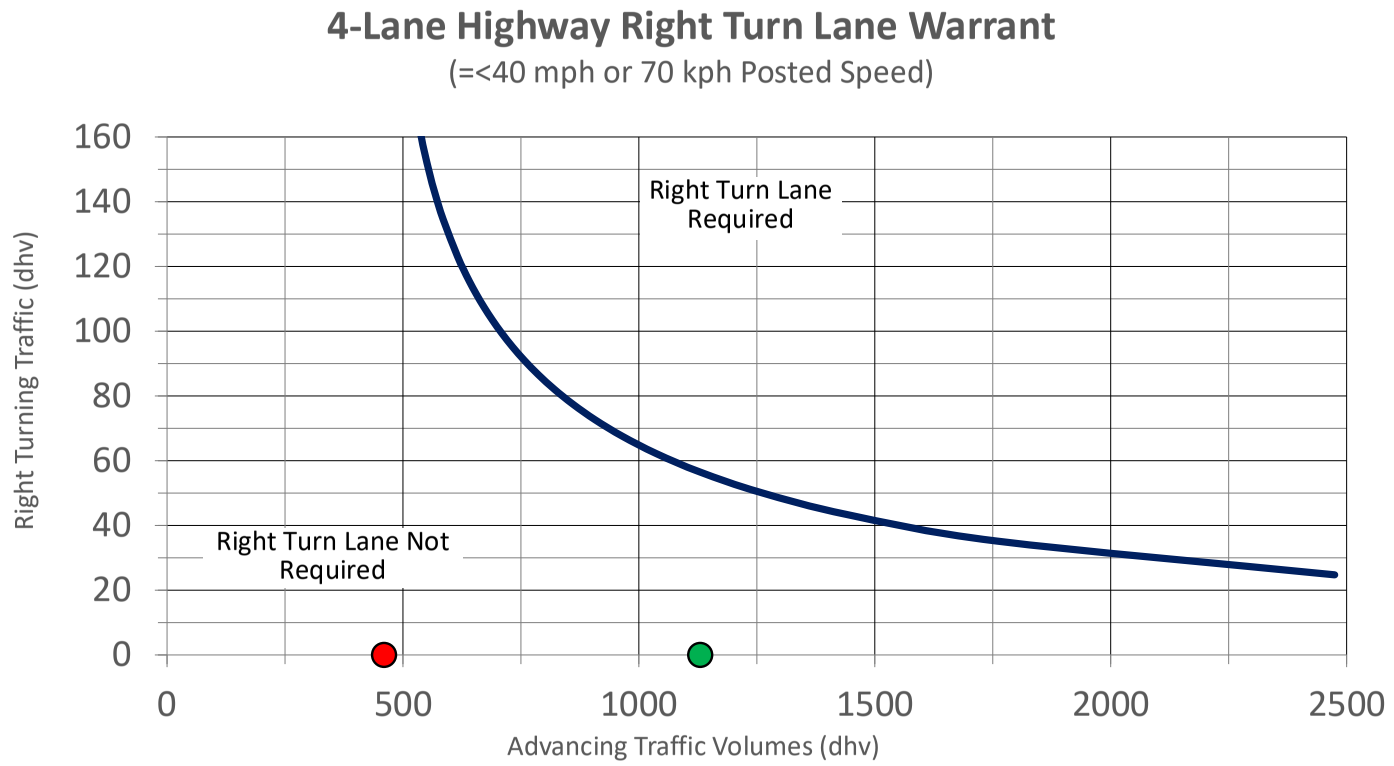
4-LANE LEFT TURN LANE WARRANT

REFERENCE SECTION 401.6.1

401-5cM

Mayfield Road & Site Access Driveway C

2030 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	0	460	-
PM	1130	0	1130	-

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

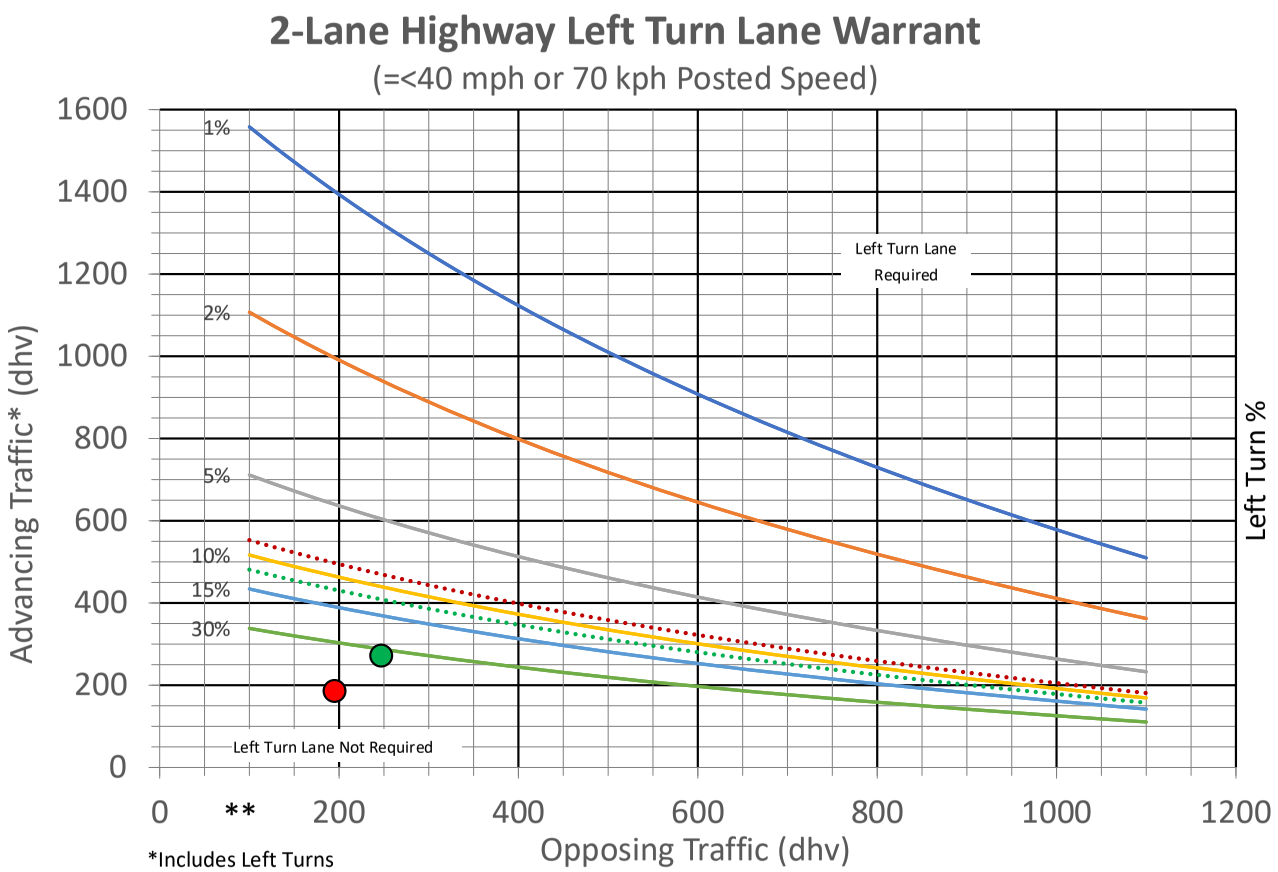
REFERENCE SECTION 401.6.3

Euclid Heights Boulevard & Site Access Driveway D

2030 Build **WARRANT IS NOT MET**

Left turn lane is warranted in the AM when the red dot is located on or above the dotted red line.

Left turn lane is warranted in the PM when the green dot is located on or above the dotted green line.



*Includes Left Turns

**There is no minimum number of turns

TIME	EASTBOUND		WESTBOUND		ADVANCING	OPPOSING	LT%	WARRANT?
	LEFT	THRU	THRU	RIGHT				
AM	16	170	180	15	186	195	8.6%	NO
PM	32	240	220	27	272	247	11.8%	NO

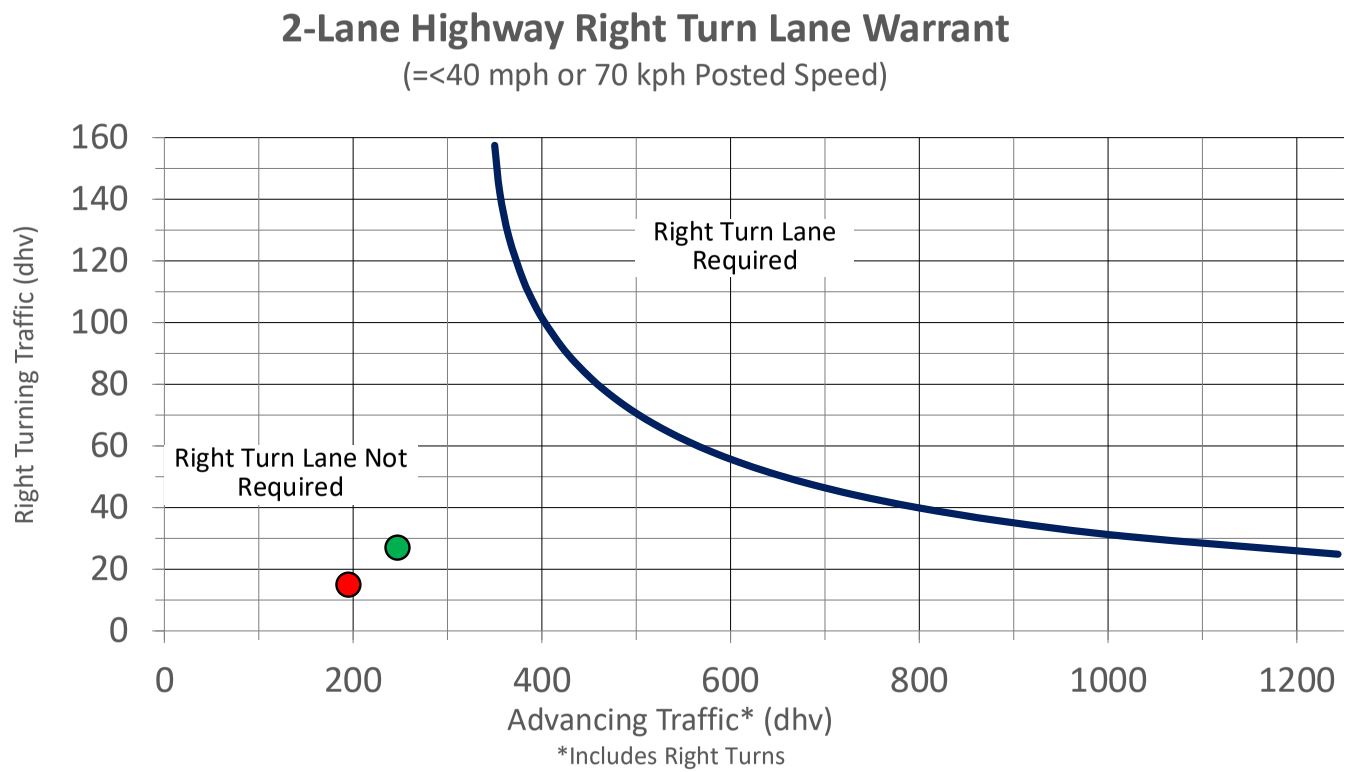
2-LANE LEFT TURN LANE WARRANT (LOW SPEED)

401-5aM

REFERENCE SECTION 401.6.1

Euclid Heights Boulevard & Site Access Driveway D

2030 Build WARRANT IS NOT MET



TIME	WESTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	180	15	195	NO
PM	220	27	247	NO

2-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6aM

REFERENCE SECTION 401.6.3

4-LANE LEFT TURN LANE WARRANT

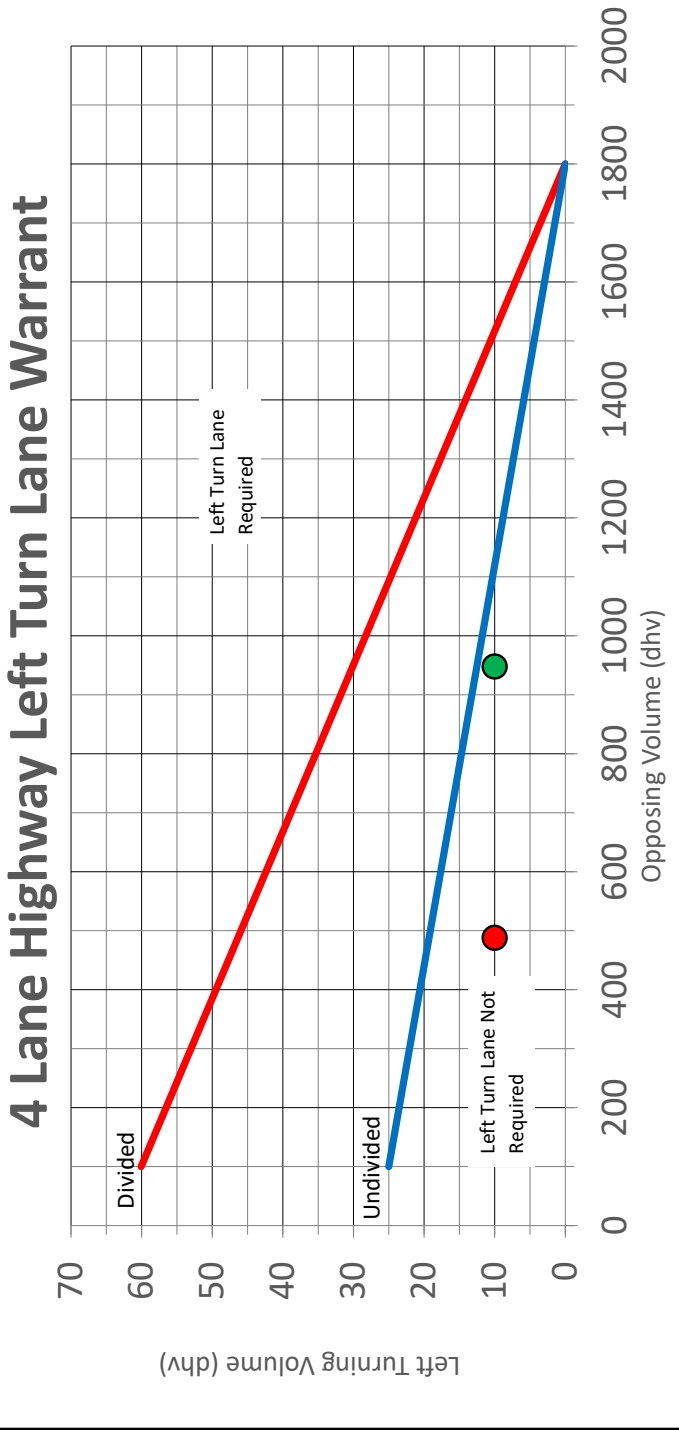
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway A

2047 Build

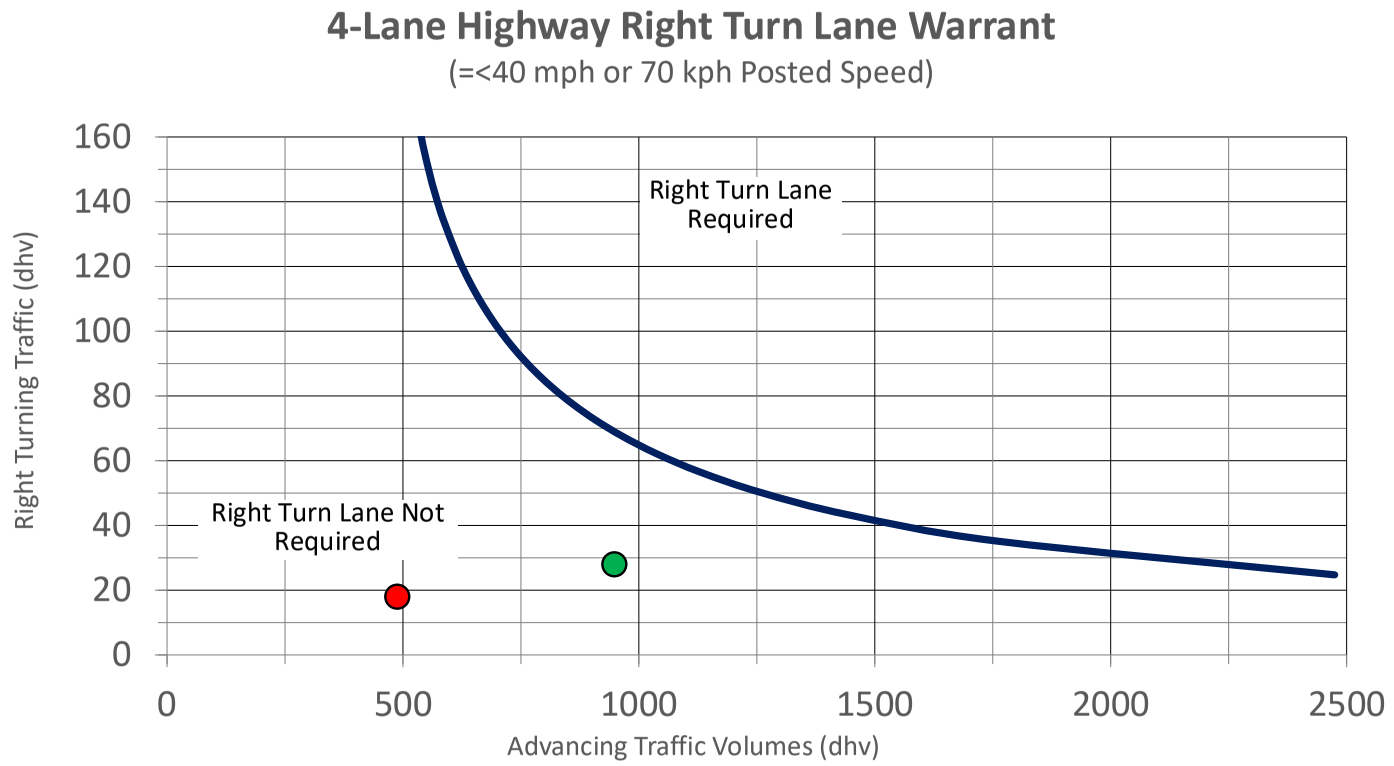
WARRANT IS NOT MET



TIME	WESTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	OPPOSING	WARRANT?
AM	10	470	18	488	NO
PM	10	920	28	948	NO

Mayfield Road & Site Access Driveway A

2047 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	470	18	488	NO
PM	920	28	948	NO

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

4-LANE LEFT TURN LANE WARRANT

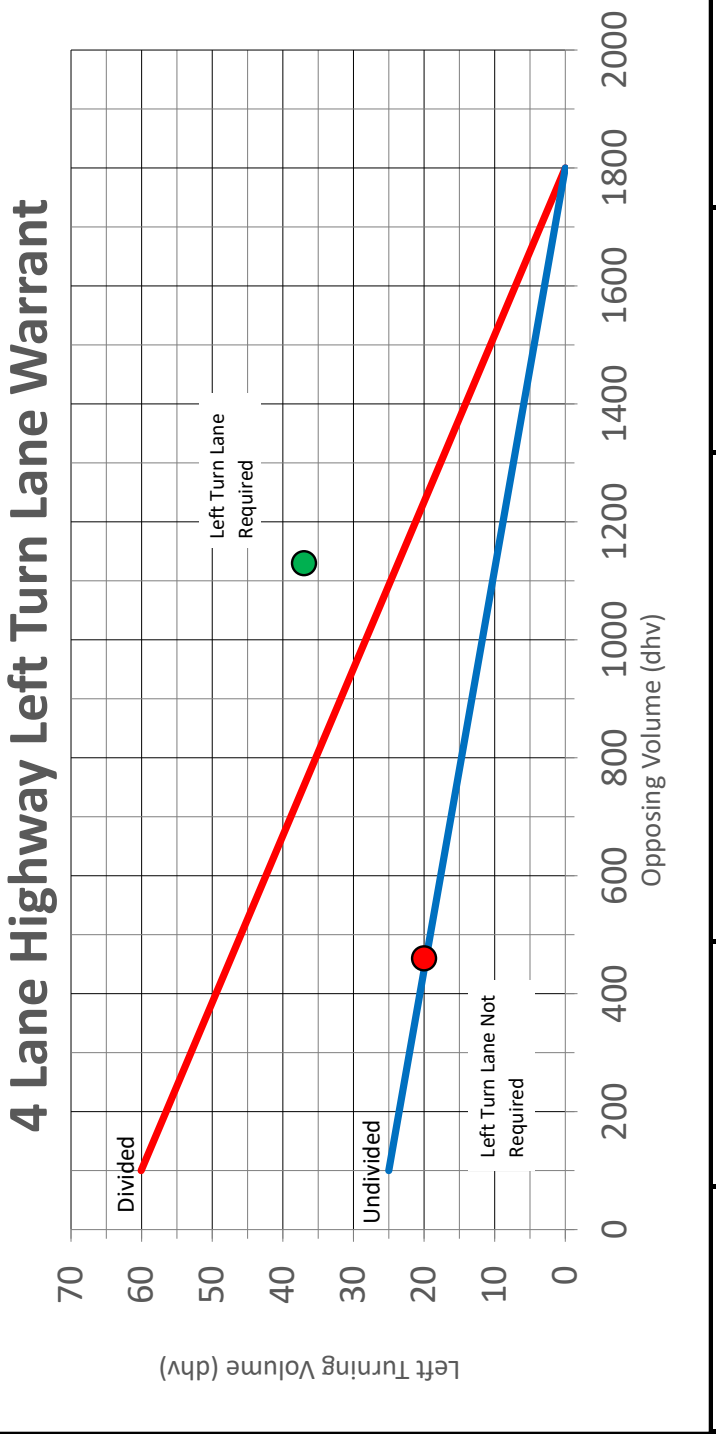
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway C

2047 Build

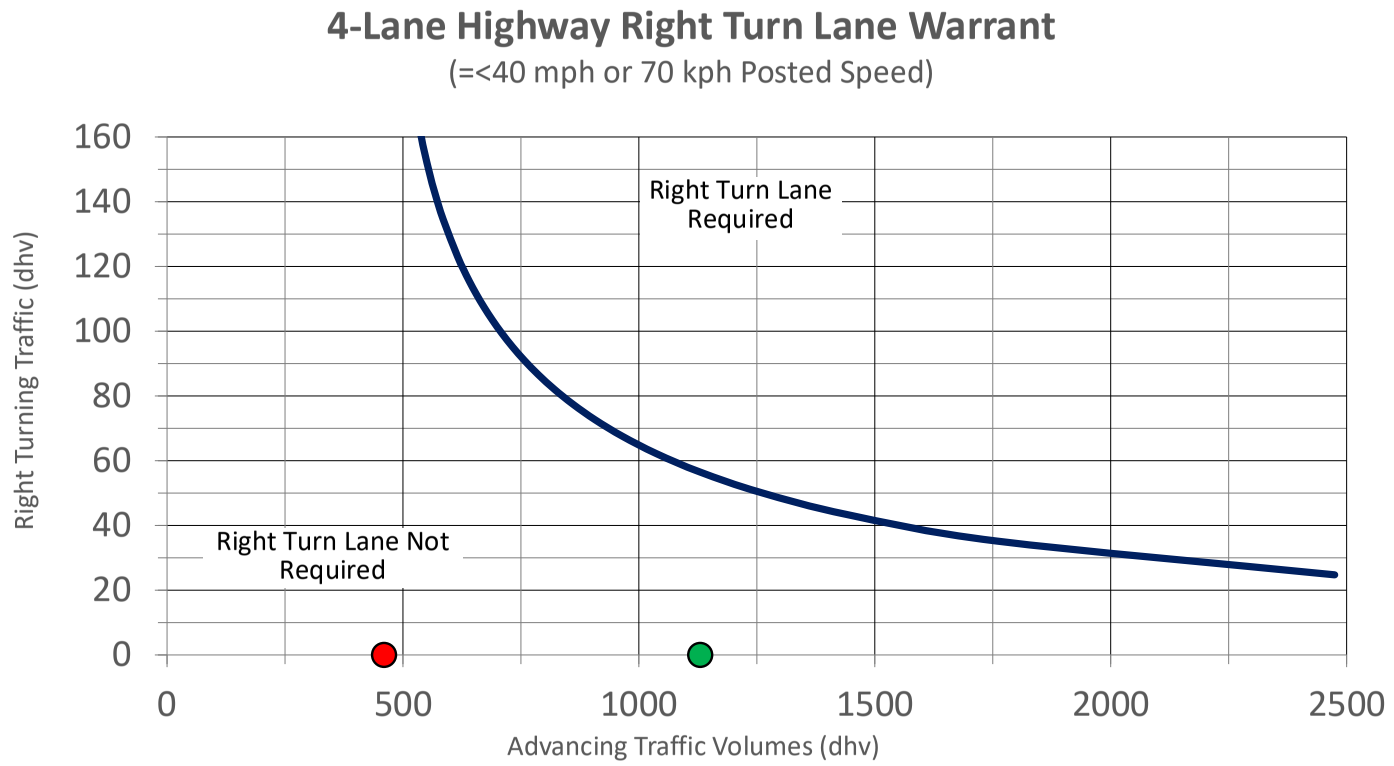
WARRANT IS MET



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	20	460	0	460	YES
PM	37	1130	0	1130	YES

Mayfield Road & Site Access Driveway C

2047 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	0	460	-
PM	1130	0	1130	-

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

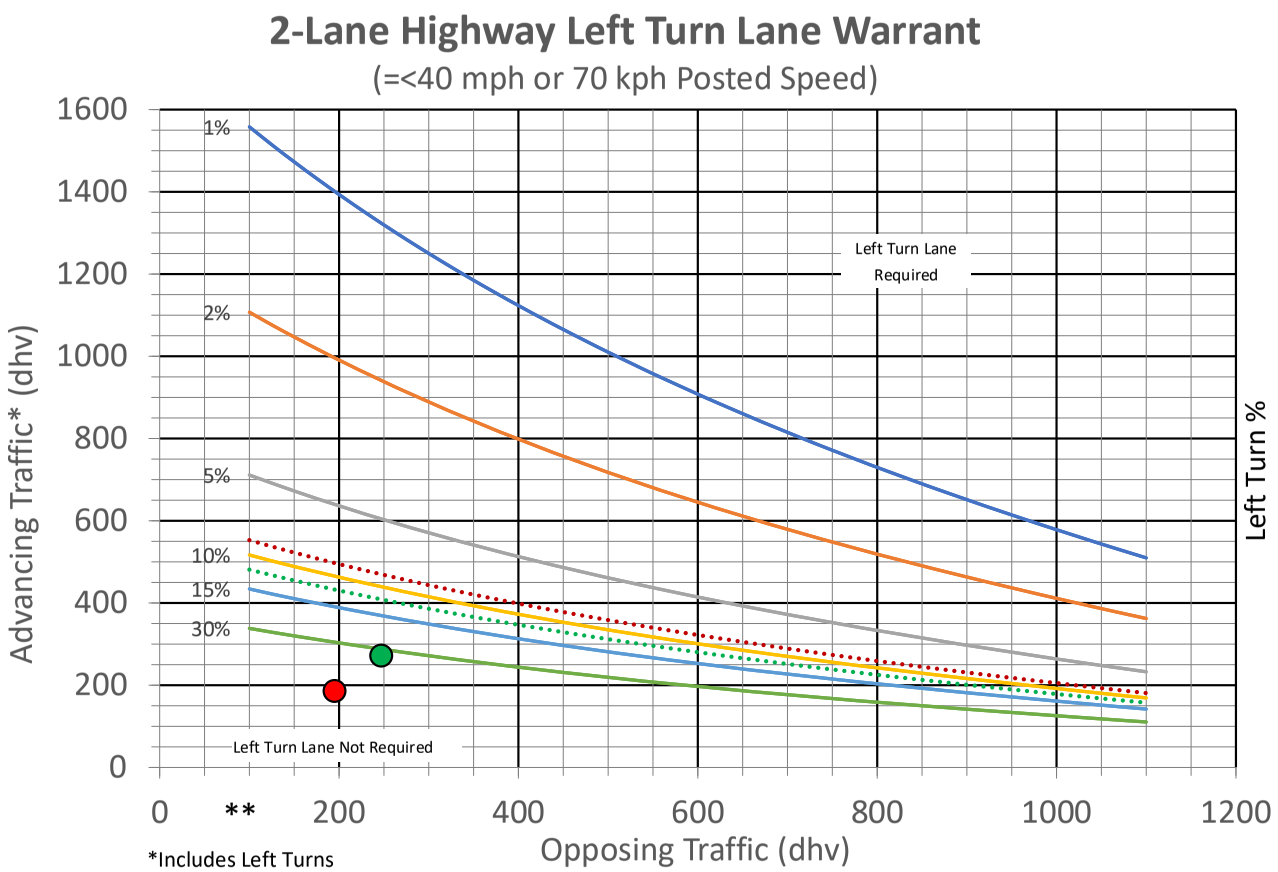
REFERENCE SECTION 401.6.3

Euclid Heights Boulevard & Site Access Driveway D

2047 Build **WARRANT IS NOT MET**

Left turn lane is warranted in the AM when the red dot is located on or above the dotted red line.

Left turn lane is warranted in the PM when the green dot is located on or above the dotted green line.



*Includes Left Turns

**There is no minimum number of turns

TIME	EASTBOUND		WESTBOUND		ADVANCING	OPPOSING	LT%	WARRANT?
	LEFT	THRU	THRU	RIGHT				
AM	16	170	180	15	186	195	8.6%	NO
PM	32	240	220	27	272	247	11.8%	NO

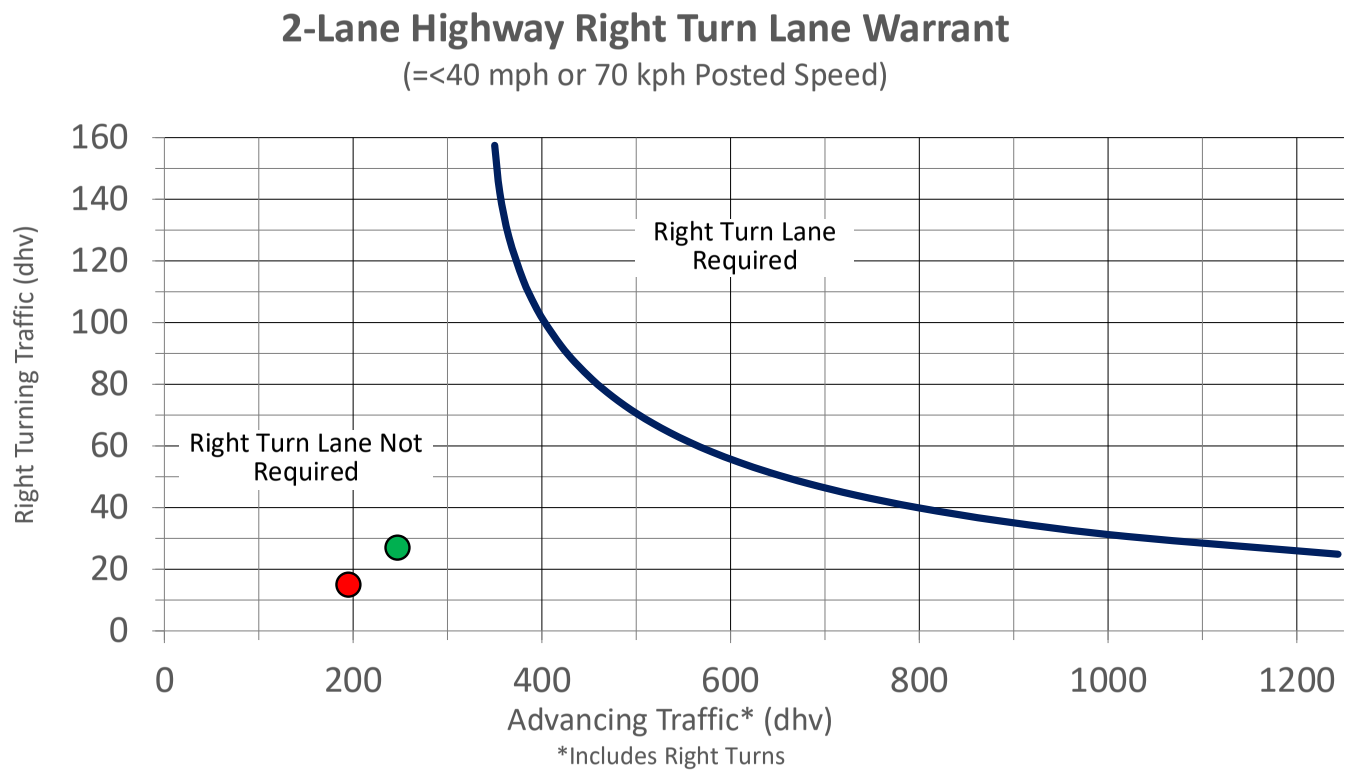
2-LANE LEFT TURN LANE WARRANT (LOW SPEED)

401-5aM

REFERENCE SECTION 401.6.1

Euclid Heights Boulevard & Site Access Driveway D

2047 Build WARRANT IS NOT MET



TIME	WESTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	180	15	195	NO
PM	220	27	247	NO

2-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

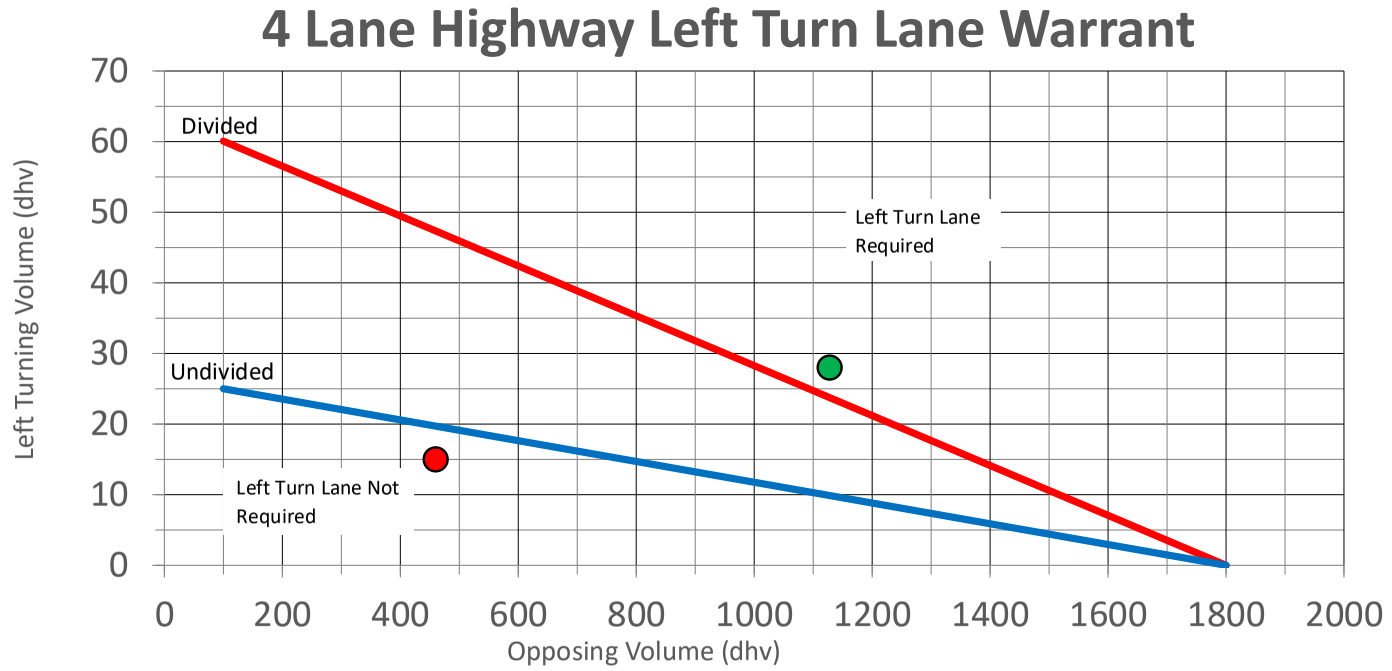
401-6aM

REFERENCE SECTION 401.6.3

Appendix T
ODOT Turn Lane Warrant Graphs (Alternate)

Mayfield Road & Site Access Driveway NB

2030 Build **WARRANT IS MET**



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	15	460	0	460	NO
PM	28	1128	0	1128	YES

4-LANE LEFT TURN LANE WARRANT

REFERENCE SECTION 401.6.1

401-5cM

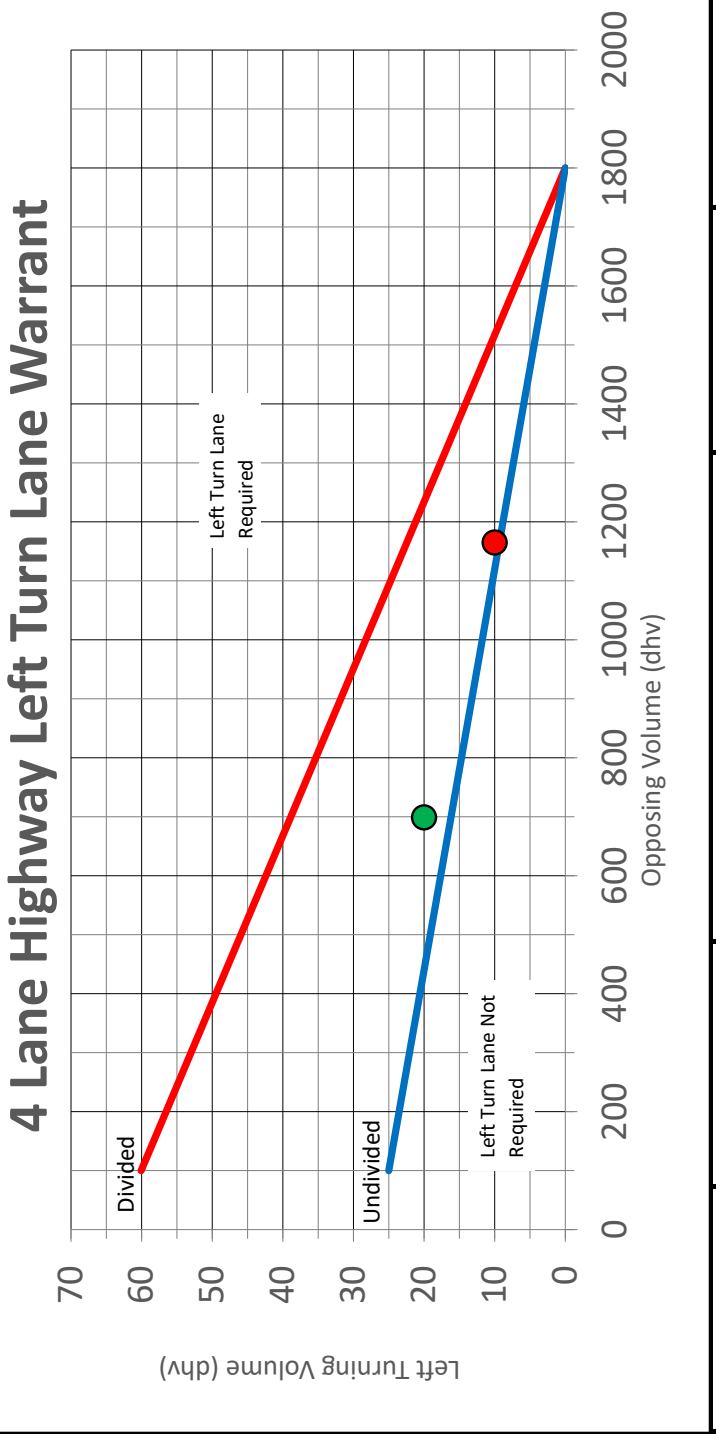
4-LANE LEFT TURN LANE WARRANT

401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Burlington Road SB

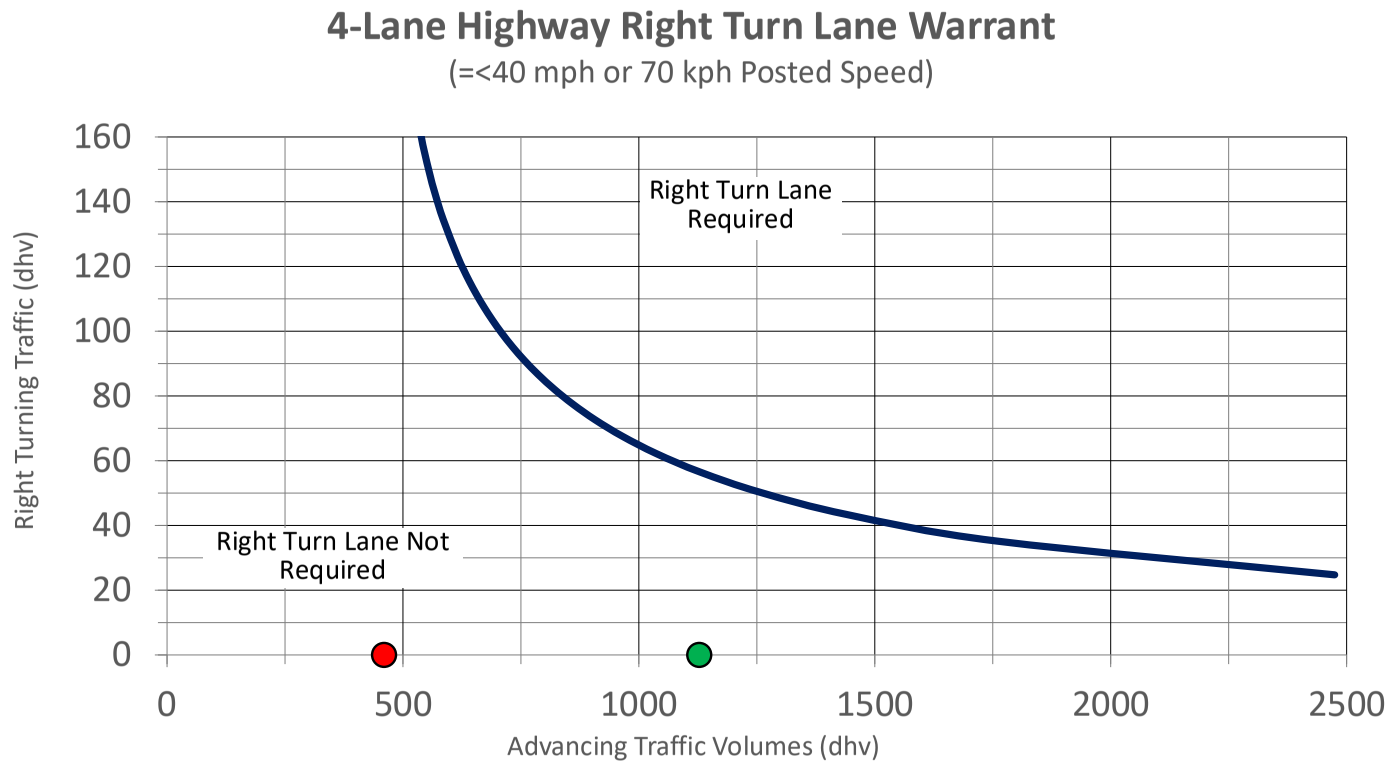
2030 Build WARRANT IS MET



TIME	EASTBOUND	WESTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	10	1155	10	1165	YES
PM	20	689	10	699	YES

Mayfield Road & Site Access Driveway NB

2030 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	0	460	-
PM	1128	0	1128	-

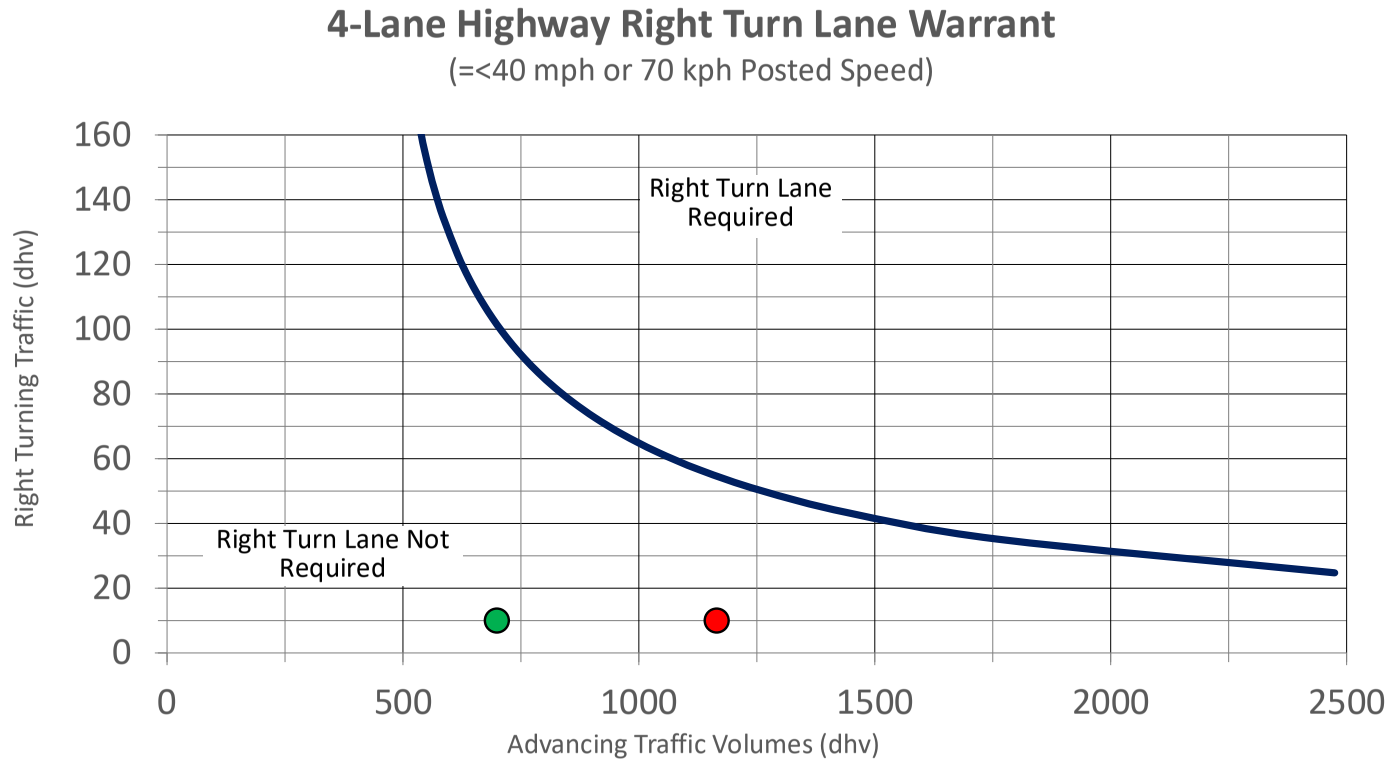
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Burlington Road SB

2030 Build WARRANT IS NOT MET



TIME	WESTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	1155	10	1165	NO
PM	689	10	699	NO

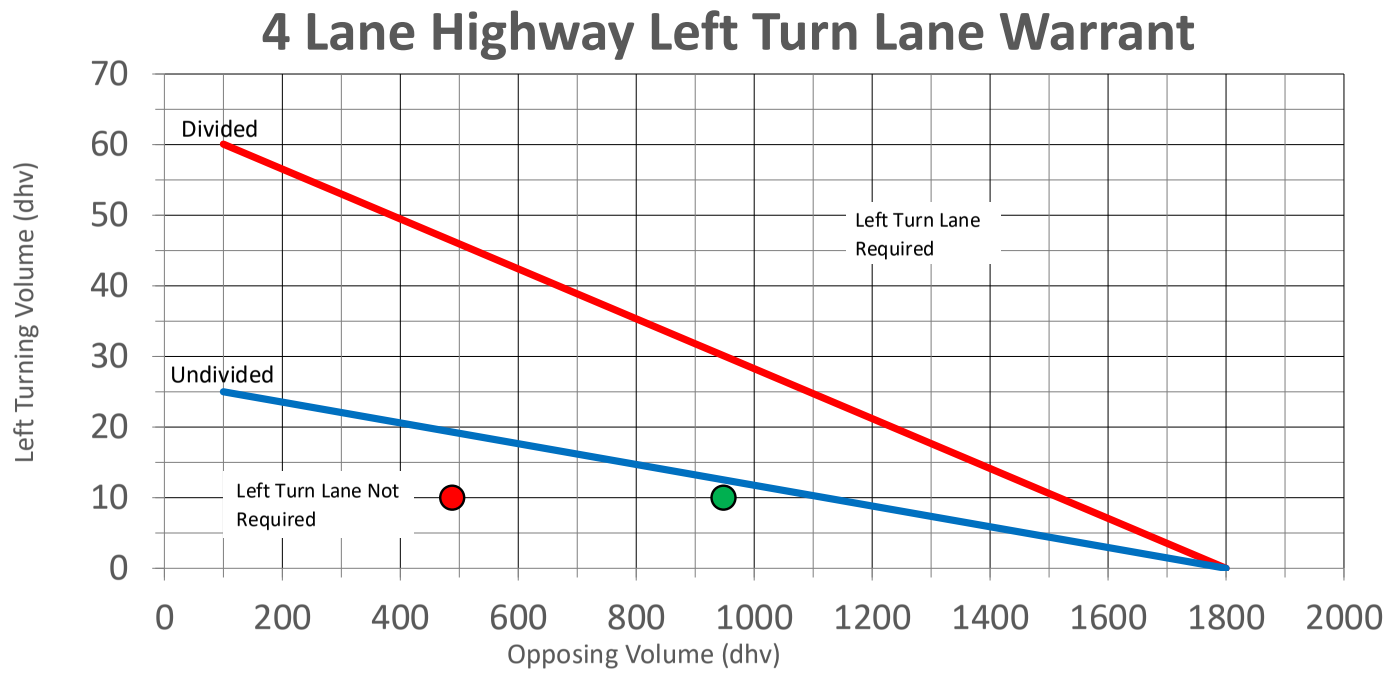
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Site Access Driveway A

2030 Build ALT WARRANT IS NOT MET



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	10	472	16	488	NO
PM	10	927	21	948	NO

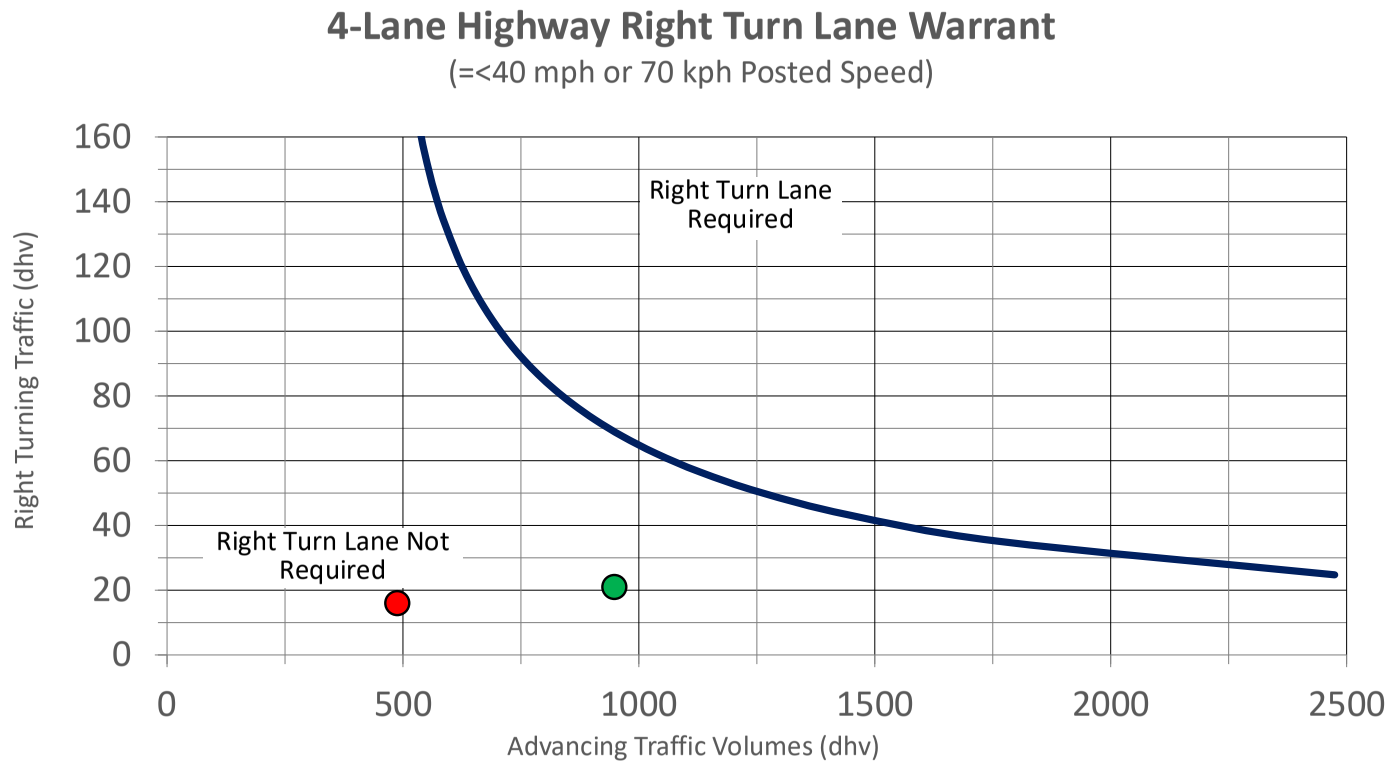
4-LANE LEFT TURN LANE WARRANT

401-5cM

REFERENCE SECTION 401.6.1

Mayfield Road & Site Access Driveway A

2030 Build ALT WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	472	16	488	NO
PM	927	21	948	NO

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

4-LANE LEFT TURN LANE WARRANT

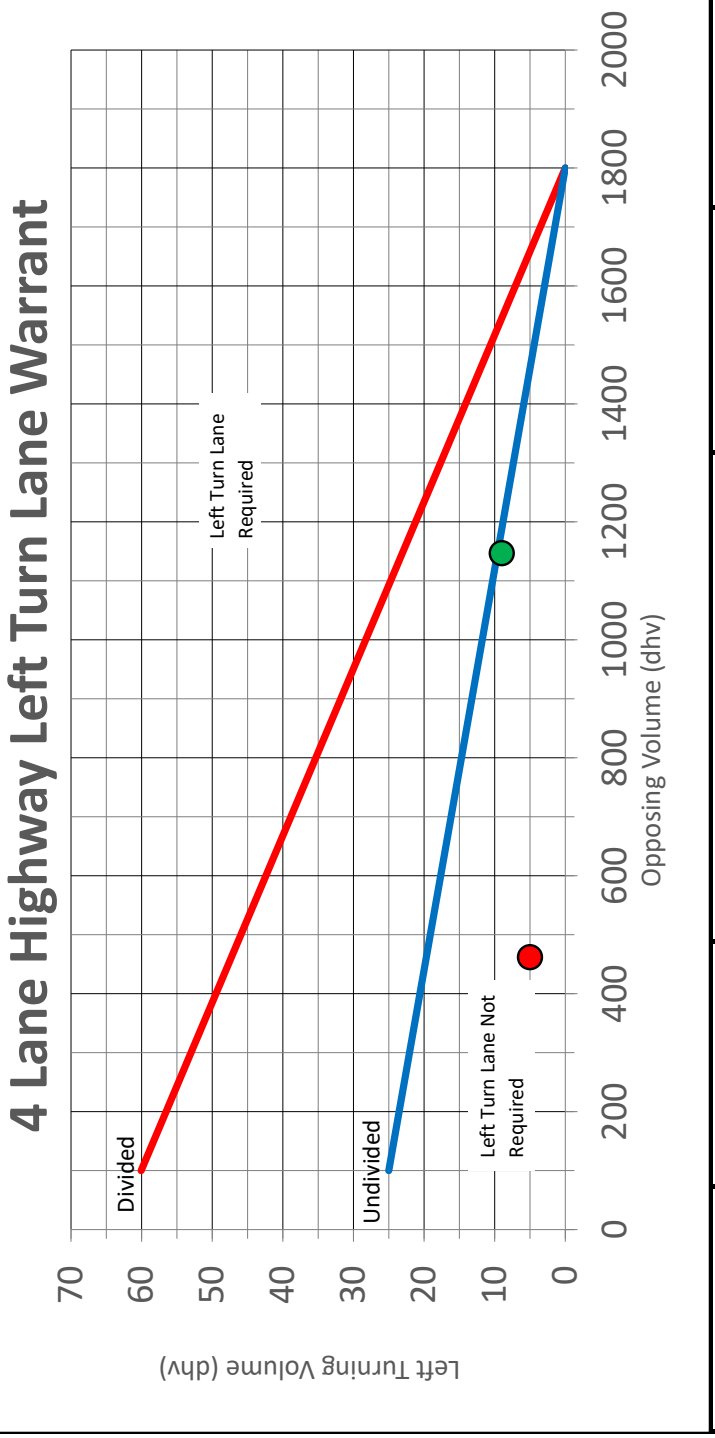
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway B

2030 Build ALT

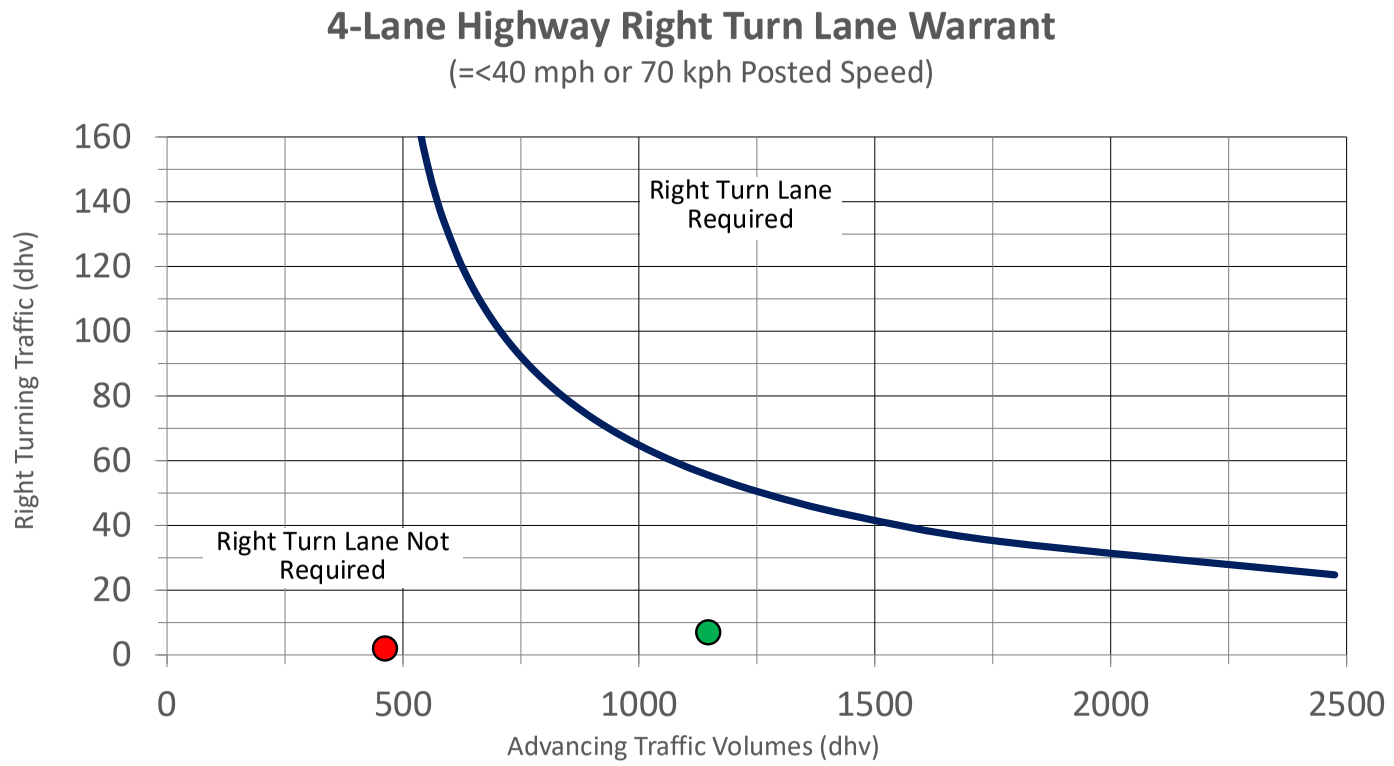
WARRANT IS NOT MET



TIME	WESTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	OPPOSING	WARRANT?
AM	5	460	2	462	NO
PM	9	1140	7	1147	NO

Mayfield Road & Site Access Driveway B

2030 Build ALT **WARRANT IS NOT MET**



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	2	462	NO
PM	1140	7	1147	NO

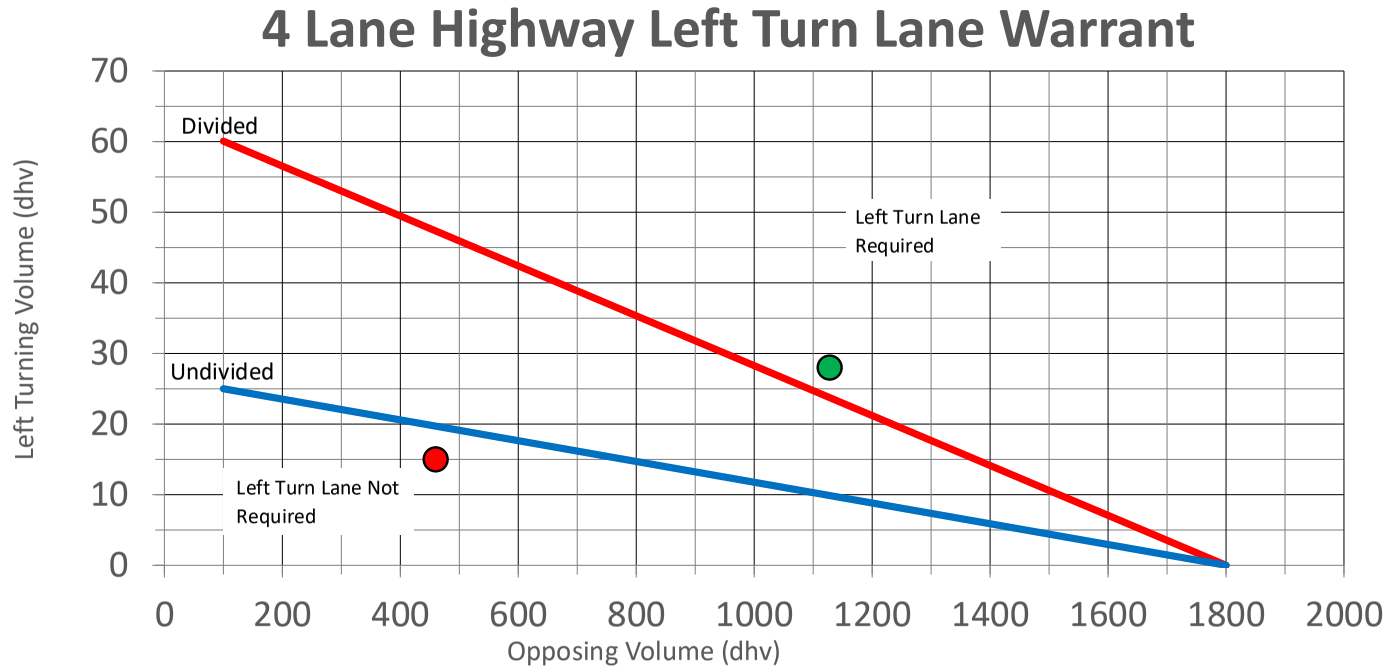
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Site Access Driveway NB

2047 Build **WARRANT IS MET**



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	15	460	0	460	NO
PM	28	1128	0	1128	YES

4-LANE LEFT TURN LANE WARRANT

REFERENCE SECTION 401.6.1

401-5cM

4-LANE LEFT TURN LANE WARRANT

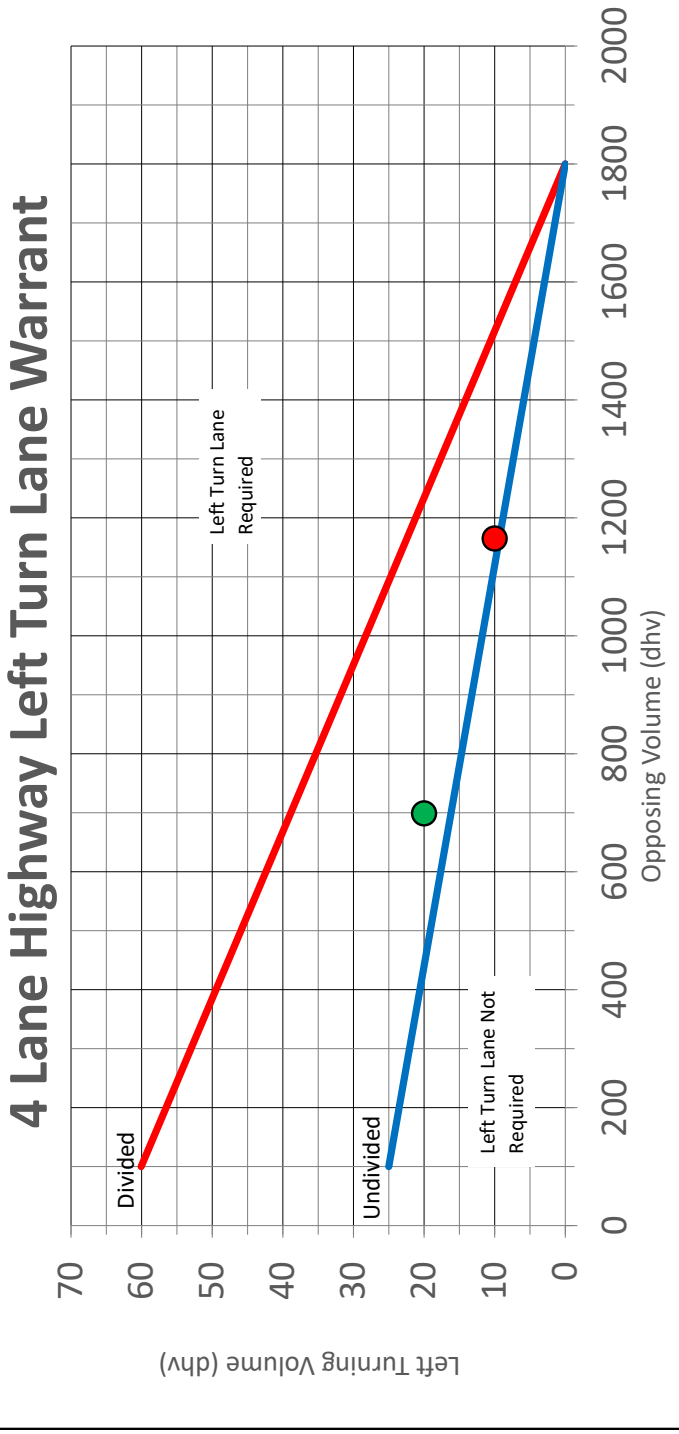
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Burlington Road SB

2047 Build

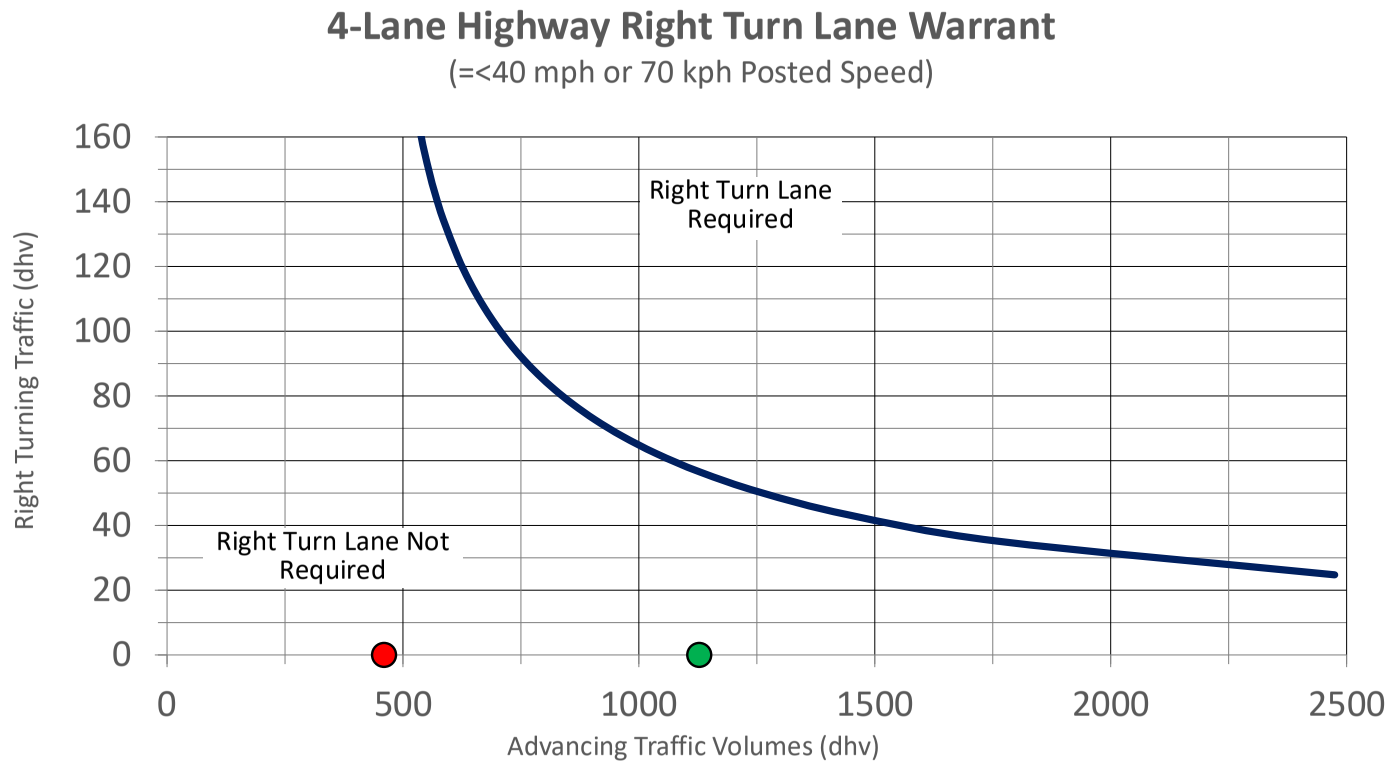
WARRANT IS MET



TIME	EASTBOUND	WESTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	10	1155	10	1165	YES
PM	20	689	10	699	YES

Mayfield Road & Site Access Driveway NB

2047 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	0	460	-
PM	1128	0	1128	-

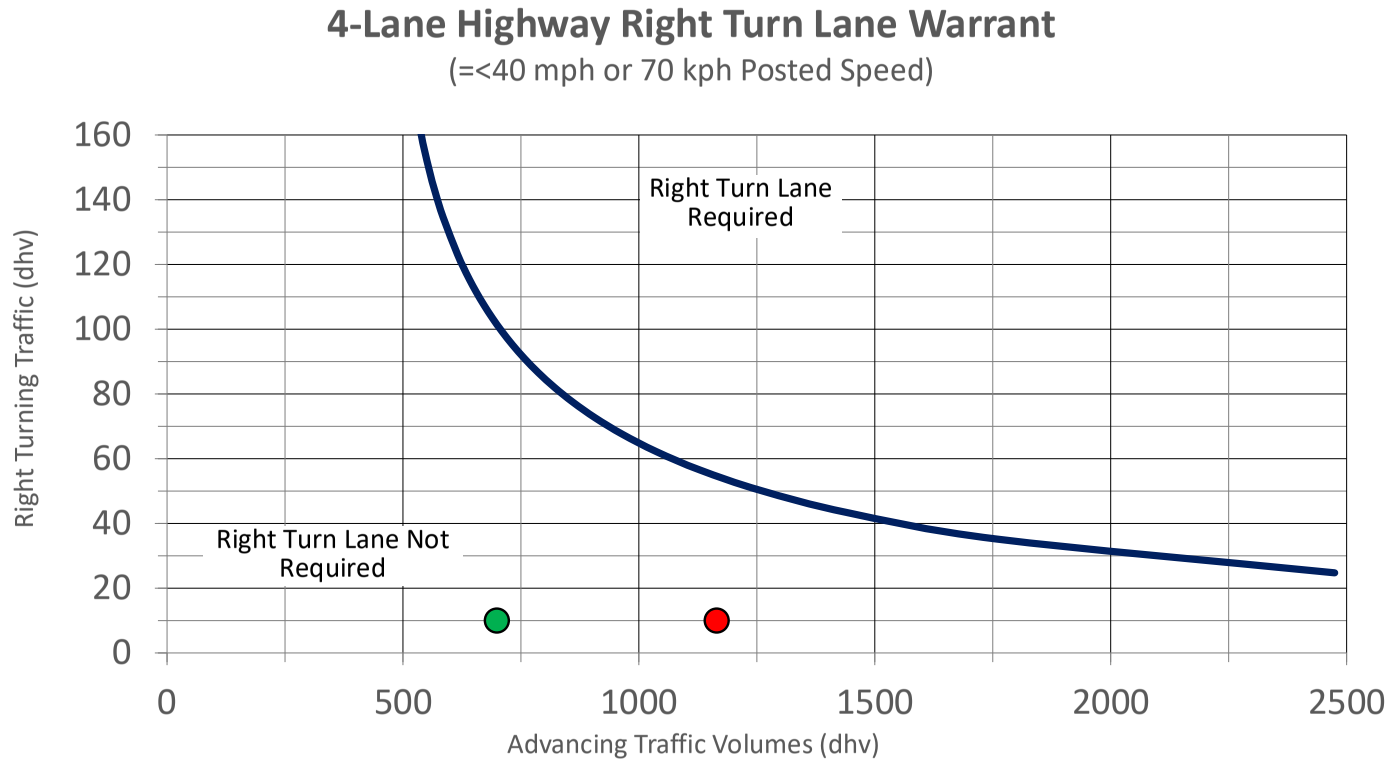
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Burlington Road SB

2047 Build WARRANT IS NOT MET



TIME	WESTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	1155	10	1165	NO
PM	689	10	699	NO

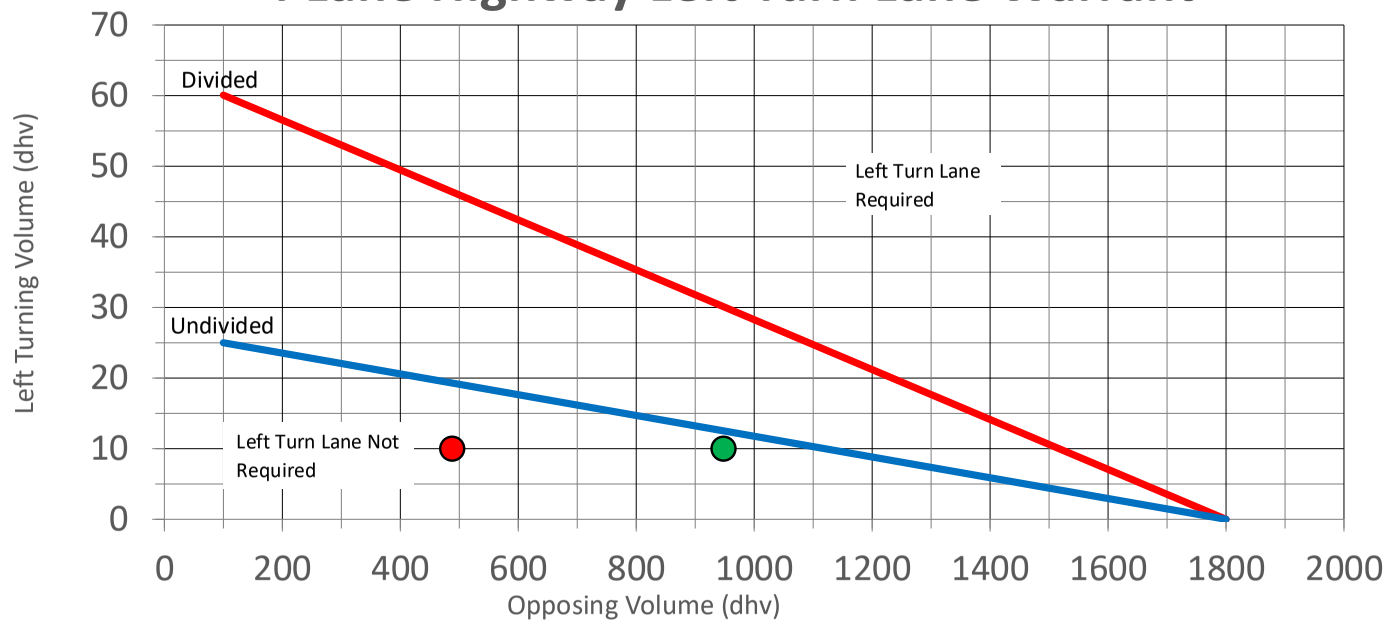
4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

Mayfield Road & Site Access Driveway A

2047 Build WARRANT IS NOT MET



TIME	WESTBOUND	EASTBOUND		OPPOSING	WARRANT?
	LEFT	THRU	RIGHT		
AM	10	472	16	488	NO
PM	10	927	21	948	NO

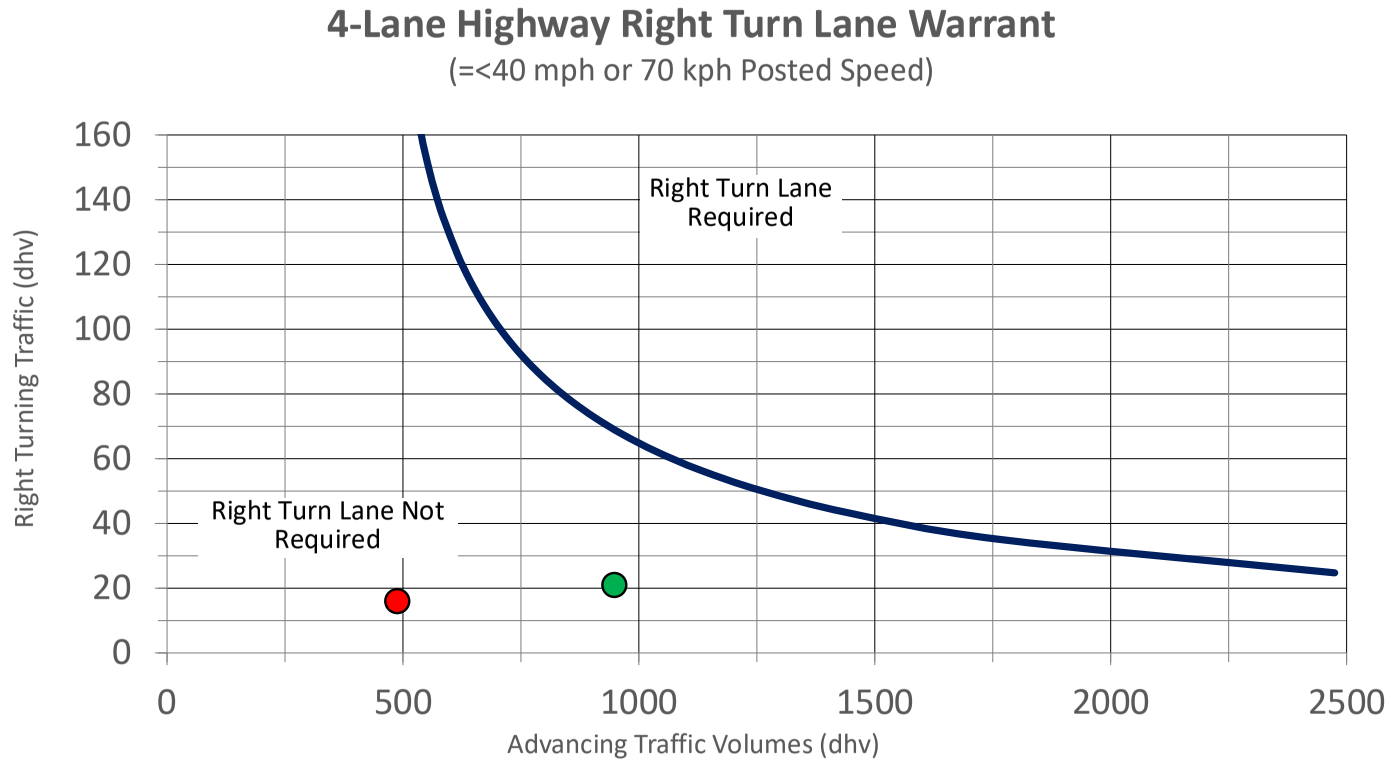
4-LANE LEFT TURN LANE WARRANT

401-5cM

REFERENCE SECTION 401.6.1

Mayfield Road & Site Access Driveway A

2047 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	472	16	488	NO
PM	927	21	948	NO

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

4-LANE LEFT TURN LANE WARRANT

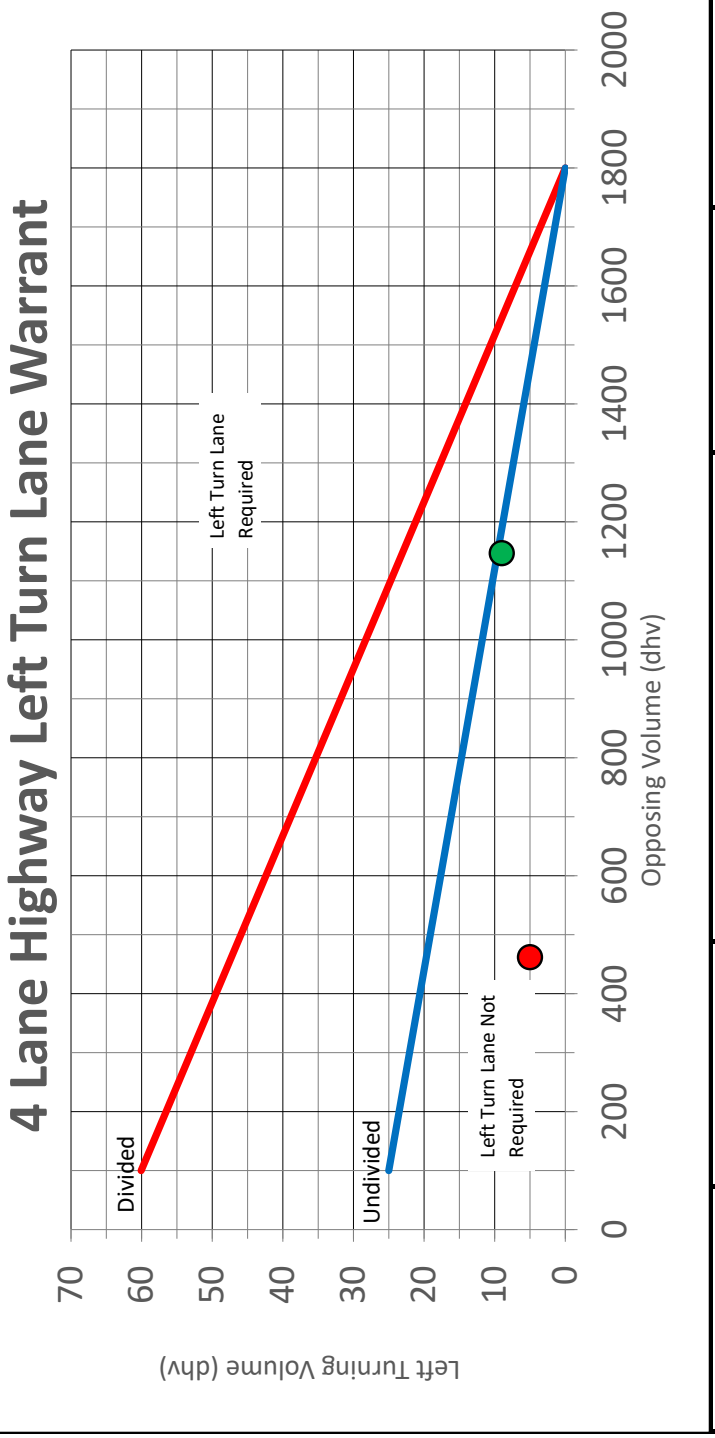
401-5cM

REFERENCE SECTION
401.6.1

Mayfield Road & Site Access Driveway B

2047 Build

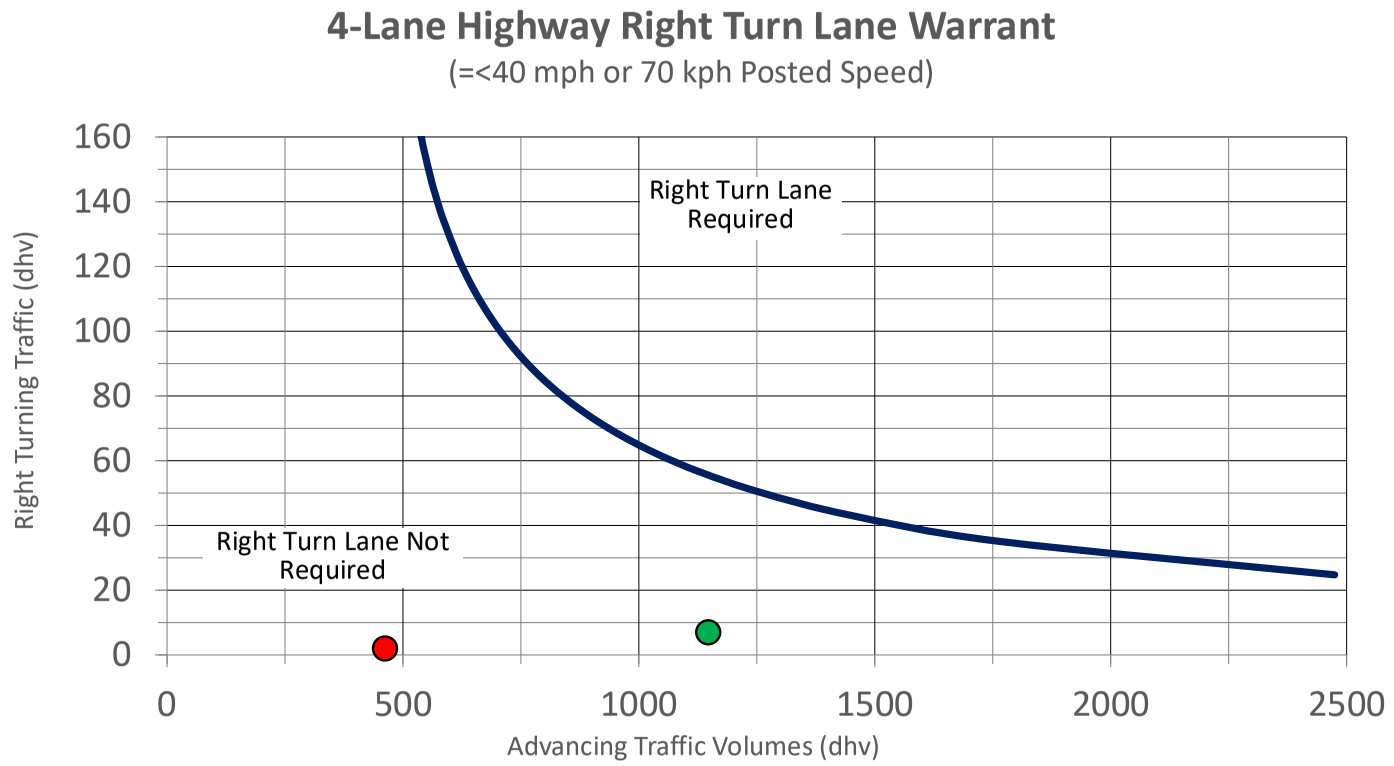
WARRANT IS NOT MET



TIME	WESTBOUND LEFT	EASTBOUND THRU	EASTBOUND RIGHT	OPPOSING	WARRANT?
AM	5	460	2	462	NO
PM	9	1140	7	1147	NO

Mayfield Road & Site Access Driveway B

2047 Build WARRANT IS NOT MET



TIME	EASTBOUND			WARRANT?
	THRU	RIGHT	ADVANCING	
AM	460	2	462	NO
PM	1140	7	1147	NO

4-LANE RIGHT TURN LANE WARRANT (LOW SPEED)

401-6cM

REFERENCE SECTION 401.6.3

TMS Engineers, Inc.



Parking Demand Study

Park Synagogue
Cleveland Heights, Ohio

November 14, 2024

Prepared for:

Friends of Mendelsohn
2306 W. 17th Street, STE 6
Cleveland, Ohio 44113

PARKING DEMAND STUDY

Park Synagogue

Cleveland Heights, Ohio

November 14, 2024

Prepared For:

Friends of Mendelsohn
2306 W. 17th Street, STE 6
Cleveland, Ohio 44113

Prepared By:

TMS Engineers, Inc.
2112 Case Parkway South
Unit #7
Twinsburg, Ohio 44087



REGISTERED ENGINEER NO. E56982
CERTIFICATION NO. 2234

"This document was prepared consistent with local agency requirements and/or applicable guidelines contained in this report."



Table of Contents

Executive Summary ..... iii-iv

Chapter 1 Introduction 1-2

1.1 Purpose of the Report 1

Chapter 2 Area Conditions 3-8

2.1 Transportation Network Study Area 3

2.2 Functional Classification 7

Chapter 3 Projected Parking Demand 9-11

3.1 ITE Parking Generation Manual 9

3.2 Parking Demand Sumary 10

Chapter 4 Conclusions 12-13

List of Figures

Appendix

Figure 1.1 Location Map ..... A

Figure 1.2 Site Plan Existing Conditions ..... A

Figure 1.3 Site Plan Phase 1 - 2027 ..... A

Figure 1.4 Site Plan Full Build - 2030 ..... A

Figure 2.1 Aerial View ..... A

Figure 2.2 Existing Parking Spaces ..... A

Figure 2.3 Functional Classification (ODOT TIMS) ..... A

List of Tables

Table-2.1 Roadway Characteristics 6

Table-2.2 Functional Classification 8

Table-3.1 ITE Land Use Codes 9

Table-3.2 Phase 1 2027 Parking Generation Summary 10

Table-3.3 Phase 2 2030 Parking Generation Summary 10

Table-3.4 Total Parking Generation Summary 11

Appendices

Appendix A - Traffic Volume Figures

Appendix B - Parking Generation Data

Executive Summary

This Parking Study has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The purpose of this study is to adequately assess the parking demand associated with the redevelopment of the site.

Park Synagogue is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. The existing site conditions can be seen in **Figure 1.2, Appendix A.**

Phase 1 of the project is expect to occur in 2027 and is based on the site plan shown in **Figure 1.3, Appendix A** and the following program description:

- **2027 Park Synagogue Reopening**
  - Kangesser Hall and Boiler House demolished.
  - Park Synagogue restored for K-12 and Higher Education Art Instruction.
  - 14 townhouse apartments (28 units) added to the south of the synagogue.
  - Daycare and Mikvah continue with current use.
  - No changes to entry drives.

The second phase of the project is expected to occur by 2030 and is based on the site plan shown in **Figure 1.4, Appendix A** and the following program description:

- **2030 Full Build Park Synagogue Redevelopment**
  - 6 townhouse apartments (12 units) added to the north of the synagogue.
  - 8 townhouse apartments (16 units) added to the southwest of the synagogue.
  - Northeast multifamily building at 5 stories, 100k, 100 units.
  - Northwest multifamily building with new daycare at 4 stories, 100k, 100 units.
  - Daycare demolished and relocated to commercial space below northwest multifamily building.
  - Potential new northeast driveway (C) alignment to Burlington Road.

There are currently 438 parking spaces available within the Park Synagogue site. **Figure 2.3, Appendix A** details the location and distribution of the existing parking spaces within the site.

Parking generation calculations for the development were performed utilizing data contained in the **Parking Generation Manual**. The following table details the expected weekday peak period parking demand for the full redevelopment of the Park Synagogue.

ITE PARKING GENERATION			PEAK PERIOD PARKING DEMAND		
			MONDAY - FRIDAY		
ITE CODE	DESCRIPTION	SIZE	WEIGHTED AVERAGE	FITTED CURVE	85TH PERCENTILE
215	Single Family Attached Housing	28 Units	16	19	23
550	College / University	50 Students	39	40	34
215	Single Family Attached Housing	12 Units	17	19	27
215	Single Family Attached Housing	16 Units	23	25	36
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
TOTAL PARKING DEMAND			**341**	**329**	**410**

Using the ITE weighted average rate, the calculated peak parking demand was found to be 341 spaces for the full redevelopment of the site as detailed in *Table 3.1*. As shown in *Table 3.2* above, the ITE data for the 85th Percentile Peak Period parking demand is 410 parking spaces.

Based on the ITE parking demand analysis, it is anticipated that the proposed redevelopment of the Park Synagogue site has a projected parking demand of 410 parking space at its peak utilization on a typical weekday.

Chapter 1
Introduction

1.1 Purpose of Report

This Parking Study has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The redevelopment project is intended to transform Park into an intergenerational campus, serving a broad civic purpose with multi-family and age in-place housing, a public park, and a new home for arts and cultural institutions.

Park is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. **Figure 1.1, Appendix A** shows the location of the development. The existing site conditions can be seen in **Figure 1.2, Appendix A.**

The redevelopment of the site is expected to be occur in two phases. Phase 1 of the redevelopment is expected to occur by the year 2027 and full build of the redevelopment is expected to occur by the year 2030.

Phase 1 of the project will be based the site plan shown in **Figure 1.3, Appendix A** and the following program description:

- **2027 Park Synagogue Reopening**
  - Kangesser Hall and Boiler House demolished.
  - Park Synagogue restored for K-12 and Higher Education Art Instruction.
  - 14 townhouse apartments (28 units) added to the south of the synagogue.
  - Daycare and Mikvah continue with current use.
  - No changes to entry drives.

The site plan for the development shows that the four existing driveways will remain as site access driveways under the future 2027 conditions. There are three site access driveways along the south side of Mayfield Road and one access driveway on the north side of Euclid Heights Boulevard. All driveways are full access locations that permit all ingress and egress turn movements.

The second phase of the project that will reach full build conditions will be based the site plan shown in **Figure 1.4, Appendix A** and the following program description:

- **2030 Full Build Park Synagogue Redevelopment**
  - 6 townhouse apartments (12 units) added to the north of the synagogue.
  - 8 townhouse apartments (16 units) added to the southwest of the synagogue.
  - Northeast multifamily building at 5 stories, 100k, 100 units.
  - Northwest multifamily building with new daycare at 4 stories, 100k, 100 units.
  - Daycare demolished and relocated to commercial space below northwest multifamily building.
  - Potential new northeast driveway (C) alignment to Burlington Road.

The site plan for the development shows that the development will continue to be served by four access locations. There are three site access driveways along the south side of Mayfield Road and one site access driveway on the north side of Euclid Heights Boulevard. All access driveways will continue to permit all ingress and egress turn movements. The full build conditions will consider the relocation of the east most driveway (C) along Mayfield Road to align with Burlington Road.

This study is structured for the following purpose;

- to adequately assess the parking demand associated with the redeveloped site.

This study documents the methodologies, findings and conclusions of the analysis, including the basis for all assumptions, traffic parameters utilized and conclusions reached.

Chapter 2
Area Conditions

2.1 Transportation Network Study Area

The following existing intersections provide access to the Park Synagogue site and the available on-site parking:

A. Mayfield Road and West Driveway
B. Mayfield Road and Center Driveway
C. Mayfield Road and East Driveway
D. Euclid Heights Boulevard and South Driveway

The site access driveways will be labeled and referred to as listed above throughout this report.

An aerial view of the of the study area can be seen in **Figure 2.1 Appendix A.**

There are currently 438 parking spaces available within the Park Synagogue site. **Figure 2.2, Appendix A** details the location and distribution of the existing parking spaces within the site.

Roadway & Intersection Characteristics

The following section details the lane use and traffic control for the site access intersections.

A. MAYFIELD ROAD & WEST DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lane**s**

West Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the West Driveway.

B. MAYFIELD ROAD & CENTER DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lane**s**

Center Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the Center Driveway.

C. MAYFIELD ROAD & EAST DRIVEWAY

Mayfield Road West Approach
- 1 Exclusive Through Lane
- 1 Shared Through/Right Turn Lane

Mayfield Road East Approach
- 1 Two-Way Left Turn Lane
- 2 Exclusive Through Lanes

East Driveway South Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the south approach. Traffic on the south approach is required to stop prior to proceeding to turn onto Mayfield Road. Traffic traveling on Mayfield Road is not required to stop at the intersection, however westbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the East Driveway.

D. EUCLID HEIGHTS BOULEVARD & SOUTH DRIVEWAY

Euclid Heights Boulevard West Approach
- 1 Shared Through/Left Turn Lane

Euclid Heights Boulevard East Approach
- 1 Shared Through/Right Turn Lane

South Driveway North Approach
- 1 Shared Left/Right Turn Lane

The intersection is controlled by a stop sign on the north approach. Traffic on the north approach is required to stop prior to proceeding to turn onto Euclid Heights Boulevard. Traffic traveling on Euclid Heights Boulevard is not required to stop at the intersection, however eastbound left-turning vehicles are required to wait for a safe gap in oncoming traffic to turn left onto the South Driveway.

The following table summarizes the primary characteristics of the study area roadways and access locations:

Table 2.1 Roadway Characteristics

INTERSECTION		APPROACH	LANE USE		SPEED LIMIT	TRAFFIC CONTROL
#	ROADWAYS		THROUGH/ SHARED LANES	TURN LANES		
A	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	West Driveway	South	1	-	NP	
B	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	Center Driveway	South	1	-	NP	
C	Mayfield Road	East	2	1 LT	35	Stop Controlled
	Mayfield Road	West	2	-	35	
	East Driveway	South	1	-	NP	
D	Euclid Heights Boulevard	East	1	-	35	Stop Controlled
	Euclid Heights Boulevard	West	1	-	35	
	South Driveway	North	1	-	NP	

NP-Not Posted

2.2 Functional Classification

The Ohio Department of Transportation functionally classifies roadways to help define a roadway's characteristics as well as identify roadways that are eligible for federal funds. Functional classification is the grouping of roads, streets, and highways in a hierarchy based on the type of highway service they provide. Generally, streets and highways perform two types of service. They provide either traffic mobility or land access and can be ranked in terms of the proportion of service they provide.

The functional classification as determined by ODOT will be used in this report to apply growth and design hour factors to the study area roadways for use in forecasting the future traffic volumes in the study area. These factors are determined using data, guidelines, and methodology supplied by ODOT. The methods and the corresponding data are based on the roadways assigned functional classification. The ODOT methods for forecasting future traffic volumes are a recognized traffic engineering standard in the State of Ohio.

Roadways that are not listed as having a functional classification can be assigned into one of two categories. The first category is a local roadway and the second category is that of an access drive.

The roadway functional classifications are assigned either an urban or rural designation.

The ODOT the urban/rural designation and functional classification of the roadways in the study area can currently be found using the ODOT Transportation Information Mapping System (TIMS). TIMS is ODOT's web-mapping portal where information about Ohio's transportation system can be found. TIMS can currently be found at the following web address:

https://gis.dot.state.oh.us/tims/

The urban and rural designation for the study area roadways can be found under the Boundaries tab and the selection of the "Census Urban Areas" layer.

The roadway functional classification can be found under the Roadway Information tab and the selection of the "Functional Classification" layer.

The following table lists the study area roadways that have an assigned functional classification as determined by ODOT and local government entities.

Table 2.2 Functional Classification

ROADWAY	AREA	FC #	CLASSIFICATION
Mayfield Road	Urban	3	Principle Arterial
Burlington Road	Urban	7	Local Roadway
Euclid Heights Boulevard	Urban	5	Major Collector
West Driveway	Urban	7	Local Driveway
Center Driveway	Urban	7	Local Driveway
East Driveway	Urban	7	Local Driveway
South Driveway	Urban	7	Local Driveway

Figure 2.3, Appendix A illustrates the section of the functional classification map for the study area.

Chapter 3
Projected Parking Demand

3.1 ITE Parking Generation Manual

The most widely accepted method of determining the amount of parking demand for a proposed development is to compare the proposed site with existing facilities of the same use. In order to estimate the parking demand for the proposed redevelopment of the Park Synagogue site, the average and 85 percentile demand levels were calculated using data and procedures found in the Institute of Transportation Engineers (ITE) **"Parking Generation" Manual, Sixth Edition**.

The following table details the development land uses from the site plans (**Figures 1.3 & 1.4**) and the corresponding **Parking Generation Manual** land uses that will be used to forecast the site generated parking demand:

Table 3.1 ITE Land Use Codes

SITE PLAN DESCRIPTION	SIZE	ITE CODE	ITE DESCRIPTION
Park Synagogue Restoration	50 Students	550	University / College
South	28 Units	215	Single Family Attached Housing
Southwest Townhomes	16 Units	215	Single Family Attached Housing
North Townhomes	12 Units	215	Single Family Attached Housing
Northeast Multifamily Building	100 Units	221	Multifamily Housing (Mid-Rise)
Northwest Multifamily Building	100 Units	221	Multifamily Housing (Mid-Rise)

The Institute of Transportation Engineers (ITE) provides a web-based application (**ITEParkGen**) that will be used to calculate the expected future driveway trips using the data from the **Parking Generation Manual** [8]. The **ITEParkGen** web-based app can be accessed through a subscription at the following address:

https://iteparkgen.org/

3.2 Parking Demand Summary

Parking generation calculations for the development were performed utilizing data contained in the **Parking Generation Manual**. The following table details the expected weekday peak period parking demand for each phase of the redevelopment. Copies of the parking generation worksheets can be found in **Appendix B**.

Table 3.2 Phase 1 2027 Parking Generation Summary

ITE PARKING GENERATION			PEAK PERIOD PARKING DEMAND		
			MONDAY - FRIDAY		
ITE CODE	DESCRIPTION	SIZE	WEIGHTED AVERAGE	FITTED CURVE	85TH PERCENTILE
215	Single Family Attached Housing	28 Units	16	19	23
550	College / University	50 Students	39	40	34
	TOTAL PARKING DEMAND		**55**	**59**	**57**

Table 3.3 Phase 2 2030 Parking Generation Summary

ITE PARKING GENERATION			PEAK PERIOD PARKING DEMAND		
			MONDAY - FRIDAY		
ITE CODE	DESCRIPTION	SIZE	WEIGHTED AVERAGE	FITTED CURVE	85TH PERCENTILE
215	Single Family Attached Housing	12 Units	17	19	27
215	Single Family Attached Housing	16 Units	23	25	36
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
	TOTAL PARKING DEMAND		**286**	**270**	**353**

The following table details the expected weekday peak period parking demand for full build out of the proposed redevelopment.

Table 3.4 Total Parking Generation Summary

ITE PARKING GENERATION			PEAK PERIOD PARKING DEMAND		
			MONDAY - FRIDAY		
ITE CODE	DESCRIPTION	SIZE	WEIGHTED AVERAGE	FITTED CURVE	85TH PERCENTILE
215	Single Family Attached Housing	28 Units	16	19	23
550	College / University	50 Students	39	40	34
215	Single Family Attached Housing	12 Units	17	19	27
215	Single Family Attached Housing	16 Units	23	25	36
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
TOTAL PARKING DEMAND			**341**	**329**	**410**

Using the ITE weighted average rate, the calculated peak parking demand was found to be 341 spaces for the full redevelopment of the site as detailed in *Table 3.1*. As shown in *Table 3.2* above, the ITE data for the 85th Percentile Peak Period parking demand is 410 parking spaces.

Based on the ITE parking demand analysis, it is anticipated that the proposed redevelopment of the Park Synagogue site has a projected parking demand of 410 parking space at its peak utilization on a typical weekday.

Chapter 4
Conclusions

Based on the results of the analyses, we offer the following conclusions:

4.1 This Parking Study has been prepared at the request of Friends of Mendelsohn for the redevelopment of the Park Synagogue (Park). The purpose of this study is to adequately assess the parking demand associated with the redevelopment of the site.

4.2 Park Synagogue is located on the south side of Mayfield Road between Lee Road to the west and South Taylor Road to the east in the City of Cleveland Heights, Cuyahoga County, Ohio. The existing site conditions can be seen in **Figure 1.2, Appendix A.**

4.3 Phase 1 of the project is expect to occur in 2027 and is based on the site plan shown in **Figure 1.3, Appendix A** and the following program description:

- **2027 Park Synagogue Reopening**
  - Kangesser Hall and Boiler House demolished.
  - Park Synagogue restored for K-12 and Higher Education Art Instruction.
  - 14 townhouse apartments (28 units) added to the south of the synagogue.
  - Daycare and Mikvah continue with current use.
  - No changes to entry drives.

4.4 The second phase of the project is expected to occur by 2030 and is based on the site plan shown in **Figure 1.4, Appendix A** and the following program description:

- **2030 Full Build Park Synagogue Redevelopment**
  - 6 townhouse apartments (12 units) added to the north of the synagogue.
  - 8 townhouse apartments (16 units) added to the southwest of the synagogue.
  - Northeast multifamily building at 5 stories, 100k, 100 units.
  - Northwest multifamily building with new daycare at 4 stories, 100k, 100 units.
  - Daycare demolished and relocated to commercial space below northwest multifamily building.
  - Potential new northeast driveway (C) alignment to Burlington Road.

4.5 There are currently 438 parking spaces available within the Park Synagogue site. **Figure 2.3, Appendix A** details the location and distribution of the existing parking spaces within the site.

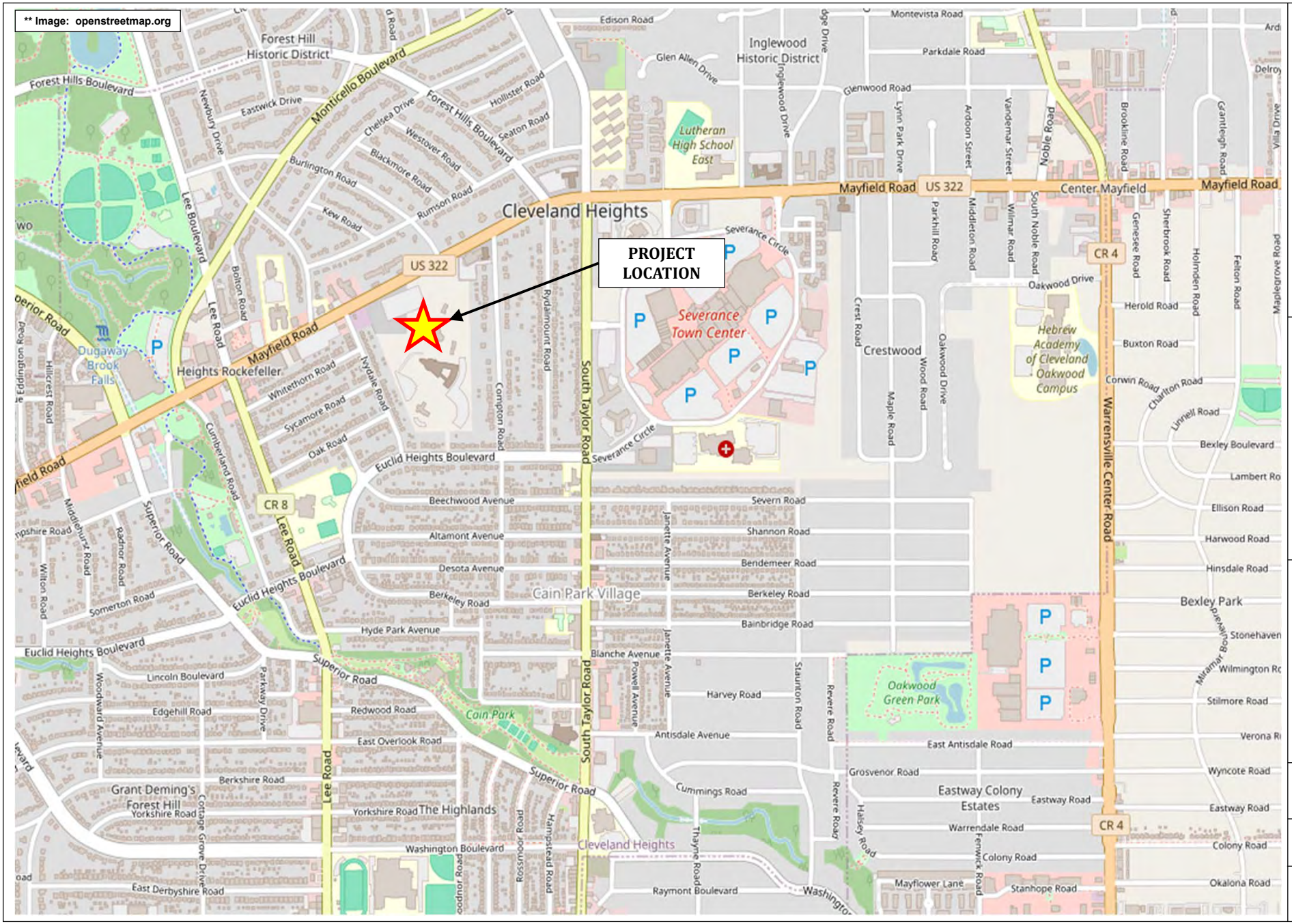
4.6 Parking generation calculations for the development were performed utilizing data contained in the **Parking Generation Manual**. The following table details the expected weekday peak period parking demand for the full redevelopment of the Park Synagogue.

ITE PARKING GENERATION			PEAK PERIOD PARKING DEMAND		
ITE CODE	DESCRIPTION	SIZE	MONDAY - FRIDAY		
			WEIGHTED AVERAGE	FITTED CURVE	85TH PERCENTILE
215	Single Family Attached Housing	28 Units	16	19	23
550	College / University	50 Students	39	40	34
215	Single Family Attached Housing	12 Units	17	19	27
215	Single Family Attached Housing	16 Units	23	25	36
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
221	Multifamily Housing (Mid-Rise)	100 Units	123	113	145
TOTAL PARKING DEMAND			**341**	**329**	**410**

4.7 Using the ITE weighted average rate, the calculated peak parking demand was found to be 341 spaces for the full redevelopment of the site as detailed in *Table 3.1*. As shown in *Table 3.2* above, the ITE data for the 85th Percentile Peak Period parking demand is 410 parking spaces.

4.8 Based on the ITE parking demand analysis, it is anticipated that the proposed redevelopment of the Park Synagogue site has a projected parking demand of 410 parking space at its peak utilization on a typical weekday.

Appendix A
Figures



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

Park Synagogue
Parking Study
Cleveland Heights, Ohio

Location Map

NORTH
NOT TO SCALE

FIGURE
1.1

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

Park Synagogue
Parking Study
Cleveland Heights, Ohio

Site Plan
Existing Conditions

NORTH
NOT TO SCALE

FIGURE
1.2

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

Park Synagogue
Parking Study
Cleveland Heights, Ohio

Site Plan
Phase 1 – 2027

NORTH
NOT TO SCALE

FIGURE
1.3

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

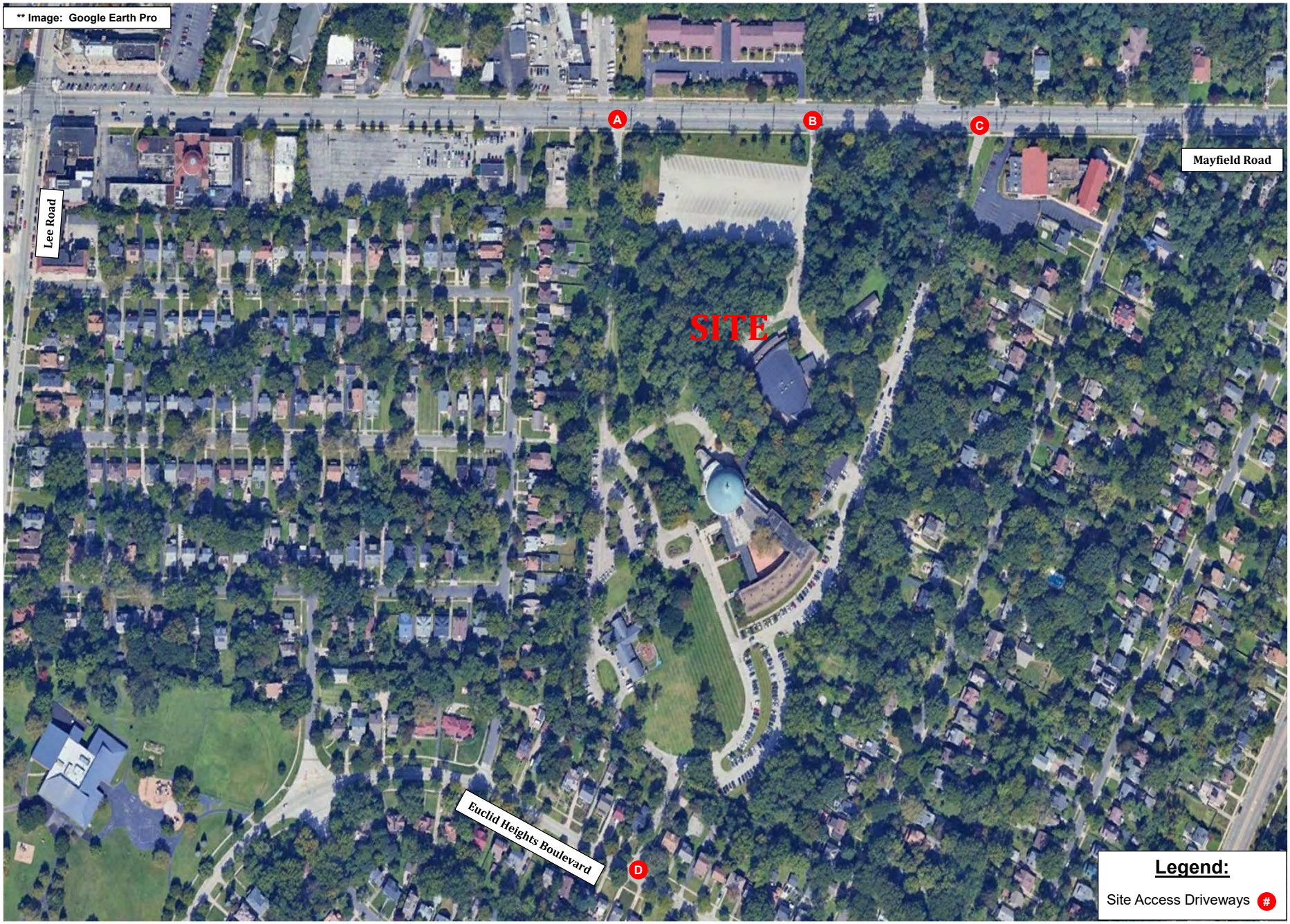
Park Synagogue
Parking Study
Cleveland Heights, Ohio

Site Plan
Full Build - 2030

NORTH
NOT TO SCALE

FIGURE
1.4

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

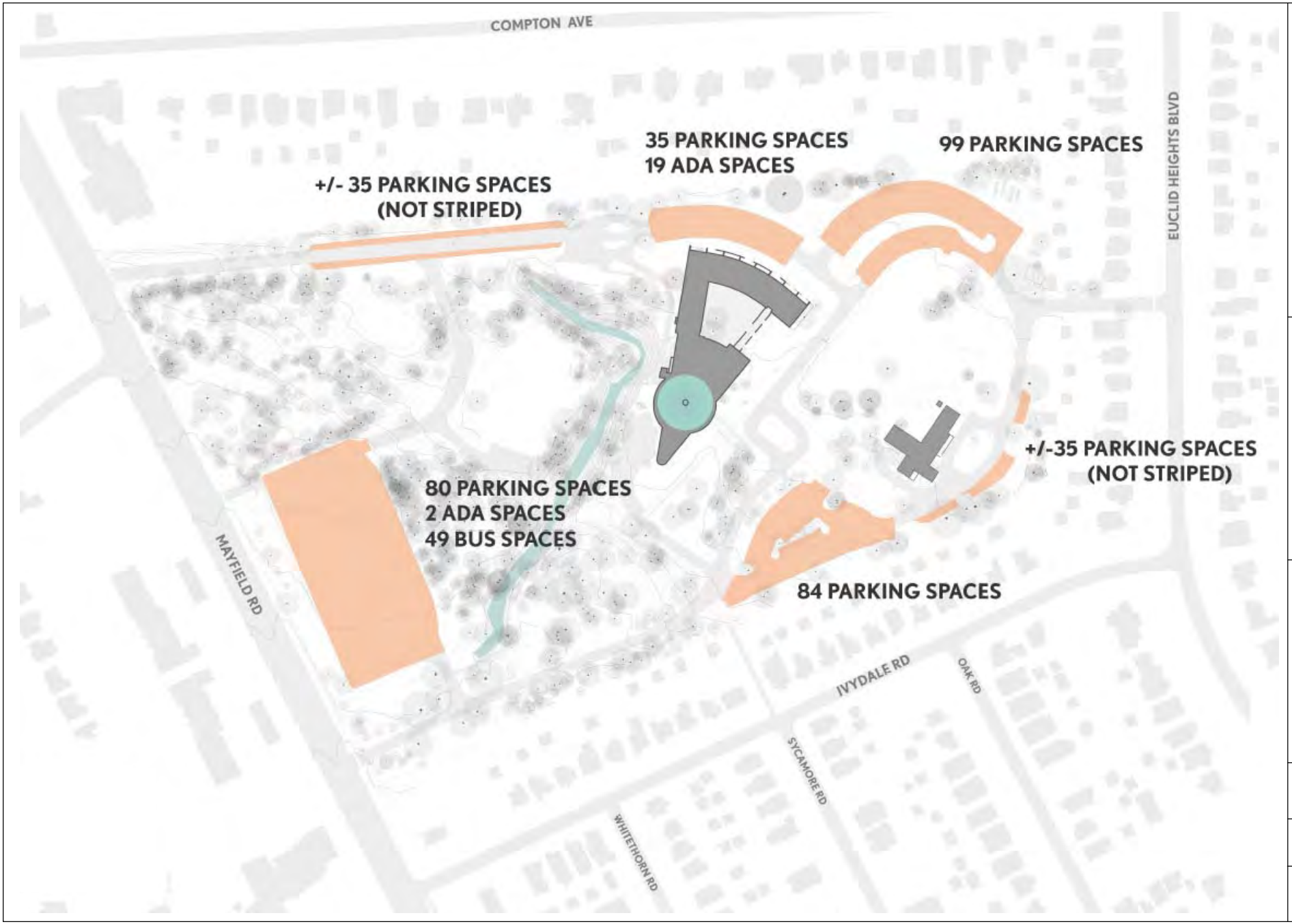
Park Synagogue
Parking Study
Cleveland Heights, Ohio

Aerial View

NORTH
NOT TO SCALE

FIGURE
2.1

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

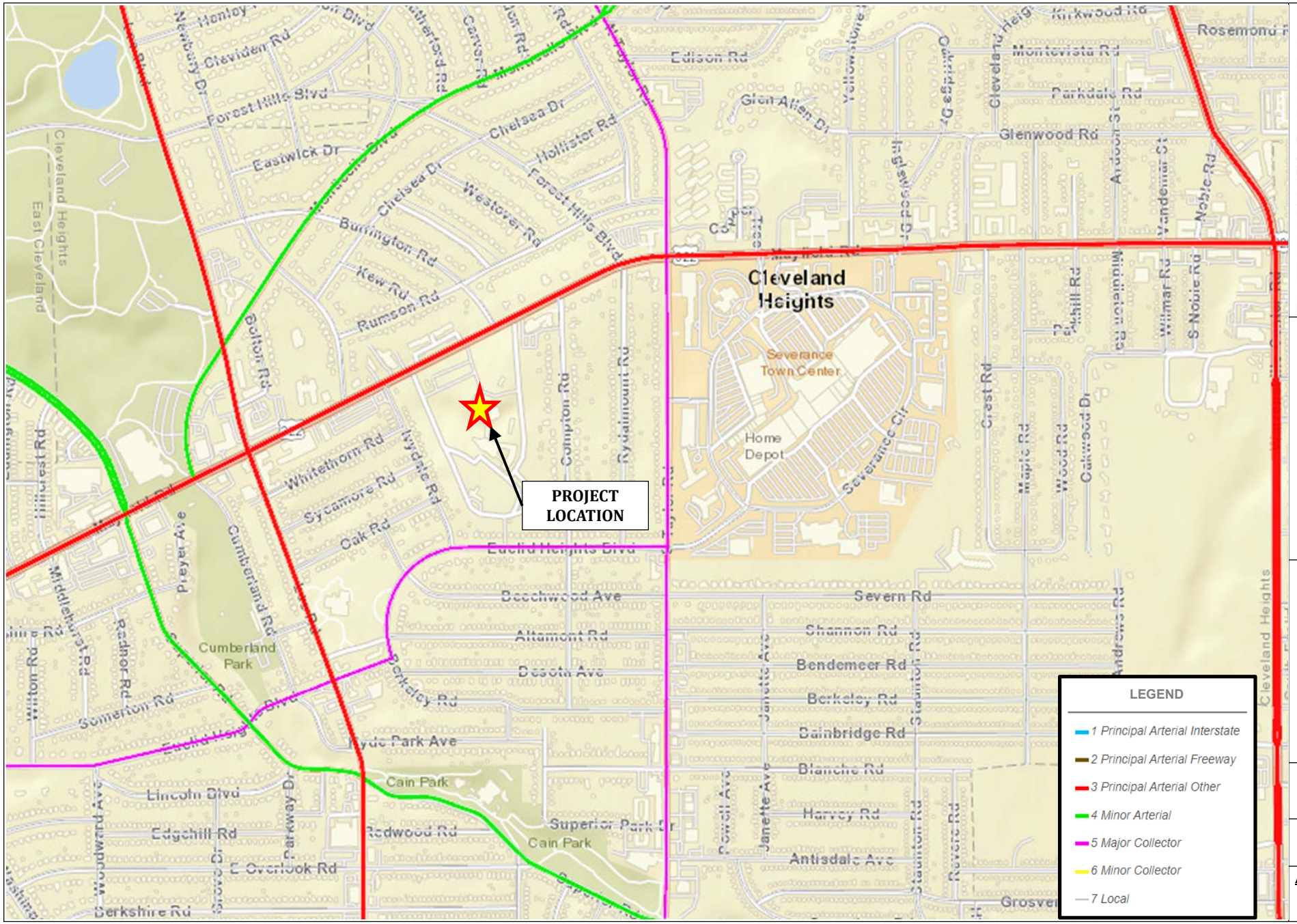
Park Synagogue
Parking Study
Cleveland Heights, Ohio

Existing Parking Spaces

NORTH
NOT TO SCALE

FIGURE
2.2

APPENDIX
A



TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

Park Synagogue Parking Study
Cleveland Heights, Ohio

Functional Classification (ODOT TIMS)

NORTH
NOT TO SCALE

FIGURE
2.3

APPENDIX
A

Appendix B
Parking Generation Data

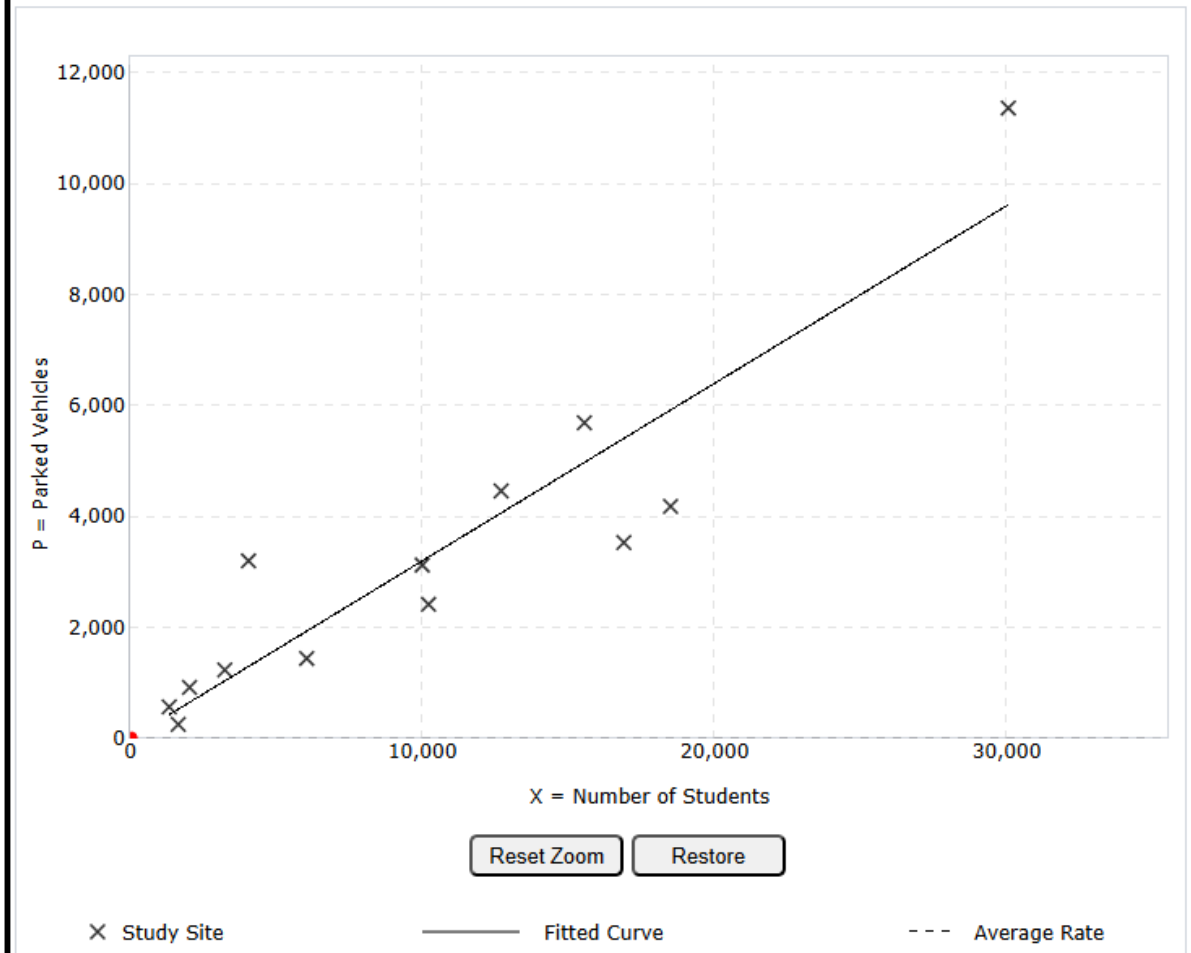
UNIVERSITY/COLLEGE – ITE CODE #550

Size: 50 Students

WEEKDAY

(Monday – Friday)

Data Plot and Equation



DATA STATISTICS

Land Use:
University/College (550) Click for Description and Data Plots

Independent Variable:
Students

Time Period:
Weekday (Monday - Friday)

Setting/Location:
General Urban/Suburban

Number of Studies:
13

Avg. Num. of Students:
10176

Average Rate:
0.32

Range of Rates:
0.16 - 0.79

33rd / 85th Percentile:
0.24 / 0.45

95% Confidence Interval:
***

Standard Deviation:
0.12

Coefficient of Variation:
38%

Fitted Curve Equation:
P = 0.32(X) + 2.78

R^2:
0.86

Calculated Parking Demand:
Weighted Average: 16
Fitted Curve: 19
85th Percentile: 23

Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

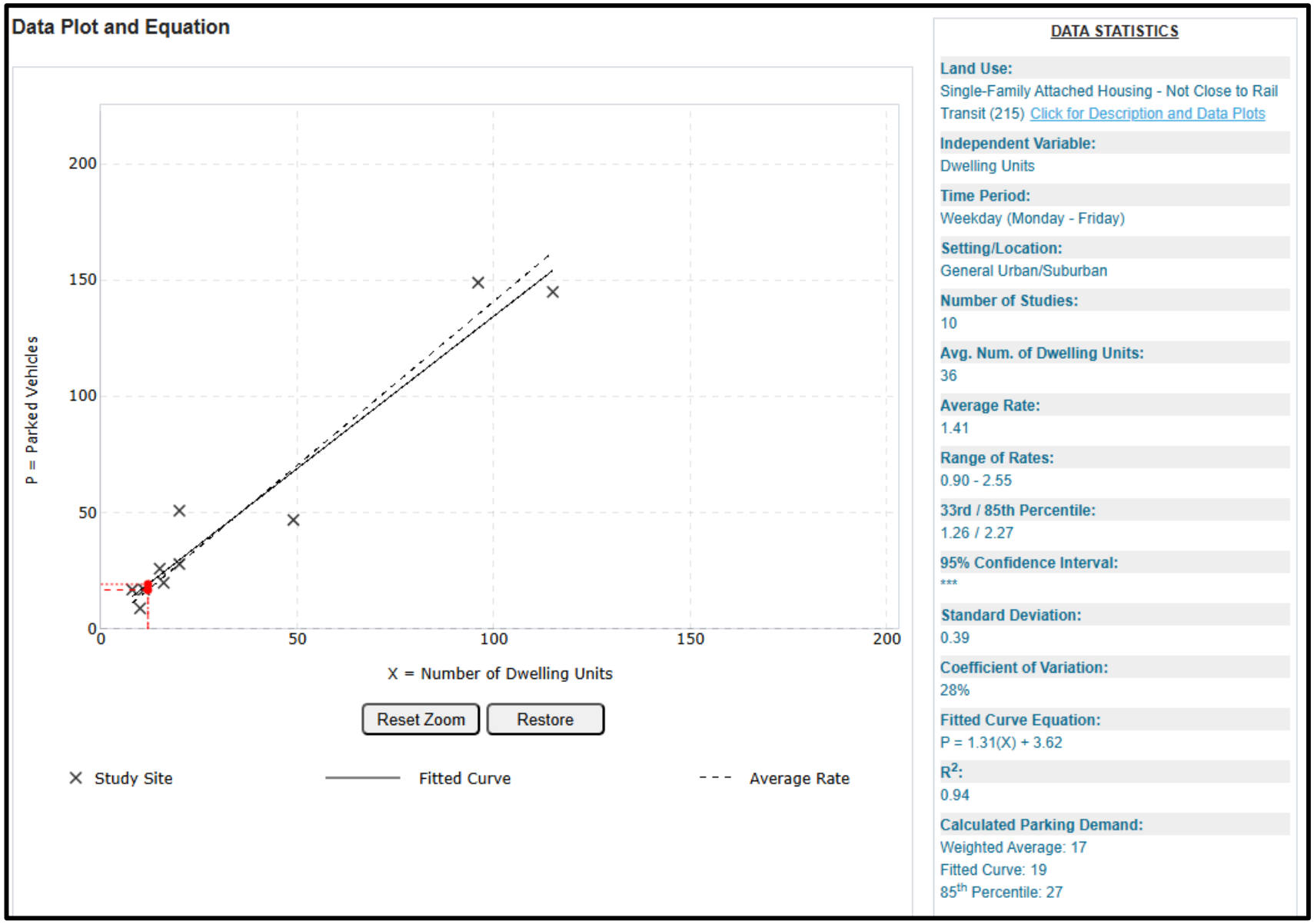
Date: 10/14/24

SINGLE-FAMILY ATTACHED HOUSING – ITE CODE #215

Size: 12 Units

WEEKDAY

(Monday – Friday)



Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

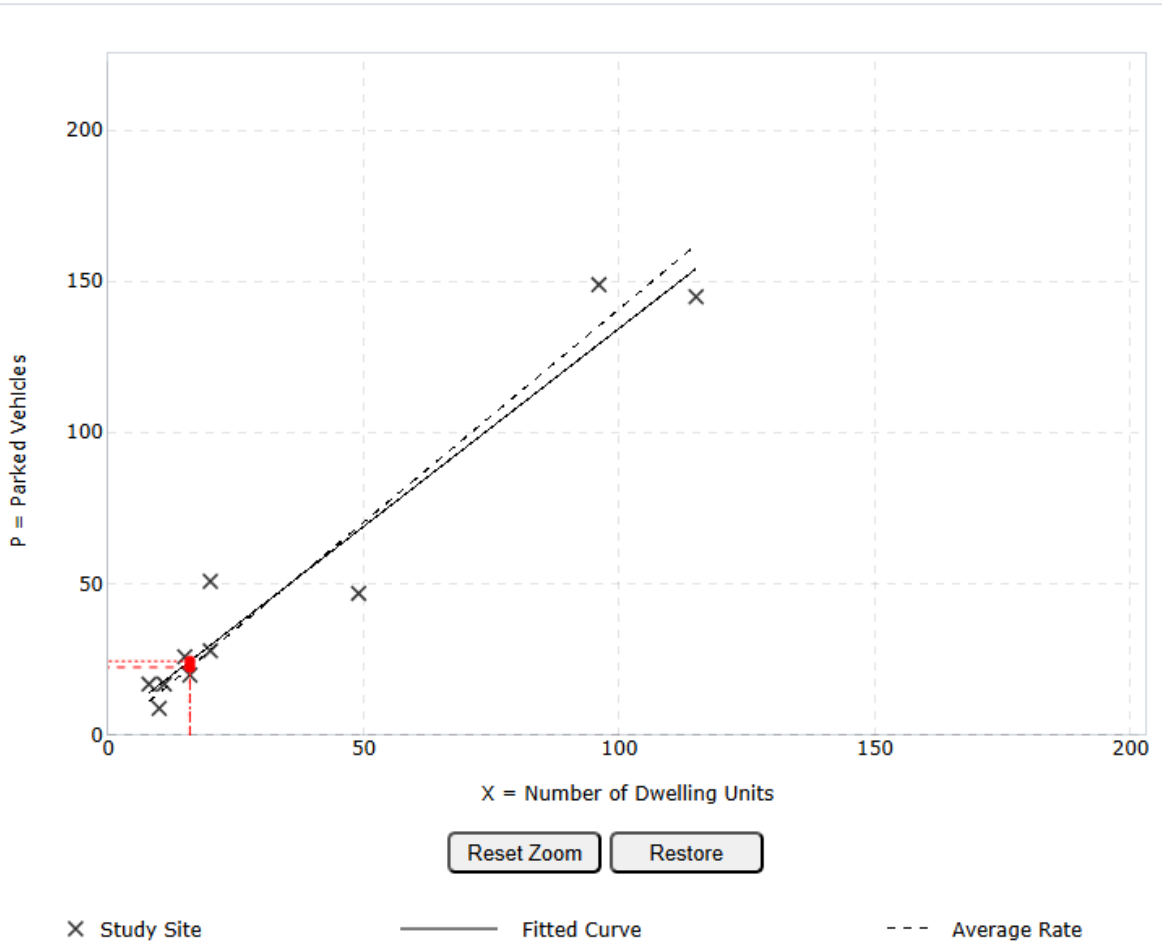
Date: 10/14/24

SINGLE-FAMILY ATTACHED HOUSING – ITE CODE #215

Size: 16 Units

WEEKDAY
(Monday – Friday)

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Attached Housing - Not Close to Rail Transit (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday (Monday - Friday)

Setting/Location:
General Urban/Suburban

Number of Studies:
10

Avg. Num. of Dwelling Units:
36

Average Rate:
1.41

Range of Rates:
0.90 - 2.55

33rd / 85th Percentile:
1.26 / 2.27

95% Confidence Interval:
***

Standard Deviation:
0.39

Coefficient of Variation:
28%

Fitted Curve Equation:
P = 1.31(X) + 3.62

R^2:
0.94

Calculated Parking Demand:
Weighted Average: 23
Fitted Curve: 25
85th Percentile: 36

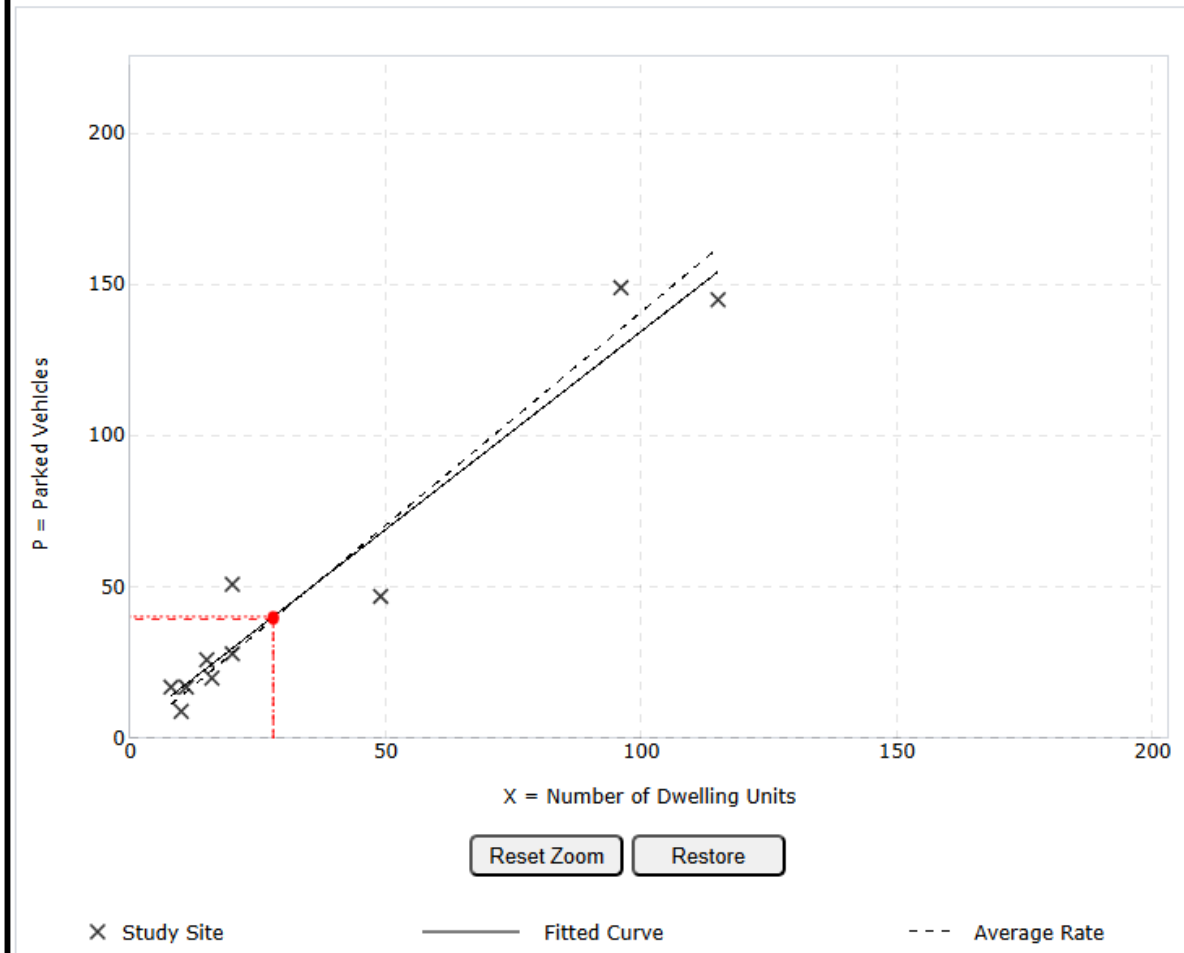
Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

Date: 10/14/24

SINGLE-FAMILY ATTACHED HOUSING – ITE CODE #215 **WEEKDAY**

Size: 28 Units **(Monday – Friday)**

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Attached Housing - Not Close to Rail Transit (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday (Monday - Friday)

Setting/Location:
General Urban/Suburban

Number of Studies:
10

Avg. Num. of Dwelling Units:
36

Average Rate:
1.41

Range of Rates:
0.90 - 2.55

33rd / 85th Percentile:
1.26 / 2.27

95% Confidence Interval:
***

Standard Deviation:
0.39

Coefficient of Variation:
28%

Fitted Curve Equation:
P = 1.31(X) + 3.62

R^2:
0.94

Calculated Parking Demand:
Weighted Average: 39
Fitted Curve: 40
85th Percentile: 64

Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

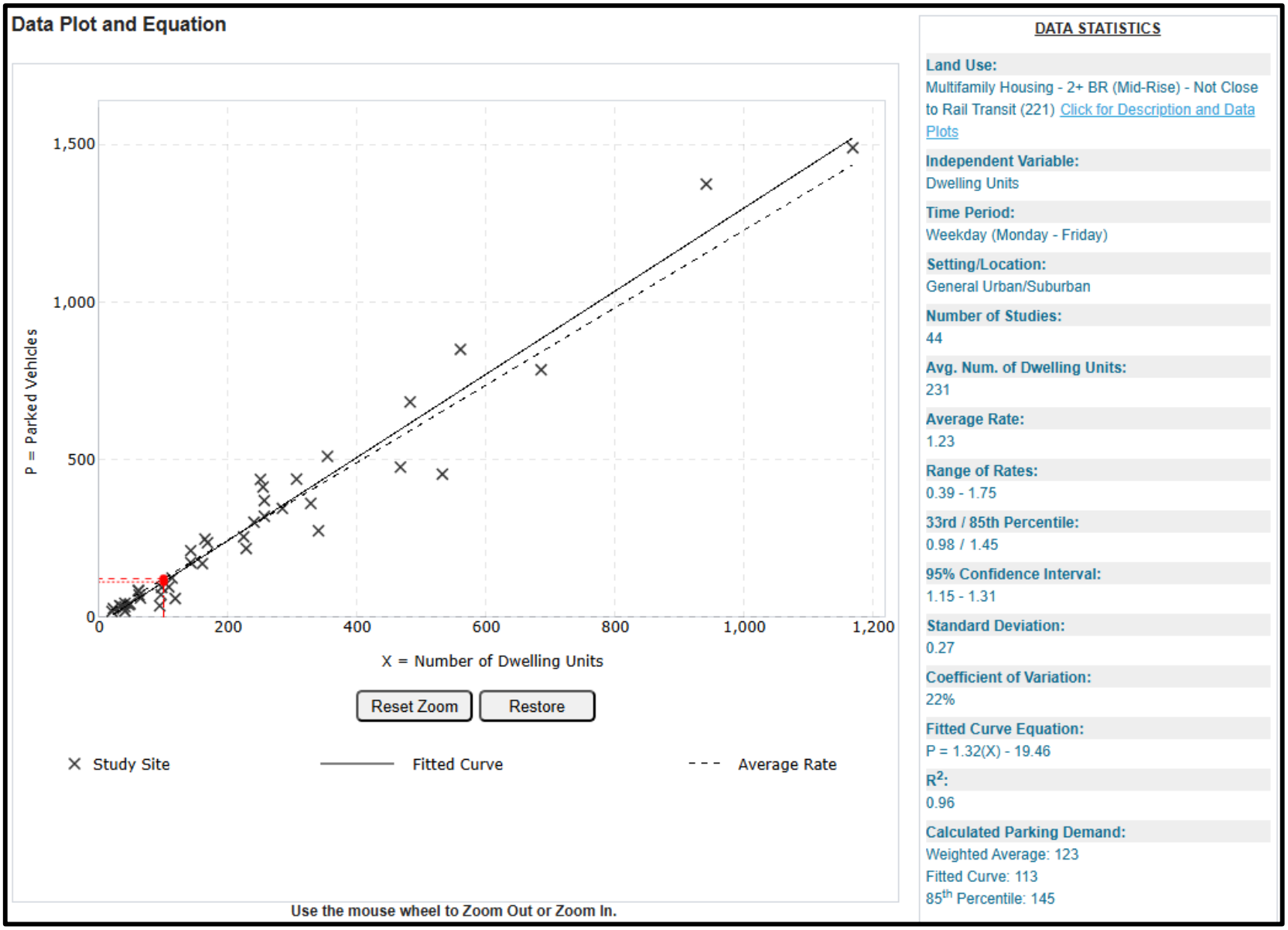
Date: 10/14/24

MULTIFAMILY HOUSING – 2+ BR (Mid-Rise) – ITE CODE #215

Size: 100 Units (NE Building)

WEEKDAY

(Monday – Friday)



Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

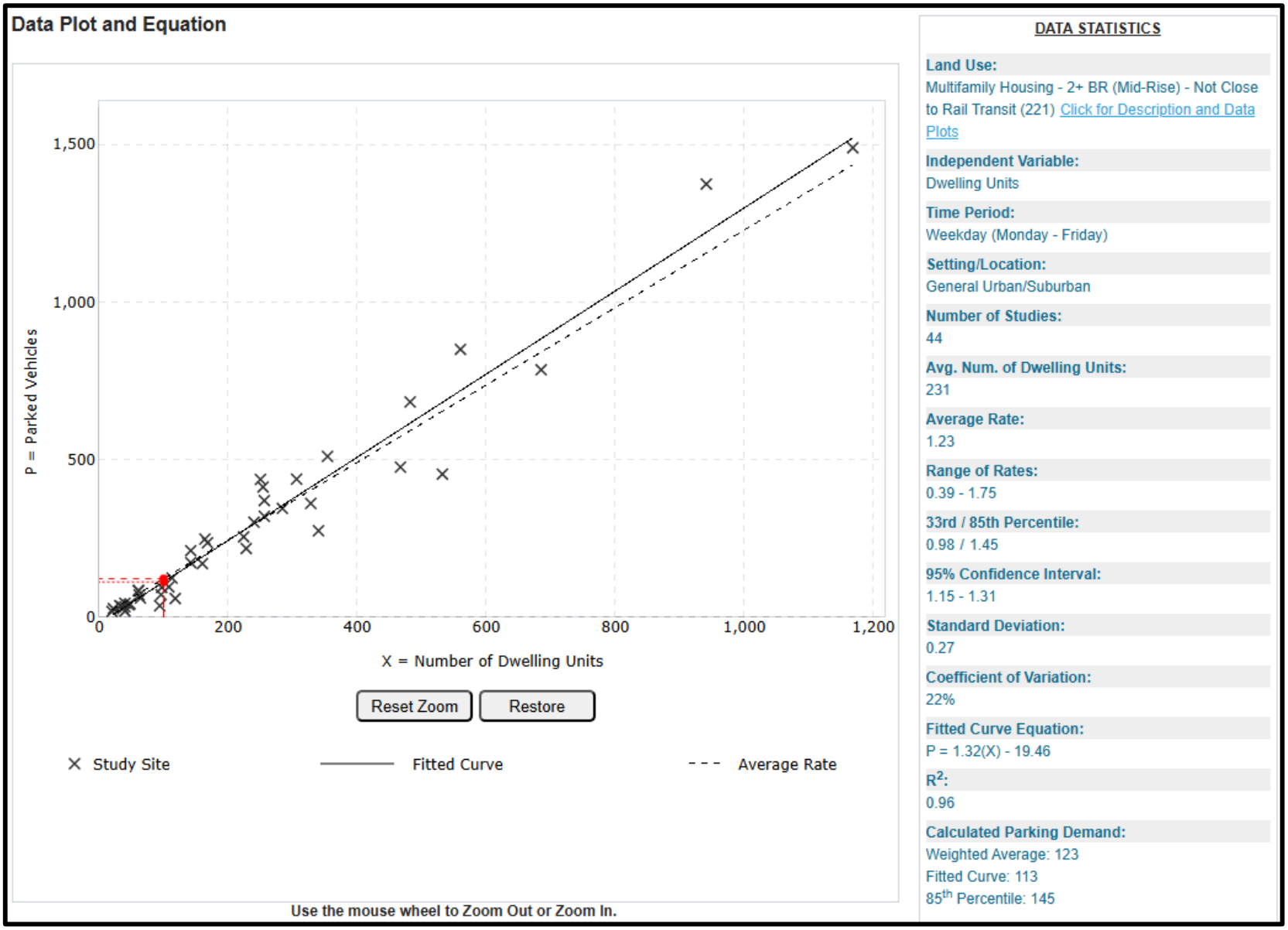
Date: 10/14/24

MULTIFAMILY HOUSING – 2+ BR (Mid-Rise) – ITE CODE #215

Size: 100 Units (NW Building)

WEEKDAY

(Monday – Friday)



Source: Institute of Transportation Engineers, Parking Generation Manual, 6TH Edition

Date: 10/14/24

Plat of Lot Split and Consolidation Survey

of
3300 Mayfield Road
P.P.N. 684-34-001
P.P.N. 684-35-001
P.P.N. 684-35-022
Creating
Parcels A, B and C
City of Cleveland Heights
County of Cuyahoga
State of Ohio

Situated in the City of Cleveland Heights, County of Cuyahoga, and State of Ohio and known as being part of Euclid Township Lot No. 14 and 15 and part of Sublot No. 5, in Minor Heights Subdivision No. 1 as shown by the recorded plat in Volume 40, Page 26 of Cuyahoga County Map Records.

Owners Acceptance

I, (We) the undersigned owner(s) of the land shown hereon, do hereby accept this Plat of Lot Split and Consolidation of the same.

_____
Josh Rosen – President
Sustainable Community Associates IX, LLC

Notary

State of _____ }
County of _____ }

Before me a Notary Public in and for said County and State, personally appeared the above named Owner(s) who acknowledged that he did sign the foregoing instrument and that it was his own free act and deed.

In witness whereof, I have hereunto set my hand and official seal at _____, _____, this _____ day of _____, 2024.

_____
Notary Public

_____
My commission expires

City Approvals

This Plat of Lot Split and Consolidation Survey is accepted and approved by the Planning Commission of the City of Cleveland Heights, Ohio this _____ day of _____, 2024.

_____ _____
Secretary, Planning Commission Print Name

This Plat of Lot Split and Consolidation Survey is accepted and approved by the Director of Planning of the City of Cleveland Heights, Ohio this _____ day of _____, 2024.

_____ _____
Director, Planning and Development Print Name

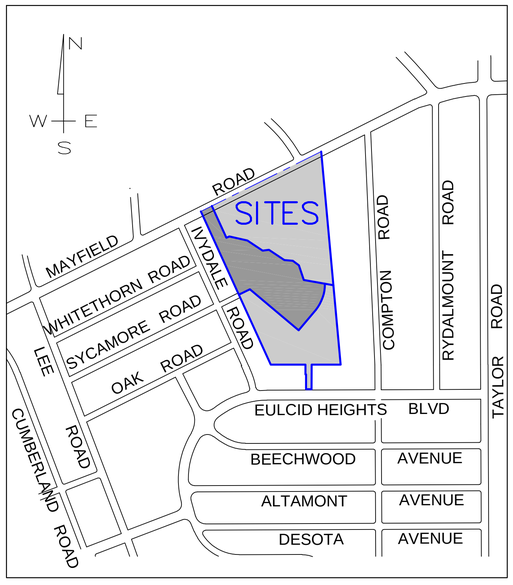
This Plat of Lot Split and Consolidation Survey is accepted and approved by the Director of Law of the City of Cleveland Heights, Ohio this _____ day of _____, 2024.

_____ _____
Director of Law Print Name

Land Area

Parcel "A"	13.3785	Acres	582,769 Sq.Ft.
Within R/W	00.9076	Acres	39,533 Sq.Ft.
Net	12.4709	Acres	543,236 Sq.Ft.
Parcel "B"	8.1069	Acres	353,138 Sq.Ft.
Within R/W	0.0918	Acres	4,000 Sq.Ft.
Net	8.0151	Acres	349,138 Sq.Ft.
Parcel "C"	7.3267	Acres	319,150 Sq.Ft.

VICINITY MAP



NOT TO SCALE

Easement Note

Due to existing and proposed utilities on the subject property(s) a blanket easement for utilities needed to service the existing and proposed buildings on the property(s) is needed for the creation of this Lot Split and Consolidation.

Due to existing and proposed pavement (drives, walks, etc.) on the subject property(s) a blanket easement for ingress / egress over said paved areas is needed for the creation of this Lot Split and Consolidation.

Separate maintenance and easement agreement(s) to be filed at a later date outlining the involved parties (current and future) rights and responsibilities.

Certification

STATE OF OHIO
BRIAN SIEBENTHAL
8740
REGISTERED
PROFESSIONAL SURVEYOR

This plat was prepared from a field survey, analysis of recorded plats, recorded deeds, and city survey records. Bearings shown hereon are to an assumed meridian and are intended to indicate angles only. Distances are given in feet and decimal parts thereof. All of which I certify to be correct to the best of my knowledge. I hereby certify I have surveyed the subject premises and prepared this drawing in Accordance with the provisions of Chapter 4733–37 of the Ohio Administrative Code.

Brian Siebenthal *September 19, 2024*

Brian Siebenthal P.S. No. 8740 Date

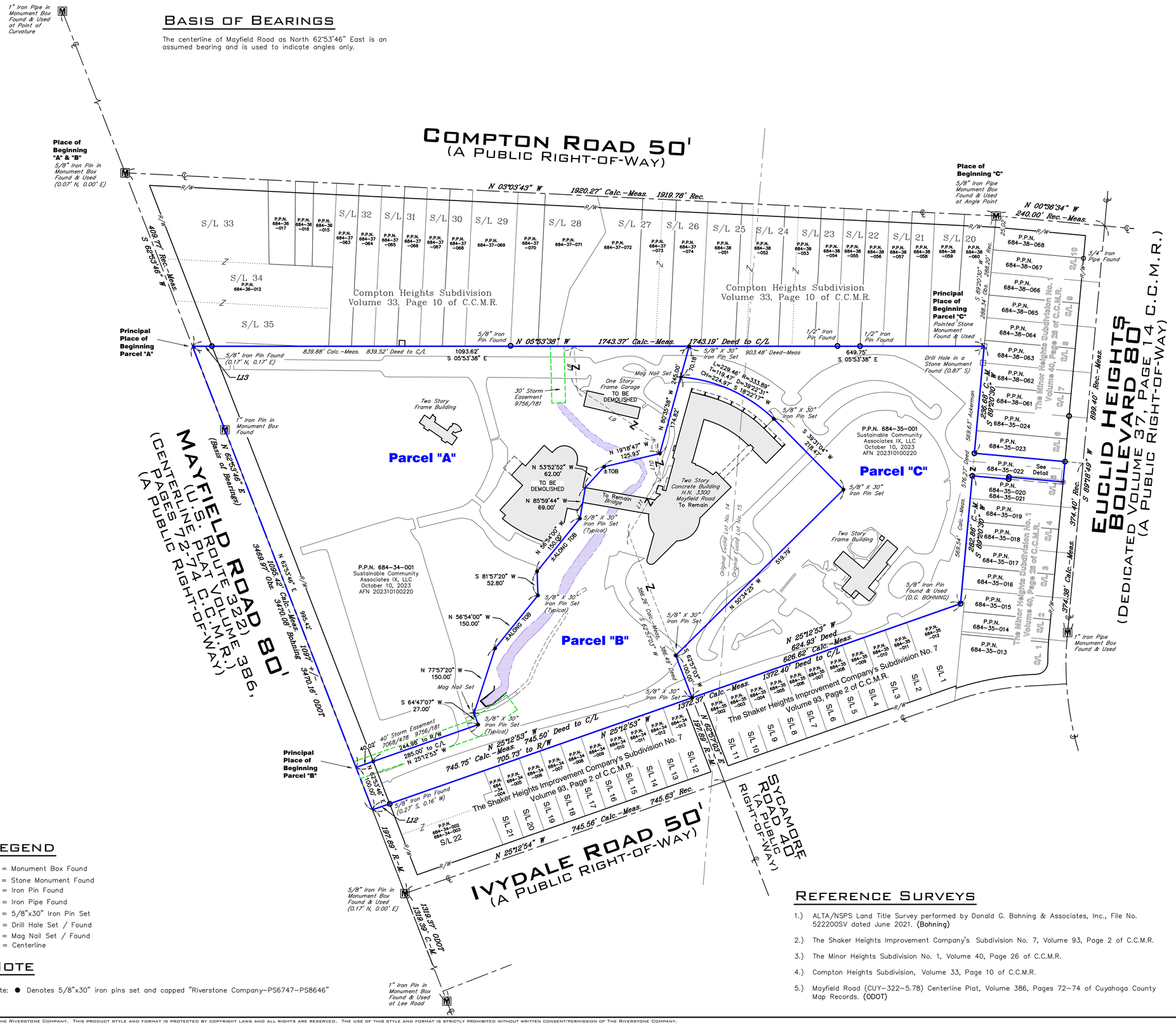
RIVERSTONE
LAND SURVEYING - ENGINEERING - DESIGN
3800 LAKESIDE AVENUE - SUITE 100
CLEVELAND - OHIO - 44114
PHONE: (216) 491-2000 FAX: (216) 491-9640
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Plat of Lot Split and Consolidation Survey of 3300 Mayfield Road

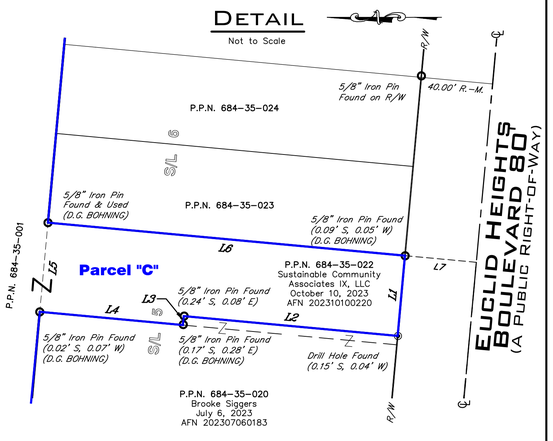
Basis of Bearings

The centerline of Mayfield Road as North 62°53'46" East is an assumed bearing and is used to indicate angles only.



Detail

Not to Scale



Line Table

Line #	Length	Bearing
L1	45.00' R.-M.	S 89° 18' 49" W
L2	120.00' R.-M.	N 00° 36' 34" W
L3	5.00' R.-M.	S 89° 18' 49" W
L4	80.28' C.-M. 80.00' R.	N 00° 36' 34" W
L5	50.00' R.-M.	S 89° 20' 30" W
L6	200.26' C.-M. 200.00' R.	S 00° 36' 34" E
L7	40.00' R.-M.	N 00° 36' 34" W
L8	91.28' D.-M.	S 79° 59' 26" W S 80° 32' 23" W (D)
L9	206.35' D.-M.	S 27° 45' 56" W S 28° 20' 11" W (D)
L10	90.86' D.-M.	S 75° 33' 26" W S 76° 07' 41" W (D)
L11	138.60' C.-M. 141.29' D.	N 65° 02' 39" W N 65° 02' 38" W (D)
L12	40.02' C.-M.	S 25° 12' 53" E
L13	42.91' C.-M.	S 05° 53' 38" E

Legend

- M = Monument Box Found
- □ = Stone Monument Found
- ○ = Iron Pin Found
- ○ = Iron Pipe Found
- ● = 5/8"x30" Iron Pin Set
- ◉ = Drill Hole Set / Found
- ┼ = Mag Nail Set / Found
- ℄ = Centerline

Note

Note: ● Denotes 5/8"x30" iron pins set and capped "Riverstone Company-PS6747-PS8646"

Reference Surveys

1.) ALTA/NSPS Land Title Survey performed by Donald G. Bohning & Associates, Inc., File No. 5222005V dated June 2021. (Bohning)

2.) The Shaker Heights Improvement Company's Subdivision No. 7, Volume 93, Page 2 of C.C.M.R.

3.) The Minor Heights Subdivision No. 1, Volume 40, Page 26 of C.C.M.R.

4.) Compton Heights Subdivision, Volume 33, Page 10 of C.C.M.R.

5.) Mayfield Road (CUY-322-5.78) Centerline Plat, Volume 386, Pages 72-74 of Cuyahoga County Map Records. (ODOT)

GRAPHIC SCALE

100 0 50 100

(IN FEET)

1 inch = 100 ft.

RIVERSTONE

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3800 LAKESIDE AVENUE - SUITE 100
CLEVELAND - OHIO - 44114
PHONE: (216) 491-2000 FAX: (216) 491-9640
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Park Synagogue

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SITE PLAN SURVEY
OF
PARK SYNAGOGUE
3300 MAYFIELD ROAD
P.P.N. 684-34-001
P.P.N. 684-35-001
P.P.N. 684-35-022
CITY OF CLEVELAND HEIGHTS, OHIO

(BOUNDARY CONTROL)

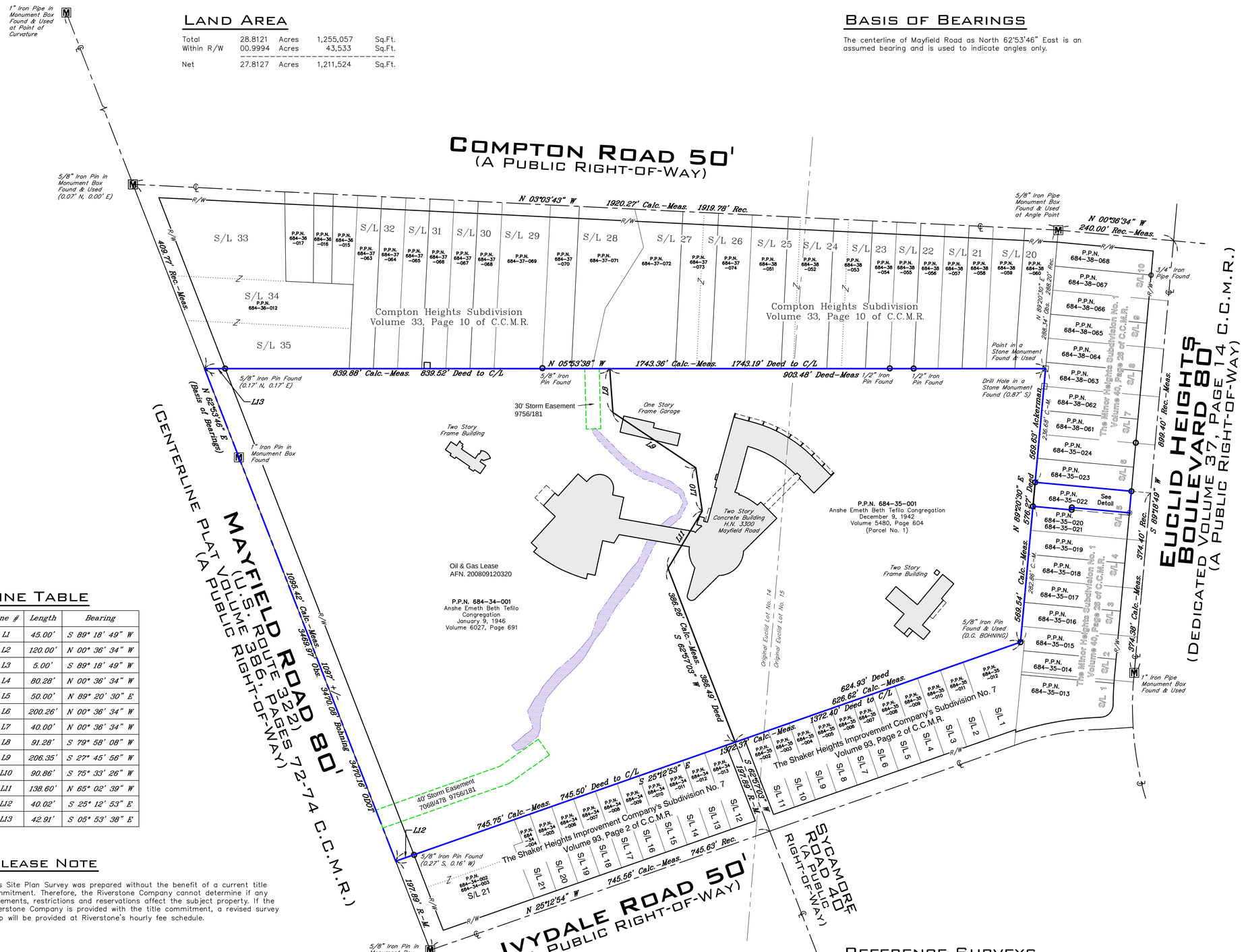
Situated in the City of Cleveland, County of Cuyahoga and State of Ohio and known as being part of Sublot No. 5 in The Minor Heights Subdivision No. 1 as shown by the plat recorded in Volume 40, Page 26 of Cuyahoga County Map Records and part Original Euclid Township Lot Nos. 14 and 15.

LAND AREA

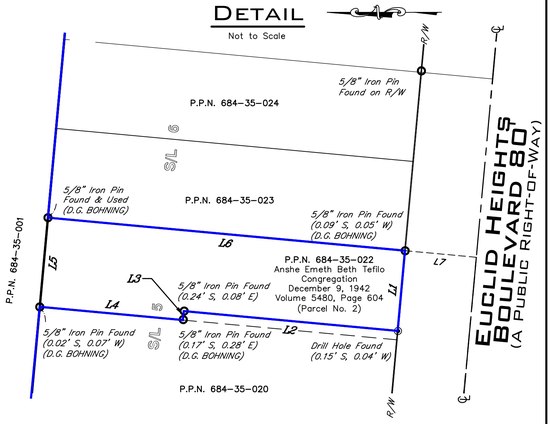
Total	28.8121 Acres	1,255,057	Sq.Ft.
Within R/W	00.9994 Acres	43,533	Sq.Ft.
Net	27.8127 Acres	1,211,524	Sq.Ft.

BASIS OF BEARINGS

The centerline of Mayfield Road as North 62°53'46" East is an assumed bearing and is used to indicate angles only.



DETAIL
Not to Scale



GRAPHIC SCALE
100 0 50 100
(IN FEET)
1 inch = 100 ft.

LINE TABLE

Line #	Length	Bearing
L1	45.00'	S 89° 18' 49" W
L2	120.00'	N 00° 36' 34" W
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L9	206.35'	S 27° 45' 56" W
L10	90.86'	S 75° 33' 26" W
L11	138.60'	N 65° 02' 39" W
L12	40.02'	S 25° 12' 53" E
L13	42.91'	S 05° 53' 38" E

PLEASE NOTE

This Site Plan Survey was prepared without the benefit of a current title commitment. Therefore, the Riverstone Company cannot determine if any easements, restrictions and reservations affect the subject property. If the Riverstone Company is provided with the title commitment, a revised survey map will be provided at Riverstone's hourly fee schedule.

LEGEND

- M = Monument Box Found
- □ = Stone Monument Found
- O = Iron Pin Found
- o = Iron Pipe Found
- ● = 5/8"x30" Iron Pin Set
- ◉ = Drill Hole Set / Found
- ⊕ = Mag Nail Set / Found
- ℄ = Centerline

NOTE

Note: ● Denotes 5/8"x30" iron pins set and capped "Riverstone Company-PS6747-PS8646"

REFERENCE SURVEYS

1.) ALTA/NSPS Land Title Survey performed by Donald G. Bohning & Associates, Inc., File No. 5222200SV dated June 2021. (Bohning)

2.) The Shaker Heights Improvement Company's Subdivision No. 7, Volume 93, Page 2 of C.C.M.R.

3.) The Minor Heights Subdivision No. 1, Volume 40, Page 26 of C.C.M.R.

4.) Compton Heights Subdivision, Volume 33, Page 10 of C.C.M.R.

5.) Mayfield Road (CUY-322-5.78) Centerline Plat, Volume 386, Pages 72-74 of Cuyahoga County Map Records. (ODOT)

SURVEYOR CERTIFICATION

CONTRACTOR TO VERIFY BEFORE STARTING CONSTRUCTION:

1. Finished Floor elevation & House sizes
2. Location and Elevations of existing utility connections
3. Existing sewer connections can only be used if they are in good working condition. the city shall decide on the condition of existing connections.
5. The contractor must obtain a sewer permit from the City of Cleveland Heights, division of Water Pollution Control, before performing the sewer work.

Utility Provider source information from plans provided by the client, the title company and the utility provider and on ground utility markings will be combined with observed evidence of utilities to develop a view of those underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted.

Dimensions shown on this plan are expressed in feet and decimal parts thereof, all of which I declare to be correct to the best of my knowledge and belief. Bearings are to an assumed meridian and are used to denote angles only.

Brian Siebenthal — P.S. No. 8740 — September 11, 2023
Brian Siebenthal P.S. No. 8740 Date

STATE OF OHIO
BRIAN SIEBENTHAL
8740
REGISTERED
PROFESSIONAL SURVEYOR

RIVERSTONE
LAND SURVEYING · ENGINEERING · DESIGN
3800 LAKESIDE AVENUE · SUITE 100
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Site Plan Survey
of
Park Synagogue

(Existing Conditions)

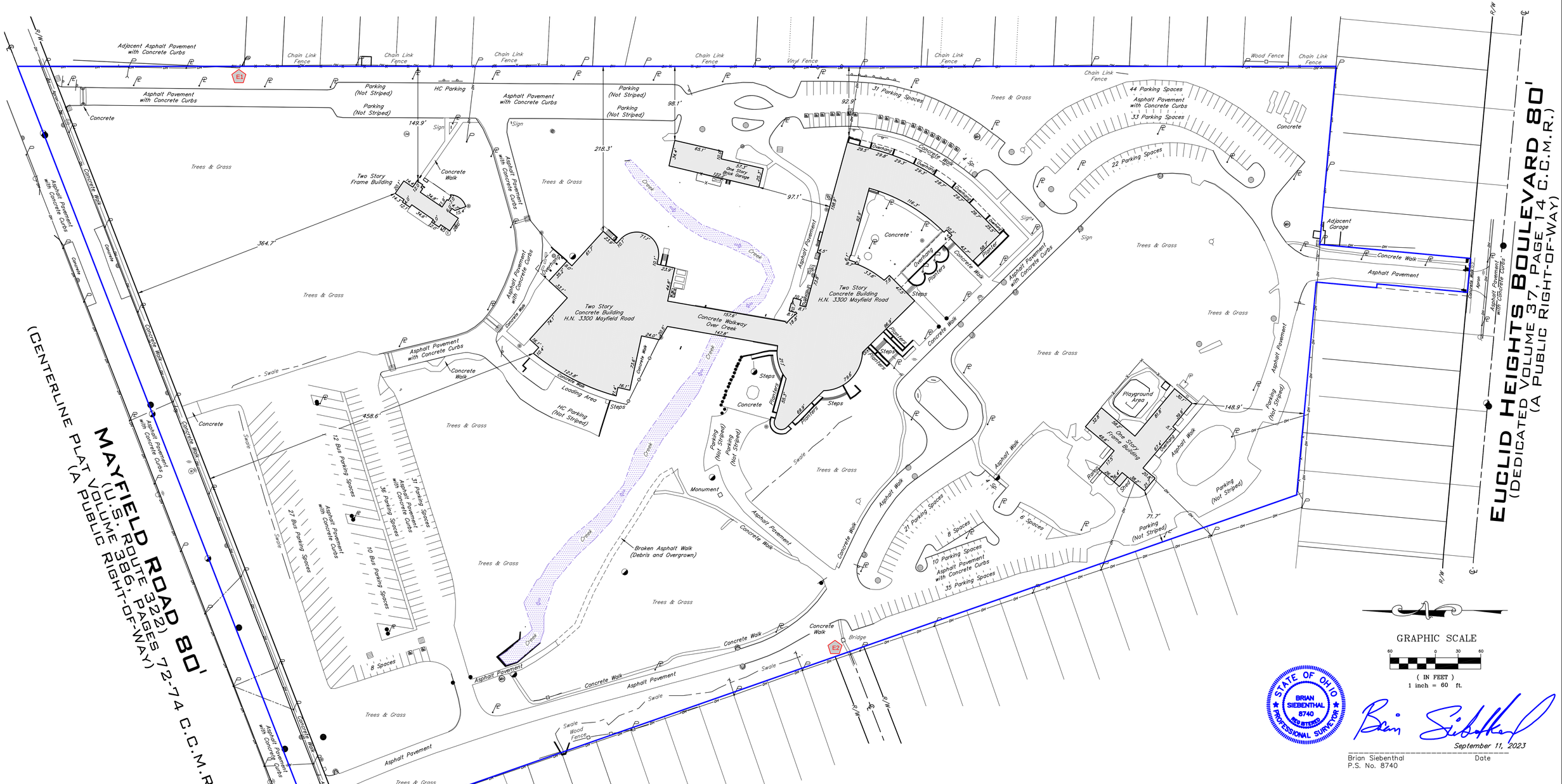
Possible Encroachments

E1 Adjacent pavement extends onto subject property by 2.3 feet.

E2 Subject's concrete walk extends off property.

Surveyors Notes

1. All of the various survey monuments shown on this survey as found and/or used are in good condition, undisturbed, unless otherwise noted. 5/8" iron pins shown hereon as set will be set upon closing.
2. Ownership of fences are unknown unless otherwise noted.
3. Dimensions on this plat are expressed in feet and decimal parts thereof unless otherwise noted.
4. Parking Spaces are poorly striped.



Legend

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- = Iron Pin Found
- = Iron Pipe Found
- = 5/8"x30" Iron Pin Set
- = Drill Hole Set / Found
- = Mag Nail Set / Found
- ℄ = Centerline
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- = Traffic Pole
- = Ground Light
- = Guy Anchor & Line
- = Flag Pole
- GM = Gas Meter
- = Gas Valve / Shut Off
- E = Electric Meter
- EM = Electric Manhole
- = Electric Box
- = Transformer
- = Air Conditioning Unit
- = Telephone Box / Manhole
- = Cable Box / Manhole
- = Traffic Control Box
- = Hydrant
- = Stand Pipe
- = Water Service Valve
- = Water Line Valve
- W = Water Meter
- WM = Water Manhole
- = Sanitary Manhole
- C/O = Clean Out
- MH = Unknown Manhole
- = Storm Manhole
- = Catch Basin
- = Yard Basin
- = Curb Inlet
- = Trench Drain
- = Traffic Flow/Access
- = Sign Post
- = Bollard
- = Handicap Parking

Waterline — Water Line
Gas Line — Gas Line
Overhead Utility Line — OH
Electric Line — Electric Line
Sanitary Sewer — Sanitary Line
Storm Sewer — Storm Line
Telephone Line — Telephone

EL'EV = Existing Spot Elevation Tag

Note: ● Denotes 5/8"x30" iron pins set and capped "Riverstone Company–PS6747–PS8646"

State of Ohio · Brian Siebenthal · 8740 · Registered · Professional Surveyor

Brian Siebenthal
P.S. No. 8740

September 11, 2023
Date

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Park Synagogue

Site Plan Survey
of
Park Synagogue

(Utilities & Topography)

Vertical Control Monument and T.B.M.

(VRS Virtual Reference Station August 31, 2023)

The horizontal component of the VRS network is based on the NAD83 (CORS96) reference frame;
The vertical component of the VRS network is based on NAVD88 as determined by the NGS (National Geodetic Survey).

TBM No. 1 — Elevation: 867.57' (NAVD 1988) — Top Nut of fire hydrant along Mayfield Road

TBM No. 2 — Elevation: 916.64' (NAVD 1988) — Top Nut of fire hydrant

TBM No. 3 — Elevation: 913.69' (NAVD 1988) — Top Nut of fire hydrant

TBM No. 4 — Elevation: 917.98' (NAVD 1988) — Top Nut of fire hydrant

Definitions — NAVD– North American Vertical Datum

Utility Providers

O.U.P.S. Reference No. A319500207
Date: July 14, 2023

2 WORKING DAYS BEFORE YOU DIG
CALL TOLL FREE 800-362-2764 or 811
OHIO UTILITIES PROTECTION SERVICE

AT&T
Plans Not Received

(CEI) The Illuminating Company
Plans Received - GIS Plans and Field Markers

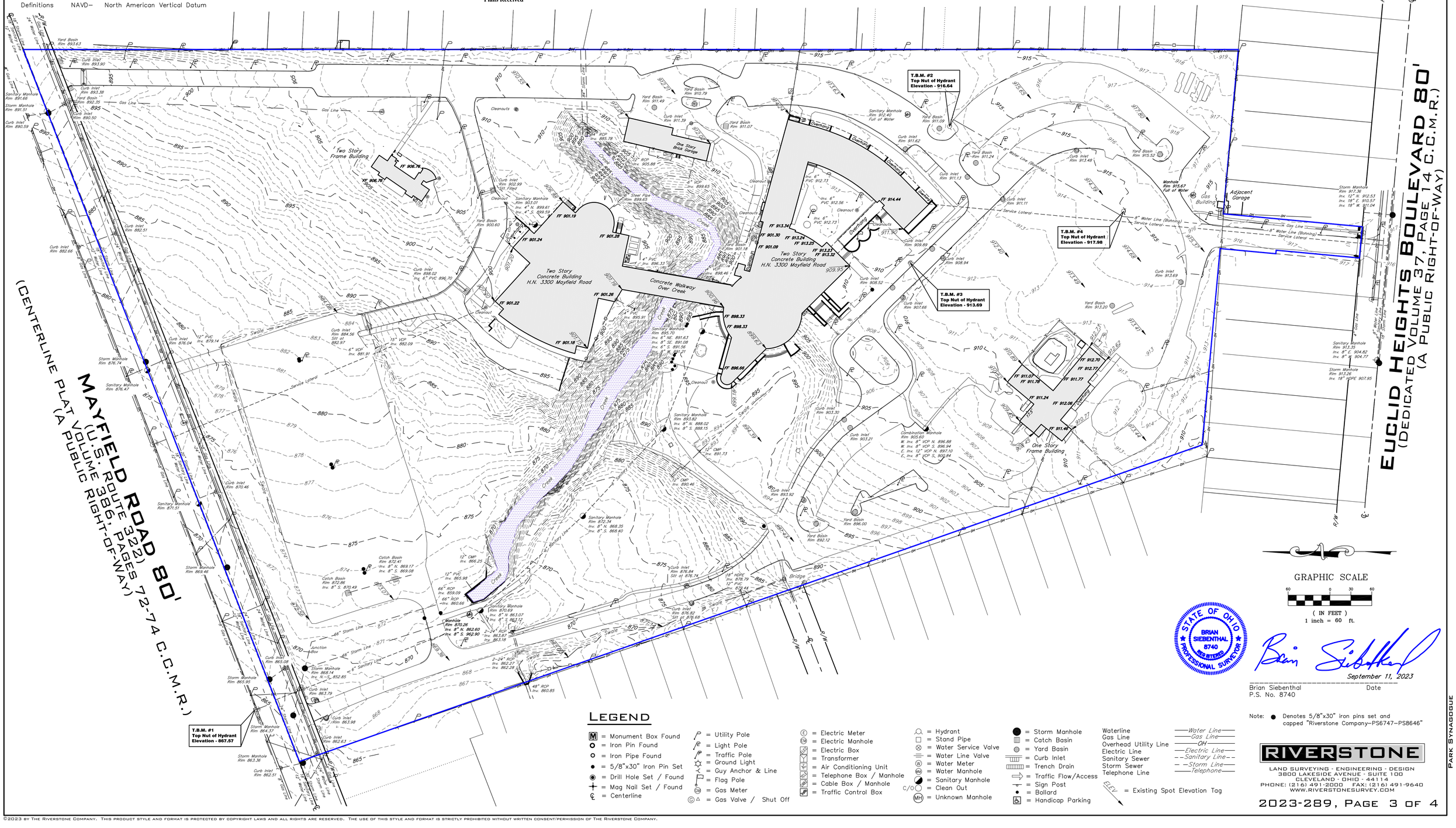
City of Cleveland Heights
Plans Received- GIS Plans

City of Cleveland Division of Water
Plans Received

Charter Communications
Plans Not Received

Dominion East Ohio Gas
Plans Received - GIS Plans

G4S
Plans Not Received



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- = Guy Anchor & Line
- = Flag Pole
- GM = Gas Meter
- = Gas Valve / Shut Off
- E = Electric Meter
- EM = Electric Manhole
- = Electric Box
- = Transformer
- = Air Conditioning Unit
- = Telephone Box / Manhole
- = Cable Box / Manhole
- = Traffic Control Box
- = Hydrant
- = Stand Pipe
- = Water Service Valve
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Telephone Line — Telephone

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Note: ● Denotes 5/8"x30" iron pins set and capped "Riverstone Company–PS6747–PS8646"

STATE OF OHIO
BRIAN SIEBENTHAL
8740
REGISTERED
PROFESSIONAL SURVEYOR

September 11, 2023

Brian Siebenthal
P.S. No. 8740

Date

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PARK SYNAGOGUE

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Site Plan Survey
of
Park Synagogue

(Vegetation & Trees)

Tree Indentification

= Oak Trees 6" to 50"

= Misc. Trees 6" to 56"

= Locust Trees 18" to 26"

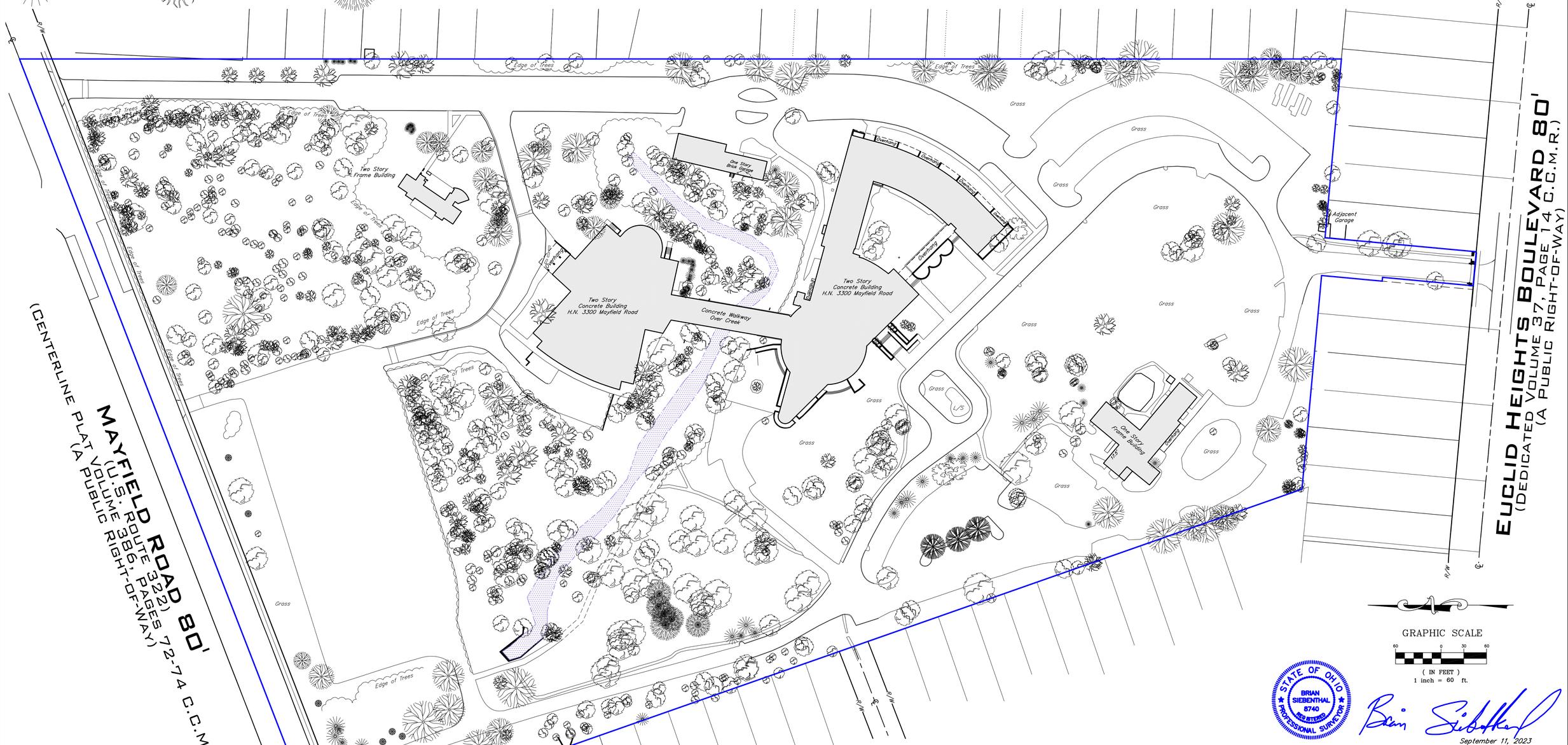
= Crab Apple Trees 18" to 26"

= Pine Trees 6" to 26"

= Maple Trees 6" to 44"

= Cherry Trees 14" to 22"

= Edge of Dense Tree Area



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- = Storm Manhole
- = Catch Basin
- = Yard Basin
- = Curb Inlet
- = Trench Drain
- = Traffic Flow/Access
- = Sign Post
- = Bollard
- = Handicap Parking

GRAPHIC SCALE

60 0 30 60

(IN FEET)

1 inch = 60 ft.

STATE OF OHIO
BRIAN SIEBENTHAL
8740
REGISTERED
PROFESSIONAL SURVEYOR

September 11, 2023

Brian Siebenthal Date
P.S. No. 8740

Note: ● Denotes 5/8"x30" iron pins set and capped "Riverstone Company-PS6747-PS8646"

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BIKE PARKING					
BUILDING	SQ FT/UNITS	TOTAL REQUIRED	STANDARD	LONG TERM	TOTAL PROVIDED
RESIDENTIAL	30 UNITS	8	2	7	9
SYNAGOGUE	75,000 SQ FT	15	8	8	16
DAYCARE	7,090 SQ FT	3	3	0	3

CLEVELAND HEIGHTS CODIFIED ORDINANCES				
SECTION	TOPIC	REQUIRED	PROVIDED	VARIANCE
1161.035 (a)	REQUIRED BICYCLE PARKING SPACES – MULTIPLE FAMILY DWELLING	1 PER 4 DWELLING UNITS, 80% REQUIRED LONG–TERM	SEE BIKE PARKING SCHEDULE	
1161.035 (a)	REQUIRED BICYCLE PARKING SPACES – COLLEGES AND UNIVERSITIES	1 PER 5,000 SQ. FT. GFA, 50% REQUIRED LONG–TERM	SEE BIKE PARKING SCHEDULE	
1161.035 (a)	REQUIRED BICYCLE PARKING SPACES – PLACES OF WORSHIP OVER 10,000 SQ. FT. GFA	1 PER 5,000 SQ. FT. GFA	EXEMPT, UNDER 10,000 SQ. FT. GFA	
1161.035 (a)	REQUIRED BICYCLE PARKING SPACES – COMMUNITY FACILITIES	1 PER 2,500 SQ. FT. GFA	SEE BIKE PARKING SCHEDULE	
1161.035 (b)(1)	LOCATION OF BICYCLE PARKING SPACES	MAY NOT INTERFERE WITH PEDESTRIAN/VEHICULAR TRAFFIC; WELL–LIT AND VISIBLE TO BUILDING OCCUPANTS OR FROM STREET	PROVIDED	
1161.035 (b)(2)	LOCATION OF BICYCLE PARKING SPACES	BICYCLISTS MAY NOT TRAVEL OVER STAIRS/OBSTACLES TO ACCESS BICYCLE PARKING	PROVIDED	
1161.035 (b)(3)	LOCATION OF BICYCLE PARKING SPACES	ALL REQUIRED SPACES MUST BE ON THE SAME LOT AS THE USE	PROVIDED	
1161.035 (b)(4)	LOCATION OF BICYCLE PARKING SPACES	SHORT–TERM SPACES MUST BE 50' FROM BUILDING ENTRANCE AT SAME GRADE AS SIDEWALK/ACCESSIBLE ROUTE	PROVIDED	
1161.035 (b)(5)	LOCATION OF BICYCLE PARKING SPACES	LONG–TERM SPACES MUST BE IN COVERED AREA ACCESSIBLE FROM BUILDING ENTRANCE	TBD	
1161.035 (b)(5)	LOCATION OF BICYCLE PARKING SPACES	LONG–TERM SPACES MUST BE IN SECURE LOCATION	TBD	
1161.035 (b)(6)	LOCATION OF BICYCLE PARKING SPACES	BICYCLE PARKING FOR RESIDENTIAL USES MUST BE IN RESIDENT–ACCESSIBLE, SECURE AREAS	PROVIDED	
1161.035 (c)(1)	DESIGN OF BICYCLE PARKING SPACES	MIN. BICYCLE SPACE DIMENSION OF 2' X 6', MIN. 7' VERTICAL CLEARANCE, MIN. 5' AISLE BETWEEN ROWS	PROVIDED	
1161.035 (c)(3)	DESIGN OF BICYCLE PARKING SPACES	LONG–TERM SPACES MUST BE COVERED WITH PERMANENT CONSTRUCTION, 7' VERTICAL CLEARANCE	TBD	
1161.09	OFF STREET LOADING SPACES REQUIRED	OFF–STREET LOADING SPACES REQUIRED ON SAME ZONING LOT AS NECESSARY TO MEET NEEDS OF PRINCIPAL USE	PROVIDED	
1161.11(a)	PARKING SPACE DIMENSIONS	9'X20', COMPACT MAY BE 7'6"X16' AS REGULATED IN 1161.107	9'X20'	
1161.11(c)	CIRCULATION AISLES	22' MINIMUM CIRCULATION AISLE FOR 90 DEGREES PARKING, 24' MAXIMUM	20'	2' VARIANCE
1161.11(g)	CURBS AND CURB INLETS	CONCRETE OR STONE CURB, 6" MIN. HIGH	6" HIGH CURB	
1161.11(g)(1)	CURBS AND CURB INLETS – LOCATION	PERIMETER OF PARKING WHEN ABUTTING LANDSCAPED AREA	PROVIDED	
1166.06 (a)(6)	PARKING LOT LANDSCAPING – PROTECTION	LANDSCAPE TO BE PROTECTED FROM PARKED CARS	6" HIGH CURB	
1166.06 (c)(1)	PARKING LOT LANDSCAPING – INTERIOR	FOR LOTS OF 10 OR MORE SPACES	PROVIDED, SEE PLAN	
1166.06 (c)(2)	PARKING LOT LANDSCAPING – INTERIOR	1 ISLAND BETWEEN 10 CONTIGUOUS SPACES	PROVIDED	
1166.06 (c)(3)	PARKING LOT LANDSCAPING – MINIMUM INTERIOR LANDSCAPE AREA	10% OF PARKING LOT AREA	TBD	
1166.06 (c)(4)	PARKING LOT LANDSCAPING – MINIMUM PARKING ISLAND AREA	MIN. 125 SF	VARIES, GREATER THAN 125 SF	
1166.06 (c)(5)	PARKING LOT LANDSCAPING – ISLANDS CURBS	MIN 6" ABOVE SURFACE GRADE (CONCRETE CURBING)	6" HIGH CURB	
1166.06 (c)(6)(A)	PARKING LOT LANDSCAPING – SHADE TREES	1 SHADE TREE FOR EVERY PARKING LOT ISLAND/LANDSCAPED AREA	PROVIDED, WITH SOME EXCEPTIONS	NO SHADE TREES OVER GEOTHERMAL WELLS

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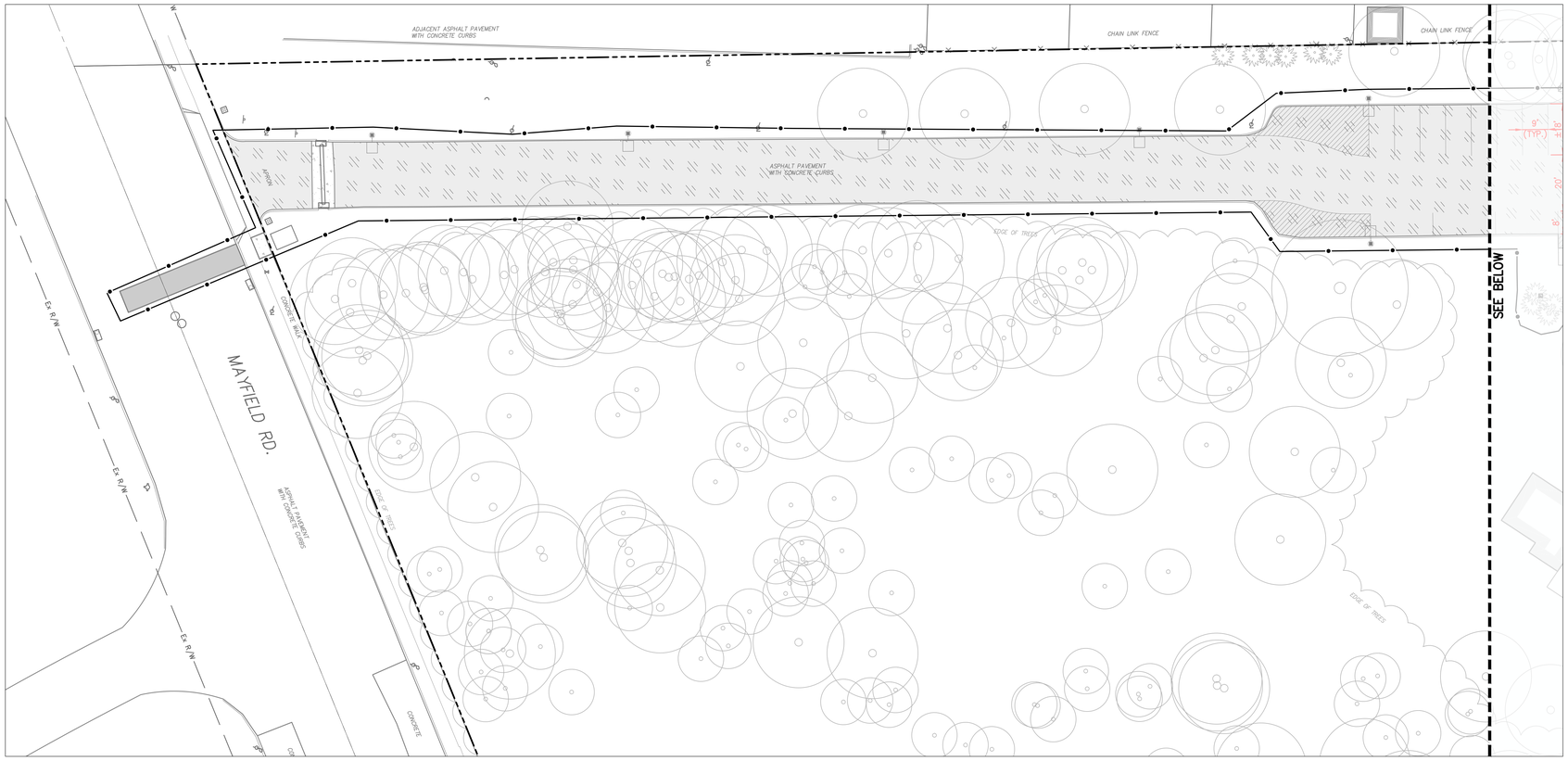
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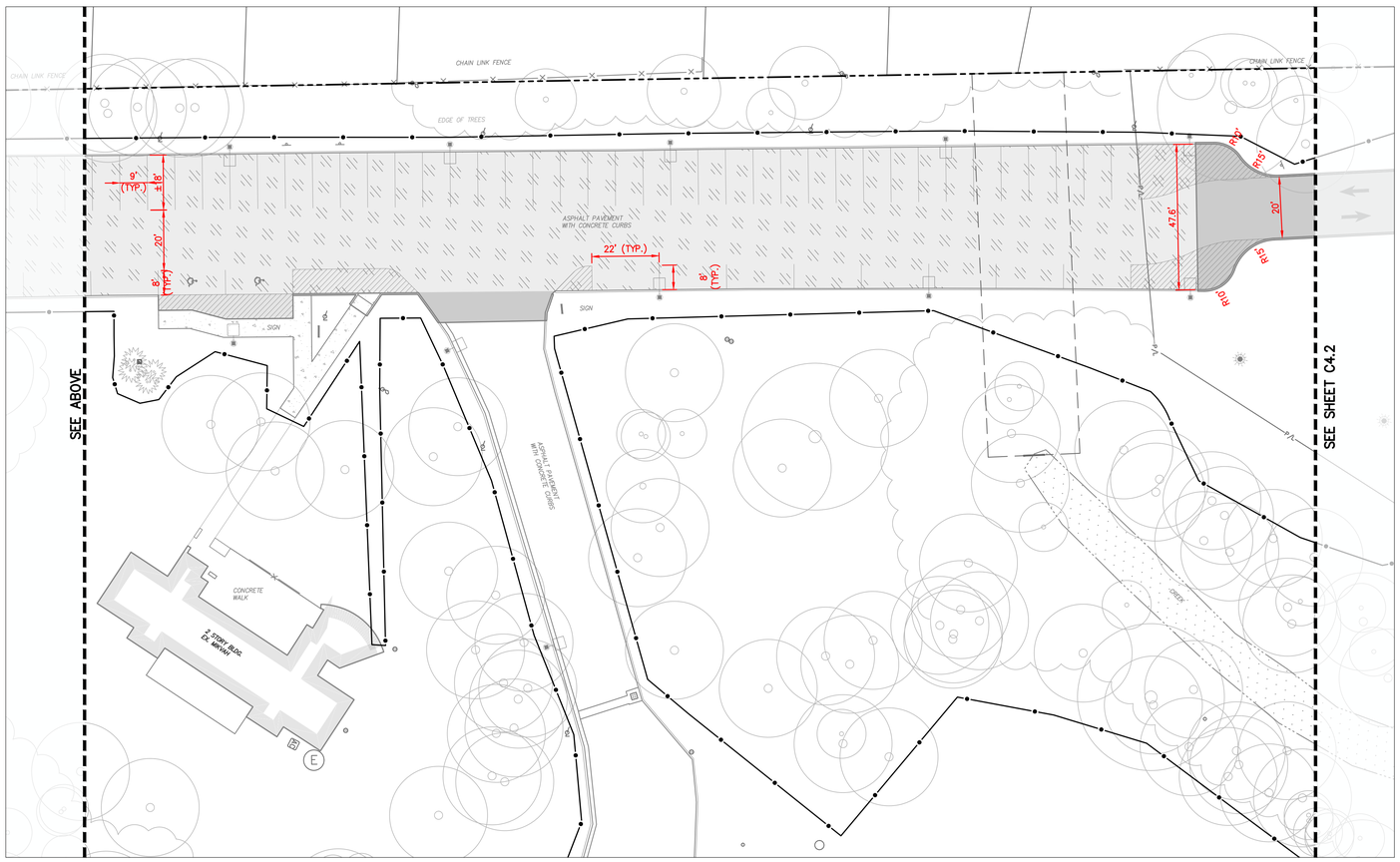
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OVERALL SITE LAYOUT PLAN

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SITE LAYOUT PLAN - ZONE A

2

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SITE LAYOUT PLAN - ZONE B

3

SEE SHEET C4.1

SEE SHEET C4.3

SEE SHEET C4.4

SEE SHEET C4.5

PROPOSED GEOTHERMAL WELLS. VARIANCE REQUEST TO NOT PLANT SHADE TREE IN LANDSCAPE ISLANDS WITH GEOTHERMAL WELL CONFLICT.

OVERHANG

OVERHANG

OVERHANG

PROPOSED TOWNHOMES

BUILDING MECHANICAL ADDITION

TWO STORY CONCRETE BUILDING H.N. 3300 MAYFIELD ROAD

EXISTING SYNAGOGUE

CONCRETE COURTYARD

CONCRETE WALL

PLANTER

PLANTER WALL

CONCRETE WALKWAY OVER CREEK

VINYL FENCE

CHAIN LINK FENCE

GRASS

R20'

R3'

R15'

R30'

20' (TYP.)

60'

9' (TYP.)

5'

12'

6'

8'

14'

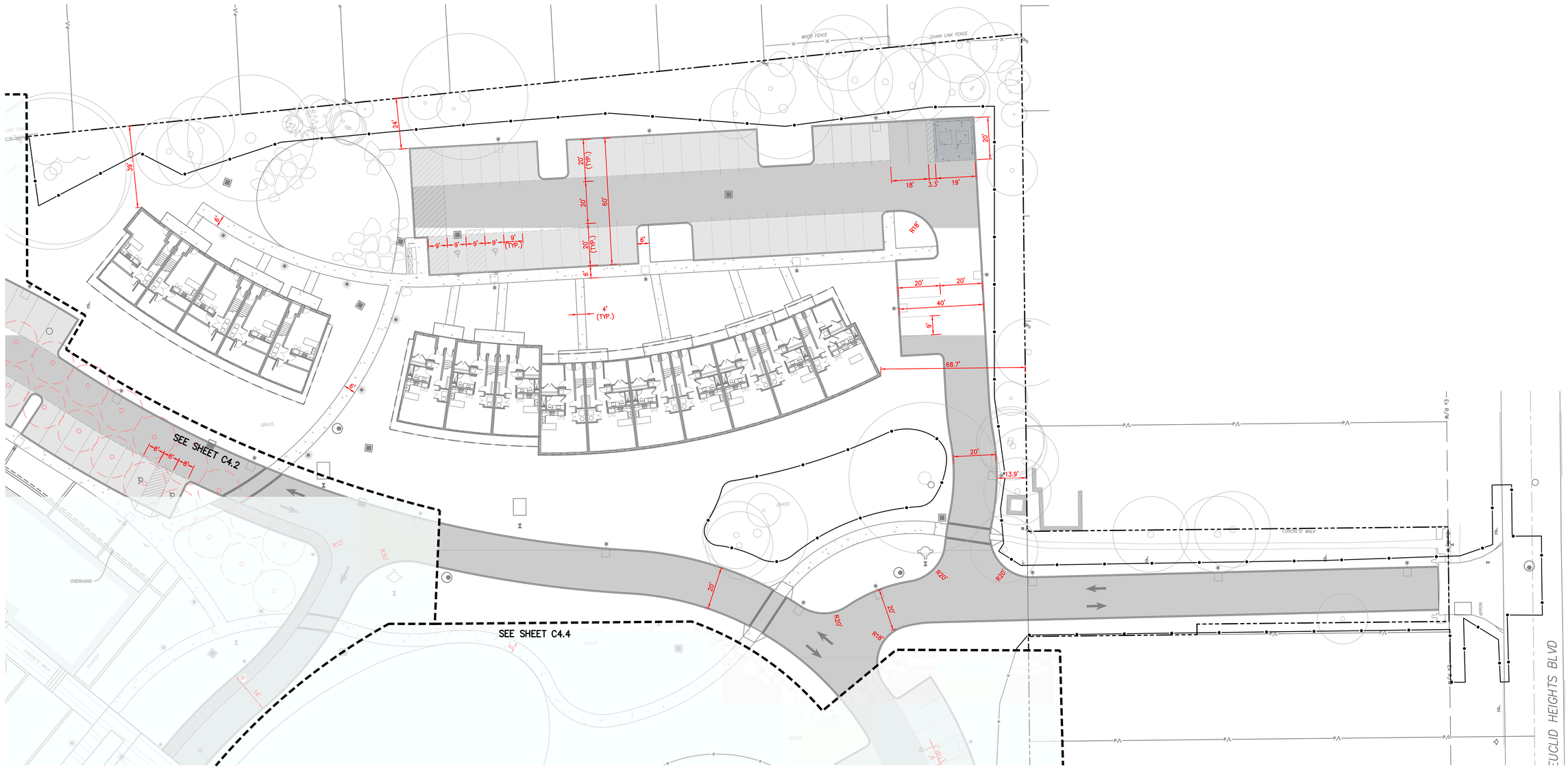
33'

18'

38.5'

0 20 40
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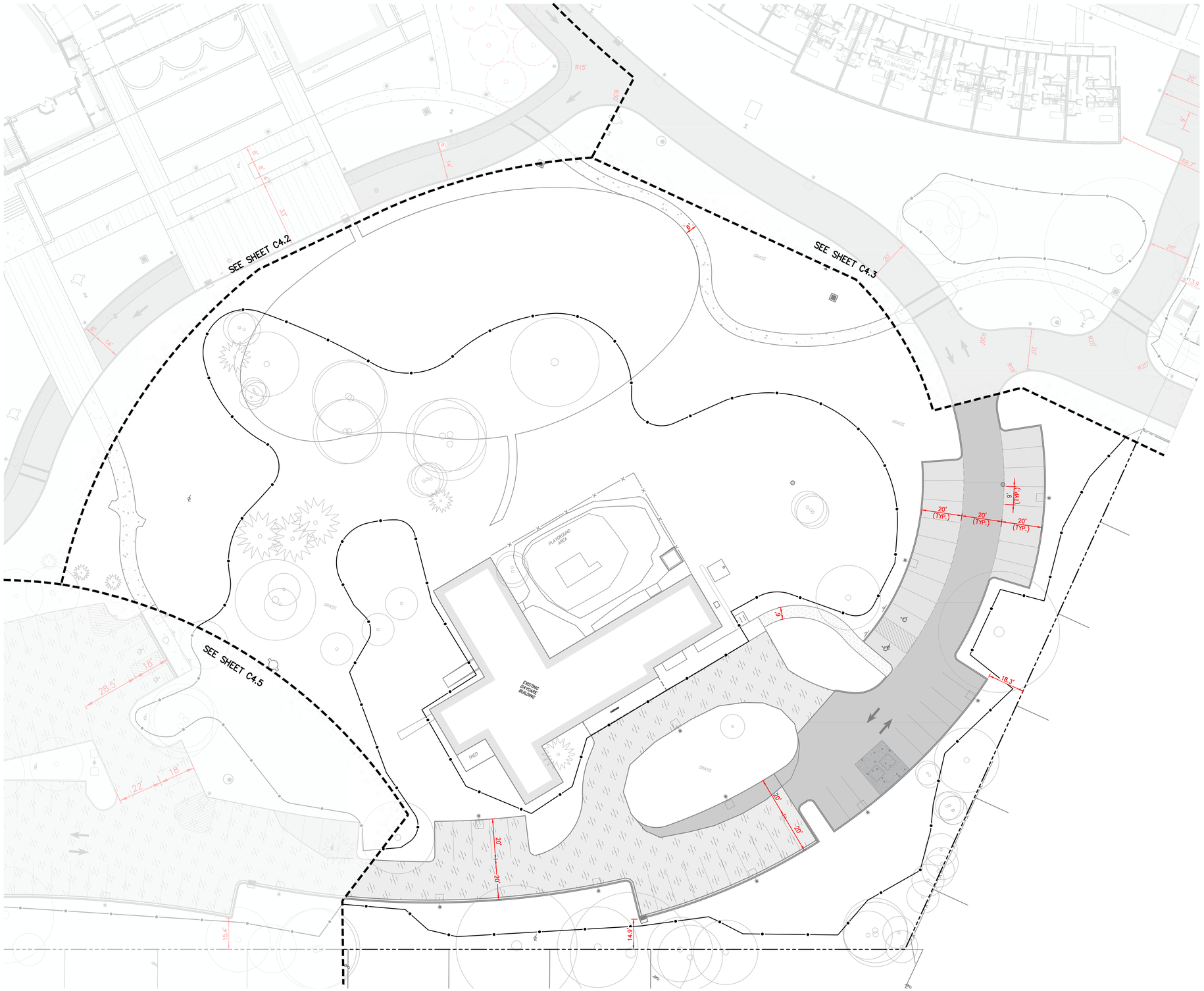
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SITE LAYOUT PLAN - ZONE C

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SITE LAYOUT PLAN - ZONE D

5

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SITE LAYOUT PLAN - ZONE E

6

SEE SHEET C4.2

SEE SHEET C4.4

SEE SHEET C4.6

CONCRETE RAILWAY CREEK

CREEK

EXISTING STRUCTURE

PLANTER WALL

PLANTER WALL

GRASS

MONUMENT

SWALE

BRIDGE

R15'

20'

16'

14'

18'

25.9'

24.7'

18'

21.4'

18'

18'

28.5'

22'

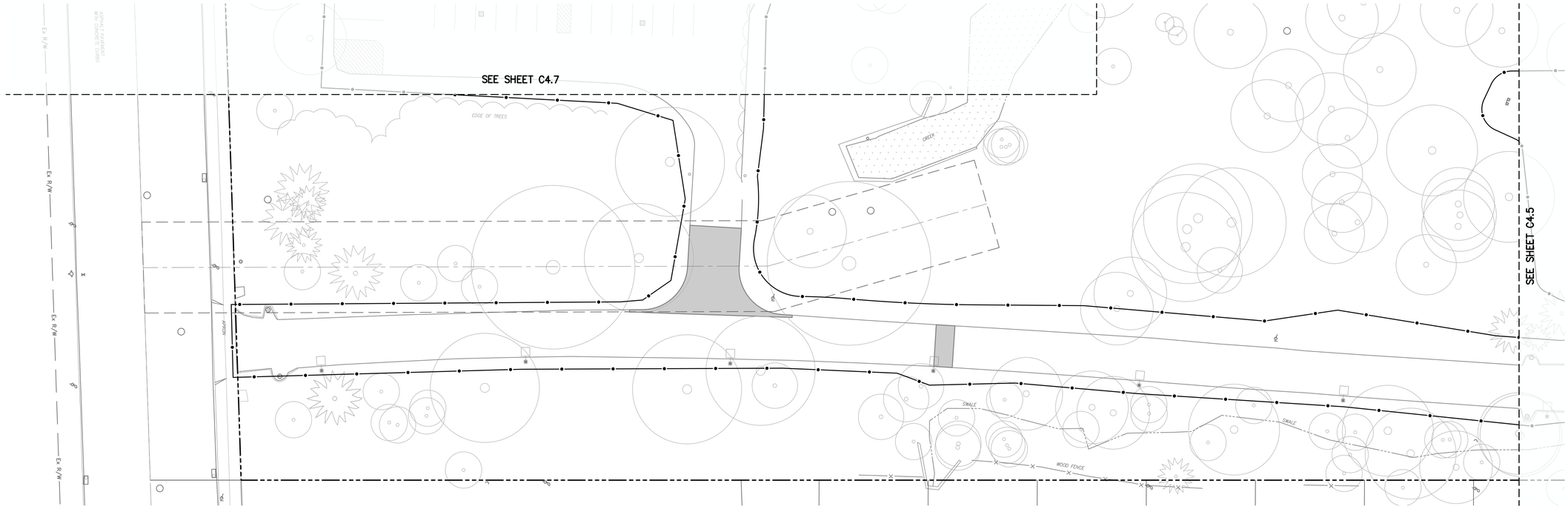
18'

15.4'

20'

0 20 40
GRAPHIC SCALE IN FEET

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SITE LAYOUT PLAN - ZONE F

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SITE LAYOUT PLAN - ZONE G

8

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